



GOVERNMENT OF TAMIL NADU

# NURSING - VOCATIONAL THEORY & PRACTICAL

HIGHER SECONDARY FIRST YEAR

A publication under Free Textbook Programme of Government of Tamil Nadu

Department of School Education

Untouchability is Inhuman and a Crime

## **Government of Tamil Nadu**

First Edition - 2018

Revised Edition - 2019

(Published under New Syllabus)

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## **Content Creation**



State Council of Educational  
Research and Training  
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## **Printing & Publishing**



Tamil Nadu Textbook and  
Educational Services Corporation

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**E-book**



**Assessment**






**DIGI links**



Lets use the QR code in the text books ! How ?

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- Once the scanner button in the application is clicked, camera opens and then bring it closer to the QR code in the text book.
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## How to use the book?

<b>Introduction</b>	Student would be motivated and focus attention to the subject matter.
<b>Learning Objectives:</b> 	List out all the major topics and provide students with a clear purpose to focus their learning efforts.
<b>Case Study</b>	Life experiences and indepth understanding of the concept given.
<b>Do you Know?</b> 	Gives additional related information for broader understanding.
<b>Activity:</b> 	Given to elicit critical thinking , creative thinking and application in day to day activities.
<b>QR Code</b> 	Enhance long term memory through Audio Visual learning.
<b>ICT Corner</b>	References to the relevant website for enhanced information.
<b>Conclusion</b>	An outline map of the entire information given in gist.
<b>Glossary</b> 	Detailed meaning in English and Tamil for new terms.
<b>References/ Website Links</b>	Basic raw materials used for the birth and development of the text.



# CAREER GUIDANCE



## PROFESSIONAL COURSE

- Auxiliary Nurse Midwife (ANM)
- Diploma in Nursing (GNM)
- Post Basic B.Sc., Nursing
- M.Sc., Nursing
- M.phil / Ph.D Nursing

## PG DIPLOMA COURSES (One Year)

- Cardio-Thoracic Nursing
- Critical Care Nursing
- Neonatal Nursing
- Neuro Science Nursing

## UG DEGREE COURSES

- B.Sc., Computer Science
- B.Sc., Clinical Nutrition and Dietetics
- B.Sc., Home Science
- B.Sc., Human Development
- B.Sc., Botany
- B.Sc., Zoology
- B.Sc., Speech Therapists and Audiologists
- B.Sc., Physician Assistant
- B.Sc., Radiology and Imaging Technology
- B.Sc., Nuclear Medicine Technology
- B.Sc., Cardiac Technology
- B.Sc., Radiotherapy Technology
- B.Sc., Dialysis Technology
- B.Sc., Respiratory Therapy
- B.Sc., Cardio Pulmonary Perfusion Technology
- B.Sc., Operation Theatre & Anaesthesia Technology
- B.Sc., Accident and Emergency care Technology
- B.Sc., Degree in Medical Laboratory Technology

## **CERTIFICATE COURSE (One Year)**

- Medical Transcription
- Dark Room Assistant
- Dental Assistant
- ECG Technician
- Lab Technician
- OT Technician
- X – Ray Technician
- Dental Hygienist
- Dental Surgery Assistant
- I.C.U Technician
- Nursing Care Assistant
- Radiology Assistant
- Operation Theatre Technology
- Ophthalmic Assistant
- Wellness Management Assistant
- Geriatrics Assistant
- Blood Transfusion Assistant
- New Born and Infant Care Assistant
- Multipurpose Health Worker
- Yoga & Naturopathy
- Medical Representative Training
- ECG Assistant

## **DIPLOMA COURSE (Two Years)**

- Diploma in Radiography
- Diploma in Optometrists
- Diploma in Health Care and Hospital Management
- Diploma in Occupational Therapy
- Diploma in Orthotic and Prosthetic
- Diploma in Medical Lab Technician
- Diploma in ECG Technician
- Diploma in Cardiology Technician
- Diploma in Cathlab Technician
- Diploma in Perfusion Technician
- Diploma in Anaesthesia Technician
- Diploma in Dialysis Technician
- Diploma in Medical Imaging Technician
- Diploma in Respiratory Therapy Technician
- Diploma in Medical Sterilization Management and OT Technician

## **M.Phil & Ph.D**

- Above mentioned all the courses with master degree

## **PG DEGREE COURSES**

All the PG courses available for the UG Disciplines



# Unit 1

## NURSE AND NURSING AS A PROFESSION



### LEARNING OBJECTIVES

At the end of this chapter, the students will be able to,

1. Gain knowledge about history of nursing.
2. Know about the concept of health, illness and about hospital.
3. Nursing and the scope of nursing.
4. Know about a nurse, the qualities of a nurse, the functions of a nurse, fundamental rules of nurse and the nurses pledge.

### 1.1 INTRODUCTION

நோய்நாடி நோய்முதல் நாடி அதுதணிக்கும்  
வாய்நாடி வாய்ப்பச் செயல்

#### Meaning

Let the physician enquire into the (nature of the) disease, its cause and its method of cure and treat it faithfully according to medical rule

Thiruvalluvar

In the past most individuals and societies viewed good health or wellness as the opposite or absence of disease.

Health is highly desirable state for all human being. Health is an individual perception; it has many meaning and views differently to different people (It differs from person to person).

Wellness is the condition in which an individual functions at an optimal level.

#### Proverbs on Health

Early to bed and early to rise makes a man  
- healthy  
- wealthy and  
- wise

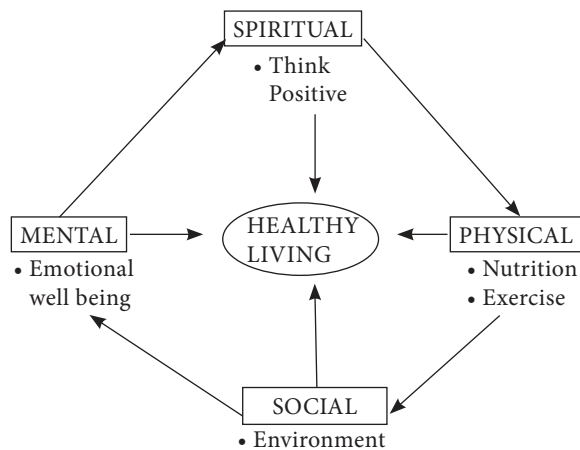
### 1.2 DEFINITION OF HEALTH

Defining health is a difficult task. There are many definitions of health offered from time to time. Some of the commonly referred definition are as follows.

“Health is a state of complete

- Physical
- Mental
- Social and
- Spiritual

Well-being, not merely the absence of disease or infirmity” -WHO



Health and illness are defined according

“Health is the condition of being sound body, mind or spirit. Especially freedom from physical disease or pain”

-Webster's Dictionary

to individual perception. Health often includes conditions previously considered to be illness.

For example: A person with epilepsy who has learned to control seizures with medication and who functions at home and work (office) may no longer consider himself or herself ill.

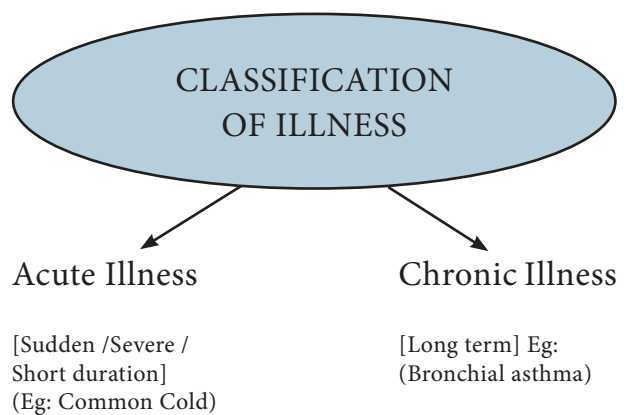
### 1.3 ILLNESS

Illness is an inability of an individuals' adaptive response to maintain physical and emotional balances that subsequently result in an impairment of functional abilities.

#### Proverb

“Health is not Valued till Sickness Comes”

“Health is Wealth.”



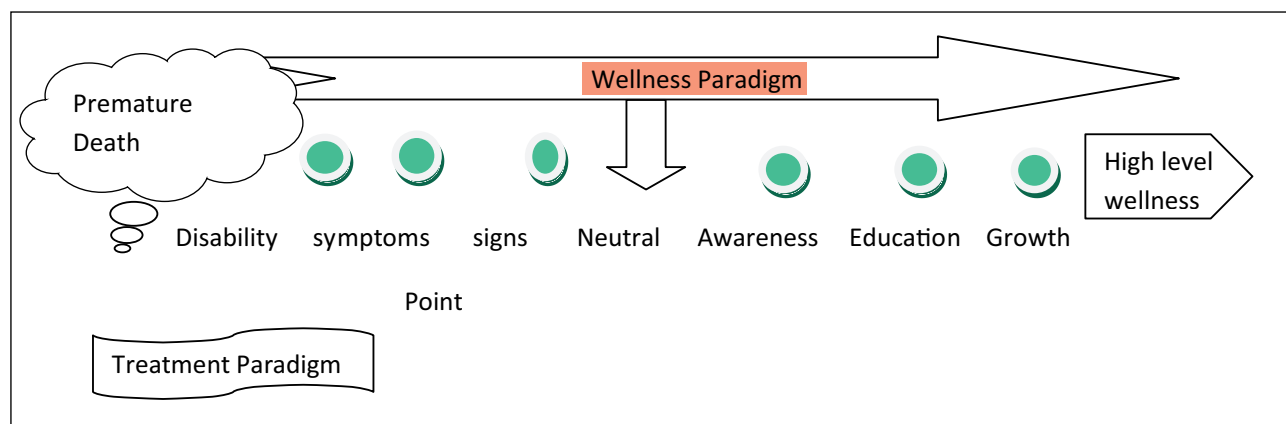
Travis's Illness – Wellness Continuum Model signifies that wellness is a process never a static state.

### 1.4 HOSPITAL

#### Definition of Hospital

Hospital means an Institution in which

- Sick/injured are treated.



- Healthy persons are helped to promote and maintain an optimum level of well being
- Prevent diseases.

The word “HOSPITAL” derived from

- **LATIN WORD – Hospitalis – For a guest**
- **FRENCH WORD – “Hospes” – A host / A guest**

### 1.4.1 Types of Hospital

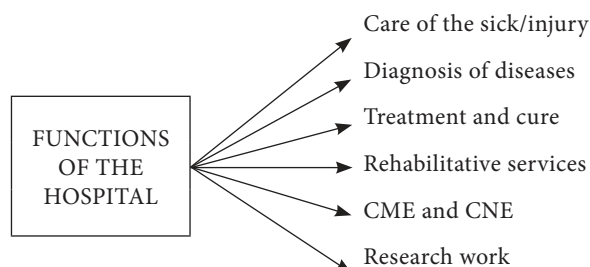
- Government Hospitals
- Railway Hospitals
- Military Hospitals
- Christian Mission Hospitals
- ESI (Employee state Insurance) Hospitals
- Private /Company Hospital/ Corporate Hospitals
- Voluntary Health Agencies

A Hospital bed is a parked taxi with the meter running.....  
..£..\$...¥....€....₹.

GOVERNMENT MEDICAL CARE SERVICES	
MULTI SUPER SPECIALITY HOSPITALS	TN GOVT MULTI SPECIALITY HOSPITAL, CHENNAI
GENERAL HOSPITALS ↑	MADRAS MEDICAL COLLEGE
DISTRICT HOSPITALS ↑	VELLORE ADUKAMPARI HOSPITAL
TALUK BLOCK HOSPITALS ↑	WALAJAH TALUK HOSPITAL
PRIMARY HEALTH CENTRE ↑	LALAPET PHC
REFERRAL MOBILE CLINICS ↑	RBSK-PROG
HOME CARE VILLAGES /TOWNS ↑	VILLAGE ANM VISITS VANAPADI VILLAGE

### 1.4.2 Functions of the Hospital

The main aim of a hospital is patient care & comfort



**DO YOU KNOW?** Hospitals are the only place where the result “Positive” can bring both pleasant and unpleasant feelings of patient.



### STUDENT ACTIVITIES

Find out the types of hospitals in and around your location and know about their services to the community.

## 1.5 NURSE AND NURSING

### Definition of a Nurse

Nurse is a person who has specially qualified knowledge, cleverness and devotedness to the patient waited upon.

### Quotes

God found some of the strongest women and made them nurses.  
“Nurses are the Heart of Health Care Team”  
-Donna Wilk

### Definition of Nursing

Nursing is the process of recognizing, understanding and meeting the health needs of any person or society and is based upon a constantly changing body of scientific knowledge.

### 1.5.1 Qualities of a Nurse

• <b>Cleanliness</b>	Clean, neat & Tidy
• <b>Resourcefulness</b>	Uses her wisdom / knowledge
• <b>Willingness to learn</b>	Coordinates with health team
• <b>Poise</b>	Control of her emotions, mental thoughts and actions
• <b>Loyalty &amp; Honesty</b>	Her relationship with clients
• <b>Courage</b>	Ready to meet any problem with courage
• <b>A caring Attitude</b>	A sense of spiritual love
• <b>Self Discipline</b>	She needs to be a self disciplined person
• <b>Willingness &amp; Self Sacrifice</b>	These two qualities are complimentary to each other. She sacrifices her time, comfort and material benefits
• <b>Love</b>	Adds qualities like mercy, kindness, gentleness, patience and understanding

#### Quotes

“If I am to care for people in hospital I really must know every aspect of their treatment and to understand their suffering”  
-Princess Diana  
Princess of Wales

### 1.5.3 Fundamental Rules for Nursing

- The nurse should wear the uniform and respect it
- Be obedient and show proper respect to her superiors (Head nurses)
- Always be neat and clean in appearance
- Be disciplined in use of time, cleanliness and order
- Maintain good relationship with health team
- Have respect for the spiritual belief of the patient
- Do not take any gift or money from the patients
- The nurse should maintain confidence of patients

### 1.5.2 Functions of nurse

F U N C T I O N S		CARE GIVER	The nurse provides direct care to patients
		COUNSELLOR	The nurse assists patients to make decisions
		TEACHER	The nurse teaches formal informal intentional or incidental
		ADVOCATE	A nurse speaks up for a acts on behalf of patient
		RESOURCE PERSON	A nurse provides skilled intervention and information

### 1.5.4 The vital aspects of nursing which the sub-committee on code of ethics revised

FIVE MAJOR ASPECTS		
NURSES	The profession	<ul style="list-style-type: none"> <li>• Role of a nurse - as a leader active participator</li> <li>• For setting up and carrying out standards of – practice - education</li> </ul>
	People	<ul style="list-style-type: none"> <li>• Nursing care</li> <li>• Values , customs and religious belief must be respected.</li> <li>• Maintain confidence</li> </ul>
	Co-workers	<ul style="list-style-type: none"> <li>• Maintain cooperation and work with the member of the health team.</li> </ul>
	Practice	<ul style="list-style-type: none"> <li>• Best care possible at all times.</li> <li>• Maintain high standards of practice</li> </ul>
	Society	<ul style="list-style-type: none"> <li>• For positive promotion of health.</li> <li>• Initiating and supporting action to meet the health and social needs.</li> </ul>

#### Quotes

Aathichudi - explains many qualities a nurse should possess;

With your health and wealth do best to others.

கிழமைப்பட வாழ்

Let others feel you are trust worthy and good.

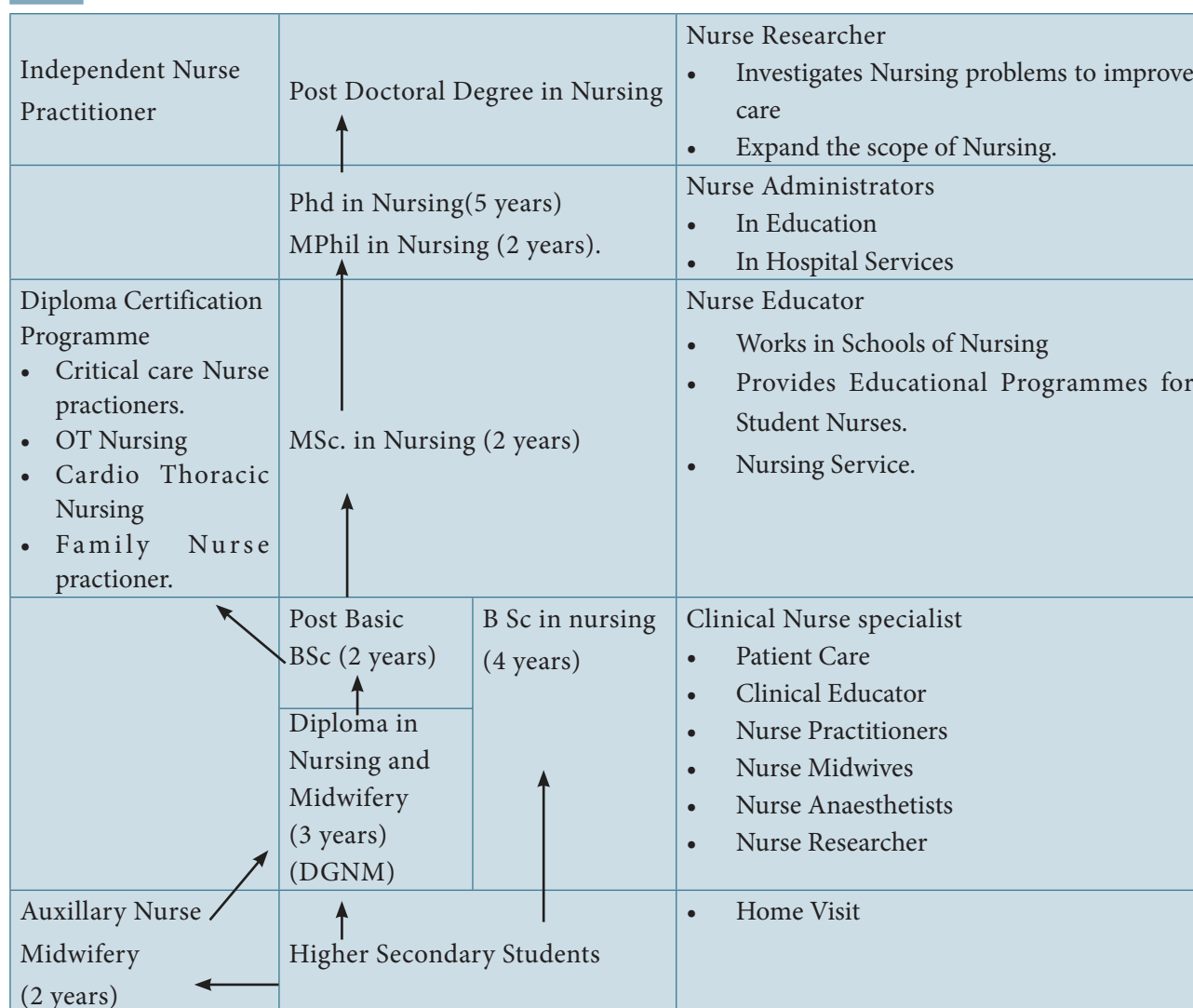
தக்கோள் எனத் திரி

Be honest and truthful.

நேர்பட ஒழுகு

–Avvaiyar.

## 1.6 SCOPE OF NURSING



Eligibility for jobs in Abroad (Foreign Country)  
Competitive exams  
(CGFNS, NCLEX)-USA  
(Prometric, gulf countries (IELTS)

**DO YOU KNOW?** 25% Of Seats for GNM (General Nursing) – TN Government is allotted for **HS VOCATIONAL NURSING** students only.



### STUDENT'S ACTIVITY

Browse and find out the best Nursing Colleges in Tamil Nadu

AIM HIGH AND SUCCEED

### EARLY CHRISTIAN ERA

Nursing in pre-Christian times, religious beliefs had great influence on the caring for the sick and suffering.


Christianity believed that one should render services with love to humanity without any reward. It was equal to one's sincere love to God. This principle

## 1.7 HISTORY OF NURSING

- Early Christian Era
- Middle Ages
- The Dawn of Modern Nursing

was absorbed in nursing and helped to improve the status of a nurse. Some

of the examples of such women are as follows.

PHOEBA	<ul style="list-style-type: none"> <li>• First Deaconesses, Intelligent and Educated</li> <li>• Best Nursing Care for the Sick in Their Homes</li> <li>• Compared as “Modern Public Health Nurse”</li> </ul>
FABIOLA	<ul style="list-style-type: none"> <li>• Daughter of a great Roman Noble</li> <li>• Converted her palace into a hospital – ‘First Christian Hospital in Rome’</li> <li>• She collected the poor and sick, cared them all by herself</li> </ul> 
PAULA	<ul style="list-style-type: none"> <li>• She devoted herself for the service of the sick</li> <li>• She built hospitals and monastery in Bethlehem for strangers, pilgrims, travellers and for the sick</li> </ul>
MARCELLA	<ul style="list-style-type: none"> <li>• She lead a group of women and indulged them in works of charity</li> </ul>

## MIDDLE AGES

Monks and Nuns dedicated to the cause of human suffering worked as doctors and nurses. Late in the 12<sup>th</sup> & 13<sup>th</sup> centuries nursing became differentiated from medicine and surgery

## THE DAWN OF MODERN NURSING

From the late 1700s through 1853, the manner in which the sick were cared, remained unchanged. In Europe, the dawn of Nursing was underway.

The Deaconess Institute of Kaiserswerth, Germany, was established

in 1836 by pastor Theodore Fliedner, to train the Deaconesses to care for the sick, and to create provision of social influence throughout the world.

### QUOTES

“I attribute my success to this:-  
I never gave or took an excuse”  
-Florence Nightingale

## 1.8 MORDERN NURSING

Miss Florence Nightingale known for her devotion to the services of the poor and the

sick, and for the great deeds for humanity and to raise the status of nursing profession.



Florence Nightingale was born in a wealthy English family on 12<sup>th</sup> May 1820. She had a great desire to become a nurse. She was dissatisfied with the daily routine lifestyle of the upper class woman. She had classical education which provided her with an understanding of circumstances of the world in which she lived.

She became aware of the inadequate care being provided in hospitals. She accompanied her mother to visit the ill at hospitals. She visited hospitals in England and Europe.

She recognized that nurses required

- Knowledge
- Training and
- Discipline

Nightingale was admitted to the training programme at the Nursing school at Kaiserwerth in 1850. After her training, in 1853 she was appointed as superintendent of the Institution for The Care of the Sick Gentlewomen in London.



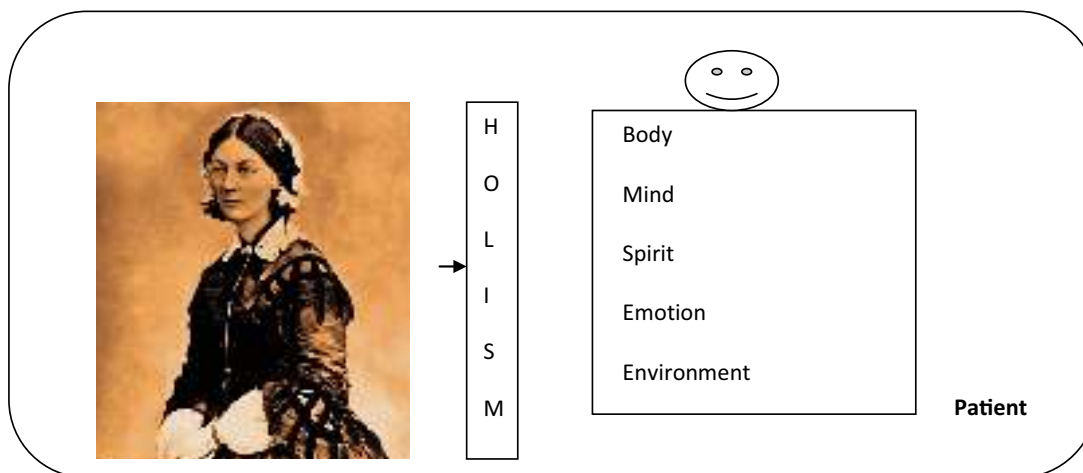
She had an opportunity to give her best service to the wounded soldiers in the Crimean War in 1854. She attended thousands of wounded and dying soldiers. For which she was rightly known as “The lady with the lamp”



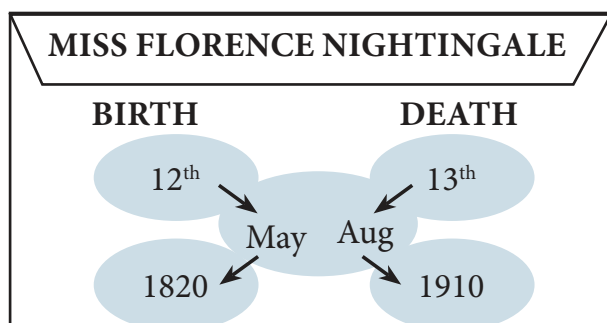
Miss Nightingale introduced enormous improvements in military hospitals. She also founded the first training school for nurses – St. Thomas Hospital, London, 1860. She shared her ideas about nursing and nursing education.

Miss Nightingale was the first to mention Holism (Treating the whole patient) in Nursing.

Nightingale was the founder of modern nursing education. She planned a complete public health programme. Despite her ill health she worked for the development of nursing services without taking sufficient rest.



She died peacefully in her sleep at the age of 90 (13<sup>th</sup> Aug 1910)



In recognition of her meritorious help to mankind. She was offered the “ORDER OF MERIT” in 1907. She was the first lady recipient for such an honour.

**DO YOU KNOW?**

**Award**

“The Order of Merit is an order of merit recognizing distinguished service in the armed forces, science, art, literature or for the promotion of culture”.



## 1.9 FLORENCE NIGHTINGALE PLEDGE

Mrs. Lystra E.Gretter in 1893 composed a modified Hippocratic Oath nursed, as a token of esteem founder of modern Nursing, Miss. Florence Nightingale.

**DO YOU KNOW?**

The President confers “Florence Nightingale Awards” to 35 Nurses across the Country on International Nurses Day “12th May” every year.

"I solemnly pledge myself before God and in presence of the assembly, to practice my profession with dedication"

"I will serve mankind with love and compassion, recognizing their dignity and rights irrespective of colour, caste, creed, religion and nationality"

"I will endeavour to maintain up-to-date knowledge and skill to uphold standard of nursing care to individual, family and community in all settings and in all aspects of holistic care as a members of the health care team"

"I will hold in confidence personal matters of my clients committed to my care and help them to develop confidence in care rendered by me"

"I will refrain from any activity that will harm my personal and professional dignity as a nurse"

"I will actively support my profession and strive towards its advancement"

"I will fulfill my responsibilities as a citizen and encourage change towards better health"

**Florence Nightingale Award is given by Government every year  
on May 12<sup>th</sup> - Nurses Day**



<b>CGFNS</b>	-	Commission on Graduates of Foreign Nursing Schools
<b>NCLEX</b>	-	National Council Licensure Examination
<b>IELTS</b>	-	International English language test system

**Do You Know?**

**Gulf Countries are:**

- Bahrain.
- Kuwait.
- Oman.
- Qatar.
- Saudi Arabia
- United Arab Emirates.

## CONCLUSION

Topics such as definition of health, illness, hospital and its functions, nurse and nursing, history of nursing, the qualities of a nurse, functions of a nurse, the nurses pledge were discussed.



## EVALUATION

### I. Choose the correct answers (1 mark)

1. The word 'Hospital' derived from the French word
  - a. Hospitals
  - b. Hopes
  - c. Hospes
  - d. None of the above.
2. The first Christian Hospital in Rome, was the palace of
  - a. Fabiola
  - b. Paula
  - c. Phoebe
  - d. Marcella.
3. The founder of modern nursing is
  - a. Fabiola
  - b. Paula
  - c. Phoebe
  - d. Nightingale.
4. Miss. Florence Nightingale was born on
  - a. 12<sup>th</sup> May 1821
  - b. 12<sup>th</sup> May 1820
  - c. 13<sup>th</sup> May 1820
  - d. 13<sup>th</sup> May 1910
5. 'The Florence Nightingale Pledge' was composed by
  - a. Miss. Florence Nightingale
  - b. Theodore fliedner
  - c. Hippocratis
  - d. Mrs. Lystra. E. Gretter.

### II. Write short answers (3 marks)

1. Define health according to W.H.O.
2. Define illness.
3. Classification of illness.
4. What are the types of hospitals?
5. Define-Nurse
6. Define-Nursing.

### III. Write short notes (5 marks)

1. Health illness continuum.
2. What are the functions of a hospital?
3. What are the functions of a Nurse?
4. Explain the five major vital aspects of Nursing revised by the sub-committee on code of Ethics.
5. History of Nursing – Early Christian Era.

#### IV. Write an essay for the following questions (10 marks)

1. Qualities of a Nurse.
2. Fundamental rules for nursing.
3. Write about Miss. Florence Nightingale.
4. Florence Nightingale Pledge.

#### A-Z GLOSSARY

**Ethics** –(நெறிமுறைகள்)

- Moral Principles of groups.

**Profession** –(தொழில்)

- Occupation involves prolonged training and a formal qualification.

**Infirmity** – (நலிந்த தளர்ந்த நிலை)

- physical or mental weakness.

#### REFERENCE BOOKS

1. Professional Adjustments and Ethics for Nurses in India.-Mrs.Ann.J.Zwemer.
2. A New Textbook for Nurses in India. Vol 1 & 2 CMAI: South India Branch.

# Unit 2

## ANATOMY AND PHYSIOLOGY



### LEARNING OBJECTIVES

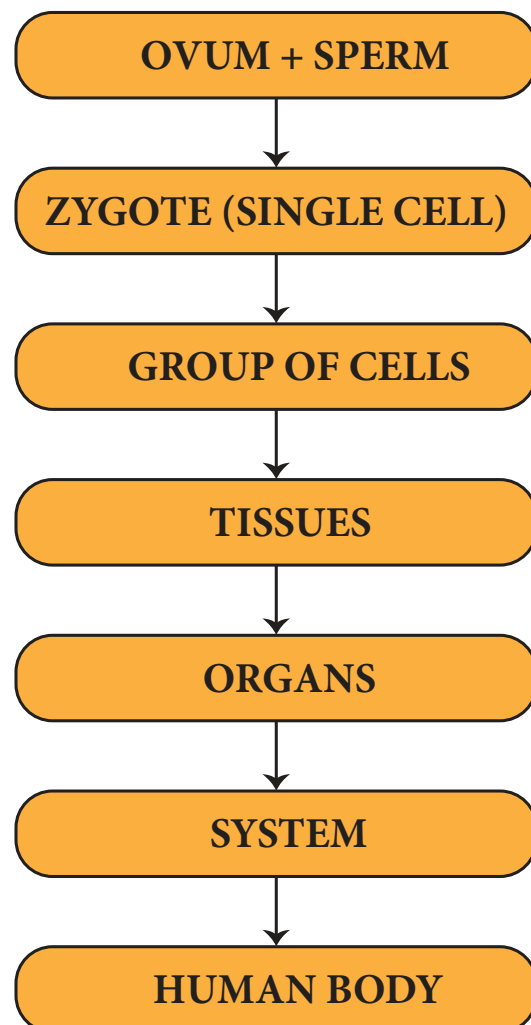
At the end of this chapter, the students will be able to,

1. Identify various tissues, organs, systems of the human body.
2. Gain knowledge about the anatomy of various organs and the functions of them.
3. Gain knowledge about the sense organs and its functions.
4. Conduct an exhibition on anatomy and physiology with charts, models and working models.

### 2.1 INTRODUCTION

Human body is a developed multicellular organism. It consists of billions of cells. Tissues are formed from many cells eg. Muscles and bones etc., the body develops from a single cell fertilized egg cell. (zygote) This cell multiplies rapidly and forms a group of cells.

Different tissues of the body are developed from the multiplication of cells. Each tissue has special function to carry out in the body. These tissues are grouped together to form organs. An organ is a group of tissues arranged in a special manner to carry out a special task eg. Stomach, the heart, the kidney, bones, muscles and nerves etc., these organs are grouped together to make up a system. A system is a group of organs which together carry out one of the essential functions of the body eg. Digestive system, respiratory system etc.,



## 2.1 (a) Definition

Anatomy - A study of the structure of the body.

Physiology - A study of the functions of the body.

## 2.1 (b) Anatomical Positions

When a person standing upright with the head facing forward, arms by the sides and the palms of the hands facing forward and feet together is said to be anatomical position.

The body is wonderfully made, like a complex perfect machine. Each part is specially constructed to carry out its own function, and to work as a whole with other parts.

## 2.2 CELL BODY AS A WHOLE

All living things, including the human body, are made up of living cells. Cell

is the structural and functional unit of human body. Just as many kinds of materials used in the construction of a large building, in the same way different kinds of cells are found in the formation of body.

## STRUCTURE OF A CELL

A cell has the following parts

- Cell membrane – the outer covering
- Protoplasm – main substance of the cell
- Nucleus – which controls activities of the cell.

