# FUNDAMENTALS OF NURSING

## STUDENT BOOK SENIOR FOUR




## ASSOCIATE NURSING PROGRAM

First Edition

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# FOREWORD

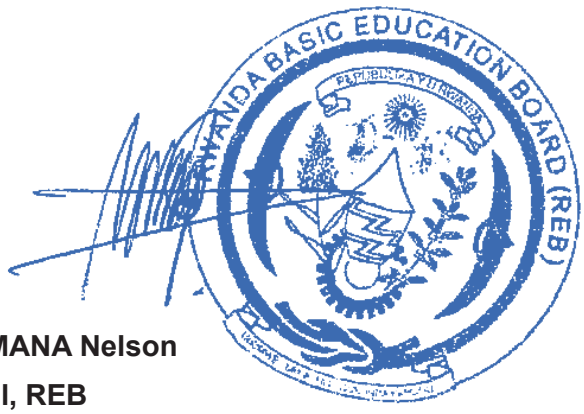
Dear Student,

The Rwanda Basic Education Board is pleased to introduce this textbook of Fundamentals of Nursing of the Associate Nursing Program. This resource is crafted to support competence-based teaching and learning, ensuring a uniform approach to mastering the Fundamentals of Nursing. Our educational philosophy is designed to help you realize your full potential at each level of your education, equipping you to integrate effectively into society and seize career opportunities.

The Rwandan government emphasizes the alignment of educational materials with the syllabus to enhance your learning experience. Instructional materials, activities, and engagement play a crucial role in shaping how well you learn. This textbook focuses on activities that promote idea development and discovery, whether done individually or in groups.

In a competence-based curriculum, learning is an active process where knowledge, skills, and attitude and values are developed through practical activities and real-life scenarios. To fully benefit from this textbook, you should:

- Engage in activities and laboratory experiments to build your skills.
- Share information through presentations, discussions, and collaborative work.
- Take ownership of your learning and draw insights from your activities.
- I extend my gratitude to all those who contributed to the creation of this book, including the Ministry of Health, University of Rwanda, and other institutions. Special thanks go to the dedicated faculty members, nurses, midwives, teachers, illustrators, and designers who worked diligently on this project.




**Dr. MBARUSHIMANA Nelson**

**Director General, REB**

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**MURUNGI Joan**

**Head of Curriculum, Teaching, and Learning Resources Department / REB**

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# UNIT 1 SELECTED NURSING THEORIES

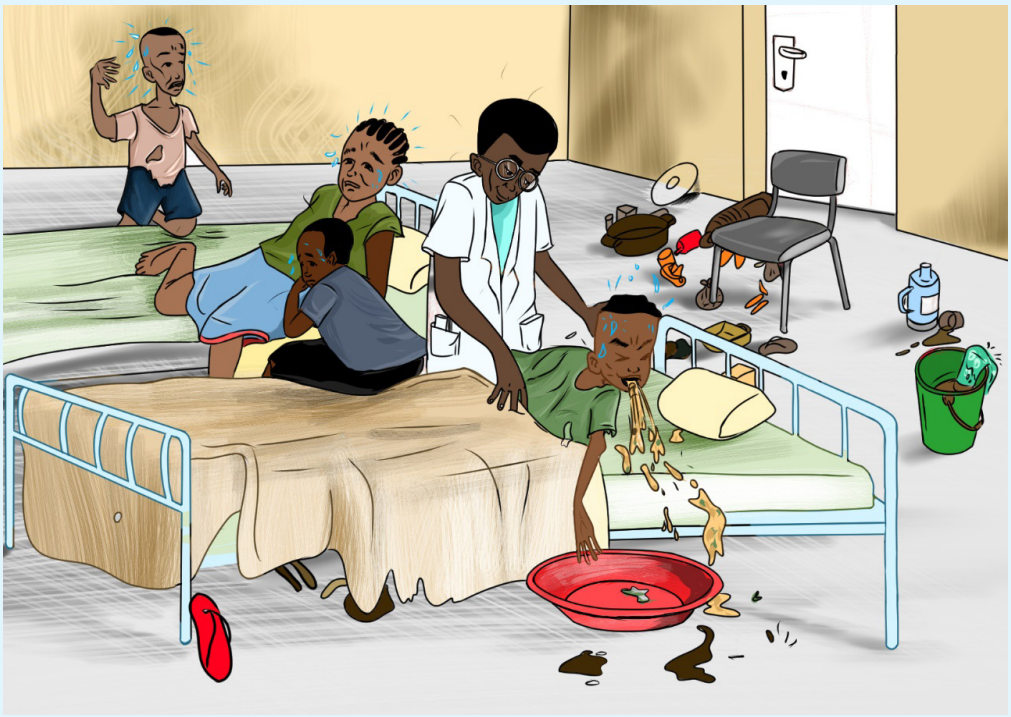
## Key Unit Competence:

Integrate the principles of nursing theories in the current nursing practice

### Introductory activity 1

**Picture:**

Look at the scenario represented by the image below carefully, and attempt to answer the asked questions.



1) In which situation are the people in this Picture?
2) Which kind of issues can you find from this image?
3) Suggest what would happen when the identified issues from the image are not solved?
4) Think about how patients were helped before modern nursing?

## 1.1. Historical Overview of Nursing

**Learning activity 1.1**

As you have learned in other subject, each science has its own history. Using the following links: *https://brainkart.com/article/Evolution-of-Nursing_35445/*; or using the Library books (fundamentals of nursing) search on *Nursing Evolution*.

Identify main periods of nursing evolution and what happened in each period

### 1.1.1. Concepts definition.

Different people have defined **nursing** in different ways. However, **Nursing** is defined as a profession within the health care sector focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life. The **nurse** is a caregiver or someone who has been formally trained and educated to tend to the sick and infirm.

According to International Council for Nurses (ICN) "Nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. Advocacy, promotion of a safe environment, research, participation in shaping health policy and in patient and health systems management, and education are also key nursing roles.The primary responsibility of a nurse is to provide nursing care for patients, family and community. In addition, the nurse plays an important role that include patient advocator, teacher/educator, leader, collaborator, caregiver, communicator, counsellor, and researcher.

**Patient:** Is someone who is waiting for or undergoing medical treatment and care. The word "patient" comes from a Latin word meaning "to suffer" or "to bear". Traditionally, the person receiving health care has been called a patient. The connotation commonly attached to the word is one of dependence

**Client:** A client is a person who engages the advice or services of another who is qualified to provide this service. The term client presents the receivers of health care as collaborators in the care, that is, as people who are also responsible for their own health.

Health: WHO (1947) World Health Organization- defines health as

"a state of complete physical, mental, spiritual and social wellbeing, not merely the absence of disease or infirmity"

**Illness:** is referred as the condition in which an individual functions at optimal levels. It means engaging in attitudes and behavior that enhance the quality of life and maximize personal potential.

**Health-illness continuum:** Wellness is a dynamic process that is ever changing

**Caring:** includes assistive, supportive and facilitative acts toward or for another individual or group with evident or anticipated needs. Caring serves to ameliorate or to improve human conditions or life ways. Caring is essential to human development, growth and survival.

## 1.1.2. Evolution of nursing

In the times before nursing became an official profession, patient care was commonly provided to sick people by family, friends, clansmen, or fellow tribe members. Nursing began as a helping profession, often undertaken by nuns and military personnel during wartime. Until recent history, nursing was considered a woman's profession. Although the origins of nursing predate **the mid-19th century**, the history of professional nursing traditionally begins with **Florence Nightingale.** The nursing profession has a rich history that spans centuries of evolving health care for patients, families, and communities. At present, WHO considers nurses as the **backbone of the health care industry**. However, nursing had to undergo a long period of development before it became the occupation, we are now familiar with. Evolution of nursing can be divided into three periods of time in history: **Early christian age, middle age**, and **the dawn of modern nursing**.

**a) Early Christian age**

Health care started to become more organized during the **early Christian age.** Christianity believed that one should render services of love to humanity without any reward. It was equal to one's sincere love to gods. The temples were more like health spas rather than hospitals in religious institutions governed by priests and nursing was done by women in temples or home**.** The caregivers had no formal training in therapeutic modalities and volunteered their time to nurse the sick. Deaconesses' women, with some educational background, were assigned by the church to take care of ill persons. The Deaconess Phoebe is considered by some historians to be the first **"**visiting nurse" because of the home care services she offered around A.D. 50. This principle was integrated later in nursing and helped to improve the status of nursing.

**b) Middle age**

Monks and nuns devoted their life to the care and services of the poor and sick. During the middle age, hospitals in large Byzantine cities were staffed primarily by paid male assistants and male nurses. These hospitals were established primarily as charity houses, medical practices in Western Europe remained basically unchanged until the 11th and 12th centuries, when formal medical education for physicians was required in a university setting and nursing become differentiated from medicine and surgery**.** Although there were not enough physicians to care for all the sick, other care-givers were not required to receive any formal training. The dominant caregivers in the Byzantine setting were men; however, this was not true in the rural parts of the Eastern Roman Empire and in the West. In these societies, nursing was viewed as a natural nurturing job for women.

When taking a sight at nursing in the Middle Ages, there were numerous advancements and innovations that were implemented within the nursing industry during these years, helping to form some of the roots of modern nursing. Hospitals functioned in innumerable ways, housing lepers and refugees among the typical sick and injured patients. It was due to this that a nurse's role within the hospital involved a wider range of duties than may be seen today.

**c) Modern Nursing:**

The **dawn of modern Nursing** is a very different field than it was before the world wars, and even before the Crimean War. The history of modern nursing originates from the pioneering work of Florence Nightingale. Through innovative nursing care and influence, Nightingale laid the foundation for nursing as an official profession. Nightingale, who belonged to a wealthy British family, chose not to lead the leisurely life of a typical upper-class lady during the Victorian era. Instead, she devoted her life to providing nursing services to sick persons, even if it was not considered a proper occupation for women in her social class during that period. Miss. Nightingale was the first to mention Holism (Treating the whole patient) in Nursing. Nightingale was the founder of modern nursing. In 1860, Nightingale also opened the first nursing school, called the Nightingale School for Nurses, which began to regulate how nurses learned and practiced. Not only did this ensure nurses had an educational foundation of knowledge and techniques, but it helped ensure a standard of care for patients, as well.

Because of the work Nightingale did for modern nursing, the oath taken by nurses when they graduate is called the "Nightingale Pledge." The field of health care is also more diversified, so nurses can choose what area they would like to practice,

and tailor their education to that field. A nurse may choose paediatrics, emergency, hospice, cardiology, or a number of other areas, and focus his or her efforts on the care of patients in that area. In the modern nursing field, nurses have a higher reputation, as well. They are no longer seen as simply assistants to physicians who do the things physicians won't do. Instead, nursing is a strong field of its own, and nurses have a wide range of duties and responsibilities. Nurses earn respect for themselves among health care professionals because of the education and experience required to be a nurse.

In Rwanda, training of nurses began during the colonial era, many of the nursing schools were opened by religious institutions such as Catholics, Protestants and Adventists, some being public and private. During 1980s, education was restructured and the secondary program was fixed to 6 years; the nursing program was integrated in secondary education. In 1994, the Genocide against the Tutsi has seriously affected all sectors of life especially nursing. After the 1994 Genocide against the Tutsi, the Government of Rwandan invested in training nurses at various levels, and many public and private nursing and midwifery schools were opened. Today, with the support from the Government of Rwanda, Nursing and Midwifery professions are becoming a pillar and cornerstone of Rwandan Health system.

## Self-assessment 1.1.

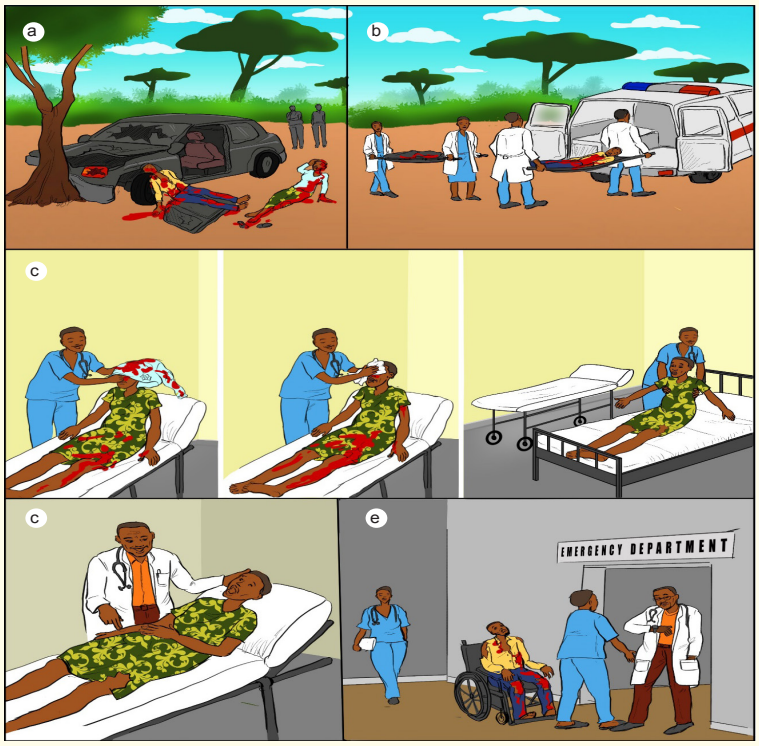
1. Match the terms in **column A** to their corresponding definitions/ meanings in **column B**.

| A | B |
|---|---|
| a. Nursing. | 1. Someone who has been formally trained and educated to tend to the sick and infirm |
| b. Evolution of nursing. | 2. Patient advocate, teacher/educator, leader, collaborator, caregiver, communicator, counsellor, researcher. |
| c. Nurse | 3. A profession within the health care sector focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life. |
| d. Nurse's role. | 4. It can be divided into three periods of time in history, Early Christian era, Middle age, and the dawn of modern Nursing. |

2. Who is the founder of nursing?

## 1.2. Introduction to nursing theories

### Learning activity 1.2.




A: With a crush car in accident where there are two survived person (Mrs M and Mrs T),

B: the survived persons moved to the hospital, both Mrs M and Mrs T is transported on stretcher,

C: Mrs M was well cared for by a nurse removing dirty clothes, washing her, moving her from stretch to well make bed

D: There a doctor examining the Mrs M (greetings, ask what happen, how is she feeling, where she has pain, the patient reply that nothing is ok she feel pain everywhere, the doctor reassures the patients “do not worry you are in good hand everything will be ok, let us do x-ray investigation to see if there is no fracture.

E: Mrs T sitting in the wheelchair, with many lacerations on both arms and one leg, being drowsy, no body care about her.

**Observe the images and answer the following questions**

Between the two persons, which one have received good care and why?

## 1.2.1. Definition of nursing Theory

**Nursing theory** is “an organized framework of concepts and purposes designed to guide the practice of nursing”. It expresses the values and beliefs of nursing discipline, creating a structure to organize knowledge and illuminate nursing practice. Nursing theories help us to describe, explain, or predict caring practices. Briefly nursing theory give us directions of how-to best care for our patients. The first nursing theories appeared in the late 1800s when a strong emphasis was placed on nursing education. Nursing theories are developed to explain and describe nursing care, guide nursing practice and provide a foundation for clinical decision making. Examples: During care to any patient, you must ensure that the patient has good hygiene, his surroundings are clean, has fresh air in room, room is warm, has light, and patient has taken food. This instruction/framework requesting the good environment of the patient is an example of Theory. The nursing theory to be used in caring the patients in mental health services will not be the same as the one to be used in Emergence service

## 1.2.2. Purpose of nursing theories

They provide a foundational knowledge of care concepts that enable those in the profession to explain what they do for patients and the reasons for their actions. It helps nurse’s articulate evidence that justifies the methodologies behind their practice.

**Self-assessment 1.2.**

Answer these questions

1) What do you understand by the term ‘’Nursing theory?
2) Do you think nursing theories are important? Justify your answer.

## 1.3. Major Concepts of Nursing Theory

**Learning activity 1.3.**

Rwanda as a developing country is building strongly health sector for wellbeing of its population as it is its precious resources, as an associated nurse your contribution will require to understand the set of ideas or concepts that provide the structure for how nursing discipline should function. **Read the Page 40 in the book** *"Kozier and ERB's Fundamental of nursing concepts, process and practice fourth Australian Edition***";** on "***Metaparadigm for nursing***" and i**n three to four sentences, summarize what you have read in the book.**

### 1.3.1. Concept of nursing theory.

**A concept, is** like ideas, are abstract impressions organized into symbols of reality. It describes objects, properties, events and relationships among them. Nursing concept is a fundamental nursing perception also called the metaparadigms of nursing. They provide the framework for understanding nursing practice.

### 1.3.2. Element of Concepts of Nursing Theory

There are four major concepts of nursing theory which are frequently interrelated and fundamental to nursing theory: **person, environment, health, and nursing**. They are collectively referred to a metaparadigm for nursing.

**a) Person**

Is referred to Client or Human Beings. Person is the recipient of nursing care and may include individuals, patients, groups, families, and communities.

**b) Health**

The degree of wellness or wellbeing that the person experiences. It may have different meanings for each patient, the clinical setting, and the health care provider.

**c) Nursing**

The nurse's attributes, characteristics, and actions provide care on behalf of or in conjunction with the client. There are numerous definitions of nursing, though nursing scholars may have difficulty agreeing on its exact definition.

**d) Environment:**

Environment is defined as the internal and external surroundings that affect the client. It includes all positive or negative conditions that affect the patient, the physical environment, such as families, friends, and significant others, and the setting for where they go for their healthcare.




***Figure 1 The Nursing Metaparadigm diagram***

## Self-assessment 1.3.

Match the terms in **column A** to their corresponding definitions/ meanings in **column B**.

| A | B |
|---|---|
| 1. Health | A. The internal and external surroundings that affect the client. It includes all positive or negative conditions that affect the patient, the physical environment, such as families, friends, and significant others, and the setting for where they go for their healthcare |
| 2. Person | B. The nurse's attributes, characteristics, and actions provide care on behalf of or in conjunction with the client. There are numerous definitions of nursing, though nursing scholars may have difficulty agreeing on its exact definition. The ultimate goal of nursing theories is to improve patient care. |
| 3. Environment | C. The recipient of nursing care and may include individuals, patients, groups, families, and communities. |
| 4. Nursing | D. The degree of wellness or well-being that the client experiences. It may have different meanings for each patient, the clinical setting, and the health care provider. |

# 1.4. Selected Nursing theorists

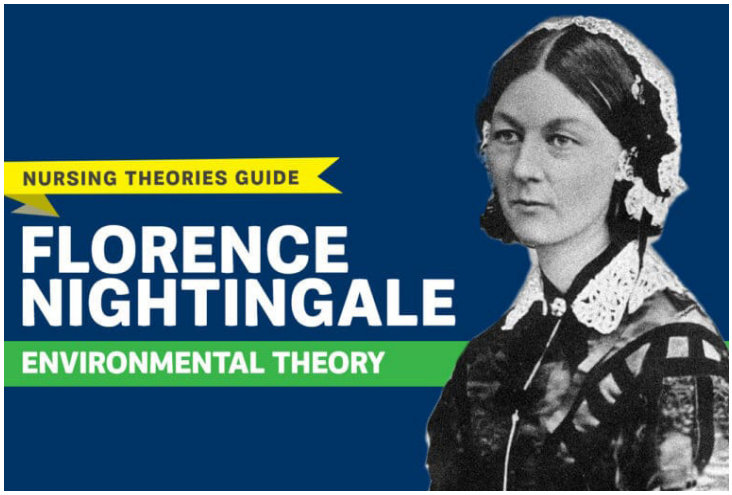
## 1.4.1. Florence Nightingale

### Learning activity 1.4.1.

Observe the images below and respond to the questions that follow:



1) Observe the first three images and describe activities that are being done,
2) What do you think would happen if these activities are not performed?



Florence Nightingale, **"the mother of modern nursing". Florence Nightingale** (1820-1910) was a British nurse, best known as the founder of modern nursing and "**The Lady with the Lamp**" because she would visit soldiers at night with a small lantern in her hand. Her experiences as a nurse during the Crimean War were foundational in her views about sanitation. Florence Nightingale is the first nurse theorist well known for developing the environmental theory. Her theory focused on the **environment**. She linked health with five environmental factors.

In Florence Nightingale's Environmental Theory, she identified five (5) environmental factors: fresh air, pure water, efficient drainage, cleanliness or sanitation, and light or direct sunlight.

**a) Pure fresh air**

"To keep the air he breathes as pure as the external air without chilling him."

**b) Pure water**

"Well water of a very impure kind is used for domestic purposes. And when the epidemic disease shows itself, persons using such water are almost sure to suffer."

**c) Effective drainage**

"All the while the sewer may be nothing but a laboratory from which epidemic disease and ill health are being installed into the house."

**d) Cleanliness**

"The greater part of nursing consists in preserving cleanliness."

**e) Light (especially direct sunlight)**

"The usefulness of light in treating disease is very important.

Deficiencies in these five factors produced lack of health or illness.

In addition to the above factors, Nightingale also stressed the importance of keeping the patient warm, maintaining a noise-free environment, and attending to the patient's diet in terms of assessing intake, timeliness of the food, and its effect on the person. Her general concepts about ventilation, cleanliness, quiet, warmth, and diet remain integral parts of nursing and health care today. "To facilitate "the body's reparative processes" by manipulating client's environment"

External influences can prevent, suppress or contribute to disease or death

- Nightingale's concepts

- **Person/ client**
  - Patient who is acted on by nurse
  - The recipient of nursing care
  - Affected by environment
  - Has vital reparative powers to deal with disease
- **Environment**
  - The major concepts for health are ventilation, warmth, light, diet, cleanliness, and absence of noise. Although the environment has social, emotional, and physical aspects, Nightingale emphasized the physical aspects.
  - Internal and external environment were both important to the progress of the patient's health.
  - The importance of fresh air and ventilation and an environment free of odors and waste, she knew that properly prepared food and clean water were also necessary.
- **Health**
  - Being well and using one's powers to the fullest extent.
  - Maintaining well-being by using a person's powers
  - Nightingale saw health as an absence of disease
  - Health is maintained through prevention of disease via environmental health factors. Maintained by control of environment and taking care of the body, health was achieved.
- **Nursing**
  - Provision of optimal conditions to enhance the person's reparative processes and prevent the reparative process from being interrupted.
  - Provided fresh air, warmth, cleanliness, good diet, quiet to facilitate person's reparative process
  - Facilitates a patient's reparative process by ensuring the best possible environment
  - Influences the environment to affect health

**Florence Nightingale** (1860) defined **nursing** as: the act of utilizing the environment of the patient to assist him in his recovery. Nightingale considered a clean, well-ventilated, and quiet environment essential for recovery. What nurse has to do is to put the patient in the best condition for nature to act upon him.

**Application of Florence Nightingale theory in nursing education and practice:**

The environmental theory of Florence Nightingale is the basis of nursing practice today. Nurses use the **environmental aspects of** Nightingale's theory (**ventilation, warmth, quiet, diet, and cleanliness)** in their daily practice to care for patients with different conditions to assist them in recovery. In addition, Nightingale's principles of nurse training provided a universal template for early nurse training schools and is still evident in today's nursing programs across the world.

## Self-assessment 1.4.1.

Read this cases study and criticize according to nightingale theory.

1) In hospital X, where Miss MUKAMANA, associated nurse went for clinical placement; there was a very small general ward, overcrowded by patients, with closed windows and small open door in corner. There were also 3nurses, 4 students; the patient's belongings were on floor under bed. With Miss MUKAMANA's observations, she saw one nurse feeding the patient A, Nurse MAHORO together with nurse KANYANA after doing patient B wound dressing and administrating painkiller they moved him outside for Sunlight exposure as the patients was recovering and prepared to be discharged. Miss MUKAMANA was very surprise to see nurses doing all these interventions and her supervisor told her that it is very good, "Nurses have to care for and respond to all patient's Needs.
2) Florence Nightingale was known as
    a) Nurse who changed nursing forever.
    b) Nurse responsible for the end of Crimean war.
    c) Lady with the lamp.
    d) Mother of nursing.
    e) c & d
3) The Theory of Florence nightingale focus on the clean environment. State environmental factors it focused on.

## 1.4.2. Virginia Henderson.

### Learning Activity 1.4.2.



*Christians on the queue receiving Eucharist, pastor in front his Christians and Muslims praying in mosque*



*A patient in hospital oxygen mask*



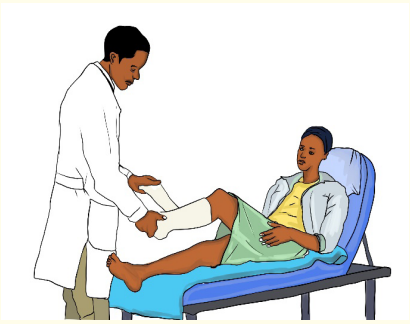

*Person sitting on toilet*



*Nurse feeding a patient with spoon*

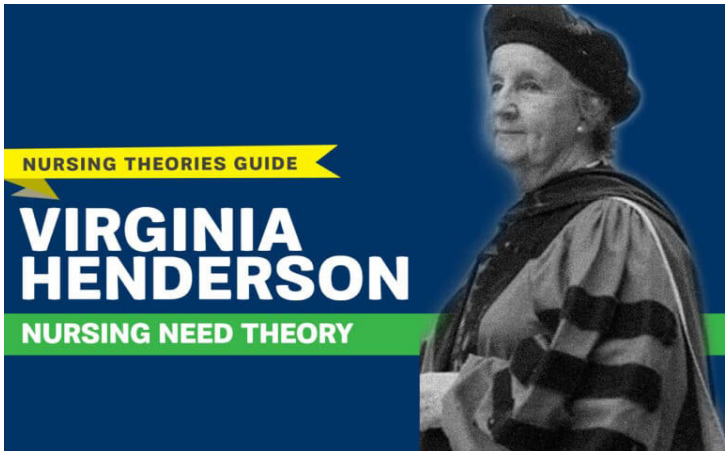


*Two male people wearing differently (one was very smart; another was dressed negligently.*



*A nurse helping a fractured female patient*

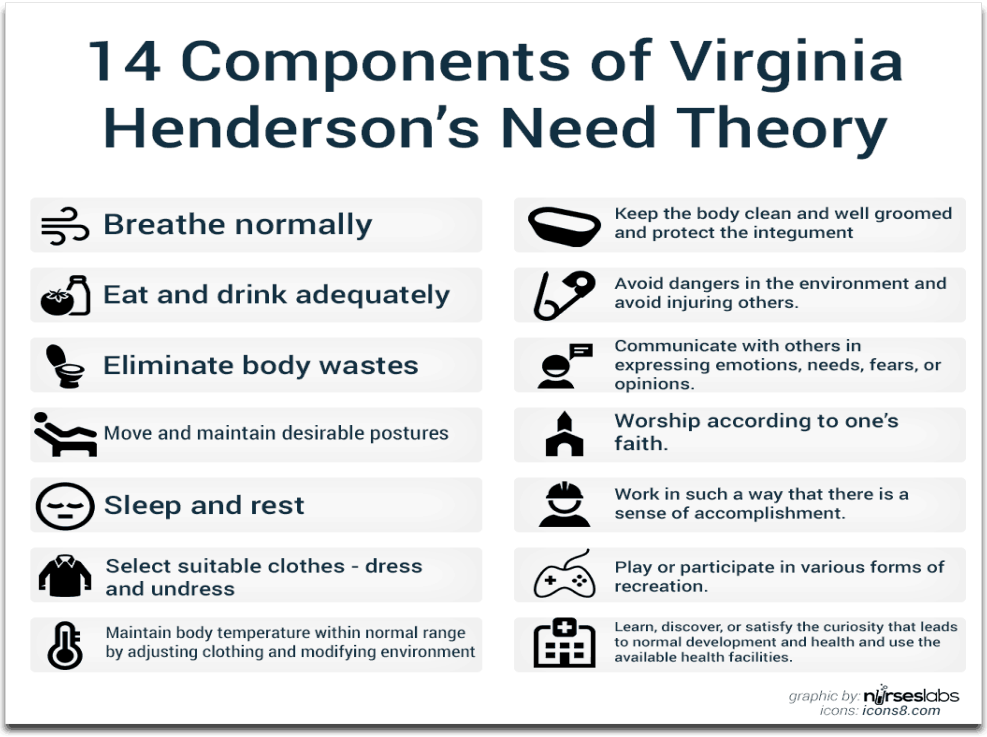
1) Observe the different boxes of images and describe how you see the personnel on the images.
2) Do you think what you have observed are important in our life? Justify your answer.




Virginia Avenel Henderson (November 30, 1897 – March 19, 1996) was a nurse, theorist, and author known for her Need Theory. According to Henderson, individuals have basic needs that are components of health. Virginia Henderson consider Person, health, nursing and environmental as**:**

- **Person:**Individual have basic needs that are component of health and require assisstance to achieve health and independence or a peacefuldeath
- **Heath :**Balance in all aspect of human life**.**
- **Nursing:** Unique function of the nurse is to assist the individual, sick or well, in the perfomance of those activities contributing to health or or its recovery that he would perfome unaided , if he has the necessary strenght , will or knowledge**.**In such way as to help him to gain independence as rapid as possible.
- **Environment:** Maintaining a supportive environment conductive for health.

The 14 components of Virginia Henderson need theory show a holistic nursing approach covering the physiological, psychological, spiritual, and social needs.




**Application of Virginia Henderson theory in nursing education and practice:** Today the nurses use Henderson's needs theory in their routine practice to set patient's goals based on 14 components of Henderson 's theory. To utilize this in the nursing practice, the nurse would see whether the client has all of these basic needs. If not, then, a problem exists. The nursing diagnosis must be then formulated and the nurse must assist the client to meet all these 14 fundamental needs.

Henderson's Needs Theory is used in different nursing schools to help the students learning how to assess the basic needs of a patient, understanding the significance of theory and determine the situation in which it can be used to assist the patients regaining independence.

## Self-assessment 1.4.2.

1) List 14 components of Virginia Henderson's need theory.

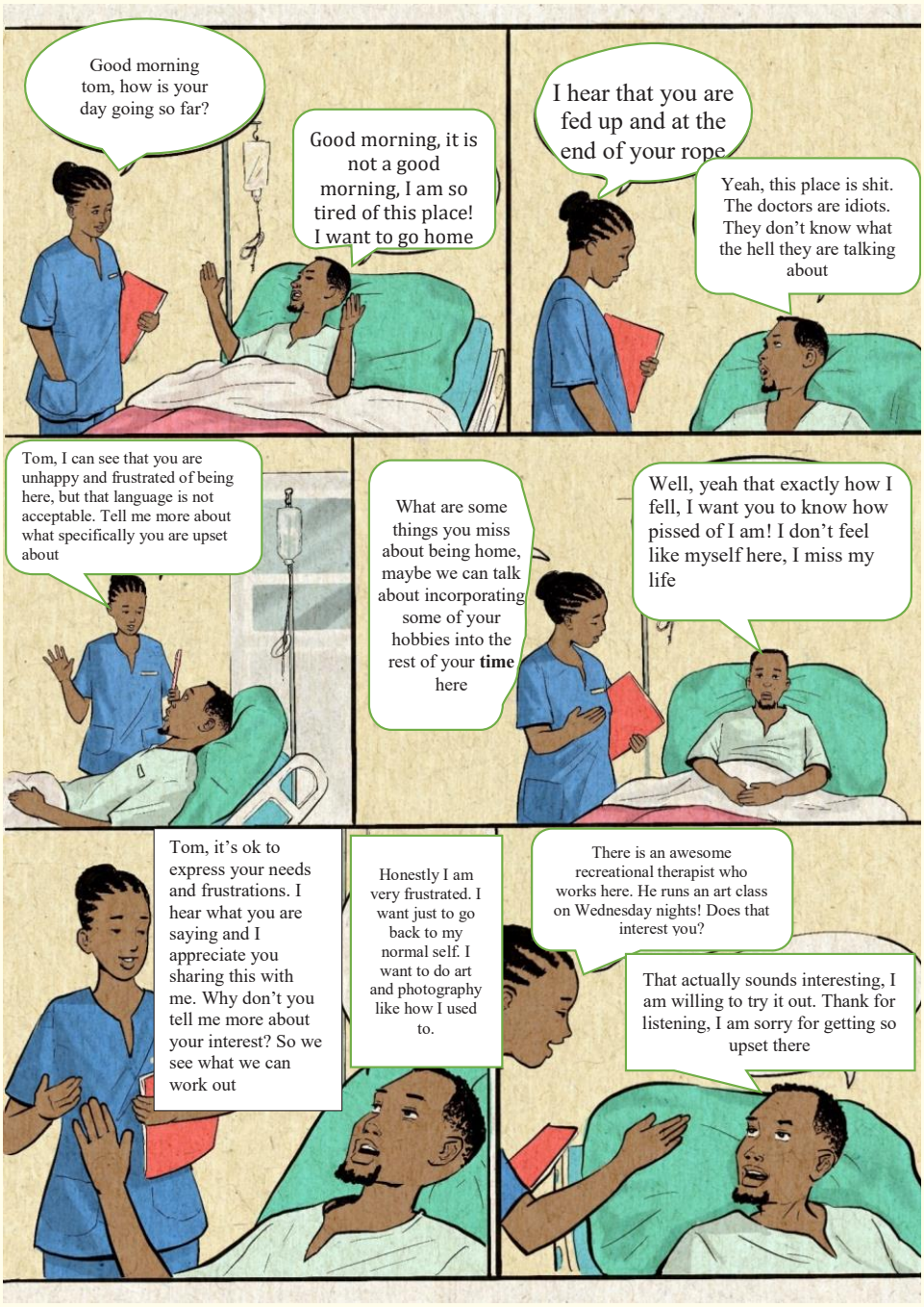
2) Match each activity with corresponding need.

| Activities | Needs |
|---|---|
| 1. A nurse helping a fractured female patient to move | **a**. Breathe normally |
| 2. A patient in hospital having oxygen | **b**. Maintain good body hygiene |
| 3. A nurse is feeding a patient | **c**. Maintain body temperature in normal ranges |
| 4. A patient is using toilet | **d**. Avoid hazards in the environment and avoid endangering others |
| 5. People in church praying | **e**. Mobility and proper postures |
| 6. Nurse is uncovering the patient because it is hot. | f. Communicate emotions, needs, fears and opinions |
| 7. A nurse is performing a patient bed bath | **g**. Work so that there is a sense of accomplishment. |
| 8. Patients in rehabilitation are watching movie while others are playing games. | **h**. Normal disposal of body waste |
| 9. A nurse is training people with disability to perform some activities by their choice (playing guitar, tailoring, dancing, crafting) | i. Act or react according to one's beliefs |
| 10. A patient is under supervision of his care giver because of being aggressive to other patients. | **j**. Dress and undress normally |
| 11. A diabetic patient is learning about insulin (self-injection, effects, doses) | **k**. Participate in recreational activities or games |
| 12. A cancer patient is requesting a visit of his family/friends to express his feeling. | **l**. Eat and drink properly |
| 13. At night, a nurse instructs caregivers to keep quiet while patients are sleeping. | **m**. Learn, discover or satisfy personal curiosity. |
| 14. A nurse is helping a patient to remove dirty clothes and put on clean ones. | **n**. Sleep and rest |

## 1.4.3. Hildegard Peplau

### Learning Activity 1.4.3.

1) Follow the nurse-patient conversation between patient KARAKE (Mr. K) and nurse UWIMANA and respond to these questions.



a) In which emotional status is patient Tom Karake?

b) Why patients Tom Karake feels unhappy?

c) What is Nurse UWIMANA doing?

d) How nurse UWIMANA arrived to calm down KARAKE?

e) How the conversation ended up?

2) Do you think it is good to have someone who could understand you? Explain your answer




Hildegard Elizabeth Peplau (September 1, 1909 – March 17, 1999) was an American nurse. She became the first publisher of nursing theory since Florence Nightingale. Hildegard Peplau's **interpersonal relations theory** emphasized the **nurse –client relationship** as the foundation of nursing practice. Peplau frequently acknowledged the importance of patients' experiences of nursing care. Peplau's theoretical work on the nurse patient relationship continues to be essential to nursing practice. Peplau developed the four levels of anxiety (mild, moderate, severe, and panic levels) that are the standards nurses use in assessing anxiety. Peplau believed that nurses play an important role in helping clients reduce their anxiety and in converting it into constructive action. Large institutions are educating their workforce on the importance of having a relationship, a connection with those with whom the nurse interacts and to whom he or she provides care. How Peplau's theory view person, health, nursing and environmental?

- **Person**: An organism that strives in its own way to reduce tension generated by needs or organism that lives in an unstable balance of a given system.

- **Health**: symbolizes movement of the personality and other ongoing human processes that directs the person towards creative, constructive, productive and community living.
- **Nursing** is defined as an interpersonal, therapeutic process that takes place when professionals, specifically educated to be nurses, engage to recognize and respond to people who are in need of health services though therapeutic relationships cooperatively
- **Environmental**: Peplau does not directly address society environment, she encourages the nurse to consider the patient's culture and mores when the patient adjusts to hospital routine. Forces outside the organism and in the context of the socially –approved way of living, from which vital human social process are derived such as norms, customs and believed

**Application of Hildegard Peplau theory in nursing education and practice:** Peplau came out with four levels of anxiety (mild, moderate, severe and panic levels). These levels are used by nurses as standards in the anxiety assessment. Peplau trusted that nurses have a major role in assisting clients minimize their anxiety and transform it into productive deed. Peplau's theory continues to be necessary in nursing practice particularly on the nurse-patient relationship. Nursing schools, hospitals are educating their students/workers the necessity of relationship; how important it is to interact with those that they provide care.

## Self-assessment 1.4.3.

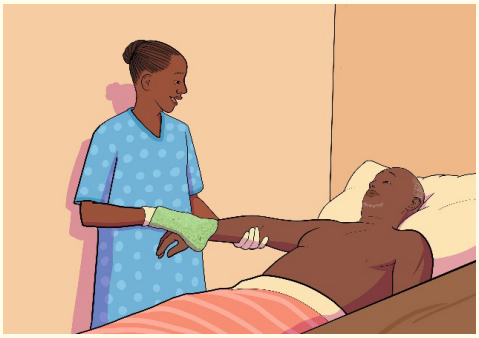
Answer the following questions:

1) Which of the following best describe Peplau's theory?
   a) Putting patients' needs ahead of your own
   b) Providing excellent clinical skills to improve patient's health status
   c) Use excellent interpersonal skills to help patients improve their health status
   d) Self-protection though avoidance of a relationship with the patient
2) Peplau viewed nursing intervention as those that:
   a) Support the implementation of doctor orders.
   b) Direct the wants and desires of the patients
   c) Are soundly based on nurse knowledge?
   d) Assist patients in gaining interpersonal and intellectual competencies grown through the nurse –patient relationship.

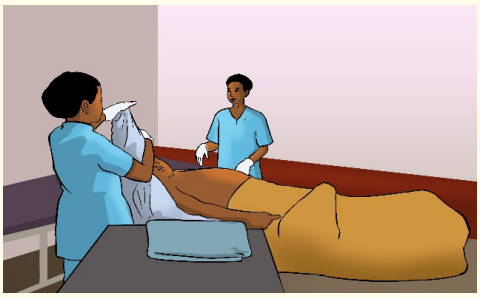
## 1.4.4. Dorothea Orem

### Learning Activity 1.4.4.

1) Observe the images below and list the activities observed on each image.
2) When observing those images who do you think maybe in need of such kind of care provided as mentioned by the images?



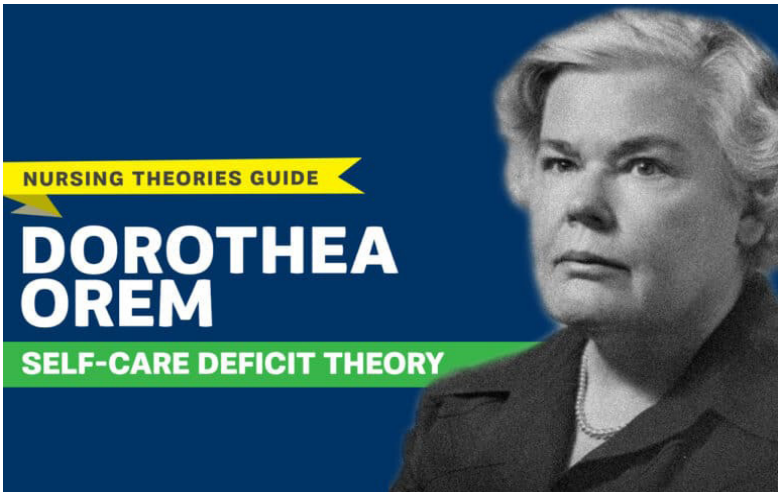













**Dorothea Elizabeth Orem** (June 15, 1914 – June 22, 2007), born in Baltimore, Maryland, was a nursing theorist and creator of **the self-care deficit nursing theory**, also known as the Orem model of nursing. The theory of self-care, which focuses on **the performance or practice of activities that individuals perform on their own behalf**. Those might be actions to maintain one's life and life functioning, develop oneself or correct a health deviation or condition. Orem's theory provides a comprehensive basis for nursing practice. It has utility for professional nursing in the areas of nursing practice, nursing education, and administration. A nurse assists the patient or family in self-care matters to identify and describe health and health-related results. Collecting evidence in evaluating results achieved against results specified in the nursing system design.

Theorist Orem Dorothea define Person, Health, Nursing, and environmental as follow:

- **Person:** Humans (Men, Women and children) cared for either singly or as social units and are the of nurses and others who provide direct care
- **Health**: is being structurally and functionally whole or sound.
- **Nursing**: is an art thought which the practitioner of nursing gives specialized assistance to persons with disabilities or incapability which makes more than ordinary assistance necessary to meet needs for self-care.
- **Environmental:** The environment as physical, chemical and biological features, it includes the family, culture, and community**.**

**Application of Dorothea Orem theory in nursing education and practice:** Orem's theory gives a complete foundation for nursing practice. It has useful information in nursing practice, education and administration. A nurse helps the patient or family members in self-care to know and express health and health related results. Students nurse are educated Orem's theory to integrate it in their daily practice during clinical practice. It helps in evaluating the goals set.

## Self-assessment 1.4.4.

1) Which of the following theories was developed by Dorothea Orem?

   a) Developed the self-care deficit theory, which explains what nursing care is required when people cannot care for themselves

   b) Developed the adaptation model, inspired by the strength and resiliency of children; relates to the choices people make as they adapt to illness and wellness

   c) Developed the caring theory, which focuses on nursing as an interpersonal process

   d) Developed the culture care diversity and universality theory

2) Respond by TRUE or FALSE to the following statement

   According to Dorothea Orem, Self-care refers to the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health and well-being.

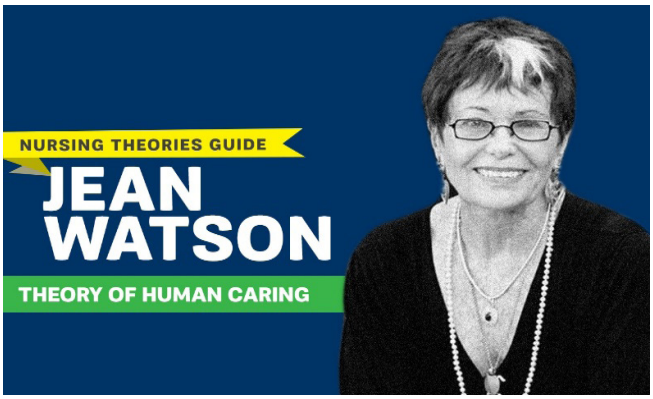
## 1.4.5. Jean Watson

**Learning activity 1.4.5.**

Read careful the following scenario showing jean Watson theory and respond to the questions.

KALISA, a 39-year-old truck driver is admitted to the hospital following an accident which caused the burn on front of his chest, is feeling much pain, appears very tense with tears in his eyes, and was rushed immediately to the hospital. The nurse at the hospital received him, holding his hands, with a soft voice, have a seat, you are so nervous, feeling too much pain, what happened to you?" I am ready to listen to you,". KALISA responded that he got an accident which caused him to get burned. The nurse in caring voice, oh my God, let me do my best to make you more comfortably and I am hopeful that you'll feel better. The nurse started giving him painkillers, antibiotics, and a rapid infusion of lactated ringers. After one hour, KALISA started feeling better, very happy, laughing and thank the nurse for his interest and support." I felt lost" stated KALISA. Now I know that somebody is beside me and has comforted me.

1) How Mr KALISA was helped by the Nurse?
2) What do you think have helped Mr KALISA to feel better and happy?




Jean Watson (June 10, 1940 – present) is an American nurse theorist and nursing professor known for her "**Theory of Human Caring"** humans cannot be treated as objects and that humans cannot be separated from self, other, nature, and the larger workforce." The human being is defined as "…a valued person in and of him or herself to be cared for, respected, nurtured, understood and assisted; in general, a philosophical view of a person as a fully functional integrated self. Nursing is concerned with promoting health, preventing illness, caring for the sick,

and restoring health." It focuses on health promotion, as well as the treatment of diseases. Watson's Theory of Human Caring is found in the 10 Caritas Processes:

***Table 1 Watson's 10 Caritas Processes***

| Number | Description | Abbreviation |
|---|---|---|
| 1 | Embrace altruistic values and practice loving kindness with self and others | Loving kindness |
| 2 | Instill faith and hope and honour others | Faith, hope, and honour |
| 3 | Be sensitive to self and others by nurturing individual belief and practices | Sense of self and others |
| 4 | Develop helping-trusting-caring relationship | Establish relationships |
| 5 | Promote and accept positive and negative feelings as you authentically listen to another's story | Authentic presence |
| 6 | Use creative scientific problem-solving methods for caring decision making | Problem solve |
| 7 | Share teaching and learning that addresses the individual needs and comprehension styles | Teach and learn |
| 8 | Create a healing environment for the physical and spiritual self, which respects human dignity | Healing environment |
| 9 | Assist with basic physical, emotional and spiritual human needs | Human needs |
| 10 | Be open to mystery and allow miracles to enter | Belief in miracles |

Watson's theory has been validated in outpatient, inpatient, and community health clinical settings and with various populations, including recent applications with attention to patient care essentials and simulating care. Watson's theory calls upon nurses to go beyond procedures, tasks, and techniques used in practice settings, coined as the trim of nursing. Watson's writings focus on educating graduate nursing students and providing them with ontological, ethical, and epistemological bases for their practice, along with research directions. Watson's caring framework has been taught in numerous baccalaureate nursing schools.

Jean Watson's metaparadigm

- **Person:** Human being is a valued person to be cared for, respected, nurtured understood, and assisted, in general a philosophical view of a person as fully functional integrated self.
- **Health**: Is the unit and harmony with the mind, body, and soul, health is associated with the degree of congruence between the self as perceived and the self and the self as experienced.

- **Nursing**: Is a human science of persons and human health-illness experiences that are mediated by professional, personal, scientific, esthetic and ethical human care transactions.
- **Environment**: Society provides the values that determine how one should behave and what goals s one should strive towards**.**

**Application of Jean Watson theory in nursing education and practice: Watson's theory is used in all health facilities today (hospitals, health centers, community settings) whereby nurses involved in the care of inpatients and outpatients using human caring theory to** *promoting patient health, preventing illness* as well as the treatment of diseases. In nursing education, students are educated human caring theory which provide them with ethical, and knowledge base for their practice.

**Self-assessment 1.4.5.**

1) Which of the following is the theory of Jean Watson?
   b) Environmental theory
   c) Human Caring
   d) Need Theory
   e) Self-care deficit
2) The following are Caritas Processes. Except.
   a) Be open to mystery and allow miracles to enter.
   b) Develop helping-trusting-caring relationships.
   c) Share teaching and learning that addresses the individual needs and comprehension styles.
   d) Impose your personal beliefs about wellness on others

## End unit assessment 1

1) Mrs. UWIMANA is brought to the hospital after sustaining an accident, he is bleeding and has multiple wounds on her both legs, and clothes were torn into pieces. She also states that she is dizzy and feeling too much pain, full of anxiety. The nurse at the hospital immediately received her putting her on flat bed in clean environment with fresh air and light and start giving her the medications to calm the pain and fluids to replace fluid loss due to bleeding. The nurse fails to stop bleeding and call the doctor to help him, the doctor come and UWIMANA was treated well and become stable. At discharge time, UWIMANA states that she is very poor and does not have the money to pay for the service provided. The nurse went to social service in the hospital to request for social support for Mrs UWIMANA to pay the hospital and find new clothes. The nurse also told UWIMANA to not worry about her life, saying that everything will be ok, he started instructing her how to continue the self-care at home, respecting the hygiene and eating balanced diet.

   a) Based on the scenario above, what is nursing?
   b) What are the nurse's roles stated in the scenario?
   c) Enumerate the theorists the nurse in scenario referred to, when giving care to Mrs. UWIMANA and why?

2) List the three periods of nursing evolution

3) Match the theorist in column A to their definition of Nursing as one element of metaparadigm in column B.

| Column A | Column B |
|---|---|
| 1.Jean Watson | a. Nursing is Unique function of the nurse is to assist the individual, sick or well, in the performance of those activities contributing to health or its recovery that he would perform unaided, if he has the necessary strength , will or knowledge. In such way as to help him to gain independence as rapid as possible. |
| 2.Dorothea Orem | b. Nursing is defined as an interpersonal, therapeutic process that takes place when professionals, specifically educated to be nurses, engage to recognize and respond to people who are in need of health services though therapeutic relationships cooperatively |
| 3.Hildegard Peplau | c. Nursing is an art through which the practitioner of nursing gives specialized assistance to persons with disabilities or incapability which makes more than ordinary assistance necessary to meet needs for self-care |
| 4.Virginia Avenel Henderson | d. Nursing is a human science of persons and human health- illness experiences that are mediated by professional, personal, scientific, esthetic and ethical human care transactions. |

4) Match the following theorists in column A to their corresponding theories in column B.

| A | B |
|---|---|
| 1. Florence Nightingale | a. Need Theory |
| 2. Hildegard Elizabeth Peplau | b. self-care deficit nursing theory |
| 3. Dorothea Orem | c. Theory of Human Caring |
| 4. Virginia Avenel Henderson | d. environmental theory |
| 5. Jean Watson | e. interpersonal relations theory |

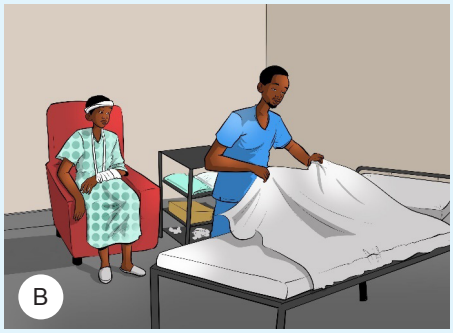
# UNIT 2 HYGIENE AND COMFORT CARE OF THE CLIENT/PATIENT

## Key Unit Competence:

Perform the Nursing care procedures related to hygiene and comfort of the client/ patient.

### Introductory activity 2







1) The nurse in image A is nearer to the hand washing facilities as it requires her to perform hand hygiene before going to provide care to patient. If water or sop is not available, suggest other possible means to use while ensuring hand hygiene.
2) Observe the image B and think about the hygiene and comfort care that have been provided to the client
3) Observe carefully the image C, and identify which kind of care that the nurse has provided to the patient in bed. Suggest other care that should be provided to such kind of client.

## 2.1. Hands hygiene and gloving

### Learning activity 2.1.

Look at the following figures (Figure 2, Figure 3 and Figure 4) and the scenario below to respond to the learning questions asked.

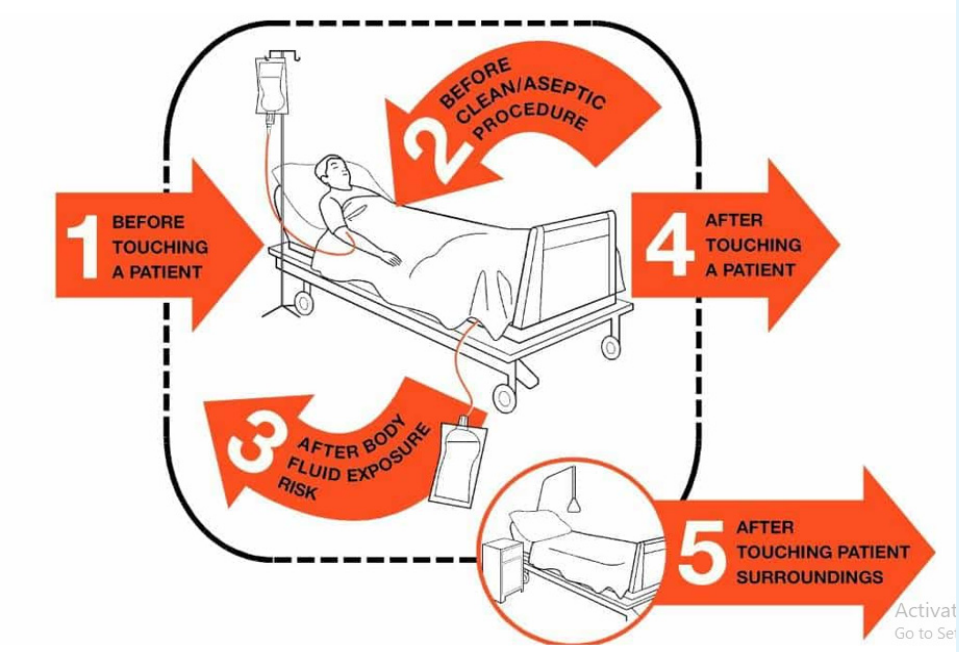



*Figure 2 WHO five moments of hand washing*




*Figure 3 Hands rubbing steps*




*Figure 4 Hands washing steps*

**Scenario:** A nurse Mary was assigned to provide care to Mr. Paul (Mr. Paul is a patient who is very dirty) and Mary is required to wash or rub hands to prevent the cross-infection. Before arriving to Paul, Mary was required to wear proper gloves since Mr. Paul was **bleeding** and had **skin rashes**.

1) By looking at the above pictures and by reading book from school library or other additional resources from internet, explain the following terms:
   a) Hand washing
   b) Hand rubbing
2) Based on the figure 1, explain the five moment of hand washing according to WHO.
3) Referring to the figure 2 and figure 3, demonstrate the technique of hand washing and hand rubbing
4) Based on the scenario, explain the purpose of wearing gloves

## 2.1.1. Hands hygiene

### a) Definition and importance

Hygiene refers to conditions and practices that help to maintain health and prevent the spread of diseases (WHO,2009); this practice is very important for better health. Hygiene includes bathing, toileting, general body hygiene and grooming.

**Hand hygiene is the most important aspect of the infection control**. Hands, the main pathway for germ transmission in health care settings should be carefully washed with water and soap or rubbed with appropriate hand sanitizer to remove germs.

**Hand washing:** is the act of cleaning hands using soap and clean water to remove harmful germs (viruses, bacteria, and other germs), dirt, grease, or other harmful and unwanted substances stuck on the hands. After washing the hands should be dried.

**Hand rubbing**: Is the act of cleaning hands using an alcohol-containing preparation (liquid, gel or foam) designed for application to the hands to inactivate microorganisms and/or temporarily suppress their growth.

### b) Indications and WHO 5 moments of hand washing

It is indicated that nurses and health care providers should wash their hands more frequently; that is before and after each procedure and each time your hands are soiled or suspected to have contracted germs. There are 5 moments recommended

by WHO to wash hands as shown in Figure 5 Five Moments of hand washing recommended by World Health Organization. Source: WHO, 2009.

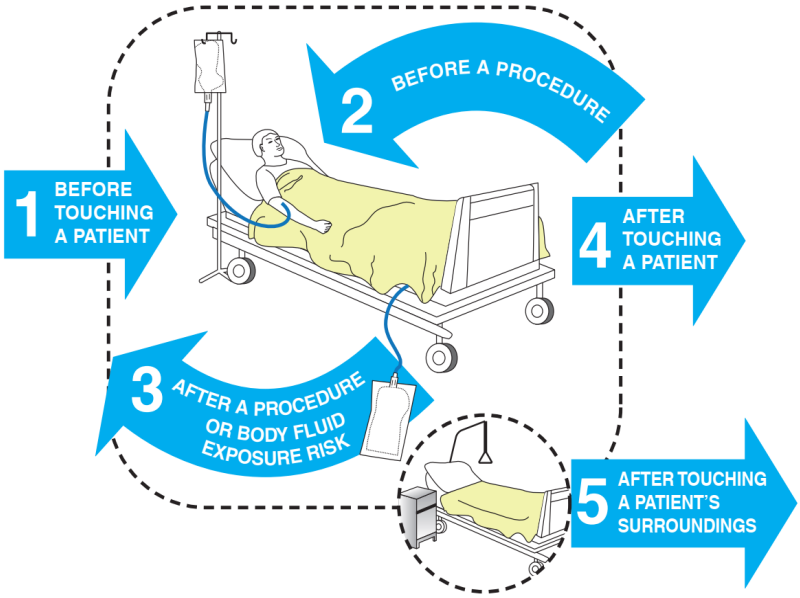



***Figure 5 Five Moments of hand washing recommended by World Health Organization. Source: WHO, 2009***

The hand hygiene would not only refer to the technique but also the substance used to clean. Hand hygiene requires the following materials: running water, soap and single use paper dryer and appropriate hand sanitizer (when hand rubbing is preferred).

According to the WHO, there are techniques to follow while washing (see Figure 6) or rubbing hands (see Figure 7)




*Figure 6 Hand rubbing techniques. Source: WHO, 2009*




*Figure 7 Hand washing technique. Source: WHO, 2009*

### c) Techniques of hand washing

| Steps | Rationale |
|---|---|
| **Preparation** | |
| **Assess hand:** *Nails should be kept short, Remove jewelry and check for the breaks in the skin (cuts etc.)*<br>***Ensure the availability of materials*** *: running water, soap and single use towel* | Short, natural nails are less likely to harbor germs;<br>Micro-organisms can lodge in the jewelry (under rings)<br>Skin breaks can allow transmission of infectious organism |
| **Performance** | |
| Turn water and adjust the flow | Adjustment would prevent the splashing out water which can contaminate the surroundings |
| Wet the hands thoroughly by holding them under the running water with hands below the elbows and apply soap thoroughly | Water should flow from the least contaminated to the most contaminated area. Soap helps to lessen the dirtiness so that it can be easily removed |
| Thoroughly wash and rinse the hands:<br>Rub hands palm to palm until soap is bubbly<br>Rub right palm over left dorsum with interlaced fingers and vice versa<br>Rub palm to palm with fingers interlaced<br>Interlock fingers and rub the backs of fingers of both hands<br>Rotational rubbing of left thumb clasped in right palm and vice versa<br>Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa<br>Rub both wrists in rotating manner | Rubbing hands creates friction which in turn removes micro-organisms mechanically from the skin<br>Interlacing the fingers and thumbs cleans the interdigital spaces<br>the nails and fingertips are commonly missed during hand washing |
| Thoroughly dry the hands | Dry hands thoroughly with a paper towel: Moist skin becomes chapped (cracked) readily; chapping produces lesions |
| Turn off the water: Use a new paper towel to grasp a hand-operated control | This prevents the nurse from picking up micro- organisms from the tape handles |

| | |
|---|---|
| Note: **hand washing before surgical non-touch aseptic techniques**<br><br>Apply the antimicrobial solution and wash as described in step (e), but hold the hands higher than the elbows during this hand wash.<br><br>Wet the hands and forearms under the running water, letting it run from the fingertips to the elbows. | In this way, the water runs from the area that now has the fewest micro-organisms to areas with a relatively greater number<br><br>Hands are hold higher than elbow so that hands become more clean that the elbows |

## 2.1.2. Hand gloving

**a) Importance of hand gloving**

Complementary to hand hygiene, hand gloving is one of the mechanisms to prevent the spread of micro-organisms . There are three purposes of hand gloving: firstly, **they protect nurses' hands** when handling substances**;** secondly**,** they **reduce the likelihood of transmitting micro-organisms** from nurses to the patient and vice-versa, **thirdly**, they **reduce the possibility of transmitting from one patient to the other.** Gloves should be changed between individuals, and one must wash hands after removing gloves.

**b) Non-sterile and sterile gloving**

Gloves are categorized in two types depending to the use: when performing septic techniques, use **clean disposable gloves** *(also called non-sterile gloves)***,** and when performing a sterile technique, use **sterile gloves.**

**Indications and contraindications**

In health care settings the medical gloves are indicated in the following conditions: protection of the wearer from contamination with blood, secretions, and excretions and the associated risk of contamination with pathogens capable of reproduction.; prevention of pathogen release from the hand into the sterile work area during aseptic procedures; protection of hands from chemicals; pathogen barrier as protection from biological agent and radiation protection. Gloves are contraindicated in the following conditions: when a health care provider is away from the bedside or laboratory bench; when health care provider is in nursing stations to handle phones or charts; in time of handling clean linens and in case of cleaning non-contaminated equipment or patient-care supplies (e.g. plate, cups etc.).

### a) Techniques of gloving

Donning disposable clean gloves does not require special techniques, however there are precautions: ***one's hands must be dry, finger nails cut short and jewellery removed to prevent tearing gloves***. Donning sterile gloves on the other hand, requires **specific technique to ensure that no micro-organism is introduced** in a wound or body orifice which should be sterile.

#### i. Donning non-sterile and sterile gloves

| Steps | Rationale |
|---|---|
| **1. Preparation** | |
| – *wash hands and ensure they are dry* | – *Wet hands would not allow the smooth passage of hand into the glove* |
| – *Ensure nails are cut short* | – *Long nails would tear the gloves and expose hands* |
| – Remove all jewelry, including rings and *watches* | – *Jewelry would also tear the gloves, and expose the hands* |
| **2. Performance** | |
| ***Clean disposable gloves***<br>– *Select the appropriate size of non-sterile gloves*<br>– *Apply first glove in dominant hand: Insert your hand through the gloves opening and ensure fingers fit into fingers appropriately*<br>– *Apply the second glove: repeat the procedure with the second hand*<br>– *Adjust gloves to cover wrist or gown as required.* | – *Wearing gloves protect both the patient and the health care provider*<br>– *Unfit gloves may splash body fluids and contaminate surroundings* |
| – Ster*ile gloves*<br>– *Select the appropriate size of sterile gloves*<br>– *Place the glove package on a clean, dry surface and Open the inner package so that the cuffs are closest to you.* | – *Unfit gloves would splash body fluids and contaminate the surroundings*<br>– *The wet surface would contaminate the sterile glove package* |

| | |
|---|---|
| – *Apply the glove of your dominant hand first by touching only the inside of the glove (the folded-over cuff) with your non-dominant hand.*<br>– *Apply the second glove by touching only the outer part of the glove with your already-gloved hand; keep your sterile thumb well away from your bare skin.*<br>– *Do not touch the gloves to any unsterile items* | – *Glove the dominant hand and it will help to glove the non-dominant hand* |

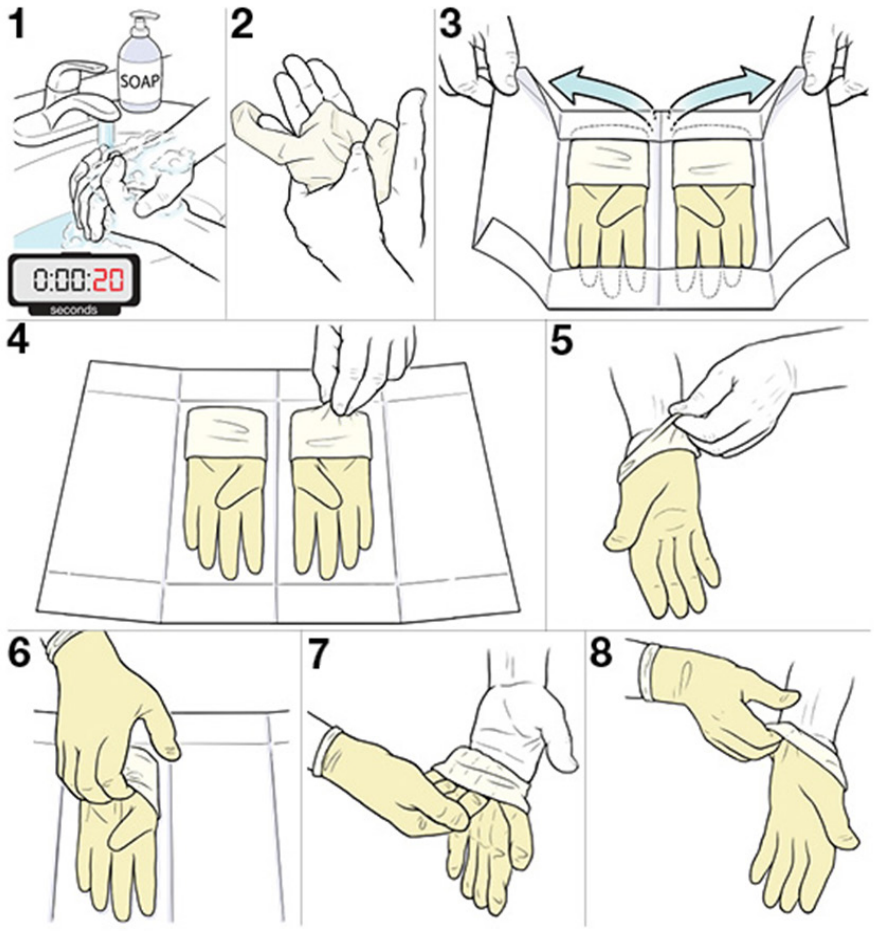



***Figure 8 Steps of Wearing sterile gloves***

### ii. Removing gloves

| Steps | Rationale |
|---|---|
| – *Grasp glove on its palmar surface (taking care to touch glove to glove), Pull the first glove completely off by inverting or rolling the glove inside out and continue to hold the removed glove by the fingers of the remaining gloved hand. See* **Figure 9 Image A** | – *It keeps the soiled part of the gloves from touching the skin of wrist and hand*<br>– *Inverting or rolling the glove inside out prevent bare hand from touching the outside of the second soiled glove.* |
| – *Place the two fingers of the bare hand inside the cuff of the second glove and pull the second glove off to the fingers by turning it inside out. This pulls the first glove inside the second glove. See* **Figure 9 Image B** | – *The soiled part of the glove is folded to the inside to reduce the chance of transferring any microorganisms by direct contact* |
| – *Using bare hand, continue to remove the gloves, which are now inside out and dispose them in the appropriate waste container and perform hand hygiene. See* **Figure 9 Image C** | – *Used gloves disposal in the appropriate waste bin helps in waste segregation in infection control measures.* |

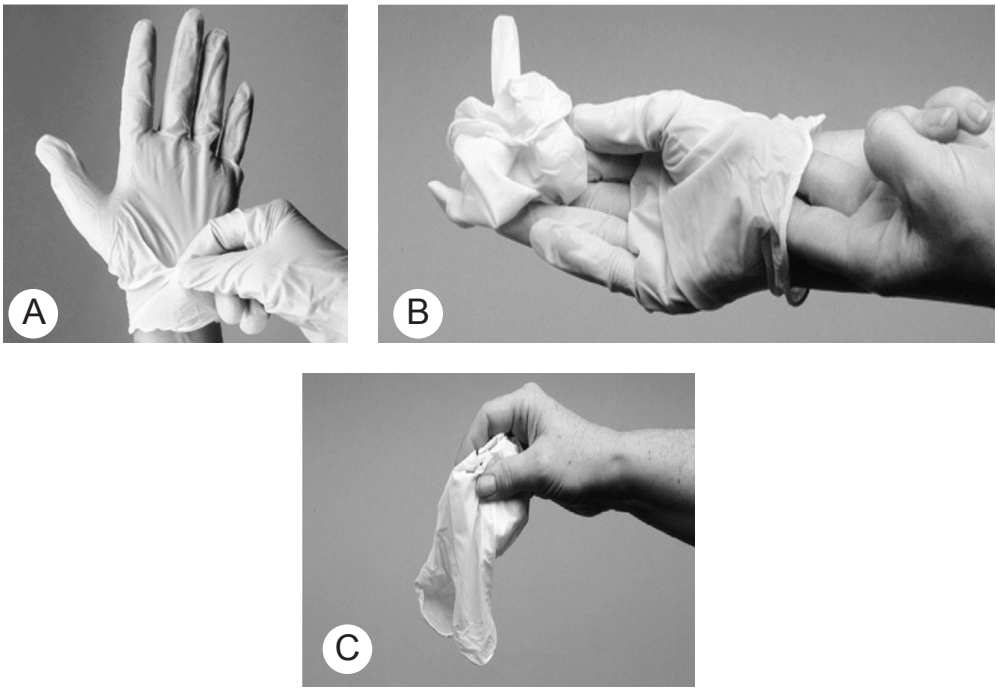



***Figure 9 Image A: First Step of glove removal. Image B: Second step of glove removal. Image C: Last step of Glove removal***

## Self-assessment 2.1.

1) A Patient is bleeding on the left leg due to road accident. The nurse has to get ready to help the patient to stop bleeding nurse is required to perform hand hygiene before wearing the gloves. What kind or cleaning technique should the nurse use?

   a) Hand washing

   b) Hand cleaning using chlorhexidine

   c) Hand gloving

   d) All the above

2) What is the difference between hand rubbing and hand washing

3) Explain the WHO five moments of hands washing

4) Why should the nurse wash his or her hands or perform an alcohol-based hand rub and then wear clean gloves?

5) Nurse was proving bed making but before to wear gloves, she rubs her hands with Alcohol and the patient asked her Why? Which of the following is a benefit of an alcohol-based hand rub that the nurse should explain?

   a) Destroys active microbes but not spores

   b) Provides the fastest and greatest reduction in microbial counts on the skin

   c) Leads to irritation and drying of the skin compared with soap

   d) Controls viral replication or release from the infected cells

## 2.2. Bed making

### Learning activity 2.2.

**Question one**

1) The images **A** & **C** shown above shows nurses making beds. After observing the above image, what do you think as the purpose of bed making?












2) List the materials that you have observed in the above image **A**

3) Observe carefully the images **A, B, C and D** and highlight the difference between them

4) Observe the well-made bed and try to make the bed in the same way

**Question two**

Mr. KARINGANIRE is on his day 7 of hospitalization at health facility, is very weak and is not able to perform any activity, but is able to turn on his left side, he stays in his bed, and he needs assistance for everything. One morning nurse wants to change his bed sheets for maintaining the comfort of Mr. KARINGANIRE

1) Based on KARINGANIRE condition is it possible to change his bed sheets? Yes/No : explain your Answer

2) What do you think as the materials will be used to make KARINGARE'S bed?

3) What is the importance of listed materials?

## 2.2.1. Definition and Purpose

Bed making is the technique of preparing different types of bed and is required for all patients. Nurses need to be able to prepare hospital beds in different ways for specific purposes. Bed making is done for providing comfort, facilitating movement of the patient and alleviate the pain. It helps to conserve patient's energy and maintain current health status. It **reduces the risk of infection** by maintaining a clean environment and permitting the physical rest. Bed making is one of the measures used in prevention of bed sores.

## 2.2.2. Principles of bed making

Prior to bed making, there are principles that have be followed, these are:

1) Arrange bed coverings in order of use

2) Wash hands thoroughly after handling a patient's bed linen

3) Hold soiled linen away from uniform

4) Linen used for one client is never placed on another client's bed

5) Soiled linen is placed directly in a portable linen hamper or a pillow case before it is gathered for disposal.

6) Soiled linen is never shaken in the air because shaking can disseminate secretions and excretions and the microorganisms they contain.

7) When undressing and making a bed, conserve time and energy by undressing and making up one side as completely as possible before working on the other side.

8) Keep your back straight as you work for preventing back injury

9) To avoid unnecessary movement to the linen supply area, gather all needed linen before starting to make a bed.

10) While tucking bedding under the mattress the palm of the hand should face down to protect your nails.

## 2.2.3. Types of bed making

There are 2 two main types of bed making: **occupied** and **unoccupied bed**. **An unoccupied** bed can be either closed or open. Generally the top covers of an open bed are folded back (thus the term open bed) to make it easier for a client to get in. Open and closed beds are made the same way, except that the top sheet, blanket, and bedspread of a closed bed are drawn up to the top of the bed and under the pillows. While **occupied bed** is a techniques of making bed for very weak patients who are not able to get out the bed or restricted in the bed by traction or other therapy condition.

## 2.2.4. Techniques of bed making

### a) Unoccupied bed making

**Purpose**: Unoccupied bed making can be done with different purposes, these are but not limited to: *To prepare the bed for the clients return, to provide a clean environment*

To provides a good appearance and to minimize source of infection

| Steps of the procedure | Rationale |
|---|---|
| **1. Preparation** | |
| **Nurse** | |
| – *Appear professionally with Clean uniform,*<br>– *Wear closed shoes*<br>– *Clean and short nails ,*<br>– *Watch jewels and rings removed*<br>– *Wash hands* | – *To be identified from other personnel*<br>– *To prevent infection* |
| **Patient** | |
| – *If patient is available*<br>– *Identify the patient*<br>– *Introduce to the patient and ask the consent*<br>– *Explain the procedure* | – *Increase trust between patient and nurse*<br>– *Enhance collaboration* |

| **Materials** | |
|---|---|
| – *Trolley or/and a chair*<br>– *Two Bed sheets : Bottom sheet and Top sheet,*<br>– *Pillow and Pillow cover*<br>– *Mackintosh*<br>– *Draw sheet*<br>– *Blanket*<br>– *water in basin*<br>– *Sponge cloth.*<br>– *one Kidney dish*<br>– *Laundry bag or Bucket*<br>– *3 pairs of proper gloves* | |
| **2. Performance** | |
| – *Place the fresh linen on the client's chair or over bed table; do not use another client's bed.* | *This prevents cross contamination (the movement of microorganisms from one client to another) via soiled linen* |
| – *Wear clean gloves* | *For infection prevention* |
| – *Removes all sheets and pillowcases; places in a laundry bag without contaminating uniform.* | *To prevent infection* |
| – *Clean Bed-side locker (Wipe with wet and dry)* | – *To maintain the hygiene* |
| – *Clean the mattress*<br>– *Stand in right side.*<br>– *Start wet wiping from top to centre and from centre to bottom in right side of mattress. Gather the dust and debris to the bottom.*<br>– *Collect them into kidney dish.*<br>– *Give dry wiping as same as procedure*<br>– *Move to left side.*<br>– *Do the same procedure as done to the right side* | *To prevent the spread of infection* |
| *Remove gloves and put a new pair of gloves.* | *Removing gloves help to prevent more infection* |

| ***Bottom sheet*** | |
|---|---|
| – *Place and slide the bottom sheet upward over the top of the bed leaving the bottom edge of the sheet.*<br>– *Open it lengthwise with the centre fold along the bed centre.*<br>– *Fold back the upper layer of the sheet toward the opposite side of the bed.*<br>– *Tuck the bottom sheet securely under the head of the mattress (approximately 20-30cm).*<br>– *Miter the sheet at the top corner on the near side and tuck the sheet under the mattress, working from the head of the bed to the foot.*<br>– *Move to the other side and secure the bottom lines.*<br>– *Tuck the remainder in along the side* | – *The top of the sheet needs to be well folded under to remain securely in place*<br>– *A mitered corner has a neat appearance and keeps the sheet securely under the mattress.* |
| *Mackintosh and draw sheet* | *Mackintosh and draw sheet are additional* |
| – *Place a mackintosh at the middle of the bed (if used), folded half, with the fold in the centre of the bed.*<br>– *Lift the right half and spread it forward the near Side.*<br>– *Tuck the mackintosh under the mattress.*<br>– *Place the draw sheet on the mackintosh.*<br>– *Proceed the same procedure as Mackintosh* | *Protection for the bed and serves as a lifting or turning sheet for an immobile client.* |

| | |
|---|---|
| ***Top sheet*** | |
| – *Place top sheet with wrong side up, center fold of sheet on center of bed and wide edge at head of bed.*<br>– *Tuck sheet of foot of bed, mitering the corner* | *Prevent irritation from the Blanket* |
| ***Blanket*** | |
| – *Cover the top sheet with blanket in the below feet from the top of the mattress and spread downward.*<br>– *Fold the cuff (approximately 1 feet) in the neck part*<br>– *Tuck all these together under the bottom of mattress. Miter the corner.*<br>– *Tuck the remainder in along the side* | – *A blanket provides warmth.*<br>– *Making the cuff at the neck part prevents irritation from blanket edge.* |
| – *Move to the left side of the bed and repeat the same as right side then return to the right side* | |
| **Pillow and pillow cover** | |
| – *Put a clean pillow cover on the pillow.*<br>– *Place a pillow at the top of the bed* | *A pillow is a comfortable measure.*<br>*Pillow cover keeps cleanliness of the pillow* |
| **3. Finishing** | |
| – *Return the bed, the chair and bed-side table to their proper place.* | – *Bedside necessities will be within easy reach for the client* |
| – *Discard all used equipment in their proper place.* | – *It makes well-setting for the next.*<br>– *Proper disposal prevents the spread of infection.* |
| – *Perform hand hygiene* | – *To prevent the spread of infection* |
| **Nursing Alert**<br>• *Do not let your uniform touch the bed and the floor not to contaminate yourself.*<br>• *Never throw soiled lines on the floor not to contaminate the floor.*<br>• *Stay on one side of the bed until it is completely made; then move to the other side and finish the bed. This saves time and steps* | |

### b) Occupied bed making

**Purpose:** the occupied bed making can be done with different purpose, these are but not limited to: t*o provide clean, safe and comfortable bed for the patient, to promote rest and sleep, to reduce the risk of infection by maintaining a clean environment, to prevent bed sores and to observe patient and to prevent complications.*

| Steps of the procedure | Rationale |
|---|---|
| **1. Preparation** | |
| ***Nurse*** | |
| • *Appear professionally with clean uniform,*<br>• *Wear closed shoes*<br>• *Clean and short nails,*<br>• *Watch jewels and rings removed*<br>• *Wash hands* | • *To be identified from other personnel*<br>• *To prevent infection* |
| ***Patient*** | |
| • *Identify the patient*<br>• *Introduce to the patient and ask the consent*<br>• *Explain the procedure* | • *Increase trust between patient and nurse.*<br>• *Enhance collaboration* |
| ***Materials*** | |
| • *Trolley or/and a chair*<br>• *Two Bed sheets : Bottom sheet and Top sheet,*<br>• *Pillow and Pillow cover*<br>• *Mackintosh*<br>• *Draw sheet*<br>• *Blanket*<br>• *Water in basin*<br>• *Sponge cloth.*<br>• *one Kidney dish*<br>• *Laundry bag or Bucket*<br>• *3 pairs of clean gloves* | |
| **2. Performance** | |
| • *Wear clean gloves* | • *Infection prevention* |
| • *Close the curtain or door to the room and put on screen.* | • *Ensure privacy* |
| • *Remove the client's personal belongings from bed-side and put them into the bed-side storeroom or in other safe place* | • *To prevent personal belongings from damage and loss* |

| | |
|---|---|
| • *Place the fresh linens on the client's chair or over bed table; do not use another client's bed.* | • *This prevents cross contamination (the movement of microorganisms from one client to another) via soiled linen* |
| • *Positions the bed flat if possible, and raises to the appropriate working height.* | |
| • *Loosen the linens starting at the foot part, then to the sides and around. Remove pillows unless contraindicated* | • *To ensure easiest removal of dirty linens.* |
| • *Place clean top sheet over dirty top sheet wider hem, wrong side out at the head part of bed. Spread, and then remove the dirty linen without exposing the patient.* | • *Top sheet keeps the client warm and protect his or her privacy* |
| • *Turn patient towards one side of the bed* | • *Moving the client as close to the other side of the bed as possible gives you more room to make the bed.* |
| • *Work on the unoccupied side of the bed. Roll dirty linens toward the patient (except rubber sheet).* | • *Placing folded (or rolled) soiled linen close to the client allows more space to place the clean bottom sheets* |
| • *Wipe the surface of mattress by sponge cloth with wet and dry* | • *To prevent the spread of infection* |
| • *Place the clean bottom sheet evenly on the bed folded lengthwise with the centre fold as close to the client's back as possible.*<br>• *Adjust and tuck the sheet tightly under the head of the mattress, making mitered the upper corner.*<br>• *Tighten the sheet under the end of the mattress and make mitered the lower corner.*<br>• *Tuck in alongside.*<br>• *Place the mackintosh and the draw sheet on the bottom sheet and tuck in them together.* | • *Soiled linens can easily be removed and clean*<br>• *linens are positioned to make the other side of the*<br>• *bed* |
| • *Turn patient towards made side of the bed* | • *Moving the client to the bed's other side allows you to make the bed on that side.* |

| | |
|---|---|
| • *Work on the other side. Remove dirty linens.* | • *Provide patient comfort,*<br>• *Infection prevention* |
| • *Spread clean linens, tuck head part of the bottom sheet, miter at side, tuck all together. Do the same with mackintosh (rubber) sheet and draw sheet.* | • *Patient hygiene and comfort.* |
| • *Assist the client back to the center of the bed.*<br>• *Adjust the pillow.* | • *Ensure Patient comfort* |
| • *Arrange top sheet, fold head part up to the patient's chest* | • *Ensure Patient comfort* |
| • *Replace*<br>• *Make a toe pleat.*<br>• *Tuck foot part, miter corner.*<br>• *Check features of a good bed and proper body mechanics.* | • *Ensure Patient comfort* |
| • *Finishing* | |
| • *Replace personal belongings back. Return the bed-side locker and the bed as usual.*<br>• *Thank the patient for collaboration*<br>• *Discard used equipment*<br>• *Remove gloves and wash hands*<br>• *Document* | • *To prevent personal belongings from loss and provide safe surroundings*<br>• *To prevent the spread of infection* |

## Self-assessment 2.2.

1) Which of the following is true about handling linen?

   a) Always carry clean and soiled linen next to your uniform

   b) Put the soiled line on the floor when making an occupied bed

   c) Soiled linen is never upset(shaken in the air

   d) Linen used for one client is directly used for another client's bed.

2) When making an occupied bed

   a) The patient is in the bed

   b) Keep the bed in the low position

   c) Make the top first , then the bottom

   d) The patient is out of the bed

3) The good ways of making a patient bed are the following **except**:

   a) Complete one side of the bed at time

   b) Remove soiled linen a few pieces at a time

   c) Move quickly and efficiently

   d) Keep you back straight as you work

4) When changing the linen that is soiled with body fluids

   a) Place the linen on the floor until it can be removed

   b) Wear gloves and avoid contact with your uniform

   c) Fold or roll with the soiled side out

   d) Ask the patient to try to make it to the bathroom next time

5) When entering a patient's room to make a bed, what are the items do you need to have in hand before entering the patient's room?

6) In skills lab, demonstrate the following techniques of Occupied and unoccupied bed making

## 2.3. Bed bath

### 2.3.1. Complete bed bath

**Learning activity 2.3.1.**

Mr. GAKWAYA was hospitalized for 5 days, he was very sick and he had no caregiver. A day duty nurse entered in Mr. GAKWAYA's room and found there was bad smell. In a very weak voice Mr. GAKWAYA told the nurse that he did not bath since three days ago. The nurse approached him and found that his bed linens were dirty and decided to provide a bath. The nurse opened the window to air the room and went back to the nursing station to prepare the following materials: two basins, bucket containing water, 2 pair of proper gloves, soap, body lotion/cream, 2 bath gloves, folded screen (for privacy), dirty linen container, bed sheets and cleaned draw-sheets, individual blanket (Bed-cover), clean clothing or Hospital gown and bed cleaning material to provide bed bath.

After bed bath Mr. GASANA thanked the nurse and reported that he was feeling much better and that he will sleep well since last night he did not sleep well. When the medical team come to visit Mr. GASANA, there was a fresh air in the room and GASANA was happy.