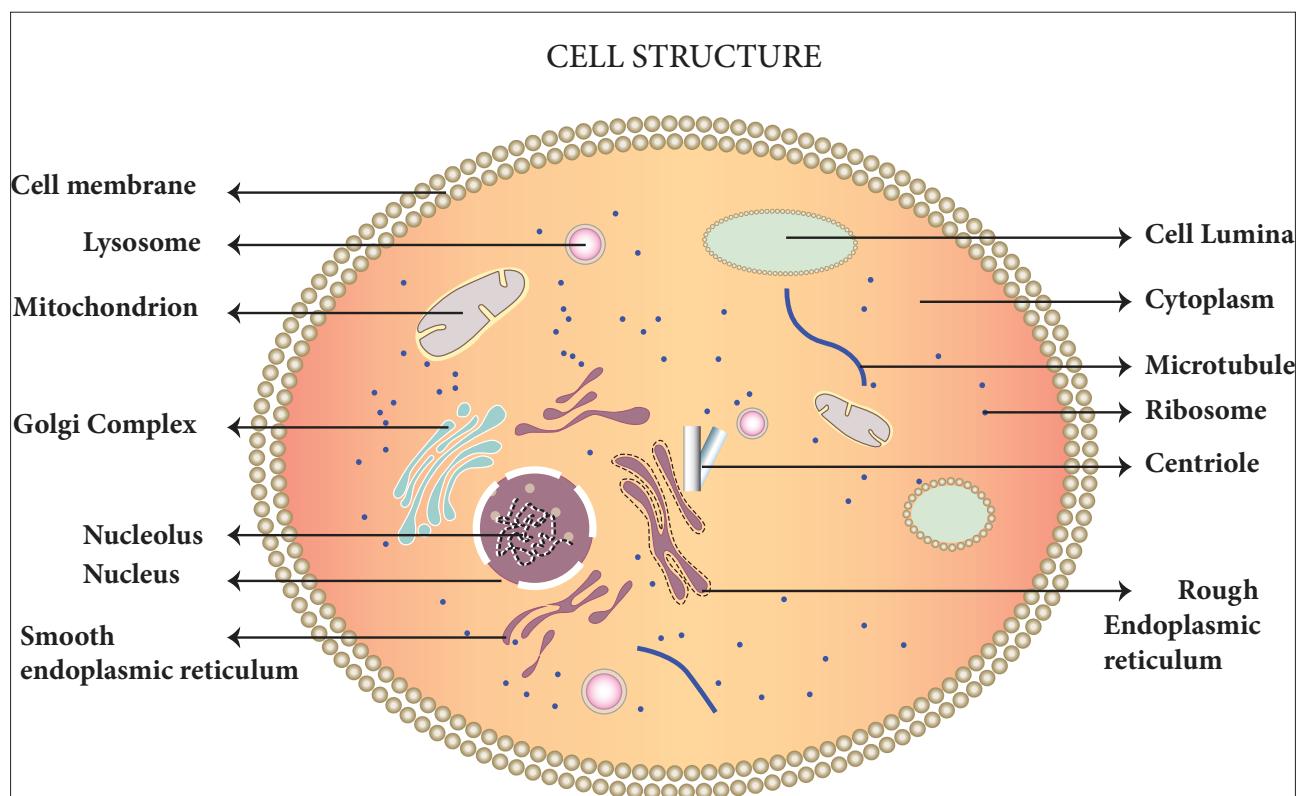
## FUNCTIONS OF THE CELL

Digestion – intake of nutrients

Excretion – elimination of waste

Respiration – taking in oxygen, and breathing out carbon dioxide

Growth and repair – increases the size of the cells and replacement of worn out cell.



Reproduction – cells reproduce by two ways either mitosis or meiosis.

## TISSUES

There are five basic tissues, which makeup the organs of the body.

1. Epithelial tissue:  
It covers the internal and external surfaces of organs.
2. Nervous tissue  
It consists of neuron and dendrites with conducts nerve impulses.
3. Connective tissue:  
It supports and binds together all the other tissues.
4. Muscular tissue  
This tissue has the power of contraction which causes movement.
5. Sclerous tissue  
It is a special type of connective tissue mainly for skeletal system.

## ORGANS

Tissues are joined in larger units called organs eg. Heart, lung, brain etc.,

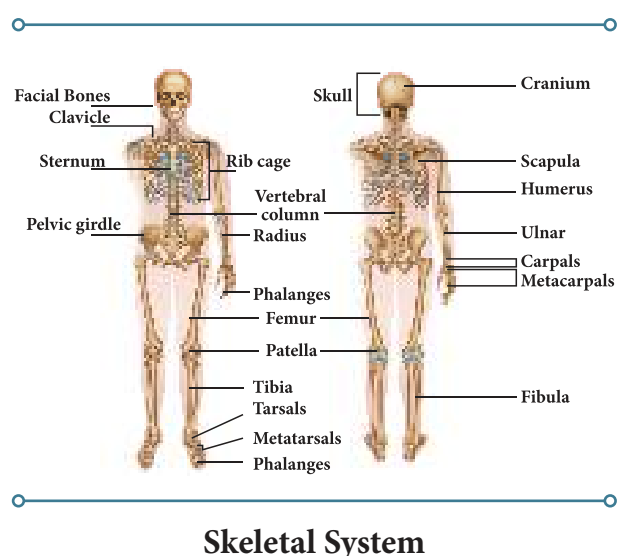
## SYSTEM

System is a group of organs, which together carry out one of the essential functions of the body. There are nine systems listed below.

## GLAND

A gland is a secretory organ, which function as a separate organ. There are two basic types of gland.

1. Endocrine gland – they pour their secretion directly into the blood stream eg. Thyroid, Adrenals etc.,
2. Exocrine gland – these discharge their secretions through ducts eg. Liver, pancreas etc.,



**Skeletal System**

S.No	Systems of the body	Functions
1.	Skeletal system	Support, movement and protection
2.	Muscular system	Movements and productions of organs
3.	Nervous system	Control of body activities
4.	Circulatory system	Transport food, oxygen and waste products etc.,
5.	Respiratory system	Taking in oxygen and giving out carbon-di-oxide.
6.	Digestive system	Taking in food, breaking it down into nutrients for absorption into body cells.
7.	Excretory system	Removal of waste matter from the body
8.	Endocrine system	Production of hormones which influence the activity of cells
9.	Reproductive system	Enables new individuals to be born

**DO YOU KNOW?**

The longest bone in human body – Femur

The Shortest bone in human body-Stapes (middle ear)

## 2.3 SKELETAL SYSTEM

The skeleton is composed of 206 separate bones in an adult. The cartilages and ligaments are used to unite the bones at the joint.

### 2.3.1 Parts of Skeleton and Bones

Skeleton	Skull	22 bones
	Spine	33 bones
	Chest [thorax]	25 bones
	Upper limbs	64 bones
	Lower limbs	62 bones

### 2.3.1 Types of the Bones

1. Long bones: These are in the arms and legs.
2. Flat bones: these includes the ribs, shoulder blades, and bones of the cranium.
3. Irregular bones: These bones are seen in face and spine.

Ligaments are made up of strong fibrous tissue and they hold bones together at the joints.

Cartilage is a strong plain tissue like hard rubber is attached to some bones.



### STUDENT'S ACTIVITY

To identify the types of bone. For e.g. Femur bone

4. Short bones: These bones are seen in wrist and ankle.

## FUNCTIONS OF THE SKELETON

1. Support and gives shape to the body
2. Protect internal organs
3. Movement with the help of muscles
4. Forms blood cells

### 2.3.2 Skull

The skull consists of two parts:

1. The cranium in which the brain is well protected.
2. The bones of the face.

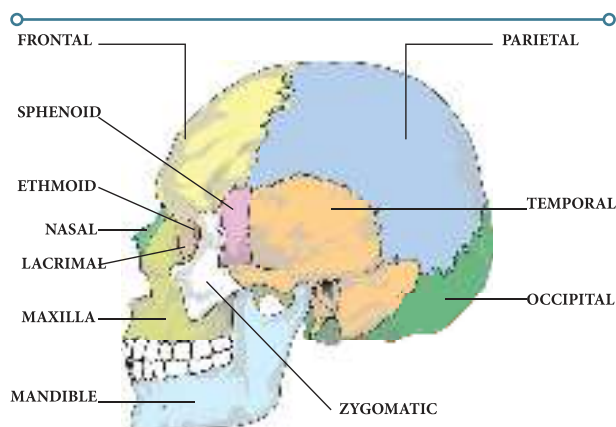
## CRANIUM

The Cranium is made up of eight bones as follows:

Frontal bone:	which forms the forehead and helps to protect eyes
Parietal bone:	one at each side of the top of the skull joined into the middle
Temporal bone:	One on each side below the parietal bones. These protect the inner parts of the ears
Occipital bone	This forms the back of the head and part of the base of the skull
One sphenoid	A hat shaped bone, which also forms part of the base of the skull
Ethmoid	Which forms the roof of the nose and in between the eyes

## FACIAL BONES

The face has the following 14 bones



**DO YOU KNOW?** The only movable joint in the skull is lower mandible.

Two nasal bones – which form the bridge of the nose.

Two lacrimal bones -near the eyes it is very thin and small.

Two cheek bones.

Two upper jaw bones.

Two palate bones – which join with the upper jaw bones in forming the hard palate.

Mandible bone – It is horse shoe shaped and forms the lower jaw.

Two curved bones, one in each side of wall of the nose.

Vomer bone – which rests on the palate and helps to form the nasal septum.

## SKULL BONE

### 2.3.3 Vertebral Column

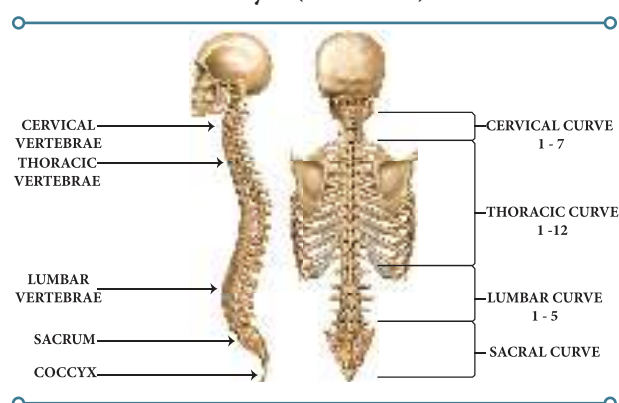
Spine or backbone is the central part of the skeleton. It supports the head and encloses

**DO YOU KNOW?** Human beings are the only living things which sleep on their back.

the spinal cord. It consists of 33 irregular bones called “vertebrae”.

## PARTS OF THE VERTEBRAL COLUMN ARE AS FOLLOWS

- Cervical vertebrae is in the neck region. The first two bones called atlas and axis which are important for nodding and turning the head.
- 12 dorsal or thoracic vertebrae at the back of the chest. The ribs are joined to these vertebrae.
- 5 lumbar vertebrae are in the waist region.
- 5 sacral vertebrae are fused together to form the sacrum. It is a triangular shaped bone with a hollow anteriorly. The sacrum helps to form the pelvis.
- 4 small vertebrae in the tail region are fused to form a small triangular bone called as coccyx (tailbone).



## FUNCTIONS OF THE VERTEBRAL COLUMN

- Movement of the body.
- Support the head and the organs of the thorax and abdomen.
- Protection for the spinal cord.
- Balance the erect position.

### 2.3.4 Thorax

Thorax or chest is formed by the sternum (breast bone) and costal cartilages in front, ribs at the sides and the 12 dorsal vertebral bones at the back.

The sternum is a flat bone, shaped like a dagger pointing downwards. The tip consists of a cartilage known as the xiphi sternum. The upper part, like the handle is joined to the two collar bones. The costal cartilages are joined to the sides of the sternum and to the true ribs.

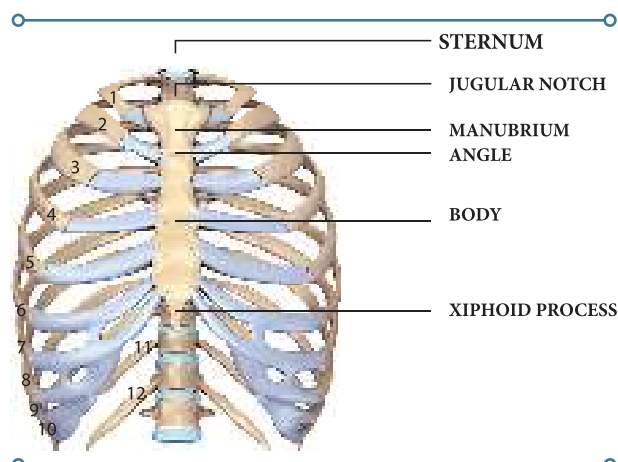
The ribs are twelve pairs of the long curved bones. The upper seven pairs are called true ribs. These are attached to the sternum by its costal cartilages.

The next five parts of the ribs are called false ribs because they are joined their cartilages to those of the ribs above and not directly to the sternum. The last two pairs are not connected at all and are called floating ribs.

### FUNCTIONS OF THE THORAX

1. Protection for the heart, lungs, liver, stomach, and spleen.
2. Support for the bones of the shoulder girdle and for the breast.
3. Important in respiration.

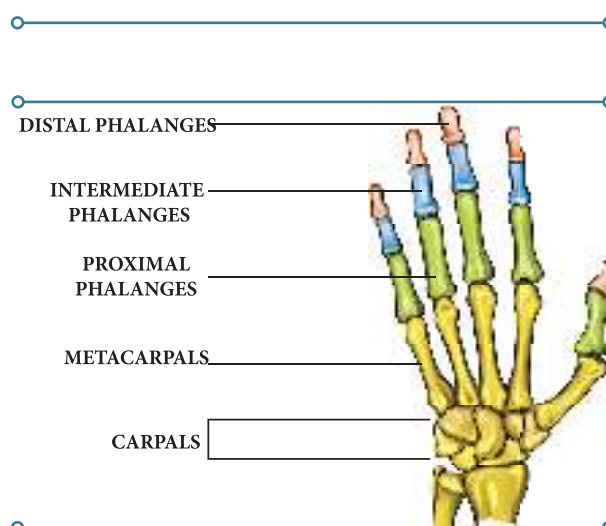
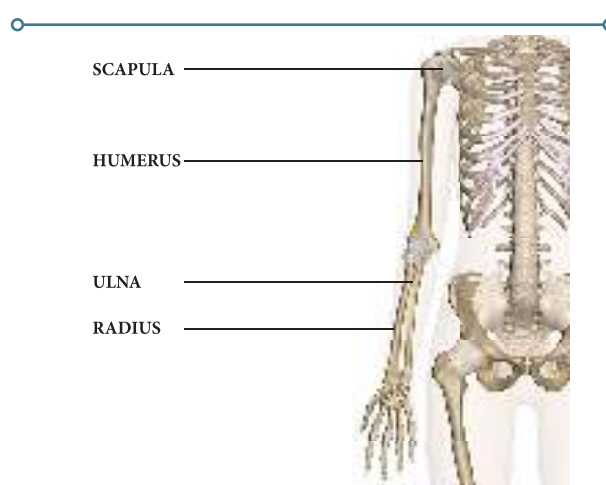
### STERNUM AND RIBS



### BONES OF THE LIMBS

#### 2.3.5 Bones of the Upper Limb

- Each upper limb consists of thirty bones.
- One collar bone.
- Shoulder girdle.
- One humerus – the bone of the upper arm.
- One radius – the outer bone of the fore arm.
- One ulna – the inner bone of the fore arm.
- Eight carpal bones of the wrist.
- Fourteen phalanges of the fingers.



### 2.3.6 Bones of the lower limb

Each lower limb consists of 31 bones.

- Innominate bone – 1
- Femur bone – 1
- Patella – 1
- Tibia – 1
- Fibula – 1
- Tarsal bones – 7
- Metatarsal bones – 5
- Phalanges – 14

Innominate bone or hip bone:

The hip bone is an irregular flat bone, which has 3 parts – Ilium, ischium and pubis.

Femur bone (thigh bone:) It is the largest and strongest bone in the body.

Patella kneecap: It is a small bone at the front of the knee joint.

Tibia: Tibia is the long bone on the inner side of the lower leg.

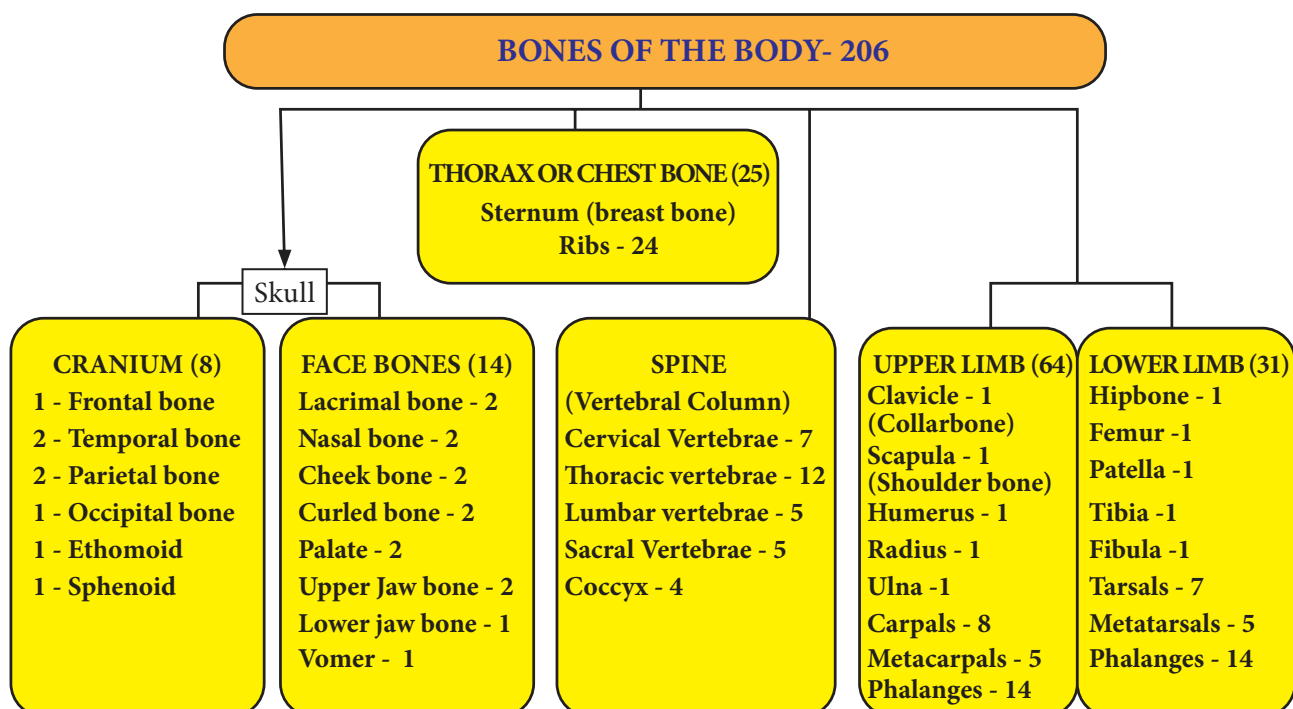
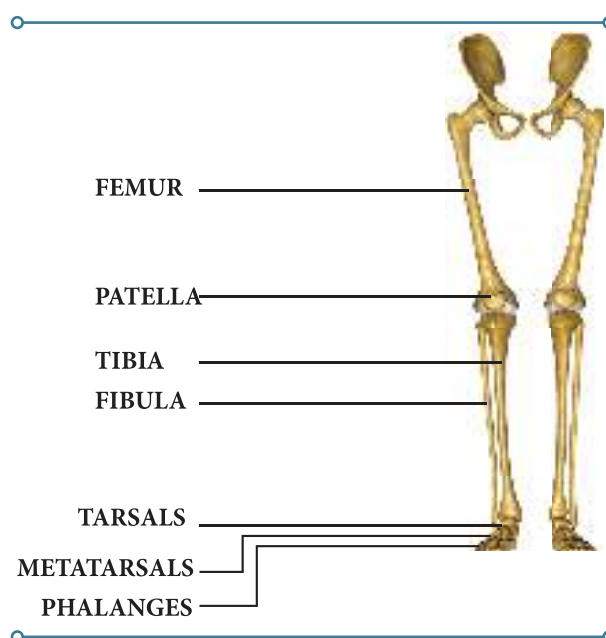
Fibula: Fibula is a long thin bone on the outer side of the leg.

Tarsal bones: Tarsal bones of the ankle are seven short bones. The largest is the heel bone (calcaneum).

Meta tarsal bones: Metatarsal bones are five long bones in the front of the feet. They support the toes.

Phalanges (toe bones): Fourteen in number and they are the smallest of the long bones.

### BONES OF THE LOWER LIMB



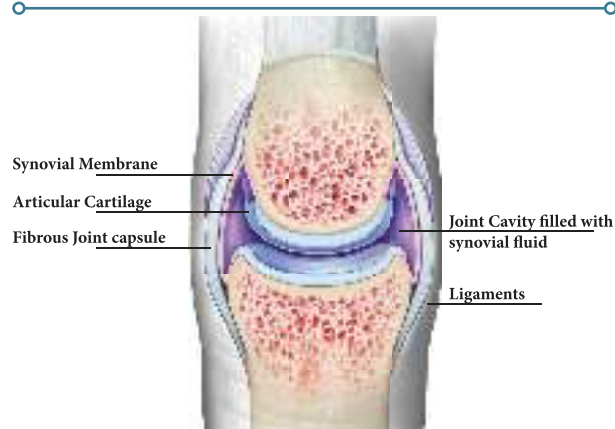
### 2.3.7 Joint

Joint is a union between two or more bones. It is a device to permit movement.

Scientific study of joints is called arthrology

#### TYPES OF JOINTS

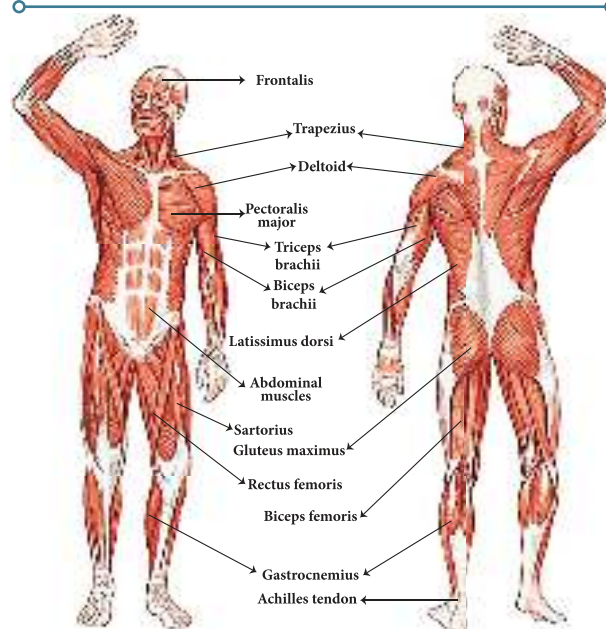
1. Fibrous Joints: In this joint there is no movement. Eg. Sutures of the skull. The bones are joined as though they were stitched (sutured) together.
2. Cartilaginous Joints: In which two bones are joined by a pad of fibrous cartilage, which allows slight movement. They are found in the vertebral column and pelvis.
3. Synovial Joints: Which are freely movable and found in the limbs and jaw.
4. Ball and Socket Joints: The round head of one bone fits into the cavity of another bone. Eg. Shoulder and hip joints.
5. Hinge Joints: The only movements are flexion and extension. Eg. Elbow, knee.
6. Gliding Joint: The bones glide on one another and allow fairly free movements. Eg. Wrist and ankle joint.
7. Pivot Joint: Turning is the only movement. Eg. The movement between the atlas and axis for turning the head.



#### STUDENT'S ACTIVITIES

1. Identify the joints with the given bones
2. Think and answer (Game)  
List of joints  
2 bones are joined together ..... joint  
3 bones are joined together ..... joint  
4 bones are joined together ..... joint  
5 bones are joined together ..... joint  
6 bones are joined together ..... joint  
7 bones are joined together ..... joint  
(etc)

### 2.4 MUSCULAR SYSTEM



Muscle is a contractive tissue, which brings movement. Muscles attached to bones of skeletal system forming

musculo skeletal system and constitute 40-50% of body weight. There are totally 639 muscles in human body.



A Person uses 17 muscles when he smile 😊 and 43 muscles when he frown.

## FUNCTIONS OF MUSCULAR SYSTEM

- Movement
- Support
- Heat Production

There are three types of muscles

- Voluntary Muscles
- Involuntary Muscles
- Cardiac Muscle

## VOLUNTARY MUSCLES

These are connected with the skeletal system causing the joints to move. They are called voluntary because their action can be controlled by the will.

**Deltoid:** It is a triangular muscle covering the shoulder joint and attached to the shoulder blade collar bone and humerus.

**Gluteal:** It is the muscles of the buttocks. Attached to the posterior surface of the ilium, sacrum and to the femur. They help to extend the hip joint.

## INVOLUNTARY MUSCLES

Work without conscious control by the individuals are found in the internal organs.

## CARDIAC MUSCLE

A special type of muscle found only in the heart. The fibres are striped, but the muscle is not under control of the will.

## 2.5 NERVOUS SYSTEM

Functional unit of nervous system is neurons.

Nervous system functions like a telephone system with the brain as the head office and nerves like the telephone wires, communication takes place with all parts of the body. By means of numerous messages sent and received by the various tissues and organs of the body to work in harmony.

## BRAIN

Brain is the most important part of the central nervous system. It is well protected in the cranial cavity and has the following parts.

The cerebrum – fore brain

The cerebellum – hind brain

The mid brain

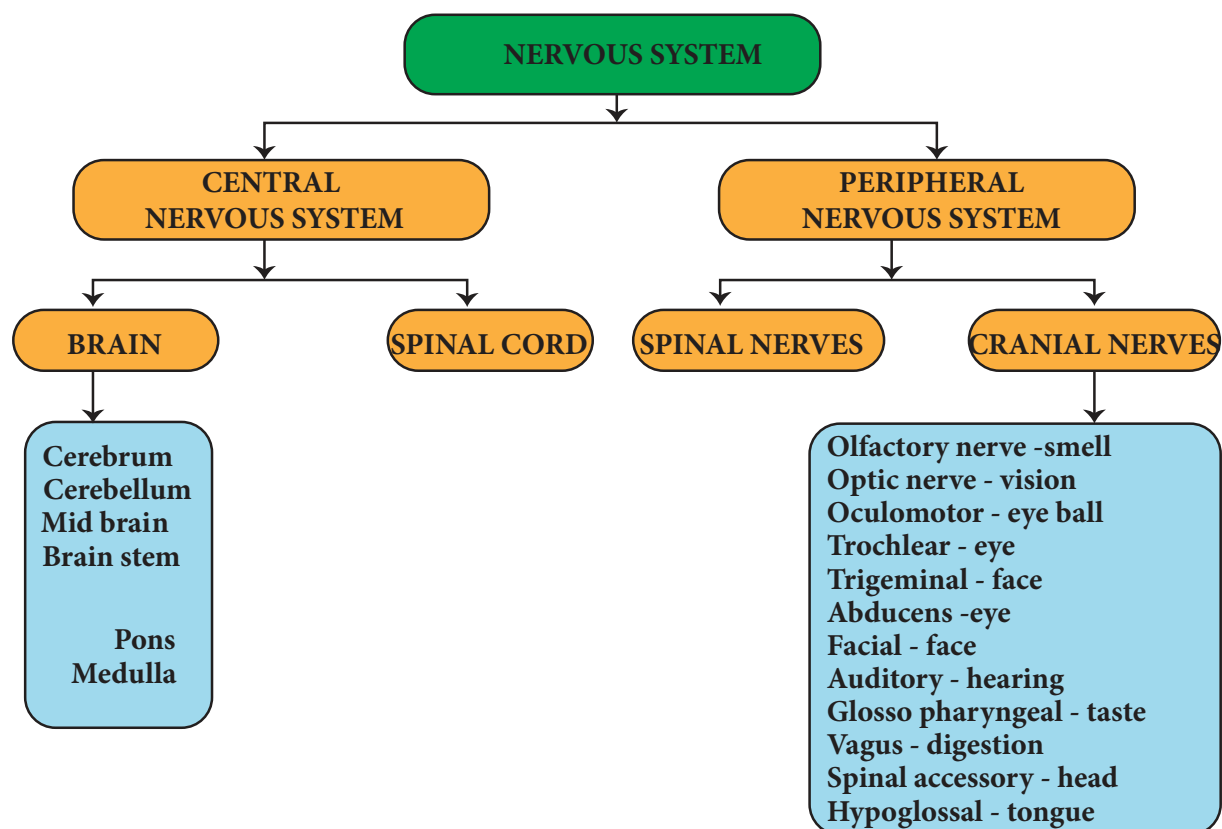
Brain stem – consisting of pons and medulla.

## CEREBRUM

Cerebrum is the largest part of the brain and fills the front and top parts of the skull. It has two parts right and left. These two parts control the opposite sides of the body, so that diseases or injury of the right side of the cerebrum paralyses the left side of the body and vice versa.



Nerve impulses are sent from the brain move at a speed of 274 km/h.



## FUNCTIONS OF THE CEREBRUM

- Frontal lobe – motor centres controlling voluntary muscles.
  - Speech centre
  - Mental power such as memory, intelligence and will.
- Parietal lobe – the sensory centres for sensations of touch, pain, heat, cold, and pressure.
- Temporal lobe – for hearing
- Occipital lobe – for vision

## CEREBELLUM

The cerebellum is situated underneath the cerebrum at the back.

## FUNCTIONS OF CEREBELLUM

- Helps to maintain balance
- Helps to maintain muscle tone
- Coordinates the work of muscles

**DO YOU KNOW?** The effect of alcohol in Brain: ↓  
 Empty stomach - few minutes  
 Full stomach – Six hours

## MID BRAIN

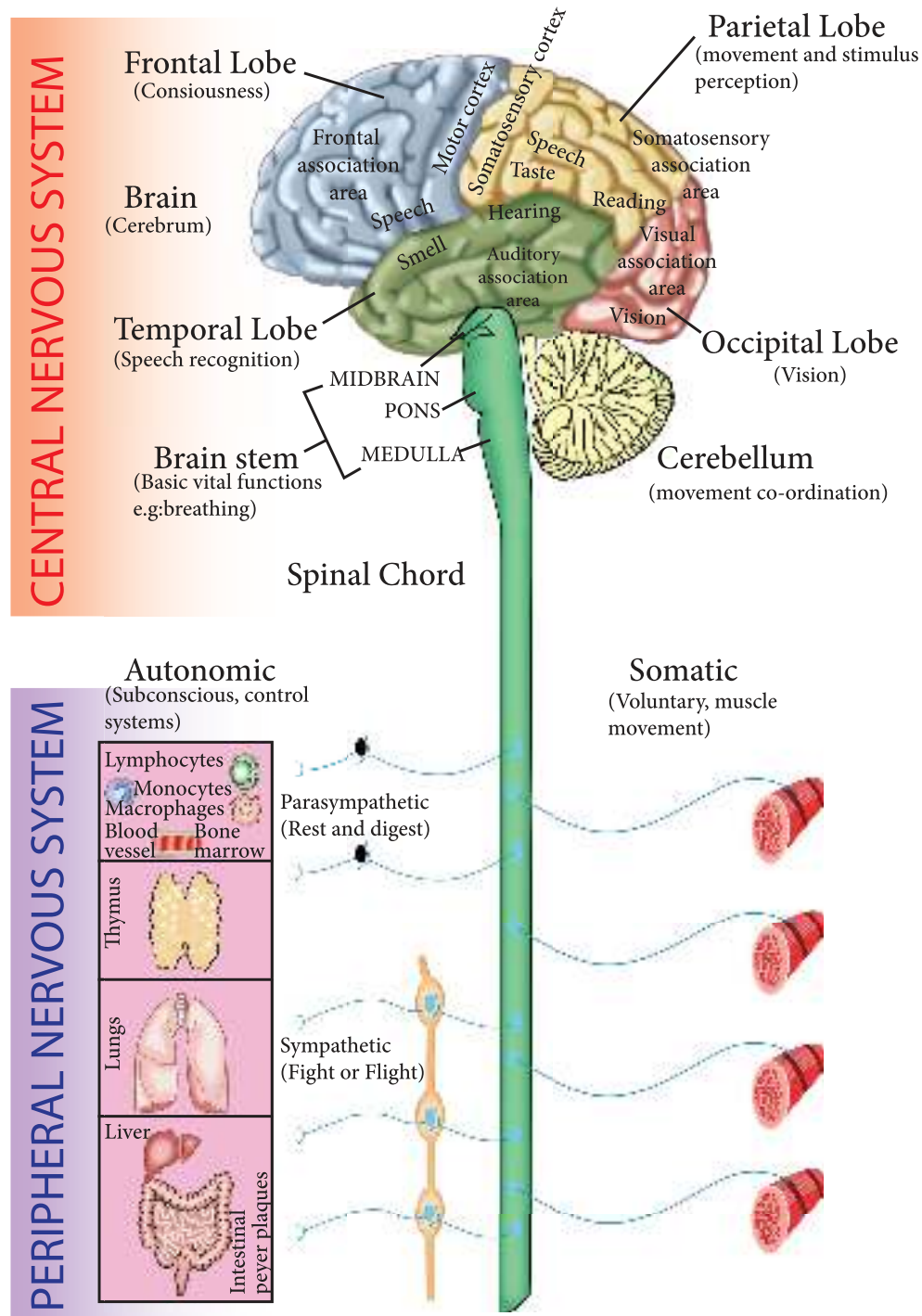
This consists of two short stalks of nerve tissue attached to the lower part of the right and left side of the cerebrum in the centre.

## FUNCTIONS OF MID BRAIN

- Acts as a pathway for messages to and from the cerebrum.
- Contains reflex centres for vision and hearing.
- Contains centres for controlling body temperature, emotions and sexual responses.

## BRAIN STEM

The brain stem is a stalk connecting the brain with the spinal cord. It has following parts.



1. Pons
2. Medulla

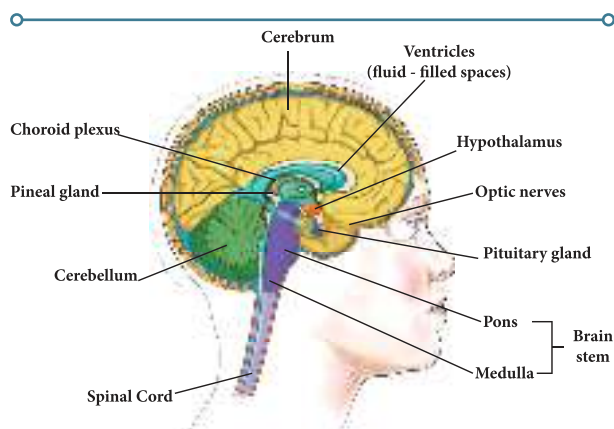
### FUNCTIONS OF MEDULLA

- Connects the brain with the spinal cord and conveys messages. It is in

the medulla cover the cerebral nerve fibres cross over to the opposite side.

- Contains nerve centres, which control the vital functions of circulation and respiration.
- Contains reflex centres of swallowing, vomiting and coughing.

## BRAIN



## CRANIAL NERVES

There are 12 pairs of cranial nerves which come out from the brain and brain stem. They pass through the holes in the skull to the eyes, ears, face, tongue, throat, etc., The tenth cranial nerve called vagus, gives branches to the larynx, lungs, heart and digestive organs. The vagus nerve functions as part of the autonomic nervous system.