Based on the above scenario, respond to the following questions:

1) Explain the purpose of bed bath
2) Identify the materials needed in bed bath
3) What do you think as the indications of bed bath
4) Watch the video in the skills lab on bed bath and list the steps of bed bath

**a) Importance of bed bath**

Bed bath helps to **stimulate** the functions of the skin and **increases** circulation. The bath **cleanses body** of dirt, bacteria, dead skin cells, sweat and odors. Bed bath provides the opportunity to assess the skin for lesions and breakdown. Bed bath help the patient to **feel comfortable and relaxed** which enhance rest and sleep that promote healing and restoration of health. In comatose patients, who have neurological impairment, the bath **increases sensation** by providing sensory input for the brain to process. Bathing provides improved self -esteem of the patient. Providing a bed bath helps **to establish the Nurse-patient Relationship** by creating trust and rapport between the nurse and the patient

### b) Indications and contraindications

In clinical setting Bed bath is mainly indicated for patients who are physical or mentally impaired due to different condition such as unconscious or semiconscious patients, postoperative patients, patient with strict bed rest, paraplegic patients, orthopedic patients in plaster, cast and traction and seriously ill patients. However, bed bath may be contraindicated is some cases such as: Hypothermia, convulsion, fresh burns, varicose veins and advance vascular diseases of the legs and feet.

### c) Principles of bathing the patient

Before performing bed bath of the patient, the nurse should assess **patient 'abilities**; such as to understand and follow directions, the degree of assistance needed during the bath and **tolerance of the physical demands** during a bath such as whether the patient is too weak, too ill, or in too much pain to participate. During the bathing procedure; patient's preferences such as bathing timing, culture should be respected.

**BOX 2.3.**

**Principles of bed bathing**

- Keep the patient warm at all times
- Position a linen skip near the patient and dispose of used linen immediately to reduce dispersal of microorganisms and dead skin cells into the environment
- Only expose the area of the body being washed
- Change water if it becomes dirty or cold and always after washing the genitalia and sacrum
- Change wash cloths if they become soiled and after washing the genitalia and sacral area
- Check skin for pressure damage
- Avoid contaminating dressings and drains with water
- Pat the skin dry to reduce the risk of friction damage
- Separate skin folds, and wash and pat them dry
- Use the correct manual handling procedures and equipment to avoid injury to yourself and the patient
- If the patient is unconscious, remember to talk them through what you are doing; nurses should not talk over the patient

### d) Techniques of bathing the patient (complete)

| Steps | Rationale |
|---|---|
| 1. **Preparation** | |
| ***Preparation of the Nurse*** | |
| - *Professional appearance*<br>- *Hair tied back*<br>- *Remove watch, jewels, and Rings*<br>- *Wear closed shoes*<br>- *Hand washing* | - *To control spread of infection* |
| ***Patient preparation*** | |
| - *Introduce to your client, explain the process, assess the level of comprehension and collaboration* | - *This prepare the client for the procedure* |
| - *Take vital signs of the client* | - *It help to identify the status of the client* |
| - *Position the client appropriately and ensure that he is comfortable* | - *Since bathing requires many movements, it is important for the client to be at rest at least ten minutes before* |
| ***Equipment preparation*** | |
| *Ensure the following materials are available: Soap, 2wash clothes, 1 Bath towel, 2 wash basins, Clean dress/ clothes, Bath blanket/sheet, Lotion for back run, mackintosh, Thermometer, Trolley, clean gloves.* | |
| 2. **Performance** | |
| - *Wash your hands* | - *To prevent the spread of organisms.* |
| - *Explain the purpose and procedure to the client. Assess ability to assist with the bath.* | - *Providing information fosters cooperation.*<br>- *Encourage the client to assist with care and to promote independence.* |
| - *Close the curtain or the door. Put the screen or curtain* | - *To ensure that the room is warm.*<br>- *To maintain and protect the client's privacy* |
| - *Dons clean gloves if exposure to body fluid is likely* | - *To protect against infection* |
| - *Cover the client's body with a top sheet or blanket and remove the client's cloth* | - *Removing the cloth permits easier access when washing the client's upper body.* |

| | |
|---|---|
| - *Ask water temperature preference. Approximately 105°F (41°C).*<br>- *Fill basin about two-thirds full with warm water. Let the client test water if possible* | - *Water at proper temperature relaxes him/her and provides warmth.* |
| - *Assist the client to move toward the side of the bed where you will be working.* | - *Keep the client near you to limit reaching across the bed.* |
| ***Face, neck, ears:*** | |
| - *Put mackintosh and bath towel under the client's body from the head to shoulders.* | - *To prevent the bottom sheet from making wet.* |
| - *Make a mitt with the wash cloth and moisten with plain water.*<br>- *Wash the client's eyes. Cleanse from inner to outer corner. Use a different section of the mitt to wash each eye.*<br>- *Wash the client's face, neck, and ears.*<br>- *Rinse and dry carefully.* | - *Washing from inner to outer corner prevents sweeping debris into the client's eyes. Using a separate portion of the mitt for each eye prevents the spread of infection.* |
| - *Do not soap on the face (unless the client prefers it)* | - *Soap irritates the eyes.* |
| ***Upper extremities:*** | |
| - *Move the mackintosh and big towel to under the client's far arm.* | - *To prevent sheet from being wet* |
| - *Starting from the far arm, fold the washcloth and moisten it. Wash the far arm with soap and rinse. Wash from wrist to shoulder and axilla and support joints. Then wash hand and clean fingernails. Rinse and pat dry.*<br>- *Repeat the same procedure to the nearest arm* | - *Washing the far side first prevents dripping bath water into a clean area.*<br>- *Washing from wrist to shoulder and axilla improve circulation by facilitating venous return* |
| - *Ensure that you dried in between fingers thoroughly* | |
| ***Abdomen and chest*** | |

| | |
|---|---|
| - *Place bathing towel across chest and fold blanket down to pubic area.*<br>- *Wash, rinse and pat dry the abdomen. Pull blanket back up across the chest and remove towel.* | - *Expose only the part you are washing to ensure client privacy* |
| – If water is dirty, soapy or cool empty basin and refill with clean water. | - *Cool bath water is uncomfortable.*<br>- *The water is probably unclean. You may change water earlier if necessary to maintain the proper temperature.* |
| ***Lower extremities:*** | |
| - *Place towel under leg farthest from you. Wash, rinse, and pat dry. Wash between each toe. Rinse and pat dry.* | - *Pillow or cushion can support the lower leg and makes the client comfort.* |
| - *Direction to wash: from foot joint to knee→ from knee to hip joint*<br>- *Repeat the same procedure as above on the near leg.* | - *Direction from lower to upper part improve venous circulation* |
| ***Genital area***<br>*Before washing the genital area ask the client if he/she wish to wash him/her self and you may assist the client accordingly* | |
| - *Lift blanket above groin area and cover legs with bedspread for privacy and comfort.*<br>- *Cover the pubic area with bath towel.*<br>- *Wash the pubic and groin area*<br>- *Change water and washcloth* | - *To wash genital area clean water and wash cloth is needed to avoid cross contamination* |
| ***Female client:*** | |
| – Use a separate portion of the washcloth for each stroke | - *This prevent irritation and transmission of infection* |
| – Cleanse from the pubis toward the anus to wash from a clean to a dirty area. | - *Prevent contaminating the vaginal area and urinary meatus with organisms from the anus.* |

| | |
|---|---|
| – Separate the labia and cleanse downward from the pubic to anal area (Figure 11).<br>– Wash between the labia including the urethral meatus and vaginal area.<br>– Rinse well and pat dry | |
| ***Male Client:*** | |
| – Gently grasp the client's penis and Cleanse in a circular motion moving from the tip of the penis backwards toward the pubic area | – Cleanse from the tip of the client's penis backward to prevent transferring organisms from the anus to the urethra |
| – In an uncircumcised male, carefully retract the foreskin prior to washing the penis (Figure 11) | – Secretions that collect under the foreskin can cause irritation and odor |
| – Return the foreskin to its former position. | – Return the foreskin to its normal position to prevent injury to the tissue. |
| – Wash, rinse, and dry the scrotum carefully. | – If not well cleaned and dried appropriately it can harbour micro-organism easily. |
| ***Back and buttocks*** | |
| – Turn the client on lateral position with back towards you. Fold blanket up so back is uncovered (keep rest of body covered) | – To provide clear visualization and easier contact to back and buttocks care |
| – Carefully observe the sacral area and back for any indications. | – Skin breakdown usually occurs over bony prominences |
| – Place Macintosh and bath towel behind back on the bed and Wash, rinse, and pat dry neck, back, and buttocks first. | – To provide clear visualization and easier contact to back and buttocks care |
| – Pay particular attention to the anal area and posterior folds of the scrotum in males | – This are easier places to harbour microorganisms |
| – Clean the anus with toilet tissue before washing, if necessary | |
| – Complete peri-care to rectal area from the back.<br>– Back rub if needed | |

| | |
|---|---|
| – Return the client to the supine position.<br>– Assist the client to wear clean new dress<br>– Take bath blanket off and pull bedspread back over resident. Place linens in laundry basket. | – To provide for warmth and comfort |
| - *Wash hands. Return equipment to proper place.* | |
| 3. **Completion of the procedure** | |
| ***Patient***<br>***After bed bath:***<br>- *Make the bed tidy and keep the client in comfortable position.*<br>- *Arrange personal effects and objects of the patient within his range*<br>- *Thank the patient for his collaboration.* | |
| ***Material***<br>- *Put material in order.* | |
| ***Nurse***<br>- *Education/ Care-related guidance.*<br>- *Wash hands.*<br>- *Make a verbal or written report of Care provided+* | - *Documentation provides coordination of care* |



***Figure 10 Cleaning Genitals for women***



***Figure 11 Cleaning genitals for men***

## Self -assessment 2.3.1.

Answer the following exercises by marking the lettered response that best answers the question:

1) When performing a bed bath you should change water when it becomes:
   a) Cold, dirty, or excessively soapy.
   b) Warm , excessively soapy or too dirty
   c) Extremely soapy, dirt or too clear
   d) Dirty, old, or too cold
2) Which area of the body should not be exposed when washing the upper and lower limbs?
   a) Genitalia.
   b) . Feet.
   c) Thigh.
   d) Stomach area
3) When preparing to give complete bed bath to a patient, what would the nurse do first?
   a) Gather the necessary equipment and supplies.
   b) Remove the patient's gown or cloths while maintaining privacy.
   c) Assess the patient's preferences for bathing's practices
   d) Turn the patient in the lateral position
4) State at least 5 guidelines that the nurse needs to follow when performing a complete bed bath

## 2.3.2. Partial bed bath

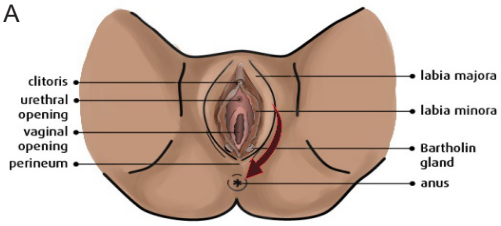
### Learning activity 2.3.2.

Mrs. MUKANEZA is in the hospital for several days, she is very sick and she is not able to maintain her body hygiene without assistance. This morning Nurse Jane did her complete bath.

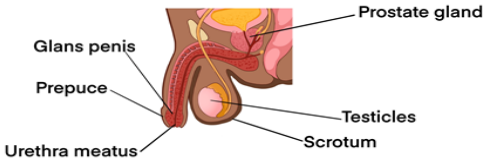
Nurse Jane after completing her bed bath; assisted her to brush her teeth to ensure a good oral hygiene. While the Nurse was trying to comb the hair of Mrs. MUKANEZA , she found that the hair were dirty and she decided to shampooing her.

Mrs. MUKANEZA had stool and urines incontinence (not able to control stool and urines), few hours after her bed bath she passed urines in her bed. Nurse Jane decided to clean her perineal area and to change her bed sheets.

A




B




After reading the above scenario and to observe carefully the above image respond to the following questions:

1) What do you think the oral hygiene will help Mrs. MUKANEZA?
2) What do you think as the benefit of shampooing the hair of Mrs. MUKANEZA?
3) Between image A and B what is the image that correspond to the above scenario and explain why.
4) As Mrs. MUKANEZA was passing urines in her bed, nurse Jane performed her perineal care, observing the image A , what does the arrow on the image indicate for?
5) Observing the image A what do you think as the risk for Mrs. MUKANEZA if the perineal hygiene is not well kept? And explain why.

### a) Definition

**Partial bed bath** consists of bathing selected body part that may cause discomfort if left unbathed. Most performed partial baths are: perineal care, oral care, foot bath, hair shampooing and therapeutic baths (SITZ bath).

### b) Techniques of partial bed bath

#### i. Perineal care

Perineal care is also called **pericare** consists of washing the external genitalia and surrounding. The perineal area is very exposed to growth of pathogenic organisms because it is warm, moist and it is not well ventilated. It has many orifices that may be the entrance of micro-organism in the human body such as urinary meatus, vaginal orifice and anus.

The **perineal area** is a private part of individual and the perineal care are embarrassing for many people. The nurse have to build strong relationship with the client to easy the effectiveness of perineal care. Most people who require a bed bath from the nurse are able to clean their own genital area with minimal assistance from the nurse.

The perineal care removes normal perineal secretion and odor, it helps to keep cleanliness and prevent from infection in perineal area and improve the client comfortable. The perineal care is mostly indicated for patient who are unable to do self-care, patient with genito -urinary tract infection, patient with incontinence of urine and stool, patient with indwelling catheter (urinary catheter), postpartum patients, patients after surgery on the genitor -urinary system and patients with injury, ulcer or surgery on perineal area.

The most important principle to respect during perineal care is to clean the perineum from the cleanest to less clean and to preserve patient privacy.

**Techniques of perineal care**

**Purpose**: to keep cleanliness and prevent from infection in perineal area and improve the client comfortable

| Steps | Rationale |
|---|---|
| 1. **Preparation** | |
| ***Nurse***<br>- *Professional appearance*<br>- *Hand washing* | |
| ***Patient preparation:***<br>- *Identification of the patient*<br>- *Self-presentation to the patient*<br>- *Physical and psychological patient preparation*<br>- *Assess levels of comprehension and collaboration of the patient*<br>- *Position the patient in a comfortable position* | |

| | |
|---|---|
| ***Equipment preparation***<br>- *Clean gloves (1 pair)*<br>- *washcloth (1)*<br>- *Basin with warm water (1)*<br>- *Bath Towels (1)*<br>- *Mackintosh (1)*<br>- *Soap with soap dish (1)*<br>- *Toilet paper*<br>- *Bed pan (1): as required* | *Organization of equipment facilitates accurate skill performance* |
| 2. **Performance** | |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear on gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To protect the client's privacy.* |
| - *Ask the client to empty his or her bladder if necessary* | - *Warm water to perineal area may stimulate urination.* |
| - *Raise the bed to a comfortable height if possible.* | - *Proper positioning prevents back strain.* |
| - *Uncover the client's perineal area.*<br>- *Place a mackintosh and bath towel under the client's hips* | - *A towel or pad protects the bed.*<br>- *You can use the towel to dry the client's perineal and rectal area.* |
| - *Cleanse the thighs and groin:*<br>- *Make a mitt with the washcloth.*<br>- *Cleanse the client's upper thighs and groin area with soap and water.*<br>- *Rinse and dry.*<br>- *Wash the genital area next.* | - *Clean from the dirt to clean area* |
| **Female client:** | |
| - *Use a separate portion of the washcloth for each stroke* | - *This prevent irritation and transmission of infection* |
| - *Cleanse from the pubis toward the anus to wash from a clean to a dirty area.* | - *Prevent contaminating the vaginal area and urinary meatus with organisms from the anus.* |

| | |
|---|---|
| - *Separate the labia and cleanse downward from the pubic to anal area (Figure 10 Cleaning Genitals for women).*<br>- *Wash between the labia including the urethral meatus and vaginal area.*<br>- *Rinse well and pat dry* | |
| ***Male Client:*** | |
| - *Gently grasp the client's penis and Cleanse in a circular motion moving from the tip of the penis backwards toward the pubic area* | - *Cleanse from the tip of the client's penis backward to prevent transferring organisms from the anus to the urethra* |
| - *In an uncircumcised male, carefully retract the foreskin prior to washing the penis (Figure 11 Cleaning genitals for men)* | - *Secretions that collect under the foreskin can cause irritation and odor* |
| - *Return the foreskin to its former position.* | - *Return the foreskin to its normal position to prevent injury to the tissue.* |
| - *Wash, rinse, and dry the scrotum carefully.* | - *If not well cleaned and dried appropriately it can harbor micro-organism easily.* |
| ***Buttocks*** | |
| - *Assist the client to turn on the side.*<br>- *Separate the client's buttocks and use toilet paper, if necessary, to remove fecal materials.* | - *Removing fecal material provides for easier cleaning.* |
| - *Cleanse the anal area, rinse thoroughly, and dry with a towel. Change sponge towel as necessary* | - *Keep the anal area clean to minimize the risk of skin irritation and breakdown* |
| - *Apply skin care products to the area according to need or doctor's order.* | - *Lotions may be prescribed to treat skin irritation.* |
| 3. **Completion** | |
| ***Patient***<br>***After bed bath:***<br>- *Make the bed tidy and keep the client in comfortable position.*<br>- *Arrange personal effects and objects of the patient within his range*<br>*Thank the patient for his collaboration.* | |
| ***Material***<br>- *Put material in order.* | |

| | |
|---|---|
| ***Nurse***<br>- *Education/ Care-related guidance.*<br>- *Wash hands.*<br>- *Make a verbal or written report of Care provided* | - *Documentation provides coordination of care* |

### ii. Oral care

Oral care is a fundamental nursing care that consist of keeping mouth and teeth clean and healthy. Each patient needs oral care; the patients who are confined in bed with decreased physical and mental capacity need assistance to provide oral care

**Purpose:** to keep the mucosa clean, soft, moist and intact**,** to keep the lips clean, soft, moist and intact, to prevent oral infections, to remove food debris as well as dental plaque without damaging the gum, to alleviate pain, discomfort and enhance oral intake with appetite and to prevent halitosis or relieve it and freshen the mouth.

| **Steps** | **Rationale** |
|---|---|
| 1. **Preparation** | |
| ***Nurse***<br>- *Professional appearance*<br>- *Hand washing* | |
| ***Patient preparation:***<br>- *Identification of the patient*<br>- *Self-presentation to the patient*<br>- *Physical and psychological patient preparation*<br>- *Assess levels of comprehension and collaboration of the patient*<br>- *Position the patient in a comfortable position*<br>- *If a patient is unconscious , put him/her in semi lying position to avoid aspiration* | |

| | |
|---|---|
| ***Equipment preparation***<br>- *1 Tray*<br>- *1 Gauze-padded tongue depressor*<br>- *Appropriate equipment for cleaning:*<br>- *Tooth brush*<br>- *Pieces of Gauze*<br>- *Gauze-padded tongue depressor*<br>- *Forceps: artery forceps (1) and dissecting forceps (1)*<br>- *Oral care agents:*<br>- *Tooth paste/ antiseptic solution*<br>- *2 Kidney tray*<br>- *1 Mackintosh: small size*<br>- *1.Middle towel (1)*<br>- *Gallipot with water (1)*<br>- *Gauze pieces as required: to apply a lubricant*<br>- *Lubricants: Vaseline/Glycerin* | *Organization of equipment facilitates accurate skill performance* |
| 2. **Performance** | |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To protect the client's privacy.* |
| - *Raise the bed to a comfortable height if possible.* | - *Proper positioning prevents back strain.* |
| - *Place the mackintosh and towel on the neck to chest* | - *The towel and mackintosh protect the client and bed from soakage.* |
| - *Put the kidney tray over the towel and mackintosh under the chin(*Figure 12*)* | - *It facilitates drainage from the client's mouth* |
| - *Inspect whole the oral cavity* | - *Comprehensive assessment is essential to determine individual needs* |
| ***Clean oral surfaces**:* | |

| | |
|---|---|
| - *Ask the client to open the mouth and insert the padded tong depressor gently from the angle of mouth toward the back molar area.*<br>- *You never use your fingers to open the client's mouth* | - *The tong depressor assists in keeping the client's mouth open. As a reflex mechanism, the client may bite your fingers.* |
| - *Clean the client's teeth from incisors to molars using a tooth brush or pieces of gauze and forceps by up and down movements from gums to crown (*Figure 13*)* | - *Friction cleanses the teeth.* |
| - *Clean oral cavity from proximal to distal, outer to inner parts, using gauze for each stroke* | - *Friction cleanses the teeth* |
| - *Discard used piece of gauze into small kidney tray.* | - *To prevent the spread of infection* |
| - *Clean tongue from inner to outer aspect* | - *Microorganisms collect and grow on tongue surface and contribute to bad breath* |
| ***Rinse oral cavity**:* | |
| - *Provide tap water to gargle mouth and position kidney tray and if the client cannot gargle by him/herself, Rinse the areas using moistened pieces of gauze* | - *To remove debris and make refresh* |
| - *Wipe mouth and around it. Apply lubricant to lips by using piece gauze piece with artery forceps* | - *Lubricant prevents lips from drying and cracking* |
| 3. **Completion** | |
| ***Patient***<br>***After bed bath:***<br>- *Make the bed tidy and keep the client in comfortable position.*<br>- *Arrange personal effects and objects of the patient within his range*<br>- *Thank the patient for his collaboration.* | |
| ***Material***<br>*Put material in order.* | |

| | |
|---|---|
| ***Nurse***<br>- *Education/ Care-related guidance.*<br>- *Wash hands.*<br>- *Make a verbal or written report of Care provided* | – *Documentation provides coordination of care* |



***Figure 12 Placing Macintosh and the kidney dish near the client's mouth***



***Figure 13 Cleansing the teeth with the tooth brush***

### iii. Shampooing

**Purpose:** It helps to maintain personal hygiene of the client, to increase circulation to the scalp and hair, promote growing of hair and to make him/her feel refreshed. Same as other types of bed bath, shampooing is indicated to all patient who are unable to care for themselves.

| **Steps** | **Rationale** |
|---|---|
| 1. **Preparation** | |
| ***Nurse***<br>- *Professional appearance*<br>- *Hand washing* | |
| ***Patient preparation:***<br>- *Identification of the patient*<br>- *Self-presentation to the patient*<br>- *Physical and psychological patient preparation*<br>- Assess levels of comprehension and collaboration of the patient<br>- *Position the patient in a comfortable position* | |

| | |
|---|---|
| ***Equipment preparation***<br>- *2 Mackintosh(2): to*<br>- *1 Bath towel*<br>- *Middle towel (1)*<br>- *Shampoo or soap (1)*<br>- *Brush, comb: (1)*<br>- *1 basin*<br>- *2 Bucket: for hot water (1)*<br>- *For wasted water (1)*<br>- *Plastic jug (1)*<br>- *Kidney dish (1)*<br>- *Clean cloth if necessary*<br>- *Trolley (1)* | *Organization of equipment facilitates accurate skill performance* |
| 2. **Performance** | |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To promote the client's privacy.* |
| - *Help the client move his/her head towards edge of the bed and remove the pillow from the head and ensure the client is comfortable* | - *Appropriate positioning promotes client's comfort and facilitate the nurse during washing.* |
| - *Setting mackintosh and bath towel to the client* | - *To prevent the sheet and client's clothes from soiling* |
| ***Washing:*** | |
| - *Brush the hair first* | - *To remove dandruff and fallen hairs, and make the hair easier washing* |
| - *Insert the cotton balls into the ears* | - *To prevent water from entering into the ears* |

| | |
|---|---|
| - *Wet the hair by warm water and wash it roughly*<br>- *Apply soap or shampoo and massage the scalp well while washing the hair using fingernails*<br>- *Rinse the hair and reapply shampoo for a second washing, if indicated*<br>- *Rinse the hair thoroughly* | |
| ***Wrapping the hair:*** | |
| - *Remove the cotton balls from the ears, remove mackintosh with the towel from the client's neck and wrap the hairs in the bath towel* | - *To prevent from wetting the bed*<br>- *To ensure that the hair and scalp are dried* |
| ***Drying the hair:*** | |
| - *Wipe the face and neck if needed*<br>- *Dry the hair as quick as possible*<br>- *Massage the scalp with oil as required*<br>- *Comb the hair and arrange the hair according to the client's preference*<br>- *Make the client tidy and provide comfortable position* | - *To prevent him/her from becoming chilled*<br>- *To increase circulation of the scalp and promote sense of well-being*<br>*To raise self-esteem* |
| 3. **Completion** | |
| ***Patient***<br>- *Make the bed tidy and return the client in comfortable position.*<br>- *Arrange the client's belongings*<br>- *Thank the patient for his collaboration.* | |
| ***Material***<br>*Put material in order.* | |
| ***Nurse***<br>- *Education/ Care-related guidance.*<br>- *Wash hands.*<br>- *Make a verbal or written report of Care provided* | *To ensure the continuity of care* |

### iv. Foot bath

The feet are essential for ambulation and merit attention even when people are confined to bed. The purpose of feet bath is to maintain personal hygiene of the client, Soothe sore muscles, to increase circulation and to make him/her feel refreshed and relaxed. The foot bath is also indicated to all patient with physical incapacity and is contraindicated to patient with foot injuries.

| Steps | Rationale |
|---|---|
| **1. Preparation** | |
| ***Nurse***<br>- *Professional appearance*<br>- *Hand washing* | |
| ***Patient preparation:***<br>- *Identification of the patient*<br>- *Self-presentation to the patient*<br>- *Physical and psychological patient preparation*<br>- *Assess levels of comprehension and collaboration of the patient*<br>- *Position the patient in a comfortable position* | |
| ***Equipment preparation***<br>- *Nail Cutter (1)*<br>- *Gallipot with water (1): for cotton*<br>- *Kidney tray (1)*<br>- *Sponge cloth (1)*<br>- *Middle towel (1)*<br>- *Mackintosh (1)*<br>- *Plastic bowl in small size (1)*<br>- *Soap with soap dish (1)* | *Organization of equipment facilitates accurate skill performance* |
| **2. Performance** | |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear on gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To protect the client's privacy.* |
| - *Put a mackintosh with covering towel on the bed.* | - *Mackintosh can prevent the sheet from wetting* |
| - *Put the basin with warm water over the mackintosh, Soak the client's feet in a basin of warm water and mild soap and scrub and wash them up.* | - *To make nails soft, thereby you can cut nails easily and safety* |

| | |
|---|---|
| - *Dry the client's feet thoroughly by using the middle towel covering the mackintosh* | - *To improve the comfort, and to prevent foot infections* |
| - *Cut nails if necessary* | - *Special orders are required before cutting the nails or cuticles of a client with diabetes to avoid accidental injury to soft tissues* |
| **3. Completion** | |
| ***Patient***<br>- *Make the bed tidy and return the client in comfortable position.*<br>- *Arrange the client's belongings*<br>- *Thank the patient for his collaboration.* | |
| ***Material***<br>*Put material in order and discard dirty ones properly* | |
| ***Nurse***<br>- *Education/ Care-related guidance.*<br>- *Wash hands.*<br>- *Make a verbal or written report of Care provided* | *To ensure the continuity of care* |

## V. Therapeutic bath: Sitz bath

### Definition and purpose

Therapeutic baths are baths that have physical effects; they are given to soothe irritated skin or to treat an area such as perineum. Medications are placed in water and the client remain in water for a designed time. A therapeutic bath often last for 20 to 30 minutes.

A Sitz bath is a type of therapy that consist of sitting in warm, shallow water to clean the perineum, which is the space between the rectum and vulva or scrotum. Sitz is from the German word "***Sitzen***" which means "***to sit***". A Sitz bath helps to clean and treat certain problems in the anal area, genital area and the perineum. It helps to increase blood flow to these areas and relax the muscle. A Sitz bath helps to relieve from pain or itching in the anal and genital area.

### Indications and contraindications

Sitz bath can be ***hot*** or ***cold***; the hot Sitz bath is indicated in case of *ovarian pain, uterine cramps, testicular pain, prostatic problems, intestinal or renal colic, sciatica, headache*; and the cold Sitz bath is indicated in case of *uterine prolapse, cystocele,*

*rectocele, constipation and heavy or prolonged menstruation*. ***The alternate hot and cold Sitz bath*** is used in case of *chronic UTI (Urinary tract infection), pelvic inflammatory disease, hemorrhoids, fissure, postpartum Contraindications*.

The Sitz bath is contraindicated in case of *hemorrhages, menorrhagia, acute congestion, acute inflammation, painful conditions with spasms or colic, and heart problems*.

| Steps | Rationale |
|---|---|
| **1. Preparation** | |
| ***Nurse***<br>- *Professional appearance*<br>- *Hand washing* | |
| ***Patient preparation:***<br>- *Identification of the patient*<br>- *Self-presentation to the patient*<br>- *Physical and psychological patient preparation*<br>- *Assess levels of comprehension and collaboration of the patient*<br>- *Position the patient in a comfortable position* | |
| ***Equipment preparation***<br>- *Basin*<br>- *Hot water*<br>- *Towel bath*<br>- *Indicated solution* | *Organization of equipment facilitates accurate skill performance* |
| **2. Performance** | |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear on gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To protect the client's privacy.* |
| - *Fill the 2/3 of the basin with warm water and mix with indicated solution. Assist the patient to sit in the basin and allow her or him to sit for 15 to 20 minutes* | - *Very hot water may cause irritation* |
| - *Help the client to return in the normal position and Assist the client to dry* | - *Undried skin may be the source of infections* |

| 3. Completion | |
|---|---|
| ***Patient***<br><br>- *Make the bed tidy and return the client in comfortable position.*<br>- *Arrange the client's belongings*<br>- *Thank the patient for his collaboration.* | |
| ***Material***<br><br>*Put material in order and discard dirty ones properly* | |
| ***Nurse***<br><br>- *Education/ Care-related guidance.*<br>- *Wash hands.*<br>- *Make a verbal or written report of Care provided* | *To ensure the continuity of care* |

## Self-assessment 2.3.

1) When providing peri-care always wash from _____ to _____
2) What is perineal care
   a) Washing a patient back
   b) Washing a patient's genital and anal area
   c) Giving a complete bath
   d) Washing patient's genitalia only
3) For an uncircumcised male patient , the nurse needs to first:
   a) Pull back the foreskin
   b) Turn the penis to the side
   c) Push the foreskin foreword
   d) Gently pat the area with a dry towel before washing
4) Which of the following statements is correct regarding perineal care?
   a) Always wear gloves when providing pericare.
   b) Wash the peri area with soap and cold water.
   c) Wash from back to front when providing peri care.
   d) The client lies on his/her stomach during peri care.
5) Why the client is offered the bedpan or urinal before beginning peri care?
6) List two purposes of giving peri care.

7) You ARE giving oral care to unconscious person ,which action is incorrect

   a) Provide privacy

   b) Place a kidney basin under the chin

   c) Place the mackintosh and towel on the neck to chest

   d) With your fingers open the client's mouth.

8) In order to prevent aspiration when performing oral hygiene on a person who is unconscious, they are placed

   a) In high Fowler's

   b) In supine

   c) In side lying position

   d) Reverse Trendelenburg

9) Enumerate at least two purposes of foot care

10) Explain the purpose of a Sitz bath

11) During a Sitz bath the patient sit in water for:

   a) 45-60minutes

   b) 5-10 minutes

   c) 40-50 minutes

   d) 20-30 minutes

## 2.4. Bed sores or Pressure ulcers

**Learning activity 2.4.**

Mrs. MUKANKIKO, a 75 years old patient was hospitalized for four weeks, she was severely sick and she couldn't move nor turn in her bed and she was malnourished. While providing bed bath, Mr. KWIZERA, a student nurse in his first clinical practice, has found that she had redness on her buttocks (redness: is one the signs of bedsores. A bedsore is a damage to an area of the skin caused by unrelieved pressure on the area for a long time) due to prolonged compression on the side she was lying on.

Mr. KWIZERA recalled that bedsores can be prevented by changing position, maintaining adequate nutrition, hygiene (body and surrounding hygiene), and exercises to promote blood circulation and decided to change position every two hours for Mrs. MUKANKIKO and to do advocacy to the nutritionist and social workers for they can ensure good nutrition.

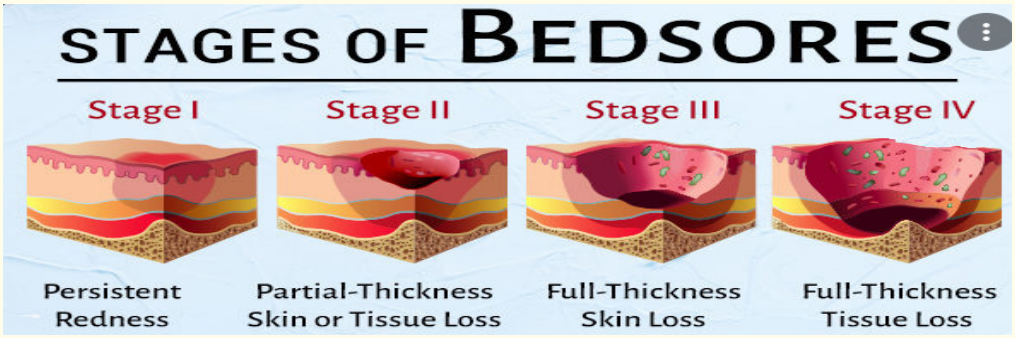



***Figure 14 Stages of bed sores***

1) What do you think as the risk factors of bedsores?
2) What do you think Mr. KWIZERA could do to prevent bedsores?
3) Basing on the Figure 15, classify Mrs. MUKANKIKO's bedsore stage

### 2.4.1. Definition of bedsores

Bed sores also called *pressures ulcers* or *decubitus sores* are lesions caused by **unrelieved pressure**, including shearing and friction forces. Bed sores are a big problem in hospital settings. Bed sores are due to **localized deficiency of blood supply** to the tissues. The tissue is compressed between two surfaces, usually the surface of the bed and the bony skeleton. When blood cannot reach the tissue, cells are deprived of oxygen and nutrients, waste products of metabolism accumulate in the cells and **the tissue consequently dies.**

## 2.4.2. Risk factors of bed sores

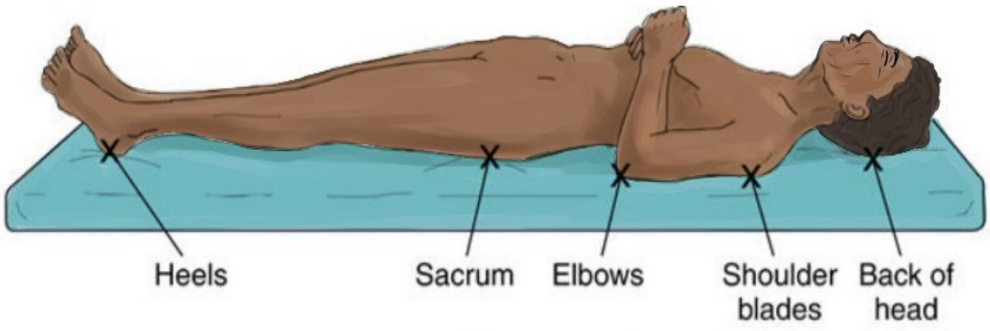
Immobility that leads to unrelieved pressure to the skin over a bony prominence is the most factor in development of pressure ulcers. Individual risk factors for pressure ulcers may be categorized as extrinsic or intrinsic. Extrinsic factors are external conditions in the immediate environment that place a vulnerable individual at risk such as Friction and shearing, force (pressure) and moisture. Intrinsic factors are conditions and comorbidities peculiar to the individual that confer risk such as: immobility and inactivity, inadequate nutrition, fecal and urinal incontinence, decreased mental status, diminished sensation, excessive body heat, advanced age and certain chronic condition (Diabetes). Below are detailed risk factors

- **Friction and shearing force: Friction** is a force acting parallel to the skin surface. (Sheets rubbing against skin create friction).Friction can abrade the skin, remove the superficial layers, and make it more prone to breakdown. **Shearing** is a combination of pressure and friction**.** They damage blood vessels and tissue area.
- **Immobility**: refers to reduction in the amount and control of movement. Normally people move when they experience discomfort due to pressure on an area of the body. However decreased activity, extreme weakness, pain or any cause of decreased activity can hinder person's ability to change positions independently and relieve the pressure, even if the person can perceive pressure.
- **Inadequate nutrition:** Prolonged inadequate nutrition causes weight loss, muscle atrophy and loss of subcutaneous tissue. These three reduce the amount of padding between the skin and bones, thus increasing the risk of pressure ulcer development. Inadequate intake of protein, carbohydrates, fluids, zinc and vitamin C contributes to pressure ulcer formation.
- **Fecal and urinary incontinence:** Moisture from incontinence promotes skin maceration (tissue softened by prolonged wetting or soaking), making the epidermis more easily eroded and susceptible to injury. Digestive enzymes in feces, gastric tube drainage and urea in urines also contribute to skin excoriation. Any accumulation secretion or excretions irritate the skin, harbours microorganisms and makes an individual prone to skin breakdown and infection.
- **Decreased mental status:** Individuals with decrease level of awareness are at risk because they are less able to recognize and respond to pain associated with prolonged pressure.
- **Diminished sensation:** Loss of sensation reduces a person's ability to respond to trauma, to injurious heat and cold and to the tingling (pins and needles).

- **Excessive body heat:** An elevated body temperature increases the metabolic rate, thus increasing cellular need for oxygen. This increased need is particularly severe in cells of an area under pressure, which are already oxygen deficient. Severe infections with accompanying elevated body temperature may affect the body's ability to deal with the effects of tissue compression.
- **Advanced age:** ageing processes bring about several changes in skin and its supporting structures, making the older person more prone to impaired skin integrity. These changes are loss of lean body mass, generalized thinning of the epidermis, decreased strength end elasticity, increased dryness, diminished pain perception and diminished venous and arterial flow due to ageing vascular walls.
- **Chronic medical conditions:** Certain chronic conditions such as diabetes and cardiovascular disease are risk factors for skin breakdown and delayed healing

**Areas where bedsores occur**

Bed sores mostly develop in areas where bones are close to the surface (bony prominences) and areas that are under the high pressure. For People who uses wheelchairs, bedsores occur on tailbone or buttocks, shoulder blades and spine, backs of arms and legs where they rest against chair. For people who stay in bed, bed sores develop on the back or sides of the head, the should blades, the hip, lower back or tailbone, the heels, ankles and skin behind the knees



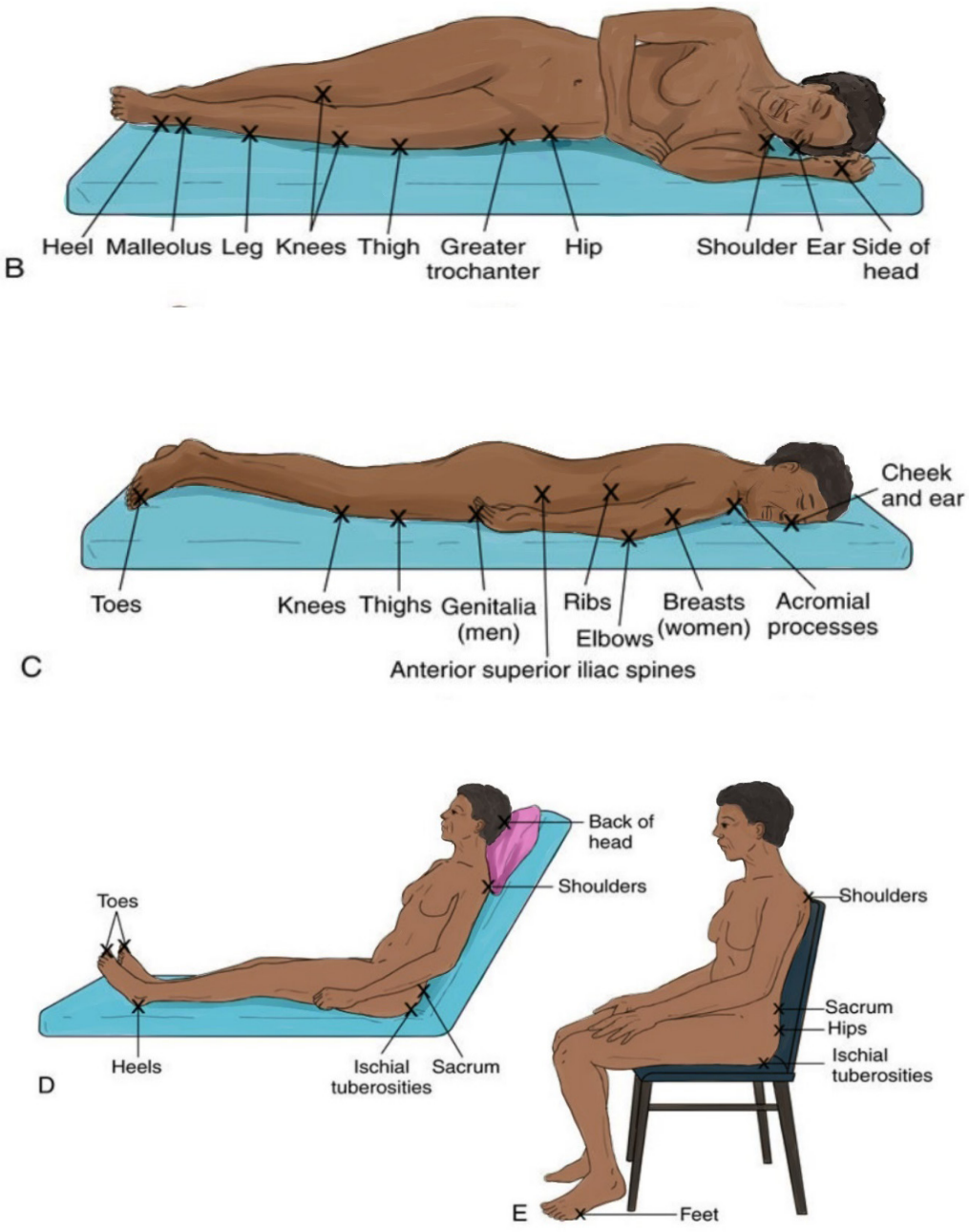



***Figure 15 Areas of bedsore development***

## 2.4.3. Stages of bed sores

Bed sores have four clinical stages as shown s below in details:

**a) Staged 1-Pressure injury: Non blanchable erythema**

This first stage is characterized by intact skin with non -blanchable redness of a localized area usually over a bony prominence. In darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area. The area may be painful, firm, soft, and warm or cool compared to adjacent tissue. It may be difficult to detect in individuals with dark skin tones.

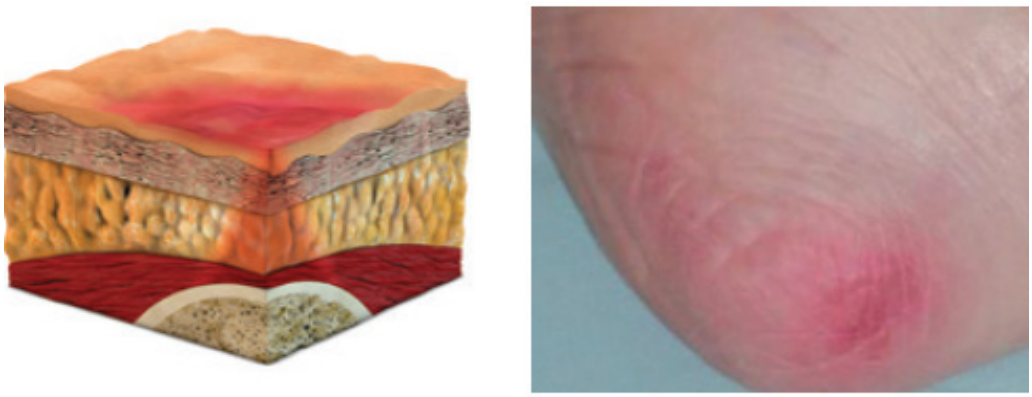


*Figure 16 First stage of bedsores development*

**b) Stage 2- Pressure injury: partial thickness skin loss**

The second stage is characterized by **partial thickness loss** of dermis presenting as a **shallow, open wound with a red-pink wound bed, without slough**. May also present as an intact or open/ruptured serum-filled blister. Presents as a shiny or dry, shallow ulcer without slough or bruising.

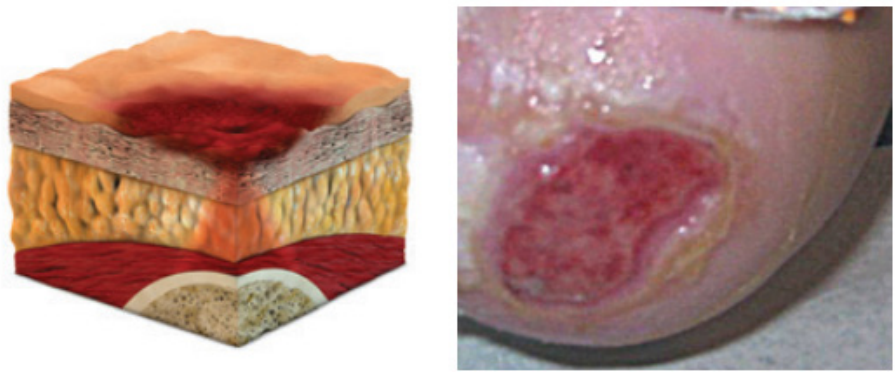


*Figure 17 Stage 2 of bed sores development*

### c) Stage 3-Pressure injury: full thickness skin loss

The third stage is characterized by full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscles are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunneling.

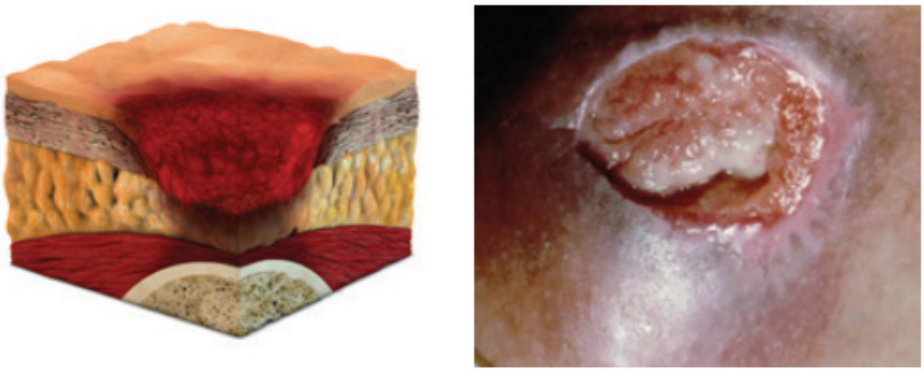


*Figure 18 Stage 3 of bed sores development*

### d) Stage 4- Pressure injury: full thickness tissue loss

The fourth stage is characterized by full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed.



*Figure 19 Stage 4 of bed sores development*

## 2.4.4. Prevention of bed sores

Prevention of bed sores is complex; early identification of risk factors is key to prevention of bed sores. Prevention of bedsores consist of providing adequate body hygiene by keeping the skin clean and dry and keeping the bed tidy and dry; turning and repositioning the client every two hours prevent bedsores; and adequate nutrition with enough calories, vitamins, minerals, fluids and protein help to prevent bedsores and accelerate healing process of sores.

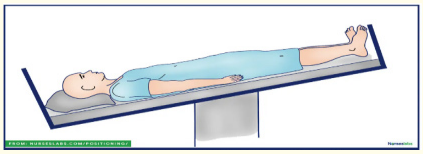
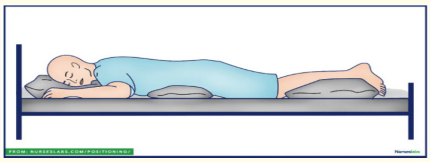
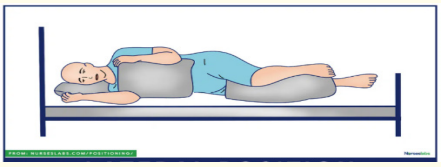
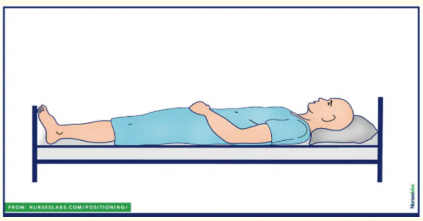
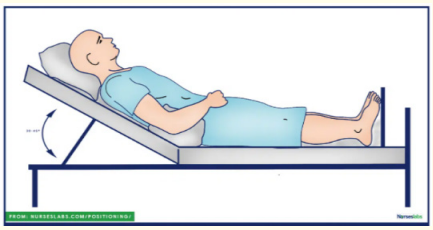
### Self-assessment 2.4.

1) The most common areas where pressure ulcers occur are the
   a) Hands and neck
   b) Coccyx and neck
   c) Sacrum and coccyx
   d) Back of the head and hands
2) In which of the following pressure injury stages is the skin still intact?
   a) Stage 1
   b) Stage 2
   c) Stage 4
   d) Stage 3
3) The following are risk factors of bed sores except:
   a) Advanced age
   b) Physical exercise
   c) Poor Nutrition
   d) Diabetes
4) The pressure ulcers can be caused by
   a) Wrinkled linen
   b) Soiled linen
   c) Dragging the patient across linens
   d) All the above
5) Staging systems for pressure ulcers are based on the depth of tissue destroyed. Briefly describe each stage.

## 2.5. Moving and positioning patients in bed

### Learning activity 2.5.1.

Look at the following table that describe different positions that a person may (be assisted to) take depending on her or his status and condition and attempt the questions which follow it.

| Statement of the position | Image of patient position |
|---|---|
| 1. **Supine position**: A patient lies on the back. And is used for general examination or physical assessment | A  |
| 2. **Lateral position**: A patient lies on her side and is used in case of vomiting and relieve pressure on the sacrum and heels. | B  |
| 3. **Fowler's position**: is a bed position wherein the head of the bed is elevated. Used with respiratory distress patient | C  |
| 4. **Prone position**: the patient lies on the abdomen with head turned to one side and the hips are not flexed. It is used to facilitate ventilation and expansion of the base of the lungs | D  |
| 5. **Trendelenburg's position:** involves lowering the head of the bed and raising the foot of the bed of the patient. The patient's arms should be tucked at their sides. It is used to improve brain perfusion during hemorrhage | E  |

1) Match each statement with its corresponding image
2) After sustaining a road traffic accident, Mr. RUKUNDO has bled heavily. Which appropriate position for Mr. RUKUNDO and why?
3) Mrs. MUGWANEZA was lying on her back position and you noticed that she is vomiting. What is the suitable position to her?

## Learning activity 2.5.2.

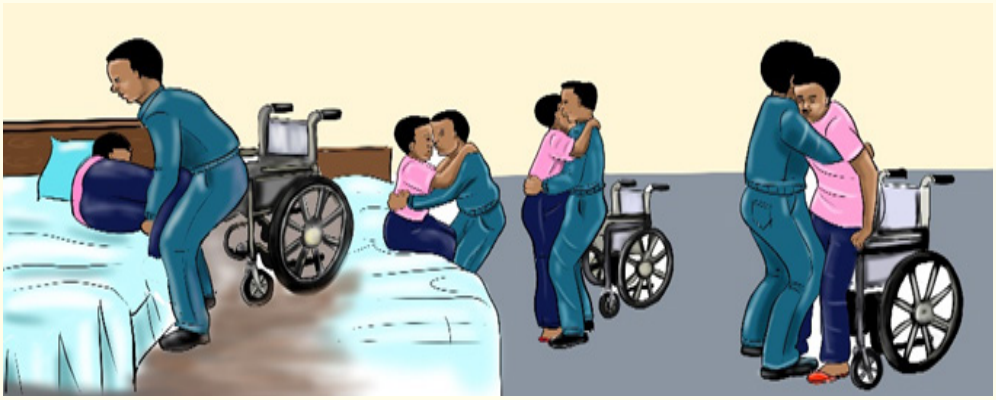
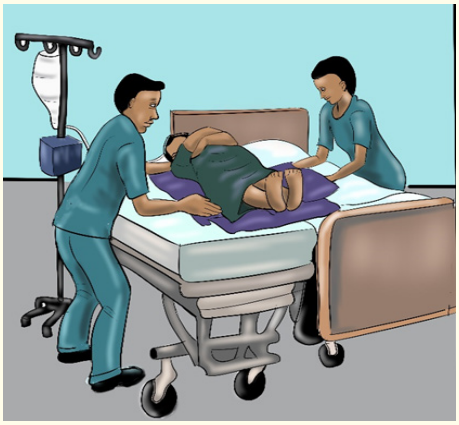


*Figure 20 Moving Patient from bed to Wheelchair*



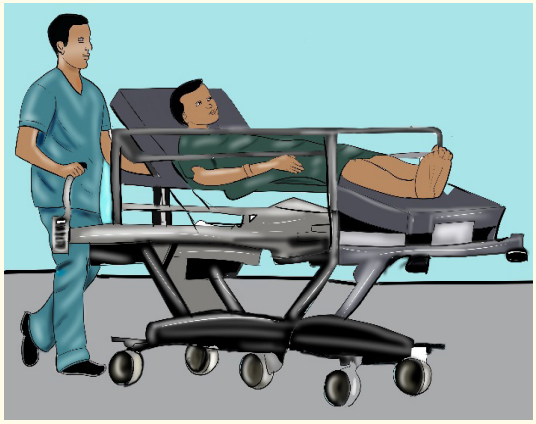


*Figure 21 Moving patient from bed to stretcher (a stretcher is a device used to carry a person who must lie flat and can't move on their own)*

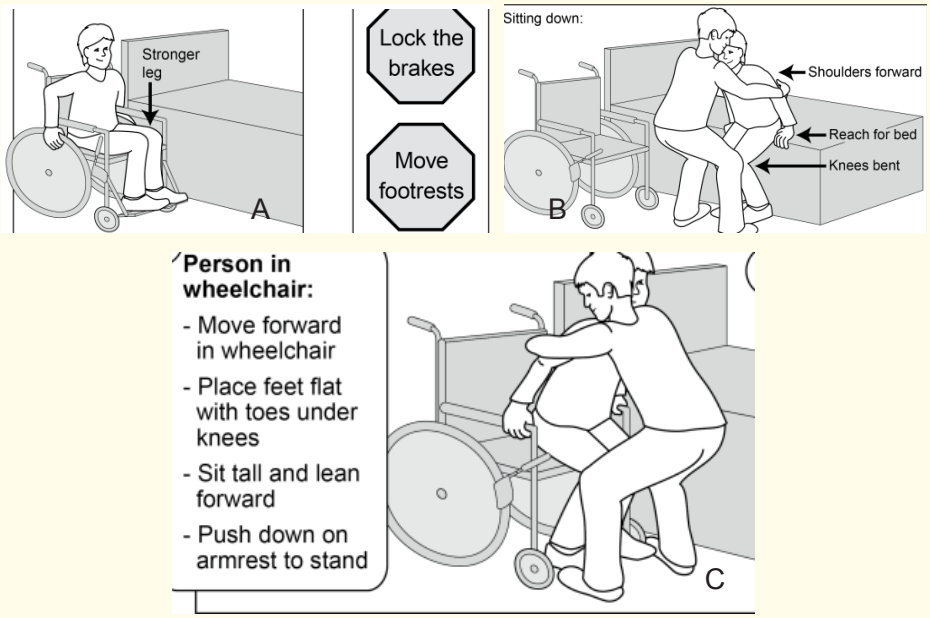



***Figure 22 three images that represent three steps of moving patient from wheelchair to bed***

1) Look at the Figures 20, 21 &22 and think about the purpose of moving patient from bed to wheelchair
2) From the Figure 21, what do you think is the purpose of moving patient from bed to stretcher
3) Observe the Figure 22 and provide the chronological order of steps. Think about how these persons will use their muscle during the move.

## 2.5.1. Positioning patients

### a) Patient positions

Patients with **impaired nervous, skeletal or muscular system functioning and increased weakness and fatigue** often require assistance from nurses for positioning while in bed or sitting and for moving. Positioning a patient in **good body alignment** and **changing position carefully** and systematically are essential aspect of nursing practice.

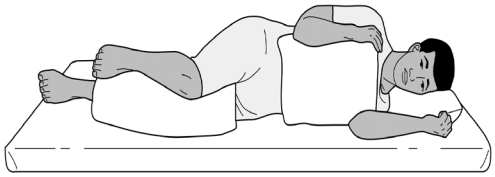
Any position, correct or incorrect, can be detrimental if maintained for a prolonged period of time. Frequent changes of position help to **prevent muscle discomfort**,

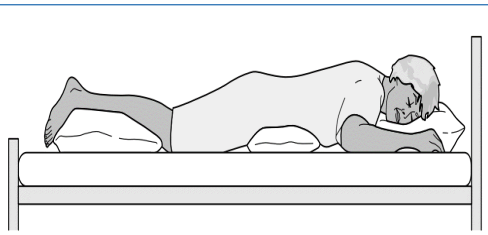
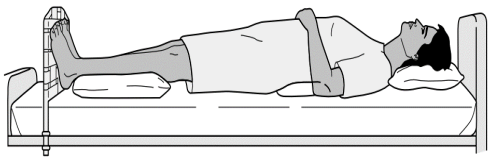
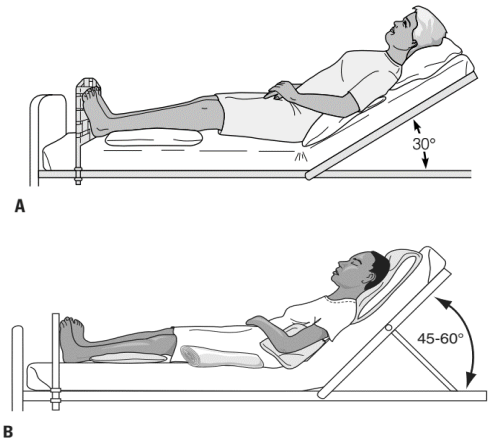
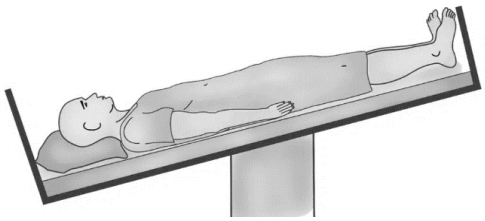
undue pressure resulting in pressure injuries, damage to superficial nerves and blood vessels and contractures. Position changes also maintain **muscle tone and stimulate postural reflexes**.

Positioning materials and aids are available but sometimes can be made from the available ones. **Pillows,** are used to protect bony prominences. **Trochanter roll,** prevent external rotation when lining in supine position. **The trapeze bar,** a triangular device hanged on the bed that can be used by the patient whose upper extremities functions well.

When positioning ensure the following: ***Mattress should be firm and level yet has enough give to fill in and support natural body curvatures; Bed should be clean and dry*** (wrinkled or damp sheets increase the risk of pressure injuries forming; that's why bed making is important*),* ***support devices/aids according to patient's position*** (pillows and trochanter roll are examples)*,* ***avoid placing one body part directly on top of another body part*** (especially one with bony prominences) because pressure can damage veins and causes thrombus formation; ***ensure the 24-hour schedule of position changes,*** frequent position changes are essential to prevent pressure sores; and ***always obtain patient's information on which position is comfortable and appropriate***.

**b) Different positions of the clients**

| | |
|---|---|
| **Lateral position:** In the **lateral** (side-lying) **position** the person lies on one side of the body. Flexing the top hip and knee and placing this leg in front of the body creates a wider, triangular base of support and achieves greater stability**.**<br><br>Lateral position is good for the person who is **resting**, **relieve pressure on the sacrum and heels** in people who sit for much of the day or who are confined to bed and rest in Fowler's or dorsal recumbent positions much of the time |  |

| | |
|---|---|
| **Prone position:** n the **prone position**, the person lies on the abdomen with the head turned to one side.<br><br>The prone position also promotes drainage from the mouth and is especially useful for the person who is unconscious or someone recovering from surgery of the mouth or throat and neck and spine surgeries |  |
| **Supine position:** also termed **dorsal recumbent** (back lying) **position** the person's head and shoulders are slightly elevated on a small pillow.<br><br>This position is used general examination or physical assessment<br><br>It is indicated in **post-surgical operation recovery**. |  |
| **Fowler position: also called semi-sitting position**, is a bed position in which the head and trunk are raised 45 to 90 degrees.<br><br>In **low Fowler's (A)**, the head and trunk are raised 15 to 45 degrees; in **high Fowler's position (B)**, the head and trunk are raised 90 degrees. In this position, the knees may or may not be flexed.<br><br>Fowler's position is indicated for people who have **difficulty breathing** and people with **heart problems**. |  |
| **Trendelenburg position:** this position involves lowering the head of the bed and raising the foot of the bed of the patient. The patient's arms should be tucked at their sides<br><br>This position is indicated in people who have poor venous return (hypotensive patient), and in postural drainage of the basal lung lobes. |  |

### c) Principles of changing positions

Healthy people change position, with little effort, however ill people may have

difficulties of moving or changing positions even in bed. Nurses should be sensitive to both the need of clients to function independently and their need for assistance to move. **Comfortable and correct body alignment** should be maintained in order **to prevent undue stress on the musculoskeletal system**. When turning the client, nurse should ensure the appropriate number of staffs and assisting materials needed.

When positioning patient, there are couple octions and ratonales which are applicaple to moving and lifting:

- ***Before moving a client, assess the client's physical abilities, and ability to assit with the move, degree of comfort, client's weight, orthostatic hypotension and your strength and ability***
- ***Prepare assitive materials available*** *(e.g: pillows, trochanter roll);*
- ***Plan around incumbrances to movement*** *(e.g: IV, Urinary catheter, cast);*
- ***Be aware of medications effects*** *(e.g: effect on alertness, balance, strenth and mobility);*
- ***Ensure assistance*** *(if needed)* ***from other people is available;***
- ***Explain the procedure and listen suggestions from patient, or support people have;***
- ***Provide privacy;***
- ***Perform hand hygiene;***
- ***Raise the bed of the client*** *to bring the client to your center of gravity;*
- ***Lock the wheels on the bed and raiserails on the other side*** *to ensure client safety;*
- ***Face the direction of the movement*** *to prevent spinal twisting;*
- ***Stand appropriately*** *to increase the stability and provide balance;*
- ***Lean your trunk forward and flex you hips, knees and ankles*** *to lower your center of graity, ensure stability and ensure use of large muscle groups during movements;*
- ***Tighten your gluteal, abdominal, leg and arm muscle*** *to prepare them for action and prevent injury;*
- ***Rock from the front leg to the back leg*** *when pulling* ***or from the back leg to the front leg when pushing*** *to overcome inertia counteracy the client's weight and help attain a balanced smooth motion;*
- *After moving* ***determine and document the client's comfort, body alignment tolerance of the activity*** *(check pulse rate, blood pressure),* ***abilty to assit and understand and safety precautions required.***

### d) Techniques of changing position of the patient

#### i. Turning client to the lateral or prone position in bed

**Purpose:** the lateral positioning maybe needed when **placing a bed pan**, **changing bed linen** or **repositioning the client**.

| *Steps* | *Rationales* |
|---|---|
| **1. Preparation** | |
| *Determine the following:*<br>• *Required assistive materials and assistance from other health care personnel*<br>• *Encumbrances to movement (IV, Urinary catheter…)*<br>• *Medications the client is receiving* | • *Assistance would prevent the injury to both patient and care giver*<br>• *Certain medications may affect the client's abilities* |
| **2. Performance** | |
| • *Introduce self and explain the procedure to the client and why it is important* | • *Improves the relationship and trust and client may participate actively* |
| • *Perform hand hygiene* | • *Prevents transmitting infection* |
| • *Provide for client privacy* | • *Promotes the mutual understanding and the dignity of pain* |
| • *Position yourself and the client appropriately before moving the client* | |
| ○ *Adjust the head of the bed to a flat position or as low as the client can tolerate, Raise the bed to the appropriate personnel safety and lock the wheels on the bed* | • *This will promote the comfort of the client and the safety of the caregiver* |
| ○ *Move the client closer to the side of the bed opposite the side the client will face when turned* | • *This ensures that the client will be positioned safely in the center of the bed after turning* |
| ○ *While standing on the side of the bed nearest the client, place the client's near arm across the chest.* ***Abduct the client's far shoulder slightly*** *from the side of the body and externally rotate the shoulder (See the* ***Figure 23****)* | • *Pulling the one arm forward facilitates the turning motion. Pulling the other arm away from the body and externally rotating the shoulder prevents that arm from being caught beneath the client's body during the roll* |

| | |
|---|---|
| ○ *Place the client's near ankle and foot across the far ankle and foot.*<br>○ *The person on the side of the bed toward which the client will turn should be positioned directly in line with the client's waistline and as close to the bed as possible* | • *This facilitates the turning motion. Making these preparations on the side of the bed closest to the client helps prevent unnecessary reaching* |
| • *Roll the client to the lateral position. The second person(s) standing on the opposite side of the bed helps roll the client from the other side* | |
| ○ *Place one hand on the client's far hip and the other hand on the client's far shoulder*<br>○ *Position the client on his or her side with arms and legs positioned and supported properly* | • *position of the hands supports the client at the two heaviest parts of the body, providing greater control in movement during the roll* |
| • *Variation: Turning the Client to a Prone Position*<br>• *To turn a client to the prone position, follow the preceding steps, with two exceptions* | |
| • *Instead of abducting the far arm, keep the client's arm alongside the body for the client to roll over* | • *Keeping the arm alongside the body prevents it from being pinned under the client when the client is rolled* |
| • *Roll the client completely onto the abdomen* | • *It is essential to move the client as close as possible to the edge of the bed before the turn so that the client will be lying on the center of the bed after rolling* |
| • *Document all relevant information. Record:*<br>○ *Time and change of position moved from and position moved to*<br>○ *Any signs of pressure areas*<br>○ *Use of support devices*<br>○ *Ability of client to assist in moving and turning*<br>○ *Response of the client to moving and turning (e.g., anxiety, discomfort, dizziness)* | |

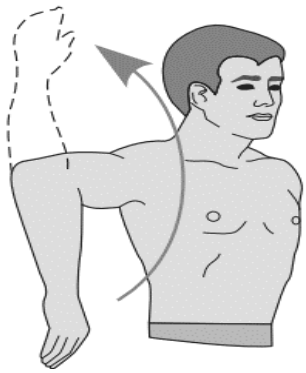


*Figure 23 External rotation of the shoulder prevents the arm from being caught beneath the client's body when the client is turned*

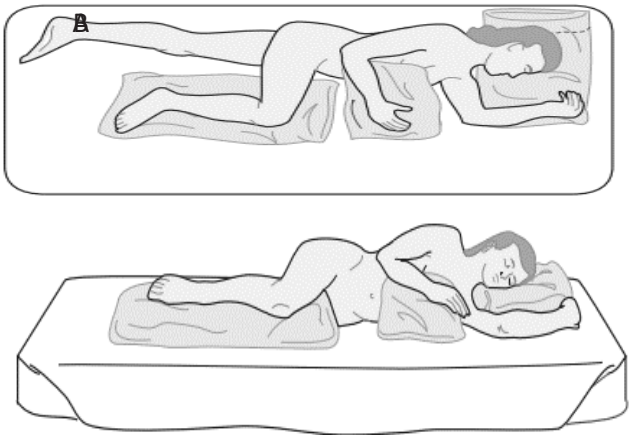



*Figure 24 Lateral position with pillows in place (Image A and B)*

### ii. Logrolling a client

**Purpose:** the purpose it to turn the client whose body must at all times be kept in a straight alignment. E.g. client with back surgery or spinal injury.

| Steps | Rationales |
|---|---|
| **3. Preparation** | |
| *Determine the following:*<br>- *Required assistive materials and assistance from other health care personnel (at least 2-3 additional people are needed)*<br>- *Encumbrances to movement (IV, Urinary catheter…)*<br>- *Medications the client is receiving* | - *Assistance would prevent the injury to both patient and care giver*<br>- *Certain medications may affect the client's abilities* |
| **4. Performance** | |
| - *Introduce self and explain the procedure to the client and why it is important* | - *Improves the relationship and trust and client may participate actively* |
| - *Perform hand hygiene* | - *Prevents transmitting infection* |
| - *Provide for client privacy* | - *Promotes the mutual understanding and the dignity of pain* |
| - *Position yourself and the client appropriately before moving the client* | |

| | |
|---|---|
| ○ *Place the client's arms across the chest* | - *Doing so ensures that they will not be injured or become trapped under the body when the body is turned* |
| - *Pull the client to the side of the bed:* | |
| ○ *Use a turn sheet to facilitate log-rolling. First, stand with another nurse on the same side of the bed. Assume a broad stance with one foot forward, and grasp half of the fan folded or rolled edge of the turn sheet or friction-reducing device. On a signal, pull the client toward both of you. (*Figure 25*)* | |
| ○ *One nurse counts: "One, two, three, go." Then, at the same time, all staff members pull the client to the side of the bed by shifting their weight to the back foot* | - *Moving the client in unison maintains the client's body alignment* |
| - *Move to the other side of the bed, and place supportive devices for the client when turned* | |
| ○ *Place a pillow where it will support the client's head after the turn* | - *The pillow prevents lateral flexion of the neck and ensures alignment of the cervical spine* |
| ○ *Place one or two pillows between the client's legs to support the upper leg when the client is turned* | - *This pillow prevents adduction of the upper leg and keeps the legs parallel and aligned* |
| - *Roll and position the client in proper alignment*<br>○ *Go to the other side farthest from the client, grasp the far edges of the turn sheet and roll the client towards you (see* Figure 26*)*<br>○ *One nurse count "one, two three, go." Then, at the same time, all nurses roll the client to a lateral position. The nurse behind the client helps turn the client and provides pillow supports.* | - *Two nurses; one on each side is to ensure the safety and good alignment of the patient* |

| | |
|---|---|
| - *Document all relevant information Record:*<br>  ○ *Time and change of position moved from and position moved to*<br>  ○ *Any signs of pressure areas*<br>  ○ *Use of support devices*<br>  ○ *Ability of client to assist in moving and turning*<br>  ○ *Response of the client to moving and turning (e.g., anxiety, discomfort, dizziness)* | |



***Figure 25 Using turn sheet, nurses pull the sheet with the client on it to the edge of the bed***



***Figure 26 The nurse on the right uses the far edge of the sheet to roll the client toward him. the nurse on the left remains behind the client and assist with turning***

## 2.5.2. Moving the patient

### a) Purpose of moving patient

Many clients may require some help in **transferring between bed and chair** or **wheelchair**, **wheelchair and the toilet**, and **from bed to stretcher** (mostly with clients who cannot sit on wheelchair. Whenever the client is able to move him/herself from bed to chair, wheelchair or stretcher encourage him to do so and provide the required and appropriate assistance.

### b) Techniques of moving the patient

#### i. Moving patient in bed (two nurses using turn sheet)

**Purpose**: To assist clients who have slid down in bed from the Fowler's position to move up in bed

| Steps | Rationales |
|---|---|
| **1. Preparation** | |
| *Determine the following:*<br>- *Required assistive materials and assistance from other health care personnel*<br>- *Encumbrances to movement (IV, Urinary catheter…)*<br>- *Medications the client is receiving* | - *Assistance would prevent the injury to both patient and care giver*<br>- *Certain medications may affect the client's abilities* |
| **2. *Performance*** | |
| - *Introduce self and explain the procedure to the client and why it is important* | - *Improves the relationship and trust and client may participate actively* |
| - *Perform hand hygiene* | - *Prevents transmitting infection* |
| - *Provide for client privacy* | - *Promotes the mutual understanding and the dignity of pain* |
| - *Place a draw sheet or a full sheet folded in half under the client, extending from the shoulders to the thighs. Each person rolls up or fanfolds the turn sheet close to the client's body on either side.*<br>- *Both individuals grasp the sheet close to the shoulders and buttocks of the client.* | - *This draws the weight closer to the nurse's center of gravity and increases the nurse's balance and stability, permitting a smoother movement* |
| - *Assist the client to flex the hips and knees. Place the client's arms across the chest.*<br>- *Ask the client to flex the neck during the move and keep the head off the bed surface* | - *This keeps them off the bed surface and minimizes friction during movement* |
| - *Position yourself and the client appropriately before moving the client* | |
| - *Face the direction of the movement, and then assume a broad stance with the foot nearest the bed behind the forward foot and weight on the forward foot. Lean your trunk forward from the hips. Flex the hips, knees, and ankles* | - *Facing the direction prevent spinal twisting* |

| | |
|---|---|
| - *Tighten your gluteal, abdominal, leg, and arm muscles and rock from the back leg to the front leg and back again. Then, shift your weight to the front leg as the client pushes with the heels so that the client moves toward the head of the bed* | - *Tightening gluteal, abdominal, leg and arm muscle help to prepare them for action and prevent injury* |
| - *Ensure client comfort and*<br>- *Document all relevant information. Record:*<br>  ○ *Time and change of position moved from and position moved to*<br>  ○ *Any signs of pressure areas*<br>  ○ *Use of support devices*<br>  ○ *Ability of client to assist in moving and turning*<br>- *Response of the client to moving and turning (e.g., anxiety, discomfort, dizziness* | |

**ii. Moving the patient from bed to chair or wheel chair (one nurse and two nurses)**

**Purpose:** clients who cannot move by themselves but can sit may need to be transferred from bed to chair, or wheelchair due to different purpose: changing position, ambulation, or transfer to operating room.

| Steps | Rationale |
|---|---|
| **1. Preparation** | |
| **Assessment**<br>*Before transferring client, assess the following: Client body size, Activity tolerance, Muscle strength, joint mobility, presence of paralysis, degree of comfort, orthostatic hypotension and the ability of the client*<br>***Materials***<br>- *Appropriate clothing*<br>- *Slippers or other appropriate open shoes*<br>- *Chair, wheelchair (depending the purpose)* | |
| **2. Performance** | |
| - *Introduce self and explain the procedure to the client and why it is important* | - *Improves the relationship and trust and client may participate actively* |
| - *Perform hand hygiene* | - *Prevents transmitting infection* |
| - *Provide for client privacy* | - *Promotes the mutual understanding and the dignity of pain* |

| | |
|---|---|
| - *Position the equipment appropriately.*<br>○ *Lower the bed to its lowest position so that the client's feet will rest flat on the floor. Lock the wheels of the bed.*<br>○ *Place the wheelchair parallel to the bed and as close to the bed as possible. Put the wheelchair on the side of the bed that allows the client to move toward his or her stronger side (see* Figure 27*). Lock the wheels of the wheelchair and raise the footplate.* | - *Lowering the bed helps the client's feet to reach on the floor*<br>- *Locking the wheels to prevent fall* |
| - *Prepare and assess the client.*<br>○ *Assist the client to a sitting position on the side of the bed*<br>○ *Assess the client for orthostatic hypotension before moving the client from the bed*<br>○ *Assist the client in putting on a bathrobe and slippers or shoes* | |
| - *Give explicit instructions to the client and Ask the client to:* | |
| ○ *Move forward and sit on the edge of the bed (or surface on which the client is sitting) with feet placed flat on the floor* | - *This brings the client's center of gravity closer to the nurse's* |
| ○ *Lean forward slightly from the hips* | - *This brings the client's center of gravity more directly over the base of support and positions the head and trunk in the direction of the movement* |
| ○ *Place the foot of the stronger leg beneath the edge of the bed (or sitting surface) and put the other foot forward* | - *In this way, the client can use the stronger leg muscles to stand and power the movement. A broader base of support makes the client more stable during the transfer* |
| ○ *Place the client's hands on the bed surface (or available stable area) so that the client can push while standing* | - *This provides additional force for the movement and reduces the potential for strain on the nurse's back* |
| ○ *The client should not grasp your neck for support* | - *Doing so can injure the nurse.* |

| | |
|---|---|
| - *Position yourself correctly: stand in front of the client on her weaker side, hold him in the waist. Ensure you are stable by leaning your trunk forward, flexing your hips, knees, and ankles. Assume broad stance and mirror the client's feet while standing.* | - *This helps prevent loss of balance during the transfer.* |
| - *Assist the client to stand, and then move together toward the wheelchair or sitting area to which you wish to transfer the client. Ensure wheelchair brakes are on.* | - *To ensure the safety of the client while sitting* |
| - *Assist the client to sit* | |
| ○ *Assist the client to have back up to the wheel chair (or the desired sitting area) and place legs against the seat* | - *Having the client place the legs against the wheelchair seat minimizes the risk of the client falling when sitting down* |
| ○ *Assist the client reach back and hold the arms of wheel chair. While standing in front of the client with one foot forward, another back (see Figure 28)and tightening your muscles (gluteal, abdominal, leg and arms muscles), help the client to sit down bending your knees and hips and lowering the client onto the wheel chair.* | - *Tightening muscles, ensure the use of muscle groups and preventing injuries to the nurses. Standing with one foot in front another back provides balance.* |
| - *Ensure client safety.*<br>○ *Ask the client to push back into the wheelchair seat* | - *Sitting well back on the seat provides a broader base of support and greater stability and minimizes the risk of falling from the wheelchair* |

| | |
|---|---|
| **Variation: Transferring with Two Nurses**<br>- *Even if a client is able to partially bear weight and is cooperative, it still may be safer to transfer a client with the assistance of two nurses. If so, you should position yourselves on both sides of the client, facing the same direction as the client. Flex your hips, knees, and ankles. Grasp the client's waist or transfer belt (if any) with the hand closest to the client, and with the other hand support the client's elbow.* | - *Two nurses assisting patient may be safer than one nurse.* |
| - *Document relevant information:*<br>o *Client's ability to bear weight and pivot*<br>o *Number of staff needed for transfer and safety*<br>o *measures/precautions used*<br>o *Length of time up in chair*<br>o *Client response to transfer and being up in chair or wheelchair* | |

### iii. Moving the client from bed to stretcher

**Purpose:** the stretcher is used to transfer the client in supine position from one location to another (post-operated patients, patient with spinal injuries etc.)

| Steps | Rationale |
|---|---|
| **1. Preparation** | |
| **Assessment**<br>Before transferring client, assess the following: ***Client body size and weight, Activity tolerance, Muscle strength, joint mobility, presence of paralysis, degree of comfort, orthostatic hypotension, the ability of the client*** *and* ***the number of assistant required*** | |
| **Materials**<br>- Appropriate clothing<br>- Stretcher<br>- Assistive devices as required | |
| **2. Performance** | |

| | |
|---|---|
| *Introduce self and explain the procedure to the client and why it is important* | *Improves the relationship and trust and client may participate actively* |
| *Perform hand hygiene* | *Prevents transmitting infection* |
| *Provide for client privacy* | *Promotes the mutual understanding and the dignity of pain* |
| - *Adjust the client's bed in preparation for the transfer.* | |
| ○ *Lower the head of the bed until it is flat or as low as the client can tolerate. Place the friction-reducing device (if not available, use a bedsheet) under the client.* | - *Lowering the bed as flat as the client can tolerate will prevent injuring the client while turning him* |
| ○ *Raise the bed so that it is slightly higher than the surface of the stretcher* | - *It is easier for the client to move down a slant.* |
| ○ *Ensure the wheels of the bed are locked and place the stretcher parallel to the bed and lock the brakes.* | - *Locking brakes stabilize the bed during transfer* |
| - *Transfer the client to the stretcher* | |
| ○ *If client can transfer independently, encourage him or her to do so and stand by safety* | - *This promotes the client independence* |
| ○ *If the client is partially able or not able to transfer;* ***one care giver (nurse),*** *stands on the bed's side between client's shoulder and hip,* ***the second*** *and* ***the third*** *on the side of the stretcher (one between shoulder and hip and other between hips and lower leg) and all should stand in a walking stance* | - *This ensures the safety of the client and provide the balance to the caregivers while lifting the client.* |
| ○ *Ask the client to flex the neck during the move, if possible, and place the arms across the chest* | - *This prevents injury to those body parts* |

| | |
|---|---|
| ○ *At a signal given by one of the nurses, have the nurses standing on the stretcher side of the bed pull the friction reducing sheet. At the same time, the nurse (or nurses) on the other side push, transferring the patient's weight toward the transfer board, and pushing the patient from the bed to the stretcher* | |
| ○ *Once the patient is transferred to the stretcher, remove the transfer board, and secure the patient until the side rails are raised. Raise the side rails. To ensure the patient's comfort, cover the patient with blanket and remove the bath blanket from underneath. Leave the friction-reducing sheet in place for the return transfer* | - *Because the stretcher is high and narrow, the client is in danger of falling unless these safety precautions are taken* |
| - *Document relevant information:*<br>○ *Equipment used*<br>○ *Number of people needed for transfer and safety measures/precautions used*<br>○ *Destination if reason for transfer is transport from one location to another* | |
| ***Completion of the procedure*** | |
| ***Patient*** | |
| *Arrange personal effects and objects of the patient within reach.* | |
| *Thank the patient for his collaboration* | |
| ***Nurse*** | |
| *Education/ Care-related guidance.* | |
| *Wash hands* | |
| *Make a verbal or written report of Care provided* | |

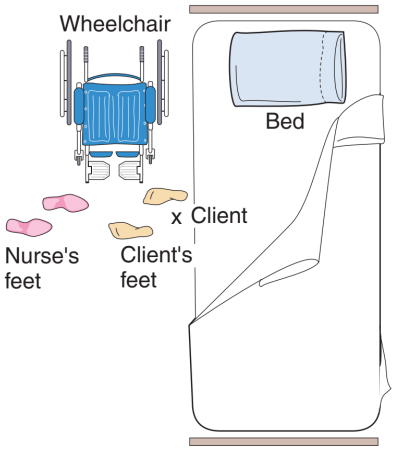



*Figure 27 The wheelchair is placed parallel to the bed and as close to the bed as possible. note that placement of the nurse's feet mirrors that of the client's feet*



*Figure 28 Helping the client to sit in the wheelchair*

## BOX 2.5.

Positioning, moving, and transferring clients reduce the potential for disuse syndrome. Disuse syndrome is a term for the physical decline and other problems that arise when the human body is deprived of physical activity

## Self-assessment 2.5.

Mr. MUNYAKAYANZA, is hospitalized altered patient who is at risk of developing bedsores, nurse decided to change position every two hours. Mr. MUNYAKAYANZA is not breathing well, and his abdomen is distended.

1) What are the possible positions for Mr. MUNYAKAYANZA and explain why?
2) What are the contraindicated positions for Mr. MUNYAKAYANZA and explain why?

After two weeks, Mr. MUNYAKAYANZA condition is being improved, he has requested a nurse to help him for going outside on sunlight. However, he can turn in the bed and sit but cannot walk.

3) How a nurse will a nurse help Mr. MUNYAKAYANZA to move to the sunlight and explain why?
4) What are indications and contraindications of the chosen technique?

## 2.6. Application of local heat and cold

**Learning activity 2.6.**

Mr. NDAYISABA, an athletes who sustained a sprain (sprain: twist of the ligaments of (an ankle, wrist, or other joint) violently that causes pain and swelling) while running, the nurse AKAZUBA wanted to calm down the pain and to prevent the progress of swelling by applying ice bags to the area. The ice bag will cause vasoconstriction.

1) How do you think the vasoconstriction can lead to the reduction of swelling?
2) What do you think are other alternatives to use in spite of ice bag?

### 2.6.1. Definition of local heat and cold application

**Heat application:** is an application of warmed object, above body temperature, on a body part to increase blood flow or provide relief of pain. While **Cold application** refers to the placement of cold object cooler than skin, on the surface of the skin. Heat and cold can be applied to the body in both **dry and moist** forms. Heat or cold can be applied **generally** or **locally**. **General application** of heat or cold is used when a very high or very low body temperature puts the patient's health at risk or makes the patient very uncomfortable. **Local application** of heat or cold is very commonly used, and there are many different therapies. Common uses are to treat **sprains muscle pulls**, **arthritic joints**, or **local infections.**

### 2.6.2. Purpose of Local heat and cold application

Heat and cold stimuli create different physiological responses. The choice of heat or cold therapy depends on local responses desired for wound healing as shown in the below table.

| Physiological response | The goal of Heat or cold application |
|---|---|
| **1. Heat** | |
| Vasodilation | Improves blood flow to injured body part; promotes delivery of nutrients and removal of wastes; lessens venous congestion in injured tissues. |
| Reduced blood viscosity | Improves delivery of leukocytes and antibiotics to wound site |
| Reduced muscle tension | Promotes muscle relaxation and reduces pain from spasm or stiffness |
| Increased tissue metabolism | Increases blood flow; provides local warmth |

| | |
|---|---|
| Increased capillary permeability | Promotes movement of waste products and nutrients |
| **2.** Cold | |
| Vasoconstriction | Reduces blood flow to injured body part, preventing oedema formation; reduces inflammation |
| Local anaesthesia | Reduces localized pain |
| Reduced cell metabolism | Reduces oxygen needs of tissues |
| Increased blood viscosity | Promotes blood coagulation at injury site |
| Decreased muscle tension | Relieves pain |

## 2.6.3. Principles of heat or cold applications

The following are principles of heat and cold applications:

**a) Heat application principles**

- Measures the temperature of moist heat applications by putting at the back of your palm.
- Do not apply very hot application, because it may cause burn
- Measure the patient temperature; Lower temperature is used for those at risk, if it is too hot for the patient add cold water.
- Cover dry heat applications with cloth/ towel before applying them and be sure that you are applying at the right location
- Do not let the person increase the temperature of the application.
- Carefully watch the time. Heat should not be applied for more than 30 minutes4
- Expose only the body part where the cold is to be applied.

**b) Cold application**

- Measure the temperature of moist cold applications. It should not be freezing cold
- Very cold applications can damage tissue
- Be sure about the exact location for the cold application
- Cover dry cold application with cotton or soft cloth before applying them.
- Carefully watch the time. Cold should not be applied for more than 30 minutes.
- Observe the skin for any problem, discontinue immediately if patient experience: Pain, numbness or burning, Excessive redness, Blisters, Pale, white or gray skin, Blue Patch and Shivering.

## 2.6.4. Indication and contraindication of local heat and cold application

| a. Indications | | |
|---|---|---|
| **Indication** | **Heat effect** | **Cold effect** |
| **Pain** | Relieves pain, possibly by promoting muscle relaxation, increasing circulation, and promoting psychological<br><br>Promotes relaxation and a feeling of comfort.<br><br>Acts as a counterirritant. | Decreases pain by slowing nerve conduction rate and blocking nerve impulses; produces numbness, acts as a counterirritant, increases pain threshold. |
| **Inflammation** | Increases blood flow, softens exudates. | Vasoconstriction decreases capillary permeability, decreases blood flow, slows cellular metabolism. |
| **Muscle spasm** | Relaxes muscles and increases their contractility. | Relaxes muscles and decreases muscle contractility |
| **Traumatic injury** | | Decreases bleeding by constricting blood vessels; decreases edema by reducing capillary permeability |
| **Contracture** | Reduces contracture and increases joint range of motion by allowing greater distention of muscles and connective tissue. | |
| **Joint stiffness** | Reduces joint stiffness by decreasing viscosity of synovial fluid and increasing tissue dispensability | |
| **b. Contraindications** | | |
| **Contraindications** | **Effect of heat** | **Effect of cold** |

| | | |
|---|---|---|
| *Very young or older patients* | Thinner skin layers in children increase risk of burns.<br><br>Older patients have reduced sensitivity to pain | Older patients have reduced sensitivity to pain |
| Neurosensory impairment | Damaging of the tissues andrisk for burns | Cause tissue injury |
| Impaired mental status | Need monitoring and Supervision during applications to ensure safe therapy. | Need monitoring and Supervision during applications to ensure safe therapy. |
| Impaired circulation | Risk for tissue damage | Can further impair nourishment of the tissues and cause tissue damage. In clients with Raynaud's disease, cold increases arterial spasm. |
| Open wounds | More sensibility to heat | Can increase tissue damage by decreasing blood flow to an open wound. |
| The first 24 hours after traumatic injury | Increases bleeding and swelling. | |
| Active hemorrhage | Causes vasodilation and increases bleeding. | |
| No inflammatory edema | Heat increases capillary permeability and edema. | |
| Skin disorder that causes redness or blisters | Can burn or cause further damage to the skin. | |
| Allergy or hypersensitivity to cold | | An allergy to cold that may be manifested by an inflammatory response, for example, erythema, hives, swelling, joint pain, and occasional muscle spasm. Some react with a sudden increase in blood pressure, which can be hazardous if the person is hypersensitive. |

## 2.6.5. Techniques of local heat and cold application

Heat or cold should be applied after assessing the patient's physical condition for signs of potential intolerance to heat and cold. First observe the area to be treated. Assess the skin, looking for any open areas such as alterations in skin integrity (e.g., abrasions, open wounds, edema, bruising, and bleeding, or localized areas of inflammation) that increase the patient's risk of injury. The health care provider commonly orders heat and cold applications for traumatized areas, the baseline skin assessment provides a guide for evaluating skin changes that can occur during therapy. Include in your assessment the neurological system for sensation (to understand if the patient senses extremes of cold or heat) and the patient's mental status to be sure that he or she can correctly communicate any issues with the hot or cold therapy.

a) Heat application

| Steps of the procedure | Rationale |
|---|---|
| **1. Preparation** | |
| ***Nurse*** | |
| *Appear professionally with Clean uniform,*<br>*Wear closed shoes*<br>*Clean and short nails ,*<br>*Watch jewels and rings removed*<br>*Wash_hands* | *To prevent infection* |
| ***Patient*** | |
| *Identify the patient*<br>*Introduce to the patient and ask the consent*<br>*Explain the procedure* | *Ensure good collaboration* |
| ***Equipment*** | |
| - *Tray,*<br>- *Folded screen* | |
| ***Dry heat*** | |
| - *Hot water bag*<br>- *Kettle with cover/ or any other material that can kook the water.*<br>- *Water container.*<br>- *Hot water bag cover / small towel to cover.*<br>- *Vaseline or oil for applying on the skin in case there is redness*<br>- *Gloves* | |

| | |
|---|---|
| ***Moist Heat*** | |
| - *Basin or tub.*<br>- *Small towel.*<br>- *Bath towel*<br>- *Ties, tape, or rolled gauze.*<br>- *Mackintosh* | |
| **2. Performance** | |
| ***Dray Heat*** | |
| - *Closed the door and/ or put folded screen* | - *To apply privacy* |
| - *Keep water boiling in a kettle with cover/ or another material that cook water* | - *To make water at appropriate temperature* |
| - *Pour some hot water in a bottle and empty it* | |
| - *Pour water to fill the ½ to 2/3 of the capacity of hot water bottle.* | |
| - *Expel the air by placing the bag over a flat surface. Cork it tightly.* | |
| - *Dry the outside of the bottle and hold the bottle upside down for checking leakage.* | - *To prevent wetting the patient environment* |
| - *Apply folded screen* | - *For privacy* |
| - *Wear Gloves* | |
| - *Cover the hot water bottle with towel and apply the hot water bottle to the affected area.* | - *To prevent injury may be resulted to direct contact of bottle and skin,* |
| - *Keep the bottle in place for about 20 – 30 minutes; change its position as necessary* | - *To keep heat at maximum level, and to prevent injury* |
| - *Inspect the area occasionally for redness, pain and swelling.*<br>- *Apply Vaseline or oil on the skin in case there is redness* | - *To prevent injury* |
| ***Moist Heat*** | |
| - *Wear gloves* | - *To prevent infection* |
| - *Place the plastic sheet under the body part.* | - *To protect patient bed from wetting* |
| - *Fill the basin one-half to two - thirds full with hot water.* | - *Heat resource* |
| - *Check the water is not too hot.* | - *To prevent injury* |
| - *Place the compress in the water* | - *To warm the compress* |

| | |
|---|---|
| - *Squeeze out the compress* | - *To reduce the amount of water in compress for preventing injury* |
| - *Apply the compress quickly till it is warm* | - *To attend the purpose of heat application* |
| ***Finishing*** | |
| - *Thank the patient for collaboration* | - *Sense of good collaboration* |
| - *Discard used equipment* | - *To prevent infection* |
| - *Wash hands* | - *To prevent infection* |
| - *Document* | - *Keeping record* |

**b. Cold application**

| Steps of the procedure | Rationale |
|---|---|
| **3. Preparation** | |
| ***Nurse*** | |
| *Appear professionally with Clean uniform,*<br>*Wear closed shoes*<br>*Clean and short nails ,*<br>*Watch jewels and rings removed*<br>*Wash_hands* | *To prevent infection* |
| ***Patient*** | |
| *Identify the patient*<br>*Introduce to the patient and ask the consent*<br>*Explain the procedure* | *Ensure good collaboration* |
| ***Equipment*** | |
| **General equipment** | |
| - *Tray or trolley*<br>- *Folded screen*<br>- *Gloves* | - *Required materials for dry cold application* |
| ***Dry cold*** | |
| - *Ice bags or ice collar.*<br>- *Crushed ice.*<br>- *Towel or cotton cloth* | |
| ***Moist cold*** | |

| | |
|---|---|
| - *Large basin Contains of ice.*<br>- *Small basin Contain with cold water.*<br>- *Gauze squares, wash cloth, or small towels.*<br>- *Waterproof pad/ Plastic sheet.*<br>- *A towel*<br>- *Mackintosh* | |
| **4. *Performance*** | |
| ***Dry cold application*** | |
| - *Closed the door and/ or put folded screen* | - *For privacy* |
| - *Fill the ice bag with water. Put in the stopper, turn the bag upside down to check for leaks.* | |
| - *Remove excess air, bend, twist, or squeeze the bag, or press it against a flat area.* | - *To prevent break of ice bag* |
| - *Dry the bag with paper towels.* | - *To prevent wetting of patient environment* |
| - *Apply the ice bag to the surface area* | |
| - *Check the skin after every 10 minutes.* | - *To prevent injury* |
| - *Check for redness and complaints of pain, discomfort, or numbness. Remove the bag if any occur.* | - *To prevent injury* |
| - *Remove the bag after 30 minutes.* | |
| ***Moist cold application*** | |
| - *Closed the door and/ or put folded screen* | - *To apply privacy* |
| - *Place the small basin with cold water into the large basin with ice.* | |
| - *Place the compress/cloth/gauze into the cold water.* | |
| - *Place the bed protector under the affected body surface and expose the area* | - *To prevent wetting the patient environment and maintain comfort* |
| - *Squeeze out a compress so water is not dripping.* | - *To maintain comfort and hygiene* |
| - *Apply the compress to the surface and note the time* | |
| - *Check for redness and complaints of pain, discomfort, or numbness. Remove the compress* | - *To prevent injury, and maintain patient comfort* |

| | |
|---|---|
| - *Change the compress when it warms. Usually compress is changed every 5 minutes.* | - *To prevent injury* |
| - *Remove the compress after 20 minutes.* | - *To prevent injury* |
| - *Pat dry the area with towel.* | - *To maintain patient comfort and keep body hygiene* |
| **Finishing** | |
| - *Thank the patient for collaboration* | - *Sense of good collaboration* |
| - *Discard used equipment* | - *To prevent infection* |
| - *Wash hands* | - *To prevent infection* |
| - *Document* | - *Keeping record* |

**Self-assessment 2.6.**

1) Explain the indications and contraindications of the heat application
2) Explain the relationship between the following terms
   a) Vasoconstriction and swelling
   b) Vasodilatation and inflammation

## 2.7. Assisting the patient to eliminate

**Learning activity 2.7.**

Regular elimination of body waste products is essential for normal body functioning; the body eliminates its waste mainly through the urinary and the gastro-intestinal systems. The metabolic reactions and other homoeostatic processes lead to wastes which should be evacuated and if not eliminated, they can alter the homeostasis lead to body malfunctions. Patients who are not able eliminate independently or not able to control it (for example in case of incontinence) should be assisted.

1) With reference to the above text and the knowledge from biology, explain different ways of human body waste elimination
2) Think about possible consequences that may arise if the gastro-intestinal system elimination is disturbed
3) Think about the patient with urinary incontinence, what could be possible the consequences

## 2.7.1. Introduction

### a) Bowel elimination

The digestive system has many functions; ingestion, mastication, deglutition, digestion, absorption and **elimination**. Elimination of the waste products of **digestion** is the passage of fecal material that remains in the colon following the digestion and absorption of nutrients and fluids which are required for maintenance of metabolic health. The excreted waste products are referred to as **faces** or **stool**. Normal feces are characterized by: brown color, soft formed consistency, tubular shape as in the rectum, tolerable odor depending on diet and normal fecal content. The normal bowel elimination frequency is 1-3 times a day to 3 times a week.

Many factors affect defecation such as different stages of life (new-born, infant, toddler, preschool children and adolescent adult and elder adult), Diet, fluid intake and intolerance, physical activity and psychological factors such as anxiety and depression. Physical disability, certain medications, gastrointestinal infection and disease processes can also affect defection. Nurses are frequently involved in assisting people with elimination problems. These problems can be embarrassing to the individual and can cause considerable discomfort.

Most problems of elimination are: **Constipation** which is defined as fewer than three bowel movements per week. This infers the passage of dry, hard stool or the passage of no stool. **Fecal** impaction is a mass or collection of hardened faces in the rectum. Impaction results from prolonged retention and accumulation of fecal material. **Diarrhea** is a problem of elimination that refers to the passage of liquid faces and an increased frequency of defection.

**Encopresis** also called **fecal incontinence** is an elimination problem that refers to the loss of voluntary ability to control fecal and gaseous discharges through the anal sphincter. **Flatulence** is an elimination problem that consist of presence of excessive gas in the intestines and leads to stretching and inflation of the intestines (intestinal distention) If excessive gas cannot be expelled through the anus, it may be necessary to insert a rectal tube to remove it.

### b) Urinary Elimination

The urinary tract system is made of kidney, ureters, bladder and urethra; the pathway trough which urine flows and is eliminated from the body. Urinary elimination depends on the effective functioning of the upper and lower urinary tract. **Micturition** or **voiding**, or **urination** refer to the process of emptying the urinary bladder. Urine collects in the bladder until pressure stimulates special sensory nerve endings in the bladder wall called stretch receptors.

They are many factors that affect the volume and characteristics of the urine produced and the manner in which it is excreted such as: developmental factors(infant, preschooler, school age children, adult, older adult), psychosocial factors that stimulate micturition reflex includes privacy, normal position, sufficient time, occasional running water. Fluids and food intake affect voiding. Other factors that affect voiding are medication, muscle tone, pathological conditions that affect urinary tract system and surgical and diagnostic procedures.

Altered urine production is characterized by **Polyuria** which is the production of abnormally large amounts of urines by kidneys, often several liters more than the person's usual daily output. Oliguria and Anuria are used to describe urinary output. **Oliguria** is low urine output usually less than 500ml a day. **Anuria** refers to a lack of urine production.

Altered urinary elimination is characterized by: urinary frequency that refers to voiding at frequent intervals; that is more than six times per day. **Nocturia** is a condition where a person wakes more than once during the night to void. **Urgency** is the sudden strong desire to void. There may or may not by a great deal of urine in the bladder, but person feels a need to void immediately.

**Dysuria** is altered urinary elimination characterized by voiding that is either painful or difficult. Enuresis is involuntary urination in children beyond age when voluntary bladder control is normally acquires usual by 5 years of age. **Urinary incontinence** is involuntary urination. **Urinary retention** is when emptying the bladder is impaired, urines accumulates and the bladder becomes over distended.

**Neurogenic bladder** is an altered urinary elimination characterized by impaired neurological function that interfere with the normal mechanisms of urine elimination resulting in lack of perceiving bladder fullness and inability to control urinary sphincters. The bladder may become flaccid and distended, or spastic, with frequent involuntary urination.

## 2.7.2. Use of urinal

### a) Indications and contraindications

In case patient cannot move of from the bed due to different conditions such as lower limb fracture, or other conditions preventing him to move from the bed; ***urinal,*** a device that help people to urinate while in bed, can be used to collect urine while patient on bed**.** Urinals are indicated to people who have conscious control of micturition and movement of their arms to urinate without the help of nurse. However, it is contraindicated to people who are unconscious, not having control on micturition and who have incontinence.



*Figure 29 Male urinal*

**b) Techniques of urinal elimination**

| Steps of the procedure | Rationale |
|---|---|
| **1. Preparation** | |
| **Student/Nurse**<br>- Should appear professional (in full and clean uniform) with ID Card<br>- Hair tied back<br>- Remove watch, jewels, and Rings<br>- Wear closed shoes<br>- Hand washing<br>**Patient preparation:**<br>- Identification of the patient<br>- Self-presentation to the patient<br>- Physical and psychological patient preparation<br>- Assess levels of comprehension and collaboration of the patient<br>- Position the patient in a comfortable position | |
| **Equipment preparation**<br>- urinal<br>- Protective Clean gloves<br>- Toilet paper<br>- Material for personal hygiene if necessary<br>- Receptacle for waste disposal<br>- Screen<br>- Linens such as privacy blankets<br>- Water proof protector/Macintosh | Organization facilitates accurate skill performance |

| 2. Performance | |
|---|---|
| - *Bring urinal and other necessary equipment to the bedside stand or over bed table* | - *For a better organization* |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear on gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To protect the client's privacy.* |
| - *Assist the patient to an appropriate position, as necessary: standing at the bedside, lying on one side or back, sitting in bed with the head elevated, or sitting on the side of the bed.* | - *To ensure comfortable position* |
| - *If the patient remains in the bed, fold the linens just enough to allow for proper placement of the urinal*<br>- *Put the individual sheet/cover or water proof protector* | - *To protect the linens for being soiled* |
| - *If the patient is not standing, have him spread his legs slightly. Hold the urinal close to the penis and position the penis completely within the urinal. Keep the bottom of the urinal lower than the penis. If necessary, assist the patient to hold the urinal in place* | |
| - *Cover the patient with the bed linens* | - *To ensure privacy* |
| - *Place toilet tissue within easy reach. Have a receptacle, such as plastic trash bag, handy for discarding tissue. Ensure the bed is in the lowest position. Leave patient if it is safe to do so. Use side rails appropriately* | - *To ensure the patient safety and prevent bed form wetting* |
| - *Pull back the patient's bed linens just enough to remove the urinal. Remove the urinal. Cover the open end of the urinal. Place on the bedside chair. If patient needs assistance with hygiene, wrap tissue around the hand several times, and wipe patient clean or use water and wash cloth depending on patient. Place tissue in receptacle* | - *To ensure Patient safety, and comfort* |

| | |
|---|---|
| - *Return the patient to a comfortable position. Make sure the linens under the patient are dry. Remove your gloves and ensure that the patient is covered* | - *To ensure the patient comfort* |
| - *Offer patient supplies to wash and dry his hands, assisting as necessary* | - *To ensure hand hygiene* |
| - *Put on clean gloves. Observe the characteristics of urine, measuring urine in graduated container as necessary, Empty and clean the urinal, and return it to patient for future use. Discard trash receptacle with used toilet paper per facility policy* | - *To measure urine output* |
| **3. *Completion of the procedure*** | |
| ***Patient***<br>- *Arrange personal effects and objects of the patient within their range*<br>- *Thank the patient for his/her collaboration* | - *To provide for comfort and safety.*<br>- *To prevent the spread of infection* |
| ***Material***<br>- *Put material in order* | - *To maintain standard precaution* |
| ***Nurse***<br>- *Remove gloves and perform hand hygiene*<br>- *Document the procedure*<br>- *Report any findings to the senior staff* | - *To provide continuity of care* |

## 2.7.3. Use of bed pan

### a) Definition of bed pan

A bed pan is a container used in hospital settings to assist bed ridden patient for urination and defecation. A bed may be made in metal Stan steel or plastic material. They are two different types of bed pans: regular and fracture




***Figure 30 Bed pans (A: Stan steel; B: Plastic; C: Fracture and D: Regular or standard bed pan)***

**Indications of the bed pan use**

Same as the urinal, bed pan can be used when client cannot walk to the bathroom; *patient with hip and lower extremity fracture, debilitating illness or profound fatigue, high fall risk and increased injury potential, obstetrical and gynecological and patient with fracture and patient who have had surgery* that make them unable to move.

**a) Techniques of bed pan elimination**

| **Steps of the procedure** | **Rationale** |
|---|---|
| **1. Preparation** | |
| ***Nurse*** | |
| - *Should appear professional (in full and clean uniform) with ID Card*<br>- *Hair tied back*<br>- *Remove watch, jewels, and Rings*<br>- *Wear closed shoes*<br>- *Hand washing* | |

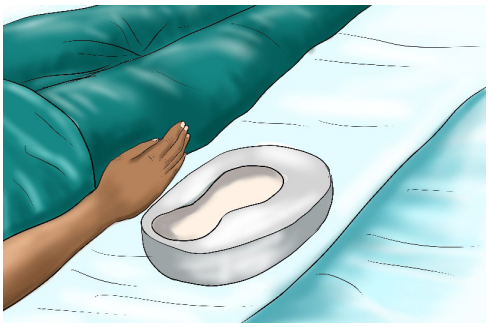
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|---|---|
| ***Patient preparation:*** | |
| - *Identification of the patient*<br>- *Self-presentation to the patient*<br>- *Physical and psychological patient preparation*<br>- *Assess levels of comprehension and collaboration of the patient*<br>- *Position the patient in a comfortable position* | |
| ***Equipment preparation*** | |
| - *Bed pan*<br>- *Protective Clean gloves*<br>- *Toilet paper*<br>- *Material for personal hygiene if necessary*<br>- *Receptacle for waste disposal*<br>- *Screen*<br>- *Linens such as privacy blankets*<br>- *Water proof protector/Macintosh* | *Organization facilitates accurate skill Performance* |
| **2. Performance** | |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear on gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To protect the client's privacy.* |
| - *Put the individual sheet/cover or water proof protector* | - *To protect the linens for being soiled* |
| - *Fill the bedpan with just enough water to cover the bottom or piece of toilet paper( if no specimen is required* | - *To easy the cleanup process* |
| - *Position the patient in the correct position, taking into account his status: dorsal decubitus, bent knees, or sitting in the bed.* | - *To make patient comfortable* |
| - *Assist the patient to remove the cloths* | - *To easy the process of placing bedpan* |
| ***Placing the bed pan***<br>- *Place the bedpan next to the patient.* | |
| ***If the patient can lift their hips:*** | |

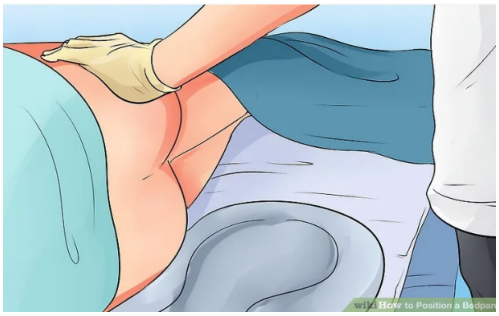
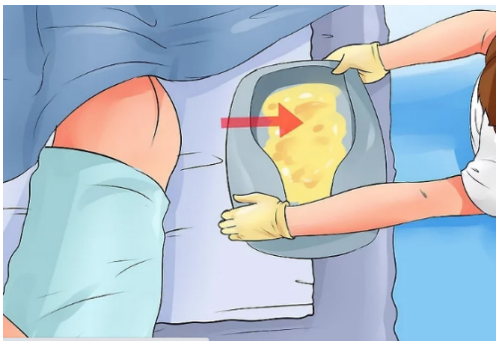
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|---|---|
| - *Instruct the patient to raise their hip**s** **and** Support her or him by placing your hand beneath their lower back.* | - *To ensure the patient comfort and safety* |
| - *Slide the bedpan underneath the buttocks and instruct the patient to ease down onto it, using your support hand to guide them.* | - *To ensure safe placement of bedpan by respecting their condition* |
| ***If the patient cannot lift their hips:*** | |
| - *Gently turn the patient to the side facing away from you and place the bed pan under the patient's buttocks by sliding the bedpan beneath the patient's buttocks with the curved edge of the bedpan facing the back* | - *For proper placement and avoiding soling the bed* |
| - *Slide the bedpan directly next to the patient's buttocks. Keep the open end pointing toward the patient's feet* | |
| - *Gently roll the patient back onto her back and over the bedpan. Hold the bedpan close to the patient's body as you work* | |
| - *Verify proper bed pan placement by asking patient to spread their legs slightly* | |
| - *Make sure that the patient and bedpan are well placed.* | - *Help the proper use and avoid soiling the sheets* |
| - *Cover the patient and leave him alone if his condition allows it.*<br>- *Instruct the patient to call you if he finish.*<br>- *Avail a toilet paper if the patient is able to use it independently.* | - *To ensure patient privacy during defecation* |
| ***Removing the bedpan*** | |
| – Return to patient as soon as he/she call you and If the patient didn't call within 5 to 10 minutes check on their progress and continue checking every few minutes | – To ensure monitoring of patients |
| ***If the patient can lift their hips:*** | |
| – Ask the patient to bend their knees. | |

| | |
|---|---|
| – Instruct the patient to raise their lower half. Place your hand beneath the lower back to offer gentle support and Slide the bedpan from its current position and allow the patient to rest | – For better placement of the bed pan |
| – ***Clean the patient.*** Determine whether or not the patient needs assistance with getting clean. If not, you clean the patient. | |
| ***If the patient cannot lift their hip*** | |
| – Hold the bedpan flat on the bed so that it does not spill.<br>– Simultaneously roll the patient to the side facing away from you.<br>– Slide the bedpan from its current position and allow the patient to rest.<br>– Cover the bedpan with a towel and set it aside for the time being. | |
| – If patient needs assistance with hygiene, wrap tissue around the hand several times, and wipe patient clean, using one stroke from the pubic area toward the anal area.<br>– Discard tissue, and use more until patient is clean. Place patient on his or her side and spread buttocks to clean anal area. | |
| – Remove your gloves and ensure that the patient is covered | |
| **3. Completion of the procedure** | |
| ***Patient*** | |
| – Return the patient to a comfortable position | – To provide for comfort and safety |
| – Make sure the linens under the patient are dry. | – For the patient comfort and infection prevention |
| – Offer patient supplies to wash and dry his or her hands, assisting as necessary<br>– Remove gloves and perform hand hygiene. Thank the patient for his collaboration. | – To prevent the spread of infection |

| | |
|---|---|
| ***Material*** | |
| - *Replace all equipment in proper place*<br>- *Discard dirt properly and safety*<br>- *Empty and clean the bedpan. Discard trash receptacle with used toilet paper* | – To maintain standard precaution |
| ***Nurse***<br><br>- *Remove gloves and perform hand hygiene*<br>- *Document the procedure*<br>- *Report any findings to the senior staff* | – To provide continuity of care |

**Summarized steps of bedpan use in pictures**

| | |
|---|---|
|  | **Step 1:** Put the patient in a supine position |
|  | **Step 2:** Turn the patient to side |
|  | **Step 3:** Place the bedpan under the patient's buttocks |

| | |
|---|---|
|  <br>  | **Step 4:** Cover the patient to preserve privacy and Provide toilet paper and step away |
|  | **Step 5:** Return the patient one the side and hold the bed pan flat on the bed |
|  | **Step 6:** Slide the bedpan from its current position |

| | |
|---|---|
|  | **Step 7:** Clean the patient |
|  | **Step 8:** Empty the contents of the bedpan into the toilet and flush them away. |
|  | **Step 9:** Clean and dry the bed pan and return it to its proper storage |

## 2.7.4. Enema

### a) Definition and Types of enema

An enema is a a procedure in which liquid is injected into the rectum, to expel its contents or to introduce drugs or permit X-ray imaging.

. The purpose of an enema is to cleanse the lower bowel, to evacuate the stool or flatus, or to instill medication. The enema solution should be at 37.7°C (100°F) because a solution that is too cold or too hot is uncomfortable and causes cramping. Enemas are classified into four groups: cleansing, carminative, retention, and return-flow enemas.

#### i. Cleansing enema

The goal of cleansing enemas is to remove feces. This type of enema is indicated in case of constipation, patient preparation for surgery and some diagnostic test

(i.e., colonoscopy). **Normal saline** is Isotonic considered as safe to use. Cleansing enemas have two sub category: high or low. A high enema requires large volume (i.e., 500 to 1,000 mL) for adult and is provided to cleanse as much as possible the colon. The client changes the positions from the left lateral to the dorsal recumbent and then to the right lateral position during administration so that the solution can follow the large intestine. The low enema requires a small volume (90 to 120 mL) and is used to clean the rectum and sigmoid colon only. The client maintains a left lateral position during administration.

**ii. Carminative enema**

A carminative enema is given mainly to expel flatus (intestinal gas). The solution instilled into the rectum remove gas. For an adult, 60 to 80 mL of fluid is instilled

**iii. Retention enema**

A retention enema tends to introduce the oil or medication into the rectum and sigmoid colon. The liquid is retained for a relatively long period for 1 to 3 hours. The goal is to soften the faces, lubricate the rectum and anal canal, hence facilitating passage of the feces

**iv. Return-flow enemas**

A return-flow enema, also called a Harris flush, is occasionally used to expel flatus. Alternating flow of 100 to 200 mL of fluid into and out of the rectum and sigmoid colon stimulates peristalsis. This process is repeated five or six times until the flatus is removed and abdominal distention is relieved.

**b) Indications and Contra-indications of enema**

**Enema is indicated to** evacuate the bowel before surgery, X-ray or for bowel examinations such as an endoscopy and to treat severe constipation. The enema is contraindicated when phosphate or sodium is in high concentration in the blood, or when calcium is low in the blood. Enema is also contraindicated in the following condition: dehydration, anal cancer, Laceration or wounds on anus, Hemorrhoid, Diarrhea, Intestinal occlusion or perforation and Appendicitis

**c) Complications of enema**

A wrongly administered enema can damage tissue in the rectum/colon and cause **bowel perforation** and, if the device is not well sterilized can cause the infections. Long-term, regular use of enemas can cause electrolyte imbalances. Other effect of enemas can include bloating and cramping.

**d) Administering enema (evacuating enema/return flow enema)**

| Steps | Rationale |
|---|---|
| **4. Preparation** | |
| ***Nurse*** | |
| – Appear professionally with Clean uniform,<br>– Wear closed shoes<br>– Clean and short nails ,<br>– Watch jewels and rings removed<br>– Wash_hands | – Identification of the nurse<br>– To prevent infection |
| ***Patient*** | |
| – Identify the patient<br>– Introduce to the patient and ask the consent<br>– Explain the procedure | – Ensure good collaboration |
| **Equipment** | |
| – *Folding screens.*<br>– *Tray, Trolley.*<br>– *Bracket*<br>– *Impermeable protection and cotton cloth.*<br>– *Appropriate rectal tube.*<br>– *Kidney dish.*<br>– *Lubricant.*<br>– *Protective gloves.*<br>– *Clean compress and toilet paper.*<br>– *Enema cannula with connection tube.*<br>– *Grip for clamping or tap.*<br>– *Water or other solution at the temperature prescribed.*<br>– *Bed pan*<br>– *Material for personal hygiene, if necessary.* | – Organization facilitates accurate skill Performance |
| **5. Performance** | |
| – Place the clean equipment on the bedside stand. Arrange the supplies so they can be easily reached. | – For easiest distribution of the materials |
| – Close curtains around the bed or put screen fold and close the door to the room, if possible. | – To maintain privacy |

| | |
|---|---|
| – Wash and dry your hands thoroughly. | – To prevent infection |
| – Put on clean gloves. | – To prevent infection |
| – Close the clamp on the enema tubing | – To prevent fluid loss |
| – Warm solution in amount ordered, and check temperature with a bath thermometer, if available. If bath thermometer is not available, warm to room temperature or slightly higher, and test on inner wrist. If tap water is used, adjust temperature as it flows from faucet. | – Avoids harming the intestinal mucosa |
| – Pour the water into the enema container | – To adjust the solution |
| – Open the clamp on the enema container. Let a small amount of the solution run through the tubing to eliminate any air in the tubing and reclamp. | – To prevent air for entering to the intestine |
| – Adjust the patient's clothing to expose the buttocks. Cover the resident with a bath blanket/sheet, etc. | – To maintain client privacy |
| – Place the bed protector under the patient's buttocks and assist his/her to turn on the left side. Bend the right knee toward his/her chest unless contraindicated by the resident's medical condition. | – Lying flat on left side allows fluid to flow |
| – Place the bedpan at the foot of the bed. Be sure that it is in easy reach. | – Urgent evacuation of bowels or inability to retain fluid may occur. |
| – Elevate solution to 12 to 18 inches (30-45 cm) above level of anus. Hang the container on an IV pole/stand or hold it at the proper height | – Rapid infusion caused by bag height over 18 inches may cause cramping and discomfort.<br>– And a risk of Bowel perforation |
| – Lubricate the tip of the tubing about 3 to 4 inches. Be sure the tube is well lubricated. Check the opening of the tube to be sure that it is not plugged. | – Eases catheter tip insertion |

| | |
|---|---|
| – Expose the buttocks. (Note: Grasp the bath blanket or other protective covering at the anal area. Lift it up and fold over the buttock | – To prevent soiling the bed sheet of the patient |
| – Separate the buttocks so that you can see the anal area. | – To ensure good visualization of the anus |
| – Slowly and gently insert the enema tube 3 to 4 inches (7 to 10 cm) for an adult. Direct it at an angle pointing toward the umbilicus, not bladder. Ask patient to take several deep breaths | – Further catheter advancement could cause damage to bowel, |
| – If resistance is met while inserting tube, permit a small amount of solution to enter, withdraw tube slightly, and then continue to insert it. Do not force entry of the tube. Ask patient to take several deep breaths | – Discomfort may cause poor retention of fluid. |
| – Clamp tubing or lower container if patient has desire to defecate or cramping occurs. Instruct the patient to take small, fast breaths or to pant | – Stops flow of fluid |
| – After solution has been given, clamp tubing and remove tube. Have paper towel ready to receive tube as it is withdrawn | – Stops flow of fluid |
| – Return the patient to a comfortable position. Encourage the patient to hold the solution until the urge to defecate is strong, usually in about 5 to 15 minutes. Make sure the linens under the patient are dry. Remove your gloves and ensure that the patient is covered | – To maintain patient comfort, to enhance the action of solution |
| – Wear other gloves | – Top prevent infection |
| – When patient has a strong urge to defecate, place him or her in a sitting position on a bedpan or assist to commode or bathroom. Offer toilet tissues, if not in patient's reach. Stay with patient or have call bell readily accessible. | – Provides assistance and avoids potential harm to patient |
| – Assist patient, if necessary, with cleaning of anal area. Offer washcloths, soap, and water for hand washing. Remove gloves | – To prevent infection and to maintain patient comfort |

| Finishing | |
|---|---|
| – Position the patient comfortably and appropriately | – Ensure patient comfort |
| – Arrange patient environment | – To keep environment hygiene |
| – Thank the patient for collaboration | – To keep good communication |
| – Discard used equipment | – To prevent infection |
| – Remove gloves and wash hands | – To prevent infection |
| – Document | – To keep record |

## 2.7.5. Assisting patients in using diapers

Diaper is an absorbent object or a piece of towel wrapped around the bottom and between the legs to absorb and retain the urine and feces. The purpose of using diaper for babies and altered patients with incontinence is to prevent pressure ulcers and infections by keeping the clean skin.

| Steps of procedure | Rationale |
|---|---|
| **1. Preparation** | |
| ***Nurse*** | |
| – Appear professionally with Clean uniform,<br>– Wear closed shoes<br>– Clean and short nails ,<br>– Watch jewels and rings removed<br>– Wash_hands | – Identification of the nurse<br>– To prevent infection |
| ***Patient*** | |
| – Identify the patient<br>– Introduce to the patient and ask the consent<br>– Explain the procedure | – Ensure good collaboration |
| ***Equipment*** | |

| | |
|---|---|
| – Tray or trolley<br>– Proper Gloves<br>– A clean diaper (consider the size of the patient)<br>– Dust bin or bucket to receive soiled diaper<br>– Bucket with a lid and filled with water for non-disposable diapers.<br>– Skin protection barrier cream<br>– Bed linens, if necessary. | – Necessary equipment for performing the procedure |
| **2. Performance** | |
| – Note: This type of care requires, generally, to be assisted by another person. | – It is not easy to do it by one person for adult patient |
| – Put on protective gloves | – Infection control |
| – Remove the diaper, fold it in such a way that the soiled part is turned inward, and discard it. | – Turn it inward prevent soiling the linens and prevent the spread of infection |
| – Remove gloves, rub hands and put on clean gloves | – Gloves used to remove old diaper are dirty must be changed for preventing the spread of infection |
| – Fold the diaper length-ways so that the back sheet is facing outwards. Don't touch the inside of the brief | – Easiest the way of passing the diaper from the one area to another.<br>– Prevention of infection |
| – Pass the folded brief from front to back | – To cover the buttock and front |
| – Pull out the brief horizontally at front, shape it to create pants with legs | – To prevent the leak urine or feces in front |
| – Pull out the back of brief horizontally. Make sure it fit snuggly into the groin area, back sheet turned outwards. | – To prevent the leak urine or feces in the back |
| – Fix bottom tapes on both sides. It may be helpful to angle the tapes slightly upwards to improve the fit around the legs | – To secure the diaper, |
| – Form a pleat in the band of the brief. Fix top tapes angles downwards over the pleat. | – To secure the diaper, |

| | |
|---|---|
| – Make sure the edges of the brief easy into the groin area, back sheet turned away from the skin | – To prevent the leakage of the urine or feces to the bed |
| – Change draw-sheet, if necessary | – To ensure patient comfort and hygiene |
| ***Finishing*** | |
| – Put client in comfortable position | – To ensure patient comfort |
| – Thank the client for collaboration | |
| – Discard used materials | – To prevent infection |
| – Remove and wash hands | – To prevent infection |
| – Document | – To keep the record |

## 2.7.6. Manual removal of fecaloma

Bowel dysfunction is a common problem experienced by many adults. Manual removal of feces (MRF) may be required to aid defecation of patients when other methods have failed. Manual removal of feces should be performed to meet the individual patient's needs and to ensure continuity of care. Please note that MRF should not be considered a primary treatment for patients with a bowel dysfunction. MRF is indicated for the patients with acute constipation/impaction where other methods of bowel management have failed. MRF is contraindicated for patient with Severe/acute inflammatory bowel disease, Rectal or colonic surgical anastomosis in the last 6 months, severe cognitive impairment, anal fissure, large hemorrhoids that bleed easily, Past pelvic radiotherapy; anal surgery within the last 6 months.

**Techniques**

| **Steps of the procedure** | **Rationale** |
|---|---|
| **1. Preparation** | |
| ***Nurse*** | |
| - *Appear professionally with Clean uniform,*<br>- *Wear closed shoes*<br>- *Clean and short nails ,*<br>- *Watch jewels and rings removed*<br>- *Wash_hands* | - *Identification of the nurse*<br>- *To prevent infection* |
| **Patient** | |
| - *Identify the patient*<br>- *Introduce to the patient and ask the consent*<br>- *Explain the procedure* | - *Ensure client collaboration* |

**Equipment**

- *The trolley.*
- *Serving forceps in its container.*
- *Disinfectant solution (for hands).*
- *Bed pan with cover.*
- *Impermeable protection and cotton protection.*
- *Lubricant.*
- *Toilet paper.*
- *Kidney dish for wastes.*
- *Individual blanket or towel.*
- *Protective gloves.*
- *Plastic apron if available*

| **2. Performance** | |
|---|---|
| - *Provide patient privacy* | - *To prevent exposition of the patient* |
| - *Wash hands.* | - *To prevent infection* |
| - *Position the patient laterally, knees bent towards the chest.* | - *To follow the natural anatomy of the bowel but is not essential.* |
| - *Place impermeable protection on the bed.* | - *To prevent soiling the bed* |
| - *Respect the patient privacy by covering him/her and expose only the buttocks.* | - *To maintain patient comfort and privacy* |
| - *Place bed pan for collection of feces.* | |
| - *Get behind the patient* | - *To ensure good position* |
| - *Put on clean gloves.* | - *To prevent infection* |
| - *Assess perineum and anus status.* | - *Ensure any conditions are reported and treated where required.* |
| - *Lubricate the fingertips of the hand you use.* | - *To prevent the harm to the Patient* |
| - *Alert the patient and ask him/her to relax* | - *To ensure patient is well prepared* |
| - *Gently insert the lubricated finger tips into the rectum.* | - *To prevent the harm to the Patient* |
| - *Direct the finger tips towards the direction of the umbilical point following the rectum and remove gently feces by massage and kneading fingers on hard mass of feces* | - *To ensure that the client is as low disturbed as possible* |
| - *Fragment feces and push them towards the anus and remove the feces in small pieces and put them in bed pan while observing for signs of intolerance by the patient*<br>- *Remove the feces in small pieces and put them in bed pan.* | - *Fragmenting feces into small pieces so that they can be removed easily and cause as little as possible discomfort to the client* |

| | |
|---|---|
| - *Remove the feces in small pieces and put them in bed pan.* | |
| - *Communicate to him/her and explain what you are doing.* | - *For better communication* |
| - *Give nutritional education and appropriate habits of defecation and Examine the consistency of fecal matter* | - *To prevent the recurrence* |
| - *Change gloves and perform perineal care and hygiene* | - *To prevent cross infection and infection control* |
| - *Remove bedpan and remove gloves* | |
| **3. Finishing** | |
| - *Position the patient comfortably and appropriately.* | - *To ensure the comfort of the client* |
| - *Arrange the personal belongings of patient and put them within reach* | |
| - *Thank the patient for his/her collaboration.* | |
| - *Discard used materials* | |
| - *Wash and disinfect hands* | |
| - *Document* | |

Nursing Alert

- During the procedure the pulse and blood pressure should be monitored. If the pulse drops and/or the blood pressure rises, the procedure must be stopped.
- Assess for presence of feces using **Bristol stool score (**Figure 31 Bristol stool score**)** and record.
- In Scybala-type stool (hard, smaller lumps), remove a lump at a time until no more fecal matter can be felt and place in receptacle.
- In a solid mass, push finger into the middle of the fecal mass and split it, remove small sections until no more fecal matter can be felt and place in receptacle. **Do not** attempt to hook and drag feces as this can damage the bowel wall.
- If the fecal matter is **more than 4cm in diameter and cannot be broken up**, then the procedure should be stopped and medical advice is required.
- If the feces are **hard and dry**, consider inserting two glycerin suppositories 30 minutes before commencing the procedure.
- If feces are too soft to remove effectively, consider leaving the patient for another 24 hours to enable further re-absorption of water content and review fiber content of diet or prescribe appropriate bulking agent.

- Stop the procedure if the patient complains of feeling unwell, having pain or bleeding, or if patient asks you to discontinue

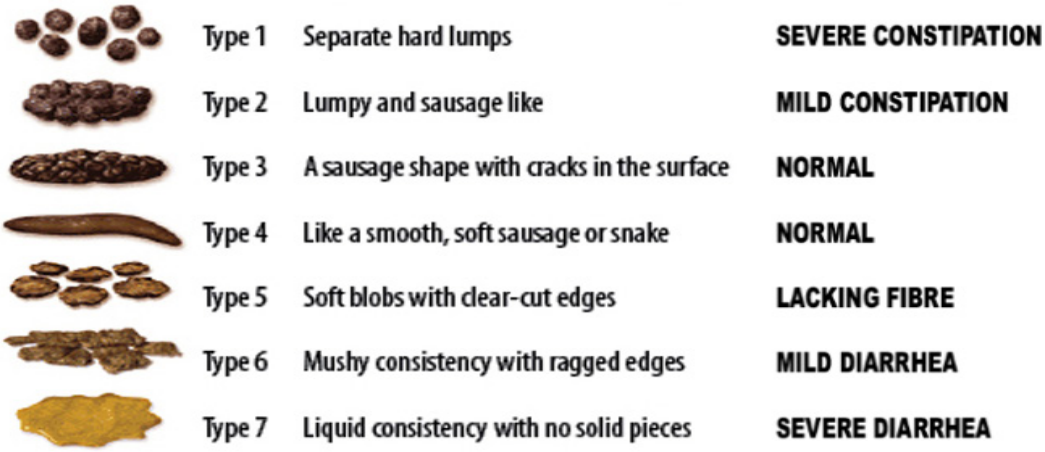



*Figure 31 Bristol stool score*

## 2.7.7. Hygiene Care of ostomies (gastrostomy, ileostomy, colostomy).

A stomy (ostomy) is an opening for the gastrointestinal or urinary tract onto the skin of the abdomen in the purpose of helping patient with elimination of urines or feces.

there are many types of intestinal ostomies: A ***gastrostomy*** is an opening through the abdominal wall into the stomach it is mainly indicated for the purpose of feeding the patient; A ***jejunostomy*** opens through the abdominal wall into the jejunum; an ***Ileostomy*** opens into the ileum; and A ***Colostomy*** is an opening through the abdominal into the colon (ascending, descending or transverse).

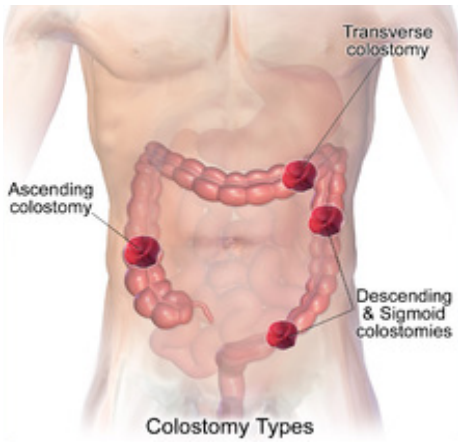



*Figure 32 Types of Colostomy*




*Figure 33 Ileostomy*

**Techniques of providing hygienic care to colostomy or ileostomy: Changing**

**a colostomy bag**

**Purpose and indications**

This procedure is done for the purpose of hygiene and infection prevention of the patient and is indicated to bedridden patient with colostomy and ileostomy.

| Steps of the procedure | Rationale |
|---|---|
| **1. Preparation** | |
| ***Nurse*** | |
| - *Should appear professional (in full and clean uniform) with ID Card*<br>- *Hair tied back*<br>- *Remove watch, jewels, and Rings*<br>- *Wear closed shoes*<br>- *Hand washing* | |
| ***Patient*** | |
| - *Identification of the patient*<br>- *Self-presentation to the patient*<br>- *Physical and psychological patient preparation*<br>- *Assess levels of comprehension and collaboration of the patient*<br>- *Position the patient in a comfortable position* | |
| ***Equipment preparation*** | |
| - *Bed pan*<br>- *Protective Clean gloves*<br>- *Toilet paper*<br>- *Material for personal hygiene if necessary*<br>- *Receptacle for waste disposal*<br>- *Screen*<br>- *Linens such as privacy blankets*<br>- *Water proof protector/Macintosh*<br>- *Pieces of gauzes*<br>- *Physiologic 0.9% solution* | *Organization facilitates accurate skill Performance* |
| **2. Performance** | |
| - *Explain the procedure to the client.* | - *Providing information fosters cooperation.* |
| - *Perform hand hygiene and wear on gloves* | - *To prevent the spread of infection* |
| - *Close the door to the room and place the screen.* | - *To protect the client's privacy.* |
| - *Put the individual sheet/cover or water proof protector* | - *To protect the linens for being soiled* |

| | |
|---|---|
| - *Assist the person to a comfortable sitting or lying position in bed or preferably a sitting position* | - *Lying positions may facilitate smoother application, that avoid wrinkles* |
| ***If a drainage colostomy pouch is sed*** | |
| - *Remove the clamp and empty the contents of a drainable colostomy through the bottom opening into a bedpan. (Assess the consistency, color and amount of stool.)*<br>- *If the appliance uses a separate clamp, do not throw it away as it can be reused.* | - *emptying before removing the colostomy prevents spillage of stool onto the person's skin* |
| - *Peel the skin barrier off slowly, beginning at the top and working downward, while holding the person's skin taut.* | - *Holding the skin taut minimizes discomfort and prevents abrasion of the skin.* |
| - *Remove and discard the colostomy pouch.*<br>- *Use a toilet paper to remove excess stool*<br>- *Use warm water and washcloth to clean the peristomal skin.*<br>- *You may also use piece of gauze and physiologic solution 0.9% to clean peristomal skin*<br>- *Clean from inside to outside*<br>- *Dry the area thoroughly by patting with a dry gauze or washcloth.* | - *To ensure the hygiene of the peristomal skin and prevent an infection* |
| - *Assess the stoma and peristomal skin.*<br>- *Inspect the stoma for color, size, shape and bleeding.*<br>*Inspect the peristomal skin for any redness, ulceration or irritation* | - *To detect any inflammatory signs*<br>- *Transient redness after the removal of adhesive is normal.* |
| - *Place a piece of gauze over the stoma and change it as needed* | - *This absorbs any seepage from the*<br>*stoma* |
| - *Prepare and apply the skin barrier* | - *The skin barrier should fit snugly around* |
| - *On the backing of skin barrier trace a circle the same size as the stomal opening*<br>- *Cut out the traced stoma pattern to make an opening in skin barrier.*<br>- *Remove the backing to expose the sticky adhesive side.* | - *The stoma. It is important that peristomal skin is not exposed to the stomal efflux* |

| | |
|---|---|
| - *Centre the new colostomy bag over the stoma and gently press it onto the person's skin for 30 seconds.* | *The heat and pressure help activate the adhesives in the skin barrier.* |
| **3. Completion of the procedure** | |
| ***Patient.*** | |
| - *Return the patient to a comfortable position* | - *To provide for comfort and safety* |
| - *Make sure the linens under the patient are dry, Remove gloves and perform hand hygiene.* | - *To prevent the spread of infection* |
| - *Thank the patient for his collaboration* | |
| ***Material*** | |
| – *Replace all equipment in proper place*<br>– *Discard dirt properly and safety*<br>– *Empty* and clean the bedpan. | - *To maintain standard precaution* |
| ***Nurse*** | |
| - *Remove gloves and perform hand hygiene*<br>- *Document the procedure*<br>- *Report any findings to the senior staff* | - *To provide continuity of care* |

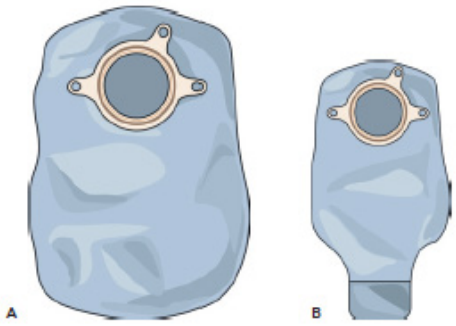



***Figure 34 Colostomy bags:***

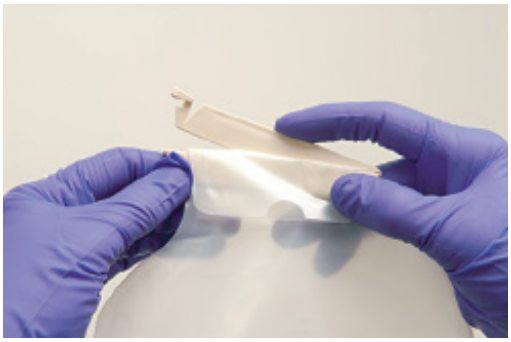


***Figure 35Application of pouch clamp***

**Step 1:** *Prepare a colostomy pouch* depending the types of colostomy pouch to use and apply pouch clamp

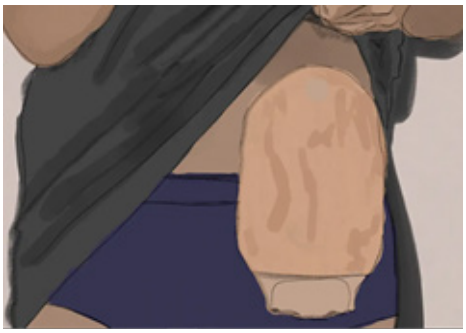
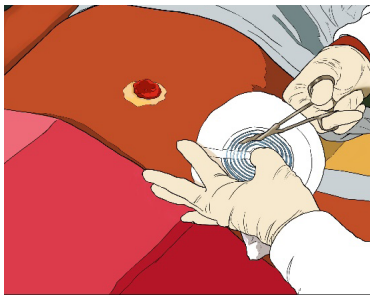


*Figure 36 Full colostomy bag*

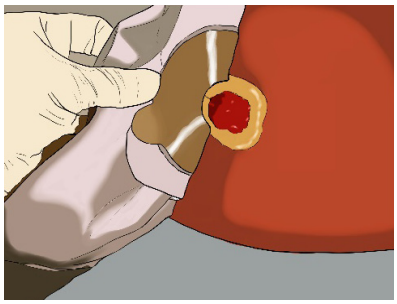


*Figure 37Cleaning the peristomal skin*

**Step 2**: *Remove the colostomy bag and clean the peristomal skin*: Peel the skin barrier off slowly, beginning at the top and working downward, while holding the person's skin taut.



**Step 3:** Cut out the traced stoma pattern to make an opening in skin barrier



**Step 4:** Central the skin barrier over the stoma



**Step 5:** Press the skin barrier over 30 second reinforce the adherence of stomach pouch to the skin

## Self-assessment 2.7.

1) When caring for male clients at the healthcare facility who require assistance with urinary elimination, for which of the following clients should the nurse use a urinal?
   a) Clients who can ambulate
   b) Clients who are weak
   c) Clients who are unable to walk
   d) Clients who are confined to bed
2) A nurse is caring for a client with severe pain in the abdomen and constipation resulting from fecal impaction. Which of the following interventions should the nurse perform to facilitate easy insertion within the rectum when removing the fecal impaction?
   a) Lubricate the fore finger
   b) Place the client in the Sims' position
   c) Lubricate the rectal tube
   d) Warm the cleansing solution.
3) A physician has ordered the nurse to administer an oil retention enema to a client for easier expulsion. For how long should the nurse ask the client to retain the cleansing solution within the large intestine?
   a) At least 1 hour
   b) At least 10 minutes
   c) At least 5 minutes
   d) At least half an hour.
4) All of the following are devices for elimination except
   a) Wheel chair
   b) Urinal
   c) Bed Pan
   d) Diaper
5) Define the following bowel diversions:
   a) Stoma
   b) Ileostomy
   c) Colostomy
6) list the complications of excessive rectal manipulation
7) Identify the primary action of enema
8) What is the purpose of using diaper for adult patients.

## End unit assessment 2

**Question I**

*Bathing is a hygienic practice during which a cleaning agent (such as soap) is used to remove sweat, oil, dirt, and microorganisms from the skin. Answer the following questions, which involve the nurse's role in assisting clients with bathing.*

A nurse is caring for an elderly client who has undergone rectal surgery. The client is averse to bathing daily. The nurse needs to ensure that body areas subject to greatest soiling or that are sources of body odors are cleaned and infections do not occur

1) What kind of bath should the nurse suggest to the client?
2) What care should the nurse take when providing perineal care to the client?

**Question II**

*Many factors affect ventilation and, subsequently, respiration. Positioning and teaching breathing techniques are two nursing interventions frequently used to promote oxygenation. Answer the questions related to nursing intervention to promote oxygenation*.

A nurse is caring for a client who is brought to the health care facility with breathing difficulty. The client is diagnosed to have hypoxia.

In what position should the nurse place the client to promote better breathing?

**Question III**

*Nursing care activities such as positioning, moving, and transferring clients reduce the potential for disuse syndrome. Nurses can become injured if they fail to use good posture and body mechanics while performing these activities. Answer the following questions, which involve the nurse's role in preventing work-related injuries*.

A nurse is caring for an elderly client with a fractured leg following a fall. When caring for this client, the nurse should take precautions to prevent injuries to him- or herself

1) What care should the nurse take before planning to turn and move the client?
2) What should the nurse do as part of planning to move the client?

**Question IV**

*Asepsis means practices to decrease or eliminate infectious agents, their reservoirs, and vehicles for transmission. It is the major method for controlling infection. Answer the following questions, which involve the various aspects of asepsis that a nurse should follow while caring for clients*.

A nurse practices medical and surgical asepsis to accomplish care for a client suffering from an infection. There are other clients around who should be protected from the spread of infection.

1) What are the principles or measures the nurse should follow to break the chain of infection?
2) What are antimicrobial agents?
3) Which antimicrobial agents should the nurse use and why? Define the role of each type of agent

**Question V**

*Heat and cold have various therapeutic uses and each can be used in several ways. Examples include an ice bag, collar, chemical pack, compress, and Aquathermia pad. Answer the following questions, which involve a nurse's role in the application of a compress*.

A nurse is caring for a 2-year-old-client who is being treated for viral fever at the health care facility. The nurse uses a cold compress for the child.

1) What is the purpose of a cold compress?
2) How should the nurse apply the compress to the client?

**Question VI**

1) Identify the risk factors that predispose a patient to pressure ulcer formation.
   a)
   b)
   c)
   d)
   e)
2) Staging systems for pressure ulcers are based on the depth of tissue destroyed. Briefly describe each stage
   I.
   II.
   III.
   IV.
   V.

## Key unit competence:

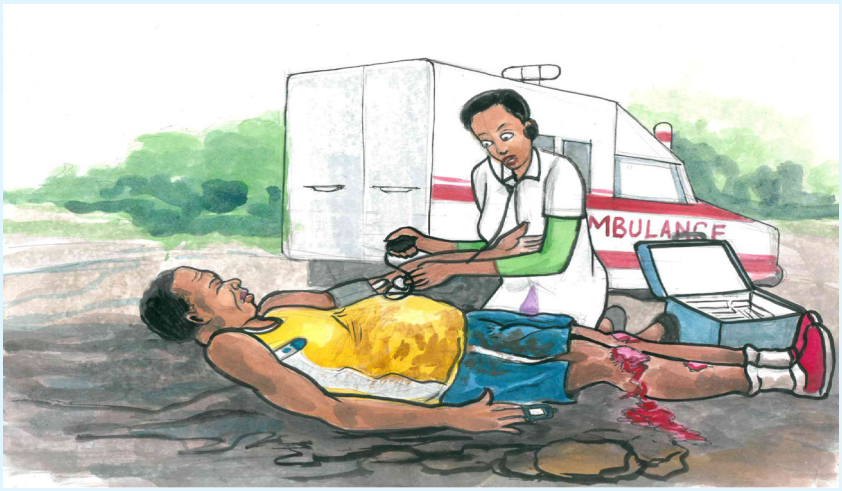
Interprets correctly the measured vital signs and parameters

### Introductory activity 3

**PERSON A**








1) By observing these pictures above, what do you think has happened to the person A?
2) What can you conclude about the health condition of this injured person?
3) According to your observation, what do you think is the nurse doing to the person A?
4) In your view, what do you think can happen to the person A in case these actions being done by the nurse are not done?

## 3.1. Introduction to vital signs

**Learning activity 3.1.**

Do searching of the Fundamentals of Nursing book and read the vital signs unit and come up with a summary of the following:

1) Definition of vital signs
2) The cardinal vital signs
3) Times to assess the vital signs
4) Guidelines for vital signs assessment

**Vital signs** are the fundamental measurements of life signs. The term **vital signs (VS)** suggests assessment of vital or critical physiological functions. Vital signs provide important information about the interrelationship between body systems. The vital signs reflect changes in function that otherwise might not be observed. Vital signs that are within normal limits reflect a person's physiological wellbeing, whereas abnormal vital signs may be an early warning of clinical deterioration.

The cardinal vital signs are **body temperature, pulse, respirations, and blood pressure**. **Oxygen saturation** is also commonly measured at the same time as the traditional vital signs. An alteration in vital signs signals a change in physiological function and the need for medical or nursing intervention.

**a) Uses of vital signs**

Very often the vital signs are used: **To establish the diagnoses of the patients**: The disruption of one or several vital signs can orient the diagnosis because it can be the first sign of disease; **to prescribe treatments and for medical follow-up**: They permit to have a control on the patient's general state. That means that they are used to evaluate the success of the implementation and good evolution of prescribed treatment (recovery, relapse of the illness); and **to establish nursing care plan**

**b) Times(moments) to assess vital signs**

When and how often to assess a specific patient's vital signs are chiefly nursing judgments, depending on the patient's health status. A patient's vital signs may be recorded on a routine basis (every 8 hours for most hospitals), however if there is a change in the patient's condition then the vital signs may need to be recorded more frequently depending on the physician orders or according to nurse judgment. Below, are examples of times (moments) to assess vital signs though the list is not exhaustive:

- On admission to a health care facility
- When a person has a change in health status or reports symptoms such as chest pain or difficulty breathing.
- Before, during and after surgery or an invasive procedure.
- Before and/or after the administration of a medication that could affect the respiratory or cardiovascular systems.
- Before and after any nursing intervention that could affect the vital signs (e.g. ambulating a person who has been on bed rest or when a person is receiving a blood transfusion).
- Following an incident, accident or injury in the health care setting (e.g. when a person has fallen or has been administered an incorrect medication).

**c) Guidelines for assessing vital signs**

Vital signs are part of the assessment data base. You include them in a complete physical assessment or obtain them individually to assess a patient's condition. Establishing a database of vital signs during a routine physical examination serves as a baseline for future assessments. **Guidelines for assessment of vital signs** include:

- Use of functional and appropriate equipment in regard to the size and age of the patient.
- Select equipment based on the patient's condition and characteristics
- Being familiar with normal ranges of vital signs for different ages.
- Always compare the patient's usual range of vital signs with later findings.
- Determine the patient's medical history, therapies, and prescribed medications. Some illnesses or treatments cause predictable changes in vital signs.
- Control or minimize environmental factors that affect vital signs.
- Use an organized, systematic approach when taking vital signs. Each procedure requires a step-by-step approach to ensure accuracy.
- Use vital sign measurements to determine indications for medication administration. For example, give certain cardiac drugs only within a range of pulse or BP values.

- Analyze the results of vital sign measurements. Vital signs are not interpreted in isolation. You need to also know related physical signs or symptoms and be aware of the patient's ongoing health status.
- Communicate significant changes in vital signs to the patient's health care provider or the charge nurse. Document findings and compare with baseline measurements to identify significant changes.
- Instruct the patient or family caregiver in vital sign assessment and the significance of findings.
- Vital sign measurements can require removing clothing or exposing areas. Provide patient privacy while being sensitive to cultural norms when measuring vital signs.

Vital signs serve different role. Vitals signs can orient the diagnosis because it can be the first sign of disease. They are also used to evaluate response to intervention.

**Self-assessment 3.1.**

1) List the vital signs you know
2) What do vital signs serve for?
3) What is the right time to measure the vital signs?
4) Why is it important for the nurse to know the patient's usual range of vital signs?

## 3.2. Body temperature

### 3.2.1. Body temperature overview

**Learning activity 3.2.1.**

Use the provided book of Fundamentals of Nursing to read the materials on body temperature under the vital signs unit and make a summary note of the following:

1) Definition of body temperature
2) Difference between core and surface temperature
3) Normal values of body temperature
4) Factors affecting body temperature
5) Routes of body temperature assessment

## a. Concept of Body Temperature

**Body temperature** is defined as the balance between the heat produced by the body and the heat lost from the body, measured in heat units called degrees either *Fahrenheit or Celsius.* There are two kinds of body temperature**: *core temperature and surface temperature*. The core temperature** which remains relatively constant is the temperature of the deep tissues of the body, such as the abdominal cavity and pelvic cavity. **The surface temperature** is the temperature of the skin, the subcutaneous tissue, and fat. It rises and falls in response to the environment.

The normal core body temperature is a range of temperatures. No single value can be considered "normal" since the body temperature fluctuates as a result of differences in metabolism. The normal range for adults is considered to be between **36°C and 37.5°C (96.8°F to 99.5°F)** with the average being 98.6°F**(37°C).**The core temperature is generally **1°F to 2°F (0.6°C to 1.2°C)** higher than surface (skin) temperature. This normal temperature range is maintained by keeping a balance between heat production and heat loss.

**Box 3.2.**

***To convert Fahrenheit to Celsius: subtract 32 from Fahrenheit reading and multiply by 5/9.***

$C=(F-32°)\times 5/9$

Example:$(104°-32°)\times 5/9=40°C$

***To convert Celsius to Fahrenheit: Multiply the Celsius reading by 9/5 and add 32.***

$F=(C\times 9/5)+32$

Example: $(40°C \times 9/5)+32=104°F$

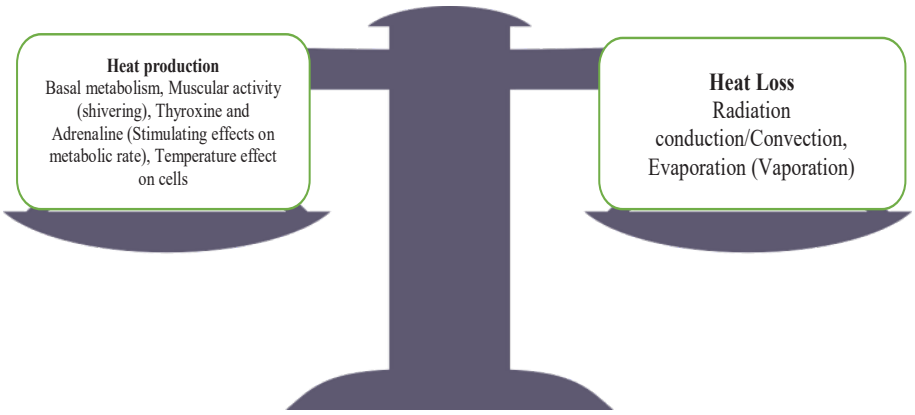



*Figure 35 Heat Balance: Kozier & Erb's, 2018*

## b. Factors affecting body temperature

A variety of internal and external factors affect body temperature. Nurses should be aware of physiological factors that affect a person's body temperature so that they can recognize normal temperature variations and understand the significance of body temperature measurements that deviate from normal. The common factors are environment, time of day, gender, age, physical activity and exercise, medications, food or liquid intake, stress, and illness.

- **Age:** Infants have an immature thermoregulatory mechanism and their temperature is greatly influenced by the environment and must be protected from extreme changes. Elderly people have decreased thermoregulatory controls and are also more sensitive to extremes of environmental temperature changes. Elderly individuals are particularly at risk for hypothermia for a variety of reasons, such as poor activity, limited metabolism and poor diet, as well as poor temperature-regulating mechanisms. Many older people, particularly those over 75 years old, are at risk of hypothermia (temperature below $36^0$C)
- **The action of hormones:** At ovulation, a woman's body temperature may increase by about $0.3^0$C to $0.6^0$C, due to the influence of progesterone. Just prior to ovulation the estrogen peak may cause a slight decrease in body temperature. Thyroxin, adrenaline and noradrenalin all increase body temperature.
- **Rest and sleep:** The metabolism slows down during these periods. The temperature can go down from a few tenth degrees.
- **Time of the day:** Body temperature is lowest in the early morning, when metabolic rate and heat production are at their lowest. The body temperature

is highest in the afternoon and early evening when we are active. Body temperatures normally change throughout the day, varying as much as 1.0$^0$C between the early morning and the late afternoon.

- **Exercise and physical labor:** The role of muscles is predominant in the production of heat; the muscular activities can increase the metabolism 4 to 5 times to the initial value of rest. Therefore, the temperature can rise from 0.2 to 1. 5$^0$C according to the activity. However, hard work or strenuous exercise can increase body temperature to as high as 38.3 to 40$^0$ C measured rectally.
- **Stress:** Stimulation of the sympathetic nervous system can increase the production of epinephrine and norepinephrine, thereby increasing metabolic activity and heat production.
- **The digestion:** The combustion of the nutritious substances increases the production of heat. The abundant meals increase the temperature by the activation of the metabolism. On the other hand the fasting lowers the temperature in the beginning, but if it is prolonged, it can increase it. Hot and cold fluids can have mild effects on the oral temperature reading for 15 to 30 minutes after ingestion.
- **The climate:** The temperature of individuals living in tropical countries is of 1 degree more elevated than normal. Contrary in cold countries the temperature is below the normal. If the patient has been outside in extremely cold weather without suitable clothing, the body temperature may be low.

## c. Routes of body temperature assessment

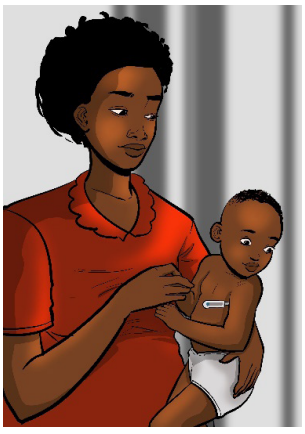


*Figure 39 Axillary route*

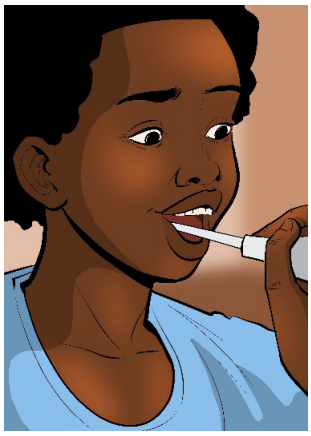


*Figure 40 Oral route*

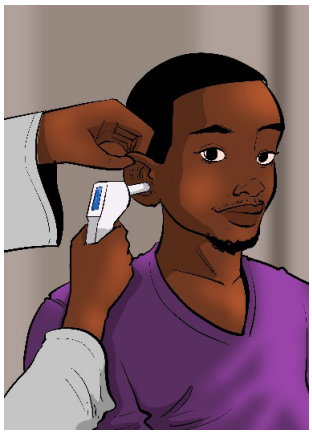


*Figure 41 Tympanic route*



*Figure 42 Temporal route*

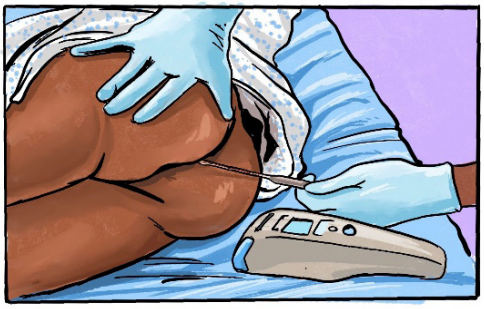


*Figure 43 Rectal route*

Body temperature is most accurate when measured at sites where there is a rich blood supply. The common routes used to measure temperature are **the axillary (**Figure 39 Axillary route**) ,oral (**Figure 40 Oral route**), tympanic (**Figure 41 Tympanic route**), temporal artery(**Figure 42 Temporal route**), rectal (**Figure 43 Rectal route**) and skin routes.** Rectal and tympanic membrane measurements are used to represent core temperatures; oral and axillary measurements reflect surface temperatures.

**Oral temperature** is the most commonly used and probably the most convenient method. Provided that it is done correctly, the oral temperature is a reasonably accurate reflection of the body temperature. To accurately measure an oral temperature, you must make certain the patient has not eaten, drunk, or smoked within the last 15 to 30 minutes. After applying a disposable thermometer cover sheath, the thermometer should be placed deep into the sublingual pocket under the tongue.

**Rectal temperature** readings are considered the most accurate, and they are the true reflection of the core temperature of the body. However, rectal temperature is contraindicated in many clinical situations; for example, people who are undergoing rectal surgery, have diarrhea or diseases of the rectum, are immunosuppressed, have a clotting disorder or have significant hemorrhoids. The rectal temperature is approximately 1°F higher than the oral temperature.

**The axilla temperature** is the preferred site for measuring temperature in newborns because it is accessible and safe. It measures the surface temperature of the body, and this method is not accurate if not correctly carried out. Properly carried out, an axillary temperature is a reasonably accurate reflection of body temperature. Axillary temperatures are lower than rectal temperatures. The axillary route is used for patients who cannot hold the oral thermometer in place or for patients for whom the oral route might pose a safety risk, such as a patient who is having seizures.

The axillary route temperature is approximately1°F lower than the oral temperature.

**The tympanic membrane** is a frequent site for estimating core body temperature. Like the sublingual oral site, the tympanic membrane has an abundant arterial blood supply, primarily from branches of the external carotid artery.

Normal range of adult body temperature per site:

- Orally 36.7°C to 37.2° C , average: 37°C
- Axillary 35.6°C to 36.7° C, average: 36.5°C
- Rectally 36.7°C to 37.8° C , average: 37.5°C
- New born 36.1$^0$C-37.7$^0$C (axillary)

## d. Advantages and disadvantages of sites for body temperature measurement

| Site | Advantages | Disadvantages |
|---|---|---|
| Temporal artery (Forehead) | • Most accurate representation of core temperature<br>• Very fast. Scanners provide a reading in about 3 sec.<br>• No discomfort is associated with the procedure.<br>• Safe. Can be used even for infants<br>• Less prone to error than tympanic thermometer | • Requires electronic equipment that may be expensive or unavailable (special scanning thermometer).<br>• Any covering, hat, hair, etc., prevents heat from dissipating and causes the reading to be falsely high. This is also true for the side of the head lying on a pillow. |
| Rectal | • Reliable measurement (accurately represents core (internal) body temperature. The rectal temperature is still the gold standard for estimating core body temperature,<br>• Use for clients who are unable to follow directions for oral temperature monitoring,<br>• Use for situations where accuracy is crucial. | • Inconvenient and more unpleasant;<br>• Difficult for someone who cannot turn to the side.<br>• Presence of stool may interfere with thermometer placement which results in inaccurate reading.<br>• Not recommended as the first choice of site because of the risk for injury to the rectal mucosa, especially infants.<br>• Does not reflect changes in core temperature as rapidly as the oral method. |

| | | |
|---|---|---|
| Oral | • Accessible, simple and relatively inexpensive and convenient<br>• Comfortable for most patients.<br>• Safe for adults and children who are old enough to follow simple directions | • The glass thermometers can break if bitten.<br>• Inaccurate if person has just ingested hot or cold food or fluid or smoked in the 30 minutes before measurement.<br>• Could injure the mouth following oral surgery.<br>• Requires at least 3 minutes to obtain accurate and reliable reading. It can even require up to 8 min to ensure an accurate reading if glass or plastic thermometer is used).<br>• Patient must keep her mouth closed for several minutes (glass or plastic thermometers). |
| Axillary | • Safe<br>• Easy to use<br>• Can be used for children and for uncooperative or unconscious clients<br>• Recommended over rectal site for routine measurements. | • Not reflective of core temperature<br>• Considered one of the least accurate sites.<br>• Diaphoresis (sweating) can affect the reading.<br>• Thermometer may need to be left in place for 3 to 5 minutes or for up to 8 minutes if glass or plastic is used). |

| | | |
|---|---|---|
| Tympanic (ear) | • Readily accessible<br>• Very fast (2–5 sec).<br>• Reflects the core temperature.<br>• Can be used for children and for uncooperative or unconscious clients. | • May be uncomfortable for the client.<br>• Involves risk of injuring the tympanic membrane if the probe is<br>• Inserted too far.<br>• Presence of cerumen (Earwax) can affect the reading.<br>• Requires a special thermometer, a relatively expensive<br>• Significant differences have been found between readings in left and right ear of same patient. |

## e. Pathological variations (Alterations) of body temperature

There are two primary alterations in body temperature**: pyrexia, hyperthermia or fever and hypothermia.** Pyrexia or fever is a body temperature above the normal range. A very high fever that is above 40$^{o}$C such as 41$^{o}$C is called **hyperpyrexia**. The client who has fever is referred to as **febrile**; the one who has not is **afebrile.**

Very high temperatures, such as **41$^{0}$C to 42$^{0}$C**, damage the cells throughout the body, particularly in the brain where destruction of neuronal cells is irreversible. Damage to the liver, kidneys and other body organs can also be great enough to disrupt functioning and eventually cause death.

**Hypothermia** which is a core temperature below 95°F (35°C), slows body metabolism. Mild hypothermia is treated with warm clothes or blankets and ingestion of warm drinks such as broth or soup. Because up **to 40%** of body heat can be lost through the head, coverings such as a hat or scarf can dramatically help reduce heat loss.

Every patient with a fever will not present signs and symptoms of fever in the same manner. Some of the common **signs and symptoms** that may indicate fever include: Flushed face , dry hot skin, dry mucous membranes, elevated pulse rate and rapid respirations, droopy eyes, increased irritability or restlessness, photophobia, which means the eyes have increased sensitivity to light, thirst, headache, myalgia (muscle aches), lethargy or drowsiness, diaphoresis, anorexia and nausea. A patient with **hypothermia** often presents the following **signs and**

**symptoms:** Decreased body temperature, pulse and respirations, severe shivering initially and feeling of cold and chills, pale, cool, waxy skin, hypotension, lack of muscle coordination, disorientation, drowsiness progressing to coma, decreased urinary output.

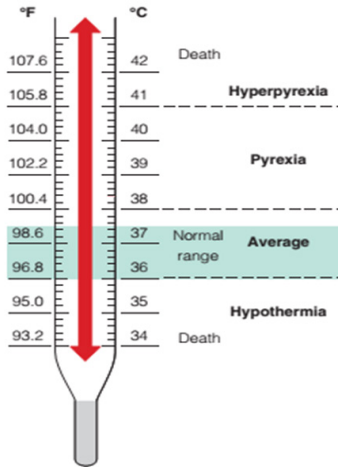



*Figure 44 Temperature readings*

## f. Nursing interventions for a patient with alterations of body temperature

| Body temperature alteration | Nursing interventions |
|---|---|
| **Pyrexia, hyper-thermia or fever** | ▪ Remove excess clothes and bedclothes, but do not allow the patient to become chilled<br>▪ Unless contraindicated, plenty of water and other fluids should be given to replace fluid lost in sweating<br>▪ Provide adequate food and fluids (e.g. 2,500-3,000 ml per day) to meet the increased metabolic demands and prevent dehydration<br>▪ Measure intake and out put<br>▪ Maintained prescribed intravenous fluids<br>▪ Reduce physical activity to limit heat production<br>▪ Administer antipyretics (drugs that reduce the level of fever) as ordered e.g aspirin, paracetamol.<br>▪ Provide oral hygiene to keep the mucous membranes moist. They can become dry and cracked as a result of excessive fluid loss<br>▪ Provide a tepid sponge bath to increase heat loss through conduction<br>▪ Ventilation of the room( room aeration)<br>▪ Provide dry clothing and bed linen.<br>▪ Cold application<br>▪ Monitor vital signs |
| **Hypothermia** | ▪ Remove the victim from the cold environment<br>▪ Provide a warm environment.<br>▪ Remove wet clothing and provide dry clothing.<br>▪ Apply warm blankets.<br>▪ Keep limbs close to body.<br>▪ Warm the patient's bed with heat pack (hot water bottle)<br>▪ or warming pads<br>▪ Cover the person's scalp with a cap or beanie.<br>▪ Supply warm oral or intravenous fluids.<br>▪ Apply warming pads. |

**Self-assessment 3.2.1**

1) What is the difference between core and surface temperature?
2) Among the following sites of body temperature assessment, which one is the safest and most convenient site?
   a) Oral
   b) Tympanic
   c) Axillary
   d) Rectal
3) Mr. TA, 30 years old is hospitalized in a district hospital in room B (Private room). During his assessment, the nurse notices that his body temperature is 1030F.
   a) How will the nurse interpret the body temperature of Mr. TA?
   b) Based on the body temperature of Mr. TA, what will be the appropriate nursing interventions by the nurse?

## 3.2. Body Temperature measurement/assessment

**Learning activity 3.2.2.**

In small groups of four (4) learners per each, read firstly the required equipment and all the steps of axillary, oral, rectal, tympanic membrane and temporal artery body temperature assessments in the provided procedural guides. Secondly, use the provided materials for axillary, oral, rectal, tympanic membrane and temporal artery body temperature assessments and measure the axillary, oral, tympanic membrane and temporal artery body temperature of your partner. N.B. In a group of four learners, two learners will pair and everyone will measure the body temperature (axillary, oral, tympanic membrane and temporal artery) of his/her partner, write down the results , interpret them and communicate the results to his/her partner. For the measurement of rectal body temperature, you will measure it on the provided mannequins.

### a) Axillary body temperature assessment

**To measure body temperature**, several types of equipment and different procedures might be used. To obtain an accurate measurement, choose an appropriate site, the correct equipment, and the appropriate tool based on the patient's condition. If a temperature reading is obtained, it is better to document also the site used along with the measurement.

Various types of clinical thermometers may be used to assess the axillary body temperature, including mercury glass thermometer, a plastic non-mercury thermometer, electronic contact thermometer. Plastic non-mercury thermometers have a digital readout, with oral, axillary, and rectal settings, requiring you to preset the correct route before taking the temperature. Electronic contact thermometers consists of a rechargeable battery-powered display unit, a thin wire cord, and a temperature-processing probe covered by a disposable probe cover. This thermometer can provide a reading in 2 to 60 seconds, depending on the model and may be used to assess oral, axillary, or rectal temperatures. The mercury-in-glass thermometer has been eliminated from health care facilities (no longer advised) because of the environmental hazards of mercury.