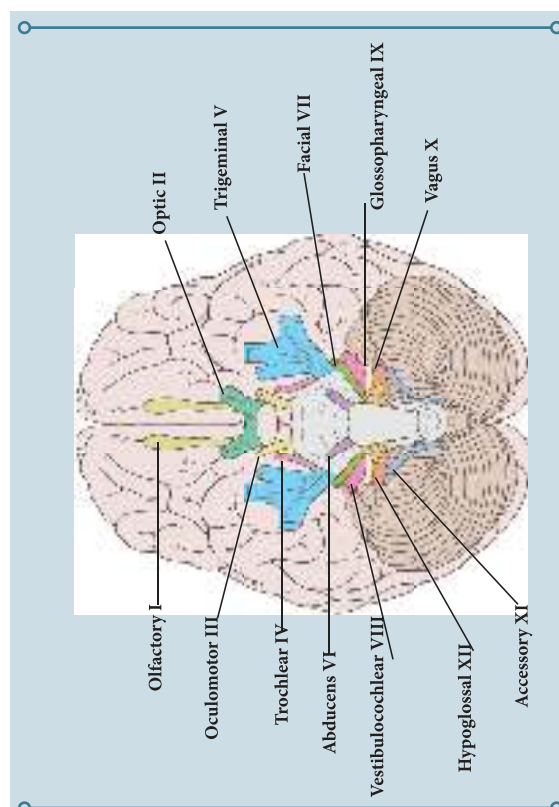


## STUDENT'S ACTIVITY

Quiz on Cranial Nerves and its function (Class should be divided into two groups)

## SPINAL CORD

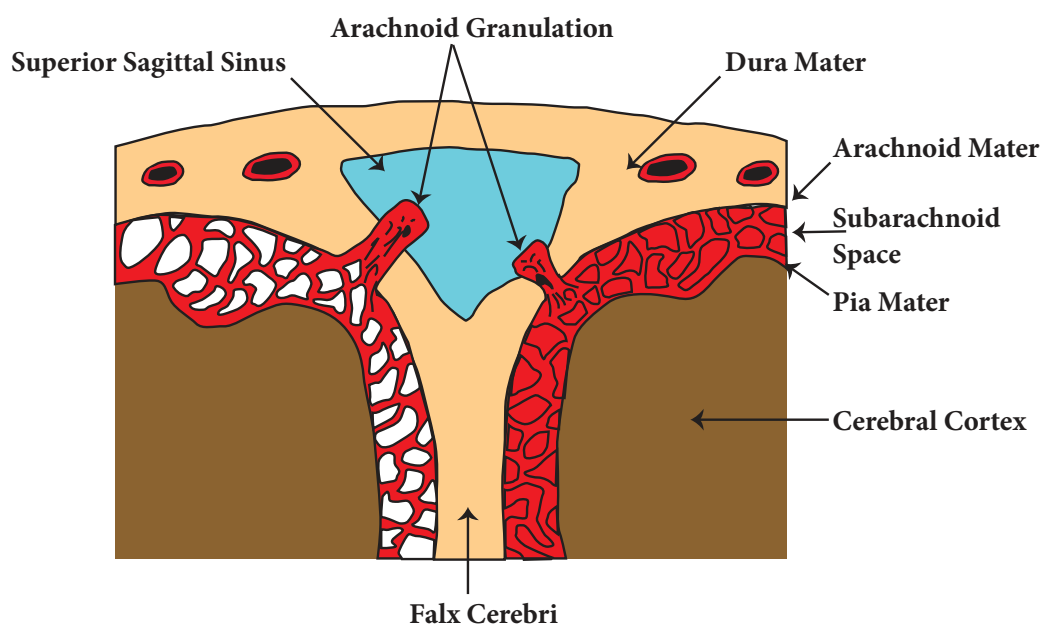
- The spinal cord is a cord of nervous tissues. The thickness of a little finger and about 12cm long. It lies inside a canal formed by the vertebrae.
- Functions of the spinal cord.
- Receives motor impulses from the frontal lobe of the cerebrum, and passes them on to muscles via the spinal nerves.
- Receives sensations from the skin and other tissues and relays the message to the brain.
- Reflex action is the quick response in the spinal cord.



## Cranial nerves

Number	Name	Function
I	olfactory	smell
II	optic	Sight
III	oculomotor	moves eye, pupil
IV	trochlear	moves eye
V	trigeminal	face sensation
VI	abducens	moves eye
VII	facial	moves face, salivate
VIII	vestibulocochlear	hearing, balance
IX	glossopharyngeal	taste, swallow
X	vagus	heart rate, digestion
XI	accessory	moves head
XII	hypoglossal	moves tongue

## THE MENINGES



The brain and spinal cord are covered by three membranes called meninges.

- Duramater is the outer, thick elastic cover. It lines the skull and spinal cord.
- Arachnoid is a thin middle membrane. It is a loose covering and there is a space called 'theca' (sub arachnoid space) containing cerebrospinal fluid.
- Piamater is closed to the nerve tissue and carries blood vessels.
- When these membranes get infected, the condition is known as meningitis.

## CEREBRO SPINAL FLUID

It is a clear fluid, which circulates both inside and outside the brain and spinal cord.

## FUNCTIONS OF CEREBROSPINAL FLUID

- It acts as a water cushion to protect the brain and spinal cord from shocks.
- It nourishes and cleanses, washing away water and toxins.

## 2.6 CARDIO VASCULAR SYSTEM

Heart is an efficient muscular pump works 24 x 7

Cardio vascular system consists of the following organs:

- Blood
- Heart
- Blood Vessels – Arteries, Veins and Capillaries
- Lymphatics.

## ANATOMICAL STRUCTURE OF THE HEART

Heart is a cone shaped, hallow muscular organs about the size of its owners closed fist. It weighs about 300 gm in a man and 250 gm in a woman. It is situated in the thoracic cavity between the lungs.

The heart is divided by a septum into right heart and left heart. The right heart contains

impure or deoxygenated blood, and the left heart contains pure or oxygenated blood. Each portion is further sub divided into a superior and an inferior chamber. The superior chambers are called atrium and inferior chambers are called the ventricle.

The atrium communicates with the corresponding ventricle through an opening called an atrioventricular opening which is guarded by a valve.

The atrioventricular valve on the right side is called the tricuspid valve and the valve on the left side is called bicuspid or mitral valve. These valves permit the flow of blood in only one direction, that is from the atrium to the ventricle but not in the reverse direction.

## HUMAN HEART



### STUDENT'S ACTIVITY

Still model – heart

Working model – blood circulation



Women's heart beats faster than men.

The human heart pump 182000000 (182 million) litres of blood during the average life time.

**Pulmonary artery:** The only artery which carries the deoxygenated blood.

**Pulmonary vein:** The only vein which carries the oxygenated blood.

Superior vena cava

Pulmonary veins

Right atrium

Tricuspid valve

Right Ventricle

Interior vena cava

Aorta

Pulmonary veins

Pulmonary artery

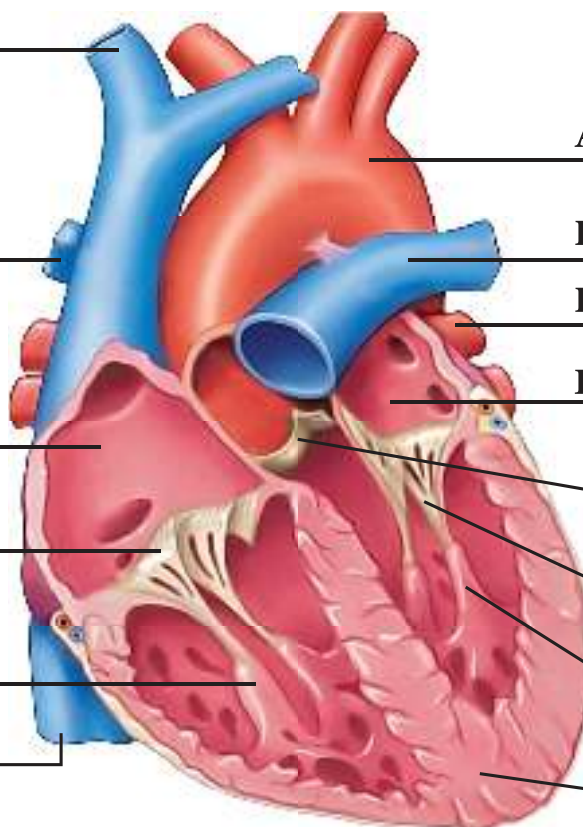
Left atrium

Pulmonary valve  
(Semi-lunar valve)

Mitral valve  
(bi-cuspid valve)

Left Ventricle

Cardiac muscle



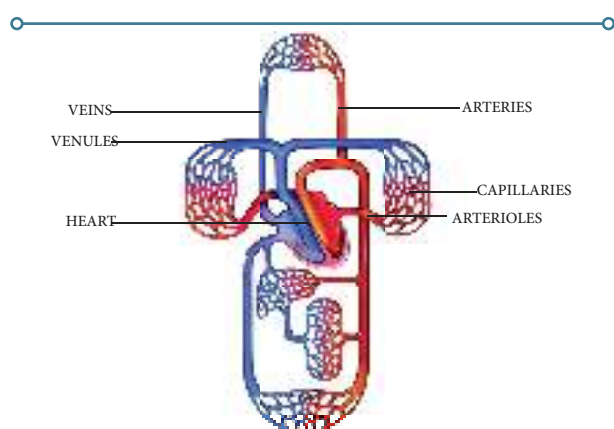
## BLOOD CIRCULATION

Circulation can be roughly divided into pulmonary and systemic circulation.

1. Pulmonary circulation
2. Systemic circulation

### PULMONARY CIRCULATION

Deoxygenated blood from all parts of the body reaches the right atrium through two major veins the superior and inferior vena cava. From the right atrium this blood reaches the right ventricle. From the right ventricle, blood flows into the pulmonary artery through which it is supplied to both lungs. In the lungs, the blood gets oxygenated.



### SYSTEMIC CIRCULATION

The oxygenated blood from the lungs enters the left atrium through 4 pulmonary veins. From the left atrium the blood enters the left ventricle. From the left ventricle, through aorta, and its branches. This oxygenated blood is supplied to all parts of the body.

### FUNCTIONS OF HEART

- It draws blood back from the capillaries and veins.

- It sends blood into the lungs where it is oxygenated.
- It sends blood through the aorta to all parts of the body.

### BLOOD VESSELS

There are mainly 3 types of blood vessels:

- Arteries
- Veins
- Capillaries.

### BLOOD

About 6 litres of blood continuously circulates through the heart and blood vessels in all parts of the body. It is a sticky red fluid is slightly alkaline in reaction. It made up of a liquid (Plasma) and solid (cells).



#### STUDENT'S ACTIVITY

Separation of plasma and cells in a test tube at classroom.

Plasma is a pale yellow fluid consisting of:

- Water 90 %
- Salts, including sodium chloride
- Proteins (Albumin, globulin, fibrinogen)
- Nutrients, such as glucose, fats, amino acids, vitamins and minerals
- Waste products such as Urea and carbon dioxide
- Antibodies and antitoxins for resistance to germs.

- Hormones produced by the endocrine glands.
- Substances for blood clotting and for preventing clotting of blood.
- Plasma is important for the life of the tissue cells. It gives water and nourishment and carrying away their waste products.

## BLOOD CELLS

There are three main types:

- Red blood cells or Erythrocytes
- White blood cells or Leucocytes
- Blood Platelets or Thrombocytes.



Leukocytes in human body live for 2–4 days and erythrocytes for 120 days.

## FUNCTIONS OF BLOOD

- Carries oxygen to the tissues by means of red blood cells.
- Carries food to the tissues.
- Carries away waste produces from the tissues to the excretory organ.
- Carries hormones from the glands to the target tissues.
- Fights germ infection by means of the white cells and antibodies.
- Distributes heat and helps to maintain body temperature.
- Helps to maintain water balance in the body.

## LYMPHATIC SYSTEM

The lymphatic system is a special types of circulatory system. It is composed of:

1. The lymph
2. The lymphatic Vessels.
3. The lymph glands or nodes

## FUNCTIONS OF LYMPH

- Lymph glands help to protect the body from infection by filtering the lymph to prevent germs from getting into the blood stream and fighting to overcome them.
- Producing new lymphocytes for the blood.

## 2.7 THE DIGESTIVE [ALIMENTARY] SYSTEM

The functions of the digestive system is to receive food and water.

Prepare and process it for absorption and to excrete the unwanted portion of the food.

Digestion and absorption are two chief functions of digestive system.

The digestive system may be up to 30 feet in length in adult and it is usually divided into eight parts. The mouth the Oesophagus, the stomach, the small intestine the large intestine with the liver, pancreas and gall bladder adding secretions to help the digestive process.

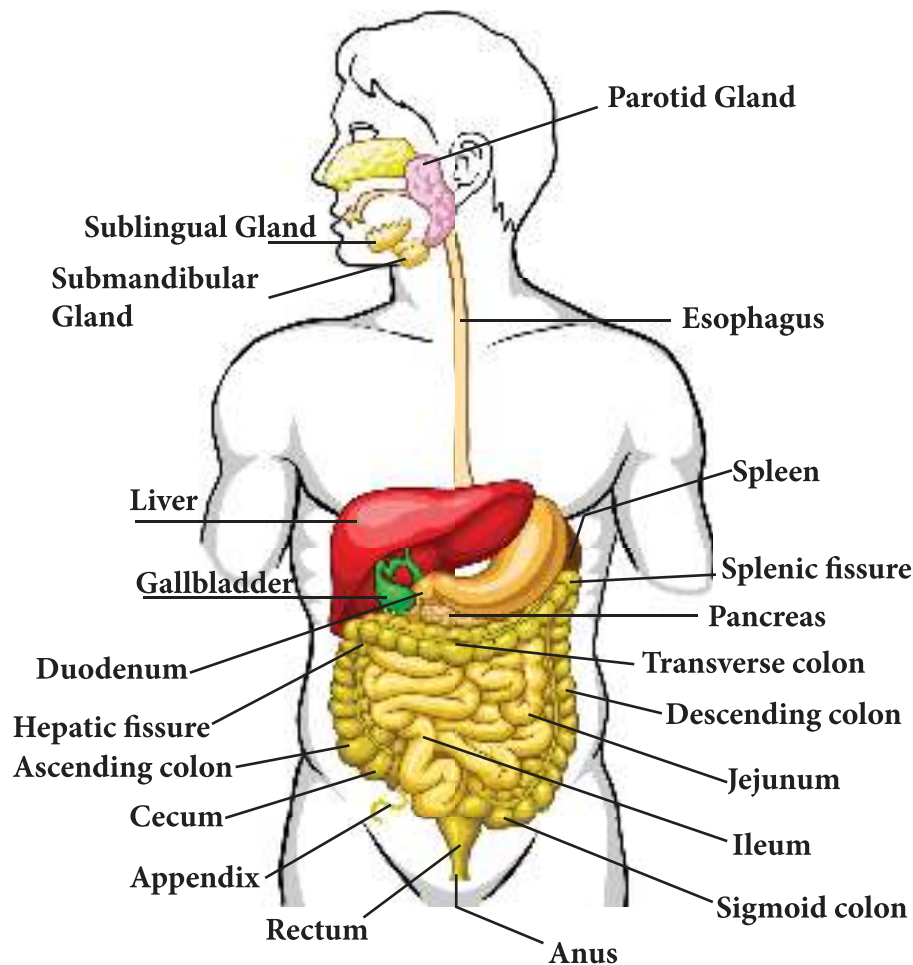
## FUNCTIONS OF DIGESTIVE SYSTEM

- Break down of food substance into small particles
- Digestion of food
- Absorption of food
- Excretion of undigested food and toxic substances.

The mouth [oral cavity]

In the mouth there are 32 tooth. They are.

Molar	–	12
Premolar	–	8
Canine	–	4
Incisors	–	8



This helps to break down the food into small particles.

The tongue is a muscular organ, which helps in chewing, swallowing and speech. The taste buds help in the sensation of taste.

The salivary glands secrete saliva in the mouth. The three salivary glands are.

- The parotid gland
- The sub maxillary gland
- The sub lingual gland.

The oesophagus is a tube connecting pharynx {throat} and the stomach which transfer food from mouth to stomach.

The stomach is a muscular organ (J shaped) the ends are guarded by 2 sphincters

- Cardiac sphincter
- Pyloric sphincter

The liver is the largest and important organ of the abdomen, bile is secreted by the liver cells and stored in gall bladder.

The small intestine is about 6 meters long. The parts of the small intestine are:





- Duodenum
- Jejunum
- Ileum


The large intestine is about 1½ meters. The small intestine opens into the large intestine. The large intestines consist of:

- Ascending colon
- Transverse colon
- Descending colon
- Sigmoid colon.

The sigmoid colon opens into the rectum. The faeces is collected in the rectum and expelled through the anus.

## PHYSIOLOGY OF DIGESTION

	Organ	Enzymes	Action
Food	Mouth saliva 	Ptyalin Maltase	Starch – maltose Maltose – glucose
Bolus	Stomach 	Food – bolus – gastrin is released – discharges gastric juice contains – hydrochloric acid – kills bacteria in the food  Enzymes <ul style="list-style-type: none"> <li>• Pepsin – converts protein into peptones</li> <li>• Renin – converts indigestible protein of milk into digestible one</li> <li>• Lipase – converts fats into – fatty acid and glycerol</li> </ul>	
	Liver 	Liver - bile Pancreas - Pancreatic juice <ul style="list-style-type: none"> <li>• Pancreatin</li> <li>• Trypsin</li> <li>• Pancreatic lipase</li> </ul>	Acts on fats dissolves fatty acid and glycerol  Converts carbohydrates into fructose, amylase, glucose, galactose  Converts peptones – polypeptides  Converts facts – fatty acid and glycerol
Chyme	Small intestine 	Chyme – succus entericus  Pepsin  Nucleotidase  Nucleotidase  Splits lactase, maltase, sucrose – glucose	Converts polypeptides – amino acids  Converts nucleotide to nucleoside  Converts nucleosides Pentose Purine Pyramidin

Organ	Enzymes	Action
	Final products of digestion takes place in small intestine Carbohydrate - Glucose Proteins – Amino Acids Fats – Fatty Acids, Glycerol	
Faeces	Large intestine 	large quantity of water is absorbed.

**DO YOU KNOW?** A new born child breathe and swallow at the same time for up to seven months.

**DO YOU KNOW?** At least 700 enzymes are active in the human body.

## 2.8 RESPIRATORY SYSTEM

Functional unit of respiratory system is respiratory bronchiole.

Respiratory system consists of a group of organs which are designed to convey air and to provide a mechanism in which blood and air comes into intimate relation with each other, so that, gaseous exchange occurs between the oxygen of the air is absorbed by the blood and the carbon dioxide is eliminated into the air.

The exchange of gases between the body and the environment taking place in the lungs is termed as external respiration. The gaseous exchange between the tissues and the lungs is termed as internal respiration.

Respiratory system consists of the following organs

- Nose
- Pharynx
- Larynx

- Trachea
- Bronchi
- Lungs.

### NOSE:

The nose is made up of cartilage and bone. It allows the passage of air. Air which passed through nose is moistened by mucus, warmed by blood and filtered by hairs and cilia. It opens at the back into the pharynx.

### PHARYNX

The nose opens into the nasopharynx which leads below into larynx.

### LARYNX

It is also called the wind pipe and is about 10 cm long. The lower end, of it divides into 2 bronchi. It is made up of 16-20 rings of cartilage which are connected to each other by fibrous tissue.

### BRONCHI

These are two short tubes similar in structure to the trachea and each leads to one lungs. Each bronchus divides further

into smaller branches called bronchiole, finally leading to small air filled spaces called alveoli which constitute the lungs.

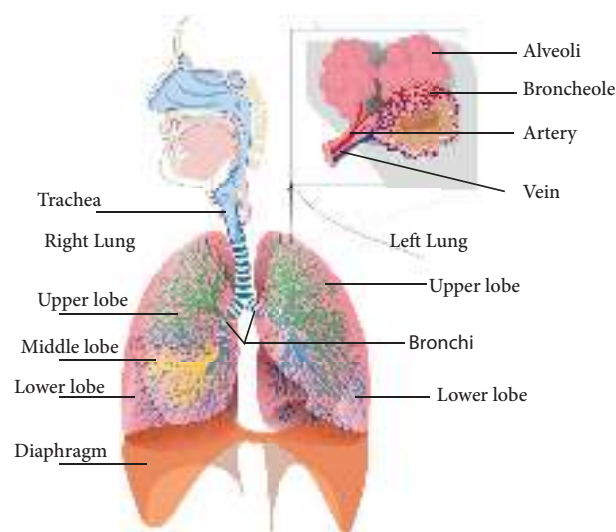
## LUNGS

The lungs are two in number, and are cone shaped spongy organs. The base of the lungs rests on the diaphragm, and the apex behind the clavicle, the right lung has 3 lobes and the left lung has 2 lobes.

Each lung is covered by a thin serous membrane called pleura, which is actually made up of 2 layers, between which there is a fluid called as pleural fluid. This act as a lubricant.

The lung is made up of numerous tiny pockets of air sacs called alveoli, which form the main site for exchanges of gases between the inhaled air and the blood.

## RESPIRATION



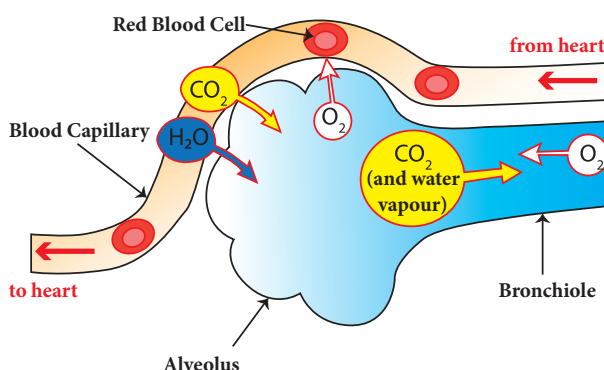
We breathe continuously from birth to death. Respiration may be defined as the mechanical process of breathing in and out. It involves both the respiratory system and muscles of the respiration.

Two phases of breathing are:

- Inhalation – during which the air is drawn into the lungs

- Exhalation – which refers to the expulsion of air from the alveoli
- The respiration is controlled by medulla oblongata

## IMPORTANCE OF RESPIRATION



- It supplies oxygen and eliminates carbon dioxide
- It excretes volatile substance like ammonia, ketone bodies, essential oils, alcohol and water vapour etc.,
- By adjusting the amount of carbon dioxide elimination it helps to maintain the normal body temperature.
- It is necessary for the maintenance of optimal oxidation – reduction process in the body.



### STUDENT'S ACTIVITY

1. Working model – Lung
2. Deep breathing exercise - inhalation and exhalation by balloon blow method.

## 2.9 EXCRETORY SYSTEM

### INTRODUCTION

The end products of metabolism which have to be removed from the body are called excreta and the organs that remove them are called excretory organs.

## EXCRETORY ORGANS

- Lung – Carbon Dioxide
- Kidney – Urine
- Intestine – Faeces
- Skin – Sweat

## URINARY SYSTEM

Functional unit of kidney is nephron

Urinary system is the vital excretory system of the body.

Parts of the urinary system:

Parts	Functions
Kidney	Urine Formation
Ureter	Passes Urine to the Bladder
Urinary Bladder	Storage of Urine
Urethra	Passing of Urine

## KIDNEYS

The kidneys are bean shaped organs, lying on the posterior abdominal wall, one each side of the vertebral column. Each kidney measures 10-13 cm in length 2-3 cm in thickness and 6 cm in breadth. Each kidney weighs about 140 gms.

The kidneys are made up of basic units called nephrons. Each kidney contains about 10,00,000 nephrons approximately. A nephron has a cup shaped part which acts as a filter part is connected to a long coiled tubule which carries the filtered liquid. All these tubules join together to form the ureter.

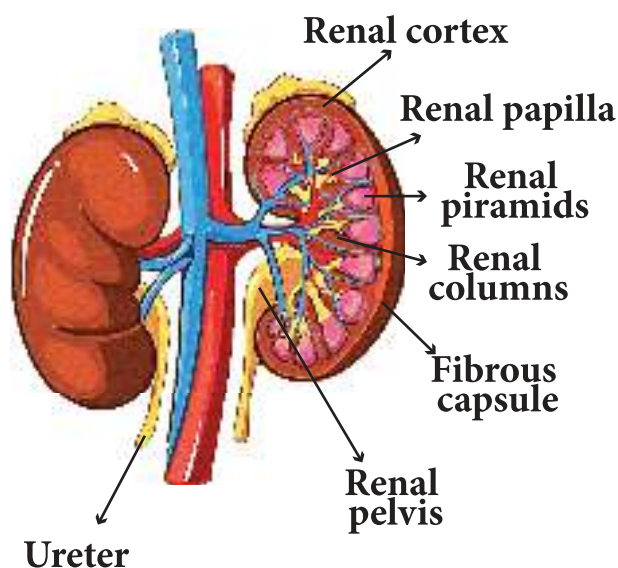
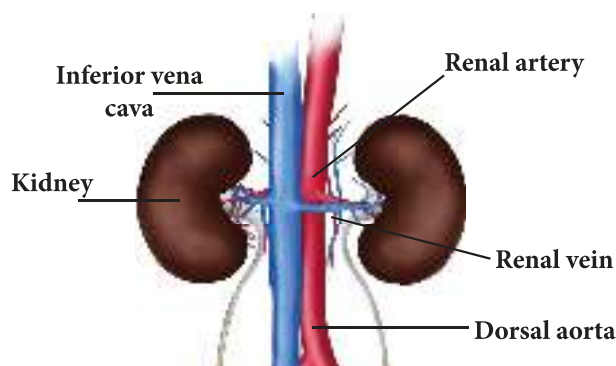
## URETERS

It is a short tube passing from the kidney to the bladder. The bladder receives urine through the ureters and stores it. When the bladder is full to its capacity by a voluntary act the urine is expelled through an opening

called the urethra. The male urethra is about 2.5-5 cm long.

## FUNCTIONS OF THE URINARY SYSTEM

- Excretion of excess water and salts
- Excretion of metabolic waste products, drugs and toxic materials
- Maintaining water balance and acid base equilibrium of the body
- Maintaining the blood pressure by producing a substance called rennin
- Helping in the production of Red blood cells by secreting a substance called erythropoietin.



## STUDENT'S ACTIVITY

Chart Preparation – Excretory System (Kidney)

## 2.10 ENDOCRINE SYSTEM

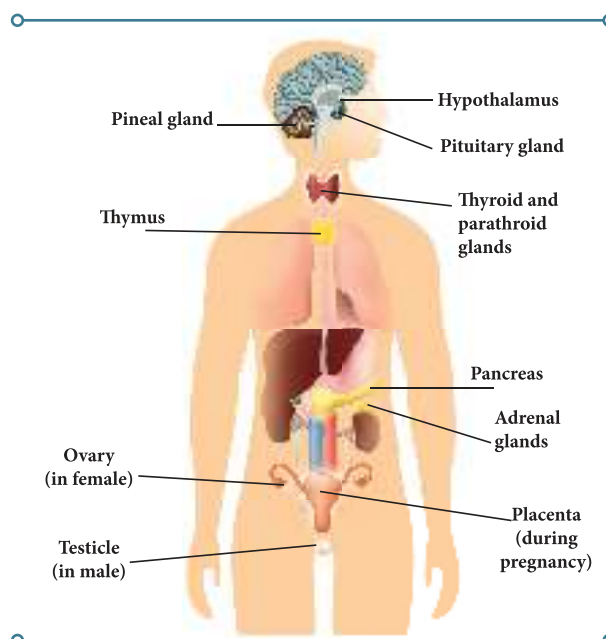
The glands of the body may be divided into – endocrine gland.

- exocrine gland

External secretion	Internal secretion
Exocrine glands	Endocrine glands [ductless gland]
Eg. Sweat glands, lachrymal glands, mammary glands	Eg. Pituitary glands
	Thyroid glands
	Para thyroid glands
	Islets of langerhans
	Adrenal glands
	Sex glands – ovary, testis



Hormones help your body by telling the cells what they need to do.




## HORMONES

A hormone is a chemical substance produced by the endocrine glands and their overall function is to regulate the activities of various body organs and their function.



Endocrine gland	Structure	Hormone	Functions
Pituitary	Small gland – size of a cherry [pea sized] Just below the hypothalamus base of the brain Also called “Master Gland” <u>Pituitary gland</u> Anterior Pituitary gland Posterior Pituitary gland	Anterior Pituitary gland -Growth hormone	Facilitates the growth of bone and cartilage tissue <u>In children</u> Increase production → gigantism Decrease production → dwarfism <u>Adults</u> Excessive production Acromegaly

Endocrine gland	Structure	Hormone	Functions
		Thyrotrophic stimulating hormone [THS]	Stimulates the activity of thyroid gland
		Adrenio corticotrophic hormone [ACTH]	Stimulates the production of harmones of adrenal cortex
		Follicular stimulating hormone [FSH]	Influences the growth, development and maturation of the ovarian follicles. Formation of sperms in testis
		-Prolactin hormone	Acts on mammary glands during lactation
		-Luteinising hormone	Stimulates ovulation in females Stimulates interstitial cells of tests to secrete testosterone
		Posterior Pituitary gland	Acts on muscles of the uterus during delivery – contractions
		Oxytocin	
Thyroid gland	 <p>Largest of endocrine glands Located in the neck region It has 2 lobes seen on either side of trachea</p>	Vasopressin	<ul style="list-style-type: none"> <li>Acts on smooth muscles of arterial system and increases the blood pressure</li> <li>Decrease secretion – diabetes insipidus</li> </ul>
		Thyroxin	<ul style="list-style-type: none"> <li>Regulates tissue growth and development</li> <li>Increases BMR thus raises body temperature</li> <li>Stimulates breakdown of protein for energy</li> <li>Decreases breakdown of fats</li> <li>Helps in conversion of <math>\beta</math> carotens – vitamin A</li> <li>Ca and P are removed from bones and excreted in increased amounts.</li> </ul>

Endocrine gland	Structure	Hormone	Functions
Para thyroid glands	Seen situated at the upper and lower poles of lateral lobes of thyroid glands	Para thyroxin	<ul style="list-style-type: none"> <li>Increases the reabsorption of calcium from bones</li> <li>Increases the serum calcium levels</li> <li>Increases the phosphate excretion in the urine stimulates lactation in mammary glands.</li> </ul>
Islets of langerans in the pancreas.	Both exocrine / endocrine function is seen in pancreas  The head of the pancreas is seen in the duodenum	Pancreas  Alpha cells – glucagon  Beta cells - insulin	<ul style="list-style-type: none"> <li>Increases the blood glucose level</li> <li>Breakdown of glycogen into glucose in liver</li> <li>Stimulates the breakdown of fat in adipose tissue.</li> </ul>
Adrenal gland	Also called supra renals	Glucocorticoids	Cause increase in blood sugar.
	It seen above the kidneys	Minerlocorticoids	Acts on Na & K and help in conversion of Na in the body.
	<u>Adrenal glands</u>  Adrenal cortex Adrenal medulla	Sex steroids	Development of reproductive organs and secondary sex characteristics.
		Adrenaline	Increases heart rate and increases BMR.
		Nor-Adrenaline	Decreases heart rate.
Male sex glands Testis	Seen inside the scrotal sac	Testosterone	Responsible for secondary sex characteristics.
Female sex glands Ovary	Seen on the either side of the uterus	Estrogen	Development and functioning of female reproductive system.
		Progesterone	Assists in normal development of pregnancy.

- DO YOU KNOW?**
1. The gland that makes hormones and help you to grow and stay full of energy is thyroid.
  2. A common problem with the endocrine is diabetes.

## 2.11 SENSE ORGANS

Sense organs are nose, tongue, eye, ear and skin.



The organs of the special sense are specially adopted for the reception of certain kind of stimuli. The sensory impressions which are supplied by the nerves are carried to the brain where sanctioning are interpreted for eg. Smell, taste, sight, sound, touch.

### NOSE

The nose is the organ of smell. The upper 1/3rd of the nasal cavity contains olfactory cells. From here the olfactory nerve begins and passed through the cribriform plate of ethmoid bone to reach the smell area of brain.

### TONGUE

Tongue is the organ for taste. It is a solid muscular organ. Speech and helps in

mastication of food. It is situated in the oral cavity. The mucous membrane of the tongue is moist and pink in healthy person.

The upper surface of the tongue has a velvate appearance covered by three varieties of papillae.

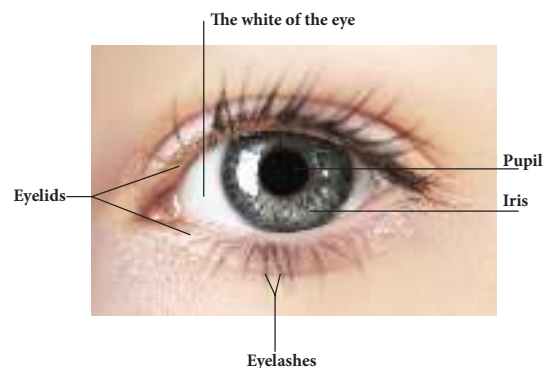
1. Circumvallate Papillae
2. Fungiform Papillae
3. Filiform Papillae.

### EYE



#### STUDENT'S ACTIVITY

Identify the taste from various food stuffs by keeping the surface of tongue



**DO YOU KNOW?** The only part of the body that has no blood supply - Cornea

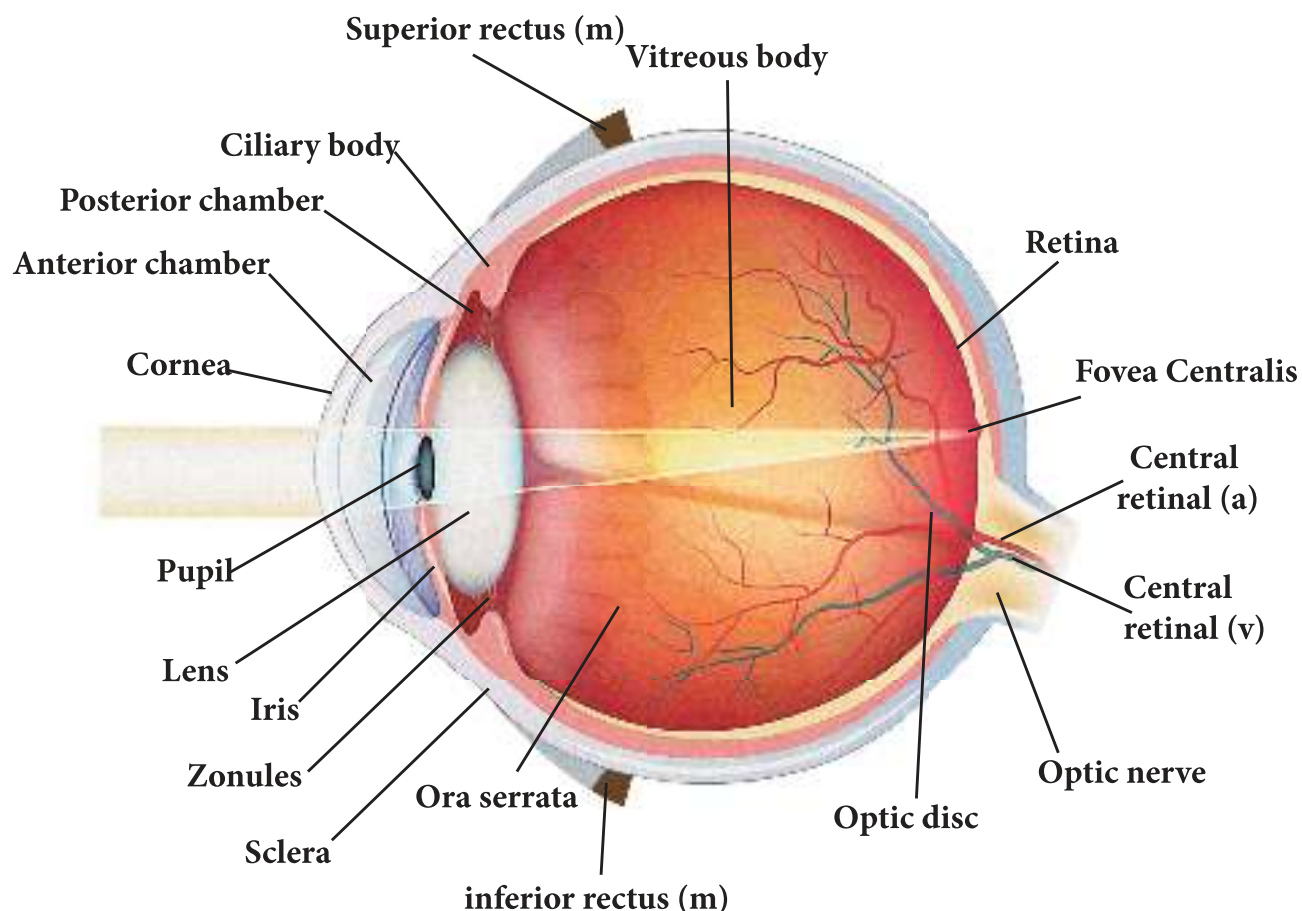
Eye ball is spherical in shape situated in the anterior 2/3<sup>rd</sup> of the orbital cavity and it is embedded in the fat of the cavity. The optic or second cranial nerve is the sensory nerve of the sight.

When an image is perceived the rays of light from the object seen, and pass through the cornea, aqueous humor lens and vitreous body to stimulate the nerve endings in the retina.

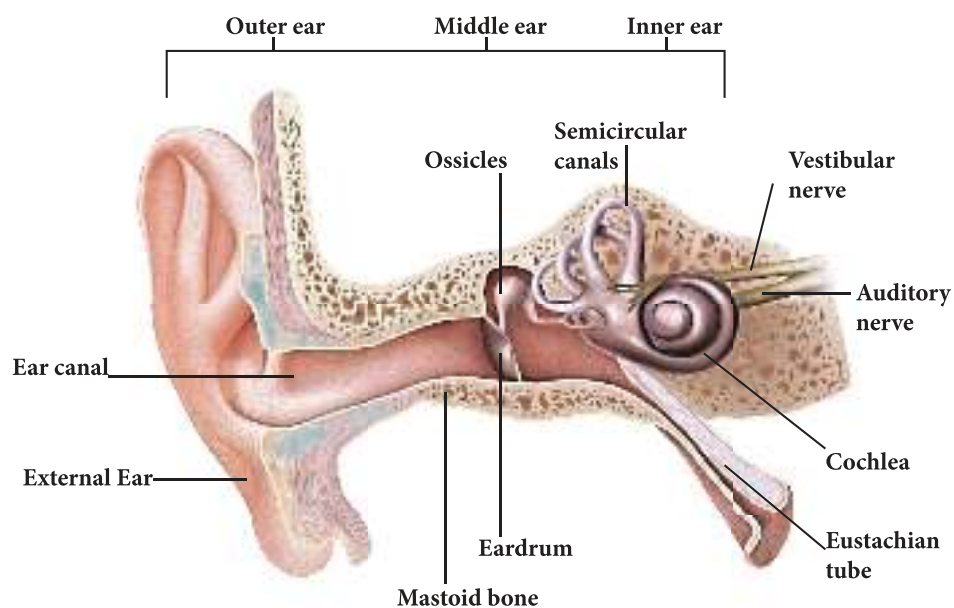
The stimuli received by the retina pass along the optic tract to the visual areas of the brain to be interpreted both areas receive messages from both eyes thus

giving perspective and contour. One lens is provided in an ordinary camera where as in the eyes the crystalline lens is important in focusing the image on the retina.

### STRUCTURE OF EYE



### STRUCTURE OF EAR



Ear is the organ of hearing. The nerve supplying the ear is the 8th cranial nerve which is also called the auditory nerve or the vestibule cochlear nerve. The ear is divided into 3 parts:

- External ear
- Middle ear
- Internal ear.

### External Ear

- Pinna or auricle – collects the sound waves
- External auditory meatus – conveys the vibrations of sound.

### Middle Ear

- Ear drum – communicates to the mastoid process
- Eustachian tube - maintaining the pressure of air
- Auditory ossicles – 3 small bones (malleus, incus, stapes).

Mastoid process is the part of the temporal bone lying behind the ear. It is an air space which communicates in the middle ear.

### Internal Ear

Consists of cavities called the bony labyrinth and membranous labyrinth. Bony labyrinth consists of 3 parts:

- The vestibule
- Semi circular canals
- Cochlea.

## PHYSIOLOGY OF EAR

Sound waves pass along the external auditory canal cause the tympanic membrane to vibrate. The vibrations transmitted through

malleus, incus and stapes. By movement of these bones, the vibrations are magnified and then communicated to the vestibular fenestra to the perilymph and to the endolymph in the canal of the cochlea. This stimuli reaches the nerve endings in the organ of corti and conveyed to the brain by auditory nerve.

## SKIN

- Largest sense organ is SKIN. The surface area of skin is about 19.4 sq/ft.
- Lymph vessels are absent in epidermis, hair, nail, cartilage, cornea and central nervous system.

The skin covers the body. It consists of dermis and epidermis. It completely covers the body and protect the under lying structure from injury and infection by the bacteria.

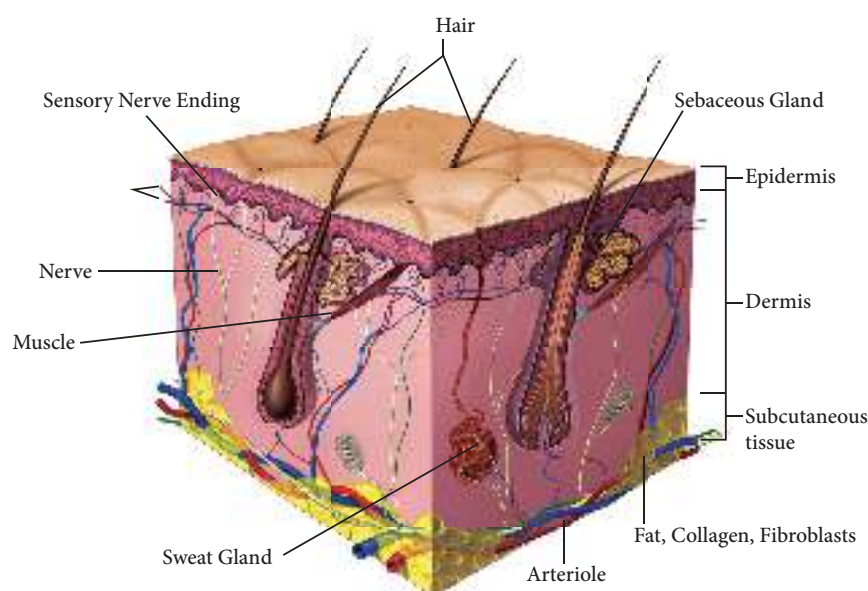
## EPIDERMIS

This is the outermost thin portion of the skin. No blood vessels are found in this layer. It derives its nutrition from lymph. Nerves are found in this layer. The epidermis consists of four layer of cells. They are.

- The stratum corneum
- The stratum lucidum
- Stratum granulosum and
- the stratum malphigi.

## DERMIS

This is situated below the epidermis. It is the most thickest dermis formed by connective tissue which is richly supplied with blood vessels and nerves.



### DERMIS CONTAINS THE FOLLOWING

- Fine elastic fibres
- Capillary blood vessels and lymphatics
- Sensory nerve endings of various types
- Hair roots or hair follicles
- Sweat glands
- Sebaceous glands and
- Involuntary muscle fibres.

### SWEAT GLANDS

Each sweat gland consists of a long tube, which at one end opens on to the surface

### FUNCTIONS OF THE SKIN

Protection	The skin protects the inner parts of the body from mechanical injuries.
Excretion	Like kidney, the skin through its sweat glands, eliminates salts and metabolic waste products in the form of sweat.
Sensory	Acts as a special organ of sense Regulation of body temperature.
Water balance	Formation and evaporation of sweat is an important factor in the regulation of water balance of the body.
Acid base equilibrium	Helps to maintain a constant reaction in the body.
Production of vitamin D	The skin contains a substance called 7-dehydro cholesterol which is converted into vitamin D by ultra violet rays of the sun.
Secretion	Sebum which is secreted by the sebaceous glands helps to keep the skin greasy and prevents drying.
Storage function	The subcutaneous tissue can store <ul style="list-style-type: none"> <li>• Fat</li> <li>• Water</li> <li>• Salts</li> <li>• Glucose and such other substances.</li> </ul>

through the sweat pore. At the other end, in the deeper part of the dermis, the tube forms a coiled mass with a blind end. The sweat passes through the sweat pore and evaporates from the surface by taking heat from the skin. The sweat glands are present in large amounts on the palms, soles, forehead and in armpits.

The sebaceous glands are irregularly shaped sac like glands that open into the hair follicles. The oily secretions [sebum] of these glands make the hair, water, proof and protect the skin from drying effects of the atmosphere due to high temperatures and low humidity.


## 2.12 REPRODUCTIVE SYSTEM

“Without the reproductive system. The human species could not survive. However, this system unlike other organs systems is not necessary for the survival of individual humans”, but to produce a new individual”.

The reproductive system is a collection of internal and external organs in both male and female.

### SEX ORGANS

	Male sex organs	Female sex organs
Primary	A pair of testes	A pair of ovaries
Secondary	Epididymis gland Vas deferens Seminal vesicles Prostrate gland Urethra Penis	Fallopian tubes Uterus Vaginal canal Vagina The breasts



The smallest cell in man's body are sperm cell. (size 0.05 mm)

**Testes:** There is one pair of testes lying one in each scrotal sac. It weighs about 15 gms.

**Scrotum:** The scrotum is a bag of skin having two compartments one for each testis. The semiferous tubules and interstitial cells are concerned with the process of spermatogenesis and secretion of testosterone (male sex hormone).

**Epididymis:** The epididymis is a long, coiled tube that rests on the backside of each testicle. It functions in the carrying and storage of the sperm cells that are produced in the testes.

**Vas deferens:** This is a fibro elastic (30-40 cms) which extends from epididymis to end in ejaculatory duct. It is joined by seminal duct and opens in prostatic urethra.

**The seminal vesicles:** These are little sacs one on each side of the urethra near the base of the bladder. They also add a fluid to the “semen” to the stored sperm.

**The prostate gland:** The gland lies at the base of the urinary bladder, this adds another fluid to the semen which makes the sperms active in swimming to reach the ovum.

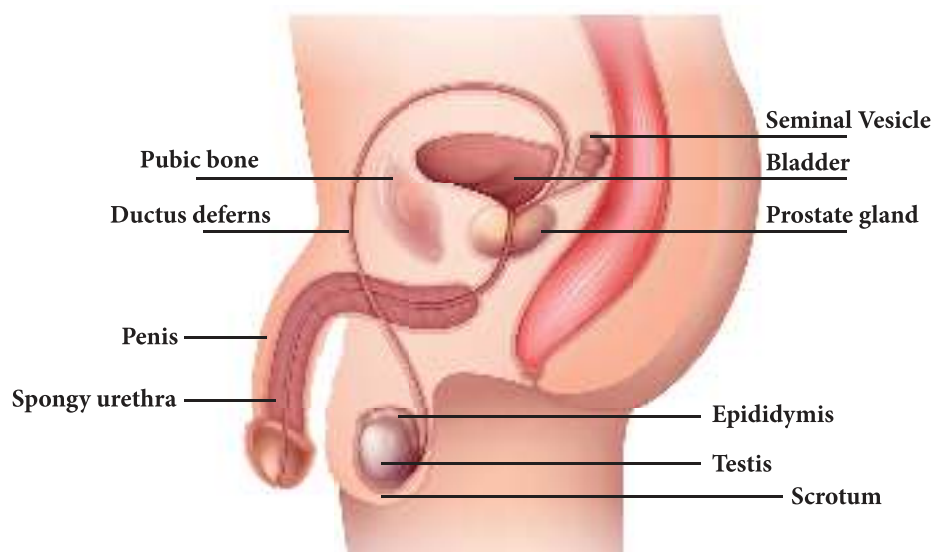
**The penis:** This is an external organ for both urinary and reproductive system.

**Urethral openings:** This is the tube that takes the sperm outside the body during ejaculation.

**Male sex hormones:** Androgens [maintains spermatogenesis and sexual activity].

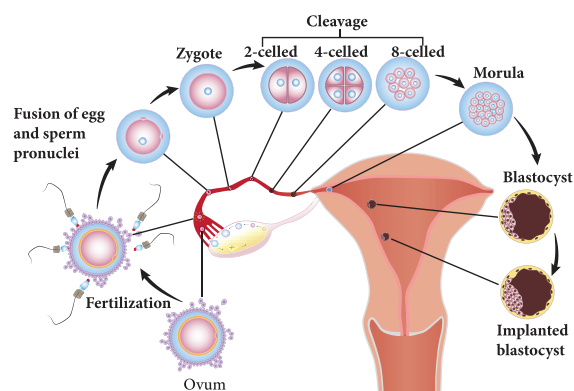
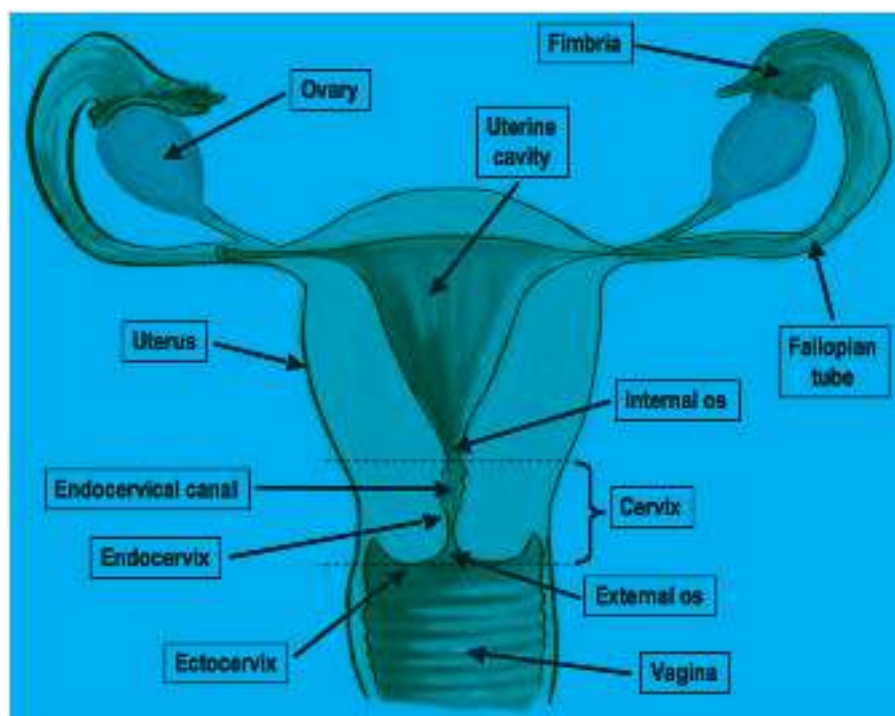
**Testosterone** [stimulates secondary sexual characteristics].

## MALE REPRODUCTIVE ORGANS



## FEMALE REPRODUCTIVE ORGANS

### UTERUS



## THE FEMALE REPRODUCTIVE ORGANS

External organs [The vulva]	Internal organs
Mons pubis Labia majora Labia minora Clitoris Vestibule Vagina Perineum	Ovaries Fallopian tubes Uterus Vaginal canal

The female reproductive organs:

The external organs form the vulva.

They are as follows:

Mons veneris or pubic Mont lies over the symphysis pubis, and is covered with hair after puberty.

Labia majora or the outer lips, form the sides of the vulva.

Labia minora or smaller lips are seen within the labia majora. They are moist by gland secretions.

Clitoris is a small sensitive organ with erectile tissue.

The urethral opening is seen between the Clitoris and vaginal opening.

Vagina is a muscular tube lined with membrane of special type of stratified epithelium, well supplied by blood vessels and nerves. The vaginal canal form vaginal opening to the external os of the uterus.

Perineum is the area from the vaginal opening back to the anus. The gonads of the females are called ovaries, they produce egg cells, ova. When the ovum matures, the graffian follicle burst and ruptures is called ovulation. The function of the fallopian tube is to collect the ovum which is discharged from the ovary, and pass it to the uterus where it reaches the endometrial layer of the uterus.

The uterus is a pear shaped muscular organ. It measures about 7.5x5x2.5 cm and weighs about 60gm. The parts of the uterus and fundus [upper], body [middle], cervix[lower pole].

The walls of the uterus is in 3 layers perimetrium [outer], myometrium [middle], endometrium [inner].

## FUNCTIONS OF THE UTERUS

- Menstruation – changes in the endometrium under the influence of hormones
- Pregnancy – the uterus receives the fertilized ovum and develop as foetus.
- Labour – contractions to expel the foetus and placenta
- Involution – gradual return to normal size of the uterus following delivery.

## FEMALE SEX HORMONES

Estrogen and progesteron.

## CONCLUSION

In this chapter, we learned about the human body organs – structure and its functions. The Body is made like a complex perfect machine. Each body is specially constructed to carry out its own function. The body consists of head, neck, trunk, upper limbs and lower limbs. The body has a strong frame work of bones called as skeleton. Human body is made up of living cells. Each cell has cell membrane, protoplasm and nucleus. The functions of the cells are digestion, excretion, respiration, growth and repair and reproduction. Tissues are made up of group of similar cells. Tissues are joined into larger units as organs. A system is group of organs. skeletal system, muscular, system, nervous system, circulatory system, digestive system and reproductive system respiratory system, excretory system, endocrine system are systems of our body.



## ICT Corner

### Human Anatomy

Through this activity you will be able to understand the anatomy of human body.



- Step 1:** Type the given URL in the browser. Human anatomy page will appear.
- Step 2:** Select 'Anatomy Explorer' from the menus on left and select a system or several systems you want to explore.
- Step 3:** Select 'Customize 3d Model' from the menus on left and use 'View modes' to Isolate a single part and explore it.
- Step 4:** Use buttons on right side bottom or use navigation arrow keys on keyboard to navigate the structure.

Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## ICT Corner

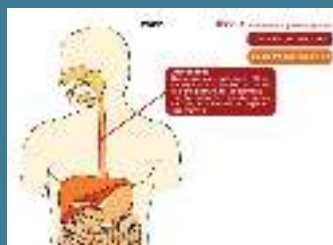
### Digestive System

Through this activity you will explore the process of digestion.



- Step 1:** Use the URL to open the 'Interactive Digestive System' page. Click the 'View Digestive System' to view the digestive system.
- Step 2:** Roll the mouse over the interactive diagram and place the cursor on any of the parts. A brief description of the parts will appear.
- Step 3:** Click the 'Explore the digestive system' to observe the process of digestion right from the mouth to the anus.
- Step 4:** During the exploration, questions will be asked and only correct answers will lead you to progress to the next process. Answer all the questions and finish the process of digestion.

Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## EVALUATION



### I. Choose the correct answers (1 mark)

1. A study of the structure of the body is termed as
  - a. Anatomy
  - b. Physiology
  - c. Tissues
  - d. Cells
2. The structural and functional unit of the human body is
  - a. Protoplasm
  - b. Nucleus
  - c. Cell
  - d. Cell membrane.
3. How many bones are present in the cranial cavity?
  - a. 206
  - b. 22
  - c. 8
  - d. 14
4. Which is the first bone in the cervical vertebral column?
  - a. Atlas
  - b. Axis
  - c. Sacral vertebrae
  - d. Lumbar bone
5. 4 small vertebrae in the tail region are fused to form a triangular bone is called as
  - a. Sacral bone
  - b. Femur
  - c. Coccyx
  - d. Medulla
6. The last two pairs of the ribs are not connected to the sternum by directly or indirectly is called as
  - a. Floating ribs
  - b. True ribs
  - c. False ribs
  - d. Ribs cage
7. Which is the strongest and longest bone in the body?
  - a. Radius
  - b. Ulnar
  - c. Wrist
  - d. Femur
8. The important part of the central nervous system is
  - a. Brain
  - b. Spinal cord
  - c. Nerves
  - d. All of the above
9. The largest part of the brain is
  - a. Cerebrum
  - b. Cerebellum
  - c. Pons
  - d. Medulla Oblongata
10. Function of the temporal lobe of the brain
  - a. Motor centre
  - b. Speech centre
  - c. Mental powers
  - d. Hearing centre.
11. The brain and spinal cord are covered by three membranes are called as
  - a. Cranial nerves
  - b. Meninges
  - c. Medulla oblongata
  - d. Duarmater
12. The shape of the heart is
  - a. Square
  - b. Triangle
  - c. Cone
  - d. Round
13. Which gland helps to protect the body from infection?
  - a. Thyroid
  - b. pituitary gland
  - c. lymph glands
  - d. parathyroid
14. Which is the largest and important organ of the abdomen?
  - a. Spleen
  - b. Intestine
  - c. Pancreas
  - d. Liver
15. Which enzyme converts protein into peptones
  - a. Pepsin
  - b. Renin
  - c. Lipase
  - d. Hcl

16. Larynx is otherwise called as  
 a. Voice box      b. Trachea  
 c. Nostril          d. Cartilage
17. The important excretory organs of the body are  
 a. Lungs            b. Kidney  
 c. Skin              d. Thyroid.
18. Which maintains the pressure of air in the tympanic cavity?
- a. Eardrum              b. Lncus  
 c. Eustactian tube      d. Stapes
19. The outer thin layer of the skin is  
 a. Dermis              b. Epidermis  
 c. Subcutaneous tissue      d. Cornea
20. The shape of the uterus is  
 a. Pear shaped          b. Apple shaped  
 c. Pea shaped            d. Beans shaped.

## II. Write short answers (3 marks)

- Define anatomical position.
- What is system?
- Write about endocrine gland with examples.
- Write the parts of skeleton.
- Explain about cervical vertebral column
- What are the functions of vertebral column.
- What is meant by false ribs?
- What is meant by joint?
- Write the functions of muscular system.
- Explain about Cardiac system.
- Write the parts of brain.
- Write the functions of cerebellum.
- Explain about arachnoid mater.
- Write the functions of cerebrospinal fluid.
- Write the functions of heart.
- Write the functions of lymph
- What are the functions of digestive system?
- What is meant by external respiration.
- Write the parts of urinary system.
- Define hormone
- Explain the parts of urinary system.
- Write the four layers of epidermis.
- Mention the functions of uterus.
- Write the internal and external organs of female reproductive system.
- Explain about scrotum.
- Write the parts of middle ear?
- Write the names of the papillae which is found in the upper surface of the tongue.
- Mention the functions of parathyroid gland.

## III. Write short notes (5 marks)

- Draw the structure of a cell and identify its parts?
- Write the types of tissues and explain.
- Explain the systems of the body.
- Draw the structure of skeletal system.
- Explain about cranium.
- Write the bones of upper limb.
- Define joints. Explain the various types of joints in our body?

8. Draw the diagram of gastro intestinal tract.
9. Explain the importance of Respiration.
10. Write the functions of Renal system.
11. Explain about thyroid gland.
12. Mention the functions of islets of langerhans.
13. Explain the physiology of Ear.
14. What are the functions of skin.
15. Draw the diagram and mention the parts of male reproductive system.

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#### IV. Write an essay for the following questions (10 marks)

1. What is digestion and explain about physiology of digestion?
2. Draw the central nervous system and its functions.
3. Describe the structure of heart and blood circulation.
4. Describe the structure of female reproductive system.
5. Write an essay about blood vessels.
6. Draw and explain the structure of respiratory system?
7. Draw and explain the structure of renal system?
8. Write an essay about pituitary gland?

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## A-Z GLOSSARY

**Artery** – (தமனி)

- A Tube of muscle and elastic fibers, which distributes blood from the heart to the capillaries and throughout the body.

**Skeleton** – (எலும்புக்கூடு)

- Bony frame work of the body

**Impulse** – (தூண்டுதல்)

- A sudden pushing force or a sudden uncontrollable act.

**Meninges** – (மூளை உறைகள்)

- The membranes covering the brain and spinal cord.

**Vein** – (சிரை)

- A vessel carrying blood from the capillaries back to the heart.

**Capillaries** – (தந்துகிகள்)

- Hair like, a minute vessel connecting an arteriole and venule

**Red blood cell** – (இரத்த சிவப்பணுக்கள்)

- Otherwise called as erythrocytes contain haemoglobin which combines with oxygen in passing through the lungs

**White Blood Cell** – (இரத்த வெள்ளை அணுக்கள்)

- The cells which have power against invading micro- organism and to destroy

**Platelets** – (இரத்த தட்டுகள்)

- They help in the clotting of blood

**Digestion** – (செரிமானம்)

- The act or process of converting food into chemical substances that can be absorbed into the blood and utilized by the body tissues.

**Absorption** – (உறிஞ்சப்படுதல்)

- In physiology, the taking up of fluids or other substances by the tissues of the body

**Sphincter muscle** – (சுருக்கு தசை)

- A ring shaped muscle, contraction of which closes natural orifice.

**Bolus** – (போலஸ்)

- A rounded mass of masticated food immediately before being swallowed or one passing through the intestines.

**Chyme** – (கைம்)

- The semi liquid acid mass of food that passes from the stomach to the intestine.

**Metabolism** – (மெட்டபாலிசம்)

- The sum of the physical and chemical process by which living organized substance is built up and maintained.

**Ovary** – (ஓவரி)

- One of a pair of glandular organs in the female pelvis. They Produce ova

**Testis** – (விந்தகம்)

- One of the two glands in the scrotum which produce spermatozoa

**Fallopian tube** – (பெல்லோபின்குழாய்)

- It is a uterine tube. It is used to release the Ova from the Ovaries to the interior of the uterus

**Colon** – (குடல்)

- The large intestine, from the caecum to the rectum

**Nerve** – (நரம்பு)

- A Bundle of conduction fibre enclosed in a sheath and is to transmit impulses between and part of the body.

# Unit 3

## INTRODUCTION TO PSYCHOLOGY AND SOCIOLOGY



### LEARNING OBJECTIVES

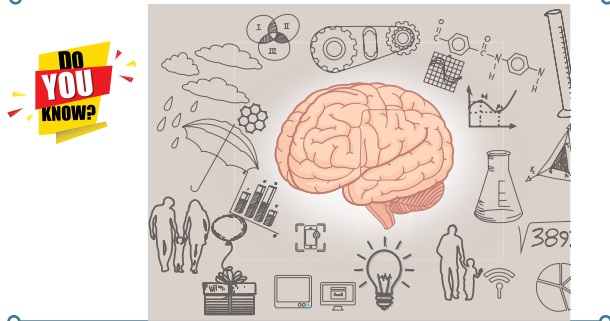
At the end of this chapter, the student will be able to,

- Define psychology and sociology
- Understand the importance of psychology in nursing
- Define the behavior
- List the factors influencing behavior
  - Mental health
- Brief the characteristics and factors influencing mental health
- Explain the mental health and its importance to nurses
  - Learning
- Understand the factors influencing and theories of learning
  - Attention and perception
- List the types and factors of attention
  - Distraction
- Know the sources and forms of distraction
- Explain the implications of attention in nursing
  - Perception
- List the types and factors influencing the perception
- Explore the gesalt principles of perception
- Understand the perceptual constancy, errors and its types
  - Eemotion
- Explain the types and factors influencing emotion
- Understand the physiological changes due to emotions and its effect in nursing
  - Motivation
- Narrate the concept and process of motivation
- Describe the nature and characteristics and kinds of motivation
- Define the individual differences
- Describe the factors causing individual differences and its importance in nursing
  - Personality
- Explain the categories and traits of personality for nurse
- Define and discuss the importance of sociology
- Understand the application of sociology in nursing and basic principles of sociology.



மனநலம் மன்னுயிர்க் காக்கும் இனநலம்  
எல்லாப் புகழும் தரும்  
Goodness of mind will give wealth and  
good society will bring with it all praise  
to men.

### 3.1 INTRODUCTION

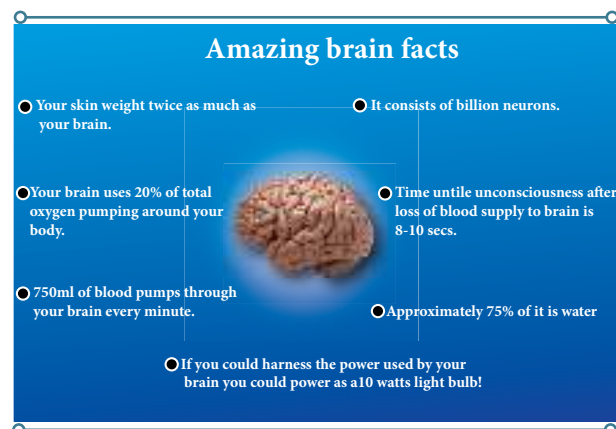


Look at this picture. The brain is able to perceive all sides of it. If the brain is healthy and is able to perceive. The person can identify all the things around him, and behave normally. Eg. In above picture we can see one umbrella, balloon, clouds, man, different shapes, and electric bulb, graphs etc. if the mind is healthy and sound it can go ahead and think about what are the relationships among all the things around. The same way, the nurse needs to identify the patients and things around them and she needs to think that what is the problem for patient and why he is behaving in such a way. Ex; look at the picture down. By seeing this picture down the man is with headache, fever, because he is looking at the thermometer and with one towel or pad on the forehead.

So, the nurse knows that the patient may be with fever. She will try to identify the needs and help the patient immediately. To do this, the nurse must have enough knowledge about fever and also the



mind to perceive and act to the situation immediately. She needs to think what is going on and behave accordingly and also to understand the behavior of a patient? This will help the nurse to help the patient as well as for her. She also needs to establish the social relationship with the patient and family. So the nurse must be through of psychology which means knowledge of behavior and sociology which means **the science of society**, and social relationships.



- **Psychology** is the science of the mind and behavior. The word "**psychology**" comes from the Greek word psyche means "soul" and the Greek word logos means the study of something. It plays a vital role in taking care of the patients in nursing. The knowledge

of basic principles of psychology is significant in taking care of nurse herself and also in her interaction with the patient. The father of psychology is German philosopher Wilhelm Wundt (1832 - 1920)

- “**Sociology**” is a branch of science which deals with society, including patterns of social relationships, social interaction, and culture.



## Wilhelm Wundt

- Leipzig, Germany

-The “father of Psychology”

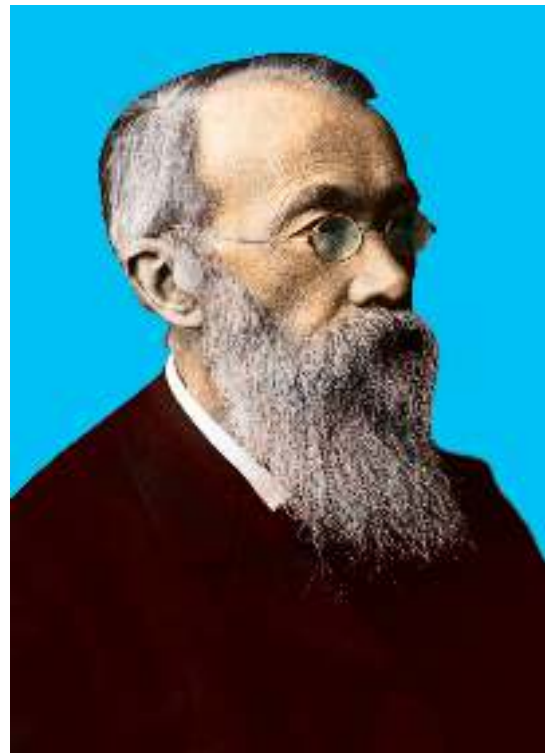
-Founder of modern Psychology

-Opened the first Psychology lab in 1879

-Applied laboratory techniques to study of the mind

The nurses should understand that, psychology and sociology are sciences which must be incorporated in nursing.

In this chapter, we are going to discuss about the psychology in terms of behavior and what is the relationship between nurse and patients behavior? How to keep healthy behavior? What is social relationship? society, social structure etc.



**Wilhelm Wundt**  
(1832 - 1920)

### 3.2 DEFINITIONS

#### 3.2.1 Psychology

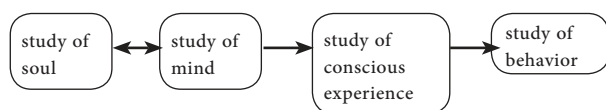
- **Psychology means**, scientific study of the way the human mind works and how it influences behavior
- “Psychology: the study of behavior and mental processes and how

they are affected by an organism’s physical state, mental state, and environment.