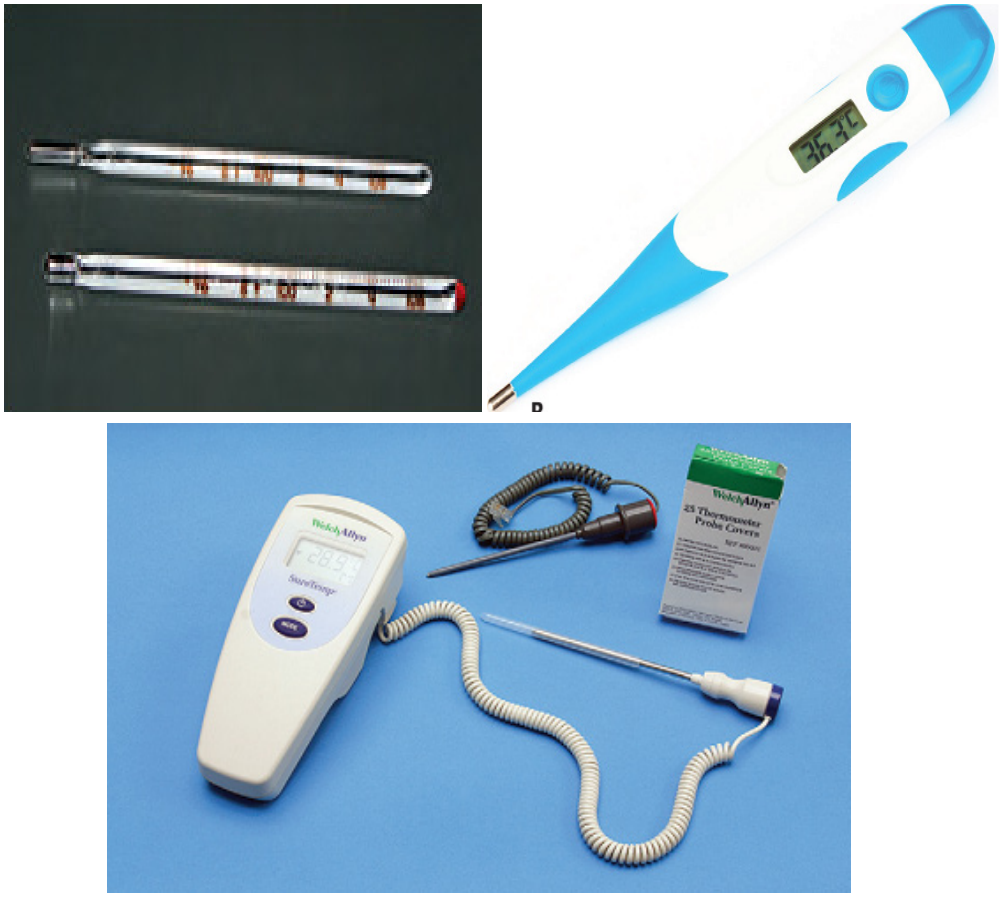



***Figure 45 Types of thermometers. (A) Glass mercury thermometer. (B) Plastic non-mercury thermometer (digital thermometer). (C)Electronic contact thermometer.***

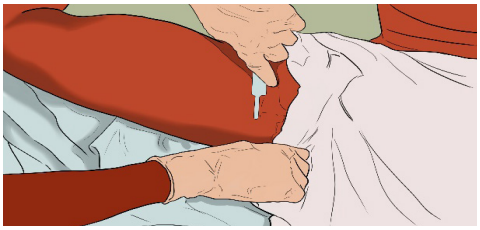
**Skill 1. Axillary Body Temperature assessment/measurement**

**EQUIPMENT**

- Digital, glass, or electronic thermometer, appropriate for site to be used
- Disposable probe covers
- Non sterile gloves, if appropriate
- Cleaned and disinfected tray.
- Swabs and disinfectant
- Kidney dish and bowl
- Additional Personal Protective Equipment (PPE),as indicated
- Toilet tissue, if needed
- Pencil or pen, paper or flow sheet, computerized record

| | Steps | Rationale |
|---|---|---|
| 1. | *Check medical order or nursing care plan for frequency of measurement and route. More frequent temperature measurement may be appropriate based on nursing judgment. Bring necessary equipment to the bedside stand or over bed table.* | *Assessment and measurement of vital signs at appropriate intervals provide important data about the patient's health status. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.* |
| 2. | *Perform hand hygiene and put on PPE, if indicated* | *Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.* |
| 3. | *Identify the patient.* | *Identifying the patient ensures the right patient receives the intervention and helps prevent errors* |
| 4. | *Close curtains around bed and close the door to the room, if possible. Discuss the procedure with patient and assess the patient's ability to assist with the procedure.* | *This ensures the patient's privacy. Explanation relieves anxiety and facilitates cooperation. Dialogue encourages patient participation and allows for individualized nursing care.* |
| 5. | *Ensure the electronic or digital or glass thermometer is in working condition.* | *Improperly functioning thermometer may not give an accurate reading.* |

| | | |
|---|---|---|
| 6. | *Put on gloves, if appropriate or indicated.* | *Gloves prevent contact with blood and body fluids. Gloves are usually not required for an oral, axillary, or tympanic temperature measurement, unless contact with blood or body fluids is anticipated. Gloves should be worn for rectal temperature measurement.* |
| 7. | *Select the appropriate site based on previous assessment data* | *This ensures safety and accuracy of measurement.* |
| | ***Using a glass thermometer (Mercury or non-mercury)*** | |
| 8. | *If the thermometer is stored in a chemical solution, wipe the thermometer dry with a soft tissue, using a firm twisting motion. Wipe from the bulb toward the fingers. If necessary, disinfect the thermometer using swabs from the bulb toward the fingers.* | *Thermometer disinfection reduces infection transmission from the thermometer to the patient.* |
| 9. | *Grasp the thermometer firmly with the thumb and the forefinger and, using strong wrist movements, shake it until the chemical line reaches at least below $96^0F$ ($35\ ^0C$)* | |
| 10. | *Move the patient's clothing to expose only the axilla* | *The axilla must be exposed for placement of the thermometer. Exposing only the axilla keeps the patient warm and maintains*<br><br>*his or her dignity* |
| 11. | *Wipe the zone (axilla) to make it dry if it is moist, but without rubbing, as a friction may increase the surface temperature of the skin.* | *Moisture on the thermometer may interfere with temperature reading* |

| | | |
|---|---|---|
| 12. | *Read the thermometer by holding it horizontally at eye level. Rotate it between your fingers until you can see the chemical line. Verify the reading is less than or equal to 96$^0$F (35 $^0$C).*  | |
| 13. | *Place the thermometer bulb in the center of the axilla. Move the patient's arm against the chest wall.*  | |
| 13. | *Leave the thermometer in place for 5 up to 10 minutes or according to agency protocol.* | |
| 14. | *Remove the thermometer and read the thermometer to the nearest tenth of a degree* | |
| 15. | *Disinfect the thermometer, then shake it to lower the mercury or wash thermometer in lukewarm, soapy water. Rinse it in cool water. Dry and replace the thermometer in its container.* | *Reduces transmission of microorganisms.* |
| 16. | *Assist patient in assuming comfortable position, replacing linen or gown* | *Restores comfort and sense of well-being.* |
| 17. | *Remove PPE, if used. Perform hand hygiene* | *Removing PPE properly reduces the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.* |

| | | |
|---|---|---|
| 18. | *Inform patient of temperature reading and record measurement* | *Promotes participation in care and understanding of health status* |
| 19. | *Record temperature and route on vital sign flow sheet, nurses 'notes, or electronic health record (EHR)* | |
| 20. | *Report abnormal findings to nurse in charge or health care provider* | |
| | ***Using electronic thermometer*** | |
| | *Step 1 to step 7 are the same as above described* | |
| 8. | *Move the patient's clothing to expose only the axilla* | *The axilla must be exposed for placement of the thermometer. Exposing only the axilla keeps the patient warm and maintains his or her dignity* |
| 8. | *Remove the probe from the recording unit of the electronic thermometer. Place a disposable probe cover on by sliding it on and snapping it securely.* | *Using a cover prevents contamination of the thermometer probe* |
| 9. | *Raise patient's arm away from torso. Inspect for skin lesions and excessive perspiration; if needed, dry axilla. Insert thermometer probe into center of axilla, lower arm over probe, and place arm across patient's chest.* | *Maintains proper position of thermometer against blood vessels in axilla. The deepest area of the axilla provides the most accurate measurement; surrounding the bulb with skin surface provides a more reliable measurement.* |
| 10. | *Once thermometer probe is positioned, hold it in place until audible signal indicates completion and patient's temperature appears on digital display, remove thermometer probe from axilla. Note the temperature reading on the display* | *Axillary thermometers must be held in place to obtain an accurate temperature.* |
| 11. | *Dispose of the probe cover by holding the probe over an appropriate waste receptacle and pushing the release button*<br><br>*Pushing button to dispose of cover* | *Discarding the probe cover ensures that it will not be reused accidentally on another patient. Reduces transmission of microorganisms.* |
| 12. | *Return thermometer stem to storage position of recording unit* | *Returning thermometer stem to storage position automatically causes digital reading to disappear. Protects stem from damage.* |

| | | |
|---|---|---|
| 13. | *Assist patient in assuming comfortable position, replacing linen or gown.* | *Restores comfort and sense of well-being.* |
| 14. | *Perform hand hygiene.* | *Reduces transmission of microorganisms* |
| 15. | *Inform patient of temperature reading and record measurement* | *Promotes participation in care and understanding of health status* |
| 16. | *Record temperature and route on vital sign flow sheet, nurses' notes, or electronic health record (EHR)* | |
| 17. | *Report abnormal findings to nurse in charge or health care provider* | |

### b) Oral body temperature assessment

Various types of clinical thermometers may be used to assess the oral body temperature, including mercury glass thermometer (no longer advised), a plastic non mercury thermometer (digital) and electronic contact thermometer.

| **Skill 2. Oral Body Temperature assessment/measurement** | | |
|---|---|---|
| **EQUIPMENT** | | |
| ▪ Digital, glass, or electronic thermometer, appropriate for site to be used<br>▪ Disposable probe covers<br>▪ Non sterile gloves, if appropriate<br>▪ Cleaned and disinfected tray.<br>▪ Swabs and disinfectant<br>▪ Kidney dish and bowl<br>▪ Additional Personal Protective Equipment (PPE),as indicated<br>▪ Toilet tissue, if needed<br>▪ Pencil or pen, paper or flow sheet, computerized record | | |
| | **Steps** | **Rationale** |
| 1. | *Check medical order or nursing care plan for frequency of measurement and route. More frequent temperature measurement may be appropriate based on nursing judgment. Bring necessary equipment to the bedside stand or over bed table.* | *Assessment and measurement of vital signs at appropriate intervals provide important data about the patient's health status. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.* |

| | | |
|---|---|---|
| 2. | *Perform hand hygiene and put on PPE, if indicated* | *Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.* |
| 3. | *Identify the patient.* | *Identifying the patient ensures the right patient receives the intervention and helps prevent errors* |
| 4. | *Close curtains around bed and close the door to the room, if possible. Discuss the procedure with patient and assess the patient's ability to assist with the procedure.* | *This ensures the patient's privacy. Explanation relieves anxiety and facilitates cooperation. Dialogue encourages patient participation and allows for individualized nursing care.* |
| 5. | *Ensure the electronic or digital or glass thermometer is in working condition.* | *Improperly functioning thermometer may not give an accurate reading.* |
| 6. | *Optional: Apply clean gloves when there are respiratory secretions or facial or mouth wound drainage* | *An oral probe cover is removable without physical contact. Gloves should be worn for rectal temperature measurement.* |
| 7. | *Select the appropriate site based on previous assessment data* | *This ensures safety and accuracy of measurement.* |
| | ***Using electronic thermometer*** | |
| 8. | *Remove thermometer pack from charging unit. Attach oral thermometer probe stem (blue tip) to thermometer unit. Grasp top of probe stem, being careful not to apply pressure on ejection button.* | *Charging provides battery power. Ejection button releases plastic cover from probe stem.* |
| 9. | *Slide disposable plastic probe cover over thermometer probe stem until cover locks in place cover on by sliding it on and snapping it securely.*<br><br>*Nurse inserts electronic thermometer probe stem into probe cover. Cover snaps in place* | *Soft plastic cover will not break in patient's mouth and prevents transmission of microorganisms between patients.* |

| | | |
|---|---|---|
| 10. | *Ask patient to open mouth; gently place thermometer probe under tongue in posterior sublingual pocket lateral to center of lower jaw*<br><br>*Probe under tongue in posterior sublingual pocket* | *Heat from superficial blood vessels in sublingual pocket produces temperature reading. With electronic thermometer temperatures*<br><br>*in right and left posterior sublingual pocket are significantly higher than in area under front of tongue* |
| 11. | *Ask patient to hold thermometer probe with lips closed* | *Maintains proper position of thermometer during recording* |
| 12. | *Leave thermometer probe in place until audible signal indicates completion and patient's temperature appears on digital display; remove thermometer probe from under patient's tongue.* | *Probe must stay in place until signal occurs to ensure accurate reading.* |
| 13. | *Push ejection button on thermometer probe stem to discard plastic probe cover into appropriate receptacle.* | *Discarding the probe cover ensures that it will not be reused accidentally on another patient. Reduces transmission of microorganisms* |
| 14. | *If wearing gloves, remove and dispose in appropriate receptacle and perform hand hygiene.* | *Reduces transmission of microorganisms* |
| 15. | *Return thermometer probe stem to storage position of thermometer unit.* | *Protects probe stem from damage. Returning thermometer probe stem automatically causes digital reading to disappear* |
| 16. | *Assist patient in assuming comfortable position, replacing linen or gown.* | *Restores comfort and sense of well-being.* |
| 17. | *Inform patient of temperature reading and record measurement* | *Promotes participation in care and understanding of health status* |
| 18. | *Record temperature and route on vital sign flow sheet, nurses' notes, or electronic health record (EHR)* | |
| 19. | *Report abnormal findings to nurse in charge or health care provider* | |

### c) Rectal body temperature assessment

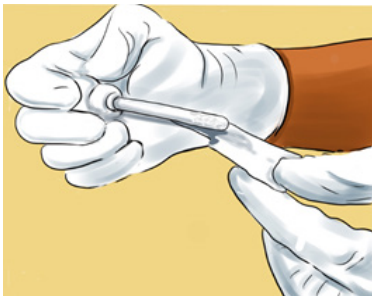
Various types of clinical thermometers may be used to assess the oral body temperature, including mercury glass thermometer (no longer advised), a plastic non-mercury thermometer (digital) and electronic contact thermometer.

**Skill 3. Rectal Body Temperature assessment/measurement**

**EQUIPMENT**

- Digital, glass, or electronic thermometer, appropriate for site to be used
- Disposable probe covers
- Water-soluble lubricant for rectal temperature measurement
- Non sterile gloves, if appropriate
- Cleaned and disinfected tray.
- Swabs and disinfectant
- Kidney dish and bowl
- Additional Personal Protective Equipment (PPE),as indicated
- Toilet tissue, if needed
- Pencil or pen, paper or flow sheet, computerized record

| | Steps | Rationale |
|---|---|---|
| 1. | *Check medical order or nursing care plan for frequency of measurement and route. More frequent temperature measurement may be appropriate based on nursing judgment. Bring necessary equipment to the bedside stand or over bed table.* | *Assessment and measurement of vital signs at appropriate intervals provide important data about the patient's health status. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.* |
| 2. | *Identify the patient.* | *Identifying the patient ensures the right patient receives the intervention and helps prevent errors* |
| 3. | *Draw curtain around bed and/or close room door. Assist patient to side-lying or Sims' position with upper leg flexed. Move aside bed linen to expose only anal area. Keep patient's upper body and lower extremities covered with sheet or blanket.* | *Maintains patient's privacy, minimizes embarrassment, and promotes comfort.* |

| | | |
|---|---|---|
| 4. | *Perform hand hygiene and apply clean gloves. Cleanse anal region when feces and/or secretions are present. Remove soiled gloves and reapply clean gloves* | *Maintains standard precautions when exposed to items soiled with body fluids (e.g., feces).* |
| 5. | *Remove thermometer pack from charging unit. Attach rectal thermometer probe stem (red tip) to thermometer unit. Grasp top of probe stem, being careful not to apply pressure on ejection button.* | *Ejection button releases plastic cover from probe stem* |
| 6. | *Slide disposable plastic probe cover over thermometer probe stem until cover locks in place.* | *Soft plastic probe cover prevents transmission of microorganisms between patients.* |
| 7. | *Using a single use package, squeeze a liberal amount of lubricant on tissue (a water-soluble Lubricant). Dip probe cover of thermometer, blunt end, into lubricant, covering 2.5 to 3.5 cm (1 to $1^{1/2}$ inches) for adult.*  *Lubricating thermometer tip* | *Lubrication reduces friction and facilitates insertion, minimizing the risk of irritation or injury to the rectal mucous membranes* |
| 8. | *With non-dominant hand separate patient's buttocks to expose anus. Ask patient to breathe slowly and relax.* | *Fully exposes anus for thermometer insertion. Relaxes anal sphincter for easier thermometer insertion.* |
| 9. | *Gently insert thermometer into anus in direction of umbilicus 3.5 cm ($1^{1/2}$ inches) for adult. Do not force thermometer.*  *Inserting thermometer into the anus.* | *Ensures adequate exposure against blood vessels in rectal wall* |

| | | |
|---|---|---|
| 10. | *If you feel resistance during insertion, withdraw immediately. Never force thermometer.* | *Prevents trauma to mucosa* |
| 11. | *Once positioned, hold thermometer probe in place until audible signal indicates completion and patient's temperature appears on digital display; remove thermometer probe from anus (see illustration).Note the temperature reading on the display*<br><br>*Probe inserted into anus* | *If left unsupported, movement of the probe in the rectum could cause injury and/or discomfort. The signal indicates the measurement is completed. The electronic thermometer provides a digital display of the measured temperature.* |
| 12. | *Push ejection button on thermometer stem to discard plastic probe cover into appropriate receptacle. Wipe probe stem with alcohol swab, paying particular attention to ridges where probe stem connects to probe* | *Reduces transmission of microorganisms.* |
| 13. | *Return thermometer stem to storage position of recording unit.* | *Protects probe stem from damage. Returning thermometer stem automatically causes digital reading to disappear* |
| 10. | *Wipe patient's anal area with soft tissue to remove lubricant or feces and discard tissue. Assist patient in assuming a comfortable position* | *Provides for comfort and hygiene* |
| 11. | *Remove and dispose of gloves in appropriate receptacle. Perform hand hygiene.* | *Reduces transmission of microorganisms.* |
| 12. | *Inform patient of temperature reading and record measurement* | *Promotes participation in care and understanding of health status* |
| 13. | *Record temperature and route on vital sign flow sheet, nurses' notes, or electronic health record (EHR)* | |
| 14. | *Report abnormal findings to nurse in charge or health care provider* | |
| 15. | *Return thermometer probe stem to storage position of thermometer unit.* | *Protects probe stem from damage. Returning thermometer probe stem automatically causes digital reading to disappear* |

### d) Tympanic membrane body temperature assessment

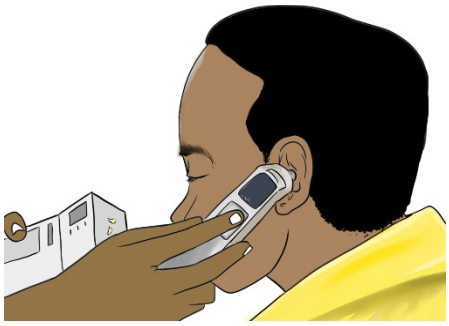
Infrared (tympanic) thermometer is used,. Infrared (tympanic) thermometers (another form of electronic thermometer); is an otoscope-like speculum with an infrared sensor tip which detects heat radiated from the tympanic membrane.



*Figure 46 Infrared (tympanic) thermometer*

| **Skill 4. Tympanic membrane Body Temperature assessment/measurement** |
|---|
| **EQUIPMENT** |
| ▪ Infrared (tympanic) thermometer, appropriate for site to be used<br>▪ Disposable probe covers<br>▪ Non sterile gloves, if appropriate<br>▪ Cleaned and disinfected tray.<br>▪ Swabs and disinfectant<br>▪ Kidney dish and bowl<br>▪ Additional Personal Protective Equipment (PPE),as indicated<br>▪ Toilet tissue, if needed<br>▪ Pencil or pen, paper or flow sheet, computerized record |

| | Steps | Rationale |
|---|---|---|
| 1. | *Check medical order or nursing care plan for frequency of measurement and route. More frequent temperature measurement may be appropriate based on nursing judgment. Bring necessary equipment to the bedside stand or overbed table.* | *Assessment and measurement of vital signs at appropriate intervals provide important data about the patient's health status. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.* |
| 2. | *Perform hand hygiene and put on PPE, if indicated* | *Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.* |
| 3. | *Identify the patient.* | *Identifying the patient ensures the right patient receives the intervention and helps prevent errors* |
| 4. | *Close curtains around bed and close the door to the room, if possible. Discuss the procedure with patient and assess the patient's ability to assist with the procedure.* | *This ensures the patient's privacy. Explanation relieves anxiety and facilitates cooperation. Dialogue encourages patient participation and allows for individualized nursing care.* |
| 5. | *Ensure the thermometer is in working condition.* | *Improperly functioning thermometer may not give an accurate reading.* |
| 6. | *Optional: Apply clean gloves* | *For protection* |
| 7. | *Select the appropriate site based on previous assessment data* | *This ensures safety and accuracy of measurement.* |
| 8. | *Assist patient in assuming comfortable position with head turned toward side, away from you. If patient has been lying on one side, use upper ear. Obtain temperature from patient's right ear if you are right handed. Obtain temperature from patient's left ear if you are left-handed.* | *Ensures comfort and facilitates exposure of auditory canal for accurate temperature measurement. Heat trapped in ear facing down causes false-high temperature reading .The less acute the angle of approach, the better the probe seal.* |
| 9. | *Note if there is an obvious presence of cerumen (earwax) in patient's ear canal.* | *Cerumen impedes the lens cover of speculum. Switch to other ear or select alternative measurement site.* |
| 10. | *Slide disposable speculum cover over the otoscope-like lens tip until it locks in place. Be careful not to touch lens cover* | *Soft plastic probe cover prevents transmission of microorganisms between patients. Lens cover should not have dust, fingerprints, or cerumen obstructing optical pathway* |

| | | |
|---|---|---|
| 11. | *Insert speculum into ear canal following manufacturer instructions for tympanic probe positioning:*<br><br>*(a) Pull ear pinna backward, up, and out for an adult (see illustration). For children less than 3 years of age, pull pinna down and back, point covered probe toward midpoint between eyebrow and sideburns.*<br><br>*For children older than 3 years, pull pinna up and*<br><br>*Back*<br><br>  <br><br>*Tympanic membrane thermometer with probe cover placed in patient's ear.*<br><br>*(b)Move thermometer in a figure-eight pattern*<br><br>*(c)Fit speculum tip snug in canal, pointing toward the nose* | *Correct positioning of probe with respect to ear canal allows maximal exposure of tympanic membrane.*<br><br>*The ear tug straightens the external auditory canal, allowing maximum exposure of tympanic membrane and therefore correctly positioning speculum.*<br><br>*Some manufacturers recommend movement of speculum tip in a figure-eight pattern that allows sensor to detect maximum tympanic membrane heat radiation.*<br><br>*Gentle pressure seals ear canal from ambient air temperature, which alters readings as much as 2.8° C (5° F)* |
| 12. | *Once positioned, press scan button on handheld unit. Leave speculum in place until audible signal indicates completion and patient's temperature appears on digital display* | *Pressing scan button causes detection of infrared energy. The speculum tip must stay in place until signal occurs to ensure accurate reading.* |

| | | |
|---|---|---|
| 13. | *Carefully remove speculum from auditory meatus. Push ejection button on handheld unit to discard speculum cover into appropriate receptacle.* | *Reduces transmission of microorganisms. Automatically causes digital reading to disappear.* |
| 14. | *If temperature is abnormal or second reading is necessary, replace probe cover and wait 2 minutes before repeating in same ear or repeat measurement in other ear. Consider an alternative temperature site or instrument.* | *Lens cover must be free of cerumen to maintain optical path. Time allows ear canal to regain usual temperature.* |
| 15. | *Return handheld unit to thermometer base.* | *Protects sensor tip from damage* |
| 16. | *Help patient assume a comfortable position.* | *Restores comfort and sense of well-being* |
| 17. | *Perform hand hygiene.* | *Reduces transmission of microorganisms* |
| 18. | *Inform patient of temperature reading and record measurement* | *Promotes participation in care and understanding of health status* |
| 19. | *Record temperature and route on vital sign flow sheet, nurses' notes, or electronic health record (EHR)* | |
| 20. | *Report abnormal findings to nurse in charge or health care provider* | |

**e) Temporal artery body temperature assessment**

For a temporal artery thermometer (another form of electronic thermometer); a handheld scanner with an infrared sensor tip detects the temperature of cutaneous blood flow by sweeping the sensor across the forehead and just behind the ear.



***Figure 47 Temporal artery thermometer***

**Skill 5. Temporal artery Body Temperature assessment/measurement**

**EQUIPMENT**

- Infrared temporal artery thermometer, appropriate for site to be used
- Disposable probe covers
- Non sterile gloves, if appropriate
- Cleaned and disinfected tray.
- Swabs and disinfectant
- Kidney dish and bowl
- Additional Personal Protective Equipment (PPE),as indicated
- Toilet tissue, if needed
- Pencil or pen, paper or flow sheet, computerized record

| | Steps | Rationale |
|---|---|---|
| 1. | *Check medical order or nursing care plan for frequency of measurement and route. More frequent temperature measurement may be appropriate based on nursing judgment. Bring necessary equipment to the bedside stand or overbed table.* | *Assessment and measurement of vital signs at appropriate intervals provide important data about the patient's health status. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.* |
| 2. | *Perform hand hygiene and put on PPE, if*<br><br>*indicated* | *Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.* |
| 3. | *Identify the patient.* | *Identifying the patient ensures the right patient receives the intervention and helps prevent errors* |
| 4. | *Close curtains around bed and close the door to the room, if possible. Discuss the procedure with patient and assess the patient's ability to assist with the procedure.* | *This ensures the patient's privacy. Explanation relieves anxiety and facilitates cooperation. Dialogue encourages patient participation and allows for individualized nursing care.* |
| 5. | *Ensure the thermometer is in working condition.* | *Improperly functioning thermometer may not give an accurate reading.* |
| 6. | *Optional: Apply clean gloves* | *For protection* |
| 7. | *Select the appropriate site based on previous assessment data* | *This ensures safety and accuracy of measurement.* |
| 8. | *Ensure that forehead is dry; dry with a towel if needed* | *Moisture interferes with thermometer sensor.* |
| 9. | *Place sensor firmly on patient's forehead* | *Flush contact avoids measurement of ambient temperature.* |

| | | |
|---|---|---|
| 10. | *Press red scan button with your thumb. Slowly slide thermometer straight across forehead while keeping sensor flat and firmly on skin (*Figure 47 Temporal artery thermometer*)* | *Thermometer continuously scans for highest temperature when scan button is depressed.* |
| 11. | *If patient is diaphoretic, keeping scan button depressed, lift sensor after sweeping forehead and touch sensor on neck just behind the earlobe. Peak temperature occurs when clicking sound during scanning stops. Release scan button.* | *Sensor is cooled by diaphoresis, resulting in an inaccurate temperature. Area behind earlobe is less affected by diaphoresis.* |
| 12. | *Gently clean sensor with alcohol swab* | *Prevents transmission of microorganisms* |
| 13. | *Inform patient of temperature reading and record measurement* | *Promotes participation in care and understanding of health status* |
| 14. | *Help patient assume a comfortable position.* | *Restores comfort and sense of well-being* |
| 15. | *Perform hand hygiene.* | *Reduces transmission of microorganisms* |
| 16. | *Record temperature and route on vital sign flow sheet, nurses' notes, or electronic health record (EHR)* | |
| 17. | *Report abnormal findings to nurse in charge or health care provider* | |

## Self -assessment 3.2.2

**Instructions:**

For you to master the technique of temporal artery body temperature measurement; go back to your previous groups of four ; let each learner measures one more time the temporal artery body temperature. The teacher will be facilitating and observing each student while carrying out the procedure. After measuring temporal artery body temperature, do the following:

a) Record the temperature reading

b) Interpret the temperature reading.

c) Communicate the result to your partner

## 3.3. Pulsation/Pulse measurement

**Learning activity 3.3.**

**For Overview**

Use the provided book of Fundamentals of Nursing to read the materials on Pulse under the vital signs unit and make a summary note of the following:

1) Definition of Pulse
2) Normal values and abnormal values of pulse
3) Factors affecting Pulse
4) Sites of pulse palpation
5) Different methods of Pulse taking or How to assess the pulse rate
6) Basic nursing interventions during abnormal pulse.

**For procedure**

Using checklist provided and equipment for pulse taking (see checklist); read all steps of pulse rate taking in order for you to measure correctly the pulse for your partner.

1) Observe the images of pulse taking for your guidance. (Figure 48 to Figure 55)
2) Form pairs of 2 students and each one of you measure a peripheral pulse selecting the site of Radial artery used for routine assessment of vital signs
3) Assess the pulse at the apex of the heart (apical pulse) or at a place where an artery can be pressed by the fingers against a bone (peripheral pulses).
4) Use Different methods of how to assess the pulse rate:
5) Write down the results for your partner; Interpret results of pulse showing normal and abnormal values

### 3.3.1. Pulse overview

The **pulse** corresponds to the contractions or beats of the heart and is counted by the number of beats per minute (bpm). **The pulse** is the rhythmic expansion of an artery produced when a bolus of oxygenated blood is forced into it by contraction of the heart. The **pulse** is the palpable bounding of blood flow noted at various points on the body and is an indicator of circulatory status.

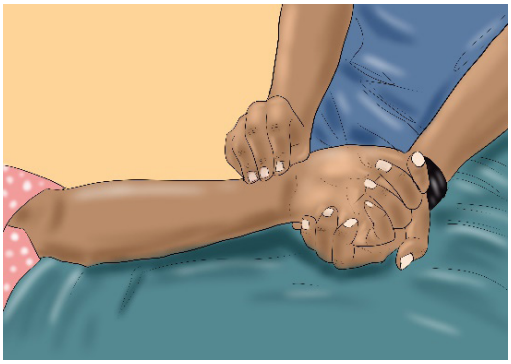


*Figure 48 A person taking the radial pulse*

**a) Normal and abnormal values of Pulse**

**i. Normal Pulse Rate**

The ***normal range*** for healthy young and middle-aged adults is **60 to 100 beats/min (bpm)**, with an average rate of **70 to 80 beats/min.** The normal range of pulse rate for adults is 60 to 100 bpm and is measured in beats per minute. Taking the pulse is a quick and simple way to assess the condition of the heart, blood vessels, and circulation. While assessing pulse rate as a nurse, you will assess three characteristics of the pulse: Rate, Rhythm and Volume (strength).

**ii. Abnormal values of Pulse**

A pulse less than 60 bpm is known as ***bradycardia***; a pulse greater than 100 bpm is termed ***tachycardia***.

**b) Pathological variations of Pulse**

There are three abnormalities of Pulse: ***Tachycardia, Bradycardia and Dysrhythmia***

The first two abnormalities (Tachycardia, Bradycardia) are related to the pulse rate and the third one (Dysrhythmia) is related to pulse rhythm.

***Tachycardia*** is an abnormally elevated HR (Heart Rate), *above 100 beats/min* in adults. ***Bradycardia*** is a slow rate, below 60 beats/min in adults. In other words*, a pulse less than 60 bpm* is known as ***bradycardia (***brady = slow, cardia = heart***)***; *a pulse greater than 100 bpm* is termed ***tachycardia*** (tachy = rapid, cardia = heart).

***Dysrhythmia:*** is an abnormal rhythm when the intervals between beats vary enough to be noticeable, and is called *dysrhythmia*.

There are also abnormal rhythms which are a group of ***irregular beats*** that form a pattern. *An irregular heart rhythm* can be very serious and may require additional assessment by electrocardiogram (ECG), a procedure that traces the electrical pattern of the heart.

### c) Factors Affecting Pulse Rate

Because the heart and blood vessels are regulated by the nervous system, *conditions that interfere with normal functioning of the nervous system also affect the pulse.*

**Other factors that may cause variations in pulse rate, rhythm, or quality include the following**:

- **Developmental level (Age):** New-borns have a rapid pulse rate. The rate stabilizes in childhood and gradually slows through old age:
    - New-borns: 120–160 bpm
    - 1–2 years: 90–120 bpm
    - 3–18 years: 80–100 bpm
    - Adults: 60–100 bpm
- **Gender**: Adult women have a slightly more rapid pulse rate than do adult men.
- **Exercise, Meditation, rest, sleep**: Muscle activity or exercise normally increases the pulse rate but meditation, rest and sleep lower the pulse rate.
- **Food**: Ingestion of food causes a slight increase in pulse rate for several hours.
- **Stress, Emotions and hormones**: Stimulate sympathetic nervous system, increasing pulse rate.
- **Fever or Body temperature:** The pulse rate tends to increase about 10 beats/ min for each degree Fahrenheit of temperature elevation. As body temperature increases, each degree Fahrenheit results in speeding the heart approximately 10 bpm. As the body cools, each degree results in slowing the pulse by 10 bpm
- **Disease**: Diseases, such as heart disease, hyperthyroidism, respiratory diseases, and infections, are generally associated with increased pulse rates. Hypothyroidism is associated with decreased pulse rates.
- **Blood loss**: Small blood loss is generally well tolerated and produces only a temporary increase in pulse rate but a large blood loss brings about an increase in pulse rate to compensate for the decreased blood volume.

- **Position changes**: Standing and sitting positions generally cause a temporary increase in pulse rate and decrease in blood pressure as a result of blood pooling in the veins of the feet and legs. This decreases blood return to the heart, decreasing blood pressure and subsequently increasing heart rate
- **Medications**: Stimulant drugs (e.g., epinephrine) increase pulse rate. Cardiotonics (e.g., digitalis) and opioids (e.g., narcotic analgesics) or sedative drugs decrease pulse rate.
- **Hypoxia**: Increases the pulse rate.

### d) Sites of Pulse palpation

#### i. *Peripheral Pulse Sites:*

There are various other pulse sites where the pulse may be palpated by applying gentle fingertip pressure over the artery against the underlying bone. These sites are known as the peripheral pulses.

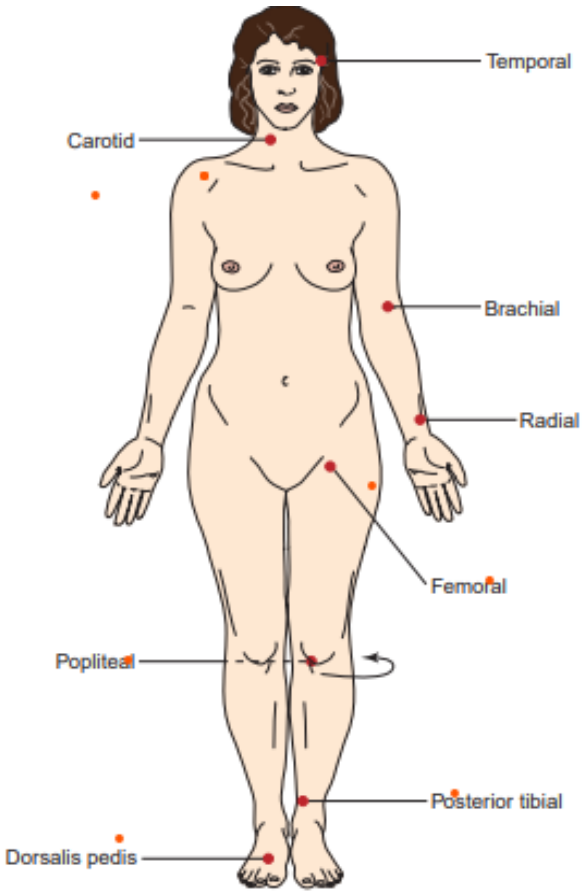



***Figure 49 Peripheral pulse sites***

The peripheral pulse sites include the following: ***Temporal***: can be used when radial pulse is not accessible; ***Carotid***: used in cardiac arrest and cardiopulmonary resuscitation (CPR); ***Brachial***: used to measure BP; can be used to assess pulse rate in small children; ***Radial***: routinely used for pulse rate assessment; ***Femoral***: used to determine circulation to the leg, cardiac arrest; ***Popliteal***: used to determine circulation to the lower leg; ***Posterior tibialis***: used to determine circulation to the foot and ***Dorsalis pedis***: used to determine circulation to the foot.

### ii. *Apical Pulse Site:*

For Apical pulse; Nurses assess the pulse at the apex of the heart. Auscultate (listen to) an apical pulse over the apex of the heart, as the heart beats.

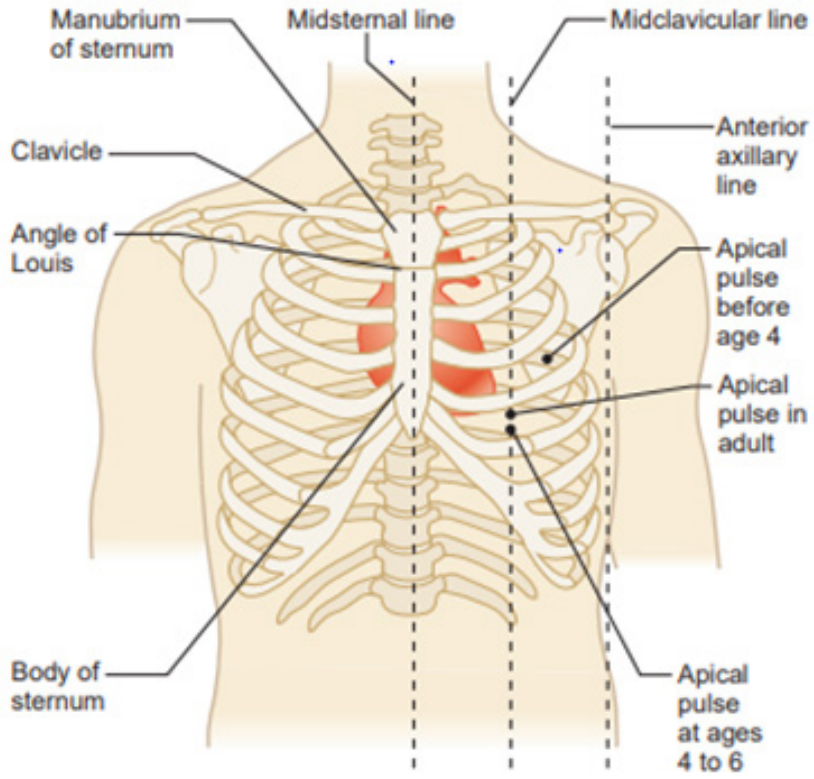



***Figure 50 Location of apical pulse for adults and children***

*Table of Pulse Sites, location and Assessment Criteria*

| Site | Location | Assessment Criteria |
|---|---|---|
| Temporal | Over temporal bone of head, above and lateral to eye | Easily accessible site used to assess pulse in children |
| Carotid | Along medial edge of sternocleidomastoid muscle in neck | Easily accessible site used during physiological shock or cardiac arrest when other sites are not palpable |
| Apical | Fourth to fifth intercostal space at left midclavicular line | Site used to auscultate for apical pulse |
| Brachial | Groove between biceps and triceps muscles at antecubital fossa | Site used to assess status of circulation to lower arm and auscultate blood pressure |
| Radial | Radial or thumb side of forearm at wrist | Common site used to assess character of pulse peripherally and assess status of circulation to hand |
| Ulnar | Ulnar side of forearm at wrist | Site used to assess status of circulation to hand; also used to perform an Allen's test |
| Femoral | Below inguinal ligament, midway between symphysis pubis and anterior superior iliac spine | Site used to assess character of pulse during physiological shock or cardiac arrest when other pulses are not palpable; used to assess status of circulation to leg |
| Popliteal | Behind knee in popliteal fossa | Site used to assess status of circulation to lower leg |
| Posterior tibial | Inner side of ankle, below medial malleolus | Site used to assess status of circulation to foot |
| Dorsalis pedis | Along top of foot, between extension tendons of great and first toe | Site used to assess status of circulation to foot |

**Indications of apical pulse**

- When cardiac output declines significantly, peripheral pulses weaken and are difficult to palpate. The **radial and apical** locations are the most common sites for pulse rate assessment
- If the radial pulse is abnormal or intermittent resulting from dysrhythmias or if it is inaccessible because of a dressing or cast, **assess the apical pulse.**
- When a patient takes medication that affects the HR, **the apical pulse** provides a more accurate assessment of heart function.
- The brachial or **apical pulse** is the best site for assessing an infant's or young child's pulse because other peripheral pulses are deep and difficult to palpate accurately.

### a. Nursing interventions during abnormal Pulse

Specific nursing activities and focused assessments for a patient with a dysrhythmia depend on the cause of the problem and on specific orders from the physician. For example, a client with a pulse rate of 50 beats/min is usually considered to have bradycardia. However, such a slow resting heart rate would be perfectly normal for a well-trained athlete.

Some dysrhythmias are benign; that is, they are not dangerous to the client, and they require no interventions. **Nursing strategies that address dysrhythmias**, regardless of cause, include the following:

- ***Closely monitor the patient's VS (Vital Sign):*** A reduced heart rate may alter blood pressure and tissue perfusion. The extent of intervention depends on the effect of the dysrhythmia on the client's other vital signs.
- ***Monitor the patient's activity tolerance*****:** The degree of activity, orientation, and level of fatigue while the dysrhythmia is present are indicators of the patient's ability to tolerate the dysrhythmia.
- ***Collect and assess laboratory data as prescribed***: Cardiac function depends on normal electrolyte balance, particularly potassium, calcium, and magnesium levels. If a client is receiving medications that affect cardiac rhythm, serum levels of these medications must be checked periodically.
- ***Help determine the cause of the dysrhythmia***: Determine when the client experiences the dysrhythmia. Are there precipitating or alleviating factors?
- ***Administer antidysrhythmic medications***: These are prescribed to control the heart rhythm
- ***Provide emotional support***: The client experiencing a dysrhythmia may be frightened by the experience. Explain all procedures to the client and family members, and maintain a calm presence.

## 3.4.2. Pulse Measurement

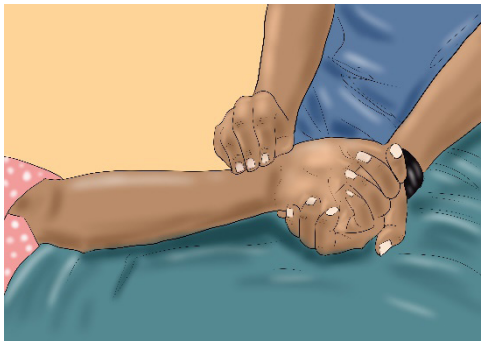


*Figure 51 palpating the radial pulse and counting the pulse*



*Figure 52 Temporal Pulse*



*Figure 53 Femoral Pulse*



*Figure 54 Carotid Pulse*



*Figure 55 Brachial pulse*

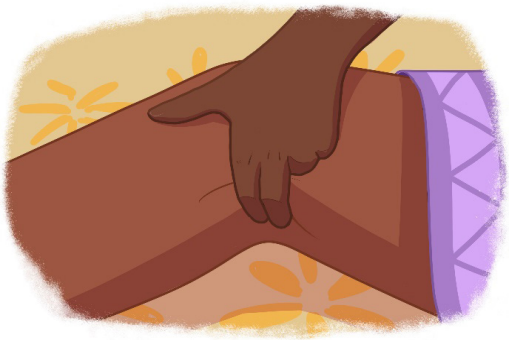


*Figure 56 Poprietal Pulse*

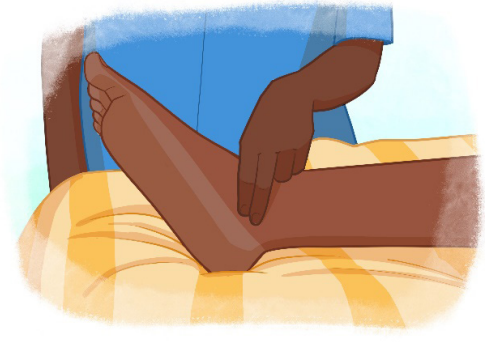


*Figure 57 Posterial Tibialis Pulse*



*Figure 58 Dorsalis Pedis pulse*

**a) Assessment of pulse**

To assess the pulse rate, count the number of beats per minute while palpating or auscultating. Begin the count with one, rather than zero. For normal, healthy adults, you can determine the rate of a regular heart rhythm by counting the pulse for 15 seconds and multiplying the result by 4. Research is conflicting, but some studies indicate that a 30-second count is more accurate. If the pulse is irregular or slow, always count for 1 full minute.

**i. Assessing Peripheral Pulses**

- Make sure the client is resting while you assess the pulse.
- Count for 15 or 30 seconds if the pulse is regular; count for 60 seconds if it is irregular.
- Note pulse rate, rhythm, and quality.
- Compare pulses bilaterally.

### ii. Assessing the Apical Pulse;

Assessing the apical rate requires a stethoscope and is done as follow:

- Position the patient supine or sitting.
- Palpate and place the stethoscope at the 5th intercostal space at the midclavicular line.
- Count for 60 seconds.
- Note pulse rate, rhythm, and quality and the S1 and S2 heart sounds.

***Assessing for an Apical-Radial Pulse Deficit***

- Palpate and place stethoscope over apex of the heart.
- Palpate the radial pulse.
- Have two nurses carry out the procedure, if possible.
- Count for 60 seconds, simultaneously.
- Compare the pulse rate at both sites; calculate the difference.

***Pulse Amplitude***

Pulse amplitude typically is graded as 0 to 4:

- 0 (absent pulse): pulse cannot be felt, even with the application of extreme pressure
- 1 (thread pulse): pulse is very difficult to feel, and applying slight pressure causes pulse to disappear • 2 (weak pulse): pulse is stronger than a thready pulse, but applying light pressure causes pulse to disappear
- 3 (normal pulse): pulse is easily felt and requires moderate pressure to make it disappear
- 4 (bounding pulse): pulse is strong and does not disappear with moderate pressure

**Implementation using the procedural guide for peripheral pulse measurement**

***Equipment***

- Watch with second hand or digital readout
- Pencil or pen, paper or flow sheet, computerized record
- Nonsterile gloves, if appropriate; additional PPE, as indicated

| ACTION | RATIONALE |
|---|---|
| *1. Check medical order or nursing care plan for frequency of pulse assessment. More frequent pulse measurement may be appropriate based on nursing judgment* | *Assessment and measurement of vital signs at appropriate intervals provide important data about the patient's health status* |
| *2. Perform hand hygiene and put on PPE, if indicated* | *Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions* |
| *3. Identify the patient.* | *Identifying the patient ensures the right patient receives the intervention and helps prevent err* |
| *4. Close curtains around bed and close the door to the room, if possible. Discuss the procedure with patient and assess the patient's ability to assist with the procedure* | *This ensures the patient's privacy. Explanation relieves anxiety and facilitates cooperation.* |
| *5. Put on gloves, as appropriate.* | *Gloves are not usually worn to obtain a pulse measurement unless contact with blood or body fluids is anticipated. Gloves prevent contact with blood and body fluids.* |
| *6. Select the appropriate peripheral site based on assessment data.* | *Ensures safety and accuracy of measurement* |
| *7. Move the patient's clothing to expose only the site chosen* | *The site must be exposed for pulse assessment. Exposing only the site keeps the patient warm and maintains his or her dignity* |
| *8. Place your first, second, and third fingers over the artery. Lightly compress the artery so pulsations can be felt and counted* | *The sensitive fingertips can feel the pulsation of the artery* |
| *9. Using a watch with a second hand, count the number of pulsations felt for 30 seconds. Multiply this number by 2 to calculate the rate for 1 minute. If the rate, rhythm, or amplitude of the pulse is abnormal in any way, palpate and count the pulse for 1 minute.* | *Ensures accuracy of measurement and assessment* |
| *10. Note the rhythm and amplitude of the pulse* | *Provides additional assessment data regarding the patient's cardiovascular status* |
| *11. When measurement is completed, remove gloves, if worn. Cover the patient and help him or her to a position of comfort.* | *Removing PPE properly reduces the risk for infection transmission and contamination of other items. Ensures patient comfort* |
| *12. Remove additional PPE, if used. Perform hand hygiene.* | *Removing PPE properly reduces the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.* |

**Evaluation**

The expected outcomes are met when the patient's pulse is assessed accurately without injury and the patient experiences minimal discomfort.

**Unexpected situations and associated interventions**

- ***The pulse is irregular***: Monitor the pulse for a full minute. If the pulse is difficult to assess, validate pulse measurement by taking the apical pulse for 1 minute. If this is a change for the patient, notify the physician.
- ***The pulse is palpated easily, but then disappears***: Apply only moderate pressure to the pulse. Applying too much pressure may obliterate the pulse.
- **In case *you cannot palpate a pulse:*** Use a portable ultrasound Doppler to assess the pulse. If this is a change in assessment or if you cannot find the pulse using an ultrasound Doppler, notify the physician. If you can find the pulse using an ultrasound Doppler, place a small X over the spot where the pulse is located. This can make palpating the pulse easier because the exact location of the pulse is known.

**Special considerations**

***General Considerations***

- The normal heart rate varies by age.
- When palpating a carotid pulse, lightly press only one side of the neck at a time. Never attempt to palpate both carotid arteries at the same time. Bilateral palpation could result in reduced cerebral blood flow
- If a peripheral pulse is difficult to assess accurately because it is irregular, feeble, or extremely rapid, assess the apical rate.

***Infant and Child Considerations***

- For children younger than 2 years of age, assess the apical pulse.
- Do not measure the radial pulse because it is difficult to palpate accurately in this age group
- Measure the apical rate if the child has a cardiac problem or congenital heart defect

**Self-assessment 3.4.**

**For overview**

1) What are the normal values of pulse?
2) Explain the three abnormalities or variations of Pulse?
3) List the Eight peripheral pulse sites
4) Explain how to assess peripheral, and apical pulses?
5) Describe the seven Nursing strategies that address dysrhythmias, regardless of cause

**For procedure**

For you to master the technique of Pulse rate taking; going back to your previous groups of two; let each student takes one more time the pulse of his /her partner.

The teacher will be facilitating and observing each student while carrying out the procedure.

1) Record the results
2) Interpret them.
3) Communicate results to your partner

## 3.4. Blood Pressure

**Learning activity 3.4.**

**Section (a): For over view**

Use the provided book of Fundamentals of Nursing and read the materials on blood pressure under the vital signs unit and make a summary note of the following:

1) Definition of blood pressure
2) Difference between systolic and diastolic blood pressure
3) Determinants of blood pressure
4) Normal values of blood pressure
5) Factors affecting blood pressure
6) Alterations of blood pressure
7) Nursing interventions for a patient with alterations of blood pressure

**Section (b): For measurement**

In small groups of four (4) learners per each, read firstly the required equipment and all the steps of blood pressure assessment in the provided procedural guide. Secondly, use the provided materials for blood pressure measurement and measure the blood pressure of your partner. N.B. In a group of four learners, two learners will pair and every one will measure the blood pressure of his/her partner, write down the results and interpret them.

## 3.4.1. Blood Pressure overview

**Blood pressure** is the force exerted on the walls of an artery created by blood as it flows through the arteries.

Blood flows throughout the circulatory system because of pressure changes, moving from an area of high pressure to an area of low pressure. Under high pressure the left ventricle contracts and ejects blood into the aorta which creates the peak pressure known as **systolic pressure**. When the ventricles relax, the blood remaining in the arteries exerts a minimum pressure know as **diastolic pressure.** Thus**, Diastolic pressure** is the minimal pressure exerted against the arterial wall at all times. In other words**, systolic blood pressure** is the pressure exerted by the blood flow on the arterial wall at the time of the systole: that means that when the left ventricle of the heart contracts throws blood in the circulation, the arteries are then to their maximum of tension. And **diastolic blood pressure** is the pressure exerted by blood on the arteries during the diastole. That means that at the time of the laxity of the ventricle (at rest).

Blood pressure is measured in millimeters of mercury **(mm Hg)** and recorded **as a fraction: systolic pressure over the diastolic pressure.** According to the National Heart Foundation of Australia (2013), **normal blood pressure for a healthy adult** is usually less **than 120/80 mm Hg** (i.e. systolic blood pressure less than 120 and diastolic blood pressure less than 80 mm Hg). The difference between the diastolic and the systolic pressures is called the **pulse pressure**. **A normal pulse pressure** is about **40 mm Hg** but can be as high as 100 mm Hg during exercise. A consistently elevated pulse pressure occurs in arteriosclerosis. A low pulse pressure (e.g. less than 25 mm Hg) occurs in conditions such as severe heart failure.

**a) Normal values of blood pressure**

- The systolic pressure varies between 90 and 140 mm Hg (adult), for men aged of 45 years and more, it can go up to 150mmHg.
- The diastolic pressure, it is between 60 and 90 mm Hg (adult)
- The pulse pressure can vary from 30 to 50 mm Hg
- Newborn: 65-90/ 30-60 mmHg (systolic/ diastolic)
- Infants: 65-125/ 40-90 mmHg (systolic/ diastolic)
- Children: 80-120/ 45-85 mmHg (systolic/ diastolic)
- Adolescents: 95-135/50-70 mmHg (systolic/ diastolic)

**b) Determinants of blood pressure**

Arterial blood pressure is the result of several factors: the pumping action of the heart, the peripheral vascular resistance (the resistance supplied by the blood vessels through which the blood flows), the blood volume, blood viscosity and elasticity of vessels.

- **The pumping action of the heart:** Cardiac output is the volume of blood pumped into the arteries by the heart during 1 minute. When the pumping action of the heart is weak, less blood is pumped into arteries, and the blood pressure decreases. When the heart's pumping action is strong and the volume of blood pumped into the circulation increases, the blood pressure increase. The cardiac output for an adult at rest is 4 to 6 liters of blood each minute.
- **The peripheral vascular resistance**: if the caliber (lumen) of the peripheral vessels is abnormally small, the blood pressure increases, inversely if the caliber is very large the blood pressure decreases.
- **The blood volume**: The volume of blood circulating within the vascular system affects BP. Most adults have a circulating blood volume of 5000 ml. Normally the blood volume remains constant, when it decreases, for example in case of hemorrhage, the blood pressure is low. If it increases (blood transfusions), the blood pressure rises.
- **The blood viscosity or consistence of the blood:** more blood is viscous (thick); more the blood pressure will be raised. Because the resistance is increased. The hematocrit, or percentage of red blood cells in the blood, determines blood viscosity. When the hematocrit rises and blood flows slowly, arterial blood pressure increases. The heart contracts forcefully to move the viscous blood through the circulatory system.

- **The elasticity of vessels:** the vessels with a reduced elasticity, offer more resistance to the blood passage. Therefore, if the resistance increases, the blood pressure will be increased

**c) Factors affecting blood pressure**

Among the factors influencing blood pressure are age, exercise, stress, ethnicity, obesity, gender, medications, obesity, diurnal variations, medical conditions and body temperature.

- **Age:** The blood pressure varies with the age. It is usual to note a progressive increase of blood pressure with the age. In elderly people, elasticity of the arteries is decreased. The arteries are more rigid and less yielding to the pressure of the blood. This produces an elevated blood pressure for the elderly.
- **Exercise:** Physical activity increases both the cardiac output and hence the blood pressure, thus a rest of 20 to 30 minutes following exercise is indicated before the blood pressure can be reliably assessed.
- **Stress:** Anxiety, fear, pain, and emotional stress result in sympathetic stimulation. Stimulation of the sympathetic nervous system increases cardiac output and vasoconstriction of the arterioles, thus increasing the blood pressure. Anxiety raises BP as much as 30 mmHg.
- **Sex/ Gender:** After puberty, females usually have lower blood pressures than males of the same age, this difference is thought to be due to hormonal variations. After menopause, women generally have higher blood pressures than before. For men, the maxima are from 125 to 140 mm Hg whereas for women of the same age it is less elevated at 115 to 130. For the minima, it is generally the same for two sexes.
- **Diurnal variations:** Pressure is usually lowest early in the morning, when the metabolic rate is lowest, then rises throughout the day and peaks in the late afternoon or early evening.
- **Disease process:** any condition affecting the cardiac output, blood viscosity, and/ or compliance of the arteries, has a direct effect on the blood pressure.
- **Position:** A person in lying down position normally the blood pressure is low, while in standing or seated position the blood pressure is high.
- **Medications:** many medications may increase or decrease the blood pressure

- **Obesity:** pressure is generally high in some overweight and obese people than in people of normal weight.

**d) Pathological variations or alterations of blood pressure**

The two common alterations of blood pressure are **hypertension** and **hypotension**.

**i. Hypertension**

**Hypertension** is a blood pressure that is persistently above normal. In other words, hypertension is defined as systolic blood pressure (SBP) greater than 140mmHg and diastolic blood pressure (DBP) greater than 90mmHg. Hypertension is often asymptomatic disorder characterized by persistently elevated blood pressure. Factors such as obesity, cigarette smoking, excessive alcohol intake, elevated blood cholesterol, lack of physical exercises and continued exposure to stress are risk factors for hypertension.

Hypertension cannot be diagnosed/confirmed unless an elevated blood pressure is found when properly measured twice with well-maintained equipment at different times, it is usually asymptomatic and is often a contributing factor to myocardial infarctions and stroke. An elevated blood pressure of unknown cause is called **primary hypertension**. An elevated blood pressure of known cause is called **secondary hypertension**.

**Classification of Blood Pressure for Adults ages (18yearsand older)**

| Category | Systolic (mmHg) | Diastolic (mmHg) |
|---|---|---|
| **Normal** | <120 | <80 |
| **Prehypertension** | 120-139 | 80-89 |
| **Hypertension Stage 1** | 140-159 | 90-99 |
| **Hypertension Stage 2** | ≥160 | ≥100 |

**Nursing interventions for a patient with hypertension:**

- Put the patient in supine position
- Assure calmness around him and to reassure maximum relaxation.
- Give glucose solution drip
- Give diuretic if the high blood pressure is very important
- Continue observation
- Treat cause
- Refer to the hospital center if you are in health center or seek for medical advice

### ii. Hypotension

**Hypotension** is a blood pressure that is below normal. It is an SBP less than 90mmHg.

For most individuals hypotension is an abnormal finding associated with an illness (e.g., hemorrhage or myocardial infarction). Hypotension occurs when arteries dilate, the peripheral vascular resistance decreases, the circulating blood volume decreases, or the heart fails to provide adequate cardiac output. Signs and symptoms associated with hypotension include pallor, skin mottling, clamminess, confusion, dizziness, chest pain, increased heart rate, and decreased urine output. Hypotension is usually life threatening and needs to be reported immediately to the patient's health care provider.

**Nursing interventions for a patient with hypotension**

- Put the patient in Trendelenburg
- Give physiological solution drip of preference or Ringer Lactate
- Continue observation
- Treat cause
- Refer to the hospital if you are in health center or alert the physician when you are at the hospital

## 3.4.2. Blood Pressure measurement

**Blood pressure** is measured with a blood pressure cuff, a sphygmomanometer and a stethoscope. The blood pressure cuff consists of the bladder; that is, a rubber bag that can be inflated with air. It is covered with cloth and has two tubes attached to it. One tube connects to a rubber bulb that inflates the bladder. A small valve on the side of this bulb traps and releases the air in the bladder. The other tube is attached to a sphygmomanometer. The sphygmomanometer indicates the pressure of the air within the bladder. There are two types of sphygmomanometers: **aneroid** and **digital** (electronic).

The **aneroid** sphygmomanometer is a calibrated dial with a needle that points to the calibrations. Most clinical settings use **digital** (electronic) sphygmomanometers; however, **manual blood pressure measurements are more reliable and accurate than electronic blood pressure devices**, which need to be calibrated regularly for accuracy. All health care facilities should have manual blood pressure equipment available for use

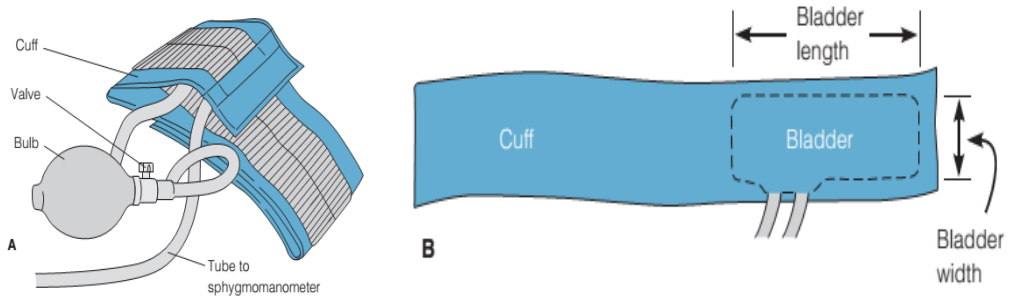



***Figure 59 A: Blood pressure cuff and bulb. B: The Bladder inside the cuff***



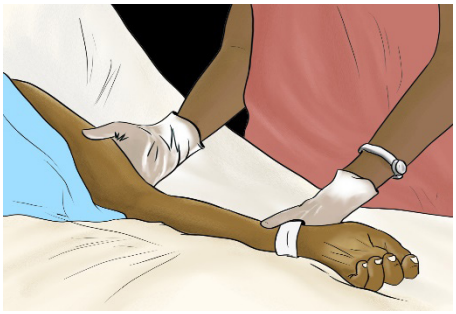
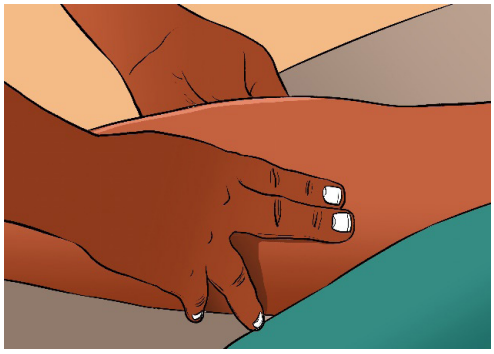
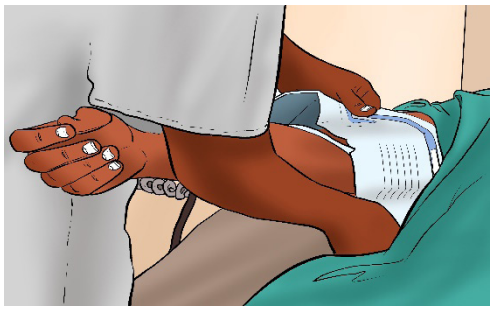
***Figure 60 An aneroid sphygmomanometer and cuff***

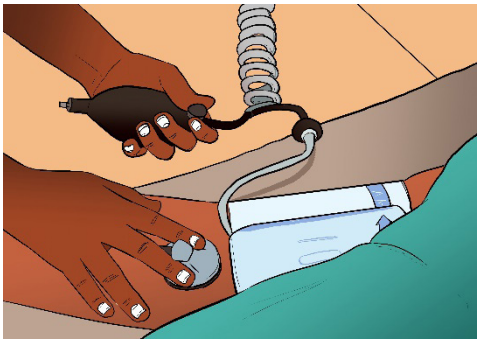



***Figure 61 Electronic BP machine***

| **Skill 1. Assessing Brachial Artery Blood Pressure** | | |
|---|---|---|
| **EQUIPMENT** | | |
| ▪ Stethoscope<br>▪ Sphygmomanometer<br>▪ Blood pressure cuff of appropriate size<br>▪ Pencil or pen, paper or flow sheet<br>▪ Alcohol swab<br>▪ PPE (Personal Protective Equipment), as indicated | | |
| | **Steps** | **Rationale** |
| 1. | *Check physician's order or nursing care plan for frequency of blood pressure measurement. More frequent measurement may be appropriate based on nursing judgment.* | *Provides for patient safety* |

| | | |
|---|---|---|
| 2. | *Perform hand hygiene and put on PPE, if indicated.* | *Hand hygiene and PPE prevent the spread of microorganisms.*<br><br>*PPE is required based on transmission precautions.* |
| 3. | *Identify the patient.* | *Identifying the patient ensures the right patient receives the intervention and helps prevent errors.* |
| 4. | *Close curtains around bed and close the door to the room, if possible. Discuss procedure with patient and assess patient's ability to assist with the procedure. Validate that the patient has relaxed for several minutes. Be sure that patient has not exercised, ingested caffeine, or smoked for 30 minutes before assessment of blood pressure* | *This ensures the patient's privacy. Explanation relieves anxiety and facilitates cooperation. Activity immediately before measurement can result in inaccurate results* |
| 5. | *Put on gloves, if appropriate or indicated.* | *Gloves prevent contact with blood and body fluids. Gloves are usually not required for measurement of blood pressure, unless contact with blood or body fluids is anticipated.* |
| 6. | *Have the patient assume a comfortable lying or sitting position with the forearm supported at the level of the heart and the palm of the hand upward. If the measurement is taken in the supine position, support the arm with a pillow. In the sitting position, support the arm yourself or by using the bedside table* | *The position of the arm can have a major influence when the blood pressure is measured; if the upper arm is below the level of the right atrium, the readings will be too high. If the arm is above the level of the heart, the readings will be too low* |
| 7. | *Expose the brachial artery by removing garments, or move a sleeve, if it is not too tight, above the area where the cuff will be placed* | *Clothing over the artery interferes with the ability to hear sounds and can cause inaccurate blood pressure readings. A tight sleeve would cause congestion of blood and possibly inaccurate readings.* |

| | | |
|---|---|---|
| 8. | *Palpate the location of the brachial artery. Position cuff 2.5 cm (1 inch) above site of pulsation (antecubital or popliteal space). Line the artery marking on the cuff up with the patient's brachial artery. The tubing should extend from the edge of the cuff nearer the patient's elbow*<br>  <br>*Proper positioning for blood pressure assessment using brachial artery.*<br>  <br>A. *Palpating brachial artery*<br>  <br>B. *Aligning blood pressure cuff arrow with brachial artery* | *Placing bladder directly over artery ensures that you apply proper pressure during inflation. Loose-fitting cuff causes false-high readings. A cuff placed upside down with the tubing toward the patient's head may give a false reading.* |

| | | |
|---|---|---|
| |  <br>c. *Blood pressure cuff wrapped around upper arm* | |
| 9. | *Position manometer gauge vertically at eye level. You should be no farther than 1 meter away.* | *Looking up or down at scale can result in distorted reading* |
| 10. | *Measure blood pressure:* | |
| | ***(1) Two-step method:*** | |
| a. | *Relocate brachial pulse. Palpate artery distal to cuff with fingertips of non-dominant hand while inflating cuff rapidly to a pressure 30 mm Hg above point at which pulse disappears. Slowly deflate cuff and note point when pulse reappears. Deflate cuff fully and wait 30 seconds* | *Determine maximal inflation point for accurate reading by palpation. If unable to palpate artery because of weakened pulse, use an ultrasonic stethoscope .Completely deflating cuff prevents venous congestion and false-high readings.* |
| b. | *Place stethoscope earpieces in ears and be sure that sounds are clear, not muffled* | *Ensure that each earpiece follows angle of ear canal to facilitate hearing.* |
| c. | *Relocate brachial artery and place bell or diaphragm chest piece of stethoscope over it. Do not allow chest piece to touch cuff or clothing* | *Proper stethoscope placement ensures best sound reception.*<br><br>*Stethoscope improperly positioned causes muffled sounds that often result in false-low systolic and false-high diastolic readings.*<br><br>*The bell provides better sound reproduction, whereas the diaphragm is easier to secure with fingers and covers a larger area.* |
| d. | *Close valve of pressure bulb clockwise until tight. Quickly inflate cuff to 30 mm Hg above patient's estimated systolic pressure* | *Tightening valve prevents air leak during inflation.*<br><br>*Rapid inflation ensures accurate measurement of systolic pressure.* |

| | | |
|---|---|---|
| e. | *Slowly release pressure bulb valve and allow manometer needle to fall at rate of 2 to 3 mm Hg/second.* | *Too-rapid or too-slow a decline causes inaccurate readings* |
| f. | *Note point on manometer when you hear first clear sound. The sound will slowly increase in intensity.* | *First Korotkoff sound reflects systolic blood pressure* |
| g. | *Continue to deflate cuff gradually, noting point at which sound disappears in adults. Note pressure to nearest 2 mm Hg. Listen for 20 to 30 mm Hg after last sound and allow remaining air to escape quickly.* | *Beginning of fifth Korotkoff sound is indication of diastolic pressure in adults. Fourth Korotkoff sound involves distinct muffling of sounds and is indication of diastolic pressure in children* |
| | ***(2) One-step method:*** | |
| a. | *Place stethoscope earpieces in ears and be sure that sounds are clear, not muffled* | |
| b. | *Relocate brachial artery and place bell or diaphragm chest piece of stethoscope over it. Do not allow chest piece to touch cuff or clothing* | |
| c. | *Close valve of pressure bulb clockwise until tight. Quickly inflate cuff to 30 mm Hg above patient's usual systolic pressure* | Tightening valve prevents air leak during inflation. Inflation above systolic level ensures accurate measurement of systolic pressure |
| d. | *Slowly release pressure bulb valve and allow manometer needle to fall at rate of 2 to 3 mm Hg/second. Note point on manometer when you hear first clear sound. Sound will slowly increase in intensity* | |
| e. | *Continue to deflate cuff gradually, noting point at which sound disappears in adults. Note pressure to nearest 2 mm Hg. Listen for 10 to 20 mm Hg after last sound and allow remaining air to escape quickly* | |
| f. | *The Joint National Committee recommends the average of two sets of blood pressure measurements 2 minutes apart. Use second set of blood pressure measurements as patient's baseline.* | *Two sets of blood pressure measurements help to prevent false positive readings based on patient's sympathetic response (alert reaction).* |

| | | |
|---|---|---|
| g. | *Remove cuff from patient's arm unless you need to repeat*<br><br>*Measurement* | |
| h. | *If this is first assessment of patient, repeat procedure on other arm* | *Comparison of blood pressure in both arms detects circulatory problems. (Normal difference of 5 to 10 mm Hg exists between arms.)* |
| i. | *Help patient return to comfortable position and cover upper arm if previously clothed.* | *Restores comfort and provides sense of well-being* |
| j. | *Discuss findings with patient as needed* | *Promotes participation in care and understanding of health status.*<br><br>*Makes patient accountable for follow-up assessment. Systolic blood pressure in leg is 10 to 40 mm Hg higher than arm but*<br><br>*diastolic blood pressure is same* |
| k. | *Perform hand hygiene. Clean earpieces and diaphragm of stethoscope with alcohol swab as needed* | *Reduces transmission of microorganisms.*<br><br>*Controls transmission of microorganisms when nurses share stethoscope* |
| 11. | *Record blood pressure and site assessed on vital sign flow sheet, nurses' notes, and EHR* | |
| 12. | *Document measurement of blood pressure after administration of specific therapies in nurses' notes and HER* | |
| 13. | *Record any signs or symptoms of blood pressure alterations in nurses' notes and EHR* | |
| 14. | *Report abnormal findings to nurse in charge or health care provider* | |

## Self -assessment 3.4.

**For Blood pressure overview:**

1) What is the difference between systolic and diastolic blood pressure?
2) What are the five determinants of blood pressure?
3) The following blood pressures in mmHg, taken 6 months apart, were recorded from adult patients screened by the nurse at the health center. Which patient should be referred to the physician for hypertension evaluation?

   Patient 1: 120/80, 118/78, 124/82

   Patient 2: 128/84, 124/86, 128/88

   Patient 3: 148/82, 148/78, 134/86

   Patient 4: 154/78, 118/76, 126/84

4) Explain why the blood pressure increases with age?

**For Blood pressure measurement:**

For you to master the technique of blood pressure measurement; go back to your previous groups of two; let each student measures one more time the blood pressure of his /her partner. The teacher will be facilitating and observing each student while carrying out the procedure.

1) Record the results
2) Interpret the results.
3) Communicate results to your partner

## 3.5. Respiration

### Learning activity 3.5.

**For overview**

Use the provided book of fundamentals of nursing to read the materials on respiration under the vital signs unit and make a summary note of the following:

1) Definition of Respiration
2) Normal values and abnormal values of Respiration
3) Pathological variations of Respiration
4) (Risk) Factors affecting Respiration
5) Sites of pulse
6) Different methods of Respiration taking or How to assess the Respiration:
7) Basic nursing interventions during abnormal respiration or in case of respiration alterations?

**For procedure**

Using checklist provided and equipment for respiration rate taking (see checklist); read all steps of pulse rate taking in order for you to measure correctly the Respiration rate for your partner. Remember that you need a watch, a pen and a sheet paper. Go back to your groups of 2 students and each one of you do the following

- Observe this image of a nurse assessing respirations of the patient.
- Position your pair in the supine or sitting position and
- Measure his/her respiration rate and vice-versa
- Compare your results



*Figure 62 Nurse assessing respirations*

## 3.5.1. Respiration Overview

Respiration is the interchange of oxygen ($O_2$) and carbon dioxide ($CO_2$) between the atmosphere and the body and involves both external respiration and internal respiration.

*External respiration* is the exchange of these gases between the lungs' alveoli and the blood found in the capillaries that surround the alveoli.

*Internal respiration* is the process of exchanging gases between the circulating blood and the tissue cells that make up the body.

The movement of air into and out of the lungs is known as *ventilation.* The mechanics of respiration involve the act of breathing in, termed as inhalation or ***inspiration***, and breathing out, described as exhalation or ***expiration*.**

**a. Inspiration**

To effect inspiration, the medulla sends an impulse via the phrenic nerves to the diaphragm muscle and along the intercostal nerves to the intercostal muscles, telling the muscles to contract

The contraction of the diaphragm causes it to flatten and move downward, while the contraction of the inter-costal muscles results in pulling the ribs upward and outward, enlarging the chest cavity.

**b. Expiration**

Once the medulla stops sending the motor impulses to inhale, the intercostal and diaphragm muscles begin to relax, once again shrinking the thoracic or chest cavity to the smaller, pre-inhalation state and compressing the lungs. The elastic connective tissue of the alveoli recoils somewhat like a rubber band, forcing the air that is mostly CO2 out of the alveoli so that it can be exhaled and returned to the atmosphere.

**c. Rate**

Each respiration consists of one inspiration and one expiration. Observe the rise and fall of the chest or abdomen to count the rate.

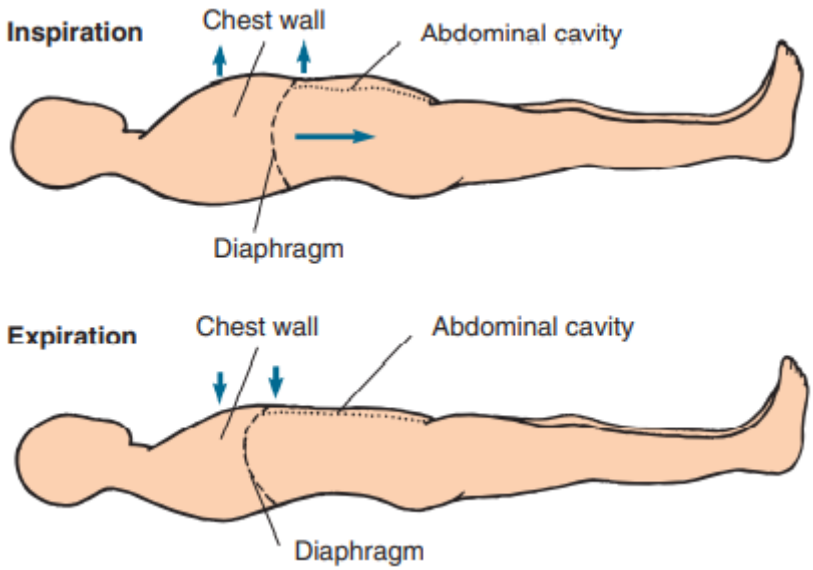



***Figure 63 Inspiration and expiration***

### d. Normal and Abnormal values

***The normal rate*** for adults is between *12 and 20 bpm*. When the rate, depth, rhythm, pattern, and respiratory effort fall within normal parameters, the term ***eupnea*** is used to describe the respirations.

***Table of Acceptable Ranges of Respiratory Rate***

| Age | Rate (Breaths/min) |
|---|---|
| Newborn | 35-40 |
| Infant(6 months) | 30-50 |
| Toddler (2 years) | 25-32 |
| Child | 20-30 |
| Adolescent | 16-20 |
| Adult | 12-20 |

***Bradypnea*** describes a respiratory rate below 12 respirations per minute; when the rate exceeds 20 respirations per minute, the term is ***tachypnea.*** These are ***abnormal values.*** When the breathing rate slows, it results in a decreased intake of O2 that can result in a deficiency of O2 in the tissues and cells. When respirations cease or are absent, this is known as ***apnea.*** You have only a brief window of 3 to 5 minutes in which to restore respirations before brain damage and death occur.

***Other things to consider when assessing respiration rate***

Assess respiration for:

- Rate per minute
- Depth
- Rhythm
- Pattern
- Respiratory effort

**Respiratory Effort**

Respiratory effort refers to the amount of work required to breathe. Normally, the act of breathing is effortless and is performed unconsciously. An individual who is having labored or difficult breathing is said to be having **dyspnea**. Another sign of difficult breathing is *use of the accessory respiratory muscles*: the neck and abdominal muscles. It is important to assess which activities result in dyspnea, document findings in the patient's record, and report such findings to the supervisor.

Some patients find it too difficult to breathe unless positioned in an upright position, such as sitting or standing. This condition is known as **orthopnea**. In other words, we define **"Orthopnea"** as an abnormal condition in which a person must sit or stand to breathe deeply or comfortably

**e. Factors affecting Respiratory rate**

Because the heart and lungs work together to provide circulation of nutrients and oxygen, *the factors that affect the heart rate generally affect the respiratory rate as well*. For example, as fever raises the pulse rate, it will also increase the respiratory rate. Breathing speeds up in an attempt to meet the body's increased metabolic needs and to remove excess heat. For every 1°F rise in body temperature, the respiratory rate increases approximately four breaths per minute. The table below presents further factors that affect the respiratory rate.

| Factor | Effect |
|---|---|
| Age | Normal rates: New-borns: 30–60; Infants: 20–40;<br>Children: 20–30; Adolescents: 14–25; Adults: 12–20 |
| Smoking | Increase |
| Environmental temperature | Heat: Increase<br>Cold: Decrease |
| Exercise, exertion | Increase |
| Rest, sleep, meditation | Decrease |
| Pain, anxiety, stress, fear | Increase |
| Medications, such as narcotics and sedatives | Decrease |
| Drug overdose, such as aspirin | Increase |
| Respiratory diseases, such as asthma and emphysema | Increase |
| Metabolic acidosis, such as caused by diabetes | Increase |
| Metabolic alkalosis, such as caused by severe vomiting | Decrease |
| Increased intracranial pressure | Decrease |

### f. Pathological (abnormal) variations of Respiration rate

Some patients find it too difficult to breathe unless positioned in an upright position, such as sitting or standing. This condition is known as **orthopnea**. In other words, we define

**"Orthopnea"** as an abnormal condition in which a person must sit or stand to breathe deeply or comfortably.

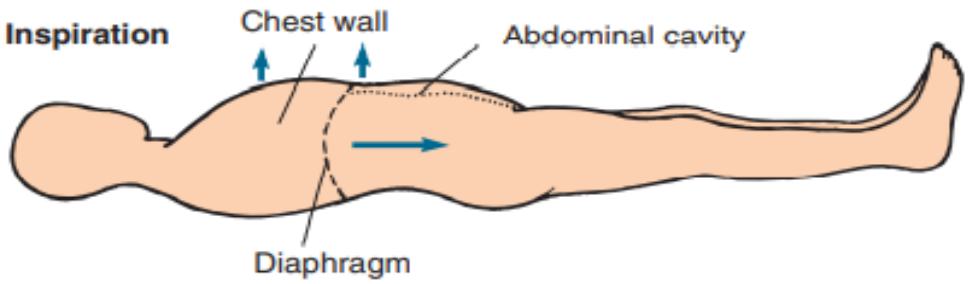
***Table of Abnormal Respiratory Patterns or Respiratory alterations***

| Pattern | Explanation | Graph of Pattern | Associated With |
|---|---|---|---|
| *Cheyne-Stokes respirations* | Respirations begin shallow, gradually increase in depth and frequency to a peak, then begin to decrease in depth and frequency until slow and shallow; this is followed by a period of apnea lasting from 10 to 60 seconds. Pattern is repetitious. |  | Children: may be a normal pattern Adults: usually ominous— coma, heart failure, head injury, drug overdose, impending death |
| *Kussmaul's respirations* | Respirations are increased in rate and depth, with long, strong, blowing or grunting exhalations. |  | Diabetic ketoacidosis, renal failure |
| *Biot's respirations* | Respirations are grouped as several shallow breaths followed by variable-length periods of apnea. |  | Meningitis, central nervous system disorders |

### g. Sites of Respiration rate taking

The rate is usually measured when a person is at rest and simply involves counting the number of breaths for one minute by counting how many times ***the chest rises.***

Note depth of respirations by observing degree of ***chest wall movement*** while counting rate. In addition, assess depth by ***palpating chest wall*** excursion or auscultating ***posterior thorax*** after you have counted rate. See Fig.5-8



### h. Basic Nursing interventions in case of respiratory alterations

**In cases of:**

- **Apnea**: You have only a brief window of 3 to 5 minutes in which to restore respirations before brain damage and death occur. Call for help to start Cardio Pulmonary resuscitation (CPR)
- **Dyspnea**: Patients with ***dyspnea*** experience more distress when lying flat. Placing the patient in a semi-Fowler or Fowler position facilitates a better respiratory pattern. Maximal lung expansion can be achieved by having the patient assume a sitting position, leaning forward over a raised bedside table with arms resting on the table, in what is called the tripod position. People who have difficulty ventilating all areas of their lungs, those whose gas exchange is impaired or people with heart failure may benefit from oxygen therapy to prevent hypoxia

## 3.5.2. Measurement of respirations

### a) Methods of Respiration taking /How to assess Respiration

The only *equipment required* to assess respiration *is a watch*.

**BOX 3.5.2.**

**N.B.** Because individuals can voluntarily control their breathing for short intervals of time:

- *It is better to assess the respirations without the patient's awareness*.
- This may be accomplished by positioning the patient's arm across his or her chest or abdomen.
- Feel for the radial pulse and hold the pulse site while you assess first the respirations and then the radial pulse. It will appear that you are simply taking the patient's pulse, and this will help to distract the patient from concentrating on his or her breathing.
- While pressing two fingers against the pulse site, count the respiratory rate for 30 seconds and multiply times two for a 1-minute rate, and then continue to palpate the radial pulse site to assess the pulse rate.
- If the patient is critically **ill or respirations deviate** in any manner from the norm, assess for a **full minute.**
- Without special equipment, you can only observe the rise and fall of the chest to provide a subjective measurement of the depth, usually described as shallow, normal, or deep.

### b) Respiratory rate assessment procedure

The checklists that will help student to acquire the skills of respiration rate taking by following all steps and procedures are hereby provided:

| STEP | RATIONALE |
|---|---|
| **Equipment**<br><br>Wristwatch with second hand or digital display; Pen and vital sign flow sheet or electronic health record (EHR) a Pen and vital sign flow sheet or electronic health record | |
| *1. Draw curtain around bed and/or close door. Perform hand hygiene.* | *Maintains privacy. Prevents transmission of microorganisms.* |
| *2. Be sure that patient's chest is visible. If necessary, move bed linen or gown.* | *Ensures clear view of chest wall and abdominal movements* |
| *3. Place patient's arm in relaxed position across abdomen or lower chest or place your hand directly over patient's upper abdomen* | *A similar position used during pulse assessment allows respiratory rate assessment to be inconspicuous. Patient's or nurse's hand rises and falls during respiratory cycle* |
| *4. Observe complete respiratory cycle (one inspiration and one expiration).* | *Rate is accurately determined only after nurse has viewed respiratory cycle* |
| *5. After observing cycle, look at second hand of watch and begin to count rate: when sweep hand hits number on dial, begin time frame, counting one with first full respiratory cycle.* | *Timing begins with count of one. Respirations occur more slowly than pulse; thus timing does not begin with zero.* |
| *6. If rhythm is regular, count number of respirations in 30 seconds and multiply by 2. If rhythm is irregular, less than 12, or greater than 20, count for 1 full minute* | *Respiratory rate is equivalent to number of respirations per minute. Suspected irregularities require assessment for at least 1 minute* |
| *7. Note depth of respirations by observing degree of chest wall movement while counting rate. In addition, assess depth by palpating chest wall excursion or auscultating posterior thorax after you have counted rate* | *Character of ventilatory movement reveals specific disease states restricting volume of air from moving into and out of lungs* |
| *8 Note rhythm of ventilatory cycle. Normal breathing is regular and uninterrupted. Do not confuse sighing with abnormal rhythm* | *Character of ventilations reveals specific types of alterations. Periodically people unconsciously take single deep breaths or sighs to expand small airways prone to collapse* |

| | |
|---|---|
| ***Clinical Decision Point**: Any irregular respiratory pattern or periods of apnea (cessation of respiration for several seconds) are symptoms of underlying disease in the adult, and you need to report this to the health care provider or nurse in charge. Further assessment and immediate intervention are often necessary.* | |
| *9 .Replace bed linen and patient's gown.* | *Restores comfort and promotes sense of well-being* |
| *10. Perform hand hygiene.* | *Reduces transmission of microorganisms.* |
| *11. Discuss findings with patient as needed.* | *Promotes participation in care and understanding of health status. Promotes participation in care and understanding of health status.* |

## Self -assessment 3.5.

**For Overview**

1) What are the normal values or acceptable ranges of respiration rate for: new-born, Infant (6 months), Toddler, Child, adolescent and Adult?
2) Explain the following terms:
   a) Bradypnea and tachypnea;
   b) Apnea, dyspnea, orthopnea
3) Name at least four abnormal Respiratory patterns
4) Identify at least five factors affecting Respiratory rate.
5) Provide the definition of the terms: Respiration, External respiration and Internal respiration
6) Indicate the sites used for Respiration rate taking

**For Measurement Procedure:**

Instructions:

For you to master the technique of Respiration rate taking; going back to your previous groups of two; let each student takes one more time the respiration rate of his /her partner.

The teacher will be facilitating and observing each student while carrying out the procedure by doing the following:

1) Take correctly the Respiration rate of your partner
2) Record the results
3) Interpret them.
4) Communicate results to your partner

## 3.6. Oxygen saturation (Pulse Oximetry)

**Learning activity 3.6.**

In small groups of four (4) learners per each, use the provided Fundamentals of Nursing book and read especially the material and procedural guide on measurement of oxygen saturation (Pulse Oximetry) under vital signs unit. After getting an overview information related to the meaning of pulse oximetry, normal values, factors that may affect the oxygen saturation readings and the equipment used to measure the oxygen saturation; two learners will pair and every one will measure the oxygen saturation of his/her partner, write down the results and interpret them

**Pulse oximetry** is the indirect measurement of oxygen saturation and is the fifth vital sign. During ventilation, oxygen and carbon dioxide diffuse across the alveolar capillary membrane. Each alveolus is a collection of air sacs surrounded by a network of capillaries carrying arterial blood from the right ventricle. The diffusion of these gases occurs in the alveoli and these gases diffuse from the area of high concentration to the area of low concentration. There is a net movement of oxygen from the air sacs into the alveolar capillaries, thereby increasing the oxygen concentration of the blood in these capillaries. This arterial blood has a high carbon dioxide concentration which diffuses from the alveolar capillaries into the air sacs.

Oxygen is carried in the blood as either dissolved oxygen or as oxygen bound to haemoglobin in red blood cells. The concentration of oxygen dissolved in the plasma is represented as the **partial pressure of arterial oxygen ($PaO_2$).** In contrast, the **saturation of arterial oxygen ($SaO_2$)** is a ratio of the oxygen bound to haemoglobin compared with the oxygen-carrying capacity of the haemoglobin.

After oxygen diffuses from the alveoli into the pulmonary blood, most of the oxygen attaches to hemoglobin molecules in red blood cells. Red blood cells carry the oxygenated hemoglobin molecules through the left side of the heart and out to the peripheral capillaries, where the oxygen detaches, depending on the needs of the tissues.

**A pulse oximeter** is a non-invasive device that estimates a person's arterial blood oxygen saturation ($SaO_2$) by means of a sensor attached to the person's finger, toe, nose, earlobe or forehead (or around the hand or foot of a neonate). The pulse oximeter can detect **hypoxaemia** before clinical signs and symptoms such as **cyanosis** (dusky/darker) skin colour and dusky nail bed colour) develop. Oxygen saturation assessed using the invasive approach is documented as **$SaO_2$ (arterial**

**oxygen saturation);** oxygen saturation assessed by pulse oximetry is documented as **SpO2 (peripheral oxygen saturation or tissue oxygenation)**.The oximeter calculates the pulse oxygen saturation ($SpO_{2)}$. $SpO_2$ is a reliable estimate of $SaO_2$. More specifically, $SpO_2$ is the percentage of oxygenated hemoglobin (hemoglobin containing oxygen) compared with the total amount of hemoglobin in the blood. Normally $SpO_2$ is between **95% and 100%;** however, in patients with extensive respiratory disease such as chronic obstructive pulmonary disease (COPD), $SpO_2$ **greater than 90%**may be an acceptable baseline.

**Oxygen saturation interpretation**

| SpO2 % | Oxygenation |
|---|---|
| 95-100 | Normal |
| 91-94 | Mild hypoxia |
| 86-90 | Moderate hypoxia |
| <85 | Severe hypoxia |

**Note:** Oximetry measurements should always be interpreted in conjunction with other patient factors, including signs and symptoms of hypoxia

The pulse oximeter's sensor has two parts: (a) two light-emitting diodes (LEDs)-one red, the other infrared-that transmit light through nails, tissue, venous blood, and arterial blood; and (b) a photodetector placed directly opposite the LEDs (e.g., the other side of the finger, toe, or nose). The photodetector measures the amount of red and infrared light absorbed by oxygenated and deoxygenated hemoglobin in peripheral arterial blood and reports it as $SpO_2$.




*Figure 64 Fingertip oximeter sensor (cordless)*

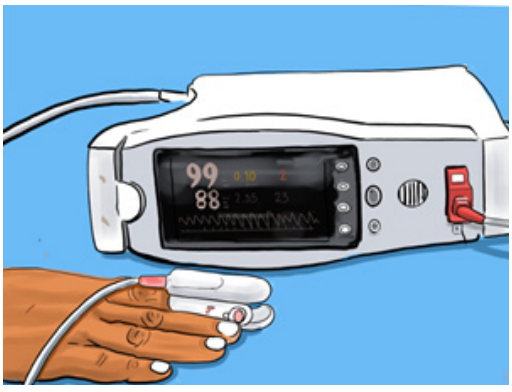



*Figure 65 Pulse oximeter connected to finger sensor*

**Factors affecting oxygen saturation readings**

**Hemoglobin.** If the hemoglobin is fully saturated with oxygen, the SpO2will appear normal even if the total hemoglobin level is low. Thus, the person could be severely anemic and have inadequate oxygen to supply the tissues but the pulse oximeter would return a normal value.

**Circulation.** The oximeter will not return an accurate reading if the area under the sensor has impaired circulation, such as occurs in peripheral vascular disease or if a person is very cold. Other factors that result into reduction of pulse volume (reduction of arterial pulsations) will also affect the oxygen saturation reading. Such factors are peripheral vascular disease (atherosclerosis), hypothermia, pharmacological vasoconstrictors (epinephrine, phenylephrine, and dopamine), low cardiac output and hypotension, peripheral edema, tight probe (will record venous pulsations in the finger that compete with arterial pulsations).

**Activity.** Shivering or excessive movement of the sensor site may interfere with accurate readings.

**Dark-colored nail polish or discoloration of the nail bed.** False readings typically arise when a person is wearing dark colored nail polish or if the nail bed is discolored by a subdermal hematoma or other sources of nail bed discoloration, such as nicotine stains.

**Carbon monoxide poisoning.** Pulse oximeters cannot discriminate between hemoglobin saturated with carbon monoxide versus oxygen. In this case, other measures of oxygenation are needed.

| **Measuring oxygen saturation ( pulse oximetry)** | | |
|---|---|---|
| **EQUIPMENT** | | |
| ▪ Pulse oximeter | | |
| | **Steps** | **Rationale** |
| 1. | *Provide privacy and prepare environment for patient Safety* | *Providing privacy and preparing the environment helps you to think about the steps needed and removes clutter from over-bed or bedside table.* |
| 2. | *Prepare and organize pulse oximetry equipment* | *Ensures organized procedure* |

| | | |
|---|---|---|
| 3. | *Explain purpose of procedure and how you measure oxygen saturation to patient. Instruct patient to breathe normally* | *Promotes patient cooperation and increases compliance.*<br><br>*Prevents large fluctuations in minute ventilation and possible error in $SpO_2$ readings.* |
| 4. | Perform hand hygiene. | Reduces transmission of microorganisms |
| 5. | *Position patient comfortably. When using finger as monitoring site, support lower arm.* | *Ensures probe positioning and decreases motion artifact that interferes with $SpO_2$ determination.* |
| 6. | *Instruct patient to breathe normally and relax* | *Prevents large fluctuations in respiratory rate and depth and possible changes in $SpO_2$* |
| 7. | *When using finger as monitoring site, consider removing any fingernail polish with acetone or polish remover. Acrylic nails without polish do not interfere with $SpO_2$ determination.* | *Ensures accurate readings. Nail polish may falsely alter saturation.* |
| 8. | *Attach transmittance sensor probe following manufacturer directions. In most sensors involving finger, toe, or ear, the LEDs and the photodector must be aligned directly across from one another.* | *Ensures transmission of light between emitter and detector through the digit or ear across the arteriolar bed* |
| 9. | *Attach reflectance sensor to forehead following manufacturer's directions. LEDs are already aligned as part of sensor design. Remove cover over adhesive to apply to forehead or use a Velcro band/device to apply* | *Reflects light from the emitter/detector across the skin surface. Forehead site is preferred if patient has poor circulation* |
| | **Clinical Decision Point**:<br><br>▪ Do not attach sensor to finger, ear, forehead, or bridge of nose if area is edematous or skin integrity is compromised.<br>▪ Do not attach sensor to fingers that are hypothermic.<br>▪ Select forehead, ear, or bridge of nose if adult patient has history of peripheral vascular disease.<br>▪ Do not use earlobe and bridge of nose sensors for infants and toddlers because of skin fragility.<br>▪ Do not use disposable adhesive sensors if patient has latex allergy.<br>▪ Do not place sensor on same extremity as electronic blood pressure cuff because blood flow to finger is temporarily interrupted when cuff inflates and causes inaccurate readings that trigger alarms. | |

| | | |
|---|---|---|
| 10. | *Once sensor is in place, turn on oximeter by activating power. Observe pulse waveform/intensity display and audible beep. Correlate oximeter pulse rate with patient's radial pulse. Differences require re-evaluation of oximeter sensor placement and may require reassessment of pulse rates.* | *Pulse waveform/intensity display enables detection of valid pulse or presence of interfering signal. Pitch of audible beep is proportional to $SpO_2$ value. Double-checking pulse rate ensures oximeter accuracy. Oximeter pulse rate, patient's radial pulse, and apical pulse rate should be the same. Any difference requires re-evaluation of oximeter sensor placement and reassessment of pulse rates.* |
| 11. | *Leave sensor in place until oximeter readout reaches constant value and pulse display reaches full strength during each cardiac cycle. Inform patient that oximeter alarm will sound if sensor falls off or patient moves sensor. Read $SpO_2$ on digital display* | *Reading takes 10 to 30 seconds, depending on site selected.* |
| 12. | *If continuous $SpO_2$ monitoring is necessary, verify $SpO_2$ alarm limits and volume, which are pre-set by the manufacturer at a low of 85% and a high of 100%.*<br><br>*Determine limits for $SpO_2$ and pulse rate alarms based on each patient's condition. Verify that alarms are on* | *Alarms are set at appropriate limits and volumes to avoid frightening patients and visitors* |
| 13. | *Assess skin integrity every 2 hours under sensor.*<br><br>*Routinely relocate sensor at least every 24 hours or more frequently. This is especially important if skin integrity is altered or tissue perfusion is compromised. Use care during removal to avoid damage to skin.* | *Sensor tension and sensitivity to disposable sensor adhesive cause skin irritation and lead to disruption of skin integrity. There have been reports of forehead and nasal pressure injuries* |
| 14. | *Help patient return to comfortable position.* | *Restores comfort and promotes a sense of well-being* |
| 15. | *Clean the surface of a reusable sensor between patients with 70% Isopropyl alcohol solution or solution recommended by manufacturer.* | *Reduces transmission of infection* |
| 16. | *Discuss findings with patient as needed* | *Promotes participation in care and understanding of health status* |

| | | |
|---|---|---|
| 17. | *Perform hand hygiene* | *Reduces transmission of microorganisms.* |
| 18. | *If planning intermittent $SpO_2$ measurements, remove sensor and turn oximeter power off. Store reusable sensor in appropriate location* | *Batteries will run out if oximeter is left on. Sensor probes are expensive and vulnerable to damage* |
| 19. | *Record $SpO_2$ on vital sign flow sheet or nurses' notes in EHR or chart.* | |
| 20. | *Indicate type and amount of oxygen therapy used by patient during assessment.* | |
| 21. | *Record signs and symptoms of oxygen desaturation in*<br><br>*nurses' notes* | |
| 22. | *Document oxygen saturation after administration of specific therapies in narrative form in nurses' notes* | |
| 23. | *Record patient's knowledge following evaluation of teach back in nurses' notes* | |
| 24. | *Record in nurses' notes patient's use of continuous or intermittent pulse oximetry. Document use of equipment for third-party payers* | |
| 25. | *Report abnormal findings to nurse in charge or health care provider.* | |

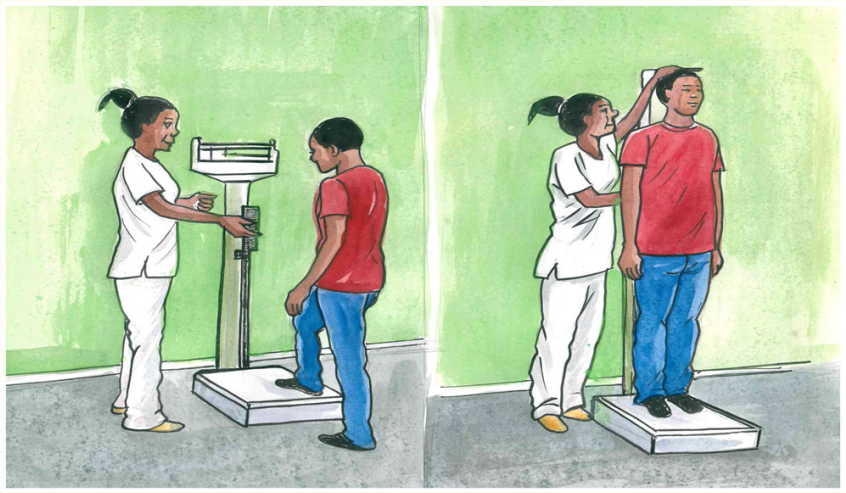
## Self-assessment 3.6.

An Associate Nurse (AN) reports to the charge nurse that a patient's pulse oximeter machine continues to alarm with a reading of 88%. The charge nurse enters the room and assesses for signs and symptoms of alterations in oxygen saturation and finds none.

1) What action does the nurse take next?
    1) Remove the current machine from service and ask the AN to use another pulse oximeter device
    2) Verify that the patient's oxygen device and flow are correct
    3) Verify that the oximeter sensor is intact and the skin under the sensor is dry
    4) Notify the health care provider immediately
2) What are the signs and symptoms of alterations in oxygen saturation?

## 3.7. Parameters

**Learning activity 3.7.**



Observe the images above provided in your textbook under the vital signs unit and parameters and after reading the sub-topic on Weight and Height measurement; make a summary note of the following:

1) Definition of two parameters (Height and Weight)
2) Importance of Measuring Height and Weight
3) Specific reasons for weighing both a child and an adult
4) Identify material /equipment used to measure weight and Height

Using procedural guide provided and equipment/Materials for Weight and Height measurement; read all steps in order for you to measure correctly the Weight and Height for your partner in the previous groups of two students. Go back to your groups and each one of you do the following:

i. Position your partner in position
ii. Measure his/her Weight and Height and vice-versa
iii. Compare your results

### 3.7.1. Weight and Height overview

**Introduction and importance of weight and height**

Measuring height and weight is as important as assessing the client's vital signs. Routine measurement *provides data* related to growth and development in infants and children and *signals the possible onset of alterations* that may indicate illness

in all age groups. The client's height and weight are routinely taken upon admission to acute care facilities and during visits to prescribing practitioners' offices, clinics, and other health care settings.

**a) Weight**

Weight is the quantitative expression of body that indicates the state of growth and health measured in kg or grams.

**Materials/Equipment:** A well weighing scale (for adults); Baby Weighing Machine or Salter balance, a pen and weight recording flow sheet

***The Purpose of weight measurement***

The purpose is to obtain accurate weight of the patient, to aid in accurate diagnosis of the patient's condition, to evaluate the patient's response to treatment

***Specific reasons for weighing***

**In a child:** reasons are to *follow up a good growth*, *to appreciate the nutritional state*, *to follow the evolution of an illness, and to calculate some doses of medicine*

**In adult:** reasons are *to evaluate the patient's general state, to help in the orientation of the diagnosis, to inform on the evolution of the illness, to calculate doses of some medicines, to follow up the evolution of treatment and to follow up the pregnant woman*

**b) Size/Height**

It is the measurement from head to toe that indicates the state of growth and health and is commonly expressed in centimeters (cm), or meters (m). In some countries; measurement of height is also expressed in inches (in.), feet (ft).

**Guidelines:**

- The scale for measuring height, calibrated in either centimeters or meters, is usually attached to a standing weight scale.
- The metal rod attached to the back of the scale should be extended to gently rest on top of the client's head, and the measurement should be read at eye level.
- Have the patient's shoes/slippers removed while taking height to avoid any variations in the reading
- If thick object is placed on the top of head at right angle to the scale indicating the reading, note the bottom reading of the object.
- The nurse should ask the client to stand erect on the scale's platform

***Equipment/Materials***

- A scale for measuring height
- A standing weight scale.
- The metal rod
- Pen and Height recording flow sheet

**Indications:**

- Follow up of child growth
- To measure the nutritional status

**BOX 3.7.1.**

Height increases gradually from birth to the pre-pubertal growth spurt. Girls usually reach their adult height between the ages of 16 and 17 years, whereas boys usually continue to grow until the ages of 18 to 20 years. The older adult usually decreases in height as a result of a gradual loss of muscle mass and changes in the vertebrae that occur in condition such as osteoporosis (a process in which reabsorption exceeds accretion of bone).

Use the patient's weight and height measurements to calculate the patient's BMI. Weight in kilograms Body mass index height in meter (Additional information to the teacher)

**Rationale**: BMI is an indicator of total body fat stores in the general population and provides a more accurate weight calculation than weight measurement alone. In addition, it provides an estimation of risk for diseases, such as heart disease, diabetes, and hypertension.

## 3.7.2. Measurement of Weight and Height Procedures

**a) Conditions required for weighing:**

**i. In adult:**

- The weighing scale must be well-designed and well controlled, that means graduated on zero: very important!
- It must be put on a plane surface
- The patient must remove the shoes and must be undressed while only keeping light clothes in order to reduce the weight

- He must stand up, free hands and does not hold any object
- Weight must be taken regularly

**ii. In child**

The weight of a child can be taken, according to age with: Baby Weighing Machine or Salter balance. If it is not available:

- Weigh the mother and the child and to note the weight;
- Weigh only mother
- Then make the difference between the first weight and the second, what corresponds approximately to the child's weight.

**c) Procedure for weight and height measurement**

**i. Equipment /Materials:**

- A scale for measuring height
- A standing weight scale.
- The metal rod
- Pen and Height recording flow sheet

***When measuring an infant's height***,

- The nurse should place the infant on a firm surface.
- Extend the knees, with the feet at right angles to the table.
- Measure the distance from the vertex (top) of the head to the soles of the feet with a measuring tape.

**N.B.** The procedure usually requires two nurses, one to hold the infant still and the other to measure the length. If the nurse needs to perform the measurement without assistance, an object should be placed at the infant's head, the infant's knees should be extended, and a second object should be placed at the infant's feet. Lift the infant and measure the distance between the two objects.

***For Adults measurement,***

- With shoes off, and standing erect
- Measure the patient's height using a wall-mounted measuring device or measuring pole.
- Compare height and weight with recommended average weights on a standardized chart.

***Rationale:*** Ratio of height and weight is a general assessment of overall health, hydration, and nutrition.

## Self-Self -assessment 3.7.

**For Overview: Section (a)**

1) Define the two parameters: Weight and Height/size
2) Explain the Purpose of weight measurement
3) What are the specific reasons for weighing both a child and an adult
4) List all materials used measuring Weight and Height both for Adult and a child

**For Weight and Height Measurement Procedure: Section (b)**

Instructions:

For you to master the technique of Weight and Height measurement; going back to your previous groups of two; let each student measures one more time the Weight and Height of his /her partner. Be familiar with the use of the check-list provided to you.

## End unit assessment 3

**Question one**

Mr. K is 25 years old male from a low income family. He consults the nearest health center complaining of vomiting and diarrhea. During initial assessment data collection, Mr. K tells to the nurse that it is the 3rd day having both vomiting and diarrhea (vomiting: 4 times a day and diarrhea: 6 times a day), severely nauseated and dizzy, tolerating sips of clear fluid. No past history of medications and illnesses.

Think about these data from Mr. K and try to answer the following questions:

1) What infection control measures should the nurse implement?
2) What route should be used to measure body temperature for Mr. K?
3) Identify in the above case study the factors that may affect the pulse and blood pressure of Mr. K

**Question two**

During physical examination of Mr. K, the nurse measures his vital signs and parameters and notes the following findings: Temperature: $102.2^0$ F, Pulse: 120 bpm (radial), BP: 98/68 mmHg, RR: 22 bpm irregular rhythm, Sp02: 94%, Weight: 53kg, Height: 174cm. Reflect on these findings and respond to the following questions:

1) Which findings are considered abnormal for Mr. K? What medical terminologies are used to define/label the abnormal findings?
2) The nurse uses the two-step method of blood pressure assessment to obtain accurate measurements for Mr. K. The nurse is explaining the steps of this procedure to the associate nurse. Place the steps in correct order:

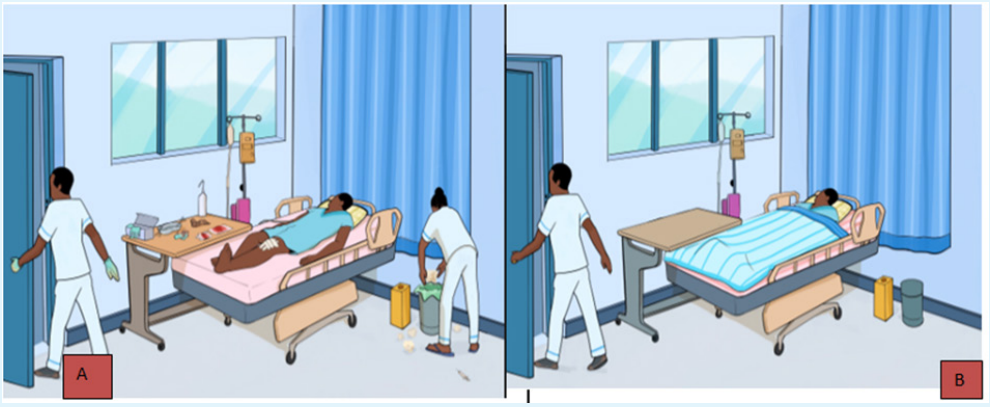
    a) Place stethoscope in ears and place the diaphragm of stethoscope over the brachial artery
    b) Palpate brachial artery while inflating blood pressure cuff 30mmHg over the pulse disappearance.
    c) Note point where you hear first Korotkoff sound.
    d) Deflate cuff fully and wait 30 seconds
    e) Apply blood pressure cuff 2.5cm above brachial artery.
    f) Continue to deflate cuff until sound disappears.
    g) Quickly inflate cuff to 30 mm Hg above patient's estimated systolic pressure
    h) Slowly deflate cuff and note point when pulse reappears

# UNIT 4 NOSOCOMIAL INFECTIONS CONTROL AND PREVENTION

## Key Unit Competence

Apply correctly the infection prevention and control techniques for nosocomial infections

### Introductory activity 4

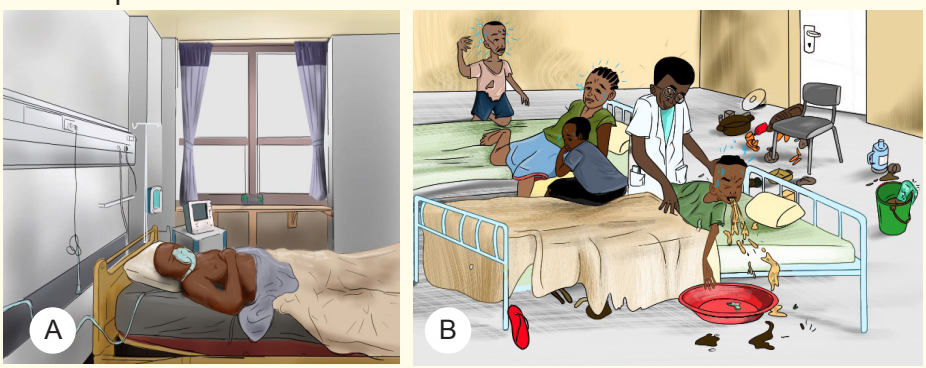


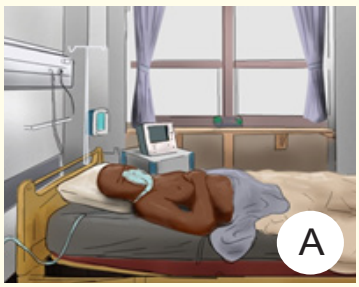

1) Is it perfect to maintain patient room A like this?
2) On your view, what should be done by the nurse room A and B if any?
3) What are potentials risks associated to this kind of patient arrangement A?
4) What do you predict to learn from this unit?

## 4.1. Overview on nosocomial infections

### Learning activity 4.1.

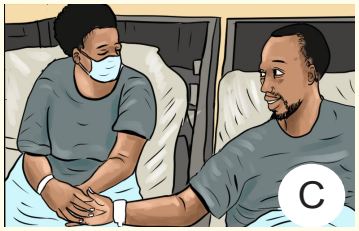
Observe the picture below:















1) Analyze the pictures above and identify the probability of transmitting diseases among them (A, B, C and D.)
2) Based on the picture above, what are the possible risk factors of nosocomial infection for patient A and B?

Nosocomial infection is a term that encompasses infections contracted in all health care settings. Nosocomial infections also known as healthcare - associated infections (HCAI) or hospital acquired infections are defined as localized or system infection, occurring at least 48 hours after hospital admission, that was not present or incubating at the time of admission. They are those infections that occur in patients or healthcare workers either as a direct result of healthcare intervention (such as medical or surgical treatment) or from being in contact with a healthcare setting.

### 4.1.1. Risk factors for nosocomial infections

The risk factors for nosocomial infection include hospitalized patients with underlying disease like diabetes, high blood pressure, HIV/AIDs, malnutrition, etc.; age particularly elderly and young aged people, invasive devices and procedures such as IV lines, surgery, intensive care; emergency hospital admission , previous exposure to some drugs and previous hospital admission add to the risk.

### 4.1.2. Causes of nosocomial infections

The most common pathogens that cause nosocomial infections are Staphylococcus aureus, Pseudomonas aeruginosa, and E. coli. Nosocomial infections are not just limited to bacteria; certain fungi such as Candida albicans and aspergillus, as well as, viruses such as Respiratory Syncytial Virus and influenza have also been implicated in a number of hospital acquired infections.

### 4.1.3. Transmission of nosocomial infections

These infections are transmitted through direct or indirect contact from the hospital staff, other patients or visitors; inadequately sterilized instruments; disease vector carrying and transmitting an infectious pathogen, or blood; aerosol droplets from other ill patients or even the food or water provided at hospitals.

**Direct-contact** transmission involves a direct body surface-to-body surface contact and physical transfer of microorganisms between a susceptible host and an infected or colonized person, such as when a person turns a patient, gives a patient a bath, or performs other patient-care activities that require direct personal contact. Direct-contact transmission can also occur between two patients, with one serving as the source of the infectious microorganisms and the other as a susceptible host.

**Indirect-contact** transmission involves contact of a susceptible host with a contaminated intermediate object, usually inanimate, such as contaminated instruments, needles, or dressings, or contaminated gloves that are not changed between patients

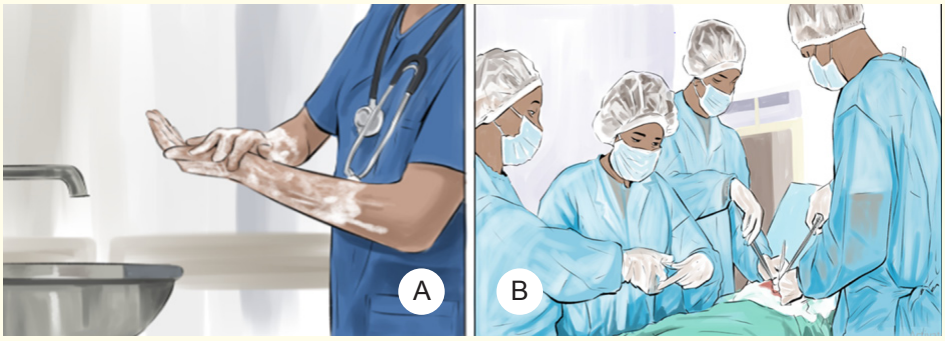
**Self-assessment 4.1.**

1) Define nosocomial infections
2) Explain the causes of transmission of nosocomial infections
3) What are risk factors of nosocomial infections?
4) Discuss the mode of transmission of nosocomial infections

## 4.2. Concepts of Asepsis and Antisepsis

**Learning activity 4.2.**

Observe the picture below:




1) Observe the activity that is being done on the picture A and tell its importance.
2) Discover the kinds of clothes and items that the people in picture B are wearing.
3) Why the people in the picture B are wearing like that?

Regardless of where nurses practice, preventing the transmission of microorganisms is a concern of all health care professionals. One way that nurses accomplish this goal is by asepsis.

**Asepsis** means the absence of germs, such as bacteria, viruses, and other microorganisms that can cause disease. Healthcare professionals use aseptic technique to protect patients from infection.

**Antisepsis** is the practice of using antiseptics (substance that stops or slows down the growth of microorganisms) to eliminate the microorganisms that cause disease.

### 4.2.1. Principles of Asepsis

The principles of asepsis include the following:

1. Use only sterile items within a sterile field;
2. Sterile (scrubbed) personnel are gowned and gloved;
3. Sterile personnel operate within a sterile field (sterile personnel touch only sterile items or areas, unsterile personnel touch only unsterile items or areas);
4. Sterile drapes are used to create a sterile field
5. All items used in a sterile field must be sterile
6. All items introduced onto a sterile field should be opened, dispensed, and transferred by methods that maintain sterility and integrity
7. A sterile field should be maintained and monitored constantly
8. Surgical staff should be trained to recognize when they have broken technique and should know how to remedy the situation.

### 4.2.2. Difference between Medical and Surgical asepsis

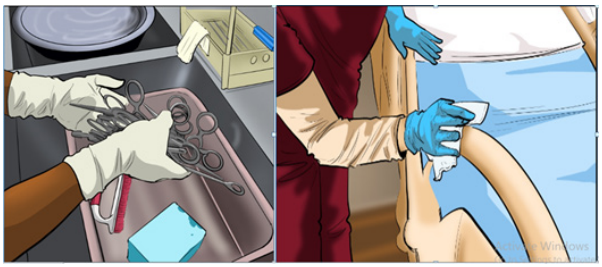
The term **medical asepsis** refers to practices performed to prevent the spread of infection. It is also sometimes described as using clean technique. These practices, or techniques, include performing **hand hygiene**, maintaining a **clean patient environment**, using **standard** precautions, and using transmission-based precautions when necessary.

Medical asepsis is different than **surgical asepsis**, which refers to maintaining a sterile environment such as that found in operating rooms. **Sterile technique** means performing procedures in such a way that no pathogens will enter the patient's body when you insert tubes or give injections.

## 4.2.3. Levels of asepsis (Cleaning, Disinfection and Sterilization)

### a) Cleaning

Cleaning is the process of removing unwanted substances **using water and soap**, such as dirt, infectious agents, and other impurities, from an object or environment. Cleaning removes dirt, dust, crumbs, and germs from surfaces or objects. When you clean, you will likely use soap (or detergent) and water to physically clean off the surfaces and objects. This may not necessarily kill the germs. But since you removed some of them, there are fewer germs that could spread infection.

| Image | Description |
|---|---|
|  | **Manual cleaning:**<br>Cleaning with or without use of brushes, specialized tools |

### b) Disinfection

Disinfection is a process of using chemicals (disinfectants) to kill germs on surfaces and objects. Some common disinfectants are bleach and alcohol solutions. You usually need to leave the disinfectant on the surfaces and objects for a certain period of time to kill the germs. Disinfecting does not necessarily clean dirty surfaces or remove germs.

| Image | Description |
|---|---|
|  | Example of disinfection of surface |
|  | Example of disinfection of material |

### c) Sterilization

Sterilization refers to any process that removes, kills, or deactivates all forms of life (in particular referring to microorganisms such as fungi, bacteria, spores, unicellular eukaryotic organisms such as Plasmodium, etc.

Note: After sterilization, an object is referred to as being sterile or aseptic.

Common methods of sterilization include **physical methods** and **chemical methods**. **Physical** methods include dry heat, steam, radiation, and plasmas.

**Chemical methods** include, for example, ethylene oxide, propylene oxide, chlorine dioxide, ozone gases, and a variety of chemicals in liquid and vapor form, such as glutaraldehyde, hydrogen peroxide, and peracetic acid.



*Figure 66 Dry sterilization by POUPINEL*



*Figure 67 Sterilization by AUTOCLAVE*

**Self-assessment 4.2.**

1) Differentiate asepsis and antisepsis
2) Describe the levels of asepsis

## 4.3. Prevention and control of nosocomial infections

**Learning activity 4.3.**

You are working at hospital setting as associate nurse and you have a patient suffering from malaria with high fever. He is receiving IM Arthesunate injection and paracetamol tablets. After two days, the health professionals decided to perform Covid19 test which become positive.

1) How are you going to behave in order to prevent you from contamination when you are going to give the above said patient treatment?

Prevention and control of infections are important concerns for all types of health care agencies, and good infection control practices generate cost savings and improved outcomes for patients.

According to WHO, infection prevention and control (IPC) is a scientific approach and practical solution designed to prevent harm caused by infection to patients and health workers.

### 4.3.1. General information on WHO Standard precautions of infection control

**Standard precautions** of **nosocomial infection** are the minimum set of actions that are to be undertaken in every care environment and to be used for every care procedure, every time. They are performed with all patients, whether or not an infection has been diagnosed.

They protect the health-care worker from possible transmission of illnesses spread through contact with infected blood, such as hepatitis B, hepatitis C, and HIV. They also protect patients from the possible spread of pathogens from one patient to another.

| **WHO Standard Precautions of infection control** | | |
|---|---|---|
| **Component** | | **Use** |
| **Hand Hygiene** | | Wash hands for 20 seconds using soap and water or use antibacterial hand gel unless hands are visibly soiled. Avoid using hand gel if caring for a patient with illness caused by spore-forming microorganisms. |
| **Personal Protective Equipment** | Gloves | Wear when touching blood, body fluids, secretions, or items contaminated with them. Wear for touching patient's mucous membranes and non -intact skin. |
| | Gown | Wear when performing procedures and patient care if there is a possibility of your exposed skin or clothing coming in contact with blood, body fluids, secretions, or excretions. |
| | Mask, eye protection, face shield | Wear during patient care procedures that could cause splashing of blood, body fluids, or secretions, such as suctioning and endotracheal intubation. |
| **Needles and Other "Sharps" (anything that could puncture a trash can liner)** | | Never recap a used needle; do not bend or break needles; use safety needles whenever possible; place all used sharps in a puncture-resistant sharps container. |

| | |
|---|---|
| **Respiratory Hygiene/Cough Etiquette** | Cover your mouth and nose with a tissue when sneezing or coughing; if tissue is unavailable, cough into your upper sleeve, not your hand.<br><br>Use hand hygiene immediately after coughing or sneezing. Any person entering a health-care facility with a cough, congestion, or increased respiratory secretions is to follow these recommendations. |

## Self-assessment 4.3.

1) Which of the following are basic standard precautions for infection control?(choose one answer)

   a) Hand hygiene
   b) Personal protective equipment and clothing
   c) Safe handling of sharps
   d) All of these are basic standard precautions

2) What is the purpose of wearing gloves and gowns? (Check all that apply).

   c) Protect the healthcare worker
   d) Prevent transmission of pathogens
   e) Reduces hand washing requirements
   f) Looks professional and identifies healthcare staff

3) What is importance of standards precautions of nosocomial infection?

## 4.4. Overview of hand hygiene

**Learning activity 4.4.**

Observe the pictures and answer the questions below:




1) What are similarities and differences between picture A and B?
2) In your point of view, what is importance of the actions in pictures A and B?

**Hand hygiene** is a general term referring to any action of hand cleansing. The term hand rubbing is used when using an alcohol-based hand rub or hand washing with soap and water aimed at reducing or inhibiting the growth of micro-organisms on hands.

### 4.4.1. When to perform hand hygiene

Hand hygiene are indicated before and after touching the patient; before handling an invasive device for patient care regardless of whether or not gloves are used; after contact with body fluids or excretions, mucous membranes, non-intact skin, or wound dressings; if moving from a contaminated body site to another body site during care of the same patient; after contact with inanimate surfaces and objects (including medical equipment) in the immediate vicinity of the patient; after removing sterile or non-sterile gloves; before handling medication or preparing food.

### 4.4.2. Benefits of hand hygiene

Germs from unwashed hands can be transferred to other objects, like handrails, table tops, or toys, and then transferred to another person's hands. Hand hygiene is the most important measure to avoid the transmission of harmful germs between people and prevent health care-associated infections.

**Note**: As much as it is necessary, perform hand hygiene. **Hand rubbing never replaces hand washing**. **Whenever possible**, do hand washing. Soap and alcohol-based hand rub should not be used at the same time.

### 4.4.3. Hand rubbing and hand washing

Hand hygiene is the single most important procedure for preventing the transmission of diseases and infections. It can be done through hand rubbing and/ or hand washing. (For more, refer to the UNIT 2: Subtopic 2.1. )

**a) Hand rubbing**

Hand rubbing is a hand hygiene technique with alcohol-based formulation (antiseptic hand rubbing). It last between 20-30 seconds. The equipment to be used in hand rubbing is the following: antiseptic hand rub: Alcohol-based, waterless, antiseptic-containing emollient

Hand rubbing involves the following steps: (1) Apply an ample amount of product to palm of one hand; (2) Rub hands together, covering all surfaces of hands and fingers with antiseptic; (3) Rub hands together for several seconds until alcohol is dry; (4) Allow hands to dry before applying gloves. (Refer to the **UNIT 2:**, **Subtopic 2.1.** )

**b) Hand washing**

Action of performing hand hygiene using soap and water for the purpose of physically or mechanically removing dirt, organic material, and/or microorganisms. The duration of the entire procedure is 40-60 seconds.

Equipment of hand washing include easy-to-reach sink with warm running water, antimicrobial or non-antimicrobial soap, Paper towels or air dryer, Disposable nail cleaner (optional).

**Self-assessment 4.4.**

1) What are benefits associated with hand washing?
2) As a future associate nurse, when to perform hand washing?
3) What is the difference between hand rubbing and hand washing?

## 4.5. Personal protective equipment (PPE)

**Learning activity 4.5.**

See the image below and answer the related questions:




1) What are you seeing on the image above?
2) On your view, what is importance of each item on this image?

Personal protective equipment is clothing and equipment that is worn or used in order to provide protection against hazardous substances or environments. This can include items such as safety helmets; ear protection; high visibility clothing; safety footwear and safety harnesses; thermal, weather and waterproof clothing; respiratory protective equipment.

### 4.5.1. Gloves

The use of gloves does not replace the need for hand hygiene by either hand rubbing or hand washing. The gloves should be worn when it can be reasonably anticipated that contact with blood or other potentially infectious materials, mucous membranes or non-intact skin will occur. After caring for a patient all the gloves should be removed and always the gloves are single use.

It is **important** to wear gloves when working with hazardous chemicals and other materials because they protect our hands from infection and contamination. Protective gloves should be selected on the basis of the hazards involved. Rubber gloves protect against mild corrosive material.

### 4.5.2. Gown

Nurses wear sterile gowns when assisting at the sterile field in the operating room, delivery room, and special treatment areas. **Surgical gowns serve to protect** patients from microorganisms carried by the surgical team or patients themselves and protecting healthcare providers from contact with infectious microorganisms harbored by the patient.

It allows the nurse to handle sterile objects and also be comfortable with less risk of contamination. The sterile gown acts as a barrier to decrease shedding of microorganisms from skin surfaces into the air and thus prevents wound contamination. A fluid-resistant gown or protective apron is worn to keep the nurse's clothing clean when potential exists for body substances to splash.

The main difference between a gown and an apron is that a gown covers the entire torso and goes all the way down to the healthcare worker wrists.




***Figure 68 Apron (left) and Surgical Gown (right)***

### 4.5.3. Mask

Masks help protect clients and healthcare personnel from respiratory infections and certain communicable diseases.

Considerations in mask use include (1) put on the mask before the gloves;(2) do not touch the mask until it is to be removed; (3) the mask must be changed when moist or soiled; (4) wash hands and remove gloves before removing the mask; (5); handle masks by the strings or elastic only; (6) dispose of a used mask immediately; do not leave a mask dangling around the neck.

## 4.5.4. Eye protection (goggles) and face shield

Safety goggles are important because they protect health care providers from accidental entry of blood and other microorganisms in the eyes. They also allow the wearer to handle potentially harmful chemicals and biological without fear of damaging their eyes. Safety goggles can also help to protect an individual from harm to the eye from physical trauma.

Wear goggles with side and forehead shields if any danger exists that a client's body fluids may splash or spray. Goggles are also available that fit over glasses. In some types of isolation, disposable goggles are worn. In situations when extra protection is needed, such as in the operating room, emergency department, or morgue, full face shields are used. These protect the eyes, as well as the mouth. The situation dictates the type of eye and mucous membrane protection to be used.

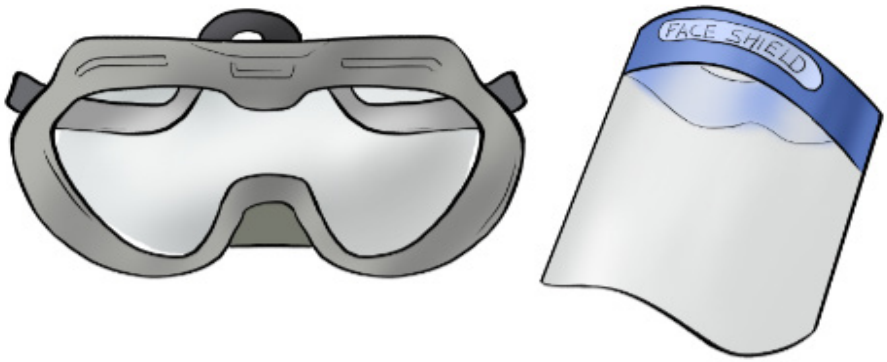



***Figure 69 Goggles and Face shield***

## 4.5.5. Boots

A pair of safety shoes also known as safety boots is personal protective equipment (PPE) for foot protection at workplaces. Protective footwear worn in the workplace is designed to protect the foot from physical hazards such as falling objects, stepping on sharp objects, heat and cold, wet and slippery surfaces, or exposure to corrosive chemicals.

## 4.5.6. Donning (wearing) of Personal Protective Equipment

Donning involves putting on the required apparel before patient contact and must be performed in the following order; (1) hand hygiene; (2) put on shoe covers (if applicable);(3) wear gown; (4) wear mask;(5) put eye or face protection ;(6) and gloves.

## 4.5.7. Doffing (removing) of Personal Protective Equipment

Personal protective equipment must be removed in the following specified sequence, to minimize the potential for disease transmission: (1) remove gloves, (2) remove gown or apron touching only the inside, turn it inside out, to contain contamination, (3) wash hands, (4) remove eye protection without touching the face, (5) remove mask by touching only the string tied behind the head, (6) wash hands, (7) properly dispose of all PPE, (8) wash hands.

### Self-assessment 4.5.

1) The nurse wears a gown when:
   a) The patient's hygiene is poor
   b) The nurse is assisting with medication administration.
   c) The patient has acquired immunodeficiency syndrome (AIDS) or hepatitis.
   d) Blood or body fluids may get on the nurse's clothing from a task that he or she plans to perform.

2) Match in the correct order of donning(wearing) Personal Protective Equipment (PPE)

| | |
|---|---|
| Step 1: | A. Gloves |
| Step 2: | B. Mask |
| Step 3: | C. Gown |
| Step 4: | D. Hand washing |
| Step 5: | E. Eyewear |

3) Match in the correct order of doffing(wearing) Personal Protective Equipment (PPE)

| | |
|---|---|
| Step 1: | A Gloves |
| Step 2: | B Mask |
| Step 3: | C Gown |
| Step 4: | D Hand washing |
| Step 5: | E Eyewear |

## 4.6. Respiratory hygiene and cough etiquette

**Learning activity 4.6.**

Observe the picture below and answer following questions




1) What are you seeing on the picture A, B and C?
2) On your view, what are similarities and differences of persons on picture A, B and C?

Respiratory hygiene and cough etiquette are terms used to describe infection prevention measures to decrease the transmission of respiratory illness (e.g., influenza and cold viruses). A respiratory infection is spread when a person who is infected with a virus coughs or sneezes.

Cough etiquette is a series of actions that should be taken when coughing or sneezing which are designed to reduce the spread of respiratory illness to others.

### 4.6.1. The actions to respect in respiratory hygiene

In respiratory hygiene everyone should (1) cover the mouth and nose with the tissue, wear mask or put on elbow when coughing or sneezing; (2)Use tissues and discard the tissue immediately into a bin; (3)wash hands or use a hand sanitizer every time touching the mouth or nose; (4) post visual alerts (in appropriate languages) at the entrance to outpatient facilities instructing patients and persons who accompany them (e.g., family, friends) to inform healthcare personnel of symptoms of a respiratory infection when they first register for care and to practice respiratory Hygiene/cough Etiquette.

### 4.6.2. Importance of respiratory hygiene

Respiratory hygiene and cough etiquette are very important components to protect self and others from the transmission of respiratory illness. Like hand hygiene, respiratory hygiene is part of the standard precautions that should be taken to prevent the spread of disease.

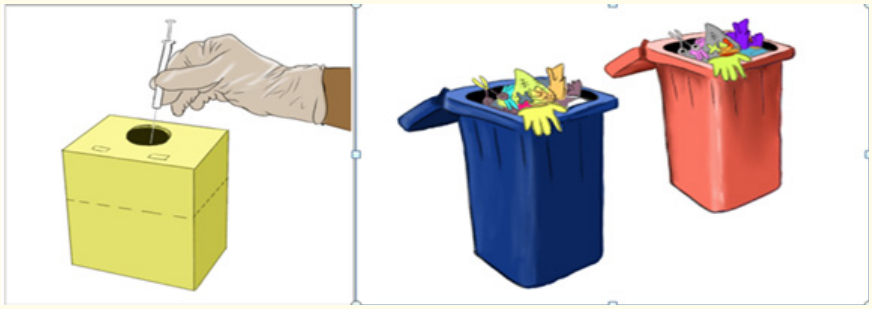
**Self-assessment 4.6.**

1) Respiratory hygiene/cough etiquette includes:
   a) Posting visual alerts about signs and symptoms of infection
   b) Re-using tissues to help keep costs down
   c) Frequent hand hygiene, especially after contact with respiratory secretions
   d) A and C are correct answers
2) What is the importance of respiratory hygiene /cough etiquette?

## 4.7. Sharps Safety/ Safe Injection Practices

**Learning activity 4.7.**

Observe the pictures and answer questions below:



1) What do you see on the picture A and B?
2) On your view, what are consequences associated with the picture B?

Safe injection is injection practice which does not harm the recipient (patient), does not expose the provider to any avoidable risks and does not result in waste that is dangerous for the community.

Safe injection practice is achieved by administering the injection using a sterile device (syringe, needle etc.), adopting sterile technique by a qualified and well trained person and discarding the used devices in a puncture-proof container

specially designed for appropriate disposal. Any breach in the process makes the injection unsafe.

### 4.7.1. Consequences of unsafe injection

Unsafe injection practices which can transmit Hepatitis B, Hepatitis C, Human immunodeficiency virus (HIV) and other blood borne pathogens result in substantial burden of preventable blood borne viral diseases.



*Figure 70 Safe injection*

### 4.7.2. Management of Accidental Needle sticks or Other Contamination

Unfortunately, the nurse may sustain an accidental stick with a contaminated needle. If this occurs, follow these procedures:

- Wash the area gently with soap and running tap water as soon as possible;
- Report the incident to the direct leader and / infection prevention and; control focal person,
- Fill out an incident report,
- Blood tests of the client and nurse will usually be performed.

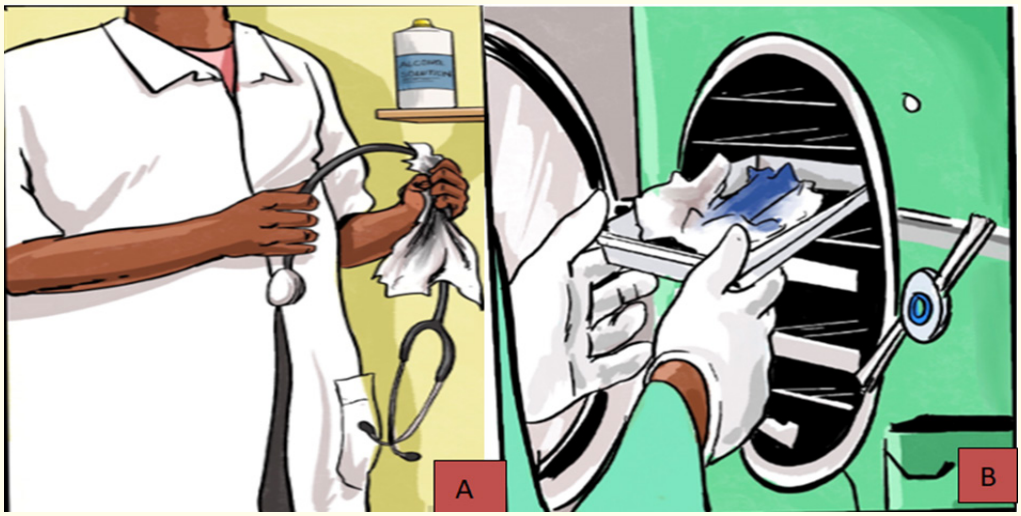
The nurse may be required to take medication as post exposure prophylaxis if the patient has blood transmissible disease or has disappearing without being tested. If material is splashed into the eyes or mouth, wash with copious amounts of water and report as above.

**Self-assessment 4.7.**

1) Which of the following is included in the steps for needle stick injuries?
   a) Wash needle stick injury with soap and water
   b) Report needle stick injury to your supervisor
   c) Wash needle stick injury with soap and water and use alcohol
   d) A and B are correct answers
2) The first step after a needle stick or sharps injury is to
   a) Express or suck the wound.
   b) Apply caustic agents (e.g., bleach) to the wound.
   c) Inject antiseptics or disinfectants into the wound.
   d) Gently wash the exposed area with soap and water without scrubbing

## 4.8. Sterilization and Disinfection of Patient-Care Items and Devices

**Learning activity 4.8.**




See the picture and answer the questions

1) What is the action done on picture A and picture B?
2) What is the importance of each action?

Sterilization and disinfection are the basic components of hospital infection control activities.

The medical device or the surgical instrument that comes in contact with the sterile tissue or the mucus membrane of the patient during the various processes is associated with increased risk of introduction of pathogens into the patient's body.

### 4.8.1. Importance of disinfection

Frequent cleaning and disinfection **helps to prevent the spread of germs that may cause illness**. The importance of respecting the proper disinfection is that it will **reduce** infections associated with contaminated patient-care items.

The cleaning and disinfection of medical equipment depends on their physical nature, character of the material it is made up of, lumen size, etc.

### 4.8.2. Importance of sterilization

Sterilization aims to eliminate or kills all microorganisms on medical items. Sterilizing each piece of equipment is critical **to keeping each patient as safe and healthy as possible**.

The level of disinfection and sterilization is dependent on the intended use of the object: **Critical items** (such as surgical instruments (example forceps), which contact sterile tissue), **semi critical items** (such as endoscopes, which contact mucous membranes), and **noncritical items** (such as stethoscopes, which contact only intact skin) require sterilization, high-level disinfection, and low-level disinfection, respectively. **Cleaning must always precede disinfection** and **sterilization**.

**Self-assessment 4.8.**

1) Remove and killing all microorganisms on materials is known as:
   a) Disinfection
   b) Cleaning
   c) Sterilization
   d) Destruction
2) What is the importance of disinfection and sterilization

# 4.9. Cleaning and disinfection of environmental surfaces

**Learning activity 4.9.**

See the picture below and **answer the following questions:**







What are you seeing on picture A and B

1) What is importance of activity done on picture A and B?
2) What are the similarities and differences among the picture A and B?

**Environmental surfaces in health-care settings** include furniture and other fixed items inside and outside of patient rooms and bathrooms, such as tables, chairs, walls, light switches and computer peripherals, electronic equipment, sinks, toilets as well as the surfaces of non-critical medical equipment, such as blood pressure cuffs, stethoscopes, wheelchairs and incubators.

## 4.9.1. Cleaning and disinfection of environmental surfaces

Environmental surfaces are more likely to be contaminated in health-care settings where certain medical procedures are performed. Therefore, these surfaces, are being cared for, must be properly cleaned and disinfected **to prevent infection transmission**.

## 4.9.2. Principles used in cleaning and disinfection

Cleaning helps to remove pathogens or significantly reduce their load on contaminated surfaces and is an essential **first step** in any disinfection process.

Cleaning with **water**, **soap** (or a neutral detergent) and some form of mechanical action (brushing or scrubbing) removes and reduces dirt, debris and other organic matter such as blood, secretions and excretions, but does not kill microorganisms.

Organic matter such as stool, vomits etc. can inhibit direct contact of a disinfectant to a surface and **inactivate** the germicidal properties or mode of action of several disinfectants that is why the cleaning should be done first. Moreover, the disinfectant concentration and contact time are also critical for effective surface disinfection. Therefore, a chemical disinfectant, such as chlorine or alcohol, should be applied after cleaning to kill any remaining microorganisms.

**Disinfectant** solutions must be prepared and used according to the manufacturer's recommendations for volume and contact time. Concentrations with inadequate dilution during preparation (too high or too low) may reduce their effectiveness. High concentrations increase chemical exposure to users and may also damage surfaces. **Enough disinfectant solution** should be applied to allow surfaces to remain wet and untouched long enough for the disinfectant to inactivate pathogens, as recommended by the manufacturer.

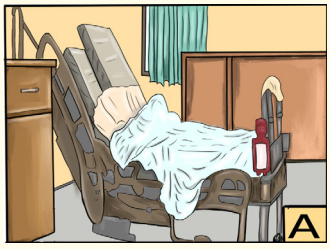
**Self-assessment 4.9.**

1) Why cleaning and disinfection of environmental surfaces?
2) Give four examples of environmental surfaces in health-care settings

## 4.10. Safe handling of linens

**Learning activity 4.10.**

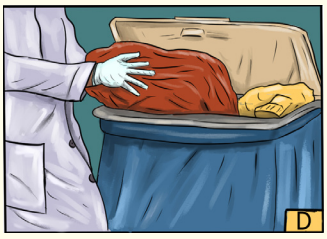
Observe the pictures below and answer the following questions













1) What are you seeing on the picture A, B, C, D and E?
2) What is the similarities and differences and on picture C and D?

Linen is a kind of cloth that is made from a plant called flax. It is used for making clothes and things such as tablecloths and sheets

### 4.10.1. Handling linens in health settings

Clean linens should be stored in a clean, designated area, preferably an enclosed cupboard. If clean linen is not stored in a cupboard then the trolley used for storage must be designated for this purpose and completely covered with an impervious covering that is able to withstand decontamination.

All soiled linen should be placed into a **clearly labeled**, leak-proof container (e.g., bag, bucket) in the patient care area. Never transport soiled linen by hand outside the specific patient care area from where it was removed. Never carry soiled linen against the body; carefully roll up soiled linen to prevent contamination of the air, surfaces, and cleaning staff and do not shake linen.

All **used linen** should be handled with **care** to avoid dispersal of microorganisms into the environment and to avoid contact with staff clothing.

**General principals** of handling the linen consist of hand hygiene protocol respected by all personnel when handling linen; standard precautions followed when handling soiled linen, clean linen and soiled linen should be handled, stored, and transported separately . Furthermore, linen should be maintained in good repair.

**Self-assessment 4.10.**

1) How the soiled linen should be handled in health setting?

## 4.11. Hazardous wastes management

**Learning activity 4.11.**

Observe the picture below and answer following questions



1) What do you see on this picture?
2) What are risks associated with the above hazardous wastes ?

A hazardous waste is a waste with properties that make it **dangerous** or capable of having a **harmful effect** on human health or the environment. Hazardous waste when improperly handled can cause substantial harm to human health.

### 4.11.1. Types of hazards waste

The hazardous nature of health-care waste is due to one or more of the following characteristics:

- Presence of infectious agents
- A genotoxic or cytotoxic chemical composition
- Presence of toxic or hazardous chemicals or biologically aggressive pharmaceuticals
- Presence of radioactivity
- Presence of used sharps

**Hazardous-waste management** consists of the collection, transport, disposal and treatment of waste material safety. They may cause damage during inadequate storage, transportation, treatment, or disposal operations.

**a) Collection of hazardous wastes:**

Hazardous waste must be accumulated and stored at the point of generation until removed by and must be: Collected in a container that is compatible with its contents under all conditions that it might be subjected to during accumulation, storage, and shipment.




**b) Disposing of Biohazardous Wastes**

After cleaning up a spill, the nurse is responsible for properly disposing of the materials. In addition to spilled body fluids, other biohazardous wastes include soiled dressings, used blood tubes, syringes, catheters, or IVs. Many bio hazardous items are placed in red “biohazard” bags for disposal. (It is important not to place inappropriate materials in these bags, because there is an additional charge for their disposal.) Remember to put sharps, such as needles, lancets, razor blades or disposable razors, suture removal scissors, or scalpel blades, in the designated sharps container. Any broken glass must be carefully disposed of as well. Be sure to ask if you have any questions regarding disposals. The nurse in a community-based setting or in home care is responsible for disposal of biohazardous wastes and for teaching clients and families how to dispose of them as well.

**c) Hazardous waste transport**

Hazardous waste generated at a particular site often requires transport to an approved treatment, storage, or disposal facility. Because of potential threats to public safety and the environment, transport is given special attention by governmental agencies. It is highly prohibited to intentionally spilled or abandoned at random hazardous waste in any locations no designed for that.

**d) Treatment of hazardous wastes:**

Hazardous waste can be treated by chemical, thermal, biological, and physical methods.

**Chemical methods** include ion exchange, precipitation, oxidation and reduction, and neutralization.

**Thermal methods** are high-temperature incineration, which not only can detoxify certain organic wastes but also can destroy them. Special types of thermal equipment are used for burning waste in either solid, liquid, or sludge form. These

include the fluidized-bed incinerator, multiple-hearth furnace, rotary kiln, and liquid-injection incinerator. One problem posed by hazardous-waste incineration is the potential for **air pollution**.

**Biological treatment** of certain organic wastes, such as those from the petroleum industry, is also an option. One method used to treat hazardous waste biologically is called land farming. In this technique the waste is carefully mixed with surface soil on a suitable tract of land. Microbes that can metabolize the waste may be added, along with nutrients. In some cases a genetically engineered species of bacteria is used. Food or forage crops are not grown on the same site. Microbes can also be used for stabilizing hazardous wastes on previously contaminated sites; in that case the process is called **bioremediation**.

The chemical, thermal, and biological treatment methods outlined above change the molecular form of the waste material.

**Physical treatment**, on the other hand, concentrates, solidifies, or reduces the volume of the waste. Physical processes include evaporation, sedimentation, flotation, and filtration.

So far another process is **solidification**, which is achieved by encapsulating the waste in concrete, asphalt, or plastic. Encapsulation produces a solid mass of material that is resistant to leaching. Waste can also be mixed with lime, fly ash, and water to form a solid, cementike product.

### 4.11.2. Health risks of hazardous waste

Health-care waste contains potentially harmful microorganisms that can infect hospital patients, health workers and the general public. Other potential hazards may include drug-resistant microorganisms which spread from health facilities into the environment.

Adverse health outcomes associated with health care waste and by-products also include:

- Sharps-inflicted injuries;
- Toxic exposure to pharmaceutical products,
- Chemical burns arising in the context of disinfection, sterilization or waste treatment activities;
- Air pollution arising as a result of the release of particulate matter during medical waste incineration;
- Thermal injuries occurring in conjunction with open burning and the operation of medical waste incinerators; and
- Radiation burns.

## Self-assessment 4.11.

1) What is the problem associated with hazardous-waste incineration?
2) What is hazardous waste?

## End unit assessment 4

1) Which of the following is not the effective way to break the chain of infection?
   a) Wearing gloves
   b) Hand hygiene
   c) Placing patients in isolation
   d) providing private rooms for patients
2) Which of the following are basic standard precautions for infection control?
   a) Hand hygiene
   b) Personal protective equipment and clothing
   c) Safe handling of sharps
   d) All of these are basic standard precautions
3) The nurse wears a gown when:
   a) The patient's hygiene is poor
   b) The nurse is assisting with medication administration.
   c) The patient has acquired immunodeficiency syndrome (AIDS) or hepatitis.
   d) Blood or body fluids may get on the nurse's clothing from a task that he or she plans to perform.
4) Respiratory hygiene/cough etiquette includes:
   a) Posting visual alerts about signs and symptoms of infection
   b) Re-using tissues to help keep costs down
   c) Frequent hand hygiene, especially after contact with respiratory secretions
   d) A and C are corrects
5) Remove and killing all microorganisms on materials is known as:
   a) Disinfection
   b) Cleaning
   c) Sterilization
   d) Destruction

6) Which of the following is included in the steps for needle stick injuries?
   a) Wash needle stick injury with soap and water
   b) Report needle stick injury to your supervisor
   c) Wash needle stick injury with soap and water and use alcohol
   d) A and B are correct answers

7) Match in the correct order of donning(wearing) Personal Protective Equipment (PPE) :

| | |
|---|---|
| Step 1: | A. Gloves |
| Step 2: | B. Mask |
| Step 3: | C. Gown |
| Step 4: | D. Hand washing |
| Step 5: | E. Eyewear |

8) Arrange in the correct order of doffing (removing) Personal Protective Equipment:

| | |
|---|---|
| Step 1: | A. Gloves |
| Step 2: | B. Mask |
| Step 3: | C. Gown |
| Step 4: | D. Hand washing |
| Step 5: | E. Eyewear |

9) Define nosocomial infections

10) Explain the causes of transmission of nosocomial infections

11) Discuss the mode of transmission of nosocomial infections

12) Differentiate asepsis and antisepsis

13) What is importance of standards precautions of nosocomial infection?

14) What are benefits associated with hand washing?

15) What is the importance of respiratory hygiene /cough etiquette?

# UNIT 5 DRUG ADMINISTRATION THROUGH ENTERAL AND TOPICAL ROUTES

**Key Unit Competence:**

Administer correctly drugs through enteral and topical routes

## Introductory activity 5.

Case study on drug administration

Shema a 16-year-old boy went for consultation to NKUNGU health center, they prescribed anti malaria 4 tablets to be taken by mouth two times a day for three days. On the 2nd day, he forgot the morning tablets, during the evening he decided to take together the forgotten tablets and current ones. At 10 P.M, he started developing vomiting, weakness and abdominal pain. His parents took him immediately back to the health center, the nurse transferred Shema to MIBIRIZI District hospital for further management. After 2 days, Shema recovered and discharged.

1) After being treated at his health facility, SHEMA received different medications. Did his health care provider give him instructions to follow about medication before going back home?
2) In this case, discuss the instruction nurse provided to Shema before going home to continue medication.
3) What do you think about Shema's attitude in regards his prescribed tablets? Give your suggestion.
4) What do you think about different ways of taking prescribed medication?

## 5.1. Rights of drug administration

**Learning activity 5.1.**

Read the text below and answer related questions:

Nurse Brune is going to offer insulin to a patient in room 213, internal medicine at King Faisal Hospital. She reads careful the patient file to confirm the patient's name, age and disease, the amount, name of the drug, expiration date and the intervals to follow to provide everyday dose. Arriving in the patient room, she introduces to the patient and explain the indication, purpose and the route of medication administration. The patient agrees to receive the drug, the nurse started by controlling blood sugar and then injected the prescribed amount of insulin. After providing this medication, she documented the whole process in patient file.

1) As an associate nurse, do you believe on Brune's process of drug administration?
2) What are the rights of drug administration observed in the above case study?
3) Do you think that there are other drug administration right not mentioned in this case study? If yes list them

When people become ill, they are used to go to the health centers to seek for treatment. Some treatment mode involves prescription of medications with curative or preventive role. To achieve intended outcomes, health professionals should follow different rights of drug administration in order to ensure patient safety.

**Drug administration** is the process of giving out medication to the patient in order treat or prevent disease or complication.

A **medication/drug** is a substance administered for the diagnosis, treatment, relief of a symptom and prevention of disease. Nurses help the patients to develop a proactive understanding of medications, clarifying the confusing information and responsibly share decision making with other healthcare professionals.

**Right for drug administration** is a guidance to health practitioners on the appropriate way to follow while ensuring the safety of drug administration. This is a nursing responsibility. To abide to the rights of drugs administration help nurses to maintain patient safety, meet the quality of care and prevent medication errors.

In today's health care delivery, nurses are accountable for their practices. This is the reason why; we have to be aware from the beginning the rights of drug administration to ensure both patient and healthcare professionals are protected.

### 5.1.1. Right patient

The first right in drug administration is to identify the correct patient to be given medications. A nurse must carefully verify the person's identification each time before administration of a medication. Use the names as recorded in the patient file, ask the patient if he or she is conscious and read patient identification band.

### 5.1.2. Right medication

The ordered medication is appropriate for the patient. Nurses should not rely on memory from previous interaction with the patient because beds can be changed at any way or patent discharged and replaced.

### 5.1.3. Right dose

The dose ordered is appropriate for the patient. A nurse should be able to calculate the correct dose in accordance to the prescription and not expect to always exact doses of medication from pharmacy. E.g: a dose may be a half of a tablet, two tablets, the tenth of a bottle depending on the desired doses.

### 5.1.4. Right time

Give the medication at the right frequency and at the time as ordered. Medications given within 30 minutes before or after the scheduled time are considered to meet the right time standard.

### 5.1.5. Right route

Give the medication by the ordered way of administration. Make sure that the route is safe and appropriate for the person.

### 5.1.6. Right education

Explain information about the medication to the person e.g. why receiving, what to expect, any precautions.

### 5.1.7. Right documentation

Document medication administration after giving it, not before. Write the name and the dose of given medication, route of administration and injection site in case of parenteral medication, date and time lastly the name or initials of the administering

nurse. Please, note any issue encountered during this process such as lack of the medication, vomiting after oral medication intake, any abnormal reaction

### 5.1.8. Right to refuse

Adults have the right to refuse any medication. The nurse's role is to ensure that the person is fully informed of the potential consequences of refusal and to communicate the person's refusal to the health care provider.

### 5.1.9. Right assessment

Some medications require specific assessment prior to administration. E.g: Check blood pressure before giving diuretics, verify glycemia values before giving insuline. Medication orders and manufacturer instructions may indicate specific parameters. E.g: do not give if pulse is less than 60 beats per minute or do not give if systolic blood pressure less than 100 mmHg".

### 5.1.10. Right evaluation

The nurse has to make a proper follow-up after certain time of drug administration. That follow up will answer questions such as: Was the desired effect achieved? Did the person experience any side effects or adverse reactions? If, yes what was those side effects or adverse reactions?

**Self-assessment 5.1.**

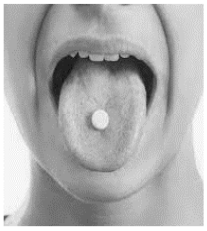
1) What do you understand by drug administration?
2) Explain different rights of drug administration.
3) An associate nurse student is asked to administer Cloxacillin 350mg per mouth but the prescription was not very clear to read. He decided to offer 500mg because it was difficult to read the prescription. Which right of drug administration has been not respected in this case?

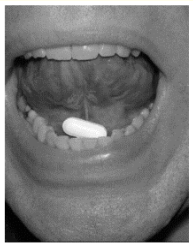
## 5.2. Enteral routes of drug administration

**Learning activity 5.2.**

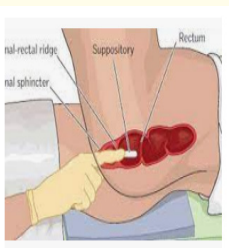
Nurses use various ways of drug administration as illustrated in the pictures below.

Observe these pictures.

A 

B 

C 

D 


1) Observe the above picture A, B, C, D, do you think all tablets are reserved to be swallowed?
2) What are the similarities and difference between the message from the above pictures?
3) Give the indications of drug administration routes presented above
4) What are the advantages of the above routes of drug administration?

When people become ill, they are used to go to the health centers or hospital for treatment. Some treatment modalities involve medication provision. Usually, every medication has a way to be administered in order to reach the site of action. The **route of** drug administration is the path by which a drug, fluid or other substance is brought into **contact** with the body to obtain maximum benefit. The route of administration should be indicated when the drug is ordered. When administering a drug, the nurse should ensure that the pharmaceutical preparation is appropriate for the route specified. The enteral route of drug administration is the one of three categories.

**Enteral administration** is about exposing drug to the gastrointestinal (GI) tract. The medications are introduced in the mouth or in the rectum. The enteral route of drug administration includes **oral**, **buccal**, **sublingual** and **rectal** route.

Substances prepared for enteral administration may be available in a variety of pills, including tablets, capsules, and syrup. Tablets are commonly round, and are sometimes coated so that they do not easily dissolve in the mouth. Capsules have rectangle forms and may contain granules of the active compound that release as the outer coating is dissolved in the stomach. Children may have immature muscle and nerve development which interfere with swallowing reflexes others may just dislike their taste.

## 5.2.1. Oral route

**Oral route (**Figure 68) is the most common, least expensive and most convenient route for most people.

In oral administration, the medication is given by mouth and then swallowed. It is used for patients who can ingest and tolerate an oral form of medication however it cannot be used in unconscious patients, patients with vomiting, in patient with nil per mouth order and during emergency.

Oral route of drug administration is most convenient, usually least expensive, safe, does not break skin barrier and administration usually does not cause stress. This route has some **disadvantages** as some medication have unpleasant taste, can cause irritation of the gastric mucosa (Aspirine), poorly absorbed from the gastrointestinal tract and may harm to the person's teeth. For example, the liquid preparation of ferrous sulfate (iron) can stain the teeth.

For oral drug administration technic, nurse need different **equipment** like prescription chart, medication pack, disposable medicines container; straw, water or juice, kidney dish to be used in case of vomiting, examination gloves and plate. This equipment will be needed in the below procedure:

**Procedural steps**

1. **Preparation**
   - *Review the patient's notes and prescription.*
   - *Wash hands*
   - *Gather all necessary equipment and arrange them on the plate*
   - *Check that the details on the prescription are complete, including the patient's name, hospital number, date of birth and allergy status*
   - *Self-introduction by name and function to the patient and obtain verbal consent. This is an ideal opportunity to answer any questions the patient has about their treatment and check their understanding of the medicine regimen.*
   - *Check that the prescription is unambiguous/legible and includes the medicine name, form, route of administration, strength and dose of the medicine to be administered.*
   - *Check the date and time when it should be administered, that the prescription is signed and includes a start and finish date, if appropriate*
   - *Caution: A medicine should not be administered if there are any concerns about the prescription; any such concerns should be discussed immediately with the prescriber.*

- *Ensure you know why the medicine is being administered and you are aware of potential complications associated with administration*
- *Check if the medicine has not been given to the patient and signed for by another staff member.*
- *Take the medicine and prescription to the patient and check the identity of the patient against the prescription using their name, hospital number and date of birth. Check their wristband according to local policy. It is important to ask the patient to state, rather than confirm, their name and date of birth.*
- *Complete the necessary assessment before administering the medication.*
- *Check whether the patient has any allergies or previous adverse drug reactions*.

1. **Implementation**
   - *Wash your hands.*
   - *Position the patient comfortably so they can swallow the medicine, (The patient should be placed in a sitting position to prevent accidental aspiration of the medication).*
   - *Decontaminate your hands.*
   - *Select the medicine and check the expiry date*
   - *Put the required dose into a medicine pot, avoiding touching the medicine.*
   - *Position the patient in sitting or upright position*
   - *Administer the medicine (put the tab or capsule on the tongue).*
   - *Offer a drink of water or other permitted fluid with pills, capsules, tablets to help the patient swallow the medicine if this is allowed, and ensure they have swallowed it.*
   - *When administering a liquid suspension, shaken the bottle before the appropriate dose is poured. When administering sprays, the container also needs to be shaken*

2. **Finishing**
   - *Thank the patient, arrange patient items, and provide appropriate health education*
   - *Disposal of the medicine pot according to local policy.*
   - *Decontaminate your hands.*
   - *Immediately record that the medicine has been administered*
   - *If the patient refuses or is unable to take their medicine, this should be documented along with the reason for omission and inform the prescriber.*
   - *Check the client within 30min to verify response to medication*

**Caution**: If the capsule or tablet fall down, it must be discarded and a new one should be administered. Oral medications need to be given before sublingual or buccal medications



*Figure 71 Oral route*

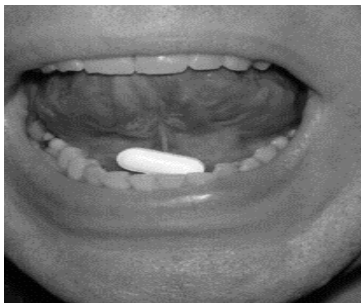


*Figure 72 Sublingual route*

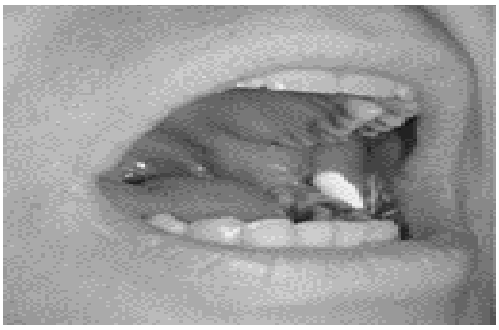


*Figure 73 Buccal route*

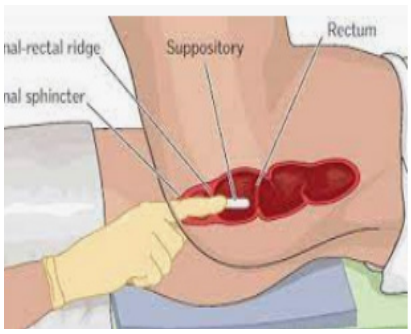



*Figure 74 Rectal route*

## 5.2.2. Sublingual route

**Sublingual (**Figure 72 Sublingual route**)** is another enteral route of drug administration where a drug is placed under the tongue and then it dissolves there in short time, the drug is largely absorbed into the blood vessels on the underside of the tongue. E.g.: Nitroglycerine.

Sublingual route is **indicated** in any of the following circumstances such as When the drug needs to get into body system quickly, When patient has trouble of swallowing medication, When the medication doesn't absorb very well in the stomach and When the effects of the drug would be decreased by digestion

Sublingual route is **contraindicated** for patients who cannot tolerate oral drugs, such as those who have altered mental status or have nausea or vomiting.

**The sublingual route's advantages** are that it is more potent than oral route because drug directly enters the blood and bypasses the liver, drug is rapidly absorbed into the bloodstream, no need to swallow the drug, easier to take for people who have problems of swallowing pills.

However, this route has some **disadvantages** such as inactivation of drug by gastric juice if swallowed, drug must remain under tongue until dissolved and absorbed,

may cause irritation of the mucous membranes, not used in large amount of medication, inconvenient to maintain the exact site. It induces nausea and vomiting if it has unpleasant taste. Eating, drinking, or smoking, can affect how the drug is absorbed and how well it works. Any open sores in the mouth can also become irritated by the medication.

In addition to the oral route **technique** basis, sublingual administration requires the patient to open his or her mouth and raise the tongue. The tablet should then be placed under the tongue. The nurse should examine the mucous membranes of the patient's mouth for irritation or sores. If there are sores in the mouth, the physician should be contacted before any sublingual drugs administration. Alternating sites should be used when giving regular doses of sublingual or buccal medications. Explained to the patient that nothing should be eaten, drank, swallowed, chewed, or smoked until the tablet has dissolved.

### 5.2.3. Buccal route

**Buccal route (**Figure 73 Buccal route**)** of drug administration is another form of enteral route which means that the drug is placed between cheek and gum.

In buccal administration, a medication (e.g. a tablet) is held in the mouth against the mucous membranes of the cheek until the drug dissolves. The drug may act locally on the mucous membranes of the mouth or systemically.

In buccal route drug directly enters the blood and bypasses the liver, drug is rapidly absorbed into the bloodstream. It is contraindicated for patients who cannot tolerate oral drugs, such as those who have altered mental status or have nausea or vomiting.

Buccal route of drug administration has **disadvantages** like inactivation of drug if swallowed, drug must remain between cheeks and gum until dissolved and absorbed. Drug in buccal administration may cause stinging or irritation of the mucous membranes. This is not used in large amount of medication, inconvenient to maintain the exact site. It induces nausea and vomiting if drug has unpleasant taste.

In addition to the oral route technic, in buccal drug administration the patient should open his or her mouth, then tablet should be placed between the gum and the wall of the cheek. With the mouth closed, the tablet should be held in this position for five to 10 minutes until it has dissolve. Mouth should be examined for the presence of sore before drug administration through this route. Alternating sites should be used when giving regular doses of buccal medications.

### 5.2.4. Rectal route

**Rectal route** is also anther enteral form of drug administration which consist of administration of medication into rectum for absorption.

It can be used as a drug delivery route for both local and systemic effects. Rectal medication may be in suppository or in liquid form in order to facilitate administration and absorption.

**It is indicated** when drug has unpleasant taste or odor, drug released at slow, steady rate provides a local therapeutic effect. To evacuate the bowel before surgical intervention, help to relieve constipation as well as when they want to treat hemorrhoids or anal pruritis. The most common medication in rectal routes serve as antipyretic, analgesia and laxatives as long as the patient accept the rectal route.

This route is **contraindicated** when patient refuse to consent, recent rectal or anal surgery, abnormalities or trauma involving the perineal area, suspected paralytic ileus or colonic obstruction, diarrhea and in case of active anal bleeding.

The rectal route has advantages such as the absorption rate of the drug not influenced by food or gastric emptying. The metabolism of both enteric and first-pass hepatic elimination is avoided. It is a preferred route when drugs are administered to relieve constipation or hemorrhoids. Drugs administered in rectal have a faster action than via the oral route and has a higher bio-availability. Rectal administration also reduces side-effects of some drugs, such as gastric irritation, nausea and vomiting. Applicable in cases of nausea, vomiting, and inability to swallow (unconscious patients), as well as in the presence of diseases of the upper gastrointestinal tract that affect oral drug absorption. It is a tolerable route in children. In cases of toxicity or overdose, this effect can be rapidly terminated.

The **disadvantages** of rectal route include the interruption of the absorption process by defecation which leads to irregular or incomplete absorption. Low volume of rectal fluids can lead to incomplete dissolution of the drug. Certain drugs may be altered by microorganisms in the rectum and patient adherence may be a problem.

**Rectal application technique**

Rectal suppositories are used mainly to local effects as laxatives and stool softener and systemic effect such as reducing nausea, vomiting and fever. The rectal suppositories are thinner and bullet shaped than vaginal ones. They are kept in refrigerator until their administration, remember to always wear gloves before insertion of rectal medication to protect your hands from fecal contamination.

**Materials**: rectal suppository drug, clean gloves, lubricator, plate or tray, medication chart.

3. **Preparation**:
   - *The nurse introduces to the patient, explain the purpose of that medication and ask for consent*
   - *Wash hands*
   - *The student nurse prepares and assemble all the materials after disinfecting the tray/ trolley*
   - *Assess the information related to the drug such as mode of action, purpose, route, time of onset and peak of action, side effects and nursing implications*
   - *Apply privacy*

4. Implementation:
   - *Wear gloves*
   - *Ask or help the patient to lie in lateral potion and flex the upper leg to easily access the anus*
   - *Lubricate the suppository and fingers to reduce irritation to the intestinal mucosa*
   - *Separate the buttocks by non-dominant hand, as the patient to relax by breathing deeply through the mouth while inserting the suppository*
   - *Introduce deeply the suppository beyond the internal anal sphincter and against rectal mucosa where its effect is intended*
   - *NB: The rectum is the right place for rectal application, the nurse will recognize the sensation of sphincter relaxing around the finger*.

5. **Finishing:**
   - *Inform the patient to hold the suppository for 30 to 45 minutes after insertion*
   - *Educate the patient that walking favorize peristalsis like in case of constipation*
   - *Thank the patient, arrange patient materials and supplies*
   - *Document the procedure*

## Self-assessment 5.2.

1) Illustrates the disadvantages of buccal route of drug administration?
2) What happen when a drug designated to sublingual administration is accidentally swallowed?
3) What are the precautional measures a nurse will teach a patient who is taking medication in sublingual?
   a) Precise the location of a drug in buccal route of medication administration
4) Where do we exactly dispose a suppository drug using rectal route

5) Administration way which is least expensive, using little equipment, and minimal training is the

   a) Oral route
   b) Skin application
   c) Vaginal application
   d) Intradermal route

6) Why will you choose to administer medication in oral route?

7) List the disadvantages of oral route of drug administration

8) Patient KANEZA is hospitalized for 3 days under treatments including suppository, while an associate nurse going to administer the medication found the patient has a diarrhoea. What can you do to help this patient taking his medication as an associate nurse? Tell us the best route to be used to treat this patient among the routes we already covered?

## 5.3. Topical skin application

**Learning activity 5.3.**



1) What this image shows to you
2) When is skin medication indicated?
3) Discuss on the side effect which may originate from skin medication application?

Sometimes the location of a disease may dictate the route of drug administration. The outermost body parts are treated by using topical route of drug administration. The **topical route of drug administration** involves applying a drug to the skin

or mucous membranes for example in the eye, external ear canal, nose and vagina. They are typically used for their action at one specific site. They usually act locally, but they may have systemic effects. The frequency of delivery of the drug is controlled and depends up the type of the prescribed drug and instructions from the manufacturer.

Topical dermatological preparations are in different forms such as ointment, lotions, creams, powders, pastes, sprays and patches. The **lotions, ointment and creams** are used to manage skin diseases localized on the specific area of the skin. Lotion such as skin moisturizers prevent the complication linked to excessive dry skin. This is the application of the drug to the desired area of the skin which will serve as route of absorption. The ointment such zinc oxide when applied on the skin, it protects against abrasion or moisture associated with bowel or bladder incontinence. Patches as a form of transdermal medication which are designed to be applied on the skin and then penetrate it to generate systematic effect. Patches may last between 24 to 72 hours. Nitroglycerine and nicotine are the commonly used patches. This route has fewer risks to gastro intestinal system, fewer risks of abuse and easy to administer. In some case the drug can be sufficient enough to enter systemic circulation and produce unwanted side effects. During the use of topical medication there is a risk to potential production of irritant and allergic contact dermatitis, potential rapid appearance of bacterial resistance and potential alteration of cutaneous flora. Before application of skin preparation, we need to wash it with water and soap then dry it throughout. The skin scurf and previous applied medication can hinder the effective drug application and absorption. Remember to wear gloves before application of medication on the skin and respect asepsis when handling open skin area.

To apply the medication on the skin we need the drug dedicated for skin, gloves, some gauze, plate or trolly. In case of **powder application** make sure the skin surface is dry. Spread apart any skin folds and apply the powder until the area is covered with a fine thin layer. Cover the site with a dressing if ordered. For **suspension-based lotion**, shake the container before use to distribute evenly suspended particles. Put a little lotion on a small gauze dressing or pad and apply the lotion to the skin by stroking it evenly in the direction of the hair growth. Rub the lotion on the skin until it is no longer visible. For **creams, ointments, pastes and oil-based lotions**: Warm and soften the preparation in gloved hands to make it easier to apply. Spread over the affected skin evenly using long strokes that follow the direction of the hair growth. Explain that the skin may feel somewhat greasy after application. Apply a sterile dressing if ordered by the doctor.

To **apply transdermal patches,** select a clean, dry area that is free of hair and matches the manufacturer's recommendations. Remove the patch from its protective covering, holding it without touching the adhesive edges, and apply it by pressing firmly with the palm of the hand for about 10 seconds. Advise the person to avoid using a heating pad over the area to prevent an increase in circulation and the rate of absorption same as when the patient has fever greater than $40^0$c. Remove the patch at the appropriate time, folding the medicated side to the inside so it is covered. Remember to rotate the sites. Write date, time and your initials on the patch guide your colleagues to take appropriate follow up care.