- Psychology is a science, which aims to give us better understanding and control of the behavior of the organism as a whole. (William McDougall-1949)

### 3.3 EVOLUTION OF MEANING OF PSYCHOLOGY

The meaning of psychology has been shifted from study of soul to study of behavior



So, study of human behavior helps nurses to deliver quality care to the patients by adjusting their own behavior. Behavior involves both body and mind.

### 3.4 IMPORTANCE OF PSYCHOLOGY IN NURSING

The study of human behavior is of great value to a nursing professional in a number of ways.

Psychology has become necessary in every profession including nursing today. This is because of increasing emphasis being laid out on the interplay of body, mind and spirit in the health status of every individual. The learning of psychology helps a nurse in the following ways.

1. **To understand own self-** The knowledge of psychology will help the nurse to get insight in to her own motives, desires, emotions, feelings, attitudes. This knowledge also helps her to understand her strength and weakness.
2. **To understand patients-** Patients may also have tension, worries, pains and also many doubts about their illness. The knowledge of psychology will help the nurse to understand the problems and needs of patients to attend them. She can understand the motives, and attitudes of patients in a better way.
3. **To recognize abnormal behavior-** The knowledge of psychology will help nurses to understand abnormal behaviors and help the patient in management of mental illnesses.
4. **To understand other self-** The student nurse has to study, work, and live with other nurses and doctor, patient and their family members. She will learn why other differ from her in their like and dislike, in their interest and abilities or in their reaction to others.
5. **To provide quality care to patients-** A nurse with good knowledge of human psychology can understand what fears or anxieties the patient faces, what he feels? what he would like to know? and why he behaves the way he does?
6. **Help the patients to adjust the situation-** Illness and physical handicaps often bring about the need for major adjustment. A nurse trained in psychology can be an effective health educator and help in these kind of adjustment.
7. **Help the student nurse** to appreciate the necessity for changing the environment or surrounding. The change in the environment is sometimes necessary for better adjustment and happiness.
8. **Helps for Readjustment**
  1. Nursing profession requires readjustment for success in the nursing carrier-: overcoming homesickness and self-reliance is needed if she has to live smoothly in a hostel or a hospital.

2. Adjusting to sick person, who may cry desperately and ventilate their anger.
3. Trying to work and study together.

In this chapter we are discussing about behavior and factors influencing behavior to understand the psychological aspects of health care.

### 3.5 DEFINITION OF BEHAVIOR

- Behavior is defined as the way in which an animal or person behaves in response to a particular situation or stimulus.
- Behavior is a response of an individual or group to an action, environment, person, or stimulus.



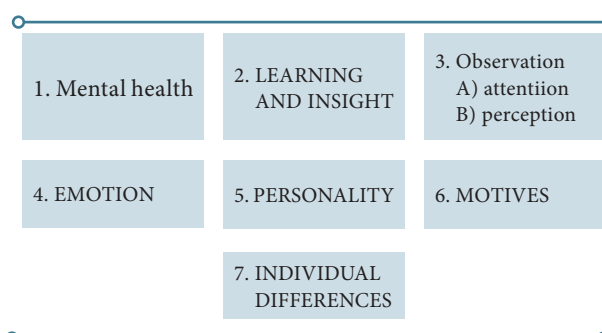
## Foundations of Individual Behavior



### 3.6 PSYCHOLOGICAL FACTORS INFLUENCING OR AFFECTING BEHAVIOR

All above factors are foundation of the behavior of a human being. Knowing about each factor will help us to have a healthy behavior and application of psychology in nursing.

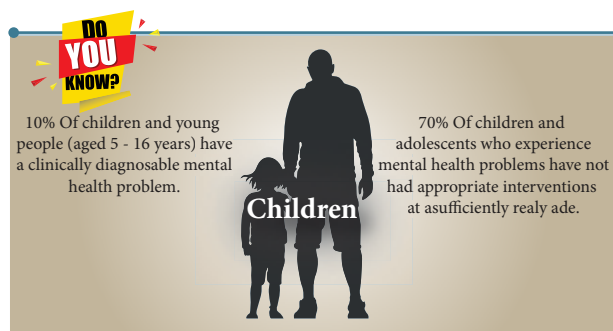
#### Factors Affecting Behavior



### 3.6.1 Mental health

#### 3.6.1.1 Definition of Mental health

- It is “the adjustment of human beings to the world and to each other with maximum of effectiveness and happiness” **Meninger**
- Mental health includes our emotional, psychological, and social well-being. It affects how we think, feel, and act. It also helps to determine how we handle stress, relate to others, and make choices.
- Mental health can be “conceptualized as a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.” (The World Health Organisation (WHO) 2001).



**Myth: Mental health problems don't affect me.**

**Fact- Mental health problems are very common. In 2014, about:**

One in five American adults experienced a mental health issue

One in 10 young people experienced a period of major depression

One in 25 Americans lived with a serious mental illness, such as schizophrenia, bipolar disorder, or major depression.

Suicide is the 10th leading cause of death in the United States. It accounts for the loss of more than 41,000 American lives each year, more than double the number of lives lost to homicide.

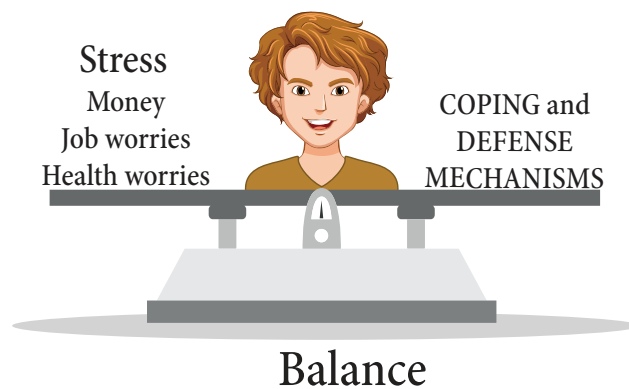
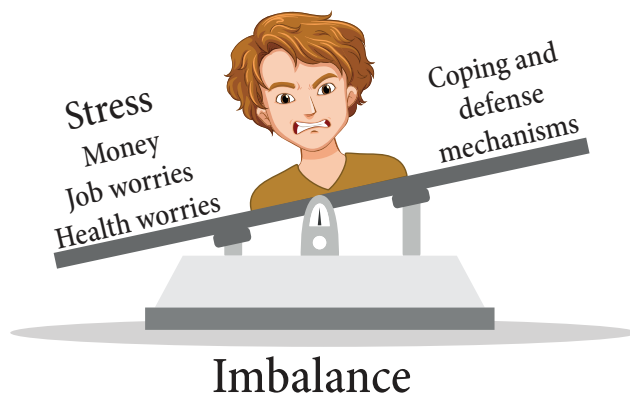
#### In India according to National health survey 2015

- **45 % of Indian population are suffering from depression**
- **871 suicide are happening daily in an average**
- **Suicide is the second leading cause of death in 18-29 age group**
- **150 millions are in need of active treatment**
- **Anxiety disorders and substance abuse are affecting 10 % of the population**

#### 3.6.2 Characteristics of mentally healthy person

The mentally healthy person will be (refer picture)

- Free from internal conflict
- Searches for an identity
- Has strong sense of self esteem and self confident
- Knows his needs, problems and goals and solves problems
- Has good control over his behavior
- Productive
- Satisfied with profession and occupation



- Well balanced life
- healthy interest and aptitudes
- Socially adjustable.

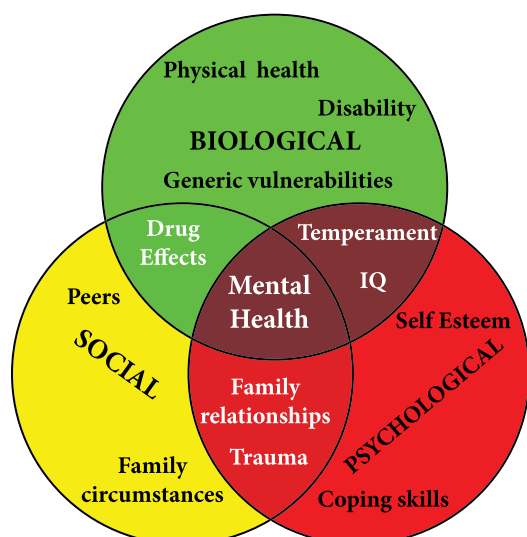
The people who are having balance between stress and coping skills will be mentally healthy person.



#### STUDENT'S ACTIVITY

Each student can list out one of the stress event and write about what they have done to overcome from that situation.

### 3.6.3 Factors Influencing Mental Health



#### • Other factors are

##### 1 Personal factors

- Age,
- Growth and development,
- Physical health and health practice
- Self efficacy
- Hardness(ability to resist illness)
- Spirituality
- Commitment, control and challenge
- Resourcefulness.

##### 2 Inter personal factors:

- Sense of belonging
- Social net work and social support

##### 3 Cultural factors

- Race
- Economic situation
- Religion
- Culture.

### 3.6.4 Importance of mental health for nurses

The nurse must have good mental health to understand the patients and their family. She must be able to balance herself

in emergency situations. She should not have any conflicts among the health team members wherever she is working. When she possess all the characters of mentally healthy person then she will be able to deliver the quality care to patients and also she can prevent the harm to the patients.

### 3.7 Learning and insight

#### 3.7.1 Learning

One of the most important characteristics of human being is the capacity to learn. Learning is central to all our behavior. Our attitude and emotional expressions are also learned behavior.

#### 3.7.2 Definitions of learning

- Learning is defined as the mental activity by which knowledge, skill, attitude, appreciations and ideas are acquired, resulting in modifications of behaviors
- Learning means change in human disposition or capability that persists over a period of time and is not simply ascribable to processes of growth.”  
— From The Conditions of Learning by Robert Gagne
- Learning means the process of gaining knowledge and expertise.”  
— From The Adult Learner by Malcolm Knowles.

#### 3.7.3 Factors influencing learning

It depends upon the following factors:



#### FACTORS INFLUENCING LEARNING

1. Personal factors
2. Environmental factors

### Personal Factors Influencing Learning

The process of learning is influenced by a variety of personal factors. A thorough knowledge of these factors will prove very helpful for teachers and parents in understanding and guiding their children's learning. Some important personal factors are following:-

- **Sensation and Perception-** Sensation is at the core of perception. There are five sense organ i.e., skin, ears, tongue, eyes and nose. These sense organs are the gateway of knowledge and help in perception of various stimuli in the environment.
- **Fatigue and Boredom-** Fatigue is mental and physical tiredness which decrease in efficiency and competency to work. Boredom, on other hand is a lack of desire or an aversion to work.
- **Age and Maturation-** Learning is directly dependent upon age and maturation. No learning can take place unless individual is matured enough to learn.
- **Emotional Condition-** Emotional condition enhances the quality and speed of learning.
- **Happiness, joy and satisfaction** are always favorable for any type of learning.
- **Needs-** The lack of something is experienced by the child. The child then tries to perform that activity which culminates in the satisfaction of the need. Thus, the needs are associated with goals. The needs in human being can be physiological such as need for oxygen, food, water etc.

- **Interests-** Various types of interests of the students can be exploited to facilitate their learning.
- **Motivation-** It is the heart of the learning process. It generates the will in an individual to do something. Two type of motivation are commonly recognized. These are following:
  - **Intrinsic motivation-** If a student engages in construction of model aero planes because he thinks it will please his father, who is an ex-pilot,
  - **Extrinsic motivation-** It occurs when a student pursues a learning task because of teacher instructions.
- **Intelligence-** Intelligence as expressed by an I.Q score on an intelligence test is positively related to learning. Generally, students with higher I.Q learn rapidly.
- **Aptitude-** A student, who possesses appropriate aptitude for a particular subject of study or skill, will learn better and retain it for a longer time.
- **Attitude-** If a person is alert attentive and interested in the material to be learned. He is bound to have a favorable attitude towards it. Such an attitude will enable him to tackle the learning situation economically, pleasantly and effectively.

### 3.7.4 Environmental Factors

- Surrounding of a person
- Relationship with teachers,
- Relationship with parents and peers
- Social Media influence on learning

- Learning situation
- Learning material.

### Theories of learning

The following are the main theories of learning:

1. **Behaviorism** - this is based on the behavioral modification towards the learning to achieve the goal.
2. **Cognitivism** - it means learning through insight (using the thinking capacity)
3. **Social Learning Theory** – learning from the social models, social games and social media. Ex; learning from the cine actors, famous personalities, family members, friends etc.
4. **Social Constructivism** –knowledge is actively constructed through collaborative and Co-operative Learning from the social activity. Eg; journaling.
5. **Multiple Intelligences** –Every person has multiple intelligence capacity, like intelligent in Linguistic (speaking), Logical-Mathematical, musical intelligence, Inter personal and Intrapersonal relationships intelligence and etc. so the teachings should be focused to enable the students to enhance their strengths and reduce their weaknesses. Delivery of instruction or teaching must be through the multiple mediums. The Student- Centered Classroom must be arranged. It is mostly Self-Directed Learning.

The major theories are Behaviorism and cognitivism. In this chapter we will **discuss only about these two theories.**

### 3.7.5 Behaviorism

#### Behaviorism Classical Conditioning (PAVLOV)

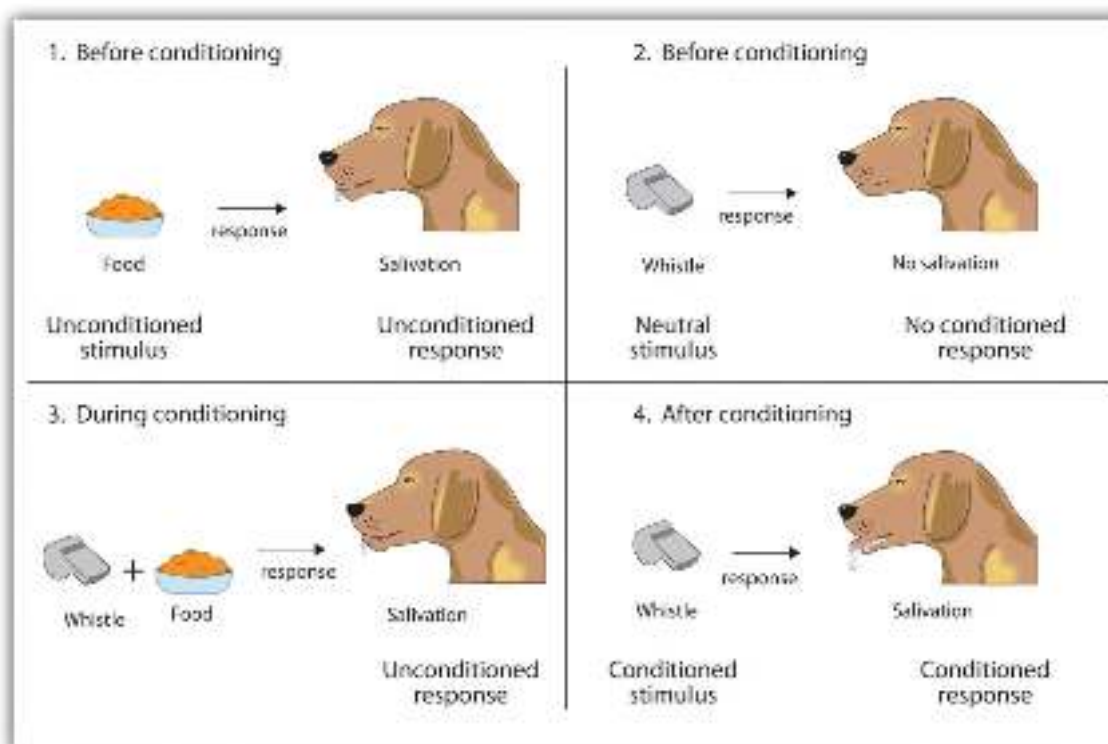
- A stimulus is presented in order to get a response.
- It is about reflexes
- **Classical conditioning** Ivan Pavlov a Russian physiologist, a researcher experimented on a dog. A capsule attached to a dogs 'salivary gland to measure the salivary flow. A whistle was rung every time and meat powder was given to the dog. This was repeated several times. Later Pavlov observed that dog salivated at the mere sound of the whistle without giving meat powder. Thus the dog has been conditioned to respond. Pavlov showed how the internal process such as learning can be studied objectively.
- **Principles of classical conditioning** used in the following areas for learning
- Developing good habits

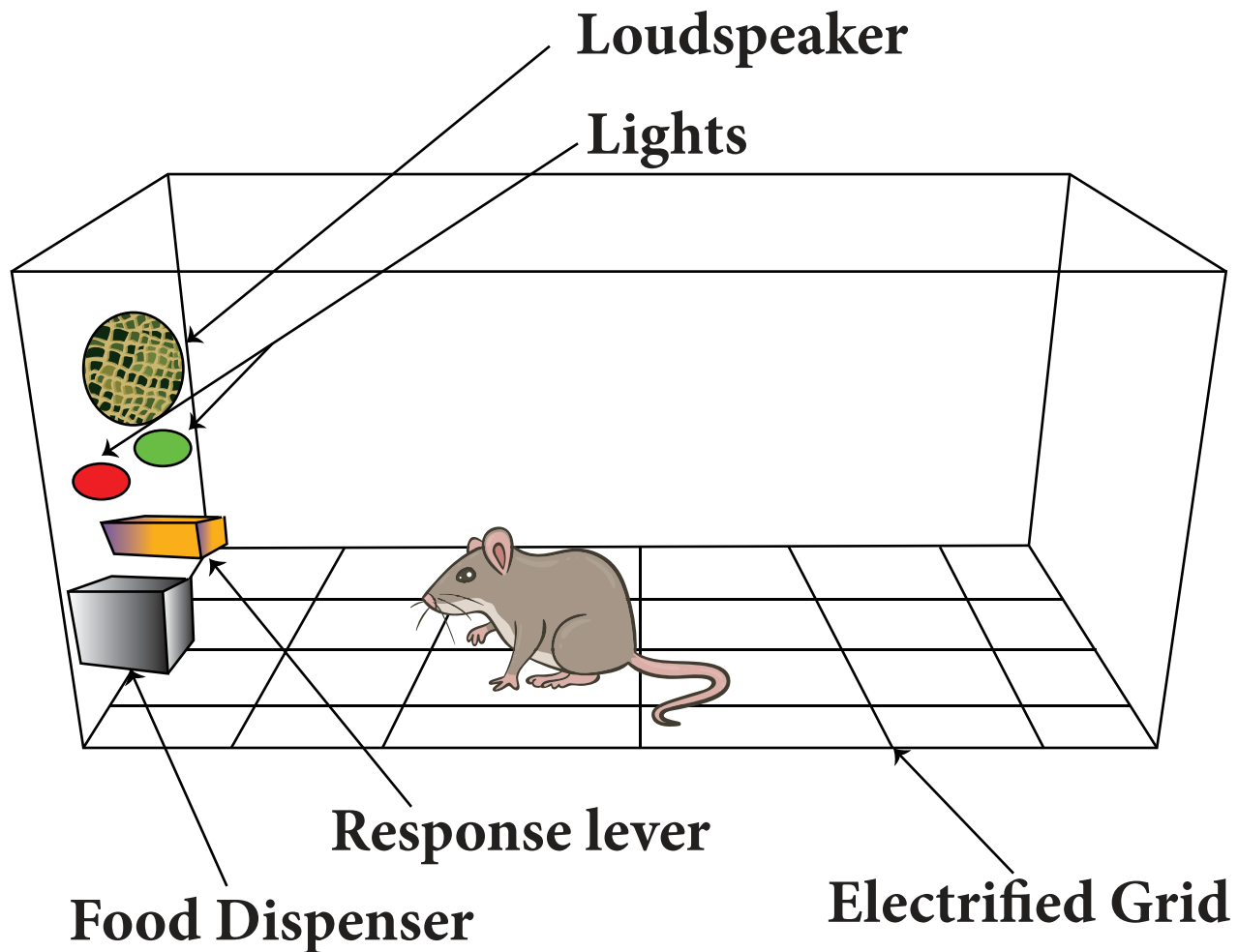
- Breaking of bad habits and elimination of fear
- Training of animals
- Use in psychotherapy
- Useful in developing favorable attitude.

#### 3.7.6 Operant Conditioning (SKINNER) it is another Behavioral Theory

- The response is made first then reinforcement follows.
- It is about feedback/reinforcement.

Skinner experimented on a rat which was placed inside a glass box containing a lever and food tray. The rat was free to explore the box. Whenever the lever in the box was pressed automatically a piece of food was dropped on the tray. The number of times, the rat pressed on the lever was recorded. Pressing the lever was the response to be learned (the operant response) and the food was the stimulus consequences





(reinforcement). Thus the rate of presses increased with rewarding of the rat with food.

This theory helps as behavioral psychology to initiate and enhance the learning through positive reinforcement by appreciating and giving rewards to the students.

### 3.7.7 Cognitivism

#### It means learning through insight

- **Insight**- A sudden understanding which alters the perception about (means old object looks new) like complicated problem and solve it by thinking.
- **The another meaning of insight** is the capacity to gain an accurate and

deep understanding of someone or something.

- **Learning by insight** means sudden grasping of the solution, a flash of understanding, without the process of trial and error. All discoveries and inventions have taken place through insight.

**Learning by insight:** This theory is also called Gestalt Theory of Learning. Gestalt psychologist concluded that, the individual learns by his ability known as insight and not by trial and error method. They underwent an experiment on a Chimpanzee called sultan.

The capacity to learn is  
a *gift*; the ability to  
learn is a *skill*; the  
willingness to learn is a  
*choice*.

Brian Herbert

### Experiments of Theory of Learning by Insight:

#### (i) Kohler's experiment on Sultan (Experiment with box):

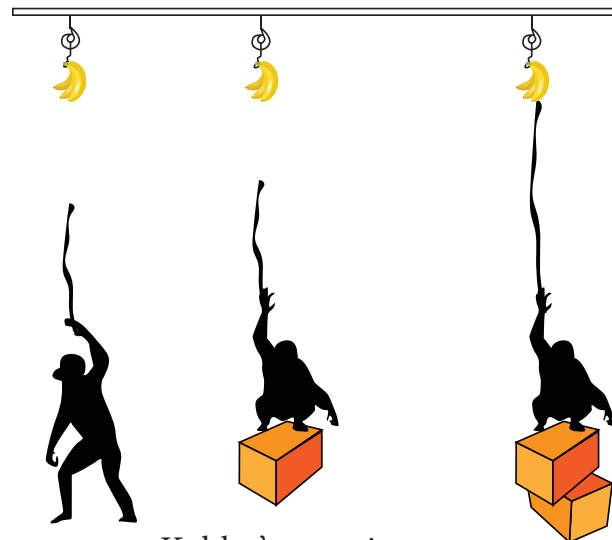
Kohlar kept a *Chimpanzee* (named Sultan) hungry for some time, and then shut him in a large cage. He hung bananas from the ceiling, and kept a box on the floor of the cage, fast beneath. The Chimpanzee could not reach the banana. Another box was put in a corner of the cage.

But Sultan could not get the idea of placing one box on the other and thus reaching the banana. Ultimately Kohler gave demonstration of putting one box on the other. Sultan could now learn the whole situation. He used his intelligence and insight to put the two boxes one upon the other, stand on these and then reach the bananas.

#### (ii) Experiment with two sticks:

In another experiment Kohler kept two sticks in the cage. One end of the shorter sticks could be fitted in the one end of the longer sticks, so as to make them longer. The monkey did not get the idea of forming the two sticks through trial

and error. When Kohlare gave a hint through putting his finger in the hole of the bigger stick, the sultan viewed the whole situation and performed the right task through understanding the insight.



Kohler's experiment

### NURSING IMPLICATIONS OF THEORY OF LEARNING BY INSIGHT



The nursing teacher must teach the student nurses following the certain principles like.

#### (i) Proceeding from whole to the part

We must always proceed from the whole to the part, so as to give a complete insight into the subject. Begin from the world, and then come to our country, our state and our city. Teach about the whole flower and then analyze the parts. Teach the whole sentence or word, and then analyze

into words of letters. In the same way teach about the whole body anatomy and physiology then proceeding to each part of the body and its pathological changes with treatment needed.

## (ii) Creating motivation

The nursing teacher should, arouse motivation by giving rewards and reinforcement.

LEARNING NEVER ENDS  
in

*Nursing*

let us never consider ourselves  
finished nurses....we must be  
learning all of our lives.



STUDENT'S ACTIVITY

## (iii) Emphasis on Understanding

For all higher learning, what is needed is deep understanding and insight into the problem. Learning by insight (whether it is a geometrical problem, arithmetical sum or scientific experiment) saves time and energy.

So, the students must be introduced in to the problem solving methods of learning. The nursing students have to

About a Nursing Student

"If she can study in this chaos,  
then handling stressful situations  
when she's a nurse will be a  
piece of cake."



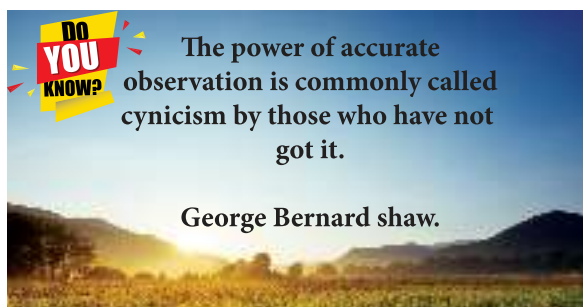
use their insight in many situations. Like, if the patient vomits suddenly the nurse must observe the type of vomiting, amount, and consistency and character of vomiting. She may need to assess the vital signs and identify the problem and solve it. So insight learning is must for nurses.



#### STUDENT'S ACTIVITY

Make like this cards and display in your classroom. so, the students will learn the behavior.

**3.8 OBSERVATION-** It is the another factor which will influence the behavior, by learning observation we can learn psychology.



#### • Definition of observation

Observation is the action or process of carefully watching someone or something.

Ex. The nurse observes the behavior of patient with anxiety.



"He's sleeping nice & peacefully - Let's wake him up for his obs."

#### • Observation has two mental activities.

1. Attention
2. Perception

**3.8.1 Definition of attention;** it is the process of concentration on particular aspect of information or event using behavioral and cognitive process.

### OBSERVING

- Observation is a conscious , deliberate skill that is developed only through and with an organized approach.

Ex : Client data observed through four senses that is through vision , smell , hearing and touch.



**Attention** has also been referred to as the allocation of limited processing resources.

The field of consciousness is vast and attention is one of its parts. For example, when we are reading, there are, Book, note, table, chair, etc., around us but, all these can be under my consciousness, but my attention is on the words being read on the paper.

**DO YOU KNOW?** Attention is not possible in the absence of consciousness, but attention and consciousness are not one

The activity of concentrating mind on a particular matter is called attention.

Attention is an active part of consciousness

- **Enforced Attention**-Instincts will force attention
- **Spontaneous Attention**-Internal motivation and sentiments
- **Volitional Attention**: It is also called voluntary attention
  - **Implicit Attention**: ordinary efforts ( natural and novelty )
  - **Explicit Attention**: make efforts for a number of times( repetition of something).

### 3.8.3 Factors related to Attention

#### (i) External Factors:

Any object, Size, Intensity, Repetition, Duration, Movement, Contrast, Change, Novelty.

#### (ii) Internal Factors:

Any person Interest, Desire, Motives, Aim/Goal, Habit, Past Experience, aptitude, attitude, mental set, disposition and temperament etc

### 3.8.2 Types of Attention

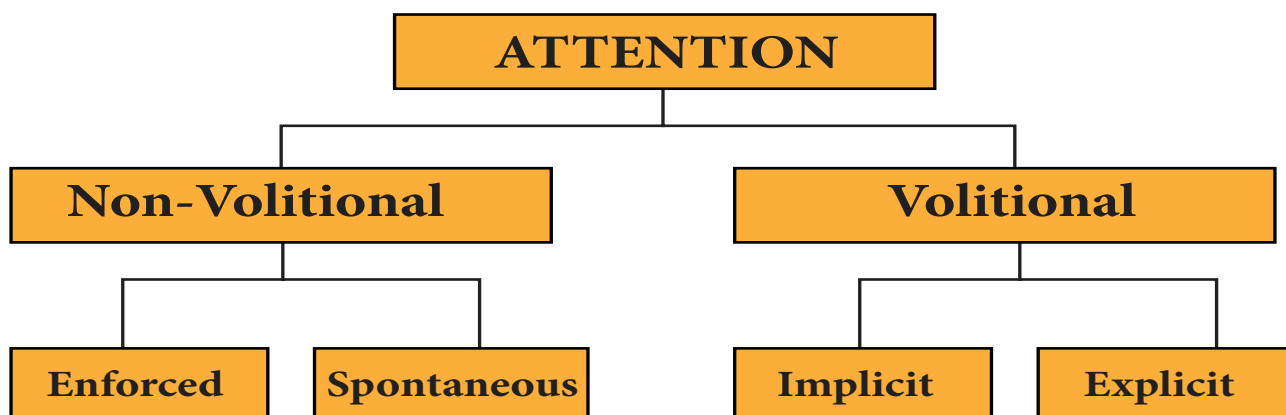
There are 4 types of attention:

- **Non-volitional Attention**- It is also called involuntary attention.

### 3.8.4 Distraction

- **Definition** -It means interference in attention. any factor which normally tends to break up attention

## TYPES OF ATTENTION



- **Sources of Distraction**

- **External Factors:** Noise, music, improper lighting, uncomfortable seats, inadequate ventilation, defective method of teaching, improper use of teaching aids, defective voice of the teacher, etc.
- **Internal Factors:** Emotional disturbances, ill health, anger, fear, feeling of insecurity, boredom, lack of motivation, feeling of fatigue, lack of interest, unrelated subject matter, etc.

- **Forms of Distraction**

- **Continuous Distraction-** continuous noise or music which disturbs the work
- **Discontinuous Distraction-** on and off of voice or noise which disturbs our concentration
- **Span of Attention:** limit of the ability of a person to attend or concentrate on something.

### Forms of Distractions



### 3.8.5 Inattention

- There are two fields of consciousness – the field of attention and inattention.

- The field of attention is in the center of consciousness and that of inattention to the edge of consciousness. The things on the edge of consciousness influence the mind to some extent, but our attention is not diverted to them.

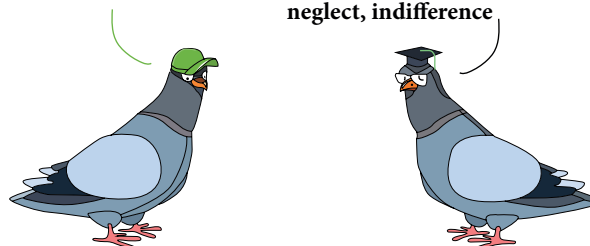
Inattention may call as negligence which may enter into legal issue.



There are other names for inattention from thesaurus as follows;

What are other words for inattention?

disregard, carelessness, negligence, inattentiveness, inadvertence, heedlessness, neglect, indifference



**Attention Span:** It varies with age, physical, mental and emotional condition and nature of material read.

On an average span of attention of a child is limited to 4 to 5, whereas for adults it is within 6 to 7 letters or digits. Touchidoscope is the apparatus using for determine the span of attention.

### 3.8.6 The implications of attention in nursing

Every step in the nursing field is very important. A great nurse pays excellent attention to detail of patient information and she must be careful, not to skip any steps or make errors. From reading a patient's chart correctly to remember the events of a delicate cases, there is nothing that essential chance in nursing. When a simple mistake can spell/create tragedy for another's life, attention to detail can literally be the difference between life and death.



#### STUDENT'S ACTIVITY

Let the students tell the multiples of table 7 till they are able to. The teacher can identify the span of attention and concentration

**3.8.7 Perception** it is an another activity of observation

### 3.8.8 Definition of perception

The process by which the brain organizes and interprets the sensory information.

**3.8.9 Perception** - It is the process of acquiring information with our senses.

- It is the process of attaining awareness or understanding of sensory information.
- The process by which an individual selects, organizes, and interprets stimuli into a meaningful and coherent picture of the world.

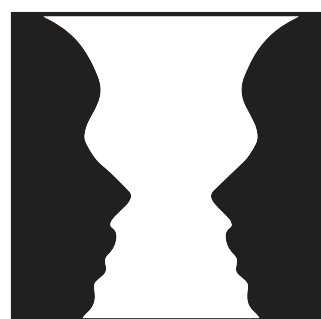
### 3.8.10 Perceptions are divided into

1) Visual perception    2) Auditory perception

### 3.8.11 Factors influencing perception:

- Functioning of the sense organs
- Previous experience
- Emotions such as fear can influence perception
- Needs and Motivation
- Functioning of the brain
- Frequency of exposure
- Interest
- Cultural influences,

### 3.8.12 Gestalt principles of perception



#### 1. Figure-ground Relationship:

According to this principle any figure can be perceived more meaningfully in a background and that figure cannot be separated from that background. For example, letters written with a white chalk piece are perceived clearly in the background of a blackboard. In the following figure two faces can be seen in the background of a white colour. The same way the white background can be perceived as a vessel in the background of two faces.

#### 2. Grouping of Stimuli in Perceptual Organization

As said above, according to gestalt principle, the objects can be perceived meaningfully when they are grouped together. There are some principles which

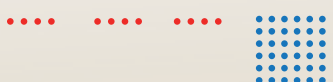
are followed by us in order to make our perception more meaningful.

1. Proximity
2. Closure (connectedness)
3. Similarity
4. Continuity.


Examples of proximity and closure, similarity and continuity.

**Gestalt principles**

**Proximity**  
Things close to one another are grouped together




**Closure**  
The brain tends to fill in gaps to perceive complete forms

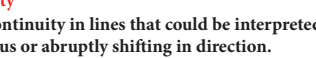
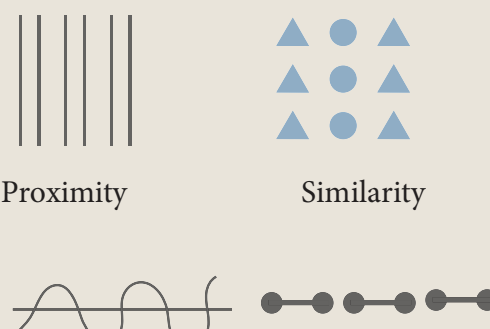


**Gestalt Principles**

**Similarity**  
Things that are alike are perceived together



**Continuity**  
Seeing continuity in lines that could be interpreted as either continuous or abruptly shifting in direction.