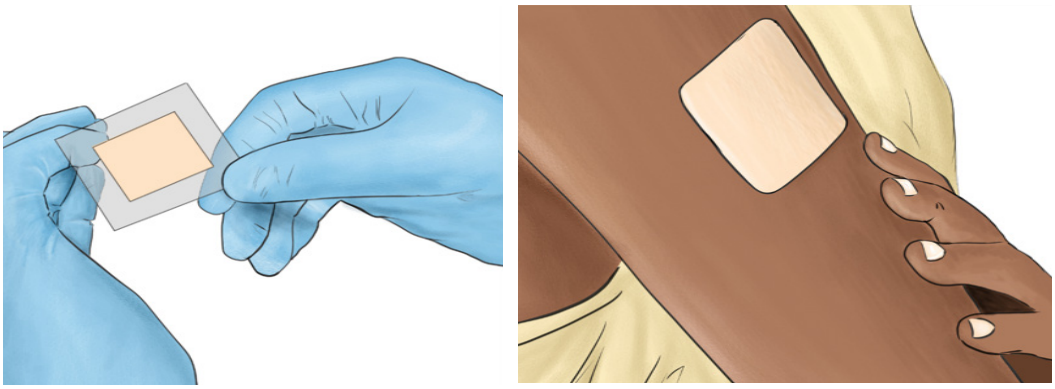


***Figure 80 Transdermal patches image***

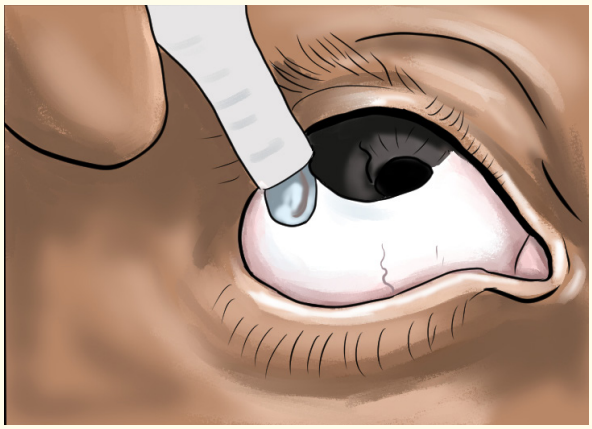
**Self-assessment 5.3.**

1) Before applying a powder medication, what are nursing consideration to be respected?
2) Give different forms of skin application medication
3) Patient Y. consult for skin disorder and Dr prescribes a skin application medication in form of cream to be applied twice a day. As an associate nurse, give to Yvan the precautions to guide him to remove the patch.

## 5.4. Topical eye medication administration

**Learning activity 5.4**

Observe the image on the left and reply to these questions:



1) What this image indicates to you
2) Why is this action done?
3) Which safe measures will apply to make this activity?

Medications become effective when they reach their site of action. Therefore, different route of drug administration are used to reach the exact site of action. Ocular route of drug administration is designed to treat eye diseases. Drugs administered to the eye are in the form of drops or ointments and usually introduced into the lower conjunctival sac. **Eye medications may be ordered** to lubricate the eye, to prevent or treat conditions such as infection, inflammation or glaucoma or for diagnostic purposes. E.g: of eye medications include gentamicin for bacterial infection such as conjunctivitis, prednisolone for inflammation and timolol for glaucoma.

**The advantages** of ocular route are that it offers direct application to the site of action in higher concentration than when taken by other routes. It involves quicker drug absorption and less systemic effect. It is also suitable to all type of patient as well as easier for self-administration. **The disadvantages** quick elimination of drug through tear and blink. Application of eye ointment may cause blurring vision. Few drugs are in ocular form, they are also expensive than oral medication.

**BOX 5.4.**

- Always remember to wash hands and if necessary, wear glove before administer eye medications and follow other prescribers' instructions.
- In some situations, the drug that is administered for a local effect may be absorbed into the bloodstream and cause unwanted systemic effects. To prevent this, after administration of the eyedrops, press your gloved fingertip gently against the lacrimal ducts on either side of the nose for a few seconds

Eye drugs are primarily in form of ointment and drops. Their administration methods are different to ensure that they reach the maximum surface.

**Materials:**

Eye medicine, medication chart, clean gloves, swabs, disinfectant, tray, trolley.

1. **Preparation**
   - *The nurse introduces to the patient, explain the purpose of that medication and ask for consent*
   - *Wash hands*
   - *The student nurse prepares and assemble all the materials after disinfecting the tray/ trolley*
   - *Assess the information related to the drug such as mode of action, purpose, route, time of onset and peak of action, side effects and nursing implications*
   - *Apply privacy*
   - *Assess the condition of external eye and note changes*
   - *Assess for allergy, level of consciousness and ability to follow command*
   - *Assess the ability for self-administration*
2. **Implementation**:
   - *Wash hand and put on gloves*
   - *In a supine position patient looks up, in sitting position on a chair he or she slightly hyperextend the head and look in the ceiling.*
   - *Use the thumb of forefinger of non-dominant hand to open the lower eye lid by pulling it back against the orbit*

***Eye drop:***

- *Ask the patient to look in the ceiling and hold the medication eye dropper at approximately 1 to 3 cm above the conjunctiva sac.*
- *Instill prescribed drops*
- *In the patient blinks or close eye so that the drops went out of lids margin, dry it with a swab and repeat the procedure.*

***Eye ointment:***

- *Hold the applicator above the lower eye lid margin and apply a thin layer of the ointment along the inner edge of the eyelid on conjunctiva from inner to outer canthus.*
- *Ass the patient to close the eye, apply a gentle circular massage on the eye unless contraindicated*
- *Wipe the excess ointment from inner to outer canthus*

**3. Finishing**

- *Thank the patient and arrange his environment*
- *Remove gloves*
- *Give related health education, train the patient for self-administration*
- *Document the procedure and other relevant findings*

### Self-assessment 5.4

1) Explain the advantages and disadvantages eye medication administration
2) When is eye medication instillation indicated?
3) Patient K. consult for redness of the eyes and Dr prescribe an eye ointment to be applied twice a day. As an associate nurse, give to K. the precautions to be followed before and during medication application.

## 5.5. Topical ear medications administration

### Learning activity 5.5

Look at the picture here attached and answer the given questions



1) What is this person doing
2) What do you think should the best way to instill ear drop?
3) Educate a patient whose ear drop prescription is to be taken at home

Drugs administered in the ear are in the form of drops. These drugs may be used to soften cerumen, relieve pain, treat infection or inflammation, or facilitate removal of a foreign body, such as an insect or a small object. It is important to control local problems found in the ear. Its disadvantages are based difficulties for self-administration as well as time consuming because the patient remain in a position for a while.

To instill eardrops, position the patient lying on his or her side with the affected ear up. For adults and children older than 3 years of age, gently pull the pinna up and back. For children younger than 3 years of age, pull the pinna down and back. This helps straighten the ear canal, which allows the drops to penetrate to the middle ear. Orients the dropper so that the medication drops rolls down the wall of the canal and does not drop directly onto the tympanic membrane, which would cause pain.

Ask the patient to remain with his or her head positioned with the affected ear up for at least 2 minutes. A cotton ball can be placed loosely in the ear to absorb excess medication. It is advisable to avoid touching the dropper to the surface of the ear to prevent the introduction of pathogens into the bottle of ear medication. Before eardrops administration, make sure that tympanic membrane is intact. If in doubt, ensure that the tympanic membrane has been examined with an otoscope by a healthcare professional prior to administering the medication. Here is a list of materials to be used to apply ear drug: ear medicine, ear dropper, medication chart, clean gloves, swabs, disinfectant, trolley or plate.

1. **Preparation**
   - *The nurse introduces to the patient, explain the purpose of that medication and ask for consent*
   - *Wash hands*
   - *The student nurse prepares and assemble all the materials after disinfecting the tray/ trolley*
   - *Assess the information related to the drug such as mode of action, purpose, route, time of onset and peak of action, side effects and nursing implications*
   - *Apply privacy*
   - *Assess the condition of external ear and note changes*
   - *Assess for allergy, level of consciousness and ability to follow command*
   - *Assess the ability for self-administration*
   - *Make sure the medication is at room air temperature*

2. **Implementation**:

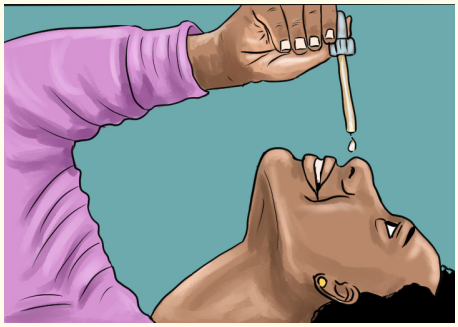
- Wash hand *and wear gloves*
- *Offer a position that exposing the affected ear*
- *Pull the pinna up and back for adults and children greater than 3 years, then down and back for younger children to straighten the ear canal*
- *If the cerumen prevents the entrance the ear canal, wipe it gently with a wooden cotton and avoid to introduce the cerumen into the inner canal*
- *Hold the dropper and instill the prescribed drops*
- *Keep the patient is the lying position for some minutes and apply a light massage to the tragus*
- *If ordered, insert a cotton ball to the entry of the ear canal*
- *Remove the cotton after 15 minutes and help the patient to resume preferred position*
- *Thank the patient and arrange his environment*
- *Remove gloves*
- *Give related health education*
- *Document the procedure and other relevant* findings

## Self-assessment 5.5

1) Proper administration of an ear medication to a 2-year-old person includes which of the following?
   a) Pull the ear straight back
   b) Pull the ear down and back
   c) Pull the ear up and back
   d) Pull the ear straight upwards
2) Describe the indications of ear medication instillation.
3) What are the disadvantages of ear drop?
4) Patient B. age 10 years old, consult the health center for right ear pain, as an associate nurse what do you think the doctor can pay attention to, before prescribing an ear drops?

## 5.6. Topical nasal drug administration

### Learning activity 5.6



Look carefully the image posted here and respond related questions.

1) Where does this medication instilled?
2) Think on the importance of this route of drug administration

Nasal route consists of drugs administration via the nasal mucosa. Some medications are administered for local effects on the nasal mucosa other are given for systemic effects and are simply absorbed through the nasal mucosa. Nasal medications are administered to reduce inflammation, facilitate drainage, or treat infections in the nasal cavity. Nasal route is contraindicated for patients with recent radiation to the head and neck, high risk for serious bleeding due to tumour, history of coagulopathy disorder.

The advantages of easily administered and generally well tolerated, rapid onset because medications are directly absorbed through the nasal mucosa into systemic circulation. There is higher bioavailability than oral medications as first pass hepatic metabolism is bypassed, may escape the blood-brain barrier through olfactory region of the central nervous system. Provides alternate route for rapid medication delivery when IV access is unavailable like in case of seizure or if there is a high risk of needle-stick injury. Nasal drug administration is limited to very small volumes due to relatively small area available for absorption. It only applicable to potent drugs with high water solubility. It is not suitable for drugs that are irritating or injurious to the nasal mucosa in addition to disease conditions of the nose may result in impaired absorption. Instilling a drug into a blocked nose or a nose with watery rhinorrhea may expel the medication from the nose. Chronic applications may lead to more serious toxicity issues and may ultimately damage the cilia and compromise body's defenses. If long-term use continues, the arteries in the nasal passage will shrink and scar, causing lesions and nosebleeds.

**Procedure of ear route drug administration**

To perform the ear medication, we need materials such as medication in its container, clean dropper, facial tissue, small pillow, wash cloth.

1. **Preparation**
   - *Review physicians order*
   - *Check patient identification*
   - *Get the consent from the patient*
   - *Refer to patient file to know which sinus affected*
   - *Perform hand washing*
   - *Gather all needed equipment*
   - *Inspect the condition of the nose*
   - *Check medication label to avoid medication errors*
   - *Perform the right of medication: the right patient, medication, dose, route, time, reason, and right assessment*
   - *The expiration date on the label should be checked to ensure that the medication is not outdated.*

2. **Implementation**
   - *Wash hands and wear gloves*
   - *Prior to administration of the medicine, the bottle or canister should be shaken.*
   - *Explain the patient the procedure regarding positioning and sensation to expect such us burning or straining of mucosa or shocking sensation as medication strikes into throat.*
   - *Arrange supplies and medications at the bedside*
   - *Explain the patient to blow his or her nose before nasal instillations.*
   - *Tissues should be kept at hand so that residue can be wiped away and for the client to use to cover the mouth and nose when sneezing.*
   - *Don clean, non-sterile gloves.*
   - *Position patient sitting back or lying down with head tilted back over a pillow.*
   - *Hold the dropper near the entry to the nostril and instruct the client to inhale as you drop the appropriate dose into the nostril.*
   - *Instruct the patient to breathe through mouth*
   - *Keep the client's head back for two to three minutes to allow the drops to roll to the back of the nostril. Repeat in the other nostril.*
   - *Avoid blowing the nose immediately after to allow medication an opportunity to absorb. rinsing the nose with warm water*

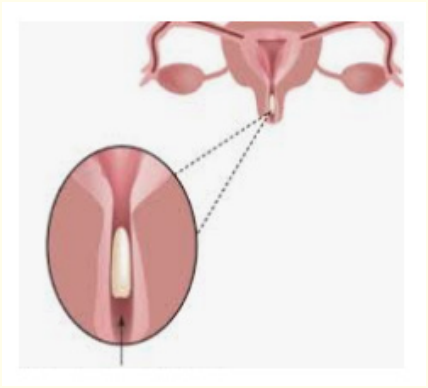
3. **Finishing**
   - *The cap should be replaced.*
   - *Soiled tissues should be placed in a bag that can be sealed and discarded.*
   - *Remove gloves and assist patient to a comfortable and safe position.*
   - *Wash hands.*
   - *Document properly date, time, dose, route; which nostril the medication was instilled into*
   - *Observe the* patient for side effect 15 to 30 min after administration

**Self-assessment 5.6**

1) Explain the advantages and disadvantages nasal medication administration.
2) When is nasal medication instillation indicated?
3) When is nasal medication instillation indicated?

## 5.7. Topical vaginal drug administration

**Learning activity 5.7**

A. 

B. 

Observe the images above the work on the following questions:

1) What do you see introduced in the female genitalia?
2) Why is it important to introduce drug in female genitalia?
3) Which kind of medicines used in female genitalia?

Healthy vaginal has many non-pathogenic organisms than pathogenic ones. This ratio protects the vaginal from invasion by pathogenic organisms in addition to the acidic vaginal secretion also protect the vagina from microbial invasion. There may be an imbalance in the above protective mechanism which originate results into diseases to be managed vaginal drugs.

Vaginal drug administration indicates the administration of medications within the vaginal cavity to produce local or less frequently, systemic pharmacological effects. Medications administered via the vaginal route come in the form of suppositories, creams, aerosol foams, or tablets that are inserted into the vagina and dissolve there to treat infection or to relieve discomfort. Vaginal administration is **indicated** to treat local infections such as yeast infections, vaginitis, endometrial atrophy, labor induction and contraception with spermicidal agents.

This route offers a **number of benefits** over other routes of drug delivery including avoidance of hepatic first-pass effect because absorbed drugs penetrate directly to the systemic circulation via the inferior vena cava thus prevent hepatic toxicity induced by some drugs. It is an easier route of administration and possible self-insertion and removal of the dosage form. This route limits the side effects associated with oral route such unpleasant taste, nausea and so on as well as parental routes associated inconvenience due to pain, tissue damage, and possible risk of infection.

However vaginal route has some **disadvantages** like gender specificity, patient incompliance, some drugs can cause vaginal irritation. Only a few drugs are administered by this route. Drug absorption may be affected by menstrual cycle, menopause, pregnancy and sexual intercourse. It affects personal hygiene due to some medication leakage and some drugs can be inactive due to vaginal pH. Some preparations come with a disposable tubular applicator for insertion others are just inserted by index and thumb fingers. Medical aseptic technique is usually used during this procedure. Suppositories are designed to melt at body temperature, so they are generally stored in the refrigerator to keep them firm for insertion.

**Procedure of vaginal administration**

The following materials are needed to perform vaginal drug administration; vaginal suppository, cream or tablets, applicator (if needed), clean gloves, tower, perineal pad, lubricant, bedpan, medication chart.

1. **Preparation**
   - *The nurse introduces to the patient, explain the purpose of that medication and ask for consent*
   - *Wash hands*
   - *The student nurse prepares and assemble all the materials after disinfecting the tray/ trolley*
   - *Assess the information related to the drug such as mode of action, purpose, route, time of onset and peak of action, side effects and nursing implications*
   - *Ask the patient to void before medication insertion or help him by using bedpan*
   - *Apply privacy*

2. **Implementation**
   - *Adequate light is needed to visualize the vaginal opening*
   - *Allow a lying position on back with knees flexed*
   - *Wash or rub hands*
   - *Wear gloves*
   - *Open the suppository and insert it on the applicator or fill the applicator with prescribed amount of cream*

- *Lubricate the applicator to reduce friction*
- *Use aseptic technique to administer medication*
- *Spread the labia with fingers and clean the area around the vaginal orifice using a cotton ball and warm water to remove discharge. Use a cotton ball as a single stroke moving from above the orifice downward to sacrum*
- *Introduce the applicator in a rolling way in a downward and backward to follow the normal contour of the vagina*
- *Push the plunger completely to drop the suppository or insert the suppository with gloved fingers well into the vagina if there is no applicator available*
- *Ask the patient to keep supine position for about 5 to 10 minutes*
- *Help the client to apply perineal pad to collect excess discharge*

**3. Finishing**

- *Teach the patient who want to self-administer suppository or cream.*
- *Thank the patient, arrange patient items, and provide appropriate health education*
- *Dispose the used according to local policy.*
- *Decontaminate your hands.*
- *Immediately record that the medicine has been administered*
- *If the patient refuses or is unable to take their medicine, this should be documented*
  *along with the reason for omission and inform the prescriber*

**Self-assessment 5.7**

1) Explain the advantages and disadvantages vaginal administration.
2) When is vaginal medication indicated?
3) Patient C. has vaginal affection which require self-insertion of vaginal suppository as treatment, as an associated explain her the procedure she will follow.

## 5.8. Dose calculation for enteral and topical drugs

**Learning activity 5.8**

4) Dr. R. orders amoxicillin syrup 500 mg per feeding tube every 6 hours. The available bottle of amoxicillin is labeled 250 mg per 5 ml.

   How many milliliters needed to provide the prescribed dose of 500mg? Calculate a daily dose for this patient.

5) The prescription indicates 1000 milligrams (gm) of Erythromycin while the available tablets are of 500gm per a tablet. How many tablets are needed to meet the prescribed dose of 1000gm of Erythromycine?

Nurses must be able to calculate the dose of medications so that the right dose is appropriately provided to the patient. The dose of medication available to you may be different from what the prescriber ordered. If the available medication is in a different dose than what is ordered, you must calculate how much of the available medication to administer to your patient. For tablets it is a matter of adding or dividing tablets to meet the desired dose whereas for the capsule we add to get the exact dose. For liquid medication, we calculate the amount of the drug dissolved in liquid, expressed as milligrams per milliliter (mg/ml). You will then be required to calculate how many milliliters of liquid to administer to give the desired milligrams of medication. In this unit, we are going to study how to calculate the dose of medications of different forms such as tablets, capsules, liquid forms including injectable ones.

To be able to calculate the drug dose, we have to know the abbreviations used in drug prescription in addition to units converting process. We are going to see the commonly used abbreviations in combination with conversion measures. It is advisable from students to make sure what she or he is reading is correct or ask clarification in case of confusing abbreviations to mitigate medication errors.

**BOX 5.8**

- To convert larger units to the smaller ones, requires to multiply.

Kiligrams (Kg)to Grams (g)=Kg×1000

Kilograms (kg) to grams(g)= Kg×1000

Grams to milligrams (mg) =g × 1000

Milligrams to micrograms (mcg) = mg ×1000

Liters(L) to milliliters(ml)= L ×1000

- To convert the smaller units to the larger ones, we divide.

Grams to kilograms = g/ 1000

Milligrams to grams = mg/1000

Microgram to milligrams = mcg/1000

Milliliters to liters = ml/100

The additional abbreviations are:

| Abbreviation | Full word |
|---|---|
| h | hour |
| IM | intramuscular |
| SC | subcutaneous |
| IV | intravenous |
| PO | Per os which means by mouth |

Many ways of dose calculation are acceptable as their result into exact responses. The calculations use simple mathematic formula which nurse need to be aware off to ensure correct dose is ready for administration. It is necessary for students and novice nurses to get guidance while performing dose calculation avoid confusion and error which may arise leading medication error. To be able to find the dose to administer , we need the dose we have on hand or the dose available, the dose that is ordered by the prescriber and stands for the vehicle, which is either a tablet or liquid.

The first fraction is: H/V=D/x

The next step is to cross multiply: HX = VD

Now x equals to: X= DV/H = (Dose prescribed*vehicle)/(Dose in hand )

Example 1: The ophthalmologic officer MUGISHA orders 200 mg of Ibuprofen, and 50 mg tablets are available, how many tablets should be given to the patient?

We know that 50 mg = 1 tablet,

We need 200 mg in an unknown number of tablets.

Step one: Set up a fraction operation: 50mg/(1 tab)=200mg/(x )

Step two: Do cross multiplication 50 mg * X= 1 tab *20 mg

Step three for ‘’x’’: X tab= (1tab * 200mg)/(50 mg )= 4 tab

The nurse needs four tablets to administer 200mg of ibuprofen using 50mg tablets.

Using simple explanation of this equation, the dose to administer equals the dose we want times what is in over the dose we have.

Here is a typical example:

Prescription states 200mg (milligrams)

You have an ampoule of 500mg (milligrams) in 4ml (millilitres).

What volume contains the dose you need?

H/V=D/x gives us; 500/(4 )=200/x; 500X=200*4; 500x= 800; x=800/500; x= 1.6

It means that we need 1.6ml to be able to administer 200mg of the prescribed drug.

## Self-assessment 5.8

1) Mrs. B have been prescribed the following medication: Cloxacillin 500mg to be given 3 times a day for 7 days and Ibuprofen 400mg to be given 2 times a day for 3 days. The available cloxacillin in health center's pharmacy has 500mg per capsule while ibuprofen is 200mg per tablet
   a) Calculate the daily and total dose of cloxacillin for Benitha
   b) Calculate the daily dose and total dose of Ibuprofen for Benitha
2) Dr. I. writes a prescription for 25 mg of morphine in SC every 12 hours. The medication is available in a concentration of 100 mg per ml. How many ml will the nurse administer to meet the prescribed dose?

## End unit assessment 5.

1) Select the right of medication administration among the following concepts:
   a. Patient file
   b. Concentration
   c. Route
   d. Thermometer
2) Proper administration of an ear medication to a 2-year old person includes which of the following?
   a. Pull the ear straight back.
   b. Pull the ear down and back.
   c. Pull the ear up and back.
   d. Pull the ear straight upwards.
3) Drug administration way which is least expensive, using little equipment, and minimal training is the:
   a) Enteral route
   b) Skin application
   c) Vaginal application
   d) Intradermal route
4) Hand Hygiene is a part of standard precautions before any nursing procedure
   a) True
   b) False

5) What is most important reason to press firmly but not to massage an applied medicated patch?
   a. Massaging a medicated patch can result in the untimely release of medication.
   b. Massaging a medicated patch can cause the medicated patch to become dislodged.
   c. Massaging a medicated patch can result in skin irritation.
6) You go to place a transdermal patch on Mrs. LOWERY and note that the patch from yesterday is still applied to her chest.
   a. As an associate nurse, what do you expect to find on the applied patch?
   b. How long a transdermal patch should last?
7) Nurse AKALIZA is going to administer amoxicillin to Mr. KALISA through enteral route,
   a. Discuss different ways of enteral route should be used to administer a medication.
   b. Outline the advantages and disadvantages of each enteral route
8) Describe the process used to perform each of the topical drug administration.
9) When assessing a person's response to medication therapy, how does the nurse best recognize that the medication is therapeutic or subtherapeutic?
10) How do Three Checks facilitate a culture of safety in medication administration?
11) Mrs. LOWERY prefers to insert her own nose drops. As you observe her doing so, what key aspects of the administration procedure should she be doing to ensure correct technique?
12) Outline the 3 indications of rectal drug administration route
13) Which of the following is an advantage of enteral drug administration?
    a) Rapid absorption
    b) Bypasses the liver metabolism
    c) Convenient and cost-effective
    d) Suitable for unconscious patients
14) When administering eye drops, which technique helps to ensure proper distribution of the medication?
    a) Applying the drop directly to the cornea
    b) Instilling the drop in the inner canthus

c) Instilling the drop in the conjunctival sac

d) Applying pressure to the nasolacrimal duct

15) The correct angle for administering nasal sprays is:

a) Directly upward

b) Towards the nasal septum

c) Slightly angled outward

d) Horizontally

16) For otic administration in adults, the ear should be pulled:

a) Downward and back

b) Upward and back

c) Straight out

d)Backward and up

17) When calculating the dose for a medication prescribed in g/kg for a child weighing 15 kg, the correct dose for a prescription of 100 mg/kg is:

a) 1.5 mg

b) 15000 mg

c) 10 mg

d) 1.5 g

18. Which of the following routes of administration is most likely to cause systemic effects?

a) Topical

b) Enteral

c) Ophthalmic

d) Otic

19. A patient is prescribed 5000 mg of topical cream. If the tube contains 50 grams, how many doses are in the tube?

a) 10 doses

b) 25000 doses

c) 5 doses

d) 25 doses

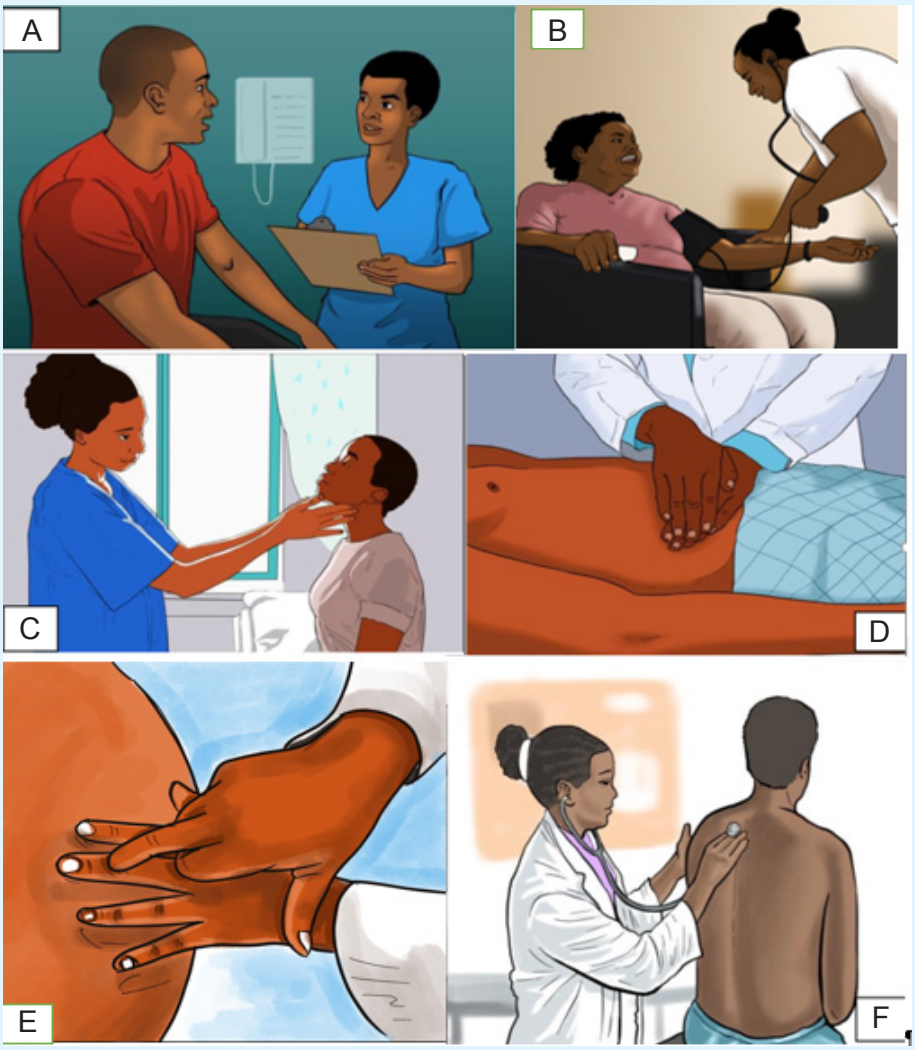
20. Enteral medications are always given orally. True or False
21. Topical medications can be used for both local and systemic effects. True or False
22. Proper administration technique is crucial for ensuring the effectiveness of ophthalmic medications. True or False
23. The nasal route of drug administration is ideal for slow systemic absorption? True or False
24. Ear drops should be warmed to body temperature before administration. True or False.

**Key unit competence:**

Carry out a comprehensive data collection of clients

## Introductory activity 6

Look at the figures (A, B, C, D, E and F) and reflect on the activity below:




1) Referring to the figure A, what do you think is the Nurse doing?
2) What do you think is the Nurse doing in figure B, C, D, E and F?
3) According to you, what is the purpose of doing all the above actions (Figures A, B, C, D,E and F) by the Nurse to the client?

## 6.1. Introduction to data collection

**Learning activity 6.1.**

Use the provided books of Fundamentals of Nursing, read about data collection or assessment and make a short note on the following

1) Definition of data collection?
2) Purpose of data collection or assessment
3) Sources of data
4) Types of data
5) Types of assessment
6) Methods of data collection

After, you will present your work in class

### 6.1.1. Definition and purpose of data collection

Data collection or assessment means the gathering of information (data) about a patient in order to facilitate effective nursing care and medical management. The purpose of assessment is to establish a database concerning a client's physical, psychosocial, and emotional health in order to identify health-promoting behaviors as well as actual and potential health problems.

### 6.1.2. Types of assessment

The assessment can be comprehensive or focused (ongoing).

A comprehensive assessment is usually the initial assessment. It is usually performed upon admission to a health care agency and includes a complete health history and physical examination to determine current needs of the client. A comprehensive assessment examines the patient's overall health status. A focused or ongoing assessment is frequently performed on an ongoing basis to monitor and evaluate the patient's progress, interventions, and response to treatments. A focused assessment is problem oriented and may be the initial assessment or an ongoing assessment. Focused assessments are not as detailed as comprehensive assessments. The nurse and physician both perform a patient history and a physical examination, but they use different formats and analyze the data based on their discipline's focus.

### 6.1.3. Types of data

In all assessments, only two types of data are obtained: **Subjective** and **Objective data.**

Subjective data, also known as symptoms, are collected by interviewing the patient and/or caregiver during the nursing history. This type of data includes information that can be described or verified only by the patient or caregiver. It is what the person tells you either spontaneously or in response to direct questioning. Objective data, also known as signs, are data that can be observe or measured. You obtain this type of data using inspection, palpation percussion, and auscultation during the physical examination. Objective data are also acquired by diagnostic testing. Usually subjective data are obtained by interview, and objective data are obtained by physical examination.

### 6.1.4. Sources of data

Data are collected from a variety of sources where the client is considered the primary source of data (the major provider of information about self). Sources of data other than the client are considered secondary sources and include family members, other health care providers, and medical records. Examples of sources of data are: Client, Family and significant other, Other health care professionals, Medical records, Interdisciplinary conferences, rounds, and consultations, Results of diagnostic tests, Relevant literature.

### 6.1.5. Methods of data collection

Assessment requires sharp observation skills and the ability to distinguish relevant from irrelevant and important from unimportant data. Data collection can occur through **interviews, observation**, and **physical assessment**

**Self-assessment 6.1.**

1) What is data collection?
2) With examples, differentiate primary and secondary sources of data
3) With examples, differentiate the subjective and objective data
4) What are the main components of a comprehensive client assessment?
5) How does comprehensive assessment differ from focused assessment?
6) List the methods of data collection

## 6.2. Interview and Health History: Subjective Data Collection

**Learning activity 6.2.**

**For Overview:**

Use the provided books of Fundamentals of Nursing, read topics about interview and Health History and make a summary note on the following:

1) Definition of interview
2) Phases of the interview
3) Interviewing techniques
4) Definition of health history
5) Purpose of health history
6) Description of components of health history

After, you will present your work to your classmates

**For the technique of taking the health history:**

Through role play, two paired learners will follow the interview phases and use effective interviewing skills/techniques to take the health history of his/her partner

### 6.2.1. Interview

Interviewing is the method by which health care providers take health histories and gather subjective data. Interview is a therapeutic interaction that has a specific purpose. A primary focus of the data collection interview is the health history. The nurse interviews for a variety of reasons throughout the nurse-client relationship, including data collection, teaching, exploration of the client's feelings or concerns, and provision of support. Effective interviewing depends on the nurse's knowledge and ability to skillfully elicit information from the client using appropriate techniques of communication. Observation of nonverbal behavior during the interview is also essential to effective data collection.

**a) Phases of the interview**

The interview is divided into three phases: the introductory phase, the working phase, and the termination phase. Each phase has a specific purpose and different communication patterns.

**i) Introductory phase**

The introductory phase is the time to introduce yourself to your patient, put him or her at ease, and explain the purpose of the interview and the time frame needed to complete it. The nurse also asks the patient his or her preferred name. The nurse shakes hands if that seems comfortable with the patient and is appropriate for culture and setting. The beginning phase may continue with discussion of neutral topics (eg, the weather) if the patient seems anxious. Questions should be nonprobing and patient centered. Explain to the patient that you will be taking notes, but keep your writing to a minimum. Reassure your patient that the information collected is confidential.

**ii) The Working Phase**

The working phase is often where data collection occurs. It is usually very structured; it is also the longest phase. Make sure you allow enough time for the working phase. Although you will need to take notes, stay focused on your patient. Listen to what the patient is saying both verbally and nonverbally. With experience, you will become skilled at taking minimal notes and then documenting your data after the interview rather than during it. During the working phase the nurse asks specific questions, two types of which are closed ended and open ended. Each has a purpose, which the nurse chooses to elicit appropriate responses. Closed-ended (direct) questions yield "yes" or "no" answers. An example is "Do you have a family history of heart disease?". Closed -ended questions are important in emergencies or when a nurse needs to establish basic facts. Open-ended questions require patients to elaborate. They are broad and provide responses in the patient's own words. They are key to understanding symptoms, health practices, and areas requiring intervention.

**iii) The Termination Phase**

The end of the interview is the termination or closing phase. During this phase, you need to summarize and restate your findings. This provides an opportunity to clarify the data and share your findings with the patient. The nurse also ends the interview by stating what the two to three most important patterns or problems might be, as well as asking patients if they would like to mention or need anything else. Based on this information, both the nurse and the patient can discuss follow-up plans. The nurse also thanks patients and family members for taking the time to provide information.

**d) Interviewing techniques**

Begin the interview by establishing trust and conveying a caring attitude. Make sure that the environment is comfortable and that privacy is ensured with minimal distractions. Effective interviewing skills evolve through practice and repetition and include the following:

**Active listening**: is the ability to focus on patients and their perspectives. It requires the nurse to constantly decode messages, including thoughts, words, opinions, and emotions.

Restatement: relates to the content of communication. The nurse makes a simple statement, usually using the same words of patients. The purpose is to ask patients to elaborate.

**Reflection**: is similar to restatement; however, instead of simply echoing the patient's comments, the nurse summarizes the main themes. Patients, thus, gain a better understanding of underlying issues, which helps to identify their feelings.

**Encouraging elaboration (facilitation)**: assists patients to more completely describe problems. Responses encourage patients to say more, continue the conversation, and show patients that the nurse is interested.

Purposeful silence: allows patients time to gather their thoughts and provide accurate answers. Silence can be therapeutic, communicating nonverbal concern. It gives patients a chance to decide how much information to disclose.

Focusing: helps when patients stray from topic and need redirection. It allows the nurse to address areas of concern related to current problems.

**Clarification**: is important when the patient's word choice or ideas are unclear.

**Summarizing**: happens at the end of the interview, when the nurse reviews and condenses important information into two or three of the most important findings. Doing so also helps to reassure the patient that he or she has been heard accurately.

## 6.2.2. Health History

The health history is a review of the client's functional health patterns prior to the current contact with a health care agency. In other words, the health history is a record of information about a person's health. Health history provides the subjective database for your assessment. The health history is subjective, it consists of what the patient tells you, what the patient perceives, and what the patient thinks is important. It provides a holistic, qualitative picture of your patient. All history information is

considered subjective data. Clues that you obtain from the health history will direct your physical assessment and are essential in developing a successful plan of care for your patient. While the medical history concentrates on symptoms and the progression of disease, the nursing health history focuses on the client's functional health patterns, responses to changes in health status, and alterations in lifestyle.

**a) Purpose of Health history**

The purpose of the health history is to:

- Provide the subjective databased
- Identify patient strengths
- Identify patient health problems, both actual and potential
- Identify supports.
- Identify teaching needs.
- Identify discharge needs.
- Identify referral needs

**b) Components of Health History**

Components of the Nursing Health History are:

**i) Biographical Information**

Biographical information is factual demographic data that include a patient's age, gender, address, insurance information, occupation, working status, marital status, and referral source. The staff who works in the admitting office usually collects this information.

**ii) Chief Concern or Reason for Seeking Health Care**

The chief concern is a brief statement about why a patient (in his or her own words) is seeking health care. This information offers a focus to explore a patient's concerns and issues. Once you learn a patient's chief concerns, you will compare those findings with what you learn during your assessment. Often you will learn much more.

Ask a patient why he or she is seeking health care (e.g., "Tell me, Ms. Richard, what brought you to the clinic today?"). Once you learn a chief concern, you then gather more comprehensive data and probe for a full description of the patient's health status. You record a patient's response in quotations to indicate a subjective statement. As you explore a patient's reason for seeking health care, you will learn the chronological and sequential history of his or her health problems.

### iii) Patient Expectations

It is important to assess a patient's expectations of health care providers (e.g., being diagnosed correctly, obtaining pain relief, or being treated for a disease).

Patient satisfaction, a standard measure of quality for all hospitals throughout the country, can be perceived by patients as poor if their expectations are unmet.

Patients typically expect to receive information about their treatments, prognosis, and a plan of care for their return home (whether they are inpatients or outpatients).

In addition, they expect relief of pain and other symptoms and to have caring expressed by health care providers.

During the initial interview have a patient express expectation when entering the health care setting. Later, as the patient interacts with health care providers, assess whether these expectations changed or were met.

### iv) History of the Present Illness or Health Concerns

The nurse begins with open-ended questions and asks patients to explain symptoms. A complete description of the present illness is essential. Questions about **symptoms** (subjective sensations or feelings of patients) in six to eight categories assist patients to be more specific and complete: location, duration, intensity, description, aggravating factors, alleviating factors, pain goal, and functional impairment.

Common mnemonics used to remember the key elements of the presenting symptom(s) are **OLDCARTS** (**O**nset, **L**ocation, Duration, Character, Associated/ Aggravating factors, Relieving factors, Timing, Severity) and **PQRSTU** (Provocative/ Palliative, Quality, Region, Severity, Timing, Understanding patient perception).

P-**Provokes** (precipitating and relieving factors): How did it come about? What might be the causes for the symptom? What makes it better or worse? Are there activities ( e.g., exercise, sleep) that affect it?

Q-**Quality**: What does the symptom feel like? (Have the patient explain in his or her own words.) If the patient has difficulty in describing symptoms, offer probes (e.g., "Is the pain sharp? Dull?" or "Do you feel light-headed, dizzy, off balance?"). What does the illness or symptom mean to the patient?

R-**Radiate**: Where is the symptom located? Is it in one place? Does it go anywhere else? Have the patient be as precise as possible.

S-**Severity**: Ask a patient to rate the severity of a symptom on a scale of 0 to 10 (with no symptom at 0 and the worst intensity at 10). This gives you a baseline with which to compare in follow-up assessments.

T-**Time**: Assess the onset and duration of symptoms. When did a symptom start? Does it come and go? If so, how often and for how long? What time of day or on what day of the week does it occur?

Also assess whether the patient is experiencing other symptoms along with the primary symptom. For example, does nausea accompany pain? Does the patient have pain along with shortness of breath?

**v) Past Health History**

A health history provides a holistic view of a patient's health care experiences and current health habits. Assess whether a patient has ever been hospitalized or injured or has had surgery. Has any illness or injury limited the patient's ability to function? Include a complete medication history (including past, current, and recent medications). Review the use of any prescription medications, herbal supplements, etc. Also essential are descriptions of allergies, including allergic reactions to food, latex, drugs, or contact agents (e.g., soap).

Asking patients whether they have had problems with medications or food clarifies the type and amount of agent, the specific reaction, and whether a patient has required treatment.

If the patient has an allergy, note the specific reaction and treatment on the assessment form and the special armband provided. When considering allergies, also ask if the patient has ever had a blood product transfusion and whether any reactions occurred.

The history also includes a description of a patient's habits, emotional status, and lifestyle patterns. Assessing for the use of alcohol, tobacco, caffeine, or recreational drugs (e.g., methamphetamine or cocaine) determines a patient's risk for diseases involving the liver, lungs, heart, or nervous system.

**vi) Family History**

The family history includes data about immediate and blood relatives. Your objective is to determine whether a patient is at risk for illnesses of a genetic or familial nature and to identify areas of health promotion and illness prevention.

For example, a patient with a strong family history of breast cancer will be recommended to pursue mammography more often, and female children may be recommended for genetic counselling.

**vii) Psychosocial profile**

The psychosocial profile focuses on health promotion, protective patterns, and roles and relationships. It includes questions about healthcare practices and beliefs, a description of a typical day, a nutritional assessment, activity and exercise patterns, recreational activities, sleep/rest patterns, personal habits, occupational risks, environmental risks, family roles and relationships. Details on the psychosocial profile is described in the next lesson of bio-psycho-social model.

**viii) Spiritual Health**

Life experiences and events shape a person's spirituality. Review with patients their beliefs about life, their source for guidance in acting on beliefs, and the relationship they have with family in exercising their faith.

Also assess rituals and religious practices that patients use to express their spirituality.

Patients may request availability of these practices while in a health care setting.

**ix) Review of Systems**

The review of systems (ROS) is a systematic approach for collecting subjective information from patients about the presence or absence of health-related issues in each body system.

The ROS is used to obtain the current and past health status of each system and to identify health problems that your patient may have failed to mention previously. Remember, if your patient has an acute problem in one area, every other body system will be affected, so look for correlations as you proceed with the ROS.

During the ROS ask the patient about the normal functioning of each body system and any noted changes.

Use a series of questions to assess each system as needed. For example, the review of the skin, hair, and nails includes assessment of whether a patient has noticed any rash or skin lesions or has itching or abnormal nail or hair growth.

## Self-assessment 6.2.

1) You are obtaining a health history on a newly admitted patient with the diagnosis of congestive heart failure. He tells you, “I’m having trouble breathing since yesterday.” Once the chief complaint is identified, which part of the history should be completed next?

   a) Symptom analysis
   b) Past health history
   c) Review of systems
   d) Family history

2) Which section of the health history identifies environmental health risk factors?

   a) Review of systems
   b) Psychosocial profile
   c) Past health history
   d) Family history

3) What is the purpose of the review of systems in the health history?

   a) Identify actual problems
   b) Determine cause of current problem
   c) Identify current/past health of systems
   d) Validate current symptoms

4) Mr. Brunner, 35 years old, is complaining of abdominal pain. You perform a symptom analysis of the abdominal pain. Which question would best assess the severity of the pain?

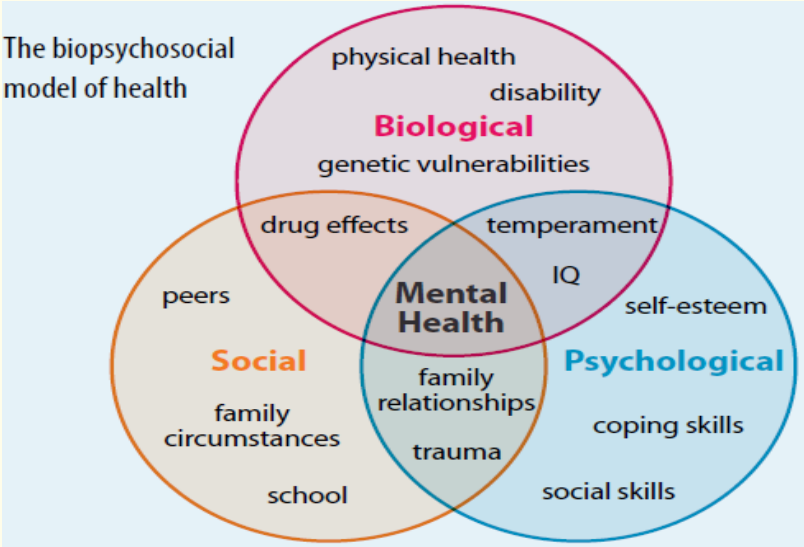
   a) Is the pain really bad?
   b) On a scale of 0 to 10, rate the pain
   c) Does the pain feel knifelike?
   d) Does the pain go anywhere else?

5) Mr. Brunner, 35 years old, is complaining of abdominal pain. You perform a symptom analysis of the abdominal pain. Which question would best assess the quality of the pain?

   a) What does it feel like?
   b) Is the pain sharp?
   c) When did the pain start?
   d) Does the pain go anywhere else?

## 6.3. Bio-Psycho-Social model to collect holistic client data

**Learning activity 6.3.**




Look at this Biopsychosocial model of health conceptualized by George Engel in 1977, read the Fundamentals of Nursing book (topic on psychosocial profile under the Health History) for additional information about the model and answer the following questions:

1) Define the Biopsychosocial model
2) Describe the domains of the Biopsychosocial model
3) Explain how the Biopsychosocial model can be integrated while assessing the client

After you will present your work in class

### 6.3.1. Introduction

The biopsychosocial model is an inter-disciplinary model that looks at the interconnection between biology, psychology, and socio-environmental factors. The biopsychosocial model was first conceptualized by George Engel in 1977, suggesting that to understand a person's medical condition it is not simply the biological factors to consider, but also the psychological and social factors. The late George Engel also believed that to understand and respond adequately to patients' suffering, the healthcare provider must attend simultaneously to the biological, psychological, and social dimensions of illness. This model is attributed to improve

patient care, compliance, and satisfaction. This model is important to remember the World Health Organization defines health as complete well-being, not just the absence of disease.

### 6.3.2. Domains of the Biopsychosocial model of health

Three domains of the Biopsychosocial model are: biology, psychology, and sociology.

Biology: Bio (physiological pathology). Biological factors involve genetics, physiology, chemistry, and neurology. Psychology: Psychological factors involve a person's personality, thoughts, and ensuing emotions and behaviour such as psychological distress, fear/avoidance beliefs, current coping methods and attribution. Social: Social factors involve socio-economical, socio-environmental, and cultural factors that affects a person's thoughts, feelings, and behaviour such as work issues, family circumstances and benefits/economics.

According to Gurung, 2014, some of the factors that fall under Biological are: Gender, Physical Illness, Disability, Genetic Vulnerability, Immune Function, Neurochemistry, Stress Reactivity and Medication Effects. Some of the factors that fall under Psychological are: Learning & Memory, Attitudes & Beliefs, Personality, Cognitions, Behaviors, Emotions, Coping Skills and Past Trauma. Some of the factors that fall under Social are: Social Support, Family Background, Cultural Traditions, Socioeconomic Status, Education, Society, and community

### 6.3.3. Biopsychosocial assessment

The psychosocial assessment focuses on health promotion, protective patterns, and roles and relationships. It includes questions about healthcare practices and beliefs, a description of a typical day, a nutritional assessment, activity and exercise patterns, recreational activities, sleep/rest patterns, personal habits, occupational risks, environmental risks, family roles and relationships, and stress and coping mechanisms. The psychosocial assessment enables you to identify how your patient incorporates health practices into every aspects of her or his life. This will therefore help you in teaching and reinforcing health promotion activities that your patient can incorporate into her or his everyday life.

During the biopsychosocial assessment, interview questions are related to its three domains, namely biology, psychology, and sociocultural influences.

**For biology domain**, questions will address biological aspects that may include diet, sleep habits, and family history. Some examples of biology questions are as follows:

- Do you currently take any prescription medication or supplements? If yes, what are they?
- Do you have any current medical problems that you believe significantly impact your life?
- Is there a family history of significant medical problems or disease? If yes, what are they?

**For the psychology domain**, questions will address current cognitive functioning, coping skills, and mood. Examples of psychology questions are: (1) How would you describe your mood? Do you have a history of suicidal thoughts or acts of self-harm? (2) Do you have a family history of psychiatric illness? (3) Name three of your strengths and three of your weaknesses.

**For social domain**, questions may address the quality of family relationships, financial stability, and educational background. Examples of social questions are the following: (1) Do you have close relationships with family members? Do you find them a source of emotional support? (2) Do you currently have a job? Does it provide you personal satisfaction and financial stability? (3) What is happening in your life right now that increases your stress level? What about in the past?

### 6.3.4. Benefits of the biopsychosocial model

The biopsychosocial approach can be applied to understand a variety of health behaviors. For example, the biopsychosocial approach can be used to understand the health behavior of excessive drinking. A person may excessively drink because they have a genetic disposition for an addiction to alcohol (Biological). A person may be struggling with negative emotions and use alcohol as a coping mechanism (Psychological). A person may also be prone to drink excessively when they are with friends that also drink excessively (Social).

The Biopsychosocial approach can also be used in understanding what determines health behaviors. It is a beneficial approach because it looks at all the possible biological, psychological, and social influences affecting overall health and health behaviors

**Self-assessment 6.3.**

1) Explain the three domains of the biopsychosocial model of health?
2) During history taking a nurse asks this question to the client "Do you find your family members a source of emotional support?" In which domain of the biopsychosocial model this question belongs?
   a) Biology domain
   b) Psychology domain
   c) Social domain
   d). Psychosocial domain
3) What does the biopsychosocial model serve for during client assessment?

## 6.4. Introduction to physical examination

**Learning activity 6.4.**

Use the provided textbooks of Fundamentals of Nursing and read topics about Physical Examination and make a summary note of the following:

1) Definition of physical assessment.
2) Description of purposes of physical assessment.
3) Physical and psychological preparation of the patient for physical assessment
4) Explanation of different vital signs and parameters

### 6.4.1. Definition of Physical Examination

A physical examination is an investigation of the body to determine its state of health. The examination involves use of the techniques of inspection, palpation, percussion, auscultation, and smell. In other words; Physical assessment is the process you use to collect physical data that are relevant to the patient' s health.

To collect physical data about the patient's current condition, you will perform a physical examination of the patient, using four of your senses: sight, smell, hearing, and touch.

Nurses perform systematic physical assessments on a regular basis in nearly every health care setting. In acute care settings you will perform more comprehensive assessments when patients are admitted to agencies and brief physical assessments at the beginning of each shift to identify changes in a patient's status for comparison with the previous assessment.

A routine physical assessment takes 10 to 15 minutes and reveals information that supplements a patient's database.

Nurses are often the first to detect changes in patients' conditions. For this reason, the ability to think critically and interpret patient behaviours and physiologic changes are essential.

The skills of physical assessment are powerful tools for detecting both subtle and obvious changes in a patient's health.

Although you may use additional tools to assist you in assessment, the most important tools you will need are your eyes, ears, hands, nose, and critical thinking ability.

When use of the four senses produces evidence of illness or injury, the findings are objective and measurable, and are classified as signs.

When evidence of illness or injury is verbalized by the patient, the findings are subjective, not directly measurable, and classified as symptoms.

In other words, signs of disease are those that can be detected by the nurse, while symptoms of disease are apparent only to the patient, so they must be verbally communicated by the patient to the nurse.

A complete examination includes a patient's height, weight, vital signs, and a head-to-toe examination of all body systems.

The data from a hands-on physical assessment allow you to collect valuable objective information needed to form accurate diagnostic conclusions.

Always conduct an examination competently with a caring and culturally sensitive approach.

### 6.4.2. Purposes of the Physical Examination

A physical examination is conducted as an initial evaluation in triage for emergency care; for routine screening to promote wellness behaviours and preventive health care measures; to determine eligibility for health insurance, military service, or a new job; or to admit a patient to a hospital or long-term care facility.

After considering the patient's current condition, a nurse selects a focused physical examination on a specific system or area. For example, when a patient is having a severe asthma episode, the nurse first focuses on the pulmonary and cardiovascular systems so treatments can begin immediately.

When the patient is no longer at risk for a bad outcome or injury, the nurse performs a more comprehensive examination of other body systems.

For patients who are hospitalized, a nurse integrates the collection of physical assessment data during routine patient care, validating findings with what is known about the patient's health history. For example, on entering a patient's room a nurse may notice behavioral patient cues that indicate comfort, anxiety, or sadness; assess the skin during the bed bath; or assess physical movements and swallowing abilities while administering medications.

**Purpose of physical assessment**

Physical assessments are performed for several purposes:

- To establish the patient's current condition, a baseline against which future changes may be measured
- To identify problems the patient may have or have the potential to develop
- To evaluate the effectiveness of nursing interventions or the outcomes of care
- To monitor for changes in body function
- To detect specific body systems that need further assessment or testing

## 6.4.3. Preparation of the patient for physical assessment

**a) Physical Preparation of the Patient**

- Gather the necessary equipment to perform the assessment, including; *a stethoscope, sphygmomanometer, thermometer, pulse oximeter, and penlight*.
- Upon entering the patient's room, ask any visitors to step out into the hallway or waiting room.
- Close the door, provide privacy, and explain what you are about to do.
- To show respect for a patient, ensure that physical comfort needs are met.
- Before starting, ask if the patient needs to use the restroom.
- Give the patient time to empty the bowel or bladder if needed. An empty bladder and bowel facilitate examination of the abdomen, genitalia, and rectum.
- If you require urine or stool specimens, now is a good time to collect them.
- Be careful to protect the patient's modesty by keeping the patient covered with a sheet, except for the body part that is being assessed.
- Make certain the room temperature is comfortable for the patient.
- Maintain a professional demeanor at all times.
- Speak in a relaxed tone of voice and exhibit a relaxed facial expression.

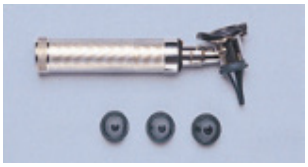
These preparatory steps serve to gain the patient's cooperation and decrease his or her anxiety.

Physical preparation involves making certain that patient privacy is maintained with proper dress and draping. The patient in the hospital likely is wearing only a simple gown. In the clinic or health care provider's office the patient needs to undress and usually is provided with a disposable paper cover or paper gown.

If the examination is limited to certain body systems, it is not always necessary for the patient to undress completely. Provide the patient privacy and plenty of time to undress to avoid embarrassment. After changing into the recommended gown or cover, the patient sits or lies down on the examination table with a light drape over the lap or lower trunk.

Make sure that he or she stays warm by eliminating drafts, controlling room temperature, and providing warm blankets. Routinely ask if he or she is comfortable.

**Equipment and supplies used for physical examination and their role**

| Equipment | Role |
|---|---|
| Flashlight or penlight  | To assist viewing of the pharynx and cervix or to determine the reactions of the pupils of the eye |
| Nasal speculum  | To permit visualization of the lower and mid-dle turbinates; usually, penlight is used for illumination |
| Ophthalmoscope  | A lighted instrument to visualize the interior of the eye |
| Otoscope  | A lighted instrument to visualize the eardrum and external auditory canal (a nasal speculum may be attached to the otoscope to inspect the nasal cavities) |
| Percussion (reflex) hammer  | An instrument with a rubber head to test reflexes |

| | |
|---|---|
| Stethoscope  | An instrument used to listen for sounds produced by the body |
| Tuning fork  | A two-pronged metal instrument used to test hearing acuity and vibratory sense |
| Vaginal speculum  | To assess the cervix and the vagina |
| Cotton applicators  | To obtain specimens |
| Gloves  | To protect the nurse and patient from infection |
| Lubricant  | To ease insertion of instruments (e.g. vaginal speculum) |
| Tongue blades (depressors)  | To depress the tongue during assessment of the mouth and pharynx |

Other equipment and supplies that may be needed are: Disposable pad/paper towels, Drapes/cover, Forms (e.g., physical, laboratory), Gown for patient, Pulse oximeter, Scale with height measurement rod, Specimen container, slides, wooden or plastic spatula, and cytological fixative if needed, Tape measure and Watch with second hand or digital display.

**b) Psychological preparation of the patient**

Many patients find an examination stressful or tiring, or they experience anxiety about possible findings. A thorough explanation of the purpose and steps of each assessment lets a patient know what to expect and how to cooperate.

Adapt explanations to the patient's level of understanding and encourage him or her to ask questions and comment on any discomfort.

Convey an open, professional approach while remaining relaxed.

A quiet, formal demeanor inhibits the patient's ability to communicate, but a style that is too casual may cause him or her to doubt an examiner's competence.

During the examination, watch the patient's emotional responses by observing whether his or her facial expressions show fear or concern or if body movements indicate anxiety.

When you remain calm, the patient is more likely to relax. Especially if the patient is weak or elderly, it is necessary to pace the examination, pausing at intervals to ask how he or she is tolerating the assessment.

If the patient feels alright, the examination can proceed. However, do not force the patient to cooperate based on your schedule. Postponing the examination is advantageous because the findings may be more accurate when the patient can cooperate and relax.

**i. Assessment of Age-Groups**

It is necessary to use different interview styles and approaches to physical examination for patients of different age-groups. Your approach will vary with each group.

When assessing children, show sensitivity and anticipate the child's perception of the examination as a strange and unfamiliar experience.

When examining children, the following tips help in data collection:

- Gather all or part of the history on infants and children from parents or guardians.
- Perform the examination in a nonthreatening area; provide time for play to become acquainted.
- Because parents sometimes think the examiner is testing them, offer support during the examination and do not pass judgment.
- Call children by their first name and address the parents as “Mr., Mrs., or Ms.” rather than by their first name unless instructed differently.
- Use open-ended questions to allow parents to share more information and describe more of the children’s problems. This also allows observation of parent-child interactions. You can interview older children, who often provide details about their health history and severity of symptoms.
- Treat adolescents as adults and individuals because they tend to respond best when treated as such.
- Remember that adolescents have the right to confidentiality. After talking with parents about historical information, speak alone with adolescents

**ii. Cultural Sensitivity**

Respect the cultural differences among patients from a variety of backgrounds when completing an examination.

It is important to remember that cultural differences influence patient behaviors.

Consider the patient’s health beliefs, use of alternative therapies, nutrition habits, relationships with family, and comfort with physical closeness during the examination and history. These factors will affect your approach as well as the type of findings you might expect.

Be culturally aware and avoid stereotyping on the basis of gender or race. There is a difference between cultural characteristics and physical characteristics.

Learn to recognize common characteristics and disorders among members of ethnic populations within the community.

It is equally important to recognize variations in physical characteristics such as in the skin and musculoskeletal system, which are related to racial variables. By recognizing cultural diversity, you show respect for each patient’s uniqueness, leading to higher-quality care and improved clinical outcomes

### c) Positioning.

During the examination ask the patient to assume proper positions so body parts are accessible and he or she stays comfortable. Table 6-4 lists the preferred positions for each part of the examination and contains figures illustrating the positions.

Patients' abilities to assume positions depend on their physical strength, mobility, ease of breathing, age, and degree of wellness.

After explaining the positions, help the patient to assume them.

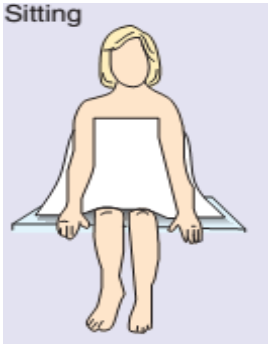
Take care to maintain respect and show consideration by adjusting the drapes so that only the area examined is accessible.

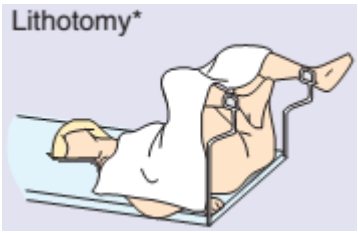
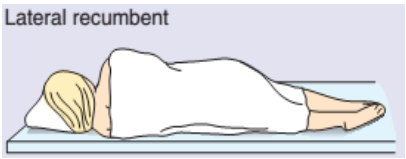
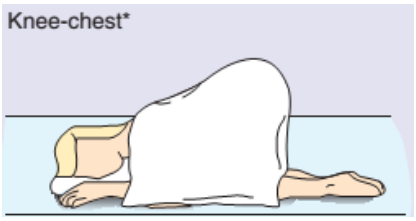
During the examination a patient may need to assume more than one position.

N.B. To decrease the number of position changes, organize the examination so all techniques requiring a sitting position are completed first, followed by those that require a supine position next, and so forth.

Use extra care when positioning older adults with disabilities and limitations.

The table below shows various patients' positions for physical assessment

| Position | Arreas assessed | Rationale |
|---|---|---|
| Sitting  | Head and neck, back, posterior thorax and lungs, anterior thorax and lungs, breasts, axillae, heart, vital signs, and upper extremities | Sitting upright provides full Expansion of lungs and Better visualization of symmetry of upper body parts |
| Supine  | Head and neck, anterior thorax and lungs, breasts, axillae, heart, abdomen, extremities, pulses | This is most normally relaxed position. It provides easy access to pulse sites |
| Dorsal recumbent  | Head and neck, anterior thorax and lungs, breasts, axillae, heart, abdomen | Position is for abdominal Assessment because it promotes relaxation of abdominal muscles |

| | | |
|---|---|---|
|  | Female genitalia and genital tract | Position provides maximal Exposure of female genitalia and facilitates insertion of vaginal speculum |
|  | Rectum and vagina | Flexion of hip and knee Improves exposure of rectal area |
|  | Musculoskeletal system | Position is only for assessing extension of hip joint, skin, buttocks |
|  | Heart | Position aids in detecting murmurs |
|  | Rectum | Position provides maximal exposure of rectal area |

### d) Explanation of Different Vital signs and Parameters

#### i. Vital Signs

After completing the general survey, measure the patient's vital signs.

Measurement of vital signs is more accurate if completed before beginning positional changes or movements. If there is a chance that the vital signs are skewed when first measured, recheck them later during the rest of the examination.

Pain, considered the fifth vital sign, should also be assessed.

Begin each head-to-toe shift assessment by assessing the patient's six vital signs: *Blood pressure, Temperature, Pulse, Respirations, $SpO_2$, and pain level.*

Because the vital signs serve as important indicators of numerous processes occurring throughout the body, their assessment serves to establish a basic foundation of the patient's condition, possibly alerting you to problems or areas of concern that you may want to assess in more depth.

All six vital signs can also serve as possible indicators of infection, and all but the SpO 2 and pain may relate to functioning of the immune system.

### 1. Blood Pressure

Blood pressure provides data associated with the cardiovascular system. As we age, atherosclerosis (hardening of the arteries) increases, contributing to the widening of the pulse pressure, or the difference between the systolic and diastolic readings.

Blood pressure also relates information regarding the kidneys, which excrete renin, a major component in the control of blood pressure.

Blood pressure also provides us with data relating to the level of hydration or fluid volume within the cardiovascular system.

A pulse pressure of 20 mm Hg or less may be indicative of severe dehydration.

In a patient who has fluid overload, blood pressure will be increased.

### 2. Temperature

An elevated temperature can direct your attention to infection or injury to the hypothalamus, the portion of the central nervous system that helps regulate body temperature. If the immune system is working correctly, it raises the body temperature whenever there are signs of microorganism invasion of the body.

Hypothermia might indicate exposure to an environment that was too cold or a disorder of the body's temperature-regulating mechanisms.

In a new-born, hypothermia may identify that the infant is not yet able to regulate body temperature. It also can be a sign of sepsis or severe hypothyroidism, or it can be a result of trauma.

### 3. Pulse

Pulse assessment may reveal hypovolemia, due to either dehydration or blood loss.

An elevated pulse rate can possibly indicate pain, anxiety, fear, stress, physical exertion, low blood pressure, infection, effects of medication, and many other conditions.

### 4. Respirations

Assessment of respirations provides detail about the patient's respiratory system as well as the acid-base balance of the blood. The rate and depth of respirations may provide insight into the patient's pain intensity and level, anxiety or fear, or recent exertion.

### 5. Pulse Oxygen Saturation (SpO2)

The patient's SpO2 level provides further insight as to the state of oxygenation.

### 6. Pain

Pain assessment includes the site of pain, characteristics of the pain, and strength of the pain, which can affect assessment of the other vital signs. Include any body language the patient may exhibit supporting the idea that he or she is in pain, such as facial grimacing; rubbing, holding, or guarding any particular part of the body such as the abdomen or head; or any additional verbal sounds such as moaning. Pain also can direct you to problems in any of the body systems. The intensity and characteristics of pain can relate the severity of illness or injury and also detail the effectiveness of pain medication.

Pain is normally assessed using a pain scale of 0 to 10 (or other facility-approved scale) for adults and a scale using a series of facial expressions for children.

### Pain Scale

Use a pain scale, such as a scale of 0 to 10, with 0 being "no pain" and 10 being "worst pain you can imagine," when assessing the patient's pain. Because pain is a subjective matter for the patient, use of the numerical scale allows for introduction of a certain amount of objectivity.

For young children or patients with impaired cognition, you probably will use the ***Wong-Baker FACES Pain Rating Scale,*** which consists of a picture of a series of faces that show varying degrees of comfort, from smiling, to frowning, to crying.

The child can point to the picture that matches his or her pain level

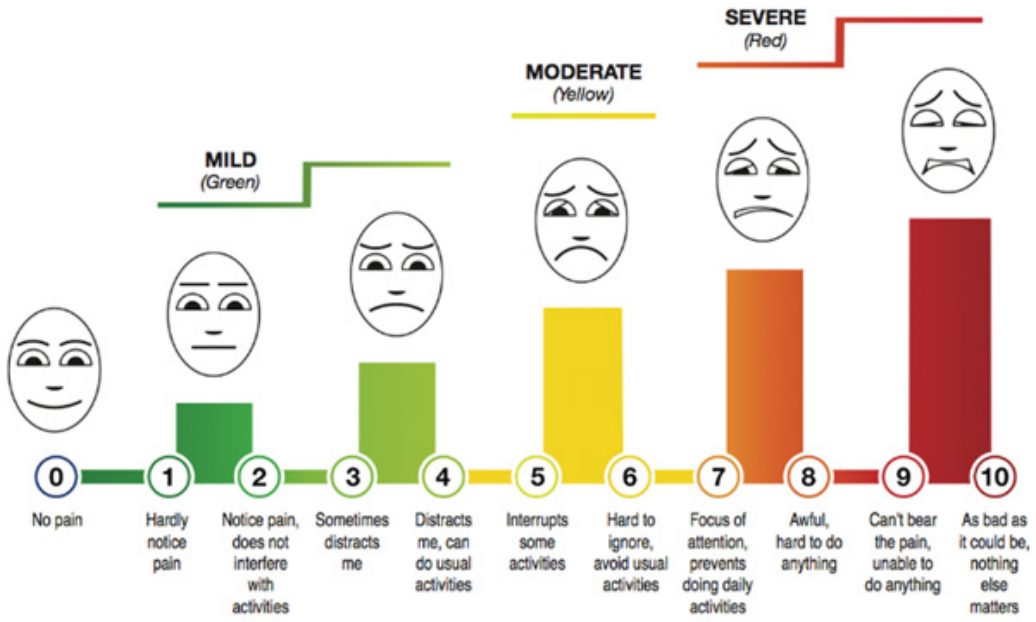



***Figure 81 FACES pain scale with details***

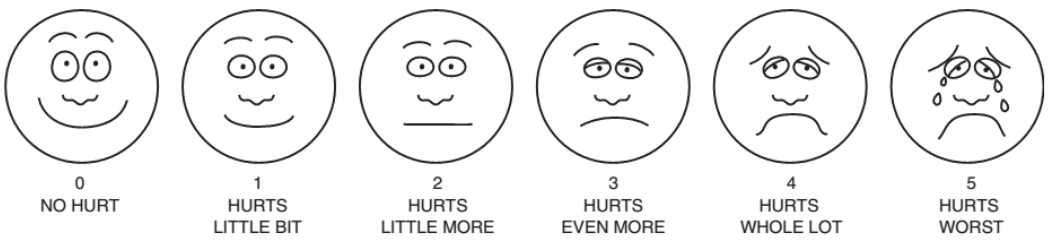



***Figure 82 FACES pain scale***

Explain to the person that each face is for a person who feels happy because he has no pain (hurt) or sad because he has some or a lot of pain. Face 0 is very happy because he doesn't hurt at all. Face 1 hurts just a little bit. Face 2 hurts a little more. Face 3 hurts even more. Face 4 hurts a whole lot. Face 5 hurts as much as you can imagine, although you don't have to be crying to feel this bad. Ask the person to choose the face that best describes how he is feeling.

Rating scale is recommended for persons age 3 years and older.

Brief word instructions: Point to each face using the words to describe the pain intensity. Ask the child to choose the face that best describes own pain and record the appropriate number

- **Pain intensity or rating scales.**

The single most important indicator of the existence and intensity of pain is the person's report of pain. In practice, however, D'Arcy (2011) found that nurses tend to use less reliable measures for assessing pain. The top factors identified by nurses were culturally influenced (e.g. facial expressions, verbalization, request for relief). The use of pain intensity scales is an easy and reliable method of determining the person's pain intensity. Such scales provide consistency for nurses to communicate with the person and other health care providers.

To avoid confusion, scales should use a 0 to 10 range with 0 indicating '***no pain'*** and the ***highest number*** indicating the '***worst pain possible'*** for that individual.

The inclusion of word modifiers on the scale can assist some people who find it difficult to apply a number level to their pain. For example, after ruling out '0' and '10' (neither no pain nor the worst possible pain), a nurse can ask the person if : *it is mild (2), mild to moderate (4),moderate to severe (6), or severe (8).*

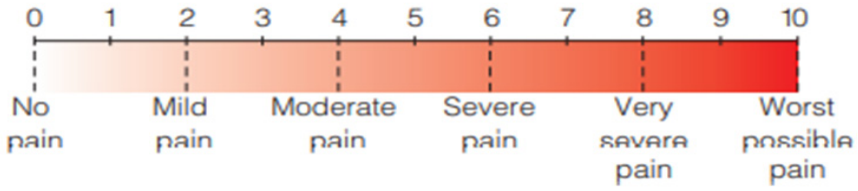



***Figure 83 An 11point pain Intensity scale with word***

Another way to evaluate the intensity of pain for people who are unable to use the numerical rating scales is to determine the extent of pain awareness and degree of interference with functioning.

For example,

- 0 - 5 no pain,
- 2 - 5 awareness of pain only when paying attention to it,
- 4 - 5 can ignore pain and do things,
- 6 - 5 can't ignore pain, interferes with functioning,
- 8 - 5 impairs ability to function or concentrate, and
- 10 - 5 intense incapacitating pain.

It is believed that the degree that pain interferes with functioning is a good marker for the severity of pain, especially for those with chronic pain.

After pain medication has been given, it is important to reassess the patient's pain using the same pain scale used before treatment of the pain so that you can objectively determine whether or not the medication was effective.

This is part of the evaluation phase of the nursing process.

### 7. Height and Weight

Height and weight reflect a person's general health status. Assess every patient to identify if he or she is at a healthy weight, overweight, or obese. Weight is routinely measured during health screenings, visits to physicians' offices or clinics, and on admission to the hospital.

Infants and children are measured for both height and weight at each health care visit to assess for healthy growth and development. If older adults are underweight, difficulty with feeding and other functional activities is a possibility.

A patient's weight normally varies daily because of fluid loss or retention. Ask the patient to report current height and weight, along with a history of any substantial weight gain or loss. A weight gain of 5 pounds (2.3 kg) in 1 day indicates fluid-retention problems.

A weight loss is considered significant if the patient has lost more than 5% of body weight in a month or 10% in 6 months.

When a patient is hospitalized, daily weight is measured at the same time of day, on the same scale, with approximately the same clothes. This allows an objective comparison of subsequent weights.

Accuracy of weight measurement is important because health care providers base medical and nursing decisions (e.g., drug dosage, medications) on changes.

Several different scales are available for use. Patients capable of bearing their own weight use a standing scale.

The standard platform scale is calibrated by moving the large and small weights to zero. Electronic scales automatically display the weight within seconds. They are calibrated automatically each time they are used

**Self-assessment 6.4.**

1) Define the following terms associated with physical assessment:
   a) Physical assessment
   b) Symptoms
   c) Signs
2) Describe five purposes of physical assessment.
3) Name the various vital signs and parameters to be assessed during the physical examination
4) Explain the action to be taken by a nurse during the physical examination after considering the patient's current condition and give an example.

## 6.5. Techniques of physical assessment

**Learning activity 6.5.**

**For Overview of Physical Assessment techniques**

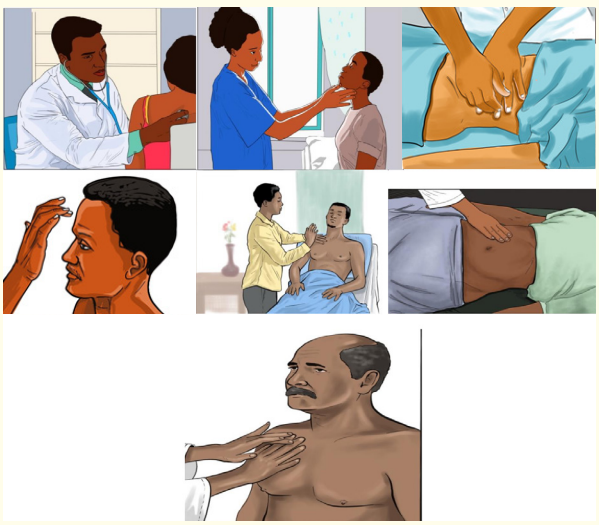
Use also the provided textbooks of Fundamentals of Nursing to read information about Techniques of Physical Assessment and make a summary note of the following:

1) Definition of each technique of Physical Assessment
2) Describe the techniques used with each physical assessment skill.

The summary will be presented to the class for discussion and clarification

**For Physical Assessment techniques**

Images about conducting the techniques of Physical Assessment;



After observing the above images under section (b) for your guidance and after carefully reading the guidelines provided to be followed under each technique used in Physical Examination, each learner should demonstrate the techniques used in physical assessment skill as follows:

1) Form pairs of 2 students and each one will conduct each technique used during physical assessment namely: Inspection, Palpation, Percussion and Auscultation.
2) Write down findings for your partner; Interpret results showing normal and abnormal findings.

The four techniques used in a physical examination are inspection, palpation, percussion, and auscultation.

### 5.6.1. Inspection

Inspection is the visual examination or assessment using the sense of sight.

An initial visual assessment should be part of the procedure of greeting the person, in which such aspects as the person's overall demeanor and appearance, hygiene, skin colour and skin appearance can be noted.

Nurses frequently use visual inspection to assess: *moisture, colour and texture of body surfaces, as well as shape, position,size and symmetry of the body.*

Lighting must be sufficient for the nurse to see clearly and may be either natural or artificial light.

When using the auditory senses, it is important to have a quiet environment to enable accurate hearing. Observation can be combined with the other assessment techniques.

To inspect, carefully look, listen, and smell to distinguish normal from abnormal findings. To do so, you must be aware of any personal visual, hearing, or olfactory deficits. It is important to deliberately practice this skill and learn to recognize all of the possible pieces of data that can be gathered through inspection alone.

Inspection occurs when interacting with a patient, watching for nonverbal expressions of emotional and mental status. Physical movements and structural components can also be identified in such an informal way. Most important, be deliberate and pay attention to detail.

Follow these guidelines to achieve the best results during inspection:

- Make sure that adequate lighting is available, either direct or tangential.
- Use a direct lighting source (e.g., a penlight or lamp) to inspect body cavities.
- Inspect each area for size, shape, color, symmetry, position, and abnormality.
- Position and expose body parts as needed so all surfaces can be viewed but privacy can be maintained.
- When possible, check for side-to-side symmetry by comparing each area with its match on the opposite side of the body.
- Validate findings with the patient. While assessing a patient, recognize the nature and source of body odors. An unusual odor often indicates an underlying pathology. Olfaction helps to detect abnormalities that cannot be recognized by any other means. For example, when a patient's breath has a sweet, fruity odor, assess for signs of diabetes. Continue to inspect various parts of the body during the physical examination.

| Odor | Site Or Source | Potential Causes |
|---|---|---|
| Alcohol | Oral cavity | Ingestion of alcohol, Diabetes |
| Ammonia | Urine | Urinary tract infection, renal failure |
| Body odor | Skin, particularly in areas where body parts rub together (e.g. Underarms and under breasts)<br>Wound site | Poor Hygiene,excess perspiration (hyperhidrosis), foul-smelling perspiration (bromhidrosis)<br>Wound abscess |
| | Vomitus | Abdominal irritation, contaminated food |
| Feces | Vomitus/oral cavity (fecal odor) | Bowel obstruction |
| | Rectal area | Fecal incontinence |
| Foul-smelling stools in infant | Stool | Malabsorption syndrome |
| Halitosis | Oral cavity | Poor dental and oral hygiene, gum disease |
| Sweet, fruity ketones | Oral cavity | Diabetic acidosis |
| Stale urine | Skin | Uremic acidosis |
| Sweet, heavy, thick odor | Draining wound | Pseudomonas (bacterial) infection |
| Musty odor | Casted body part | Infection inside cast |
| Fetid, sweet odor | Tracheostomy or mucus secretions | Infection of bronchial tree (Pseudomonas bacteria) |

Palpation may be used concurrently with inspection, or it may follow in a more deliberate fashion.

## 6.5.2. Palpation

**Palpation** is the examination of the body using the sense of touch to gather information.

The pads of the fingers are used because their concentration of nerve endings makes them highly sensitive to tactile discrimination.

There are two types of palpation: ***light*** and ***deep***.

Through touch you make judgments about expected and unexpected findings of the skin or underlying tissue, muscle, and bones.

Palpation is used to determine: ***texture*** (e.g. of the hair); ***temperature*** (e.g. of a skin area); ***vibration*** (e.g. of a joint); ***position***, size, consistency and mobility of organs or masses; distention (e.g. of the urinary bladder); ***pulsation***; and ***tenderness*** or pain.

**General guidelines for palpation**

General guidelines for palpation include the following:

- The nurse's hands should be clean and warm, and the fingernails short.
- Areas of tenderness should be palpated last.
- Deep palpation should be done after light palpation (see below).

**Light (superficial) palpation** should always precede deep palpation because heavy pressure on the fingertips can dull the sense of touch.

- For light palpation, the nurse extends the dominant hand's fingers parallel to the skin surface and presses gently downward while moving the hand in a circular motion.
- With light palpation, the skin is slightly depressed.
- If it is necessary to determine the details of a mass, the nurse presses lightly several times rather than holding the pressure.

**Deep palpation** is done with two hands (bimanually) or one hand.

- In deep bimanual palpation, the dominant hand is extended (for light palpation), then the finger pads of the non-dominant hand are placed on the dorsal surface of the distal interphalangeal joint of the middle three fingers of the dominant hand of deep bimanual palpation).

- The non-dominant hand applies pressure while the lower hand remains relaxed to perceive the tactile sensations.
- For deep palpation using one hand, the finger pads of the dominant hand press over the area to be palpated. Often the other hand is used to support a mass or organ from below
- *Deep palpation is usually not done during a routine examination and requires significant practitioner skill. It is performed with extreme caution by doctors because pressure can damage internal organs. It is usually not indicated in people who have acute abdominal pain or enlarged abdominal organs and where the source of pain is yet to be diagnosed*.



***Figure 84 Deep bimanual palpation***

The palmar surface of the hand and finger pads is more sensitive than the fingertips and should be used to determine position, texture, size, consistency, masses, fluid, and crepitus.

Assess body temperature by using the dorsal surface or back of the hand.

The palmar surface of the hand and fingers is more sensitive to vibration.

Measure position, consistency, and turgor by lightly grasping the body part with the fingertips.

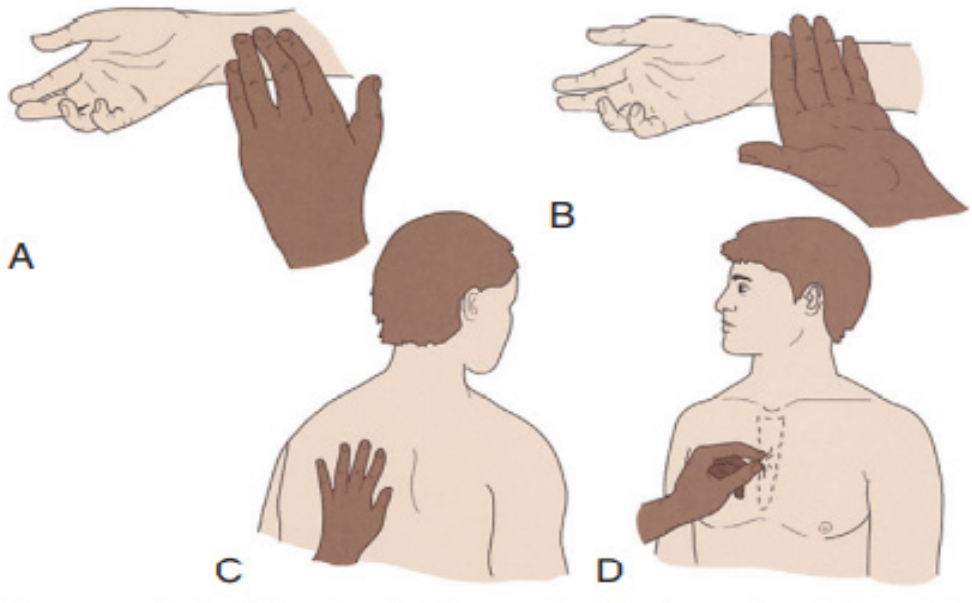



*Figure 85 A, Radial pulse is detected with the pads of fingertips, the most sensitive part of the hand. B, Dorsum of the hand detects temperature variations in skin. C, The bony part of the palm at the base of the fingers detects vibrations. D, Skin is grasped with the fingers to assess the turgor*

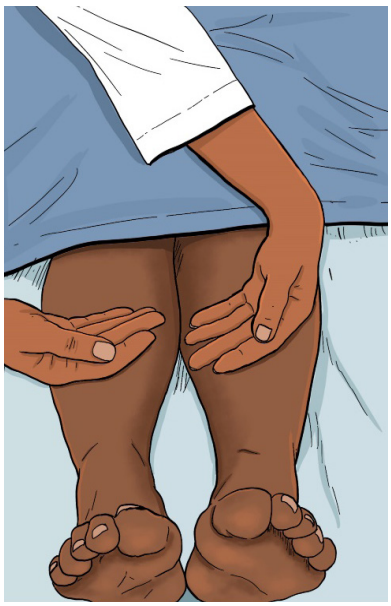


*Figure 86 Use of the dorsal aspect of the hand, which is more sensitive, to detect subtle differences in skin temperature.*

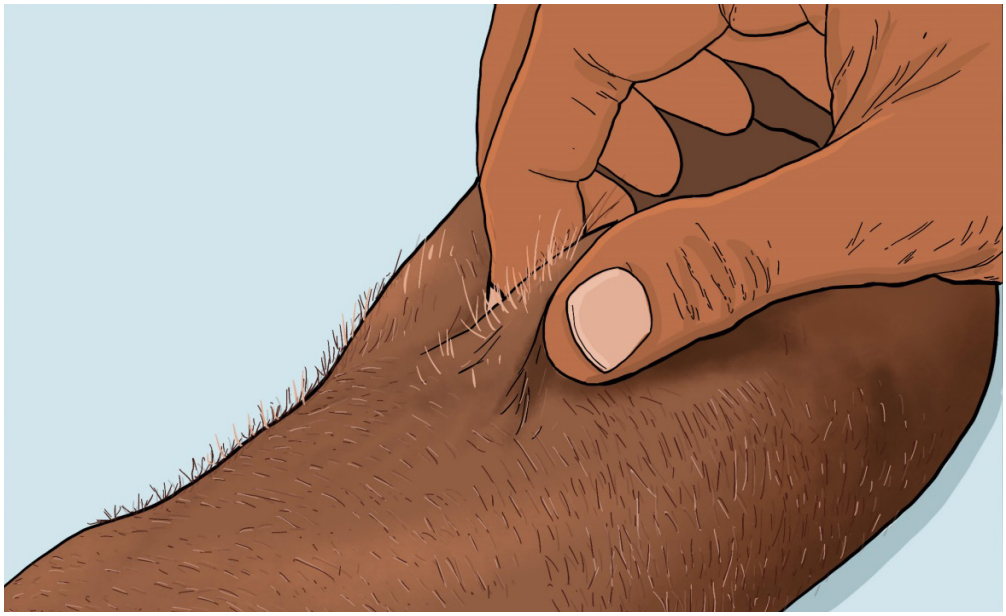


*Figure 87 Assessment of Skin turgor.*

**General considerations:**

Touching the patient is a personal experience for both you and the patient.