Proximity

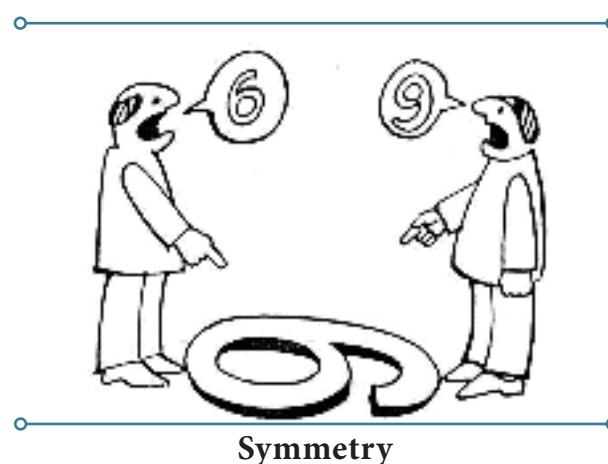
Similarity

Continuity

Connectedness

5. **Symmetry:** Items that form symmetrical units are grouped together.

The perception is really based on our mind, and how we look at any object as described in following picture.



### 3.9 Perceptual Constancy:

This refers to stableness in perception. We have a tendency to perceive the objects as relatively stable and unchanging in shape and size, inspite of a change in the image that we receive.

For example, when we see a person from 5 fts distance, the size of the image in our eyes differs from the image of the same person from 100 fts distance.

**DO YOU KNOW?**

Perception is influenced by sub consciousness.

You don't need eyes to see.

- Perception is relative.
- Perception is fictional.
- You never perceive the full reality

Perceptual constancy depends upon several factors like past experience, expectancy, habits, motivations, cognitive styles, learning, imagination, etc.

## Perceptual Constancy

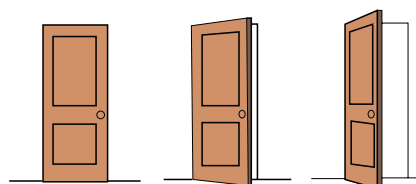
### ➤ Perceptual Constancy

Perceiving Objects as unchanging even as illumination and retinal image change.

#### ➤ Color

#### ➤ Shape

#### ➤ Size



### 3.9.1 Types of perceptual constancy

There are different types of perceptual constancies. They are shape and size, brightness and colour, size etc.

### 3.9.2 Errors in Perception

- **Illusion** - Illusion is a false perception. Here the person will mistake a stimulus and perceive it wrongly. For example, in the dark, a rope is mistaken as a snake or vice versa. The voice of an unknown person is mistaken as a friend's voice. A person standing at a distance who is not known may be perceived as a known person. Most of our illusions is visual and auditory.



#### ERROR OF PERCEPTION

Hallucination - Perception without actual stimuli.

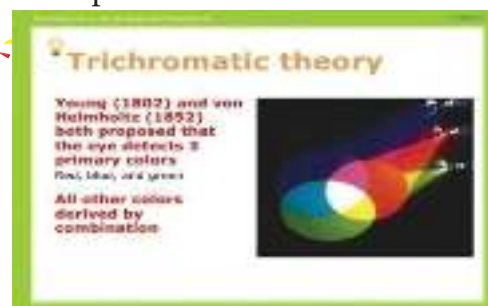
Illusion - An incorrect perception caused by a distortion of visual sensations.

- **Hallucination**- Sometimes we come across instances where the individual perceives some stimulus, even if it is not present. This phenomenon is known as hallucination.

HALLUCINATIONS	SENSORY IMPRESSIONS WITHOUT EXTERNAL STIMULI...	
	ILLUSIONS	REAL STIMULI MISINTERPRETED
DELUSIONS	FALSE FIXED BELIEF...	

### 3.9.3 Observation and Nurse:

Good and keen observational ability is an essential characteristic of a nurse. The most important activities of a nurse



include observation of changes in pulse, respiration, heart beat and blood pressure because they indicate general condition of a patient. The condition of the postoperative case, the emergency cases also require accurate observation.

Observation involves attention and perception. The nurse should always concentrate her attention on duties.

Distraction of attention may lead to serious consequences like death of a patient. Attention helps to understand the problems

of patient. At the same time, accurate perception helps the nurse to have a clear picture of the condition of the patient.

While attending the emergency cases, during operations and other serious conditions accurate perception of the situations help the nurse to deal with the situation in an effective manner.

**3.9.4 Emotion**-It is other factor which influences the behavior. Emotion “is a complex, not a simple elementary, mental state.



#### STUDENT'S ACTIVITY

Bring the students to the museum and let the students to observe the items and ask them to describe any one in writing or oral.

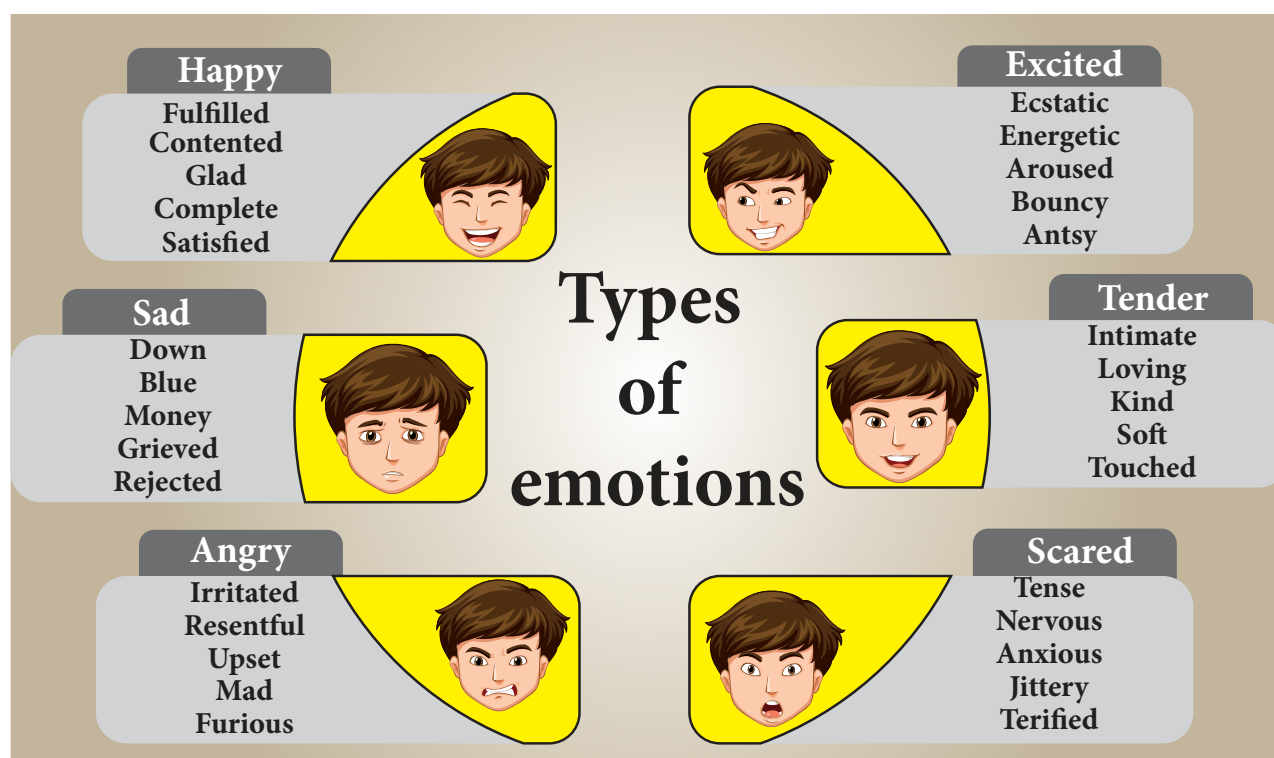
#### 3.9.5 Definitions

- The psychologist **Kulpe** defines emotion as a fusion of feeling and organic sensations
- The emotion is defined as an affective state of consciousness in which joy, sorrow, fear, hate or like is experienced from cognitive state of consciousness.



- Emotions are quite physical, as different body parts react to different emotions. ...
- According to scientists, there are 8 primary innate emotions: joy, acceptance, fear, surprise, sadness, disgust, anger, and anticipation. ...
- If you are sarcastic, chances are you have a good creative flare.

#### 3.9.6 Types of Emotions





### 3.9.7 Factors Influencing Emotions

Most of the physiological changes that occur during intense emotion, result from activation of the sympathetic division of the autonomic nervous system as it prepares the body for emergency action.

The sympathetic system is responsible for the following changes.

1. Blood pressure and heart rate increase
2. Respiration becomes more rapid
3. The pupils of the eye dilate.
4. Electrical resistance of the skin decreases.
5. Blood sugar level increases to provide more energy
6. The blood begins to clot more quickly in the case of wounds
7. Mobility of the gastro intestinal tract decreases or stops entirely. Blood is diverted from the stomach and intestines and sent to the brain and skeletal muscles.

8. The hairs on the skin erect causing a “Goose pimples. In emotion the sympathetic system also causes epinephrine (adrenaline) and non-epinephrine (noradrenalin). Nerve impulses with sympathetic system, which reach adrenal glands located on the top of the kidneys, trigger the secretion of hormones. They then get into the blood and circulate around the body.

### Emotional stability and the nursing;

Nursing is a stressful job where traumatic situations are common. The ability to accept suffering and death without letting it gets personal as crucial.

That’s not to say that there aren’t heartwarming moments in nursing. Helping a patient to recover, reuniting families, or bonding with fellow nurses are special benefits of the job.



### STUDENT’S ACTIVITY

- Let the student describe the feelings of joy, stress, and sad.
- Students can act out the emotions with facial expressions by creating face mask.

### 3.9.8 Motivation

It is the other factor which influence the behavior.

**Definition** - Motivation is an essential condition of learning process- **Melton**.

### Concept of motivation

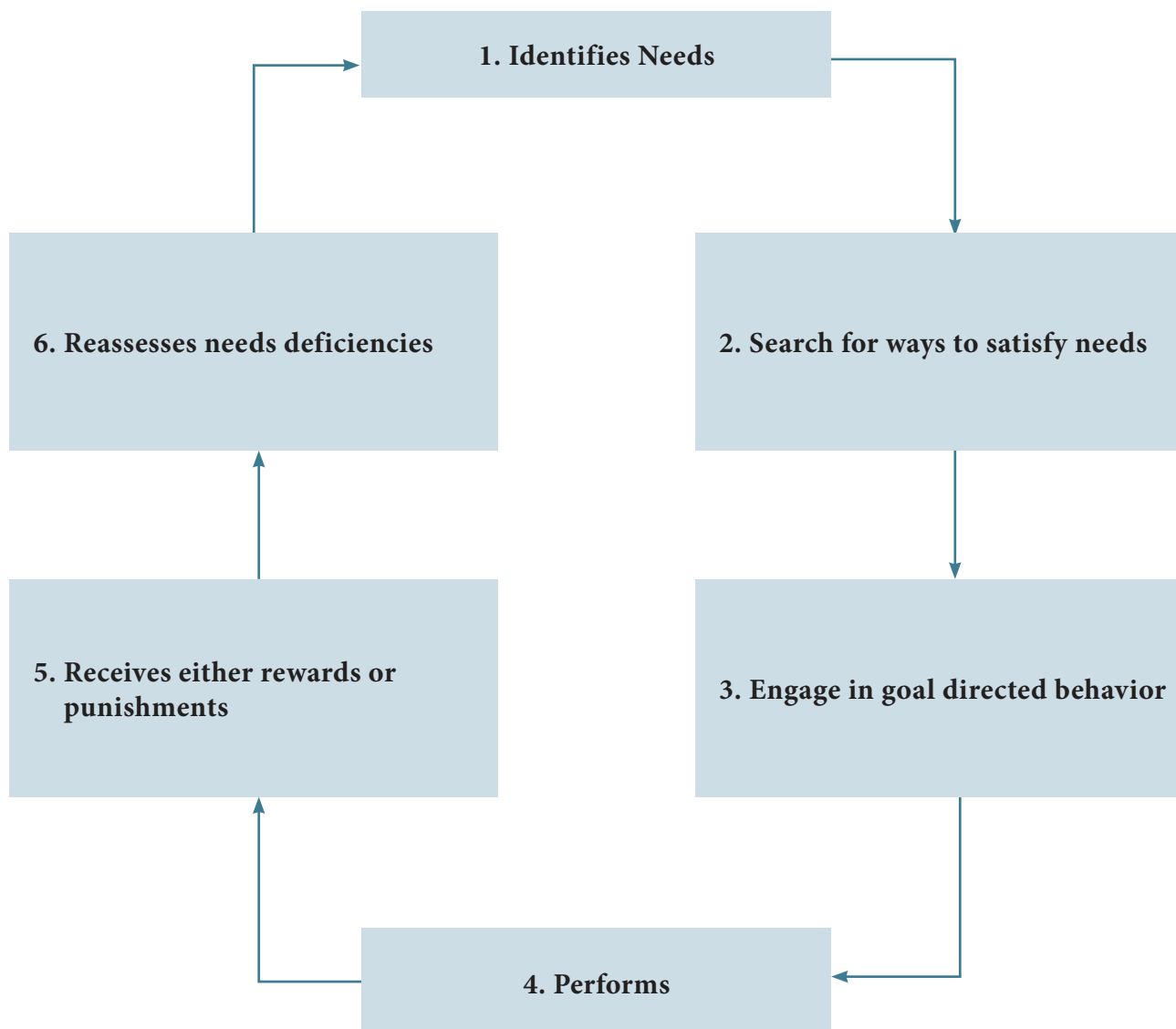
- Motivation is an art of attracting others towards oneself. Motivation is the result of processes of internal or external stimuli to the individual, that arouse enthusiasm and persistence to pursue a certain course of action”
- Motivation has become an art of giving incentives to others for doing something
- Motivation is an art of making appeals in order to attract others towards oneself. Needless to add that motivation is useful in nursing profession.

### Nature and characteristics of motivation

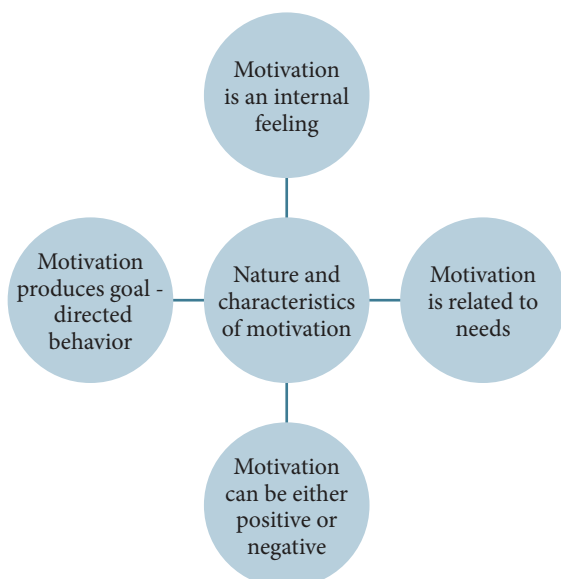
It is described in the diagram below:

1. Identifies Needs
2. Search for ways to satisfy needs
3. Engage in goal directed behavior
4. Performs
5. Receives either rewards or punishments
6. Reassesses needs deficiencies

### Process of motivation

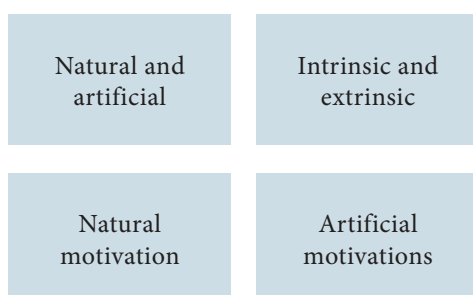


## Nature and characteristics of motivation



### 3.9.9 Kinds of Motivation:

- Motivation can be divided into four types: intrinsic (internal) motivation and extrinsic (external) motivation.



- Intrinsic motivation:**

Motivation that is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on external pressures.

- Extrinsic motivation:**

Extrinsic motivation comes from outside of the individual.

Eg. Monetary Rewards, punishment, Competition.

- Natural motivation**

It occurs with Automatic actions and reflexes, habit, instincts, feelings, desire,

interests, suggestion, imitation are natural motivation.

- Artificial motivation**

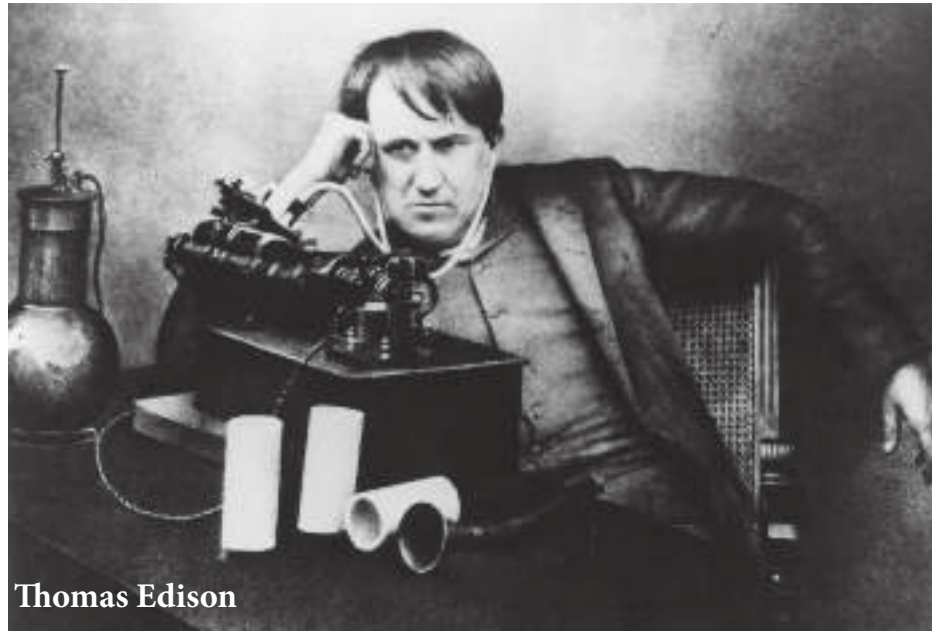
The action taken by the person to acquire knowledge, to win affection of the person, to obtain a post, to acquire confidence of others, to obtain leadership and popularity may be the **artificial motivations**

### Motivation and nursing

Work motivation determines nurses' behavior and performance when providing high-quality nursing practice (Moody & Pesut, 2006) While motivation activates and guides all verbal and physical activities (Ryan & Deci 2000), at work, it determines how and to what extent a nurse commits and performs in nursing practice? (Moody & Pesut, 2006). There is an overall acknowledgment that highly motivated nurses perform better and are more productive (Awosusi & Jegede, 2011; Ayyash & Aljeesh, 2011; Yldiz et al., 2009).

### CASE HISTORY OF INTRINSICALLY MOTIVATED PEOPLE

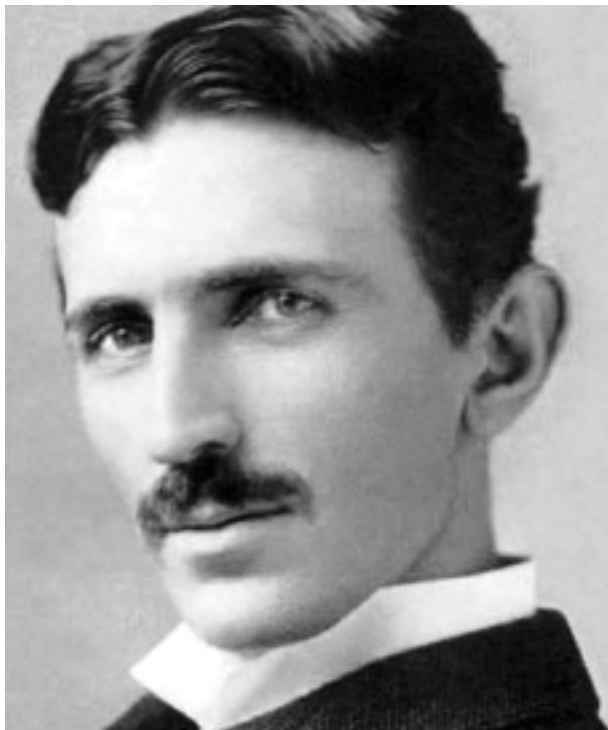
There are some examples of intrinsically motivated people. One of these is Thomas Edison. He was an inventor who lived between 1847 and 1931. He is credited with 1090 patents and also created the very first laboratory for industrial research. From his quotes, Edison indicates that he was motivated by the joy of completing tasks. For example, he indicated that he was able to invent due to a great imagination and the ability to see the potential in junk.



**Thomas Edison**

Nikola Tesla was also an intrinsically motivated person. He was an engineer and inventor who lived from 1856 to 1943. Nikola invented the AC motor and this created a firm foundation for an industrial revolution. He indicates that the greatest thrill that he ever felt was seeing one of his mental creations become a success.

Marie Curie was a chemist and physicist from Poland. She lived between 1867 and 1934. She was one of the pioneering minds in the field of radioactivity. She confessed that the sights and sounds of nature caused her to rejoice with child-like happiness and she felt as though a new world always opened up to her.



**Nikola Tesla**



**Marie Curie**

## Individual differences

- All the living organism differ in size, shape, appearance, speed of reaction and innumerable other aspects of behavior. We can see that, some are healthy and jolly while others are weak and irreparable. Some learn quickly and others learn slowly. In this way differences exists.
- These differences between individuals that distinguish or separate them from one another and make one as unique individual in oneself are named as individual differences.
- Individuals differ in height, weight, colour, structure physically and people differ in intellectual abilities like reasoning and thinking power, power of imagination, creative, expression, concentration, etc.

### What makes us unique?

Personal qualities	Personality	Intelligence	Moral values	Mental health	Group identities	Race	Culture	Gender
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#### 3.9.10 Factors causing individual differences:

- **Heredity and environment are not two independent factors.** They operate together and interact to make every person as unique
- **The environmental influences** prenatal, postnatal, period social and cultural are some factors are causing individual differences.
- **Bio chemical differences** between male and female-Sex role expectations incorporated into self-concept very early in life are some of the factors. Girls display greater social and emotional maturity at each age and boys show greater vitality, independence and initiative.
- The fact of individual differences implies that teachers have to meet wide variety of pupil's needs such as needs of
  - Exceptional children
  - Gifted children
  - Slow learners or backward children,
  - Children with sensory and motor defects,
  - Clumsy children etc.

Teachers also face antisocial behavior of some children in their class. Common behavior problems are bullying, lying, stealing, destruction of common property and adolescent sexual misbehavior. Suitable reinforcement of acceptable conduct will generally eliminate such problem behaviors.



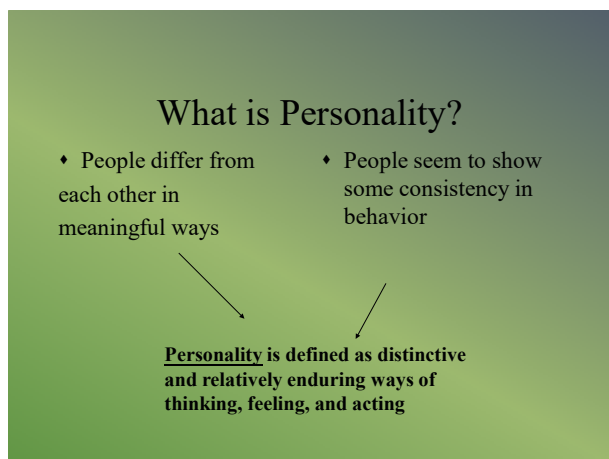
#### STUDENT'S ACTIVITY

Each student can list out their interest and dislike events and habits to know the difference among them

### 3.10 Personality

#### Introduction

The word personality has been derived from the Latin word 'Persona' which was the mask which Greek actor wore while acting. This however is not the meaning taken in the modern word personality.



#### 3.10.1 Definition of personality

- Personality refers to a person's unique and relatively stable pattern of thoughts, feelings, and actions
- **Gordon Allport** defines, "personality is the dynamic organization within the individual of those psychophysical systems, that determine his unique adjustment to his environment".

#### 3.10.2 Categories of personality

**H. J. Eysenck** speaks of three basic categories of personality.

- Extroversion - introversion,
  - neuroticism - stability and
  - psychoticism - normality.
1. **Extroverts** are described as outgoing, uninhibited fond of activities, which bring them into contact with other

people. **Introverts** have the opposite traits.

2. **Neuroticism** is a personality trait that includes anxious and nervous behavior and a frequent feeling of fear or worry. In situations of worry, panicking, stress and over emotionality a high level of activity could affect performance adversely in academic work of pupils, resulting in learning disabilities. Stability is opposite of neuroticism
3. **Psychoticism** is a personality type that is prone to take risks, might engage in anti-social behaviors, impulsiveness, or non-conformist behavior. Normality is a opposite of that.

#### 3.10.3 Personality Traits of Successful Nurses

Six important traits for a nurse to be successful is:

##### 1. Tenacious

Nurses need to understand topics like chemistry, anatomy, psychology, and nutrition to do their jobs well. It takes a strong will to memorize all of the information and apply it in hectic environments.

##### 2. Gregarious

Emergency rooms see nearly 130 million patients per day. Most of those patients and their loved ones will rely on nurses to get them through difficult times. Gregarious people who enjoy comforting and helping, however, can thrive in chaotic environments like ER (Emergency Room). But; it is helpful when working in any medical

environment since nurses are patient-facing.

### 3. Methodical

Nurses play a lot of different roles throughout a shift. Many of them fill out paperwork, take notes for medical records, and provide patient care. Only a methodical person could fill out insurance forms while talking with a patient. It is a rewarding job, but it is tough. If nurses do not have a methodical nature, he or she may need to develop some multi-tasking and organizational habits.

### 4. Optimistic

Nurses who have optimistic dispositions can set the proper mood for healing. It's hard for patients to keep their spirits up. It is even harder when their nurse has a negative perspective.

### 5. Patience

The average patient will actively participate in behaviors that worsen his or her condition. It's estimated that 60 percent of patients do not follow their doctor's orders when taking prescription medications. It takes a lot of patience to deal with people who either will not or cannot follow the basic instructions that could save their lives. Nurses who get frustrated easily will end their shifts with plenty of tension, headaches. Of course, nurses also need extreme patience when filling out endless streams of insurance documents and medical records.

### 6. Empathetic

Nurses see people in some of their worst states. Over the time, nurses



## STUDENT'S ACTIVITY

### The "Empty Your Pockets" Exercise to know the personality

This exercise is simple, but very effective as a way for students to get to know each other as well as learn about the personal meaning of the things we carry with us everyday.

Break the class down into small groups. The students take turns emptying their pockets (or pocketbooks, backpacks, etc.) to show their group what they are carrying with them.

No one is required to show anything that they would prefer NOT to show.

The person and the group then discuss what the objects say about the person. Does it reveal something about one's personality and lifestyle? Is there any one object that stands out as a reflection of some aspect of that person?

Sometimes what is MISSING also says something about the person.

can get desensitized to the disturbing things they have seen. A nurse who feels empathy for other people, becomes more in-tune with their patients and can provide better care. Empathy helps nurses to communicate with patients and better understand what they are going through. It is, perhaps, the most essential personality trait of a successful nurse.

Learning psychology (study of behavior) will help us to understand the factors affecting our behavior and also how to

maintain normal or balanced behavior to help patients.



### 3.11 SOCIOLOGY

#### Introduction

A French philosopher Auguste Comte is known as father of sociology. Because he was the first person to coin the word “sociology” in 1838. the word sociology

means, the “socio” derived from Latin and “Logos” derived from Greek language.

#### 3.11.1 Definitions of sociology

1. Sociology is the science of society- G.A. Landberg (1939)
2. Sociology is the study of social groups- Kimball Young(1942)
3. Sociology is the study of social action, interaction and social relationships. -MaxWeber(1949)
4. Sociology is the study of social institutions. Emile Durkheim (1895)
5. Sociology is the study of social bonds, social processes, social structure, and so on





**Do YOU KNOW?**

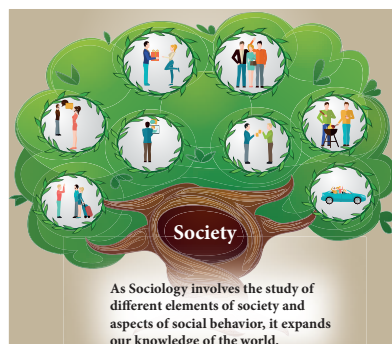
## Father of Sociology

- Auguste Comte
- 1798 – 1857
- Inspired by French Revolution
- **Social statics (constants)**
- **Social dynamics (change)**



### 3.11.2 Importance of sociology

1. Sociology makes a Scientific of Society.
2. Sociology as a profession.



3. It gives the knowledge about social system and human behavior in different situations.
4. It helps us as a tourist guide to understand our daily life
5. It tells how we are interrelated with one another.
6. It is a useful preparation for our career as a teacher, social worker, social welfare officer, programmer, and Planner, etc.
7. It is helpful to know our personality and position in our society.

8. it is helpful to give the knowledge about different cultures of different



societies, positive points etc. which we adopt from various cultures.

9. It is helpful to solve the social problems because, it uses scientific method. It tells the causes of any problem and strategies to solve that problem.

### 3.11.3 Application of sociology in nursing

- Sociology includes in the curriculum of nursing because health is included in social component. Most of the illness has social causes and social consequences.



- Sociology gives knowledge to deal with patient and to understand his habits norms, culture and behavior etc.. The nurse has to understand the necessity of changing the environment or surrounding.
- The sociological knowledge will help the nurse to understand the factors of caste, faith, community, religion etc. Without a sociological knowledge a nurse cannot understand the community.
- Adjustment and services of the family members are important in the recovery process of the patient. So this knowledge of family is essential for the nurse.
- Sociological knowledge helps her to avoid prejudices and discrimination.
- A nurse should understand the social position, status and social responsibilities with regard to health field by studying sociology.
- She has to work in accordance with rules and norms of it by removing egoistic and impulse based behavior.
- It helps the nurse to approach the patient at various levels. – Emotional level – Cultural level – Intellectual level.

“NURSES ARE IN A UNIQUE POSITION THAT ALLOWS THEM TO INTEGRATE ALL ASPECTS OF PATIENT CARE, ENSURING THAT CONCERNS ARE ADDRESSED, STANDARDS ARE UPHELD AND POSITIVE OUTCOMES REMAIN THE GOAL”

- Social correlates of disease including demographic factors can be understood by the nurse with the knowledge of Sociology.

The example for Intervention measures: In the absence of social worker the Nurse may have to deal with family and other problems such as housing, finance, social, isolation and psychological disturbances of the patient.

### 3.11.4 Basic principles of sociology

These are the basic principles of sociology:

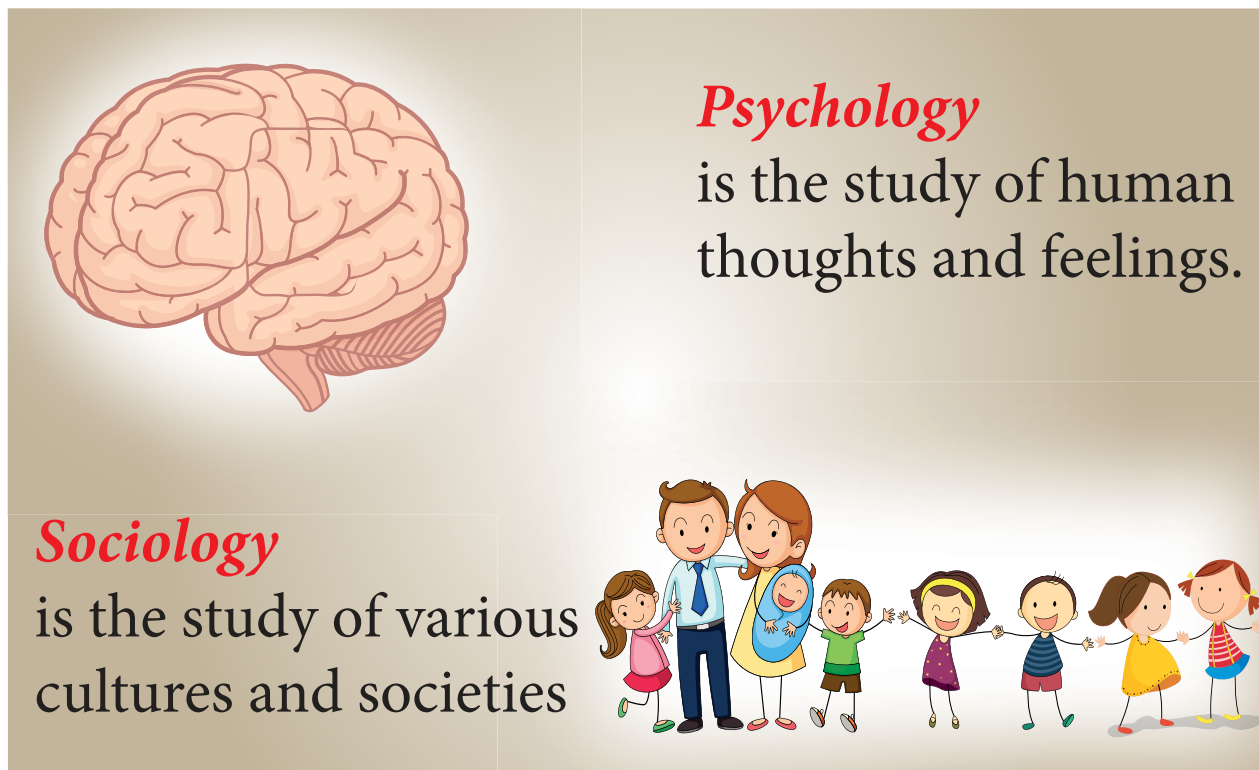
1. People behave differently in groups than they do as individuals.
2. People obey rules that are socially constructed.
3. People socially construct the rules.
4. There are rewards for following the rules and penalties for breaking the rules.
5. The rules of society can be studied scientifically.
6. Societies are organized into distinct social units (e.g. family, government, education, and religion) that tell us what the rules are.
7. Our patterns of behavior reveal unequal social relationships.
8. Social change is a necessary and essential part of our survival.
9. We must attempt to explain our social behavior.
10. We must strive to provide evidence that supports our claims about social behavior.

We can use our scientific work to improve the human social condition.

## CONCLUSION

Where sociology mainly focuses on the interaction of people, psychology has a tendency to deal with human emotions. Ultimately, there are a thousand ways that psychology and sociology relate to and enhance each other to assist people in mastering why people behave and interact as they do. These two fields with different approaches will provide you a wide range of knowledge regarding human service, social work, healthcare, and even business.

In this chapter we have discussed about the psychology and sociology which will help the nurses to understand the patient and their families and help them to come out of the health problem. This aspect will meet the holistic nursing care component.





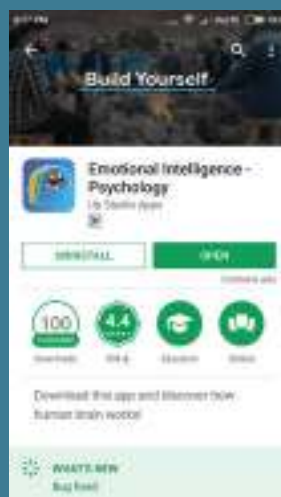
## ICT Corner

### Emotional Intelligence - Psychology

Lets Know: Emotional Intelligence - Psychology



- Step 1:** This is an Android app activity. Open the Browser and type the URL given (or Scan the QR Code. (Or) search for “Emotional Intelligence” in google play store.
- Step 2:** (i) Install the app and open the app, (ii) click Any Menu say “LEARN”,
- Step 3:** In the opened page “Body Language” click any menu say “LEGS”.



Step 1



Step 2



Step 3

\*Pictures are indicative





## ICT Corner

### Neural Control and Coordination

Through this activity you will explore the Structure and various functions of the Nervous System.

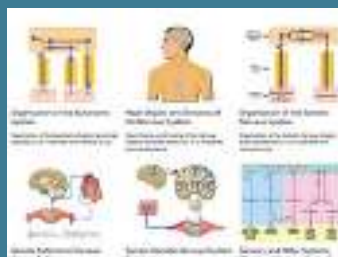


- Step 1:** Use the URL to reach the 'Nervous system' page. Surf the grid and select 'Nervous System organization' and explore the autonomic and somatic organizations of nervous system.
- Step 2:** Then reach the 'Nervous system' page by clicking back button on the top of the window or use the 'Backspace' key. Select 'Nerve cells' from the grid and explore the information.
- Step 3:** Follow the above steps and explore each and every parts and their functions of nervous system.
- Step 4:** Use the reference given below the page to acquire additional details about nervous system.

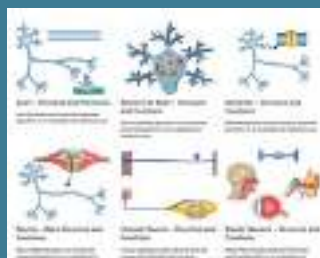
Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## EVALUATION



### I. Choose the correct answers (1 mark)

1. A study of human behavior is called as
  - a. Sociology
  - b. Psychology
  - c. Behaviorism
  - d. Behavior Theory
2. Studying psychology will help the nurse as follows EXCEPT
  - a. Understand patient
  - b. Understand self
  - c. Understand nursing
  - d. Understand human behaviour
3. If the person is adjusting to the world with maximum effectiveness is called as
  - a. Healthy person
  - b. Stable person
  - c. Adjustable person
  - d. Mentally healthy person
4. The mentally healthy person possess the following characteristics EXCEPT
  - a. Good self esteem
  - b. Solves problem
  - c. Talk loudly
  - d. Socially active
5. Factors influencing Mental health are
  - a. Age
  - b. Psychology
  - c. Behavior
  - d. Sociology
6. The mental activity by means of which knowledge, skill, attitude and ideas are acquired resulting in modification of behavior is called as
  - a. Education
  - b. Insight
  - c. Learning
  - d. Thinking
7. Classical conditioning Behavior theory was developed by
  - a. Skinner
  - b. Ivan pavlov
  - c. Kohler's
  - d. Gerald

### II. Write short answers (3 marks)

1. Define insight with example
2. List the factors insight attention
3. What are the two mental attentions of observation?
4. What are the types of attention?
5. Explain the forms of distraction
6. What are the types of perceptions?
7. Define emotion
8. What is intrinsic motivation?
9. Give an examples for extrinsic motivation
10. Mention the three basic categories of personality

### III. Write short notes (5 marks)

1. Explain perceptual constancy.
2. What are the errors in perception?
3. Explain the types of emotions.
4. What is the concept of motivation?
5. Elaborate the process of motivation.
6. What are the importance of society?

### IV. Write an essay for the following questions (10 marks)

1. Explain the Gestalt principles of perception.
2. Describe the physiological changes due to emotions.
3. Write the nature and characteristics of motivation.
4. Explain the factors causing individual differences.
5. Write about the personality traits of successful nurse.
6. Write the principles of sociology.
7. What are the application of sociology in nursing?

## A-Z GLOSSARY

<b>Psychology</b> – (மனநலம்)	- It is the science of the mind and behavior.
<b>Behavior</b> – (பண்புகள்)	- It is a response of an individual or group to an action, environment, person, or stimulus.
<b>Learning</b> – (கற்றல்)	- It is the process of acquiring new or modifying existing knowledge, behaviors, skills, values, or preferences.
<b>Observation</b> – (கூர்ந்து நோக்குதல்)	- It is the act of <i>observing</i> something or someone.
<b>Attention</b> – (கவனம்)	- It is the behavioral and cognitive process of selectively concentrating on a discrete aspect of information
<b>Perception</b> – (புலதிறன்)	- it is a belief or opinion, often held by many people and based on how things seem
<b>Emotion</b> – (உணர்ச்சி)	- Emotion “is a complex, not a simple elementary, mental state
<b>Motivation</b> – (ஊக்குவித்தல்)	- It is the process that initiates, guides, and maintains goal-oriented behaviors.
<b>Personality</b> – (தனித்திறன்(அ) தன்மை)	- It is the combination of qualities and characteristics of a person.
<b>Individual differences</b> – (தனிமனித வேற்றுமைகள்)	- These differences between individuals that distinguish or separate them from one another and make one as unique individual in oneself.
<b>Sociology</b> – (சமூகவியல்)	- It is the science of society

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# Unit 4

## PRINCIPLES AND PRACTICE OF NURSING



உற்றான் அளவும் பிணியளவும் காலமும்  
கற்றான் கருதிச் செயல்.

— குறள்: 949

Kural 949:

The learned (Physician) should ascertain the condition of his patient, the nature of his disease, and the season (of the year) and (then) proceed (with his treatment).



### LEARNING OBJECTIVES

At the end of this chapter, the student will be able to,

- Define the Nursing Process
- Know the Steps in Nursing Process
- Admission process
- Orient to the ward
- Care of belongings
- Discharge the patient
- Bed and Bed making
- Create a therapeutic environment
- Body mechanics and positioning
- Meet the Hygienic needs
- Meet the Safety and Comfort needs
- Know the Activity & Exercises, Rest & Sleep
- Do the Moving, Shifting & Lifting patients
- Meet the Oxygen needs
- Meet the Elimination Needs.

#### 4.1 INTRODUCTION:

Nursing is 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. Nurses may be differentiated from other health care providers by their approach to patient care, training, and scope of practice. Nurses develop a plan of care, working collaboratively with physicians, therapists,

the patient, the patient's family and other team members, that focus on treating illness to improve the quality of life. Nurses may help coordinate the patient care performed by other members of a multidisciplinary health care team such as therapists, medical practitioners and dietitians. Nurses provide care both interdependently, for example, with physicians, and independently as nursing professionals. Nurses are ultimately the backbone of any health care delivery system.

## 4.2 NURSING PROCESS.

### 4.2.1 Introduction

Every mother has the role of nurturing and caring for her child. In the same way nurses have the vital role of taking care of the patients in the ward. To take care of the patient, the nurse has to systematically plan her work. This work which is systematically planned is known as Nursing Process.

### 4.2.2 Definition of Nursing Process


The nursing process is a scientific method used by nurses to ensure the quality of patient care.

This approach can be broken down into five separate steps.



### 4.2.3 An Example of the Nursing Process

Below is an example of the process from start to finish in a story like fashion:

Steps of Nursing Process.	Examples.
<p><b>Assessment Phase</b></p> <p>The first step of the nursing process is assessment. During this phase, the nurse gathers information about a patient's psychological, physiological, sociological, and spiritual status. This data can be collected in a variety of ways. Generally, nurses will conduct a patient interview, physical examination, referencing to the patient's health history, obtaining the patient's family history, and general observation is used to gather assessment data.</p> <p>"The individualization of learning fundamentally redefines the role of assessment."</p> <p>- Sebastian Thrun</p>	<p>Sanjay 54 year old man visits his general physician on Monday because he was feeling sick over the weekend. When he was called from the waiting room, the nurse takes his temperature, heart rate, and blood pressure. She then asks Sanjay a series of questions about how he has been feeling lately. The nurse notes his responses when he says he has been suffering with difficulty in breathing and has been feeling very tired. She also sees Sanjay's medical history that he has had previous problems with his blood levels and blood pressure. Sanjay also has a blood sample taken during his visit.</p> 

### Diagnosing Phase

The diagnosing phase involves a nurse making an educated judgment about a potential or actual health problem with a patient. Multiple diagnoses are sometimes made for a single patient. These assessments not only include an actual description of the problem (e.g. sleep deprivation) but also whether or not a patient is at risk of developing further problems. The diagnoses phase is a critical step as it is used to determine the course of treatment.

“A plan is a list of actions arranged in whatever sequence is thought likely to achieve an objective.”

-John Argenti

The nurse looks over Sanjay's symptoms and notes that his heart-rate is higher than average and his blood pressure is elevated. She also considers that he's experienced fatigue and shortness of breath. The nurse determines that Sanjay is experiencing high levels of cholesterol, which is having high levels of fat within the blood. The nurse is also concerned that Sanjay is at risk for heart disease.



### Planning Phase

Once a patient and nurse agree on the diagnoses, a plan of action can be developed. If multiple diagnoses need to be addressed, the head nurse will prioritize each assessment and devote attention to severe symptoms and high risk factors. **Each problem is assigned a clear, measurable goal** for the expected beneficial outcome.

Apprehension, uncertainty, waiting, expectation, fear of surprise, do a patient more harm than any exertion.

-Florence Nightingale

The nurse sits down with him in a closed room and explains his cholesterol levels and high blood pressure. She suggests that Sanjay be put on medication to help lower these blood levels and recommends him to do exercise at least twice a week. The nurse also tells Sanjay he should stay away from salty foods and eat less red meat. Sanjay agrees with the nurse, and they set up a follow-up appointment two weeks later. The nurse reminds Sanjay to call or visit the hospital immediately if there is any changes in his condition, or if he starts to feel worse.



### Implementation Phase

The implementing phase is where the nurse follows through on the decided plan of action. This plan is specific to each patient and focuses on achievable outcomes. Actions involved in a nursing care plan include monitoring the patient for signs of change or improvement, directly caring for the patient or performing necessary medical tasks, educating and instructing the patient about further health management, and referring or contacting the patient for follow-up. Implementation can take place over the course of hours, days, weeks, or even months.

Sanjay is prescribed the medication and takes it as recommended. One week later, he has a day where he feels especially sick and calls the doctor's office. The nurse explains that the medication could cause nausea as a side-effect and advises Sanjay to drink jeeragam water and avoid any foods that generally upset his stomach. Sanjay continues taking the medication and goes to the gym four times during the two week period. Once the two weeks has passed, he returns to the doctor's office for his follow-up appointment.



### Evaluation Phase

Once all nursing intervention actions have taken place, the nurse completes an evaluation to determine if the goals for patient wellness have been met. The possible patient outcomes are generally described under three terms:

1. Patient's condition improved.
2. Patient's condition stabilized.
3. Patient's condition deteriorated, died, or discharged.

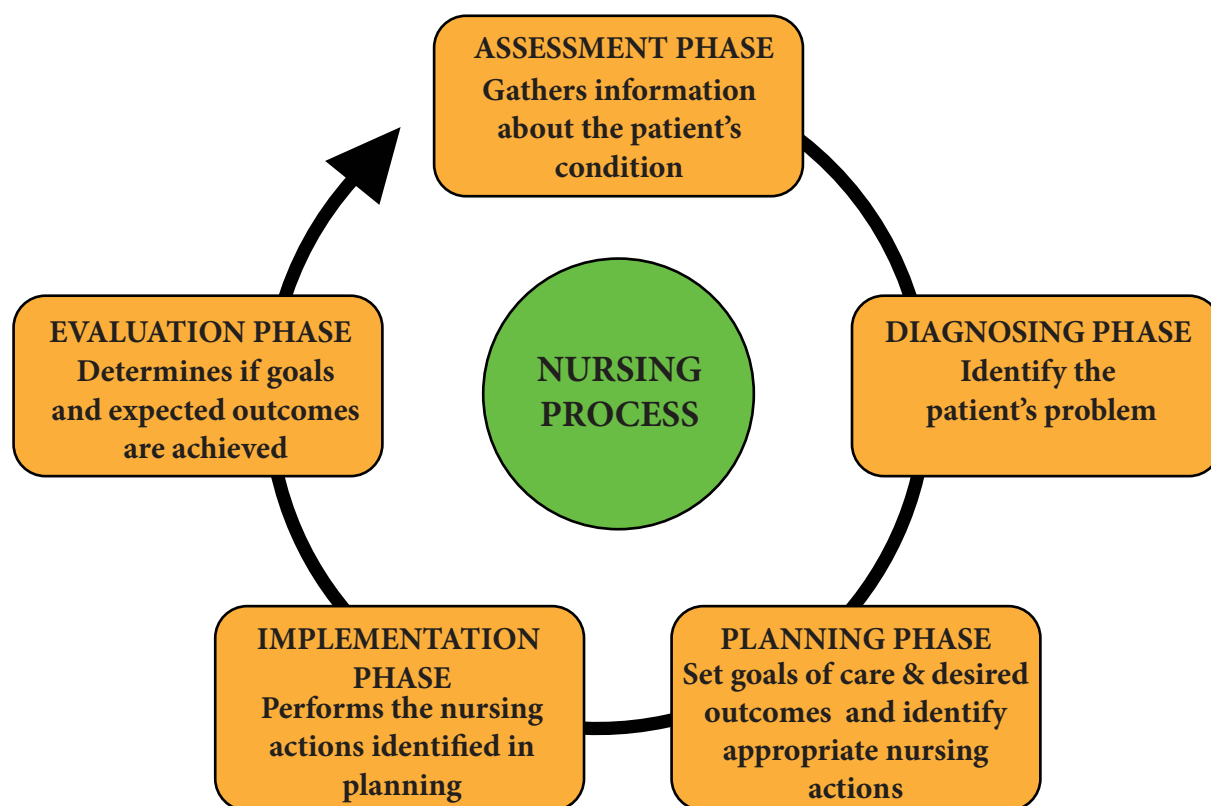
In the event the condition of the patient has shown no improvement, or if the wellness goals were not met, the nursing process begins again from the first step.



When Sanjay returns, the nurse asks him a series of questions about how he is feeling. Sanjay replies that he has been having an easier time breathing and feels significantly less tired since exercising and taking the medication. The nurse marks "Patient's Condition Improved" on his official medical records and congratulates Sanjay on his well being. She then advises him to remain on the medication for one more month and to continue his exercise.



#### 4.2.4 Diagrammatic representation



All nurses must be familiar with the steps of the nursing process. If you're planning on studying to become a nurse, be prepared to use these phases everyday in your new career, it's easy and simple.

#### Highlight

Although there are calculated steps behind the nurse's approach, her methods are extremely friendly and warm. Care is taken to treat the patient like a human being. As you can see, the nursing process will feel like second nature/mother when put into real-world practice.



#### STUDENT'S ACTIVITY

Can practice the Nursing process by doing a Role play.

Nursing practice was first described as a four-stage nursing process by **Ida Jean Orlando in 1958.**

### 4.3 ADMISSION OF A PATIENT.

#### 4.3.1 Introduction

Meena, a 14 year old child had pain in the right ear for the past 2 days and was crying continuously. Her father and mother were anxious about her condition and brought her to the hospital.

### 4.3.2 Definition:

Admission to a hospital means entrance of a patient to stay in the hospital for various health reasons like observation, investigations, and treatment.

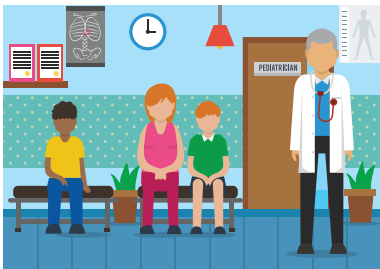


### 4.3.3 Purposes of admission.



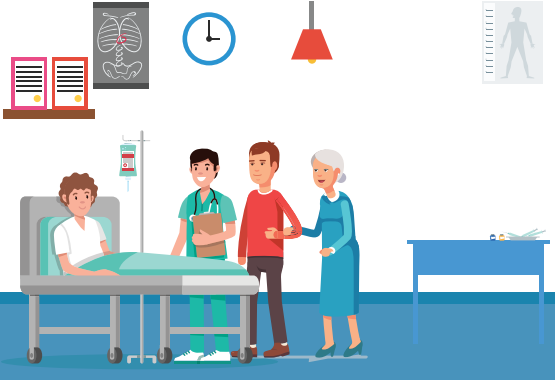
1. For observation.
2. For doing investigations.
3. For treatment.

### 4.3.4 Types of admission.

1. Routine.
2. Emergency.

### 4.3.5 Patient admission procedure.

Procedure	Example
The entrance of a patient into a hospital or a private clinic is termed as admission. A patient enters the hospital by himself /herself or he/she may be brought to the hospital by his relatives, friends, neighbours or others.	 <p>Meena was brought to the hospital reception by her mother and father.</p>
The admission to a hospital can be either routine (outpatient department) or emergency/casualty (seriously ill).	<p>Meena was brought to the hospital as a routine admission.</p>
The doctor admits the patient to the ward if necessary depending upon the condition of the patient. The patient comes to the ward by walk, wheelchair or stretcher.	 <p>Meena is advised to be admitted in the ward for investigation. Meena enters the ward on a wheelchair.</p>
The first personnel, who meet the patients, is the nurse who should be polite and friendly and should have a courteous and sympathetic approach toward the patients.	 <p>Meena is received by Nurse Sumathy with a smile and warmth.</p>

<p>Due to sudden change and strangeness in the environment, patient can feel anxious, therefore, the nurse should take effective steps to establish interpersonal relationship.</p>		 <p>Nurse Sumathy checks her chart and admission slip, introduces herself to Meena and makes her comfortable and at ease.</p>
<p>Check the height, weight, temperature, pulse, respiration, and blood pressure. Check the personal hygiene of the patient, example, if the nail is cut, if the patient has taken bath etc.</p>		 <p>Nurse Sumathy checks Meena's height, weight, temperature, pulse, respiration, and blood pressure.</p>
<p>Provide a clean and safe environment, prepare the unit (bed making)</p>		 <p>Nurse Sumathy makes the bed and checks the important parameters for Meena. Then she gives her a clean hospital gown. Necessary required blankets and locker are handed over to the patient.</p>

**Orientation to the ward and routines:** A patient may be coming to hospital for the first time. Proper orientation should be given to the patient. The patient who is not very ill, can be taken around the ward and can be introduced to the other patients and vice versa, and the nursing personnel working in the ward. Orient the patient to the whole ward, duty room, toilet room, explain about the time for meals serving, and the doctors visit timings. Explain the hospital policies, procedures, and routines to the patient and relatives. If the patient is seriously ill, the patient's relative can be given a special pass so that the relative will be able to stay with the patient in the hospital.



Nurse Sumathy explains the hospital routine, the hospital rules, the general setup of the ward, the personnel working in the ward, the time of visiting hours and supplied her parents with visiting passes.

Record the admission and inform the doctor.

Details of Meena's parameters, her condition are written in the file and signed



by Nurse Sumathy after which she informs the doctor that Meena has arrived.

**Care of belongings:** It is always a good policy to discourage patients to keep / valuable things and money with them. Send the valuables home through their relatives. If he/she does not have anyone with him, enter the description of items in the register and send the valuables to the office for safe custody. Get the patient's signature or thumb impression in the register. However, inform the patient that he will get back his valuables on discharge.



Meena was wearing a chain and gold stud which was handed over to her parents.



#### STUDENT'S ACTIVITY

- Can practice the Admission Procedure by doing a Role play.
- Visit to the hospital.

#### Quote

"Every time you smile at someone, it is an action of love, a gift to that person, a beautiful thing." –**Mother Teresa**





A strong bond between two or more people refers to **interpersonal relationship**.

Attraction between individuals brings them close to each other and eventually results in a strong interpersonal relationship. This is an important character of the nurse.

செல்லாமை உண்டேல் எனக்குரை மற்றுநின்  
வல்வரவு வாழ்வார்க்குரை.

— குறள்: 1151

**Kural 1151:**

If it is not departure, tell me; but if it is your speedy return, tell it to those who would be alive then.

## 4.4 DISCHARGE OF A PATIENT.

### 4.4.1 Introduction

After a one week stay in the hospital, Meena who had experienced pain in the right ear had completed all her investigations and treatment. She was better now and the doctor comes into her room and says those wonderful words, “You can go home today.” She was so excited and she wanted to get her home clothes on, grab her toothbrush and head out... yes? But it is not that easy. There are many things that have to be done before the patient can really leave the hospital safely.

### 4.4.2 Definition:

Discharge of a patient from the hospital means, preparation of a patient to depart or leave the hospital.

### 4.4.3 Purposes of discharge

1. To ensure continuity of care to the patient after discharge. (Follow up)

2. To assist the patient in discharge process.

### 4.4.4 Types of discharge

1. **Discharge to home:** The discharge to home is initiated by the doctor who advises the patient that he is well enough to leave the hospital.
2. **Discharge Against Medical Advice (AMA):** Patient leaves the hospital against the doctor's advice.
3. **Absconding:** When a patient escapes from the hospital without the knowledge of the hospital staff and he is treated as absconded in the records.

### Fact

It can take up to two hours to complete the discharge process. It takes time for the nurses as they are working with the, pharmacies, billing department, dietary section, etc., to coordinate activities and responses to reach that one hour goal.










### STUDENT'S ACTIVITY





Role play on the discharge procedure.



Statistics reveal that **70-80% of patients** admitted in a hospital are **emotionally upset** and they need the support of the nurses till discharge.

#### 4.4.5 Patient Discharge Procedure.

Procedure		Example
The doctor has to write discharge orders in your chart.		 <p>Meena's discharge orders were written in her chart by the doctor.</p>
The doctor has to review all the medications and list what should be taken at home. The doctor gives the order to the nurse with the prescription orders.		<p>The doctor reviews Meena's condition and prescription orders with Nurse Sumathy.</p> 
The nurse informs the patient and the family about the discharge and makes an appointment for the follow up visit.		<p>Nurse Sumathy informs Meena and her family about the discharge and follow up visit.</p> 
Financial arrangements are reviewed and finalized.		<p>Meena's parents are informed about the amount of money to be paid for the hospital stay. (Hospital Fees)</p> 
Transportation is confirmed.		<p>Nurse Sumathy confirms the safe transport of Meena with her family home.</p> 
<b>Discharge instructions</b> are prepared and printed.(A summary of the hospital stay, a list of tests and surgeries performed, with results, a list of test results still pending, a list of tests needed after discharge, such as a repeat chest x ray, a list of medications the patient is being discharged with, including the dosage and frequency.)		<p>Discharge instructions for Meena was prepared and given to her parents in a printed format.</p> 
Any delays are updated to the patient and family.		<p>The bills will be followed up by Nurse Sumathy and updated to Meena and her family.</p> 

The nurse will review all the discharge instructions with the patient.	Nurse Sumathy reviews the checklist to see if everything is completed systematically so that nothing is missed out.	
The nurse will get the feedback on the discharge plan and discuss on any concerns or questions. Health education is given to the patient. Finally, the patient's belongings are handed over.		The feedback from Meena and her parents are documented. Health education is given to the parents on how to take care of Meena at home. Her belongings are handed over to her parents.
The understanding of the instructions will be confirmed.	A caring talk will help the patient to depart from the hospital peacefully.	
Only after all of the above has been completed, the patient and the relatives will be helped to the vehicle.	Meena and her parents were helped until the vehicle head home safely.	

## 4.5 BED AND BED MAKING.

### 4.5.1 Introduction

A bed is a piece of furniture which is used as a place to sleep or relax. A clean, fresh, comfortable, bed is very important for people who have to spend time in bed during their illness. A standard hospital bed is made of metal. These are easy to handle, clean, strong, durable and simple in design. It is 200 cm long, 100 cm wide and 75 cm high from the floor.

### 4.5.2 Bed making Definition

Bed-making is the act of arranging the bed sheets and other bedding on a bed, to prepare

it for use. It is an art which has to be done skillfully and contributes materially to the patient's comfort. A comfortable bed uplifts one mentally, provides physical relaxation and can prevent serious complications.

#### Highlight

When the bed is not clean and comfortable, the patient would not have slept well, so he can develop minor problems like headaches, an altered attention span, irritability, unable to concentrate, and forgetfulness which can be very unpleasant.

### 4.5.3 Purposes

1. To provide clean and comfortable bed to the patient.
2. To observe and prevent patient's complications.
3. To save time, effort and material.
4. To provide a neat appearance of the ward/ unit.

5. To adapt to the needs of the patient.
6. To avoid patient exertion by making bed.

### 4.5.4 Principle for Bed making

- Prevents cross infection and multiplication of microorganism.

### 4.5.5 Types of beds

Types	Indications	Images
<b>1. Open (simple) bed:</b> This bed is prepared for an ambulatory patient. (walking.)	To provide a clean, smooth and comfortable bed for the patient.	
<b>2. Closed (unoccupied) bed:</b> This is an empty bed in which the top covers are arranged in such a way that all linen beneath the counter pane or bed spread is full. The bed is protected from dust and dirt until the admission of new patient. On arrival of the patient, this bed is converted to open bed.	Keep the bed ready for receiving the new patient.	
<b>3. Occupied bed:</b> This bed is prepared for bed ridden patient, lying in the bed.	Provides a clean and comfortable bed with the least disturbance of the patient in it.	

### 4.5.6 Special Beds

There are other types of special beds. They are:

1. Admission bed.
2. Post operative bed.
3. Fracture bed.
4. Plaster beds.
5. Amputation or stump bed.
6. Cardiac bed.
7. Rheumatism or renal bed.
8. Burns bed.






#### STUDENT’S ACTIVITY

- Demonstrate open bed making.
- Demonstrate closed bed making.
- Demonstrate occupied bed making.



Manual beds are generally less expensive in comparison to hydraulic and electric beds.

### 4.5.7. Special devices

Special devices.	Images.
<p><b>Side rails:</b> These are used to prevent the patient from falling out of bed, protect the restless patient, provide the patient support to grasp and hold when moving about.</p>	
<p><b>Hand cranks:</b> These are located at the foot of bed and used to adjust the height of bed, raise or lower the head, foot or knee sections in order to maintain various bed positions for treatment or comfort. (Crankes are used to elevate the head and foot end of the bed.)</p>	
<p>Special attachments are the attachments of <b>various poles, frames, foot pedals</b> and <b>equipment for traction</b> which are used to modify the beds to meet the various needs of the patient for treatment and comfort. (Foot Pedals are used to raise the height of the bed from the floor.)</p>	

## 4.6 THERAPEUTIC ENVIRONMENT

### 4.6.1 Introduction

Ramesh, a 30 year old man got admitted in the hospital with the complaints of injury to his right leg. He had to stay in the hospital for a month. He felt very insecure, lonely and dependent.

### 4.6.2 Definition

Therapeutic environment consists of more than just a hospital bed and random medical equipments. It refers to the physical, social, and psychological safe spaces that are specifically designed to be healing. It is specifically designed to increase safety, reduce anxiety, and promote independence.

### 4.6.3 Purposes

1. Maintaining and creating trustful supporting relationship in care of patients.
2. It is clearly and genuinely communicating and performing care activity.
3. Allowing the supportive group to care for the patients.
4. Acceptance of patient's feelings, and values and worthy as a whole.
5. Assist the patient and family in identifying supportive groups.
6. Maintaining a safe and secure environment.
7. Reinforce progress in behaviour or self care activities or terminating the relationship.
8. Encourage evaluation of progress between nurse and the patient.

### 4.6.4 Therapeutic Environment

#### 1. Physically safe space.



Ramesh is given a clean, comfortable, safe and secured room.

#### 2. Socially safe space.



Ramesh was able to talk and interact with others in the ward.

#### 3. Psychologically safe space.



Ramesh is taken good care of by the doctors and nurses in the ward, therefore, he was less anxious and more independent.

Ramesh's stay in the hospital was an episode he will never forget as his one month stay was well taken care of by the nurses in the ward by creating a stress free therapeutic environment.

### Highlight

The positive attitudes and positively-expressed emotions of the nurses towards patients lead to a well-organized therapeutic environment for patients who get hospitalized for a long duration of time.



Research proves that, having a solid social network has been shown to have an impact both physically and mentally, and it is often lauded as the key to a long and healthy life.



### STUDENT'S ACTIVITY

Discuss with the students on how to consider creating a therapeutic environment (space) for the patient which is safe physically, socially, and psychologically.

## 4.7 BODY MECHANICS AND POSITIONING

### 4.7.1 Introduction

Nursing is a job that needs a lot of bending our backs, flexing our arms and legs and pushing and pulling patients. Because of this, many nurses are at risk for developing physical strain and back injuries or even fractures. One way to prevent these from happening is to practice proper body mechanics.

### 4.7.2 Definition

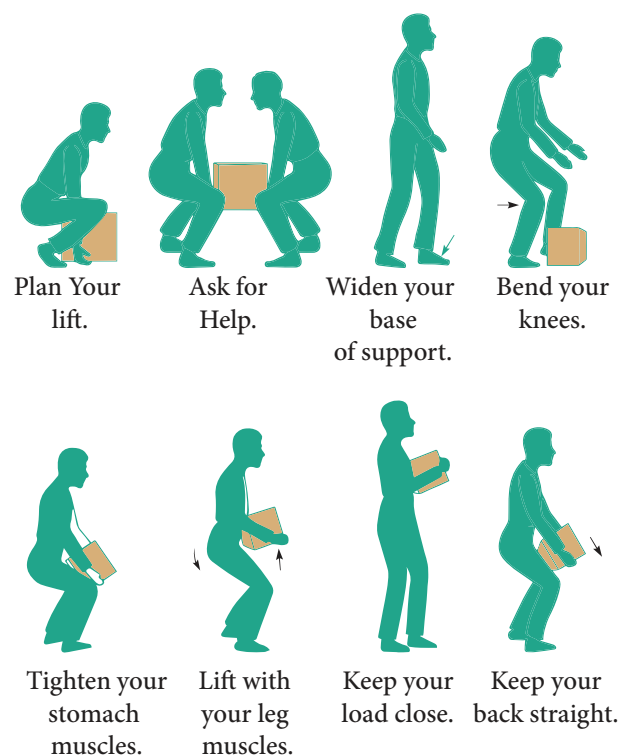
Body mechanics involves the coordinated effort of muscles, bones, and the nervous

system to maintain balance, posture, and alignment during moving, transferring, and positioning patients. Proper body mechanics allows individuals to carry out activities without excessive use of energy, and helps to prevent injuries for nurses and patients.

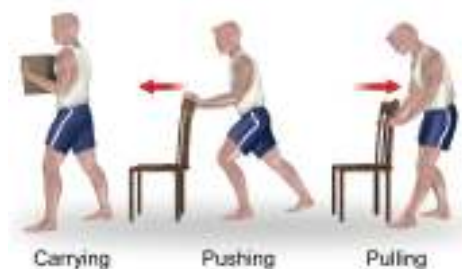


### 4.7.3 Purposes of good body mechanics and posture.

- (1) To provide maximum comfort and relaxation.



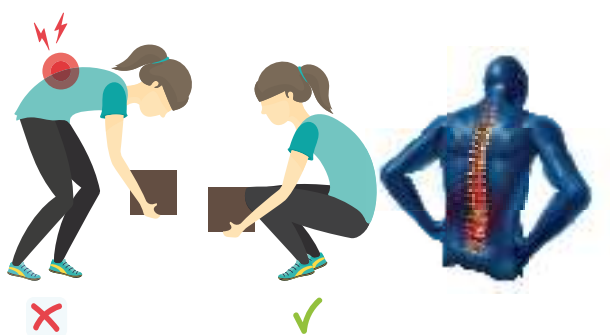
(2) To aid in normal body function.



(3) To prevent contractures and neuromuscular deformities and complications.



(4) To conserve maximum possible energy by preventing unnecessary strain.



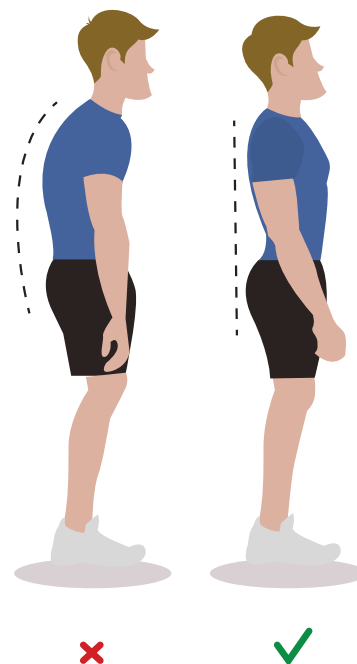
#### 4.7.4 Normal positions.

##### Positions

##### 1. Standing position:

In a standing position, the back should be straight; feet firmly on the ground, **about 4 to 6 inches apart to give an adequate base**

**of support**, with the toes pointing straight ahead or slightly toed out; head and rib cage held high; chin, abdomen, and buttocks pulled in; and knees slightly bent.



##### 2. Sitting position:

In a sitting position, the back should be straight, with the weight resting equally on the buttocks and under surface of the thigh, but not on the base of the spine.



#### 4.7.5 Positions used for patients.

##### Positions

##### 1. Dorsal position (Supine.):

Patient is flat on the bed with legs extended and arms at the sides of the body. This is not a comfortable position, as the curves of the body are not supported.



##### Indications

- Surgical procedures, it allows access to the peritoneal, thoracic and pericardial regions; as well as the head, neck and extremities.
- 2. **Dorsal recumbent position:**  
Place patient flat on back with one pillow under head; have knees flexed and separated and feet flat on bed.



##### Indications

- Rectal, vaginal and pelvic examinations and treatments.
- Deliveries.