Display respect and concern throughout the examination.

Before palpating consider the patient's condition and ability to tolerate the assessment techniques, paying close attention to areas that are painful or tender.

In addition, always be conscious of the environment and any threats to the patient's safety.

Prepare for palpation by warming hands, keeping fingernails short and using a gentle approach.

Palpation proceeds slowly, gently, and deliberately.

The patient needs to be guided to relax and feel comfortable since tensed muscles make assessment more difficult. To promote relaxation, have him or her take slow, deep breaths and place both arms along the sides of the body.

Ask the patient to point to more sensitive areas, watching for nonverbal signs of discomfort.

Palpate tender areas last one hand (sensing hand) and place it lightly over the patient's skin. The other hand (active hand) helps apply pressure to the sensing hand.

The lower hand does not exert pressure directly and thus remains sensitive to detect organ characteristics.

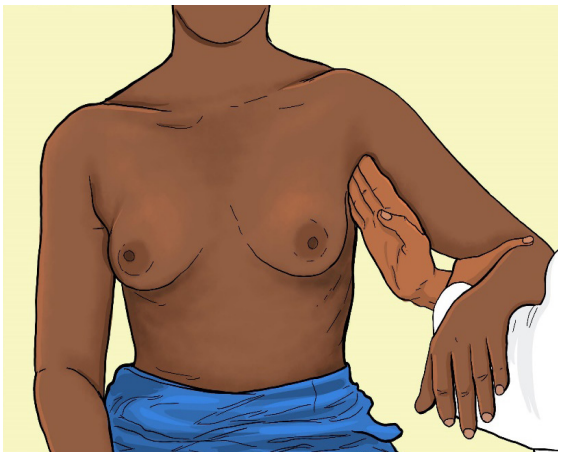


***Figure 88 Support patient's arm and palpate axillary lymph nodes***

For safety deep palpation should be observed by your clinical instructor when you first attempt the procedure.

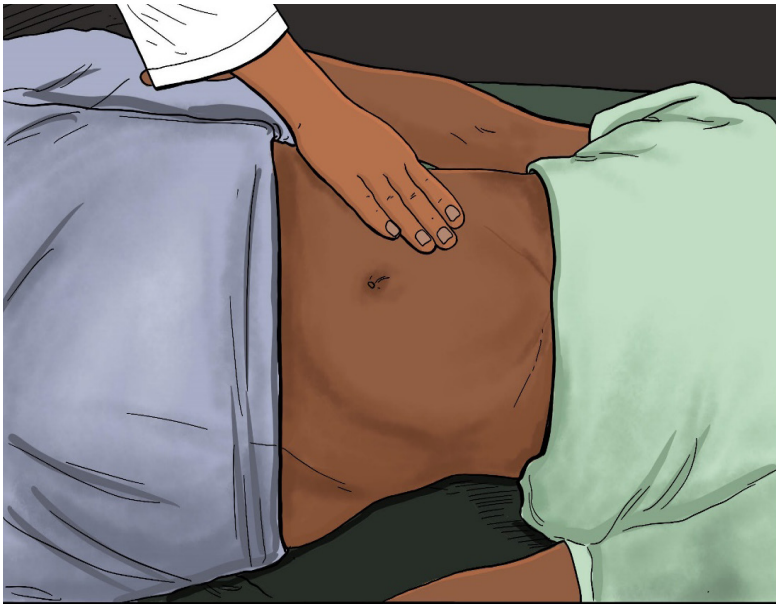


***Figure 89 Light palpation of abdomen.***

## 6.5.3. Percussion

**Percussion** is the act of striking the body surface to elicit sounds that can be heard or vibrations that can be felt.

Percussion involves tapping the skin with the fingertips to vibrate underlying tissues and organs.

The vibration travels through body tissues, and the character of the resulting sound reflects the density of the underlying tissue.

The denser the tissue, the quieter the sound. By knowing how various densities influence sound, it is possible to locate organs or masses, map their edges, and determine their size.

An abnormal sound suggests a mass or substance such as air or fluid within an organ or body cavity.

The skill of percussion is used more often by advanced practice nurses than by nurses in daily practice at the bedside.

There are two types of percussion: direct and indirect.

**a) Direct technique of percussion Procedural guideline**

**Direct percussion:**

- The nurse strikes the area to be percussed directly with the pads of two, three or four fingers, or with the pad of the middle finger.
- The strikes are rapid and the movement is from the wrist (see Figure 31.4).
- This technique is not generally used to percuss the thorax but is useful in percussing an adult's sinuses.

The most commonly used percussion technique is the indirect technique.

**b) Indirect technique of percussion Procedural guidelines:**

Indirect percussion is the striking of an object (e.g. a finger) held against the body area to be examined.

- You perform the indirect technique by placing the middle finger of your nondominant hand referred to as the pleximeter, , firmly on the person's skin against the body surface.

With palm and fingers remaining off the skin, the tip of the middle finger of the dominant handcalled the plexor, strikes the base of the distal joint of the finger.

Use a quick, sharp stroke, keeping the forearm stationary.

- Relax the wrist to deliver the proper blow. Once the finger has struck, the wrist snaps back.
- The motion comes from the wrist; the forearm remains stationary.
- The angle between the plexor and the pleximeter should be 90 degrees and the blows must be firm, rapid and short to obtain a clear sound.

If the blow is not sharp, if the hand is held loosely, or if the palm rests on the body surface, the sound is softened; and you will not detect the presence of underlying structures.

A light, quick blow produces the clearest sounds.

Percussion elicits or produces five types of sound: flatness, dullness, resonance, hyper resonance and tympany:

1. **Flatness** is an extremely dull sound produced by very dense tissue, such as muscle or bone.
2. **Dullness** is a thud-like sound produced by dense tissue such as the liver, spleen or heart.
3. **Resonance** is a hollow sound such as that produced by lungs filled with air
4. **Hyperresonance** is not produced in the normal body. It is described as booming and can be heard over an emphysematous lung.
5. **Tympany** is a musical or drum-like sound produced from an air-filled stomach.

| Sounds Produced by Percussion | | | | | |
|---|---|---|---|---|---|
| **Sound** | **Intensity** | **Pitch** | **Duration** | Quality | **Common Location** |
| Tympany | Loud | High | Moderate | Drum like | Gastric air bubble, puffed-out cheek |
| Resonant | Loud | Low | Long | Hollow | Healthy lung |
| Hyper resonant | Very loud | Low | Long than resonance | Booming | Emphysematous lung |
| Dull | Soft to moderate | Moderate to High | Moderate | Thud like | Over liver |
| Flat | Soft | High | Short | Very dull | Over muscle |



***Figure 90 Percussion of abdomen.***

## 6.5.4. Auscultation

**Auscultation** is the process of listening to sounds produced within the body in order to detect variations from normal.

Auscultation may be direct or indirect: ***Direct auscultation*** is the use of the unaided ear; for example, to listen to a respiratory wheeze or the grating of a moving joint whereas ***Indirect auscultation*** is the use of a stethoscope, which transmits the sounds to the assessor's ears.

A stethoscope is used primarily to listen to sounds from within the body, such as bowel sounds or valve sounds of the heart and blood pressure. In other words, a stethoscope is necessary to hear internal body sounds.

Internal body sounds are created by blood, air, or gastric contents as they move against the body structures. For example, normal heart sounds are created when the heart valves close, moving blood to the next portion of the cardiovascular system. Learn to recognize abnormal sounds after learning normal variations.

Becoming more proficient in auscultation occurs by knowing the types of sounds each body structure makes and the location in which the sounds are heard best.

To auscultate internal sounds, you need to hear well, have a good stethoscope, and know how to use it properly. Nurses with hearing disorders can obtain stethoscopes with extra sound amplification.The bell is best for hearing low-pitched sounds such as vascular and certain heart sounds, and the diaphragm is best for listening to high-pitched sounds such as bowel and lung sounds.

By practicing with the stethoscope, you become proficient at using it and realize when sounds are clear and when there are extraneous sounds. Extraneous sounds created by rubbing against the tubing or chest piece interfere with auscultation of body organ sounds. By deliberately producing these sounds, you learn to recognize and disregard them during the actual examination.

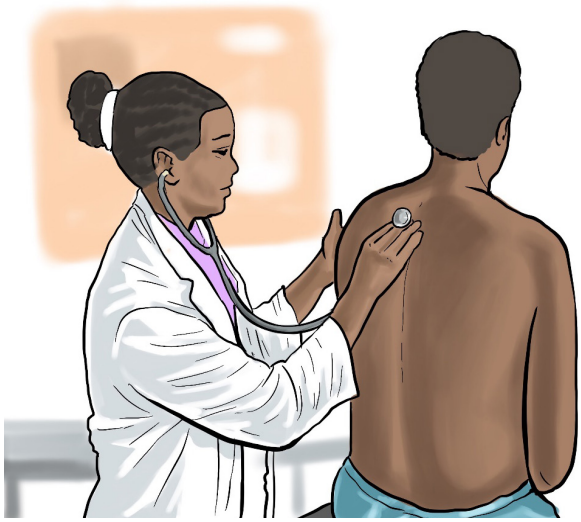


***Figure 91 Use the diaphragm of the stethoscope to auscultate breath sounds.***

Auscultated sounds are described according to their pitch, intensity, duration and quality:

- **The pitch** which is the frequency of the vibrations; indicates the number of sound wave cycles generated per second by a vibrating object. The higher the frequency, the higher the pitch of a sound and vice versa. Low-pitched sounds, such as some heart sounds, have fewer vibrations per second than high-pitched sounds, such as bronchial sounds.
- **Loudness** (Intensity)refers to the amplitude of a sound wave. Auscultated sounds range from soft to loud.
- **Quality** refers to sounds of similar frequency and loudness from different sources. The quality of sound is a subjective description of a sound; for example, whistling, blowing, gurgling or snapping.
- **Duration** means the length of time that sound vibrations last (long or short).

The duration of sound is short, medium, or long. Layers of soft tissue dampen the duration of sounds from deep internal organs.

Auscultation requires concentration and practice: while listening, know which sounds are normally produced in certain parts of the body and what causes the sounds.

After understanding the cause and character of normal auscultated sounds, it becomes easier to recognize abnormal sounds and their origins

## Self-assessment 6.5.

**For (a) section: Techniques of Physical Assessment Overview;**

1) Define the four methods/ techniques used for physical assessment
2) List and explain the five types of sounds produced by Percussion
3) What are the conditions to be fulfilled in order to auscultate internal sounds?
4) Why Light or Superficial palpation should always precede deep palpation?
5) Provide the contra-indication of Deep Palpation.
6) Explain the four Characteristics according to which Auscultated Sounds are described.

**For (b) section: Procedure of conducting out the techniques of Physical Assessment;**

Learners will practice in skills lab under guidance of the facilitator.

Images /videos if possible and Guidelines will be provided.

After observing the above images under section (b) for your guidance and after carefully reading the guidelines provided to be followed under each technique used in Physical Examination; each learner should demonstrate the techniques used in physical

assessment as follows:

1) Form pairs of 2 students and each one will conduct each technique used during physical assessment namely: Inspection, Palpation, Percussion and Auscultation.
2) Write down findings for your partner, interpret results showing normal and abnormal findings.

## End unit assessment 6

1) The patient health history and physical examination provide the nurse with information to primarily

   a) Diagnose a medical problem.
   b) Investigate a patient's signs and symptoms.
   c) Classify subjective and objective patient data.
   d) Identify disturbed clients needs and collaborative problems

2) The nurse is preparing to examine a patient's abdomen. Identify the proper order of the steps in the assessment of the abdomen, using the numbers 1-4 with 1 =the first technique and 4 =the last technique:

   (1) Inspection
   (2) Palpation
   (3) Percussion
   (4) Auscultation

3) The nurse is performing an admission assessment. Which of the following are examples of objective data? Select all that apply.

   a) 10 cc of emesis in basin
   b) Cool, clammy skin
   c) Client says, "My feet are swollen."
   d) Complaint of nausea by client
   e) Oral temperature 1030F
   f) Rapid, thready pulse

4) When performing an assessment, which of the following would the nurse use as a primary source of data?

   a) All health care personnel
   b) Client
   c) Client family and/or friends
   d) Client medical records

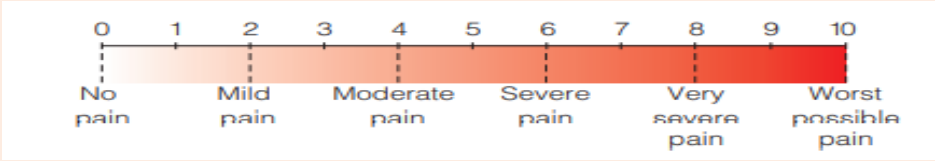
5) During interview, a nurse asks this question to the client "Do you have a family history of psychiatric illness?" In which domain of the biopsychosocial model this question belongs?

   a) Biology domain
   b) Psychology domain
   c) Social domain
   d) Psychosocial domain

6) What is the purpose of health history?

7) Put “Words” under figures or numbers for each Pain scale as far as pain assessment is concerned:

**a) For adult**




**b) For children**




8) List the elements assessed frequently by Nurses using Visual Inspection.

9) What is the difference between Direct auscultation and Indirect Auscultation?

10) Match the Characteristics odors in column (A) to Potential causes in column (B)

| (A)Characteristics odors | (B) Potential causes | |
|---|---|---|
| 1.Sweet, fruity ketones | a) Bowel obstruction | |
| 2. Ammonia. | b)Urinary tract Infection | |
| 3. Stale Urine | c)Malabsorption syndrome | |
| 4. Foul –smelling stool in Infant | d)Diabetic acidosis | |
| 5.Feces from vomitus/oral cavity | e)Uremic acidosis | |

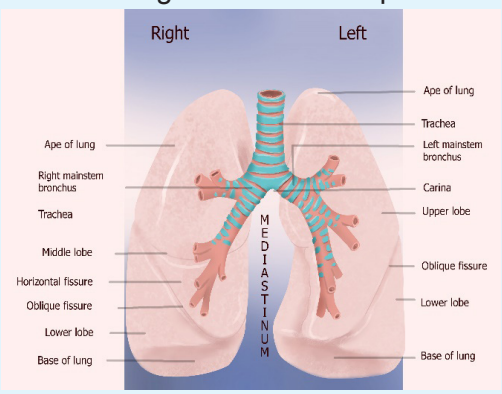
# UNIT 7 NURSING ASSESSMENT OF RESPIRATORY SYSTEM

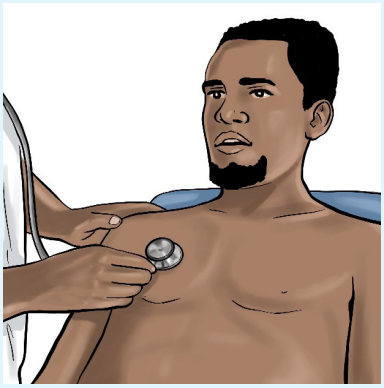
## Key unit competence:

Take appropriate action based on findings of nursing assessment of respiratory system

### Introductory activity 7

Observe the image below and respond to the asked questions



1) Identify the procedure that is being performed on picture B?
2) List the lung's anatomy parts shown by allow on picture A on right and left side?

## 7.1. History taking on respiratory assessment

### Learning activity 7.1.



1) Outline the types of information needed during history taking on respiratory system?
2) State some of the 5 key questions asked by health care providers during history taking on respiratory system?

## 7.1.1. Respiratory history taking overview

Among the assessment techniques essential to valid diagnosis, performing a fact finding history is key. To obtain adequate history, providers must be well organized attentive to the patient's verbal and nonverbal language and able to accurately interpret the patent's responses to questions. The history like the physical examination is informed by the knowledge of a wide range of conditions, their physiological basis and their associated signs and symptoms.

A comprehensive nursing assessment includes an assessment of each system. In this lesson, we are going to focus on the respiratory system. Regardless of the chief complaint, a thorough symptom analysis is warranted.

It is important to get an understanding of when the complaint started and how the onset occurred, determine how it has evolved, starting with the initial episode or awareness of the problem. Ask whether the problem is constant or intermittent.

Determine whether a similar problem has been experienced in the past. It is important to learn whether anything in particular, such as emotions, exposure to outdoor allergens, or fatigue, tends to precipitate or accelerate the complaint. Also determine whether the symptoms tend to be tied to any particular time of day, such as night, early morning, or immediately following a meal.

Another timing-related issue involves whether the complaint has continued essentially unchanged, worsened, or improved since first noticed.

**The quality of the symptom is important**

| SN | Symptom | Quality of the symptom |
|---|---|---|
| 1 | **Chest discomfort?** | Sharp, dull, aching |
| 2 | **Cough?** | Mild and tickling, sharp and paroxysmal |
| 3 | **Wheezing?** | Determine the exact location and how it relates to respirations |
| | **Tightness?**<br><br>**Pain?** | Determine the exact location any radiation to other sites and how it relates to respirations<br><br>The severity is always important to establish |
| 4 | **Current symptoms history?** | Ask about self-treatment, herbal agents or complementary therapies |

## 7.1.2. Pulmonary review of symptoms

### a) Shortness of breath

If the patient experiences shortness of breath, record the amount of work or effort that causes this symptom. Ask about nocturnal orthopnea or related difficulty sleeping. Specifically, ask about the number of pillows the patient uses to sleep and about the sleeping position. A patient may use no pillows and rest comfortably only in a recliner.

Determine whether the patient has had a cough and whether any cough has been associated with the production of sputum or with hemoptysis.

Also ask about wheezing, chest tightness, and sense of congestion. Ask whether the patient has had a fever, chills, or night sweats. In addition to asking about symptoms related to the lower respiratory tract, other systems should be explored on the basis of the presenting symptom and symptom analysis.

### b) Dyspnea

The subjective sensation of difficulty in breathing is probably the most common respiratory complaint and cannot be differentiated at first glance from dyspnea due to cardiac disease, neuromuscular weakness, or simple obesity.

Some questions can be asked to explore the origin of dyspnea;

- Is the breathlessness recent or has it been present for sometimes?
- Is it constant or does it comes and goes?
- What can't you do because of the breathlessness?
- What makes the breathing worse?
- Does anything make it better?
- Duration?

### c) Cough

Cough is a normal defense mechanism of the respiratory tract, but when increased in severity or frequency, cough can be a cause of disease as well as an indicator of disease.

The etiologies of cough can be:

- Inflammatory: edema and hyperemia of airways and alveoli due to laryngitis, tracheitis, bronchitis, bronchiolitis, pneumonitis, and lung abscess.

- Mechanical: inhalation of particulates (dust) or compression of airways (pulmonary neoplasms, foreign bodies, granulomas, bronchospasm).
- Chemical: inhalation of irritant fumes, including cigarette smoke Thermal: inhalation of cold or very hot air.

The assessment of a cough implies also the duration. The patient will be asked for how long has he/she been coughing. When the cough has been there for days to weeks; it is a sub acute cough. If the cough has been there for months to years; it is a chronic cough.

**d) Sputum/ Expectoration**

Sputum production reflects an image the presence of inflammatory, infectious or neoplastic disease in the airways or pulmonary parenchyma. The amount and character of sputum provide the health care provider with helpful clues to distinguish among possible etiologies. The color can be mucoid, purulent, mucopurulent or bloody. Also assess the duration and presence of fever or wheezing.

**e) Hemoptysis**

Hemoptysis is the coughing up of blood from the lungs. Before using the term "hemoptysis," the source of bleeding should be confirmed by both history and physical examination. Blood or blood-streaked material may originate from the mouth, pharynx, or gastrointestinal tract and can easily mislabel. The color of the blood is also implied; blood originating from the stomach is usually darker than blood from the respiratory tract and may be mixed with food particles. When it is originating from the gastric tract, it is called "hematemesis". For patients reporting hemoptysis, the volume of blood produced is also assessed. Hemoptysis is confirmed by the presence of Cough, Sputum, Alcalin PH, and Alveolar macrophage.

**f) Wheezes**

Wheezes are sounds that are heard continuously during inspiration or expiration, or during both inspiration and expiration .They are most commonly heard at end inspiration or early expiration. Wheezes are caused by air moving through airways narrowed by constriction or swelling of airway or partial airway obstruction. Wheezes can be classified as either high pitched or low pitched wheezes. It is often inferred that high pitch wheezes are associated with disease of the small airways and low pitch wheezes are associated with disease of larger airways.

### g) Chest pain

The source of chest pain can be due to parietal pleura, chest wall, diaphragm, or mediastinal involvement, it can be pleuritic (sharp knife-like), it can also originate from myocardium (angor pectoris, myocardial infarction), from pericardium (pericaditis), from aorta (dissecting aortic, aneurism) or from trachea and large bronchi (tracheitis, bronchitis). The following questions have to be asked while assessing pain; where?, how long?, kind, radiation.

### h) Clubbing

Fingers extremities change in coloration due to their poor oxygenation. Clubbing can be caused by lung abscess, chronic cavity due to mycobacterial or fungal infection in lungs, clubbing may also be caused by cardiovascular diseases, or metabolic diseases

## Self-assessment 7.1.

1) In case the client consults the health care provider for respiratory problems, the health care provider should determine whether a similar problem has been experienced in the past and rule out the factors influencing respiratory system disorders. The one among the following factors has no influence on respiratory problems:
   a) Emotions,
   b) Fatigue,
   c) The number of deliveries for a woman,
   d) Exposure to outdoor allergens.
2) If the patient experiences shortness of breath, record the amount of work or effort that cause this symptom and ask about:
   a) The sleeping position,
   b) Nocturnal orthopnea or difficulty sleeping,
   c) The number of pillows the patient uses to sleep,
   d) All the above
3) The coughing up of blood from the lungs is the symptom reported often by patients. The source of bleeding should be confirmed by both history and physical examination. This symptom is called:
   a) Hematemesis
   b) Hemoptysis
   c) Expectorant
   d) Soft vomiting

4) The quality of the symptom is important if a patient complains about “pain” during history taking of respiratory system conditions, the nurse should ask whether the pain is:

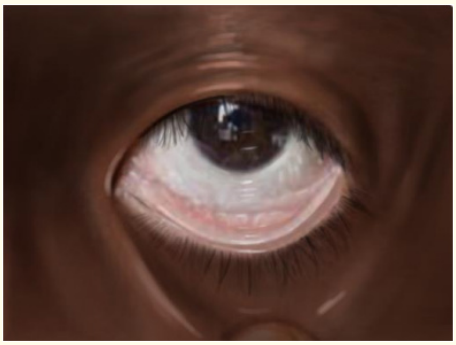
a) Mild and tickling, sharp and paroxysmal
b) Sharp, dull, aching
c) In inspiration or expiration
d) Radiating to other sites and how it relates to respirations

## 7.2. Physical examination of respiratory system: General examination

**Learning activity 7.2.**

Analyze carefully the following images and respond to the questions below;





1) List the two (2) physical signs shown on above image which may indicate poor oxygen in body?
2) Describe two signs of poor tissue oxygenation observed in nails?
3) Explain what does lymph nodes enlargement indicate in respiratory assessment?
4) Which posture is to be observed to assess if the patient has respiratory distress?

Initial survey is the first step to be performed by health care provider to evaluate the **level of consciousness** if the patient is alert, cooperative, and normally oriented because patients with hypoxemia may be irritable, somnolent, restless, confused, or combative.

The close assessment of the position for breathing is necessary whether the posture is relaxed or upright because the patients in respiratory distress may lean forward in "**tripod position**" a position whereby one sits or stands learning forward and supporting the upper body with hands on knees or on another surface.



***Figure 92 Tripod position***

The other observation will focus on patient's lips and **nasal flaring** including facial expression as patient in respiratory distress may look anxious or show nasal flaring and those with chronic obstructed pulmonary diseases show **pursed lips;** the observation and documentation of skin color for cyanosis and pallor is also a key. Skin color is appropriate tone for race. **Cyanosis** is a bluish color to the skin or mucous membrane and is usually due to a lack of oxygen in the blood while **pallor** is a condition in which a person's skin and mucous membranes turn lighter in pale color than they usually are secondary to respiratory distress it is often observed in palms and nails.

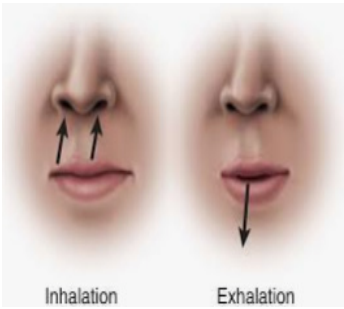



*Figure 93 Nasal flaring and Pursed lips*



*Figure 94 Cyanosis*



*Figure 95 Pallor*

The nurse observes **respiratory movements** and note if the patient uses the upper or lower chest to breathe because patients with disease that impedes outflow may have forced expiration. Guarding may accompany respiratory pain. The observation of respiratory movements may be accompanied by counting rate.

**Respiratory rate** is 12 to 20 breaths per minute for adults with regular rhythm. Tachypnea is greater than 24 breaths per minute; bradypnea is less than 10 breaths per minute. An infant's breathing rate may reach 40 breaths per minute. The respiratory pattern should be even, coordinated, and regular, with occasional sighs (long, deep breaths).

Assess **muscles used** for breathing. Diaphragm and external intercostals do most of the work. **Intercostals retractions** are due to reduced air pressure inside the chest; this can happen if the upper airway or small airways of the lungs become partially blocked. Patients with respiratory distress may use accessory muscles. Retractions accompany resistance to airflow (eg, in severe asthma)

Observe fingers for **clubbing**, clubbing is a physical sign characterized by bulbous enlargement of the ends of one or more fingers or toes due to proliferation and edema of connective tissue result in loss of the normal angle between the skin and nail plate and excessive sponginess of the nail base. Clubbing is noted with chronic lung disease.

The observation of **lymph node enlargement** is important as the most common cause of lymph node swelling in the neck is an upper respiratory infection

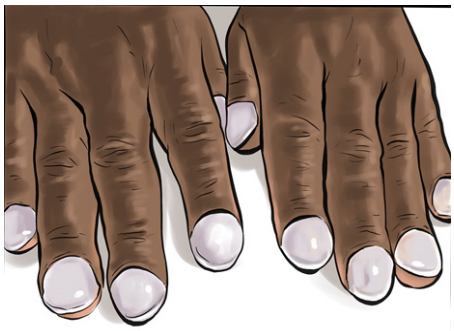


*Figure 96 Clubbing*

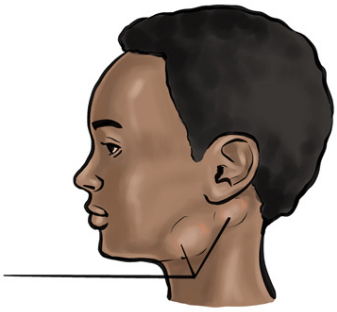


*Figure 97 Lymph nodes enlargement*

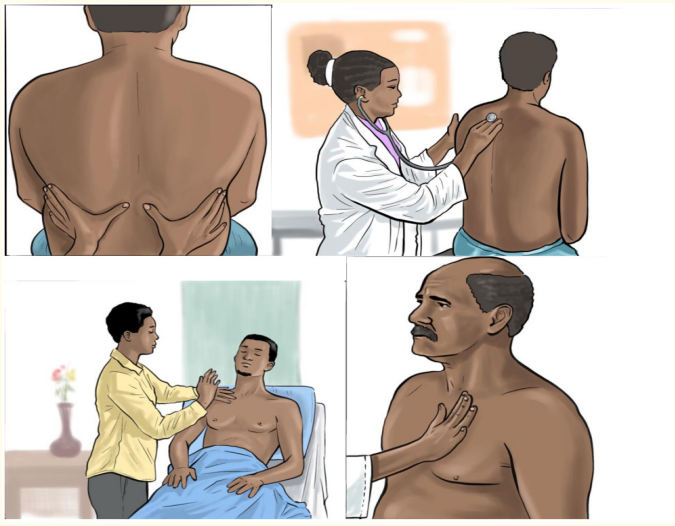
**Self-assessment 7.2.**

1) Recall the two observations to be noted by a health care provider related to respiratory movements?
2) Explain intercostals retraction sign and give an example of respiratory disease in which this sign may occur?
3) Express the importance to evaluating the level of consciousness in respiratory assessment.
4) Recall two signs assessed on patient's lips and nose to diagnose respiratory problems?

## 7.3. Physical examination of respiratory system: Focused examination

**Learning activity 7.3.**

The images below illustrate the focused respiratory physical exam

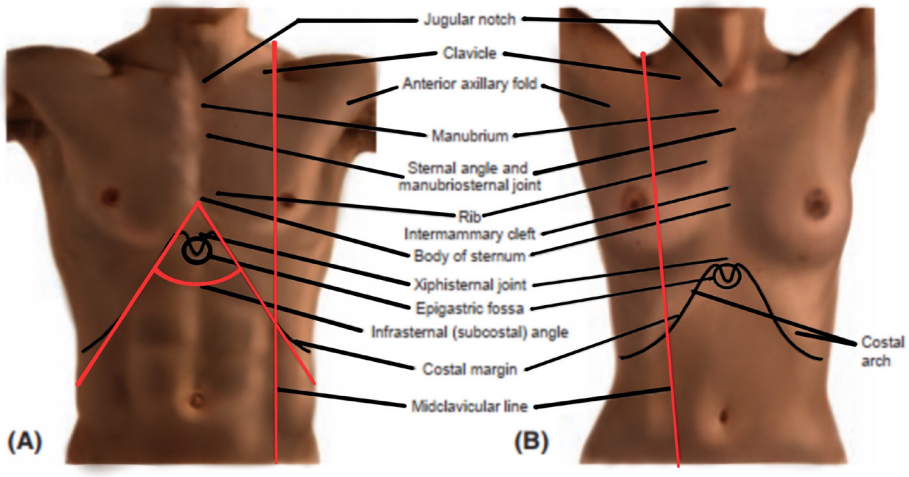


1) Describe the similarities and differences observed in images of respiratory focused examination?

The focused physical examination is helpful to examine the posterior thorax and lungs while the patient is sitting, the anterior thorax and lungs while the patient is supine. The process is performed in four ordered phases or techniques: inspection, palpation, percussion and auscultation.

## 7.3.1. Inspection

This phase/technique of inspection requires the use of the naked eye of health care provider to observe the face for nasal flaring, pursed lips breathing, conjunctiva for pallor and facial skin for central cyanosis. Observe neck and trachea for jugular vein and neck veins pulsation in bronchial asthma




Note **thoracic shape and configuration** (horizontal ribs, barrel chest, kyphosis, funnel chest), observe spontaneous chest expansion, scapulae are symmetric. Chest wall is cone shaped, symmetric and oval. **Accessory muscle use** is to be noted and **hands** inspection for Clubbing (base angle of nail obliterated, increased sponginess of nail bed) and peripheral cyanosis: excessive O2 extraction

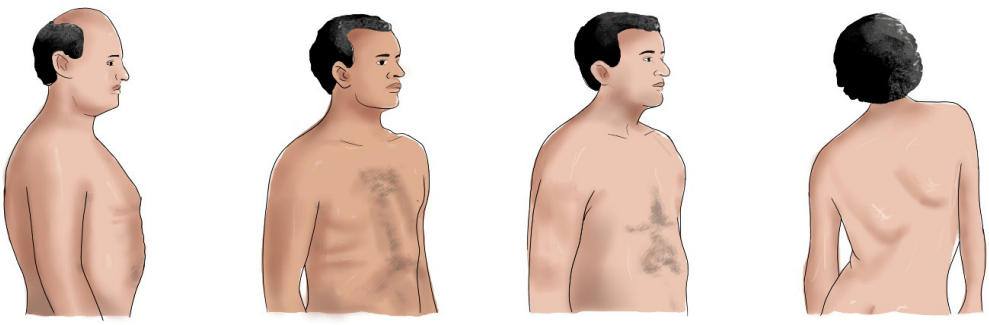
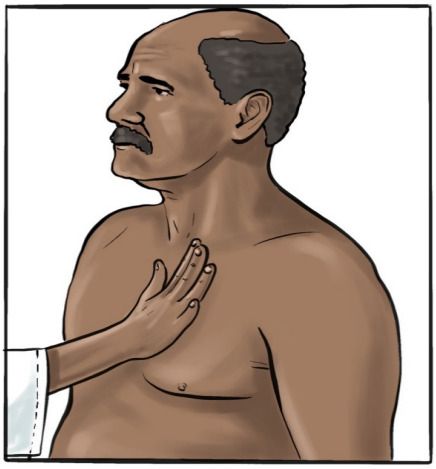
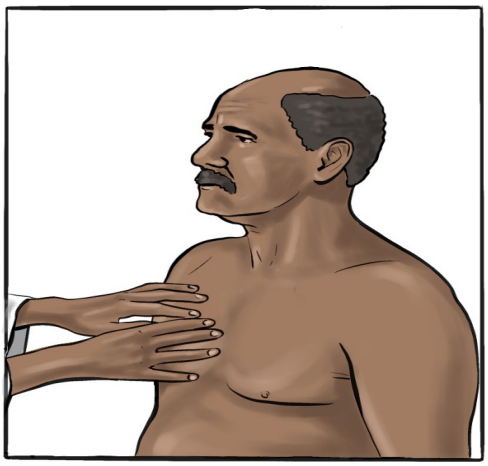


***Figure 98 Chest abnormalities***

## 7.3.2. Palpation

Palpation technique consists of using fingertips above the scapula over the lung apex. Move from one side to another; compare bilateral findings. End at lung base; move laterally to midaxillary line.





Place your palm (or palms) lightly over the thorax. Palpate for tenderness, alignment, bulging, and retractions of the chest and intercostal spaces, lumps, masses. Assess the patient for crepitus, especially around drainage sites. Repeat this procedure on the patient's back. Palpation helps to examine the thoracic wall defects like pain press and swelling and vibration sounds (tactile fremitus).Use the pads of your fingers to palpate the front and back of the thorax. Pass your fingers over the ribs and any scars, lumps, lesions, or ulcerations



***Figure 99 Tactile fremitus assessment***

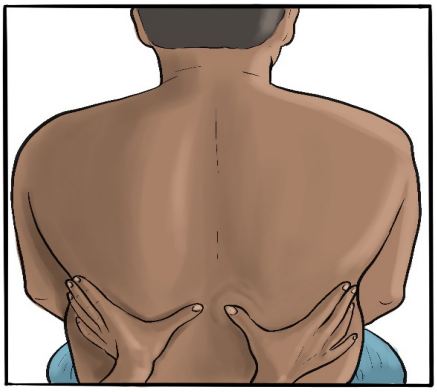
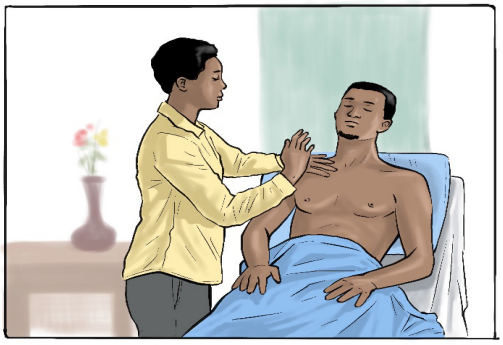
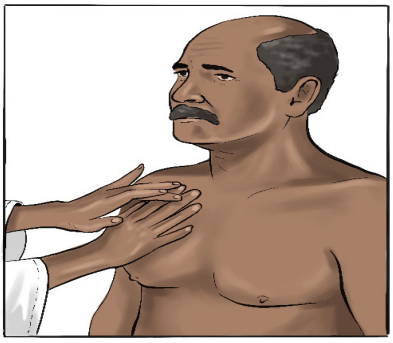


***Figure 100 Symmetry and expension***

### 7.3.3. Percussion

Percussion is a method of tapping on a surface to determine the underlying structure, and is used in clinical examinations to assess the condition of the thorax; percussion is used when lung obstruction or consolidation is suspected





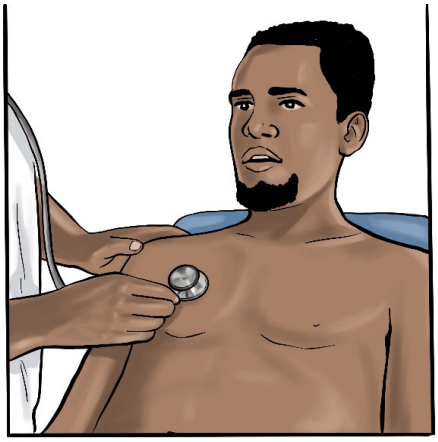
The examiner begins at the apex of the lungs. Percuss from one side to another. Work toward the bases in the intercostal spaces. Move fingers approximately 5 cm apart. When fingers are below the level of lung tissue, sound changes from resonant to dull; from around T10 move laterally to percuss near the anterior axillary line and 7th and 8th Intercostals. Avoid the area over the ribs and scapulae, because normal bone is flat.

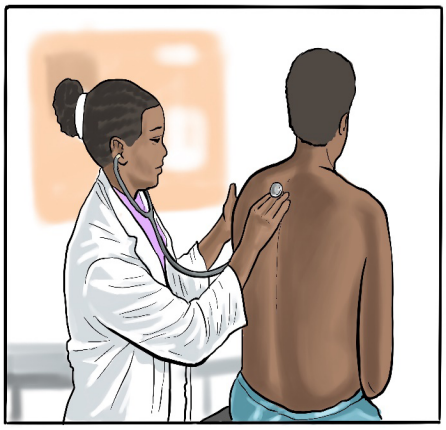
Healthy lung tissue sounds resonant.

- Place your non dominant hand over the chest wall, pressing firmly with your middle finger.
- Position your dominant hand over your other hand.
- Flex the wrist (not the elbow or upper arm) of your dominant hand; tap the middle finger of your non-dominant hand with the middle finger of your dominant hand.
- Follow the standard percussion sequence over the front and back chest walls.

### 7.3.4. Auscultation

Auscultation is performed for the purposes of examining the respiratory system for breath sounds. Listen from top to down alternating left and right. Ensure that the stethoscope is in direct contact with the skin.





Listen for extra, abnormal sounds of breathing. Ask the patient to breathe through the mouth. Place the flat side of the diaphragm on the chest wall firmly to block extraneous noise. Listen to one full breath in each location. Move from one side to another. Stand behind and beside the patient. Listen from lung apices to bases and then laterally in the same sequence as percussion. If sounds are too soft, ask the patient to breathe deeper

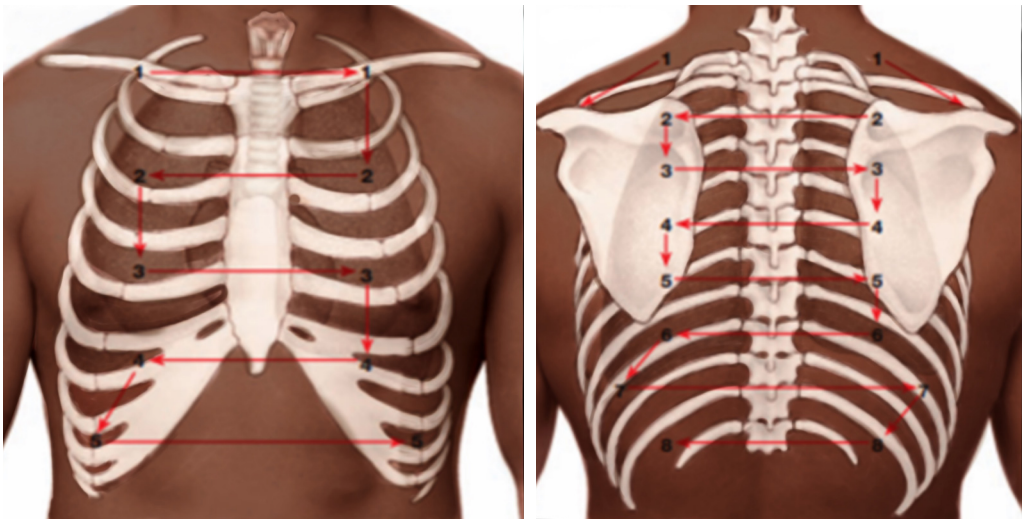



*Figure 101 Lungs auscultation landmarks anterior view and posterior view*

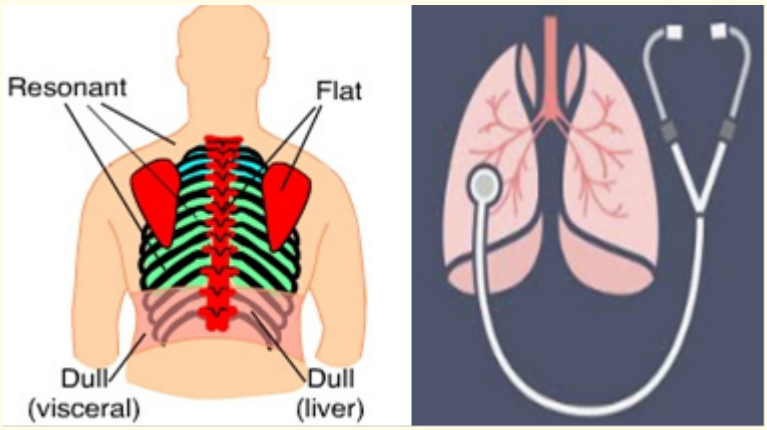
Identify vesicular, broncho vesicular, and bronchial breath sounds. Listen for intensity of sounds, quality, pitch, and duration of inspiration versus expiration. Normal breath sounds are vesicular. Expiration is longer than inspiration, similar to normal breathing. Note the absence of adventitious sounds when documenting

**Self-assessment 7.3.**

1) List the four phases/techniques of respiratory physical examination?
2) Outline the elements of inspection in respiratory physical examination?
3) Describe the difference between percussion and palpation techniques for thorax examination?

## 7.4. Interpretation of specific findings and client's problems identification

**Learning activity 7.4.**




The image above shows areas of percussion and the stethoscope for lung auscultation. Questions:

1) List the normal findings and abnormal findings of lungs percussion?
2) What are abnormal findings t of auscultation

### 7.4.1. The normal findings and abnormal findings from respiratory physical examination

| Physical exam | Normal findings | Abnormal findings |
|---|---|---|
| **INSPECTION** | Pink, moist mucous membranes<br>Mucoid sputum<br>Symmetrical<br>breathing pattern<br>Midline trachea | Pallor or cyanosis<br>Dry mucous membranes<br>Mucopurulent, purulent, blood in sputum<br>Respiratory asymmetry<br>Dyspnoea/tachypnoea<br>Accessory muscle use<br>Chest wounds, drains, scarring<br>Tracheal deviation |
| **PALPATION** | Bilateral chest expansion<br>Non-tender | Unilateral and/or reduced expansion<br>Subcutaneous emphysema<br>Fremitus<br>Localized pain across chest |
| **PERCUSSION** | Tympanic/resonant in all zones | Dull/hyper-resonant in all or some zones |
| **AUSCULTATION** | Patent airway<br>Normal breath sounds throughout chest | Stridor<br>Abnormal breath sounds, wheeze, crackles, pleural rub, diminished breath sounds |

### 7.4.2. Normal breath sounds

Tracheal: The sound is heard over the trachea and above supraclavicular as very loud, harsh, and high-pitched. Inspiration = expiration.

**Bronchial**: The sound is heard just above clavicles on each side of sternum, over the manubrium as loud, harsh, and high-pitched. Inspiration < expiration.

**Bronco-vesicular**: The sound is heard below the clavicles, between the scapulae as medium-pitched. Inspiration duration = expiration duration.

**Vesicular**: Sound heard over areas of lung tissue as soft and low-pitched. Inspection > expiration.

### 7.4.3. Abnormal breath sounds

**Wheezes**: wheezes are whistling or rattling sound in the chest heard during breathing, as a result of obstruction in the air passages. Wheezes indicate airway restriction and are typically heard on expiration. Wheeze sound during inspiration indicates severe airway narrowing. They are high-pitched when produced in small bronchioles, and low-pitched when produced in larger bronchi. Monophonic (i.e. single pitch) when heard in an isolated area, and polyphonic (i.e. multi-pitched) when heard throughout the lung area. Causes include broncho constriction, airway inflammation, secretions, and obstruction.

**Crackles**: Crackles are adventitious lung sounds heard on auscultation of the chest, produced by air passing over retained airway secretions or the sudden opening of collapsed airways. Crackles indicate instability of airways collapsing on expiration. Fine crackles can be heard in small airways, and coarse crackles can be heard in larger airways. Causes include pulmonary oedema, secretions, atelectasis, and fibrosis.

**Pleural rub**: indicates inflammation of the parietal and visceral layers of the pleura. Stiff creaking sound heard throughout inspiration and expiration. Causes include pleurisy.

**Diminished** or **absent breath sounds**: indicate lack of ventilation and/or respiration.

Causes include pneumothorax, pleural effusion, gas trapping, and collapse

**Stridor**: Loud high-pitched crowing or honking sound louder in upper airway. The causes may include laryngeal or tracheal inflammation or spasm from epiglottitis, croup, or aspiration of a foreign object can cause stridor.

### 7.4.4. Abnormal percussion sounds

**Dullness**: indicates a solid structure, a consolidated or collapsed area of lung, or a fluid-filled area, which produces a dull note on percussion. Causes include pleural effusion, infection, and lung collapse.

**Hyper-resonance**: indicates a hollow structure, which produces a hyper-resonant note on percussion. Causes include pneumothorax.

## 7.4.5. Abnormal findings from inspection of thorax

**Normal adult**: Anterior-posterior: lateral ratio is 1:2, wider than it is deep, oval shaped. Cone shaped from head to toe.

**Kyphoscoliosis:** With kyphosis, the thoracic spine curves forward, compressing the anterior chest and reducing inspiratory lung volumes. With scoliosis, a lateral S-shaped curvature of the spine causes unequal shoulders, scapulae, and hips. In severe cases, asymmetry may impede breathing.

**Barrel chest**: Anterior-posterior: lateral ratio near 1:1, round shaped. Ribs are more horizontal and costal margin is widened. Barrel chest is associated with COPD, chronic asthma, and normal aging.

**Pectus excavacum**: Depression in lower part of an adjacent to sternum. Congenital condition may compress heart or great vessels and cause murmurs.

**Pectus carinatum** (pigeon chest): Sternum is displaced anteriorly, depressing the adjacent costal cartilages. Congenital condition with increased anteroposterior

diameter.

**Flail chest**: Sternum is displaced anteriorly, depressing the adjacent costal cartilages. It may be a congenital condition with increased anteroposterior diameter.

## 7.4.6. Abnormal findings from palpation of thorax and neck

**Tender areas**: may indicate muscle strain, rib fracture, or soft tissue damage. With trauma, air can enter lungs and escape, creating a crackling sensation (crepitus). Subcutaneous emphysema migrates and may be found in the head and neck. If the amount is large, mark borders with a pen to note changes.

**Asymmetrical movements**: indicate collapse or blockage of lung. Patients with muscle weakness, respiratory disease, recent surgery, chest wall abnormalities, or obesity may have reduced chest expansion.

**Tactile fremitus**: Conditions that may lead to decreased or absent fremitus include obstructed bronchus, COPD, pleural effusion, fibrosis, tumor, pneumothorax, obesity, or an extremely large chest. Increased fremitus may accompany severe localized pneumonia or lung tumor.

**Tracheal deviation**: There are several causes for a tracheal deviation, and the condition often presents along with difficulty breathing, coughing and abnormal breath sounds. The most common cause of tracheal deviation is a pneumothorax, which is a collection of air inside the chest, between the chest cavity and the lung.

### 7.4.7. Abnormal findings from general inspection

**Breathlessness**, **use of accessory muscles, and exhalation with pursed lips**: The combination of mentioned signs indicates the evidence of respiratory distress.

**Respiratory movements and rate**: respiratory rate is 12 to 20 breaths per minute for adults, with regular rhythm. Tachypnea is greater than 24 breaths per minute; bradypnea is less than 10 breaths per minute.

**Oxygen saturation**: oxygen saturation level normal is 95% to 100%. Pulmonary embolism produces hypoxemia.

**Lymph nodes enlargement**: Patients with pneumonia may present with unusually enlarged mediastinal lymph nodes, which are most likely, a result of a strong immune response to pneumonia.

### 7.4.8. Abnormal respiratory pattern

**Tachypnea**: Shallow breathing with increased respiratory rate



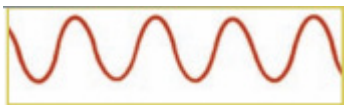
**Bradypnea:** Decreased rate but regular breathing



**Apnea:** Absence of breathing, may be periodic

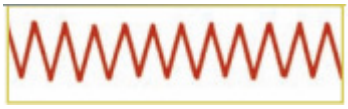


**Hyperpnea:** Increased depth of breathing



**Kussmaul's respirations:** Rapid, deep breathing without pauses; in adults, more than

20 breaths per minute; breathing usually sounds labored with deep breaths that resemble sighs.



**Cheyne stokes respirations:** Breaths that gradually become faster and deeper than normal, then slower and alternate with periods of apnea.



**Biot's respiration:** Rapid, deep breathing with abrupt pauses between each breath; equal depth to each breath



## 7.4.9. Common nursing interventions associated with respiratory system problems.

| N° | Nursing interventions |
|---|---|
| 1 | Administer oxygen,*deep breathing, incentive spirometer, inhalers* In case of **impaired gas exchange** related to alveolar-capillary membrane changes |
| 2 | Cough and deep breathe, increase fluids, expectorants,* postural drainage* In case of **ineffective airway clearance** related to thick tracheobronchial secretions |
| 3 | Semi sitting position to decrease workload of breathing, pace activity, provide rest, reduce fever if any In case of **ineffective breathing pattern** related to fatigue |
| 4 | Elevate head of bed administer diuretics,* intake and output, daily weights in case of **excess fluid volume** related to congestive heart failure |

*Collaborative interventions

### Self-assessment 7.4.

1) When multiple ribs are fractured, paradoxical movements of the chest may occur. As the diaphragm pulls down during inspiration, negative pressure causes the injured area to cave inward; during expiration it moves out. This situation happens in case of:
    b) Barrel chest
    c) Flail chest
    d) Kyphoscoliosis
    e) Pectus carinatum

2) The normal level of oxygen saturation is:
   a) 100%
   b) 95%
   c) 90-100%
   d) 95-100%
3) Tachypnea is a condition in which respiratory rate becomes greater than:
   a) 24 breaths per minute
   b) 20 breaths per minute
   c) 22 breaths per minute
   d) None of the above
4) The lymph node enlargement observed during respiratory assessment may indicate:
   a) Bronchial asthma
   b) Respiratory distress
   c) Pulmonary embolism
   d) Pneumonia
5) Recall at least four (4) respiratory abnormal patterns that may be assessed?
6) List two normal breath sounds obtained through lungs auscultation.
7) Differentiate wheezes from crackles abnormal lung sounds.
8) Outline two nursing interventions related to respiratory system problems.

## End unit assessment 7.

Select the bests answer, only one option is accepted:

1) Respiratory history taking is the key element of respiratory assessment to:
   a) Valid diagnosis
   b) To make a therapeutic plan for patient
   c) To help health care provider filling patient's file
   d) To prevent complications related to the patient's diagnosis
2) Dyspnea due to respiratory problems cannot be differentiated at first glance from dyspnea due to cardiac disease, neuromuscular weakness, or simple obesity, the following questions can be asked to explore the origin of dyspnea but the one has no impact on respiratory history taking:

a) What makes the breathing worse?
b) Does anything make breathing better?
c) What is family planning used method?
d) What can't you do because of the breathlessness?

3) Wheezes are sounds that are heard continuously during inspiration or expiration, or during both inspiration and expiration .They are most commonly heard at end inspiration or early expiration and they are caused by:

a) Airways narrowed by constriction,
b) Air passing through a solid structure,
c) Laryngeal or tracheal inflammation,
d) A hollow structure producing hyper-resonant sound

4) There are several causes for a tracheal deviation observed through palpation or inspection of neck. The condition often presents along with:

a) Cyanosis
b) Pallor
c) Poor oxygen saturation
d) Difficult breathing, coughing and breath sounds

5) The most common cause of tracheal deviation is:

a) Pneumonia
b) Pneumothorax
c) Bronchial asthma
d) Chest asymmetry

6) Patients with pneumonia may present with unusually enlarged mediastinal lymph nodes, which are most likely, a result of:

a) Neck indicate muscle strain
b) Thick tracheo-bronchial secretions
c) Alveolar-capillary membrane changes
d) A strong immune response to pneumonia

7) The impaired gas exchange is observed among the patients consulted for respiratory problem; the most related nursing factor include the following:

a) Thick tracheo-bronchial secretions
b) Alveolar-capillary membrane change
c) Increased fluid volume
d) Fatigue

8) The nursing interventions to perform towards patient with ineffective airway clearance include the following except one:

   a) Increase fluids, expectorants
   b) Administer anti-histamine drugs
   c) Cough and deep breathe
   d) Postural drainage

9) Outline the sequences of respiratory focused physical examination?

10) List four respiratory abnormal pattern findings ?

# UNIT 8 GROWTH AND DEVELOPMENT

## Key unit competence:

Analyse the concepts and theories of growth and development in interpersonal relationships.

### Introductory activity 8



1) Observe the image above and discuss on it briefly
2) What does the last image mean to you

## 8.1. Definitions

### Learning activity 8.1.

*https://www.medicalnewstoday.com/articles/154874*

Read the link above and answer to the following questions:

1) What is psychology?
2) What is developmental psychology?

### 8.1.1. Psychology

Psychology is the study of mind and behavior, it encompasses the biological influences, social pressures, and environmental factors that affect how people think, act, and feel. Psychology is defined as a science which studies mental processes, experiences and behavior in different contexts.

**The four main goals of psychology** are to describe, explain, predict and change the behavior and mental processes of others.

**a) To describe**

Describing a behavior or cognition is the first goal of psychology. This can enable researchers to develop general laws of human behavior.

**b) To explain:**

Once researchers have described general laws behavior, the next step is to explain how or why this trend occurs. Psychologists will propose theories which can explain a behavior.

**c) To predict**

Psychology aims to be able to predict future behavior from the findings of empirical research. If a prediction is not confirmed, then the explanation it is based on might need to be revised.

**d) To change**

Once psychology has described, explained and made predictions about behavior, changing or controlling a behavior can be attempted.

## 8.1.2. Developmental psychology

Developmental psychology is the development of human being' cognitive, emotional, intellectual, and social capabilities and functioning over the course of a normal life span, from infancy through old age.

Developmental psychology is a scientific approach which aims to explain growth, change and consistency though the lifespan. Developmental psychology looks at how thinking, feeling, and behavior change throughout a person's life.

A significant proportion of theories within this discipline focus upon development during childhood, as this is the period during an individual's lifespan when the most change occurs.

**The three goals of developmental psychology** are to describe, explain, and to optimize development.

**a) To describe development**

It is necessary to focus both on typical patterns of change (normative development) and individual variations in patterns of change.

**b) To explain development**

Developmental psychologists must also seek to explain the changes they have observed in relation to normative processes and individual differences.

**c) To optimize development**

Developmental psychologists hope to optimize development, and apply their theories to help people in practical situations (e.g. help parents develop secure attachments with their children).

**Self-assessment 8.1.**

1) Define psychology
2) List and explain at least two goals of psychology
3) Define developmental psychology
4) List and explain at least two goals of developmental psychology

## 8.2. Growth and development

**Learning activity 8.2.**



1) By observing the image above, what does it mean to you?

Most people use the terms “growth” and “development” interchangeably and accept them as synonymous. But in reality, the meanings of these two terms are different.

### 8.2.1. Growth concept and definition

Growth is physical change and increase in size which can be measured quantitatively. The pattern of physiological growth is similar for all people where the growth rate varies throughout the lifespan. Growth is more rapid during the antenatal, neonatal, infancy and adolescent stages and slower during childhood and minimal during adulthood.

Growth refers to physical increase in some quantity over time. It includes changes in terms of height, weight and different organs of the child's body. It means that growth involves all those structural and physiological changes that take place within individual during the process of maturation.

Hurlock has defined Growth as "change in size, in proportion, disappearance of old features and acquisition of new ones".

**Measuring Growth**

There are various measurements that are used to measure growth. These are: *Weight, Height, Head circumference, Mid-upper arm circumference (MUAC),* and *the eruption of teeth.*

## 8.2.2. Development: concept and definition

**Development** is an increase in the complexity of function and skill progression. It is the capacity and skill of a person to adapt to the environment. Development is the behavioral aspect of growth (e.g. a person develops the ability to walk, to talk and to run).

Development is the progressive acquisition of various skills such as head support, speaking, learning, expressing the feelings and relating with other people. Each child follows a unique path in growth and development that is laid down from the beginning of life by what he has inherited from both parents genetically. However thus may be changed by different factors such as infections, lack of care, psychological trauma, bad education, and malnutrition.

The normal well-fed infant who is protected from infections develops quickly, particularly during the first 3 months. It is very important to know the age ranges when most children acquire certain skills. The various skills the baby and a young child learn are called **milestones**. In monitoring development, notice at what age the child achieves various milestones, such as smiling at the mother, sitting without support, grasping objects with his/her hands, standing, walking and talking.

| Age range | Motor Development | Language and social development |
|---|---|---|
| Birth | When prone turns head to one side to avoid suffocation | Cries |
| 3-6 Months | Good head control | Can follow an object with eyes, plays with hands |
| 6-9 Months | Can sit unsupported | Grasps actively, makes loud noises |
| 9-12Months | Able to stand | Understands a few words, tries to use them |
| 9-18 Months | Able to walk | Grasps small objects with thumb and index finger |
| 15-30 Months | Able to run around as much as he wants | Can say several words or even some sentences |
| 3 Years | Plays actively, is able to jump and climb | Starts talking a lot, is curious and asks many questions |

Growth and development are independent and interrelated processes. For example, an infant's muscles, bones and nervous system must grow to a certain point before the infant is able to sit up or walk. Growth generally takes place during the first 20 years of life; development takes place during that time and also continues after that point.

**Stages of growth and development**

The rate of a person's growth and development is highly individual; however, the sequence of growth and development is predictable. Stages of growth usually correspond to certain developmental changes

| Stage | Age | Significant characteristics | Nursing implications |
|---|---|---|---|
| Neonatal | Birth to 28 days | Behaviour is largely reflexive and develops to more purposeful behaviour | Assist parents to identify and meet unmet needs |
| Infancy | 1 month to 1 year | Physical growth is rapid | Control the infant's environment so that physical and psychological needs are met |
| Toddlerhood | 1 to 3 years | Motor development permits increased physical autonomy. Psychosocial skills increase | Safety and risk-taking strategies must be balanced to permit growth |
| Preschool | 3 to 6 years | The pre-schooler's world is expanding. New experiences and the pre-schooler's social role are tried during play. Physical growth is slower. | Provide opportunities for play and social activity. |

| | | | |
|---|---|---|---|
| School age | 6 to 12 years | Stage includes the pre-adolescent period (10 to 12 years). Peer group increasingly influences behaviour. Physical, cognitive and social development increases and communication skills improve | Allow time and energy for the school-age child to pursue hobbies and school activities. Recognise and support child's achievement |
| Adolescence | 12 to 20 years | Self-concept changes with biological development. Values are tested. Physical growth accelerates. Stress increases, especially in the face of conflicts | Assist adolescents to develop coping behaviours. Help adolescents develop strategies for resolving conflicts. |
| Young adulthood | 20 to 40 years | A personal lifestyle develops. Person may establish a relationship with a significant other and a commitment to something. | Accept adult's chosen lifestyle and assist with necessary adjustments relating to health. Recognise the person's commitments. Support change as necessary for health. |
| Middle adulthood | 40 to 65 years | Lifestyle changes due to other changes; for example, relationship changes, children leave home, occupational goals change. | Assist individuals to plan for anticipated changes in life, to recognise the risk factors related to health and to focus on strengths rather than weaknesses |
| Young-old | 65 to 74 years | Adaptation to retirement and changing physical abilities is often necessary. Chronic illness may develop | Assist individuals to keep physically and socially active and to maintain peer group interactions |
| Old | 75 to 84 years | Adaptation to decline in speed of movement and reaction time, increasing dependence on others may be necessary, and relationship changes. | Assist individuals to cope with loss (e.g. hearing, sensory abilities and eyesight, death of a loved one). Provide necessary safety measures. |
| Old-old | 85 and over | Increasing physical problems may develop. | Assist individuals with self-care as required and with maintaining as much independence as possible |

**Self-assessment 8.2.**

1) Make a brief difference between the concept of growth and development
2) What is milestone

## 8.3. Principles of human development

**Learning activity 8.3.**

Open and read the following link and answer to the questions below

*https://ddceutkal.ac.in/Syllabus/MSW/PAPER-3.pdf.*

1) list the different principles of human development

There are several basic principles that characterize the pattern and process of growth and development. These principles describe typical development as a predictable and orderly process. Even though there are individual differences in children's personalities, attitudes, behaviour and timing of development, the principles and characteristics of development are universal patterns

- **Development involves change**

The human being is undergoing changes from the moment of conception to the time of death. There are different types of change that occur such as changes in size, proportions, disappearance of old features and acquisition of new features etc.

- **Development is a continuous process**

Development continues throughout the life of an individual. The process of human development starts with simple acts and progresses to complex or integrated acts. This process takes place in interaction with the environment in which a person lives. One stage of development is the basic framework for the next stage of development. A child has limited knowledge and experiences about his environment. But as he develops, he acquires more information through explorations and adds to the skills already acquired and the new skills become the basis for further achievement and mastery of skills. For example, the child is able to write and draw, he must have developed a hand control to hold a pencil and crayon.

- **Development follows a direction and uniform pattern in an orderly manner**

(i) Development proceeds from the center of the body outward. This is the principle of proximodorsal development that describes the direction of development (from nearer to far apart). It means that the spinal cord develops before outer parts of the body. The child's arms develop before the hands and the hands and feet develop before the fingers and toes.

(ii) Development proceeds from the head downwards. This is called the cephalocaudal principle. According to this principle, development occurs from head to tail. The child gains control of the head first, then the arms and then the legs

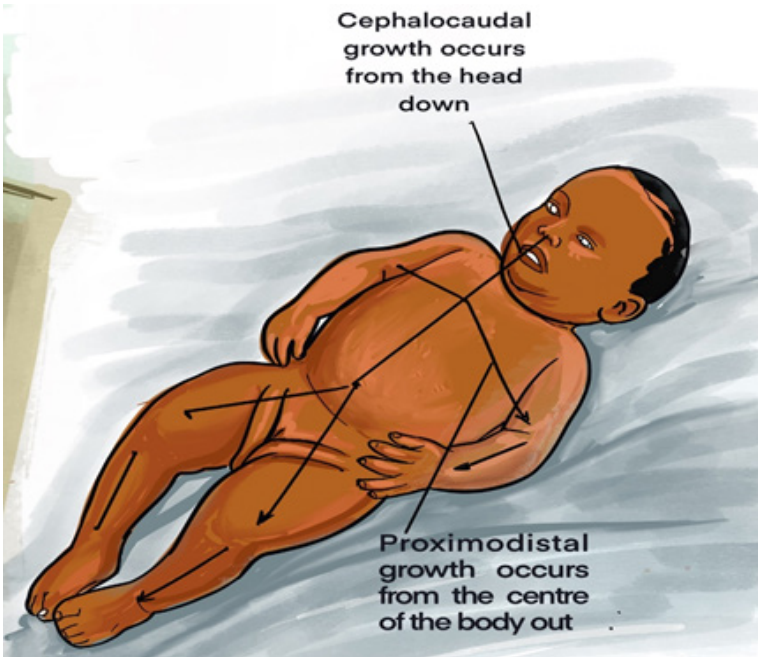



***Figure 102 Growth pattern***

- **Individual Differences in the Development Process**

Even though the pattern of development is similar for all children but the rate of development varies among children. Each child develops as per his abilities and perception of his environment. Children differ from each other both genetically and environmentally. So, both biological factor and environmental situations have their impact on individual's development which leads to individual differences in development.

- **Development depends on maturation and learning**

Maturation refers to the sequential characteristic of biological growth and development. The biological changes occur in sequential order and give children new abilities.

Changes in the brain and nervous system account largely for maturation. The child's environment and the learning that occurs as a result of the child's experiences largely determine whether the child will reach optimal development. An enriched environment and varied experiences help the child to develop his/her potential.

Learning can either help or hinder the maturational process depending on what is learned.

- **Development is predictable**

Human development is predictable during the life span. Although this development is influenced by both genetic and environmental factors, however, it takes place in a pre-defined manner. Specific areas of development, (such as: different aspects of motor development, emotional behavior, speech, social behavior, concept development, goals, intellectual development, etc) follow predictable patterns. For example, the growth of the child in height and weight continues up to a certain age.

- **Early development is more critical than later development**

Certain stages of growth and development are more critical than others. It is known, for example, that the first 10 to 12 weeks after conception are critical. The incidence of congenital anomalies as a result of exposure to certain viruses, chemicals or drugs is greater during this stage than others.

Milton said that the childhood shows the man, as morning shows the day and also Erikson states that childhood period is the scene of man's beginning as man. He explains that if parents gratify the needs of the child for food, attention and love, his perception towards people and situation remains positive throughout his life. He develops positive attitudes, feels secure, emotionally stable and adjust well with the environment. If negative experiences occur during early life of the child, maladjustments may take place.

- **Development involves social expectations**

In every society there are certain rules, standards and traditions which everyone is expected to follow. Development is determined by social norms and expectations of behaviors form the individuals. Children learn customs, traditions and values of the society and also what behaviors are expected from them. As societies are evolving, changing traditions and cultural patterns of a society are learned automatically by children during their development process.

- **Development has potential hazards**

Development may be hindered by various hazards such as physical, environmental or psychological type. These hazards may be originated from the environment in which the child grows or due to hereditary factors which may have negative impact on physical as well as socio-psychological development of the child.

- **Happiness varies at different periods of development**

Childhood is the happiest period of life and puberty is the unhappiest. The patterns of happiness vary from child to child and it is influenced by the background process of the child.

## Self-assessment 8.3.

1) Development is a never-ending process. This statement is related which principle of development?
   a) Principle of continuity
   b) Principle of integration
   c) Principle of interaction
   d) Principle of inter relationship

2) This is not a principle of development
   a) Development is continuous
   b) Development is consistent
   c) Development is lifelong
   d) None of the above

3) The law of development direction includes
   a) Cephalocaudal law
   b) Proximodistal law
   c) Both a and b
   d) Neither a nor b

4) Which of the following statement is incorrect about the principles of child development?
   a) Development follows a definite and predictable pattern
   b) All individuals are similar in their development
   c) Development is product of hereditary and environment
   d) Development works on the principle of integration

5) Out of the following, which is not correct principle in the context to growth and development?
   a) Foot to head
   b) From near to distant
   c) Head to foot
   d) Interaction of heredity and environment

6) A child first learns moving his hand, then fingers and then hand and fingers together. Which principle of growth and development is represented by this example?

a) Principle of continuity
b) Principle of directional development
c) Principle of general to specific
d) Principle of individual differences

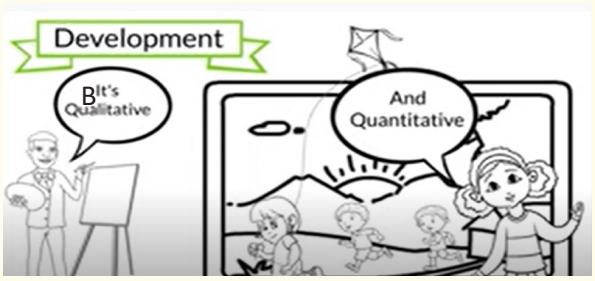
## 8.4. Comparison of growth and development

**Learning activity 8.4.**













Observe the two images(A and B) above and interpret each image basing on growth and development

### 8.4.1. Comparison of growth and development

- **Growth mainly focuses on quantitative improvement** while **development is associated with both qualitative and quantitative improvement**

For instance, growth is associated with measurable changes in weight and height. When your child's weight increases from 35 kilograms to 40 kilograms, then the 5kilogram increment is attributed to growth. On the other hand, development is

identified when substantial changes in Intelligence Quotient (IQ) are recorded in your child's brain power. For instance, your child's IQ level is relatively low during childhood but can improve significantly into adulthood. Your child's IQ level can improve from 50 to 90 after improving their creative and critical thinking skills.

- **Growth ends at maturation** while **development continues until an individual's demise (death).**

As a teacher or parent, it is important to note that growth ends at maturation. Your child will experience various changes associated with growth between childhood and maturation at adolescence. This means that your teaching approach will be different at age 6 and age 15. At 6 years, your child needs simplified information that they can understand because their brain can only process basic information. At 15 years, your child's brain has improved significantly, and they are in a unique position to grasp and retain complex information based on their improved information processing skills.

- **Growth is dependent on cellular changes** while **development is dependent on organizational transformation**

Growth begins at conception and progresses into adulthood. From conception, your child's body experiences massive changes based on changes in cellular growth. An increase in cellular size and number indicates that your child is undergoing growth. Development is often witnessed at a home or school environment when your child experiences skillset changes. This simply means that any skills learnt such as reading or arithmetic are indicative of your child's development changes. The older they get, the more likely they are to understand complex skills associated with computation and reasoning.

- **Growth is external** while **development is internal in nature**

Regardless of your location or occupation, you can observe your child's growth based on visible external features. These features include increased body parts sizes such as hands, legs, ears, and much more. These changes usually manifest over time based on improved nutrition and general wellbeing. It is important to note that family instability can also affect your child's proper growth. Too much stress from domestic strife subjects your child to stunted growth.

Unlike growth, development is an internal process and isn't visible by the naked eye. Instead, it requires a comprehensive evaluation of your child's reasoning, creativity and innovation to ascertain their development status. This can be achieved by setting various tests designed to evaluate your child's IQ in relation with creativity and reasoning. Based on their performance, you should be in a unique position

to accurately determine their development level and the changes that ought to be made to rectify the situation.

- **Growth dictates changes in physical appearance** while **development dictates change in the character of an individual**

Growth is easily discernible based on changes in physical appearance. These changes manifest over time and include increased body size and voice intonation. Whether such changes are visible based on hair transformation or skin tone, you can rest assured knowing that your child is experiencing growth changes.

On the other hand, development pays much emphasis in the character changes of an individual**.** Your child might have been disobedient during their early age but over time, they are likely to transform into a mature young adult. With each passing day, they outgrow certain habits that can only be traced back to character changes.

- **Growth takes place within a limited scope of time** while **development takes place within a vast scope of time**

This means that growth spans from conception to adolescence depending on your child's growth rate. During this period, your child undergoes progressive body changes designed to transform them into adults. By 25 years of age, your child's growth rate will have peaked.

Development isn't confined by time or age. Your child can acquire excess of skills to handle various tasks and challenges regardless of their location or background. The best part about skill acquisition is that it can still happen beyond 35-year-old if the determination and commitment exist.

- **Growth focuses on one aspect of your child's life** On the other hand, **development focuses on several aspects of your child's life such as emotional state, intelligence and interpersonal skills**.

Naturally, growth is a size-oriented process from conception to adulthood. With every increase in body size, you can monitor your child's growth rate.

On the other hand, development is an all-inclusive process designed to analyze various aspects of your child's life**.** This usually stems from the need to evaluate their capacity to interact with their peers and adults in an effective way. While their interpersonal skills might be unpolished at a young age, your child is expected to make improvements based on their advanced critical thinking and reasoning skills as they get older.

The comparison between growth and development is summarized in the table below:

| GROWTH | DEVELOPMENT |
|---|---|
| Growth refers to physiological changes. | Development refers to overall changes in the individual. It involves changes in an orderly and coherent type towards the goal of maturity. |
| Growth changes in quantitative aspect | Development changes in the quality along with quantitative aspect. |
| Growth does not continue throughout life. | Development continues throughout life. |
| Growth stops after maturation | Development is progressive. |
| Growth occurs due to the multiplication of cells. | Development occurs due to both maturation and interaction with the environment. |
| Growth is cellular. | Development is organizational. |
| Growth is one of the part of the developmental process | Development is a wider and comprehensive term. |
| Growth may be referred to describe the changes in particular aspects of the body and behavior of the organism. | Development describes the changes in the organism as a whole. |
| The changes produced by growth are subjects of measurements. They may be quantified and observable in nature. | Development brings qualitative changes which are difficult to measure directly. They are assessed through deep observation of behavior in different situations. |
| Growth may or may not bring development | Development is possible without growth. |

## Self-assessment 8.4.

1) It refers to an increase in size evident through physical change
   a) Growth
   b) Development
   c) All of the above
   d) None of the above
2) It refers to a process of gradual transformation. It is an improvement in the level of functioning based on the acquisition of skills. It isn't easily identified from a glance but only through a comprehensive evaluation of your child's performance on various skills and memory retention.
   a) Growth
   b) Development
   c) All of them
   d) None of them
3) When your child increases in height and weight, is he/she experiencing a growth process?

a) Yes

b) No

4) Which of the following best describes Development?

a) It mainly focuses on quantitative improvement

b) It ends at maturation

c) It continues throughout life

5) Why is it important to understand the differences in human growth and development?

a) This knowledge is crucial in helping you formulate ideal learning styles to disseminate various learning concepts.

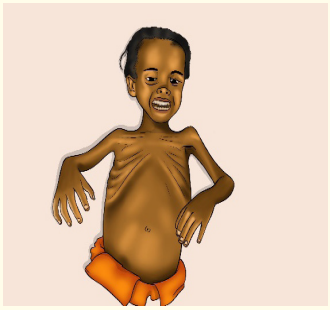
b) This knowledge will hinder parents to monitor their children closely

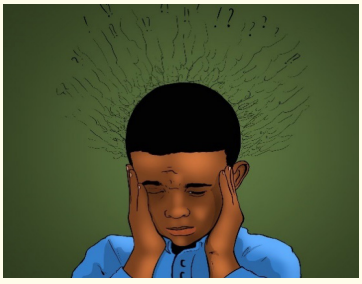
c) This knowledge will confuse learning process

## 8.5. Characteristics of normal and abnormal growth and development

**Learning activity 8.5.**







1) Observe the image A, B and C above and give the difference between them.

## 8.5.1. Overview of growth and development

Growth has been described as the work of childhood. Under normal circumstances, growth proceeds in a predictable fashion from conception to adulthood. Abnormal growth can be an indicator of a pathologic condition of any organ system as well as a psychological problem.

**a) Characteristic of normal growth and development**

The growth is considered as physical and developmental milestone that most children will attain at a specific age. Children undergo various changes in terms of physical, speech, intellectual and cognitive development gradually until adolescence. Specific changes occur at specific ages of life when we consider developmental milestone. Children development stages are organized as follow: newborn, infancy, toddle, pre-school, school age and adolescent.

A newborn is defined as a baby from birth to 2 months. During neonatal period, a normal newborn reacts automatically to external stimuli, turn their head from side to side, turn towards sounds and cry to indicate a need.

A child from birth to one year is known as an infant. At three to six months of age, infants can recognize familiar faces, begin to babble, control their head movements and bring their hands together. By six to nine months of age, infants start sitting without support, may bounce when held in a standing position and respond to people calling their name. Infants start communicating with gestures. Between nine and 12 months old, children can point at things, pick up objects, crawl and even stand with support, can imitate sound and gestures.

A Child between one and three years of age is a toddler. They can stand alone, learn to walk without help, begin to run and climb stairs with short steps. These kids can make bye-bye gesture, hold a pencil or crayon, draw a circle, learn to say several words and even short sentences and even follow simple instructions.

A preschool child is from three to five year of age. At this stage, the child's motor skills become advanced. Children can throw and catch a ball, skip and hop, learn to dress themselves and draw proper structures such as a flower. They can speak a complete, long sentence and even two to three sentences in a stretch easily. With toilet training, they begin to go to the toilet in the bathroom and use the facility all by themselves by the age of four years old.

School-age child is between 6 to 12 years. School-age children most often have smooth and strong motor skills. However, their coordination, endurance, balance,

and physical abilities vary. This variability affects a child's ability to write precisely, dress appropriately, and perform certain tasks, such as making beds or doing dishes.

The adolescence is a period from 10 to 19 years, it is considered as a transitional phase from childhood to adulthood. In this period, specific characteristics are evident such as biological changes on secondary sexual characteristics, appearance consciousness, attraction towards opposite sex, logical and constant thinking, easily react without considering the pros and cons, select the best career to follow and determine hobbies.

**b) Characteristic of abnormal growth and development**

If a child shows a very slow or a very rapid growth in relation to height or weight per age, motor and intellectual capacity need to be examined by a competent health care provider. The main factors that influence child's growth are genetic, biological, nutrition and physical activities.

Poor nutrition can make the child more likely to get sick and miss school. A good breakfast is very important to prevent tiredness and feel motivated.

Malnutrition is defined as deficiencies, excesses, or imbalances in a person's nutrient intake. Malnutrition includes undernutrition (wasting, stunting, underweight), inadequate vitamins or minerals and over nutrition which is represented by overweight and obesity.

## 8.5.2. Biological influences on human growth and behaviors

Early child development is influenced by a wide variety of both biological and environment factors. Biological factors can play a particularly important role in early development. These factors influence a child in both positive and negative ways. They can affect children throughout their development, particularly during critical times such as the prenatal period and early childhood.

Biological factors include

**a) Genes**

Heredity is a biological process through which the transmission of physical characteristics takes place from parents to their children. It greatly influences the different aspects of growth and development i.e. height, weight and structure of the body, color of hair and eye, intelligence, aptitudes and instincts. Diseases and conditions such as heart disease, diabetes, obesity and so on can also be passed through genes, thereby affecting growth and development of the child.

**b) Hormonal factors**

There are multiple glands in the human body. Each of them secrets its own fluid. This is known as hormone. It is a type of biological component that helps to increase and decrease the activity of various organs of the human body. Hormone is an important factor that affects human growth and development in many ways from birth and its normal functioning and emission is essential for the normal and harmonious growth and development of human beings. Their timely functioning is critical for normal physical growth and development in children. Imbalances in the functioning of hormone-secreting glands can result in growth defects, obesity, behavioral problems and other diseases. For example, during puberty, the gonads produce sex hormones which control development of the sex organs and the appearance of secondary sexual characteristics in boys and girls.

**c) Nervous system**

The nervous system controls a person's entire physical activity and affects its growth and development. When a person's nervous system is defective, his normal growth and development is disrupted.

d) Physical weakness

Physical weak children are always lagging behind in terms of growth and development. They often suffer from illness, which affects their physical, mental, social and emotional growth and development.

e) Defective constitutional make-up

Some of the defective body structures are ugly face, abnormally low height, abnormally high weight etc. These give rise to feelings of inferiority among individuals. As a result, individuals face social adaptation problems, which affect their normal growth and development.

f) Sex

Sex acts as an important factor of growth and development. There is difference in growth and development of boys and girls. The boys in general are taller, courageous than girls but girls show rapid physical growth in adolescence and excel boys. In general, the body constitution and structural growth of girls are different from boys. The functions of boys and girls are also different in nature.

## 8.5.3. Factors affecting human development

Growth and development are dependent on a number of factors. Knowledge of these factors helps the nurse to intervene to promote positive growth and development of the individual.

**a) Genetic**

The genetic inheritance of each individual is established at conception. It remains unchanged throughout life and determines human characteristics such as gender, physical characteristics (eye color, height, hair color) and to some personality.

**b) Temperament (personality)**

Temperament (the way individuals emotionally respond to their external and internal environment) sets the stage for the interactive dynamics of growth and development. Temperament persists throughout the lifespan, though attention must be taken to infants and children to irreversibly categorize them as being of a particular temperament.

**c) Family**

Families have the most profound impact in nurturing a child and determining the ways in which they develop psychologically and socially. Whether they are raised by their parents, grandparents or foster care, they need basic love, care and courtesy to develop as healthy functional individuals. The most positive growth is seen when families invest time, energy and love in the development of the child through activities, such as reading to them, playing with them and having deep meaningful conversations. Families that abuse or neglect children would affect their positive development. These children may end up as individuals who have poor social skills and difficulty bonding with other people as adults.

**d) Nutrition**

Growth and development are dependent on adequate nutrition from conception and throughout the lifespan. For example, poorly nourished children are more likely to have infections and other preventable challenges to health and wellbeing than are well-nourished children. Nutrition is a critical factor in growth as everything the body needs to build and repair itself comes from the food we eat. Malnutrition can cause deficiency diseases that adversely affect the growth and development of children. On the other hand, overeating can lead to obesity and health problems in the long run, such as diabetes and heart disease. A balanced diet that is rich in vitamins, minerals, proteins, carbohydrates and fats is essential for the growth and development of the brain and body.

**e) Environment**

Where you live also has a great influence on how your children turn out to be. The schools they attend, the neighborhood they live in, the opportunities offered by the community and their peer circles are some of the social factors affecting a child's development. Living in an enriching community that has parks, libraries and community centres for group activities and sports all play a role in developing the child's skills, talents, and behaviour. Uninteresting communities can push some children to not go outside often but play video games at home instead. Even the weather of a place influences children in the form of bodily rhythms, allergies and other health conditions.

**f) Health and exercise**

Illness or injury can alter the rate and patterns of growth and development. Prolonged or chronic illness may further alter developmental processes, often most notably physical development. Being hospitalized is stressful for a child and their family and can alter the child's coping mechanisms, which may in turn alter their cognitive, psychosocial and emotional development.

The word exercise here does not mean physical exercise as a discipline or children deliberately engaging in physical activities knowing it would help them grow. Exercise here refers to the normal playtime and sport activities which help the body gain an increase in muscular strength and put on bone mass. Proper exercise helps children grow well and reach milestones on time or sooner. Exercise also keeps them healthy and fights off diseases by strengthening the immune system, especially if they play outside. This is because outdoor play exposes them to microbes that help them build resistance and prevent allergies.

**g) Socio-economic status**

The socio-economic status of a family determines the quality of the opportunity a child gets. Studying in better schools that are more expensive definitely has benefits in the long run. Well-off families can also offer better learning resources for their children and they afford special aid if the kids need it. Children from poorer families may not have access to educational resources and good nutrition to reach their full potential. They may also have working parents who work too many hours and cannot invest enough quality time in their development.

**Self-assessment 8.5.**

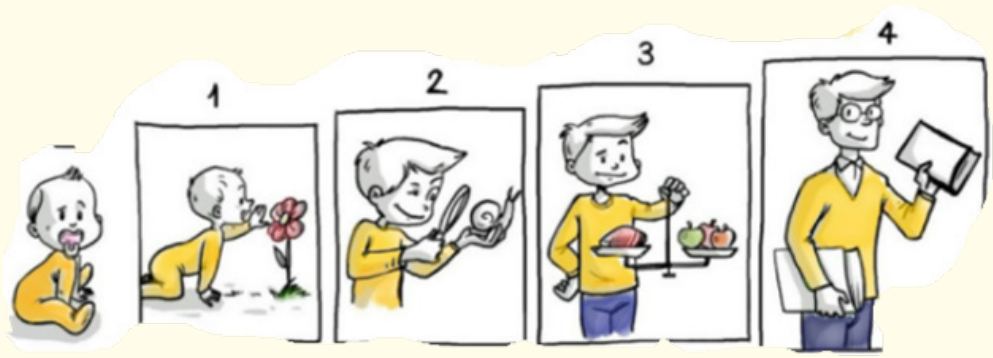
1) Outline 5 factors that affecting human development
2) Discuss how family and socio-economic status influence human development.
3) Explain how health condition may affect human development
4) The genetic of each individual is established at adulthood and it remains unchanged throughout life and determines human characteristics such as gender and physical characteristics.

    a) True

    b) False

## 8.6. Theories of lifespan and development

**Learning activity 8.6.**




Observe the image above and respond to the following questions:

1) How many people do you see in this image?
2) Estimate the age of each individual in the image
3) According to everyone activity in the image, do you think is corresponding to his age?

Lifespan development explores how we change and grow from conception to death. This field of psychology is studied by developmental psychologists and they have developed different developmental theories including cognitive development, psychosocial and sociocultural theories of development.

## 8.6.1. Cognitive theories of child development

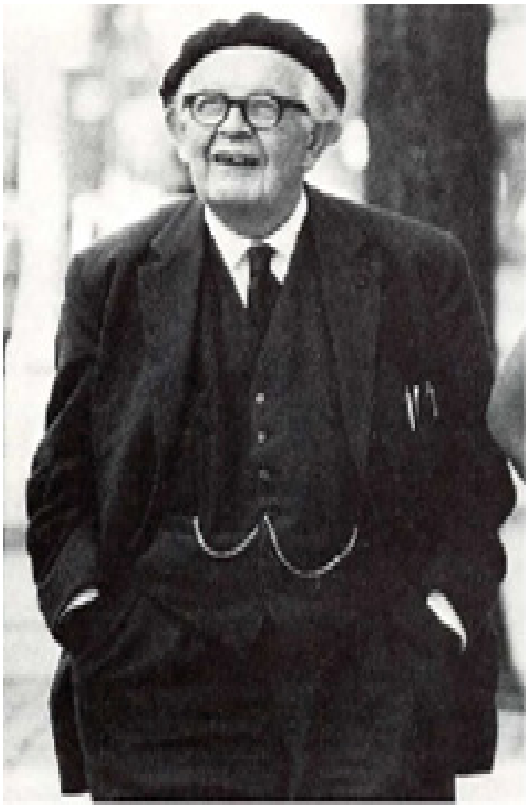


***Figure 103 Jean Piaget spent over 5 years studying children and how their minds develop***

Cognitive development refers to the manner in which people learn to think, reason and use language. It involves a person's intelligence, perceptual ability and ability to process information. Cognitive development represents a progression of mental abilities from illogical to logical thinking, from simple to complex problem solving and from understanding concrete ideas to understanding abstract concepts.

The most widely known cognitive theorist is Jean Piaget. According to him, cognitive development is an orderly, sequential process in which a variety of new experiences (stimuli) must exist before intellectual abilities can develop.

Piaget's cognitive developmental process is divided into five major phases: **the sensorimotor, the pre-conceptual, the intuitive thought, the concrete operations and the formal operations phase.**

A person develops through each of these phases; each phase has its own unique characteristics

| Phases | Age | Significant behavior |
|---|---|---|
| **1.Sensorimotor phase has 6 stages:** | From Birth to 2 years | |
| Stage 1 Use of reflexes | Birth to 1 month | Most action is reflexive. |
| Stage 2 Primary circular reaction. | 1 to 4 months | Perception of events is centered on the body. Objects are extension of self. |
| Stage 3 Secondary circular reaction. | 4 to 8 months | Acknowledges the external environment. Actively makes changes in the environment. |
| Stage 4 Coordination of secondary schemata | 8 to 12 months | Can distinguish a goal from a means of attaining it. |
| Stage 5 Tertiary circular reaction | 12 to 18 months | Tries and discovers new goals and ways to attain goals. |
| Stage 6 Inventions of new means | 18 to 24 months | Interprets the environment by mental image. Uses make-believe and pretend play. |
| **2.Preconceptual phase** | 2 to 4 years | Uses an egocentric approach to accommodate the demands of an environment. Everything is significant and relates to 'me'. Explores the environment. Language development is rapid. Associates words with objects. |
| **3.Intuitive thought phase** | 4 to 7 years | Egocentric thinking diminishes. Thinks of one idea at a time. Includes others in the environment. Words express thoughts |
| **4.Concrete operations phase** | 7 to 11 years | Solves concrete problems. Begins to understand relationships such as size. Understands right and left. Cognisant of viewpoints. |
| **5.Formal operations phase** | 11 to 15 years | Uses rational thinking. Reasoning is deductive and futuristic. |

## 8.6.2. Psycho-social theories of development

Psychosocial development refers to the development of personality. Personality is complex concept that is difficult to define, can be considered as the outwards (interpersonal) expression of the inner (intrapersonal) self. It encompasses a person's temperament, feelings, character traits, independence, self-esteem, self-concept, behavior, ability to interact with others and ability to adapt to life changes.

Psychosocial theories focus on the nature of self-understanding, social relationships, and the mental processes that support connections between the person and his/her social world.



***Figure 104 Erikson psychosocial theory (1902–1994)***

Erik H. Erikson believed that people continue to develop throughout life.

Erikson believed that the more success an individual has at each developmental stage, the healthier the personality of the individual and he proposed that personality development takes place all through the life span. Erikson suggested that how we interact with others is what affects our sense of self.

Erikson proposed that we are motivated by a need to achieve competence in certain areas of our lives. According to psychosocial theory, we experience eight stages of development over our lifespan from infancy through late adulthood. At each stage there is a conflict, or task, that we need to resolve. Successful completion of each developmental task results in a sense of competence and a healthy personality however failure to master these tasks leads to feelings of inadequacy. According to Erikson, the environment is highly influential in development.

Erikson emphasized that people must change and adapt their behavior to maintain control over their lives. In his view, no stage in personality development can be bypassed, but people can become fixated at one stage or regress to a previous stage under anxious or stressful conditions.

| Stage | Age | Central task | Indicators of positive resolution | Indicators of negative resolution |
|---|---|---|---|---|
| Infancy | Birth to 18 months | Trust versus mistrust | Learning to trust others | Mistrust, withdrawal, estrangement |
| Early childhood | 18 months to 3 years | Autonomy versus shame and doubt | Self-control without loss of self-esteem<br>Ability to cooperate and to express oneself | Compulsive self-re-straint or compliance<br>Willfulness and defiance |
| Late childhood | 3 to 5years | Initiative versus guilt | Learning the degree to which assertiveness and purpose influence the environment<br>Beginning ability to evaluate one's own behaviour | Lack of self-confidence<br>Pessimism, fear of wrongdoing<br>Overcontrol and over restriction of own activity |
| School age | 6 to 12 years | Industry versus inferi-ority | Beginning to create, develop and manipulate.<br>Developing sense of competence and perseverance | Loss of hope, sense of being mediocre<br>Withdrawal from school and peers |
| Adoles-cence | 12 to 20 years | Identity versus role confusion | Coherent sense of self<br>Plans to actualize one's abilities | Feelings of confusion, indecisiveness and possible antisocial behavior |

| | | | | |
|---|---|---|---|---|
| Young adulthood | 18 to 25 years | Intimacy versus isolation | Intimate relationship with another person<br>Commitment to work and relationships | Impersonal relationships<br>Avoidance of relationship, career or lifestyle commitments |
| Adulthood | 25 to 65 years | Generativity versus stagnation | Creativity, productivity, concern for others | Self-indulgence, self-concern, lack of interests and commitments |
| Maturity | 65 years to death | Integrity versus despair | Acceptance of worth and uniqueness of one's own life<br>Acceptance of death | Sense of loss, contempt for others |

### 1.1.1. Socio-cultural theory of development (Vygotsky 1896-1934)



Sociocultural theory is an emerging theory in psychology that looks at the important contributions that society makes to individual development. This theory stresses the interaction between developing people and the culture in which they live. Sociocultural theory also suggests that human learning is largely a social process. Sociocultural theory focuses not only how adults and peers influence individual learning but also on how cultural and beliefs affect how learning takes place.

This theory has been developed by **Vygotsky,** who believed that each culture presents unique differences. Because cultures can vary so dramatically, Vygotsky's sociocultural theory suggests that both the course and content of intellectual development are not as universal as Piaget believed. He states that children are born with basic biological constraints on their minds. Each culture, however, provides tools of intellectual adaptation. These tools allow children to use their abilities in a way that is adaptive to the culture in which they live

## Self-assessment 8.6.

1) Match theory to the theorist

| Theory | Theorist |
|---|---|
| 1. It focuses not only how adults and peers influence individual learning, but also on how cultural and beliefs affect how learning takes place. | A. Piaget |
| 2. He suggested that how we interact with others is what affects our sense of self | B. Freud |
| 3. Declares that the individual must meet the needs of each stage in order to move successfully to the next developmental stage | C. Vygotsky |
| 4. Involves a person's intelligence, perceptual ability and ability to process information | D. Erickson |

## End unit assessment 8.

1) Multiple choice questions

A) Your teacher, Alex compared your recent IQ test with last year. He then found out that you improve from 60 to 90. Which process did he use in identifying your IQ?

a) Growth

b) Development

a) None of the above

B) At 12 months your baby boy started to talk. Under what process does talking belongs?

a) Growth

b) Development

c) None of the above

C) Your grandmother noticed that you have grown 1 meter for the span of 6 years. Which process did she use in describing your progress?

a) Growth

b) Development

c) None of them

D) After 1 month of holiday your weight increases from 35 kilograms to 40 kilograms, then the 5 kilogram increment is attributed to growth?

a) Yes

b) No

E) Even at 50 years, you can still solve the Rubik's cube in 10 seconds. Under what process is this?

a) Growth

b) Development

c) None of the above

2) Give the difference between psychology and developmental psychology

3) Define growth

4) Outline the measurement of growth

5) Define development

6) Differentiate proximodistal development from cephalocaudal principle

7) Outline at least five principles of development

8) Discuss how nutrition and environment influence human development

9) Outline five major phases of Piaget's cognitive development

10) Who is the founder of socio-cultural theory?

# UNIT 9 PERSONALITY

## Key unit competence:

Explain the concepts of personality and behavior development

### Introductory activity 9

Observe the pictures below and answer the asked questions




1) What do you see on pictures above?
2) What are differences between pictures A, B and picture C?
3) On your point of view, how do you interpret the picture B

## 9.1. Personality and behavior

### Learning activity 9.1.

1) Define personality
2) Define behavior

### 9.1.1. Personality: concept and definition

The term personality is often understood in terms of social attractiveness. A good personality is considered to be one who impresses other people and who has the ability to get on well with others. Those who do not possess such ability are said to have relatively poor personality.

Psychologists have attempted to explain the concept of personality in terms of individuality and consistency. We often observe that people differ a great deal in the ways they think, feel and act and that too to different or even same situations. This distinctive pattern of behavior helps one to define one's identity. Another important notion in defining the concept of personality is consistency.

In other words it can be stated that the concept of personality also rests on the observation that a person seems to behave somewhat consistently in different situations over different time.

The personality is the special combination of qualities in a person that makes that person different from others, as shown by the way the person behaves, feels, and thinks.



One person can behave differently based on the situation she/he is facing.

**Behavior** is the way in which one acts or conducts oneself, especially towards others. It is the way in which an animal or person behaves in response to a particular situation or stimulus.

**Types of behaviours**

A study on human behaviour has revealed that 90% of the population can be classified into four basic personality types: *Optimistic*, *Pessimistic*, *Trusting* and *Envious*.

- **Optimists**: See the positive side of things. They expect things to turn out well. They believe they have the skill and ability to make good things happen.
- **Pessimistic**: Is defined as “the attitude that things will go wrong and that people’s wishes or aims are unlikely to be fulfilled. A person with a pessimistic personality tends toward a more negative or some might say realistic view of life.

- **Trusting**: Trust is a set of behaviors, such as acting in ways that depend on another. Trust is a belief in a probability that a person will behave in certain ways. Trust is an abstract mental attitude toward a proposition that someone is dependable. Trust is a feeling of confidence and security that a partner cares.
- **Envious**: Envious behavior means feeling or showing unhappiness over someone else's good fortune and a desire to have the same.
  Envious people tend to feel hostile, resentful, angry and irritable. Such individuals are also less likely to feel grateful about their positive traits and their circumstances. Envy is also related to depression, anxiety, the development of prejudice, and personal unhappiness.

**Self-assessment 9.1.**

1) Define personality
2) Explain what good personality meant?

## 9.2. Theories of personality

**Learning activity 9.2.**

A talkative man G who is your neighbor, complains to you for not being compatible with his wife. He tells that his wife is irresponsible and he wants to leave her. As an associate nurse, you plan to make further assessment in that family to know the root cause of planning to leave the family. While you meet both the man and the woman, the woman does not speak anything. In return, the man reacted stipulating that the woman does not trust him and does not want to perform her responsibilities.

The man added that the woman told him angrier to have resemblance figure as her father who used to maltreat her mother.

According to the case described above:

1) Do you have a clue on personality theory? List different personality theories you know
2) From your understanding what personality problem has the woman, and the man?

## 9.2.1. Psychodynamic theories of personality

### a) Sigmund Freud theory

**Sigmund Freud** believed that personality is made up of three components.

The **id** is our impulse energy. It is responsible for all our needs (nourishment, appreciation) and urges (sexual instinct, hate, love and envy). According to Freud, the id seeks immediate satisfaction of our needs without referring to logic or morals. It is demanding, impulsive, blind, irrational, antisocial, and selfish and lust oriented.

The **superego**, or conscience, represents morality as well as the norms of society. It contains all the ideals for which an individual strives and makes us feel guilty if we fall short of these standards. The superego essentially is our standard of perfection the person we want to be. While the id strives for pleasure and the superego for perfection. The **ego** acts to moderate the two. It works on the reality principle, mediating the competing demands of the id and the superego and choosing the most realistic solution for the long term.

Suppose, for instance, that you had a desire to splurge your paycheck on drinks and partying. That's your id talking. The superego would be yelling that your idea is foolish and immoral, and you're a bad person for even thinking it. The ego will balance your desire for instant gratification and your desire for responsibility by figuring out a sensible, rainy-day savings plan with enough left over for some fun on the weekend.

Freud also emphasized the importance of early childhood experiences on the development of personality. He believed that analyzing the harms of the past could unlock a person's development in the future. The harms, Freud believed, were mostly caused by parents during the person's childhood.

Freud's views do not meet with absolute approval, and many critics have questioned the scientific foundation of his work. However, it remains a foundation of modern psychoanalysis, where people regress or go deeper into their unconscious personality to resolve the conflicts they're facing.

### b) Alfred Adler's theory of personality

Adlerian therapy, also known as individual therapy, emphasizes the individual's ability to bring about positive change in his or her own life. Adlerian therapy consists of four stages: engagement, assessment, insight, and reorientation. In Adler's theory, individuals work to overcome feelings of inferiority and to act in ways that benefit the social interest.

In Adler's approach to therapy, termed individual psychology or Adlerian psychology, therapy progresses through a series of four stages:

1. **Engagement** where the client and therapist begin to establish the therapeutic relationship. The relationship should consist of collaboration towards addressing the client's problems. The therapist should offer support and encouragement.

2. **Assessment**: The therapist works to learn more about the client's background, including early memories and family dynamics. In this part of therapy, the therapist attempts to understand how the client may have developed certain styles of thinking that are no longer helpful or adaptive for them.

3. **Insight**: The therapist offers an interpretation of the client's situation. The therapist suggests theories about how past experiences may have contributed to issues the client is currently experiencing; importantly, the therapist leaves it up to the client to decide whether these theories are accurate and useful.

4. **Reorientation**: The therapist helps the client to develop new strategies that the client can use in daily life.

One of Adler's most well-known views is that everyone feels inferior at some point in their lives (i.e. worries that one is not achieving enough). These sentiments of inadequacy support the pursuit of goals in mentally healthy people, motivating them to work toward self-improvement. Individuals can achieve great things and make a significant contribution to society as a whole by learning positive ways of coping with feelings of inadequacy.

Some people, on the other hand, have a hard time coping with feelings of inferiority, which makes them depressed. Others may act selfishly in order to feel superior to others in order to cope with feelings of inadequacy in ineffective ways. The therapist in Adlerian treatment works with the client to provide the support and encouragement they need to cope more successfully with feelings of inadequacy and build healthy techniques to overcome these sentiments.

According to him, someone with a high level of social interest may go out of their way to help others, whereas someone with a low level of social interest may bully or act antisocially. Importantly, social interest levels might fluctuate over time. A therapist can assist a client in increasing his or her social interest.

### 9.2.2. Trait Theory of Personality

Traits are psychological dimensions such as extroversion, tidiness, emotional stability, and curiosity. Traits have proven extremely useful for describing personality and predicting people's characteristic patterns of thinking, feeling, and behaving

- **Openness**: how open-minded you are and how much you like to try new things (creative, curious, cultured)
- **Conscientiousness** or how reliable, organized and diligent you are (Hardworking, organized, dependable)
- **Extraversion** (this is spelled with an "a" in personality psychology), or whether you draw energy from interaction with others. People who score low on extraversion (introverts) gain energy from inside themselves. Extraverts gain energy from people. They tend to be assertive and have the gift of the gab.
- **Agreeableness** or how friendly, tolerant and compassionate you are (cooperative, warm, agreeable).
- **Neuroticism** (**emotional instability**), which refers to emotional instability and the level of negative emotions a person has. People with high levels of neuroticism tend to be moody and tense.

### 9.2.3. Humanistic theory of Personality

The key agent of the humanist movement is **Abraham Maslow**. Maslow believed that personality was not a matter of nature or nurture but of personal choice. Specifically, he suggested that people possess free will and are motivated to pursue the things that will help them reach their full potential as human beings.

The humanistic perspective emphasized the importance of using free will to become the best human a person can possibly be. It is different from the other theories in believing that people are fundamentally good. People are always looking for new ways to improve, learn and grow, say the humanists, and it's these choices that determine our personality and behavior.

Abraham Maslow proposed a hierarchy of five innate human needs that activate and direct human behavior. Maslow described these needs as instinctoid, by which he meant that they have a hereditary component. Although we come equipped with these needs at birth, the behaviors we use to satisfy them are learned. In the hierarchy of needs, each person's physiological needs are arranged in order of importance. Lower needs must be partially satisfied before higher needs become influential. Hungry people feel no urge to satisfy the higher need for esteem when

they are preoccupied with satisfying their physiological need for food. Safety needs: security order, and stability. Belongingness, esteem needs (from self and others). Lastly needs for self-actualization.

### 9.2.4. Behavioural theories

Behavioural theory seeks to explain human behaviour by analysing the antecedents and consequences present in the individual's environment and the learned associations he or she has acquired through previous experience.

Behaviourism is the theory that people's behaviour is the result of the rewards and punishments they have experienced in the past. Applied to personality, behaviourism is the view that people are different from one another because they have experienced different patterns of rewards and punishments, which have reinforced different behaviours in different people; therefore, they have developed different personalities. Example: A person whose parents laughed at her jokes all the time might end up making more jokes later in her life than someone whose parents did not react when she made jokes.

Behaviourism is only concerned with observable stimulus-response behaviours, as they can be studied in a systematic and observable manner

### 9.2.5. Comparison of personality theories

The study of personality has a broad and varied history in psychology, with an abundance of theoretical traditions. The major theories include six different personality theories:

- Psychoanalytic theory,
- Behaviourist theory
- Humanistic theory,
- Trait theory,
- Social-cognitive theory,
- Biological theory.

## 9.2.6. Comparison of personality theories

| Theory | Author | Brief description |
|---|---|---|
| Psychoanalytic theory | Sigmund Freud | Psychoanalytic theory explains human behaviour in terms of the interaction of various components of personality. In Freud's view, human personality – including its emotions and strivings – arises from a conflict between our aggressive, pleasure-seeking biological impulses and the internalized social restraints against them. Personality is the result of the efforts to resolve this basic conflict – to express these impulses in ways that bring satisfaction without also bringing guilt or punishment. Freud theorized that the conflict centers on three interacting systems undergone by a child: id, ego, and superego.<br><br>The **id** is the primitive and instinctual part of the mind that contains sexual and aggressive drives and hidden memories<br><br>The **super-ego** operates as a moral conscience,<br><br>The **ego** is the realistic part that mediates between the desires of the id and the super-ego. |
| Behaviorist theory | John B.Watson | The belief that personality is the result of an individual's interactions with their environment, including the decisions they make and the actions they take. Psychologists can pinpoint and connect habits and behavior to predict how a person's personality was shaped.These interactions may include:<br><br>Traumatic life experiences<br><br>Lessons from your parents and teachers<br><br>Lessons from movies, TV and other forms of media<br><br>Relationships<br><br>All of the things that we have observed contribute to how we will later behave. |
| Humanistic theory | Abraham Maslow | This theory stresses that human beings are inherently good, and that basic needs are vital to human behaviors. It states that people achieve their full potential by moving from basic needs to self-actualization. |

| | | |
|---|---|---|
| Trait theory | Gordon W. Allport | Traits describe meaningful differences among individuals. According to Gordon W. Allport;the personality of an individual can be studied through a distinction between the common traits and the personal dispositions. The common traits are used to compare the people on the grounds of six values, such as religious, social, economic, political, aesthetic and theoretical. Besides the common traits, there are personal dispositions which are unique |
| Social-cognitive theory | Albert Bandura | Learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behavior. The unique feature of SCT is the emphasis on social influence and its emphasis on external and internal social reinforcement. SCT considers the unique way in which individuals acquire and maintain behavior, while also considering the social environment in which individuals perform the behavior |
| Biological theory | Charles Darwin | Biological theory deals with the process of selection of actual biological states among the very large manifold of possible ones. This may also be expressed by saying that biological theory deals with (biologically) necessary conditions but not with sufficient ones. |

## 9.2.7. Structuring personality

Is the ordering of the personality with regard to its basic elements and their union with one another?

**Personality structure**: "The personality structure of one individual can be alike to or vastly different from another person, regardless of their relation to one another."

**a) Topographical aspects of mind**

The famed psychoanalyst Sigmund Freud believed that behavior and personality were derived from the constant and unique interaction of conflicting psychological forces that operate at three different levels of awareness: the **preconscious**, **conscious**, and **unconscious**. He believed that each of these parts of the mind plays an important role in influencing behavior.

The **preconscious** consists of anything that could potentially be brought into the conscious mind. The **conscious** mind contains all of the thoughts, memories, feelings, and wishes of which we are aware at any given moment. This is the aspect of our mental processing that we can think and talk about rationally. This also

includes our memory, which is not always part of consciousness but can be retrieved easily and brought into awareness. The unconscious mind is a reservoir of feelings, thoughts, urges, and memories that are outside of our conscious awareness. The unconscious contains contents that are unacceptable or unpleasant, such as feelings of pain, anxiety, or conflict.

### 9.2.8 Dynamic aspects of mind

The mind has an internal structure three parts with separate motivations: Id (irrational and emotional part of the mind); the Ego (rational part); and the Superego (the moral part). Freud came to see personality as having three aspects, which work together to produce all of our complex behaviors: the Id, the Ego and the Superego. All 3 components need to be well balanced in order to have good amount of psychological energy available and to have reasonable mental health. However, the Ego has a difficult time dealing with the competing demands of the Superego and the Id. According to the psychoanalytic view, this psychological conflict is an intrinsic and pervasive part of human experience. The conflict between the Id and Superego, negotiated by the Ego, is one of the fundamental psychological battles all people face. The way in which a person characteristically resolves the instant gratification vs. longer-term reward dilemma in many ways comes to reflect on their "character". Id, Ego and Superego come under the dynamic aspects of personality. The dynamic aspects of self-according to Freud refer to the agents through which conflicts arising in the instincts are resolved. The adult develops ego and superego out of id through conflicts in the earlier periods of life

**Self-assessment 9.2.**

1) Which component of our personality are we born with, according to Freud that permits our basic wants to be met?
   a) ID
   b) Ego
   c) Superego
   d) No answer

2) Which aspect of our personality, according to Freud, recognizes that other people have needs and that being selfish might harm us in the long run?
   a) Ego
   b) Superego
   c) Id
   d) No answer

3) The id, ego and superego can be the best characterized as

   a) Located in our brain
   b) Part of cortex
   c) System that make up personality
   d) A and b are correct

4) According to Freud, which part of our personality is the moral part that develops due to the moral and ethical restraints placed on us by our caregivers?

   a) Id
   b) Ego
   c) Superego
   d) No answer

5) Which of the following is not one of the big personality traits?

   a) Open to new experiences
   b) Agreeableness
   c) Locus of control
   d) Neuroticism

6) Which of the following are considered tenants of personality according to trait theorists?

   a) There are only 5 personality trait, people are born with and retain the same traits throughout their life and they are entirely based on nature
   b) Traits are relatively stable over time, traits influence behavior
   c) Traits change based on situation and exposure, trait are affected by behavior and they do not affect each other (friendly and unfriendly at once)
   d) Traits can be used to predict a person's behavior and all people have the same definable traits

7) According to Freud, displacement, sublimation and projection are all types of what?

   a) Behavior need
   b) Defense mechanism
   c) Behavior change
   d) Psychosocial stage

8) In Freud's topographic model, the 'çensor' guards the border between …
   a) The Conscious and the Preconscious
   b) The Preconscious and the Unconscious
   c) The Conscious and the Unconscious
   d) The Ego and the Id

9) Which of the following statements is true of the Ego, according to Freud?
   a) It exists prior to the Id
   b) It follows the 'pleasure principle'
   c) It lends its libidinal energy to the Superego
   d) None of the above

10) Explain the difference between social and behavior theory

## 9.3. Defense mechanism

**Learning activity 9.3.**

Y, a teacher, he has the conflict at with his wife and the beats her in the morning. When he enters the classroom, he verbally abuses the pupils before giving them an assignment. He awarded them 0 out of 10 without marking them and told them that they didn't know anything, and the pupils responded that those grades were not for them. According to the case described above:

1) In your opinion, what do you think occurred to this teacher,?

Defense mechanism is an often unconscious mental process (such as repression) that makes possible compromise solutions to personal problems.

Freud believed that part of the reason so much of personality resides in the unconscious is because many motives, thoughts, and feelings are threatening for us to admit to ourselves. Thus, we develop means to keep those aspects outside of our consciousness by developing self-protective strategies.

**Types of defense mechanisms**

- **Denial** is the act of refusing to recognize the existence of something.
- **Repression** is the act of forcing something out of your mind so that you don't have to worry about it. You don't overtly refute it; instead, you choose to ignore it and eventually forget about it.

- **Reaction formation** is convincing yourself of the opposite of what is actually true.
- **Projection** is blaming someone else for a negative feature or thinking.
- **Rationalization** is the process of coming up with a logical, rational (but false) reason for a shameful idea or action.
- **Intellectualization** is the process of turning a potentially dangerous feature or thought into a cold, rational truth.
- **Displacement** is the act of guiding an undesired impulse toward a more acceptable outcome.
- **Regression** is reverting to an earlier stage of life development when you are faced with conflict
- **Sublimation** is the process of transforming shameful desires into something honorable; it is the process of redirecting energy to something more acceptable..
- **Compartmentalization** Separating your life into independent sectors may feel like a way to protect many elements of it. Like when you choose to not discuss personal life issues at work, you block off, or compartmentalize, that element of your life. This allows you to carry on without facing the anxieties or challenges while you're in that setting or mindset.

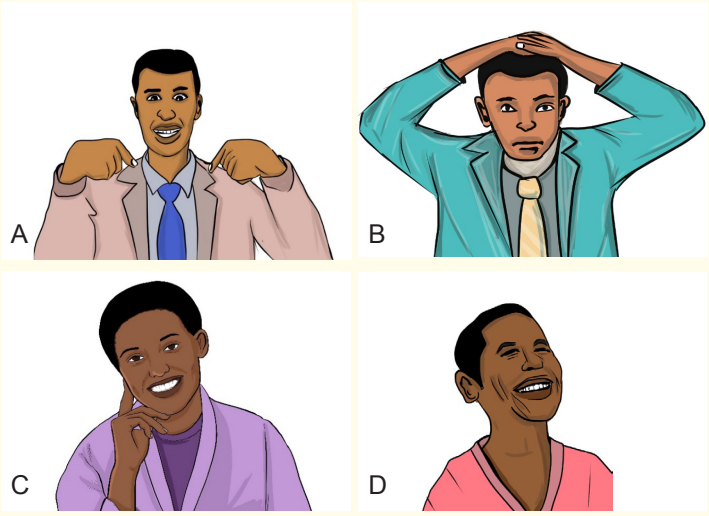
## Self-assessment 9.3.

1) Match the types of defense mechanism in A (Types of defense mechanism) with their respective definitions in column B (their definitions)

| COLUMN A | COLUMN B |
|---|---|
| 1. Projection | A. Act of refusing to recognize the existence of something. |
| 2. Repression | B. Blaming someone else for a negative feature or thinking. |
| 3. Denial | C. Is the act of forcing something out of your mind so that you don't have to worry about it. |
| 4. Displacement | D. The process of coming up with a logical, rational (but false) reason for a shameful idea or action. |
| 5. Rationalization | E. The act of guiding an undesired impulse toward a more acceptable outcome |
| 6. Sublimation | F. The process of transforming shameful desires into something honorable; it is the process of redirecting energy to something more acceptable |

## 9.4. The five-Factor Model of personality

**Learning activity 9.4.**




Observe pictures above and answer following questions:

1) What is a difference between pictures above?
2) From your understanding how can you interpret pictures A,B,C and D ?

### 9.4.1. Concept of The five-factor model of personality (FFM)

**The five-factor model of personality** (FFM) is a set of five broad trait dimensions or domains, often referred to as the "Big Five": **Extraversion**, **Agreeableness**, **Conscientiousness**, **Neuroticism** (sometimes named by its polar opposite, Emotional Stability), and **Openness** to Experience (sometimes named Intellect).

- **Extraversion**

The quantity and intensity of preferred interactions, degree of activity, need for stimulation, and capacity for delight are all indicators of extraversion. Extraverts are outgoing, lively, talkative, person-oriented, optimistic, fun-loving, and affectionate, whereas introverts are reserved (but not unpleasant), somber, distant, independent, and quiet. Introverts are neither sad nor negative, but they lack the enthusiastic high spirits that are characteristic of extraverts.

- **Agreeableness**

Agreeableness, like Extraversion, is an interpersonal attribute that describes the types of relationships that a person prefers on a scale of compassion to antagonism. Softhearted, good-natured, trustworthy, helpful, forgiving, and altruistic people have

a high A score. They are receptive and sympathetic, and they feel that most others want to and will behave in the same way they do. Those with a low Agreeableness score (referred to as hostile) are cynical, rude or even abrasive, distrustful, uncooperative, and impatient, as well as being manipulative, spiteful, and cruel.

Conscientiousness

It measures how well goal-directed behavior is organized, persistent, controlled, and motivated. Those with a high level of conscientiousness are organized, dependable, diligent, self-directed, scrupulous, ambitious, and persistent, whereas those with a low level of Conscientiousness are aimless, unreliable, lazy, careless, lax, neglectful, and hedonistic.

- **Neuroticism**

It describes a long-term state of emotional adjustment and instability. Individuals with a high level of neuroticism are more likely to experience mental anguish. Negative affectivity, such as angry anger, depression, anxiety, and volatility, are all symptoms of high neuroticism, but neuroticism also includes stress sensitivity, self-consciousness, excessive cravings, urges, and difficulties enduring the frustration created by not acting on one's urges.

- **Openness to Experience**

Openness to Experience is less widely studied than either Neuroticism or Extraversion, and is frequently misconstrued, as the alternative name of intelligence suggests. Openness to Experience, on the other hand, is distinct from ability and intellect in that it entails the deliberate pursuit and appreciation of experiences for their own sake. Individuals who are open are more curious, imaginative, and willing to explore unusual ideas and values than those who are closed; they experience the full range of emotions more intensely than those who are closed. Closed people (those with a low level of Openness to Experience) are more traditional in their views and attitudes, conservative in their tastes, and dogmatic and rigid in their convictions; they are behaviorally stiff and emotionally unresponsive.

## 9.4.2. Developing personality

Personality development is the development of the organized pattern of behaviors and attitudes that makes a person distinctive. Personality development occurs by the ongoing interaction of temperament character, and environment. Personality development helps an individual to gain confidence and high self-esteem.

Personality development also is said to have a positive impact on one's communication skills and the way he sees the world. Individuals tend to develop a positive attitude as a result of personality development.

- **Infancy**

An infant goes through the first stage of development throughout the first two years of life: learning basic trust or mistrust (hope). The newborn learns trust and security, as well as a basic optimism, after being well-nurtured and loved. When a newborn is mistreated, he or she grows uneasy and learns "fundamental mistrust."

- **Toddlerhood**

The second stage occurs between the ages of 18 months and two years and three to four years in early childhood. It's about Learning Autonomy vs. Shame. If the child has been well-parented, he or she will emerge from this stage with self-assurance and a sense of control. Depending on the temperament of the child, the early stages of this period can also include tempestuous tantrums, stubbornness, and negativism.

- **Preschool**

The third stage occurs during the "play age," or the later preschool years from about three to entry into formal school. The developing child goes through Learning Initiative or Guilt (Purpose). The child learns to use imagination; to broaden skills through activeplayand fantasy; to cooperate with others; and to lead as well as to follow. If unsuccessful, the child becomes fearful, is unable to join groups, and harbors guilty feelings. The child depends excessively on adults and is restricted both in the development of play skills and in imagination.

- **School age**

The fourth stage, Learning Industry or Inferiority (Competence) , occurs during school age, up to and possibly including junior high school. The child learns to master more formal skills like relating with peers according to rules ,progressing from free play to play that is structured by rules and requires teamwork (team sports) and learning basic intellectual skills (reading, arithmetic). At this stage, the need for self-discipline increases every year. The child who, because of his or her successful passage through earlier stages, is trusting, autonomous, and full of initiative, will quickly learn to be industrious. However, the mistrusting child will doubt the future and will feel inferior.

- **Adolescence**

Adolescents are starting to think abstractly and can comprehend their own self-identity and personalities. The teenager begins to think about identity issues such as: Who should I be? What should I place a premium on? And what kinds of hobbies should I pursue? To establish a strong sense of self-identity, the teen must answer these questions. This stage is characterized by the exploration of multiple roles and personalities.

From the ages of 13 to 14, the fifth stage, Learning Identity or Identity Diffusion (Fidelity), occurs during adolescence. During this period, the young person develops self-assurance rather than self-doubt, and experiments with many constructive roles rather than embracing a bad identity such as delinquency. In later adolescence, a defined sexual identity is established, and the well-adjusted teenager looks forward to achievement. The adolescent seeks leadership (someone to inspire him or her) and develops a set of values to live by throughout time.

Parents are usually the first to recognize that their child has a problem with emotions or behaviors that may point to a personality disorder.

- **Young adult**

The development of close emotional relationships with other people is a struggle for a young adult. In this context, the term “intimate” refers to social and emotional interactions with others rather than sexuality. Those who do not develop a sense of intimacy, on the other hand, become separated from social contact.

- **Middle-aged adult**

Adults in their forties and fifties have a strong desire to leave their mark on the world, to create something of lasting value and importance. Finding a sense of direction in life is a major theme. When a person fails to generate something meaningful, he or she becomes stuck and stops moving forward; as a result, the individual may become selfish and self-absorbed.

- **Old adult**

It is natural in old age to reflect on one’s life and what has been done. Integrity is developed by people who feel good about what they have done. For people who have received negative evaluations, there is sadness, as well as a sense of regret and guilt for the life they have lived.

## Self-assessment 9.4.

1) The big five model of personality contains the following dimensions:
   a) Psychotism, neurocism, extraversion, openness, agreeableness
   b) openness, conscientiousness, extraversion, agreeableness, narcissism
   c) openness, narcissism, psychotism, conscientiousness, extraversion
   d) conscientiousness, agreeableness, neuroticism, openness, extraversion

2) Which of the following is not one of the Big 5?
   a) Agreeableness
   b) Introversion
   c) Neuroticism
   d) Conscientiousness

3) M. is friendly, always willing to help others and compassionate. We would expect Lana to score highly on:
   a) Extraversion
   b) Agreeableness
   c) Neuroticism
   d) Openness to experience

4) John is self-disciplined, focused on achievement and keen to do his duty. He would be expected to score highly on:
   a) Neuroticism
   b) Agreeableness
   c) Extraversion
   d) conscientiousness

5) Talkative vs. silent; frank, open vs. secretive; adventurous vs. cautious; sociable vs. reclusive; these traits describe which dimension of personality?
   a) Agreeableness
   b) Conscientiousness
   c) Extraversion
   d) Culture

6) According to Erikson's eight stages of psychosocial development, during which age does the psychological stage of trust vs. mistrust develop?

a) early childhood
b) infancy
c) adolescence
d) adulthood

7) Which of the following is NOT one of the Erikson's stages of psychosocial development?
   a) Industry vs. Inferiority
   b) Trust vs. Mistrus
   c) Life vs. Death
   d) All of the above are stages

8) At what time of life does Erikson stage Industry vs. Inferiority occur?
   a) old age
   b) adolescence
   c) School age
   d) infancy

## 9.5. Determinants of behavior

**Learning activity 9.5.**

When Mr. K and her sister G were in a holidays of end year accompanied their parents in a marriage party in Eastern province of the country; they remained there for 2 days because they wanted to visit other student in the village. When their parents were coming back to Kigali where they live, their car got a severe accident and both died on site! After burial when K and G went to back to the school Mr. K remained quiet and did not tell the situation to any one of classmates while his sister G was constantly crying and telling her friends about the death of their parents

Answer following questions:

1) In your opinion, what is the reason why Mr. K was so silent?
2) In your opinion, why did his sister tell her friends about her experience?
3) From your understanding, why females talk a lot compared to males?

Human behavior is any activity or human activity, both of which can be observed directly (overt behavior), or which cannot be observed by others (covert behavior)

For years psychologists have debated whether human behavior is something we are born with or something we acquire - the "nature/nurture" debate. There are four determinants of behavior; *prewiring* (nature), *formative years* (nurture), *contemporary society*, and *creativity*. Each have had an important role to play in the evolution of human kind, namely in the first, second, and third watersheds of that evolution.

- **Prewiring**

The first determinant of our behaviour is "instinct" or "prewiring", a genetic inheritance that predisposes us to behave in particular ways. This is the "nature" argument. "I am the way I am because I was born this way and, given that is the way I am wired, there is nothing that can be done to change my behaviour." (If this argument was totally true, I would not try to learn anything. I either have natural ability or I do not). Perhaps it is partially true. Prewiring can be demonstrated by the nest-building practices of birds and the web-spinning of spiders. This is not behaviour that they have to learn. It is instinct. They have no choice. Prewiring can also be demonstrated in the human species by psychological differences between men and women. Women, on average, have greater oral ability. Men, on average, have higher spatial ability and are more competitive. On these characteristics the human species has no choice. This is the way we are prewired.

- **Formative Years**

The second of the determinants of our behaviour is learned in our formative years from our experiences with siblings, with parents or with guardians. A child arrives in the world wishing to survive. It quickly realizes that resources for that survival come from parents and so the child quickly discovers through trial and error what strategies will maximize those resources. Further, the child needs to establish for itself an ecological niche, one in which it is differentiated from others also competing for resources. The greatest competitors for resources in a child's life are its parents and its siblings.

- **Contemporary Society**

The third of the four determinants of our behaviour is the contemporary society in which each of us finds ourselves. People seem to quickly pick up social mannerisms such as accents and gestures when they relocate between countries or cultures. It is a case of the unconscious application of the maxim "When in Rome, do as the Romans do." Accents are a very obvious example. We acquire them unconsciously in order to fit in. The need for acceptance, for belonging, for not being too different

(in other words the need for “affiliation”) is prewired within us, probably strongly influencing the second and third determinants of behaviour.

Similarly our oral communication is underpinned by our prewired need to communicate between members of our species; our introversion or extraversion, coupled with the language we speak is influenced by our formative years; yet our ideographic language is contemporary, subtlety changing.

Behaviours based upon those of contemporary society are quite malleable. Our adaptability as a human species attests to that.

- **Creativity**

The fourth determinant of our behaviour is imagination, creativity or innovation, the ability to imagine and/or construct something hitherto unknown. Although the bounds of our creativity, the range within which our creativity can occur, is limited by prewiring, by formative years and by contemporary society (technology, for example) we’ll never know what those bounds are until we push them.

Behaviours based on creativity are the easiest to change. Hence “good ideas” are very fragile. The conservatism of the human species (anchored to prewiring, formative years, and contemporary society) attests to the extent to which creativity is not a strong behavioral determinant.

In Summary, It is suggested that our behaviour is influenced by our prewiring, by our formative years, by the behaviour of those around us which we model, and by our creativity

## Self-assessment 9.5.

1) Behavior refers to:

   a) Action or reaction of the object or organism, usually in relation to the environment.

   b) Action of human beings only.

   c) Reaction of human beings against any action from others.

   d) None of the above.

2) Which of the following is not a covert behaviour?

   a) Thinking

   b) Feeling

   c) Dreaming

   d) Talking

3) Which of the following is not an overt behaviour?

   a) Dreaming

   b) Walking

   c) Laughing

   d) Fighting

4) Choose the letter corresponding to the right response

   Behaviors based on ……..……are the easiest to change and is not a strong behavioral determinant.

   a) Prewiring

   b) Formative Years

   c) Creativity

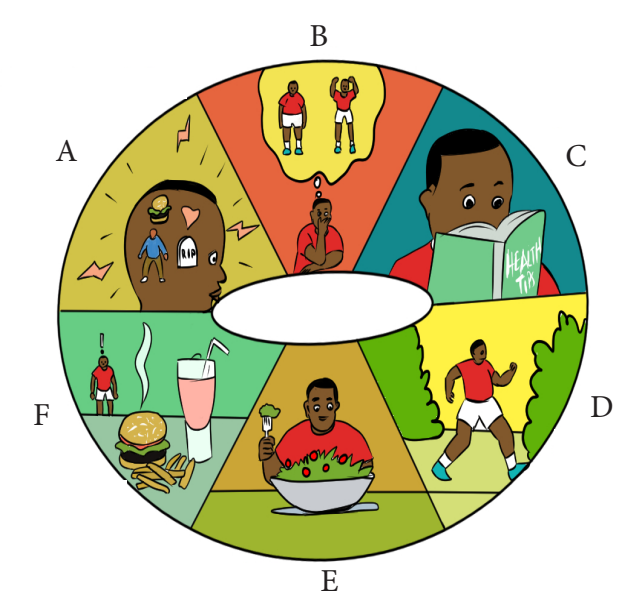
   d) Contemporary Society

5) State 4 determinants of human behavior

## 9.6. The six Stages of Behavior Change

**Learning activity 9.6.**

Observe well images above and answer questions




1) Describe the meaning of images A, B, C, D, E and F
2) From your understanding what steps of behavior change?

Behaviour change, in context of public health, refers to efforts put in place to change people's personal habits and attitudes, to prevent disease. Behaviour change in public health can take place at several levels and is known as social and behaviour change. Change occurs gradually and relapses are an inevitable part of the process. People are often unwilling or resistant to change during the early stages, but they eventually develop a proactive and committed approach to changing a behaviour.

- **Stage 1: Pre-contemplation**

The earliest stage of change is known as precontemplation. During the pre-contemplation stage, people are not considering a change. People in this stage are often described as "in denial," because they claim that their behavior is not a problem. In some cases, people in this stage do not understand that their behavior is damaging, or they are under-informed about the consequences of their actions.

- **Stage 2: Contemplation**

During this stage, people become more and more aware of the potential benefits of making a change, but the costs tend to stand out even more. This conflict creates a strong sense of ambivalence about changing. Because of this uncertainty, the contemplation stage of change can last months or even years.

- **Stage 3: Preparation**

During the preparation stage, you might begin making small changes to prepare for a larger life change. For example, if losing weight is your goal, you might switch to lower-fat foods. If your goal is to quit smoking you might switch brands or smoke less each day. You might also take some sort of direct action such as consulting a therapist, joining a health club, or reading self-help books.

- **Stage 4: Action**

During the fourth stage of change, people begin taking direct action in order to accomplish their goals. Oftentimes, resolutions fail because the previous steps have not been given enough thought or time.

- **Stage 5: Maintenance**

The maintenance phase of the Stages of Change model involves successfully avoiding former behaviours and keeping up new behaviours. If you are trying to maintain a new behaviour, look for ways to avoid temptation. Try replacing old habits with more positive actions. Reward yourself when you are able to successfully avoid a relapse.

- **Stage 6: Relapse**

In any behaviour change, relapses are a common occurrence. When you go through a relapse, you might experience feelings of failure, disappointment, and frustration.

The key to success is to not let these setbacks undermine your self-confidence. If you lapse back to an old behaviour, take a hard look at why it happened

## Self-assessment 9.6.

1) Considering six stages of behavior change. A person who does not regularly exercise makes a plan to exercise in the upcoming month. He schedules an appointment to speak with his healthcare provider. Which stage of stages of behavior change does this best describe?
   a) Pre contemplation
   b) Contemplation
   c) Preparation
   d) Action

2) Doctor tells persons that they're at risk of developing hypertension unless they make healthier choices, like daily walks and a better diet. Person may think there's nothing wrong with them. Here's what the stages may look like for them:
   a) Maintenance
   b) Contemplation
   c) Pre contemplation
   d) Relapse

3) Your Dad is a drunker, where he takes 5 SKOL a day. As his child who have information about health you are explaining to him the side effects and complications of alcohol. He understand that and he starts reading books to see if what you are saying is true. At which stage of behavior change does this father is
   a) Contemplation
   b) Contemplation
   c) Preparation
   d) Action

## 9.7. Motivation and motivation theories

**Learning activity 9.7.**

When employer H. arrived at the management centre, he found that some of the staff were constantly in training and others were not. After collecting information, he sought out how to help employees to improve their skills. To do that, he has made a list of employees who will be attending the training and looking for training that will take place away from their workplace where they will get money to help them to find accommodation and to attend quiet training without interfering work and the training

1) In your opinion what was intension of the manager to the staffs?

### 9.7.1. Motivation

**Motivation** is something that pushes people to do action or feel a certain way. Motivating someone entails encouraging and inspiring them. Turning on or igniting a feeling or action is sometimes referred to as motivation. Motivation is quite powerful. It has the ability to persuade, convince, and motivate you to take action. Motivation, in other terms, can be defined as a driving force for action. It is a power capable of completely altering your life. Our lives are propelled forward by motivation. It is motivated by a desire to succeed. There is no pride in life without success; there is no happiness or excitement at work or at home. Life can often feel like a skewed wheel that takes you on a rocky trip. Complacency is the worst enemy of motivation. Complacency breeds frustration, and frustrated people give up because they can't figure out what's important.

You can proceed to attain your goal and motivate others after you comprehend the principle that motivates the motivator. Your desire and attitude are your internal motivator. It spreads quickly. The key to achieving the response you want from others is to have a positive attitude. How can one keep focused and motivated? There are two sorts of motivation: intrinsic (internal) and extrinsic (external).

**a. External motivation**

Extrinsic motivation is defined as conduct that is influenced by external incentives. These incentives can be monetary or academic in nature, or intangible in nature, such as acclaim or celebrity. Extrinsically motivated people will continue to do something even if it isn't enjoyable or rewarding in and of itself for example, doing something at work that you don't find enjoyable or gratifying in order to earn a living. Extrinsic

motivation is used in operant conditioning, which is when someone or something is trained to behave in a certain way as a result of a reward or punishment. Although extrinsic drive can be beneficial in some instances, it can also contribute to burnout or a loss of effectiveness over time.

**b. Internal motivation**

Internal motivation is the satisfaction that comes from completing a task, not for the sake of achievement or victory. It's more than just attaining a goal; it's a sense of accomplishment. A rewarding sensation is not obtained by achieving an unworthy goal. Because internal motivation comes from inside and manifests as self-motivated, it is long-lasting. To achieve, motivation must be found and continually strengthened. Keep your objectives in sight and read them every morning and evening. Recognition and accountability are the two most powerful motivators. Being valued, treated with respect and decency, and having a sense of belonging are all aspects of recognition. A sense of belonging and ownership is produced by taking on responsibilities. People do not believe they are being treated as things. They believe they are a valuable member of a team. The satisfaction of doing the right thing is motivating in and of itself.

Intrinsic and extrinsic motivation can sometimes complement each other to help you complete a task. If you have a job and are working on a project, for example, you may be extrinsically motivated to complete it in order to meet a teammate's deadline. You may be organically motivated to complete the assignment because you enjoy working on it and want to do a good job.

## 9.7.2. Motivation theory

**a. Content theories**

The idea that motivation is based on the needs of the individual is emphasized in content theories. Need can be defined as a state in a person's life that motivates them to act and engage in certain behaviours. Individual needs, and thus motivation levels, vary, according to content theorists. These theories are often known as needs theories since they are generally associated with a perspective that emphasizes the need of figuring out "what" motivates us. They try to figure out what our "needs" are and then link motivation to meeting those needs. The following are some of the most important content theories:

### i. Maslow's hierarchy of needs

Maslow's hierarchy of needs is a motivation theory that argues that an individual's conduct is dictated by five categories of human needs. Physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs are some of these needs.

When a lower need is met, it no longer motivates behaviour; instead, the next higher need takes over. The five needs are arranged in a logical order. When lesser wants are met, higher needs become more significant. Higher-order motivation comes from higher-order needs. Priorities fluctuate from person to person. The approach aids managers in determining which specific demands are important to employees and, as a result, appropriate motivators.

### ii. Alderfer's ERG Theory

Alderfer developed a model of motivation aligning with Maslow's motivation theory by reducing the five needs suggested by Maslow to three needs. These needs are Existence, Relatedness and Growth. According to Alderfer, there is no hierarchy of needs and any desire to fulfil a need can be activated at any point in time. This results in the lower level needs not requiring to be satisfied in order to satisfy a higher level need.

**Existence needs**: include the necessity for material and energy exchange, as well as basic physiological and safety requirements.

**Relatedness** needs: interactions with human surroundings, sharing or mutuality process; desire for interpersonal relationships and attention; is similar to Maslow's social needs and part of the esteem needs.

**Growth needs**: People make creative or productive efforts for themselves; personal growth and development are part of Maslow's esteem and self-fulfillment wants. Unlike Maslow, more than one degree of need might be applicable at the same time here. There is no hierarchy; people may attempt to meet their own development needs, but not all relatedness needs are met.

### iii. McClelland's needs

David McClelland proposed a motivational model that divided demands into three categories: *achievement, affiliation*, and *power*. He claimed that numerous motives govern an individual's conduct at any given time. However, in most instances, one or two motives predominate, and motivation varies according to the demands.

**Need for Achievement**: People who have a high need for achievement want to succeed, thus they favor moderate risks. They select those tasks in which they can take personal responsibility for solving issues. Achievers need feedback on a frequent basis to keep track of their development. High performers should be given demanding projects with reachable goals by management.

**Need for Affiliation**: Those with a strong need for affiliation seek out positive interactions with others and want to be accepted by them. Companionship and mutual aid are important to such persons. Individuals with a high level of affiliation seek jobs that allow them to contact with others on a regular basis. They have a tendency to follow the conventions of their workplace. Managers should establish an environment that fosters supportive interpersonal relationships for persons seeking affiliation, as this type of group formation leads to goal achievement.

**Need for Power**: The desire to influence people expresses the yearning for power. People that are looking for power are often vocal and strong. They are prepared to engage in a fight. There are two forms of power needs: personal and institutional. Those who crave personal power want to command others, and this desire is frequently viewed as bad. People who need institutional power desire to oversee other people's efforts to achieve the organization's goals. It has been observed that managers who have a strong desire for institutional power are more effective than those who have a strong desire for personal power.

### iv. Herzberg's two-factor theory

Frederick Herzberg developed motivation-hygiene theory on the basis of studies to understand the factors affecting satisfaction or dissatisfaction in a work environment. These factors have been classified as motivators and hygiene factors respectively.

**Hygiene Factors**: These are the basic factors in a job and also known as extrinsic factors. Although, they may not provide positive satisfaction but absence of these factors lead to dissatisfaction. Examples of hygiene factors include status, job security, salary and fringe benefits.

**Motivators**: These are internal elements that contribute to job happiness. Intrinsic factors are what they're termed. The absence of these elements may not lead to discontent, but their presence in the workplace does. Job challenge, advancement, autonomy, and responsibility are examples of motivators.

### b. Process Theories

Process theories concentrate on "how" part of motivation. They describe and analyze how behavior is energized, directed and sustained. The theories under process theories are discussed as follows:

#### i. Expectancy Theory

Vroom's theory of motivation suggests that individuals are motivated towards objectives if they think that their performance will be rewarded for the efforts they put in. Vroom suggested three variables in this study **Expectancy**, **Instrumentality** and **Valence**.

- **Expectancy**: Effort lead to performance
- **Instrumentality**: Performance lead to outcome
- **Valence** is the importance associated by an individual with respect to the expected outcome. It is an expected and not the actual satisfaction that an employee expects to receive after achieving the goals. This is dependent on individuals' needs, values, goals, preferences and source of motivation.

#### ii. Equity Theory

The equity concept was suggested by J.S. Adams. According to this theory, employees have high expectations of justice, balance, and fairness in their treatment by their employers. In this viewpoint, people are motivated by a desire to be treated equally at work.

**Inputs**: These are the quality and quantity of an employee's contributions to the workplace like: time, effort, loyalty, hard work, commitment, ability, adaptability, flexibility, tolerance, determination, excitement, management trust, coworker support, and skills are among them.

**Outputs**: The positive and negative outcomes that an individual obtains after putting inputs into an activity are referred to as outputs. They can exist in both tangible and immaterial forms. Job security, esteem, remuneration, employee benefits, acclaim, and recognition are examples of outputs.

### c. Reinforcement Theory

Reinforcement theory is based upon "law of effect" Individuals tend to repeat behavior which is rewarded while the behaviour which gives punishment is not repeated. Today managers focus on positive rewards to elicit desirable behaviour.

### d. Behavioral Theories

Behavioral is described as the way a person conducts themselves towards others. When workers are treated as humans rather than machines, they take action to their particular work situation in a constructive way by increasing individual productivity. Thus, in lines of understanding and improving the human behavior, McGregor and William Ouchi suggested Theory X and Y and Theory Z respectively.

#### i. McGregor's Theory X and Theory Y

McGregor has suggested two contrasting theories on motivation based on certain assumptions

#### 1. Theory X

Theory X revolves around the traditional approach to motivation and control. It represents traditional stereotyped and authoritarian management style. It has following assumptions:

- An average human being is lazy and doesn't like to work. He will avoid work if he can
- Most human beings lack ambition and thus don't want responsibility. They prefer to be directed rather than to lead.
- Most human beings are self-centred and indifferent to the organizational goals.
- Most people are not creative to solve organizational problems.
- Most human beings are motivated with physiological and safety needs

These assumptions suggest that the human beings can be motivated by money and the benefits required for satisfying the physical and safety needs. According to the theory, the employees are managed by punishments and strict control. This type of motivational process can only work in the environment whereby the work is repetitive in nature and promotions are not frequent. McGregor advocated Theory Y refuting the assumptions of Theory X as nowadays the employees don't just get motivated with money and related benefits

#### 2. Theory Y

Theory Y assumes that people are not unreliable and lazy by nature. It has a positive view on employee motivation and their behavior. The management undertakes the responsibility of helping the employees to develop and express their creative skills. The assumptions of McGregor's Theory Y are as follows:

- An average person doesn't dislike work rather work is natural as play.
- An average human being will exert self-control and direct himself for his objectives.
- An average individual knows that he will be rewarded if he is committed for the objectives. And generally these rewards are higher order needs namely ego satisfaction and self-actualization.
- An average person tends to seek responsibility and is ambitious.
- Imagination, creativity, and ingenuity can be used to solve work problems most of the people.
- Considering the present scenario of present industrial life, the intellectual potential of an average man is only partly utilized. Theory Y is more real and generally used in the organizations. In support of this theory, McGregor suggested motivational practices like decentralization, delegation, job enlargement, participation and consultative management.

## Self-assessment 9.7.

1) Maslow's hierarchy of needs includes all of the following except:
   a) Physiological
   b) Safety
   c) cognition
   d) Esteem
2) In Maslow's hierarchy of needs, food, water and sleep are considered _____motives.
   a) Safety
   b) Self-actualization
   c) Physiological
   d) Esteem
3) In Maslow's theory of motivation, social needs are satisfied by ….
   a) Job security
   b) Food and water
   c) Love and friendliness
   d) Job responsibility
4) Explain the factors affecting satisfaction or dissatisfaction in a work environment developed by Herzberg
5) List the motivation models proposed by David McClelland
6) Describe the needs developed by Alderfer's ERG

## End unit assessment 9.

**Question one and two are True and false questions**

1) An optimist believes that the best possible outcome will occur and hopes for it even if it is unlikely.

2) The qualities of pessimistic people are self-motivated, they surround themselves with other people with the same qualities.

**Multiple choice questions**

3) According to Freud, which part of our personality is the moral part that develops due to the moral and ethical restraints placed on us by our caregivers?
   a) Id
   b) Ego
   c) Superego
   d) No answer

4) Which of the following is not one of the big personality traits?
   a) Open to new experiences
   b) Agreeableness
   c) Locus of control
   d) Neuroticism

5) Which of the following are considered tenants of personality according to trait theorists?
   a) There are only 5 personality trait, people are born with and retain the same traits throughout their life and they are entirely based on nature
   b) Traits are relatively stable over time, traits influence behavior
   c) Traits change based on situation and exposure, trait are affected by behavior and they do not affect each other (friendly and unfriendly at once)
   d) Traits can be used to predict a person's behavior and all people have the same definable traits

6) According to Freud, displacement, sublimation and projection are all types of what?
   a) Behavior need
   b) Defense mechanism
   c) Behavior change
   d) Psychosocial stage

7) In Freud's topographic model, the 'çensor' guards the border between …
   a) The Conscious and the Preconscious
   b) The Preconscious and the Unconscious
   c) The Conscious and the Unconscious
   d) The Ego and the Id

8) Considering six stages of behavior change. A person who does not regularly exercise makes a plan to exercise in the upcoming month. He schedules an appointment to speak with his healthcare provider. Which stage of stages of behavior change does this best describe?
   a) Pre contemplation
   b) Contemplation
   c) Preparation
   d) Action

9) Maslow's hierarchy of needs includes all of the following except:
   a) Physiological
   b) Safety
   c) cognition
   d) Esteem

10) M. is friendly, always willing to help others and compassionate. We would expect Lana to score highly on:
   a) Extraversion
   b) Agreeableness
   c) Neuroticism
   d) Openness to experience

11) John is self-disciplined, focused on achievement and keen to do his duty. He would be expected to score highly on:
   a) Neuroticism
   b) Agreeableness
   c) Extraversion
   d) Conscientiousness

12) Which of the following is not an overt behaviour?
   a) Dreaming
   b) Walking
   c) Laughing
   d) Fighting

**Open questions**

13) State 4 determinants of human behavior
14) List the types of defence mechanism
15) Explain what good personality means?

# UNIT 10 SOCIOLOGY OF HEALTH AND ILLNESS

## Key unit competence:

Explain the concepts of sociology in health promotion and wellbeing








1) Describe the above illustrated image in terms of sociology and health

## 10.1. Definition and characteristics of sociology

**Learning activity 10.1.**



1) What do you notice from the picture above in relation to the society?

Sociology is a study of social facts, which are ways of acting, feeling and thinking common to a society which coerce individuals in that society to conform. Sociological knowledge enables us to look at society and human relationships in a certain way and to understand, explain and make predictions about members of that society. The broad statement that sociology is the study of society can be refined by more specific definitions such as 'the scientific study of human society through the investigation of the social behavior of man.

Sociology is the youngest among the Social Sciences. The term "Sociology" is derived from Latin word "Socius" means 'Companion' or 'Associate' and Greek word "LOGOS" means 'Science' or 'Study of Society'. Thus the etymological meaning of the term Sociology is "Study of Society". The nature and characteristics of sociology can be summarized in the following way:

1. **Sociology is an independent science**

Sociology is not treated and studied as a branch of any other science like philosophy or political philosophy. As an independent science, it has its own field of study, boundary and method of approach.

2. **Sociology is a Social Science and not a physical Science**

Sociology belongs to the Social Science and not to Physical Science. As a social science, it concentrates its attention on man, his Social behavior, Social Activities, and Social life. It is intimately related to other social Sciences like Anthropology, Political Science, Economics, Psychology, etc.

3. **Sociology is a categorical and not a Normative Discipline**

Sociology Studies things "as it is" and not "as they ought to be". As a Science, Sociology is necessarily silent about the questions of value. It does not make any kind of value-judgements. Its approaches neither moral nor immoral but amoral. It is ethically neutral. It cannot decide the directions in which Sociology ought to go.

4. **Sociology is a pure science and not an Applied science**

Sociology is a pure Science because the immediate aim of Sociology is the acquisition of knowledge. On the contrary an applied science is interested in the application or utilization of that knowledge. Sociologists never determine questions of public policy and do not recommend legislators what laws should be passed or repealed. But the knowledge acquired by a Sociologist is of great help to the administrator, legislators, diplomats, teachers, social workers, and citizens.

5. **Sociology is relatively an abstract science and not a concrete science**

Sociology does not confine itself to the study of particular or concrete instances of human events. But it studies the abstract forms of human events and their patterns. For example, it does not limit itself to the study of any particular war or revolution. On the contrary, it deals with them in a general or abstract manner, as social phenomena, i.e., as types of Social conflict. In a similar manner, it makes such generalized Studies of marriage, religion, family, group, etc.

6. **Sociology is a Generalizing and not a particularizing science**

Sociology tries to make generalizations on the basis of the study of some selected events. For example, a sociologist makes generalizations on the following:

- Joint families are more stable than the nuclear families.
- Social changes tale place with greater rapidity in urban communities than in tribal or rural communities.

7. **Sociology is a General Social science and not a Special Social Science**

The area of inquiry of Sociology is general and not specialized. It is concerned with human activities whether they are political, economic, religious, social, etc., in a general way.

### 8. Sociology is both an Empirical and a Rational Science

Sociology is an empirical science because, it emphasizes the facts that result from observation and experimentation, it rests on trial, or experiment or experience. It is a rational Science because it stresses that role of reasoning and logical inferences. An empiricist collects facts where as a rationalist co-ordinates and arranges them. All modern science including Sociology avail themselves of both empirical and rational resources.

**Self-assessment 10.1.**

1) Define sociology.
2) Describe the characteristics of sociology

## 10.2. Definition of health and illness in social context

**Learning activity 10.2.**

**Case**: A father went in a vacation with his family; in their way, they meet with a disabled person who was begging for money. In their discussion, the disabled person tells them that he lost his arm in a car accident which happened when he was still young. He said that he was very hungry and that his survival depends on humanitarians who have him something. The father gave him money and left. In their car the child asks his parent this question “why does that man survival depend on begging? Losing one arms means that he is ineligible to do anything? In your groups debate on these two question

Health is a physiological and a psychological state but it is also, fundamentally, a social state. The human being make sense of health and illness by drawing on a stock of current social belief, ideas and practices. In the process of social learning; humans start to interpret and discuss the social world since infancy. The educational institution helps people to understand ‘what health is’ and is not, and what are appropriate responses to disease and illness. In encounters with the structures of power in society, people learn what it means to be ‘sick’, ‘dependent’ or ‘disabled’. As they come into contact with organisations which provide health services they develop their understanding of how to be a ‘patient’ or a ‘career’.

Medical sociologists use social constructionist theory to explain health and illness. In medical profession, disease is a biological condition. Referring to the social constructionist theory, illness is the social meaning of that condition.

- In social constructionist theory, impairment refers to a physical illness or injury; disability is the social experience of impairment.
- Illness can reshape an individual's identity. For example, deafness can be a cultural identity that replaces individual identity.
- Medicalization—the act of reducing illness to strictly a medical definition ignores the social context of disease.




***Figure 105 This image emphasized the role of economy, employment and poverty; early life experience; neighborhood environments; as they affect the human well-being***

## Self-assessment 10.2.

1) Match the terms in column A with their specific definition or examples in column B

| Column A | Column B |
|---|---|
| 1. Medicalization | A. Is the social experience of impairment |
| 2. Impairment | B. Refer to physical illness or injury |
| 3. Disability | C. Reduce illness strictly to a medical disease |
| 4. In social context illness | D. Is the social meaning of the medical disease |

## 10.3. Biomedical model and holistic approach toward health

**Learning activity 10.3.**

Search online books about model of health and with example explain the following terms

1) Bio-chemical model of health
2) Holistic approach of health

### 10.3.1. Introduction

A positive view of health is maintaining and achieving a balanced diet and a healthy lifestyle. the individual may regard running and walking in a positive view or taking supplements for mental and physical well-being. Generally feeling good within is a good indicator of good health. However, obsession toward having positive view of health can have its consequences physically and mentally. For example, physical activity can become unhealthy when it's taken to extreme measures. People normally start off at a moderate pace to stay healthy but slowly become obsessed with fitness and health. This compulsive behaviour could lead to heart and arteries been damage due to excessive training and consequently to heart attack.

A negative view on health is believing you don't have to go to the local General practitioner because you feel ok within yourself. Due to not seeing any physical evidence or symptoms of illness such as blood and vomiting, they automatically assume they are healthy. Individuals like this regard good health as normal and they do the minimum to maintain their health. The problem with the negative attitude towards health is it puts the individual at a huge disadvantage regarding their own health as certain diseases may only show physical symptoms when the disease may become untreatable, such as pancreatic cancer and heart disease. These individuals tend to live a shorter life than the general population, as they don't act upon changes in their health or physical well –being.

### 10.3.2. The Biomedical Model of health

The Biomedical model is a scientific method used by clinicians and other health professionals. It treats the human body as a very complex device and advocates the treatment of symptoms through the use of medical intervention. The main objective of the biomedical model is to focus on the human body solely and treat the illness and diseases separate from the mind.

**a. Advantage of biomedical model of health**

- It has a high success rate regarding research and diagnosis of humans.
- Depending on the illness, the model can be used to learn about the disease and avoid it recurring.
- The model states health can be restored through treatment and a variety of techniques including nuclear medication and drugs.

Example, if you fracture your leg you can have surgery which will allow you to walk again. Many illnesses can be treated through medical intervention and advance research. At the beginning of the 20th century, the leading causes of death were tuberculosis, pneumonia, influenza and diarrhea. The biomedical model was used to rule out the cause and influence treatment.

**b. Disadvantage of Biomedical model of health**

- The biomedical model fails to include other factors like psychosocial that are sometimes found to be the main influences of illness.
- The model fails to address any illness or disease which doesn't display any physical signs and symptoms.

Criticizing the model, Foucault (1973) states that Doctors who use this model see their patients like robots in need of repair. He then suggested that due to medicine and science, doctors are solely focused on the function and structure of the human body and they don't consider any other factors which may contribute to illnesses such as poverty, stress and poor housing.

## 10.3.3. The Holistic approach of health

The Holistic Model of health focuses on the whole person instead of specific parts of the body like the biomedical model. Many Holistic Doctors believe all parts of the human body work in sync with one another. Meaning that if one part of the body, isn't working properly then the rest of the body doesn't work. The main objective of the holistic Doctor is not to solely examine the body but to understand why it is happening.

**c. Advantage of holistic approach of health**

- The Holistic approach takes into consideration the whole person including their psychological and emotional health.
- The holistic approach allows alternative. Alternative medication is a treatment which is alternative to mainstream medication. Example herbal medicine which uses herbs and plants as an alternative.
- Yoga and massage are aspects of holistic model and these have proven to reduce stress

### d. Disadvantage of holistic approach of health

For people who has serious medical illness like cancer, time spent looking for other treatments can cause the disease to spread which could lead to the disease to become untreatable. Holistic drugs don't always reveal the true ingredients on the packaging, so you could take a holistic medication which may have a contraindication when taking conventional medication

**Self-assessment 10.3.**

1) Differentiate biomedical model of health from holistic approach of health

## 10.4. Sociology and nursing practices

**Learning activity 10.4.**



1) Discuss the concepts of sociology and effect on nursing practice

### The relevance of sociology to nursing

In 1991, the World Health Organization (WHO) proposed that nurses should be required to develop and perform functions related to the promotion and maintenance of health as well as disease prevention and rehabilitation. Nurses need to be aware of the physical, psychological, social and spiritual aspects of health, illness, disability and dying. Nursing models developed in nursing have

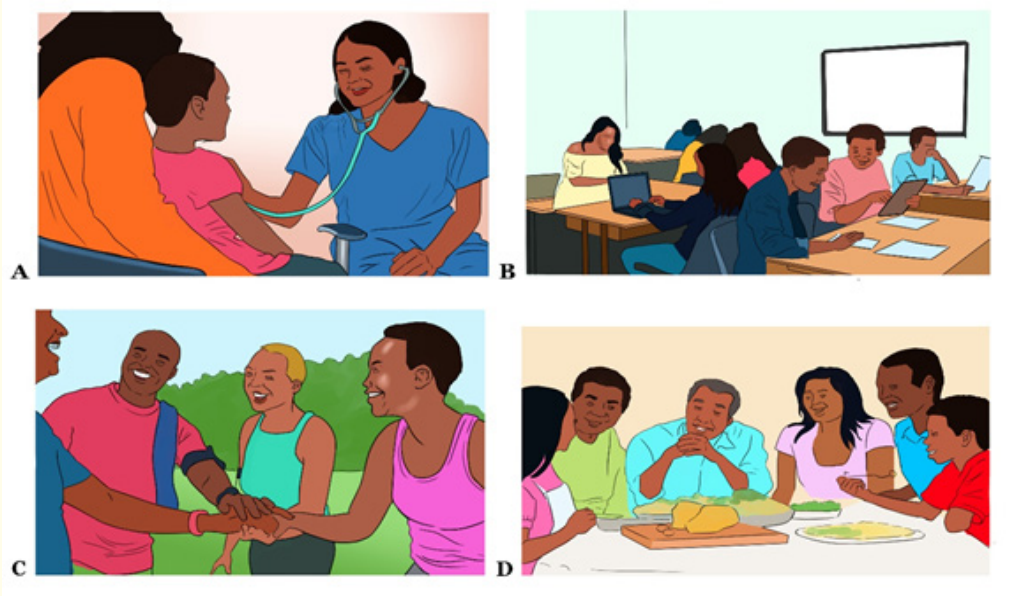
been influenced by the social and biological sciences and are intended to help raise standards of nursing care. Sociology may help nurses to achieve their primary objective of caring for patients in four ways: (i) implications of changing patterns of disease, dependency and death; (ii) social and cultural variations in perceptions of, and responses to, pain and diseases; (iii) organizational analyses, with particular reference to the importance of nurse-patient communication and; (iv) sociological studies on interpersonal relationships

**Self-assessment 10.4.**

1) Explain the ways by which sociology may help nurses to achieve their objective

## 10.5. Determinants of health

**Learning activity 10.5.**




Observe the pictures above and answer the following questions:

1) What do you see on pictures A, B, C, and D?
2) According to your point of view, what might be the relation between: (a). people's access to health services and their own health; (b). education access and health status; (c). Social circumstance and health status; (d). Income status and health status?

## 10.5.1. Introduction to determinants of health

Many factors combine together to affect the health of individuals and communities. Whether people are healthy or not, is determined by their circumstances and environment. To a large extent, factors such as where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family all have considerable impacts on health, whereas the more commonly considered factors such as access and use of health care services often have less of an impact.

**The determinants of health include:**

- The social and economic environment,
- The physical environment, and
- The person's individual characteristics and behaviours.

The context of people's lives determines their health, and so blaming individuals for having poor health or crediting them for good health is inappropriate. Individuals are unlikely to be able to directly control many of the determinants of health. These determinants—or things that make people healthy or not—include the above factors, and many others:

- Income and social status - higher income and social status are linked to better health. The greater the gap between the richest and poorest people, the greater the differences in health.
- Education – low education levels are linked with poor health, more stress and lower self-confidence.
- Physical environment – safe water and clean air, healthy workplaces, safe houses, communities and roads all contribute to good health.
- Employment and working conditions – people in employment are healthier, particularly those who have more control over their working conditions
- Social support networks – greater support from families, friends and communities is linked to better health. Culture - customs and traditions, and the beliefs of the family and community all affect health.
- Genetics - inheritance plays a part in determining lifespan, healthiness and the likelihood of developing certain illnesses.
- Personal behaviour and coping skills – balanced eating, keeping active, smoking, drinking, and how we deal with life's stresses and challenges all affect health.
- Health services - access and use of services that prevent and treat disease influences health

- Gender - Men and women suffer from different types of diseases at different ages.

## 10.5.2. Social determinants of health

Social determinants of health (SDOH) are conditions in the places where people live, learn, work, and play that affect a wide range of health risks and outcomes. The World Health Organization also provides a definition of social determinants of health. Social determinants of health as the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels. The social determinants of health are mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries. Healthy People 2030 use a place-based framework that outlines five key areas of SDOH:

**a. Health care access and quality**

There is connection between people's access to and understanding of health services and their own health. This domain includes key issues such as access to healthcare, access to primary care, health insurance coverage, and health literacy.

**b. Education access and quality**

There is connection of education to health and wellbeing. This domain includes key issues such as graduating from high school, enrolment in higher education, educational attainment in general, language and literacy, and early childhood education and development.

**c. Social and community context:**

There is connection between characteristics of the contexts within which people live, learn, work, and play, and their health and wellbeing. This includes topics like cohesion within a community, civic participation, discrimination, conditions in the workplace, and incarceration.

**d. Economic stability**

There is connection between the financial resources people have – income, cost of living, and socioeconomic status – and their health. This area includes key issues such as poverty, employment, food security, and housing stability.

**e. Neighborhood and built environment**

There is connection between where a person lives – housing, neighborhood, and environment – and their health and wellbeing. This includes topics like quality of housing, access to transportation, availability of healthy foods, air and water quality, and neighbourhood crime and violence.

## 10.5.3. Addressing social determinants of health

Resources that enhance quality of life can have a significant influence on population health outcomes. Examples of these resources include safe and affordable housing, access to education, public safety, availability of healthy foods, local emergency/ health services, and environments free of life-threatening toxins. We also know that poverty limits access to healthy foods and safe neighbourhoods and that more education is a predictor of better health. Differences in health are striking in communities with poor SDOH such as unstable housing, low income, unsafe neighbourhoods, or substandard education. By applying what we know about SDOH, we can not only improve individual and population health but also advance health equity.

**Self-assessment 10.5.**

1) Outline any 4 determinants of health
2) 2.Explain how the following factors can have an influence on population health
    a) Income and social status
    b) Physical environment
    c) Employment and working conditions
    d) Social support networks
    e) Genetics
    f) Personal behavior
    g) Gender

## 10.6. Religion, culture, social norms, beliefs, values, customs, practice and implications to health

**Learning activity**












1) Discuss about the following topics
   a) Religion and its importance in mental health
   b) Culture and cultural perception
   c) Types of norms
   d) Importance of values

### 10.6.1. Religion and implications to health

Religious practice substantially contributes to physical and mental health. Regular religious practice lessens depression, promotes self-esteem, and builds familial and marital happiness. Religious worship also increases longevity, improves an individual's chances of recovering from illness, and lessens the incidence of many diseases.

Theory and literature suggests that the reasons religiously involved people tend to have good health outcomes are because they have healthy lifestyles and behaviors in accord with religious beliefs. Other literature suggests that religious involvement may play a negative role in health outcomes due to beliefs about illness originating as punishment for sins.

Good mental health is highly correlated to religious participation. An increase in religious practice was associated with having greater hope and a greater sense of purpose in life. Religious affiliation and regular church attendance were among the most common reasons people gave to explain their own happiness. Happiness was greater and psychological health was better among those who attended religious services regularly.

More frequent attendance at religious services predicted less distress among adults. Membership in a religious community can enhance coping skills. One study found that people were much more inclined to use positive coping responses when they received spiritual support from fellow church members.

## 10.6.2. Culture and implications to health

### a. Definition

Culture refers to a set of the ideas, customs, and social behavior of a particular people or society. Culture involves how a person lives, speaks, interacts with others and what individuals create, but perception considers how that individual sees the world, or what happens when these two concepts are combined into a single phrase.

Cultural perception is how people gather information, learned within their specific culture, to inform themselves about their world. This takes into account all aspects of the individual's life. How a person sees art, language, religion, etc. is all informed by how those elements of the world are seen within the context of their culture

### b. Elements of culture

#### i. Values

Values are a culture's standard for discerning what is good and just in society. Values are deeply embedded and critical for transmitting and teaching a culture's beliefs. Values help shape a society by suggesting what is good and bad, beautiful and ugly, sought or avoided.

#### ii. Beliefs

Beliefs are the tenets or convictions that people hold to be true. Individuals in a society have specific beliefs, but they also share collective values.

#### iii. Norms

Norms define how to behave in accordance with what a society has defined as good, right, and important, and most members of the society adhere to them. Formal norms are established, written rules. They are behaviors worked out and

agreed upon in order to suit and serve the most people. Informal norms are casual behaviors to which an individual generally conforms.

#### iv. Symbols

Symbols are gestures, signs, objects, signals, and words that help people understand their surrounding world.

#### v. Language

Language is the principal method of human communication, consisting of words used in a structured and conventional way and conveyed by speech, writing, or gesture. Language is considered as a system of communication used by a particular country or community.

### c. Culture influence to health

Culture influences healthcare at all levels, including communications and interactions with doctors and nurses, health disparities, health care outcomes, and even the illness experience itself. People in some cultures believe illness is the will of a higher power, and may be more reluctant to receive health care.

A culture of Health is broadly defined as one in which good health and well-being flourish across geographic, demographic, and social sectors; fostering healthy equitable communities guides public and private decision making; and everyone has the opportunity to make choices that lead to healthy lifestyles

**Self-assessment 10.6.**

1) Discuss about the following 4 topics
   a) Religion and positive implication to health
   b) Culture and negative implication to health
   c) Social norms and positive implication to health
   d) Values and negative implication to health

## 10.7. Health beliefs and practices and their influence on health, health promotion and illness prevention

**Learning activity 10.7.**




In groups, discuss about the followings:

1) Health beliefs
2) Health practices
3) Health promotion

### 10.7.1. Health in social context

Health is determined by the conditions in which we live our everyday lives. Those conditions include the social, cultural, economic, educational, and occupational as well as the physical and mental environment, which influence health behavior and lifestyle and so the health status. Health beliefs are the tenets or convictions that people hold to be true regarding health promotion.

### 10.7.2. Illness

Illness is defined as the ill health the person identifies themselves with, often based on self -reported mental or physical symptoms. In some cases, this may mean only minor or temporary problems, but in other cases self - reported illness might include severe health problems or acute suffering.

### 10.7.3. Health promotion

Health promotion is the process of enabling people to exert control over the determinants of health and thereby improve their health. It moves beyond a focus on individual behavior towards a wide range of social and environmental interventions.

Health beliefs and practices and influence on health promotion and illness prevention

Health beliefs are what people believe about their health, what they think constitutes their health, they are also what they consider the cause of their illness, and ways to overcome an illness. Healthy practices mean the actions intending for “first do not harm”. Healthy practices mean to teach or advise patients to use their own non-specific mechanisms of defense to promote health and prevent illness in order to live a healthy life.

People will not change their health behaviors unless they believe that they are at risk. Example: Individuals who do not think they will get the sexual transmitted disease are less likely to use condom during sex intercourse. People who think they are unlikely to get malaria are less likely to sleep under mosquito net

**Self-assessment 10.7.**

1) “Health is determined by the conditions in which we live our everyday lives” basing on this statement list four conditions in which we live that determine our health?
2) Explain how health beliefs influence health promotion?

## 10.8. Health enhancing versus risk-taking behaviors; smoking, alcohol abuse, drugs and other substance abuse

**Learning activity 10.8.**



In groups, Discuss about the following topics

1) Smoking and health
2) Alcohol abuse and health
3) Drugs/substances abuse and health

While adults almost always view risk-taking in negative terms, not all risk-taking is dangerous or detrimental to a young person's health. In fact, a degree of risk-taking is essential for personal growth and development: it allows a young person to test their limits, learn new skills, develop competence and self-worth, and assume greater responsibility for their life

For some young people, risk-taking is a way of resolving developmental challenges (for example, a young male who drinks heavily to prove that he is as grown-up as his peers). For others, risk-taking may be a way of dealing with problems or escaping unhappy situations or feelings (such as a young woman who engages in sexual activity in response to her low self-esteem and feelings of worthlessness, or her experience of sexual assault). While risk-taking behavior can constitute a major health problem in itself, it may also be an indicator of an underlying problem in the young person's life. Angry, acting-out behaviour can mask depression, or it may reflect the young person's experience of violence. Risk-taking behaviours which can have serious negative implications for young people's health include:

- Early and/or high risk sexual activity
- Drink driving
- Substance or alcohol abuse
- Running away from home
- Dropping out of school
- Criminal activity
- Severe dieting
- Dissociation
- Suicidal thoughts and talk
- Self-harm
- Assaulting others

### 10.8.1. Smoking

Nicotine is a highly addictive chemical found in the tobacco plant. The addiction is physical, meaning habitual users come to crave the chemical, and also mental, meaning users consciously desire nicotine's effects. Nicotine addiction is also behavioural. People become dependent on actions involved with using tobacco.

### 10.8.2. Alcohol abuse

Alcohol abuse or alcohol use disorder is a condition in which a person continues to consume alcohol despite the adverse consequences.

### 10.8.3. Drug abuse

Drug abuse is the use of illegal drugs or the use of prescription or over-the-counter medications in ways other than recommended or intended. It also includes intentional inhalation of household or industrial chemicals for their mind altering effects.

### 10.8.4. Health enhancement versus risk taking behaviours

Drug addiction and other risk taking behaviour have been termed as a disease because their effects cause permanent changes in the dopamine reward pathway of the brain leading to compulsive use even after the initial pleasurable effect of the drug has warm off. Therefore, the repetitive use of the drug leads to craving and withdrawal symptoms which lead to continuation and maintenance of drug abuse

## Self-assessment 10.8.

1) What is nicotine and its effects in human body
2) Explain drug abuse in few words?
3) Why is drug addiction considered as disease?

## End unit assessment 10.

**From question 1 to 5; select the best answer**

1) The term socious derived from which language?
   a) German
   b) Greek
   c) Latin
   d) Roman
2) Which are the words composing the term sociology
   a) Society and community
   b) Socious and Logos
   c) Society and Science
   d) Socious and science
3) Which among the following is a youngest science?
   a) History
   b) Sociology
   c) Geography
   d) Philosophy
4) In biomedical model of health a 'sick' organ is best described as being:
   a) Depressed
   b) Unwell
   c) Ill
   d) Diseased
5) Which of these is an assumption of the biomedical model?
   i. All illness has one underlying cause.
   ii. Disease is always that single cause.
   iii. Stopping, removing, or minimizing the disease will return a person to good health.
      a) II only
      b) I only
      c) I, II
      d) I, II, III

6) Match terms in column A with their specific definition or example in column B

| Column A | Column B |
|---|---|
| 1. Medicalization | E. Is the social experience of impairment |
| 2. Impairment | F. Refer to physical illness or injury |
| 3. Disability | G. Reduce illness strictly to a medical disease |
| 4. In social context illness | H. Is the social meaning of the medical disease |

7) Differentiate the biomedical model of health and the holistic approach of health?

8) How can sociology impact nurses to achieve their primary objective of caring?

9) Describe the implication of Religion to health

10) With example describe how negative health believes can negatively influence health promotion and illness prevention

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