##### 3. Lateral Position:

Patient lies on his side with spine straight. The knees are flexed; the upper knees are more flexed than the lower one. Pillows may be provided for the head, in between the

legs, and to support the back and abdomen. The lower arm is kept above the head and the upper arm is placed on a pillow in front.



##### Indications

- General comfort, rest and relaxation.
- Back care.

The arms and legs do not bear the weight of the body.

##### 4. Sims or Left Lateral position:

Place patient on left side somewhat obliquely across the bed with buttocks to edge of mattress. Incline the body forward, draw the left arm back under patient and place the right arm free in front. The thighs should be flexed upon the body, the right more than the left.



##### Indications

- Vaginal examinations.
- Perineal examination.
- Rectal examinations.
- Post operative, to maintain a clear airway.

##### 5. Jack knife position:

Place patient on a prone position with the hips directly over the band of the examining table. Tip the table with the head lower than

the hips. Lower the foot part of the table so that the patient's feet are below the level of his head.



### Indications

- For drainage after any procedures.
- Operation on the rectum and coccyx.

### 6. *Knee Chest Position:*

Place patient in the prone position, then assist her to kneel so that her weight rests on her chest and knees. Turn head to one side and flex her arms at the elbows extending, then to the bed in front of her. Be sure the thighs are perpendicular to the level of the head. Watch pulse and general condition of the patient.



### Indications

- To obtain better exposure of the vagina, cervix, and rectum.
- To examine the bladder.
- To help correct retroversion of the uterus.
- To administer caudal and sacral anesthesia.
- Vaginal and rectal examinations.

- Operative procedures on the vagina, rectum and perineum.
- Operative deliveries

### 7. *Lithotomy Position:*

A position of the body for medical examination, pelvic or abdominal surgery, or childbirth in which the individual lies on the back with the hips and knees flexed and the legs spread and raised above the hips often with the use of stirrups.



### Indications

- Abdominal surgeries.
- Childbirth.
- Pelvic examination.
- Urologic examination of the prostate.
- Male urethral surgery. Examination or operations on rectum and genital organs.

### 8. *Prone Position:*

Patient lies flat on his abdomen with head kept on a pillow and turned to one side and another pillow under the lower chest. Pillows are kept under the waist and under the lower legs. The arms are flexed at the elbow and kept above the head.



## Indications

- For treatment on the back.
- To secure drainage of pus in front of the abdomen.
- When there is bed sore or burns or an injury at the back (spine.)
- Change of position for patients with fractured spine.

### 9. Sims position or semi prone position:

This is a modified left lateral position. The patient lies on the left side. Head, shoulders and chest are turned forward so that the chest rests on the pillow. The right knee is well flexed and rests on the bed in front. The left knee is slightly flexed and is positioned behind the right knee.

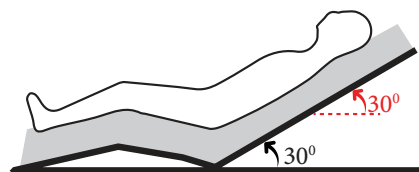


## Indications

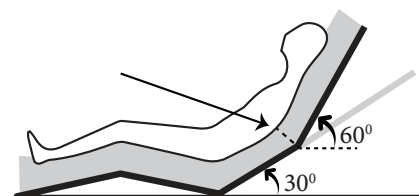
- Vaginal examination.
- For rest and relaxation.

### 10. Fowler's Position and Semi-Fowler's Position:

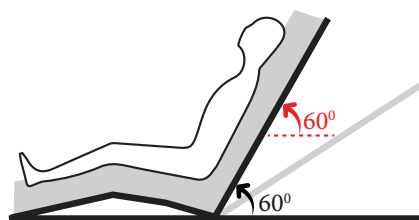
Patient is in a partially sitting position. The back of the bed is elevated to 45 degrees with the aid of a backrest and pillow or by adjustment of the cot. It can be elevated to 30 degrees as well as 90 degrees. Patient's back shoulder and head are supported well. The knees are flexed and supported with a pillow or by cot adjustment. A footrest is provided to prevent foot drop.



WT30°



UT60°



WT60°

## Indications

- To obtain good drainage in the pelvis.
- To localize infection in the pelvis and prevent its spread to the peritoneum.
- To prevent strain of abdominal muscles.
- This position is used for patients with dyspnoea (difficulty in breathing), distended abdomen, abdominal surgery, cardiothoracic disorders and ascites.
- The position is also useful while passing Ryle's tube. And while performing tapping of ascites fluid.

### 11. Trendelenburg position:

The patient lies on his back with the foot at the head of the bed elevated on wooden blocks. Patient's head and trunk are lower than the legs.

### 12. Reverse Trendelenburg Position:

The head and shoulders are at a higher level than the hips, legs and feet. This position is used for reducing intracranial pressure and for other treatment measure.



### Indications

- Gynecological surgery and suprapubic prostatectomy cases.
- To prevent shocks.
- To prevent or relieve post-partum hemorrhage.

#### Highlight

Positioning will contribute to an improved healing process.



#### STUDENT'S ACTIVITY

- Demonstration of Postures.
- Demonstration of Positioning.



Proper ergonomic (Ergonomics is the study of how a workplace and the equipment used there can best be designed for comfort, efficiency, safety, and productivity.) is necessary to prevent repetitive strain injuries and other musculoskeletal disorders, which can develop over time and can lead to long-term disability.

## 4.8 SAFETY AND COMFORT NEEDS.

### 4.8.1 Introduction

Nurses must be safety conscious and they should take all efforts to prevent accidents in the hospital. She should report all accidents promptly and take measures to prevent them from happening. Physical comfort for a patient can get affected because of a bed which is dirty and wet. Therefore, it is the duty of the nurses to see that the patient is safe and comfortable.



### 4.8.2 Safety:

Safety means protection from possible injury.

Factors which contribute to the safety of the patients in the hospital:

1. The hospital buildings should be structurally sound for ensuring safety for patients.



2. The floors should be clean and dry.






3. There should be mosquito mesh fixed in all the windows.
4. Fire extinguishers should be placed all over the building wherever necessary.







#### 4.8.3 Comfort: Comfort is a sense of mental and physical well being.





Factors which can cause discomfort to the patients in the hospital:

1. High temperature and humidity.
2. Poor ventilation.
3. Too much noise.
4. Unpleasant odours.
5. Glaring or bright lightings.

4.8.4 Comfort & Safety Devices.	Images	Indications
1. <b>Pillows:</b>		Pillows can be used for giving support for the various part of the body.
2. <b>Cotton rings:</b>		They are used to relieve pressure on certain parts of the body like elbow and heels.
3. <b>Air Mattress:</b> Air mattresses can improve the quality of life (and potentially provide some measure of relief) for people who suffer with back pain. Having the ability to adjust the firmness of a mattress to accommodate different body shapes, sizes, and weights, can be a factor in the healing process.		Air mattresses are sometimes used to protect bedridden people from pressure sores, which can create life-threatening ulcers.

<p><b>4. Water Mattress:</b></p> <p>Water has been known to increase blood flow, stimulate blood circulation and properly support all areas of the body evenly and comfortably, allowing the person to wake up feeling more rested and better able to start the day. Most waterbeds can be heated and temperature controlled, so the person can set it to whatever temperature they find desirable.</p>		<p>Patients suffering from Arthritis, Rheumatism, Fibromyalgia, Lupus, and other joint, bone, and muscular conditions, the elderly, and anyone with chronic back pain can get significant benefits from sleeping on a water mattress.</p>
<p><b>5. Air cushion:</b></p> <ul style="list-style-type: none"> <li>• Protective and void filling materials, including block and brace, corner protection, wrapping, interleaving, top and cross layering.</li> <li>• Water resistant seat cushion.</li> <li>• Inflatable bags.</li> </ul>		<p>Air cushion can be used for giving support for the various part of the body.</p>
<p><b>6. Bed bars (side rails):</b></p> <p>are used to prevent patients from falling out of bed.</p>		<p>Patients who require this safety measure are post operative patients, unconscious, semiconscious mentally disturbed, sedated, blind, children or old patients.</p>
<p><b>7. Back rest:</b></p> <p>These are usually made of wood or metal.</p>		<p>These are used to support the back of the patient in an upright position.</p>

<p><b>8. Over bed table:(Cardiac table):</b> The table such as the cardiac table is placed in front of the patient and the top of the table is adjusted to the desired height. Pillows can be arranged on the top of the table so that the patient can lean forward on it for support.</p>		<p>When he wants to take food, read or write.</p>
<p><b>9. Footboards/Foot rests:</b> These are made of wood and are L shaped, so that one end can be slipped under the mattress to hold the other end in a firm upright position. The patient is placed in supine position to rest the bottoms of the feet flat against the surface of the footboard (covered with sheet).</p>		<p>These are used to prevent foot drop by maintaining good alignment.</p>
<p><b>10. Sandbags:</b> These are canvas, rubber or plastic bags filled with sand and are 1,5 and 10 lbs in weight.</p>		<p>These are used to immobilize the body part, placing them snugly next to the part. eg. The sand bags can be placed on either side of the feet to maintain the position of the feet on the foot board, to immobilize the fractured limb.</p>
<p><b>11. Blocks (shock blocks):</b> These are made of wood, may be high or low.</p>		<p>These are placed under the foot of the bed for various reasons. Eg. Surgical shock, traction and postural drainage. This may be placed under the head of bed to promote drainage and improve cerebral circulation.</p>

<p><b>12. Hand rolls:</b> These are made of cloth that is rolled into a cylinder about 45 inches long and 23 inches in diameter and stuffed firmly.</p>		<p>These are used to keep the fingers from being held in a tight fist leading to flexion contracture in patients who are unable to move the hands due to paralysis, injury or disease.</p>
<p><b>13. Thigh rolls (Trochanter rolls):</b> These are made by folding a sheet to a desired length of 23 feet and then rolled into a tight cylinder. These are used to support the hips and thighs, preventing the limbs from outward rotation and keeping the feet in good alignment.</p>		<p>In case of paralysis, fracture of the femur or hip surgery. To use the roll, place the loose end (flap) under the patients hips and thighs with the roll under the flap end and then tucking snugly along the hip and thigh.</p>
<p><b>14. Cradle:</b> These are mostly semicircular in shape, made of wood or metal. These are used to prevent the weight of top bedclothes on patient's feet and toes. To use the cradle. Place it over the bottom bedclothes and the top bedclothes are then brought over the cradle.</p>		<p>These are used for patients affected by burns.</p>
<p><b>15. Restraints:</b> The forcible confinement or control of a patient.</p>		<p>Are used to prevent agitated patients, persons who get out of bed at night in their sleep and small children, from falling out of bed.</p>

#### 4.8.5 Other Safety Precautions to be taken in the hospital:

- Patients should be safeguarded from fire accidents and from careless application of heat.
- Fire accidents occur mainly due to allowing patients to smoke in the bed.
- Improper use of electric appliances and careless use of oxygen cylinders.
- Patient may get injured from careless application of hot water bags, electric pads and application of medications on the skin.
- Poisonous drugs should be kept under lock and key with specific red label.

#### 4.8.6 Other causes of infection in the hospital are:

1. Bacteriological sources.
2. Rodents.
3. Food and water
4. Insects.



#### STUDENT'S ACTIVITY

Demonstration of safety and comfort devices.

#### Fact

A Hospital-Acquired Infection (HAI), is also known as a **nosocomial infection**. It is an infection that is acquired in a hospital or other health care facility.



Patient safety is a serious global public health issue. There is a **1 in 300** chance of a patient being harmed during health care.(WHO, 2017)

### 4.9 ACTIVITY AND EXERCISES.

#### 4.9.1 Introduction

Bhuvana, a 36 year old lady got admitted with the complaints of fracture of the left leg, head of femur. She was operated and has to be mobilized after 2 weeks. She needs to resume her normal activity. Nurse Rekha, helps her with her daily activities and also helps her with the exercises she needs.

#### 4.9.2 Importance of Activities of daily living:

Activity and exercise are necessary for healthy living. Activities usually performed in a day are eating, dressing, grooming, bathing, brushing etc. These activities are called activities of daily living. It is essential for meeting the day to day needs of an individual.

When a patient is not able to meet his basic needs, it is the nurse's responsibility to help the patient to meet their needs. According to their health status of the patient, the degree of assistance required will vary according to the needs of the patients. Exercise is the performance of physical exertion for improvement of health or the correction of physical deformity.

#### 4.9.3 Benefits of exercise:






1. Exercise strengthens muscles.
2. Helps to prevent constipation.
3. Increases appetite.
4. Improves sleep.
5. Stimulates blood circulation.
6. Improves lung ventilation.
7. Prevents obesity.
8. Promotes physical and mental well being.
9. Promotes urinary function.
10. Regulates body temperature.

#### 4.9.4 Types of exercises.

I. Active exercise	Indications	Example
Active exercise is a type of physical activity accomplished by the patient without assistance. These exercises help the patient to attain the normal physiological function of the body.	(1) Deep breathing and coughing exercise for complete lung expansion usually done by post operative patient. The patient can do it thrice in a day.	Nurse Rekha helped Bhuvana to do the deep breathing exercises as shown in the figure.



1.

### BREATHING EXERCISE

1. Stand, sit or lie down comfortably in a quiet place.	 2. Close your eyes and loosen any tense muscles make sure to relax your shoulders.	 3. Place one hand on your chest and another on your belly button.
 4. Breathe in slowly through your nose for three seconds. Feel your stomach expand. your chest should remain still.	 5. Breathe out slowly through your mouth for three seconds. your stomach move back.	 6. Repeat steps 4 and 5. Gradually increase the time you take to breathe in and out.  Four seconds in and four seconds out, five seconds in and five seconds out....

2. Exercise of the limbs through full range of motion which include flexion, extension, adduction, abduction and rotation.



3. Moving in bed to change the position.	
4. Foot exercise to prevent foot drop and toe deformities.	
5. Abdominal and gluteal contraction exercises.	The abdominal and gluteal contraction exercises are shown in the figure below.



Breath



Hip Roll



Normal



Bridging



Standing  
Rotation







Hand via  
knees



Seated knee  
tucks



Supermans

2. Passive exercise	Indications	Example
In passive exercise the movements or activity is carried out by another person and the patient makes no voluntary effort to assist or resist the action. The passive exercises are usually carried out by the physiotherapist or the nurse.	The performance of certain nursing procedures such as bathing the patient, giving back care and changing the position etc., provides some passive exercise for the patient.	 <p>Bed bath was given by Nurse Rekha.</p>
	<p>Passive exercise is useful for patient with restricted movements, and deformities. Can be given for an unconscious patient.</p> 	 <p>Other passive exercises were also given by Nurse Rekha. Bhuvana had the feeling of being cared for and was happy over her recovery.</p>
	Bhuvana was discharged after 2 weeks and went walking home with the help of a walker.	

### Highlight

Being active and doing regular physical exercises can prevent major chronic diseases such as heart problems, diabetes, high blood pressure, back pain, osteoporosis, joint pains, obesity, and even some forms of cancer.



### STUDENT'S ACTIVITY

Demonstration of safety and comfort devices.





Exercise prevents signs of aging.

## 4.10 REST AND SLEEP.

### 4.10.1 Introduction

Getting adequate rest and sleep is an important component of overall health and quality of life. Sleep is one thing that is universal to people. It is vital for optimal psychological and physiological functioning. Sleep is essential to conserve energy, prevent fatigue, and to restore the mind and the body. Sleep is an often overlooked essential for optimal health and well-being.

#### Difference between rest and sleep:

Rest	Sleep
When we give our body a period for relaxation, we relax our muscles, and sometimes close our eyes for comfort. But, our brain is running its functions actively during resting phase too. We have our full consciousness about the surrounding during resting time.	In this condition our brain does not work actively. We do not have our full consciousness about the surroundings. Our brain takes rest as well as our body muscles do.
<p><b>Amount of Sleep Needed.</b> Each individual's sleep needs vary. In general, most healthy adults need an average of <i>eight hours of sleep</i> at night.</p> <p><b>Normal sleep : 8 hours</b>  <i>Adequate sleep provides only positive, healthful benefits.</i></p>	
Lack of Sleep	Images
Irritability and moodiness are some of the first signs a person experiences from lack of sleep.	

### Circadian Rhythm and Sleep.

Circadian rhythm is an ingrained biological clock that regulates the timing periods of tiredness and wakefulness throughout the day. The clock is calibrated by natural light in a 24-hour period. The functions of your circadian rhythm are based in the brain. (hypothalamus) It is responsible for regulating many body functions that revolve around the 24-hour cycle including: body temperature, heart rate, blood pressure, and the release of hormones such as melatonin which helps us with sleep.



If a person is deprived of sleep, the person may then start to experience apathy, slowed speech, flattened emotional responses, impaired memory, and an inability to be creative or multitask. Sleeplessness also makes the person forgetful, gain weight, can increase risk of death and impairs judgment.



#### 4.10.2 Causes of Sleep Problems.

Sleep disorders can have abnormalities in various systems, such as:

Physiological systems

- Brain and nervous system.
- Cardiovascular system.
- Metabolic functions.
- Immune system.

Furthermore, unhealthy conditions, disorders and diseases can also cause sleep problems which includes:

- Pathological sleepiness, insomnia and accidents.
- Hypertension and elevated cardiovascular risks. (Heart attack, stroke)
- Emotional disorders. (depression, bipolar disorder)
- Obesity, metabolic syndrome and diabetes.
- Alcohol and drug abuse.

#### 4.10.3 Factors affecting sleep.

1. Stress.
2. Job-related pressures.
3. Family or marriage problems.

4. Serious illness or death in the family.
5. Drinking alcohol or beverages containing caffeine in the evening.
6. A room that is too hot or cold.
7. A room that is too noisy or too bright light.
8. Comfort and size of the bed.

#### 4.10.4 Six benefits of good sleep.

1. It enhances learning and memory.
2. Helps in metabolism and maintain weight.
3. Prevent Accidents.
4. Avoids irritability and mood swings.
5. Improves cardiovascular health.
6. Enhances immunity.

#### 4.10.5 Factors that can promote sleep in patients.

1. Sleep rituals and habits.
2. Restful environment.
3. A warm drink before going to bed.
4. A warm bath before bedtime.
5. Activities like reading and listening to soft music.

6. Instruct the patient to avoid daytime naps.
7. Avoid talking about stressful events before bedtime.
8. Avoid excessive physical exertion 3 hours before bedtime.
9. Heavy meals should be avoided 2-3 hours before bedtime.
10. Spicy foods should be avoided before bedtime.
11. Use of loose-fitting night clothes.
12. Slow and deep breathing techniques for few minutes can alleviate tension and induce calmness.
13. Yoga, imagery and medication can also promote sleep.
14. Medication is the last resort to induce sleep.

#### Highlight

Over time, a lack of sleep can place a person at higher risk for heart problems, diabetes, weight gain and obesity, and Alzheimer's disease. In addition to physical effects, a lack of rest and



particularly Rapid Eye Movement (REM sleep) has also been shown to impair decision making, reaction times, mood, motivation, learning and may also affect memory.



You spend **one third** of your life on your bed sleeping. For example, if a person life span is 60 years, then the person would have slept for 20 years.

## 4.11 MOVING, SHIFTING AND LIFTING PATIENTS.

### 4.11.1 Introduction

As nurses, we may have to move and lift patients. An important point nurses have to bear in mind while moving patients is that they must observe correct body mechanic for the patients as well as for themselves.

While lifting heavy objects, it is wise to stand with your feet wide apart and firmly on the floor. The weight should be lifted close to the body. Flex your knees so that the strong muscles of the legs bear the weight of the object.

### 4.11.2 Purposes:

1. To perform the task efficiently.
2. To avoid the patient from unnecessary effort.
3. It prevents nurses from strain and back injuries.
4. To promote circulation and muscular tone.

### 4.11.3 General Considerations Prior to Action:

- Know the weight of the patient and consider the mode of transportation.
- Know your own limitations and be realistic. If the patient cannot be safely moved. Get help.

- Have a plan of action. Whether you are working alone or with a partner, know how to plan on moving the patient, what steps to be taken, and what to do if Plan A does not work.
- Communicate, both with the colleague and with the patient. When everyone is on the same plan, injuries are minimized and all efforts are more efficient. Use verbal commands, and know when to stop.

#### 4.11.4 Types of moving, shifting and lifting patients:

##### 1. Moving upward or downward:

Two nurses are required to do this. One nurse places her one hand under the patient's shoulder and the other hand under the lumbar region. The other nurse stands on the other side of the bed and does the same as the first nurse. The patient, if he is able, is asked to flex the knee and push against the matters with his heels. Both nurses together bring the patient up. *See the figure below.*



##### 2. Turning on one side:

Before turning move the patient a little away from the centre. If he is to be turned on the left side, the nurse must stand at his left. Keep his right arm crossed on the chest and right leg crossed over the left leg. Flex the right knee slightly, keep one hand on the patient's right shoulder and the other on his

right hip and gently roll him to left lateral position.



##### 3. Moving from one side of bed to another:

Move pillows towards the side of the bed. Place your one arm under the shoulders and the other under the lumbar region. *See the figure above.*



##### 4. Move upper part of the body to the side of the bed:

Then keep one arm under the lumbar region and the other under the thighs and move the middle part of the body of the side of the bed. Lastly place one arm under the things and the other under the ankles and move the lower part of the body to the side of the bed. See whether the whole body is straight and in good alignment.

##### 5. Moving patients from stretcher to bed:

Keep the head of the stretcher at right angles to the foot of the bed. Three nurses are needed. All stand on the same side of the stretcher one nurse places her arms under the patient's head and shoulders, another



keeps her arms under the hips, the third has her arms under the thighs and legs. All together lift the patient, turn and place him on the bed. The lifters observe body mechanics for themselves. They keep their backs straight, flex their knees and place their one foot forward while transferring the patient.

#### 6. Transferring from the Bed to Wheelchair:

#### 7. Sit the patient up:

Lock the wheelchair. Help the patient turn over onto his or her side, facing you. Put an arm under the patient's neck with your hand supporting the shoulder. Put your other hand behind the knees. Swing legs over the edge of the bed, helping the patient to sit up.

#### 8. Stand the patient up:

Have the patient scoot to the edge of the bed. Put your arms around the patient's chest and clasp your hands behind his or her back. Support the leg farthest from the wheelchair between your legs, lean back, shift your weight, and lift.

#### 9. Sit the patient down:

Have the patient pivot toward the chair, as you continue to hold on. Always transfer toward the person's stronger side. As the patient bends toward you, bend your knees and lower the patient into the back of the chair.



### Highlight

Strongest nurse stands beside patient's head & shoulders, or beside female patient's hips.



### STUDENT'S ACTIVITY

Demonstration of moving, shifting and lifting methods on each other.

### Fact.

In one recent study, people who took **12 weeks of yoga classes** had fewer symptoms of low back pain.

## 4.12 OXYGEN NEEDS.

### 4.12.1 Introduction

Oxygen is administered whenever there is deficiency in the blood and is shown by cyanosis. Patients with respiratory dysfunction are treated with oxygen therapy to relieve anoxaemia or Hypoxemia. The normal amount of oxygen in the blood must be in the range of 80 to 100 mm of Hg. If it falls below 60 mm of Hg, irreversible physiological effect may take place. The brain cells receive 20 percent of the body's oxygen supply and can live only for 3 to 5 minutes if the oxygen supply is cut off.

### 4.12.2 Purpose

- To supply oxygen in conditions when there is interference with the normal oxygenation of the blood.

### 4.12.3 Indications for Oxygen Inhalation

- Breathlessness due to asthma, pulmonary embolism, emphysema, cardiac insufficiencies etc.
- Obstructed airway due to growth, and enlarged thyroid.
- Cyanosis.
- Shock and circulatory failure.
- After severe haemorrhage.
- Anaemia.
- Patients under anaesthesia.
- Asphyxia due to any reason e.g. drowning, inhalation of poisonous gases, hanging etc.
- Poisoning with chemicals that alter the tissues ability to utilize oxygen e.g. cyanide poisoning
- Carbon monoxide poisoning.
- Postoperative chest surgery and thyroidectomies.
- Insufficient oxygen in the atmosphere.
- Air hunger.

### 4.12.4 Methods of Oxygen Administration.

Administration of oxygen depends upon the condition of the patient, the concentration desired, the facility available and the preference of the doctor. It can be given by the following ways:

#### Methods

#### 1. Oxygen by nasal catheter/cannula:

This is the usual method of administering oxygen to the patients in the ward. The nasal

catheter is inserted into the nostril reaching upto the uvula. The catheter is taped on the forehead to keep it in place. The nasal catheter permits free movement for the patient and nursing care may be given with much more ease.



## 2. Nasal prongs:

This is another method of administering oxygen to the patients in the ward.



## 3. Oxygen by B. L. B. Mask:

When oxygen concentration of over 25% is needed or when oxygen is given under pressure, the mask is used. If the mask does not fit snugly over the face, oxygen will be lost from the mask. It is useful for the patients who are unable to breathe through the nose. Flow of 8 to 12 litres oxygen will be sufficient to maintain the concentration of oxygen from 25 to 60%. B. L. B. [Boothby, Lovelace and Bulbalian] is a rubber mask. It is made to fit over the nose or nose and mouth. The reservoir bag is attached to it.



## 4. Oxygen by Tent:

It consists of a canopy over the patient which may cover the patient partially or totally. It is connected to a supply of oxygen. The canopies are transparent, so that the nurse can observe the patient. The lower portion of the canopy is tucked under the bed to prevent the escape of oxygen.



### 4 (a) oxygen hood:

This is used for infants to administer oxygen

## 5. Oxygen cylinders and accessories:

Oxygen is supplied in cylinders or tanks. It is stored under a pressure of 2200 lbs /1000 kg per sq. inch. Oxygen is stored in the oxygen cylinder are low pressure about 50 to 60 lbs per sq. inch. The oxygen cylinders are painted black with white neck. The Wolf's bottle has two holed rubber cork in which two glass tubes are inserted one short and one long. The long tube is attached by rubber tubing to the oxygen cylinder. The short tube is attached by the rubber tubing

and glass connection to a nasal catheter. The large valve of the cylinder is opened with keys. There is a regulator to regulate the flow. See the figure below.



#### 4.11.5 Care of oxygen cylinders:

1. Handle the cylinder with care.
2. Oxygen stand should be used to prevent falling and causing injury to someone or to the equipment.
3. It should be always placed at the head end of the bed.
4. Oxygen does not cause fire but it supports combustion.
5. Visitors and other patients may need to be reminded not to smoke. Hang "No smoking" board to the oxygen cylinder.
6. Oxygen cylinders should be stored in a cool temperature, because high temperature can cause expansion of the gas with consequent loss of gas through the safety valve.
7. Do not use electric appliances close to oxygen.
8. Oil or grease should not be used on the regulator, because in the presence of high oxygen concentration, oil is likely to catch the fire and the cylinder may explode.

9. Mark empty cylinder, replace protection cap, and set aside from full cylinders.
10. Inspect the apparatus at frequent intervals and make sure that it is in working condition. The nurse should learn the working of cylinders, its regulators etc. before handling the apparatus.

#### 4.12.5 Precautions to be taken when using the oxygen cylinder:

1. Giving oxygen is an emergency procedure, so it should be ready for 24 hours.
2. The nurse should see that the cylinders are full and all the apparatus is in working condition, the key is attached with the cylinder in a bag.
3. There should not be any leakage in the rubber tubings.
4. There should be written order for O<sub>2</sub> inhalation and specific dose must be prescribed to avoid oxygen toxicity.



5. Use regulator to reduce the pressure of the oxygen in the cylinder to a safer level.
6. Measure the flow in litres per minute. Adjust the flow of oxygen 2 to 4 litres per minute for adults when the nasal catheter is used.
7. Use sterile or disposable nasal catheters to avoid infection.
8. The catheter should be changed at least every 8 hourly to avoid blockage of catheter.
9. The catheter may be taped to the forehead for the comfort of the patient and to keep it in place.
10. Patient's nostrils should be lubricated with petroleum jelly, (Vaseline) if there is any sign of irritation.
11. Oxygen administration must never be stopped until the cause of hypoxia is reversed.
12. If the nurse is leaving the patient for a short period, leave a call bell near the patient.
13. The premature babies should be given oxygen inhalation only for a short time and at a very low concentration to avoid retrolental fibroplasia. (an unusual eye disease occurring in premature infants, usually from being given high concentrations of oxygen, which causes abnormal formation of fibrous tissue behind the lens and often results in blindness.)
14. Observe the patient, receiving oxygen inhalation continuously to detect early signs of oxygen toxicity.
15. Since oxygen helps in combustion, fire precautions are to be taken when the oxygen is on flow.

### Highlight

Oxygen is a gas that is needed for the cells in your body so that it can work properly. The air we breathe normally contains 21% oxygen. We can receive up to 100% oxygen.



### STUDENT'S ACTIVITY

- Demonstration of the various methods of oxygen administration.



- Oxygen is a chemical element with symbol "O" and atomic number 8. By mass, oxygen is the third-most abundant element in the universe, after hydrogen and helium.
- The new born baby can have birth asphyxia, (brain damage) which happens within 3 to 5 minutes without oxygen.

## 4.13 ELIMINATION NEEDS.



### 4.13.1 Introduction

Elimination of the body's waste products is essential for life and comfort. The body eliminates wastes in several ways. The lungs eliminate carbon dioxide and water; the skin eliminates water and sodium; the kidneys eliminate fluids and electrolytes; the intestines discharge solid wastes and fluids. If the body should inappropriately allow wastes to accumulate, many serious conditions can result.

### 4.13.2 Definition:

It is the process by which waste products are removed from the bowel and bladder by means of faeces and urine.

### 4.13.3 Description of physiology of elimination:

Bowel movements.	Bladder.
<p>The digestive system is uniquely designed to turn the food you eat into nutrients, which the body uses for energy, growth and cell repair. Food passes from the mouth, throat, oesophagus, stomach, small intestine, large intestine, and rectum and then finally expelled as faeces.</p>	<p>The urinary system is a group of organs in the body concerned with filtering out excess fluid and other substances from the bloodstream. The substances are filtered out from the body in the form of urine. Urine is a liquid produced by the kidneys, collected in the bladder and excreted through the urethra. Urine is used to extract excess minerals or vitamins as well as blood corpuscles from the body.</p>
<p>About 75% of fecal weight is made up of water. The other 25% is composed of solid matter which contains :</p> <ul style="list-style-type: none"> <li>• Undigested fiber and solidified components of digestive juices (30%)</li> <li>• Bacteria (30%)</li> <li>• Fat (10% to 20%)</li> <li>• Inorganic matter (10% to 20%)</li> <li>• Protein (2% to 3%)</li> </ul> <p>Feces usually has a brown color, ranging from a tan hue to a darker-brown color. Bilirubin is passed out in the bile and the action of bacteria and air in the gut breaks it down into stercobilin and urobilin, which gives stool its typical color. Additionally, certain foods with a strong colorants or other staining agents may also influence the color of feces.</p>	<p>Urine color generally ranges from a pale-yellow color to deep amber. Urine naturally has an odor, but it is usually not very strong smelling.</p> 
<p>The odor of feces may differ among people and is influenced significantly by the foods that are consumed. The gas byproducts of bacterial action in the colon largely accounts for the odor of the feces. Hydrogen sulphide is one of the most prominent odoriferous compounds responsible for the characteristic smell of the stool. Other compounds like indole, skatole and mercaptans are also responsible for the odor.</p>	

#### 4.13.4 Factors affecting bowel and bladder elimination:

- |                           |                                     |
|---------------------------|-------------------------------------|
| 1. Age.                   | 6. Pain.                            |
| 2. Dietary intake.        | 7. Pregnancy.                       |
| 3. Fluid intake.          | 8. Surgery.                         |
| 4. Physical activity.     | 9. Anaesthesia and diagnostic test. |
| 5. Psychological factors. | 10. Position during defecation.     |

#### 4.13.5 Common bowel elimination problems

- |                  |  |
|------------------|--|
| 1. Constipation. | 5. Flatulence.   |
| 2. Impaction.    | 6. Haemorrhoids.   |
| 3. Diarrhoea.    | 7. Bowel diversion.  |
| 4. Incontinence. | 8. Common bladder elimination problems: Incontinence, and urinary retention. |

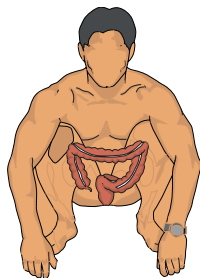
#### 4.13.6 Position of elimination.

The best method is squatting, the Indian way of defecation.

administer medications to relieve diarrhea or constipation.

#### 4.13.7 Nurses responsibilities.

1. The nurse may help the patient to



eliminate faeces by giving an enema, catheterizing the person, or assisting with dialysis.

2. The nurse can assist with surgery to eliminate a bowel obstruction and

#### 4.13.8 Elimination devices.

**Bedpans**

**Urinals**





### Highlight

A bowel obstruction, bladder cancer, kidney disease, and gallbladder disease disrupt normal elimination. Difficulty in breathing, poor circulation, acid-base imbalance, allergies, cuts, wounds, diabetes, and infection also hinder adequate elimination.



The best method of elimination is by squatting, rather than sitting as it eliminates any form of colon cancers.

### CONCLUSION

1. Nursing is the process of recognizing, understanding and meeting the health needs of any person or society and is based on a constantly changing body of scientific knowledge.
2. There are five steps in nursing process. They are assessment, diagnosis, planning, implementation, and evaluation.
3. Application of nursing process.
4. The entrance of a patient into a health care agency is termed as admission.
5. Nurses are responsible for the admission and discharge which takes place in the ward.
6. Skilful bed making contributes materially to the patient's comfort.
7. Beds are of two type of beds, ordinary, and special beds.
8. Body mechanics means the coordinated use of the body parts to produce motion and maintain equilibrium in relation to both internal and external forces.
9. The hygiene refers to the science of health and its maintenance, the prevention of disease, and sanitary practices.
10. Comfort is a sense of mental and physical well being.
11. Restraints are used to prevent agitated patient's who get out of bed at night in their sleep and small children, when falling out of bed.

12. While lifting heavy objects flex your knees so that your strong muscles of the legs bear the weight of the object.
13. Patients with respiratory dysfunction are treated with oxygen therapy to relieve “anoxaemia or Hypoxemia”. The normal amount of oxygen in the blood must be in the range of 80 to 100 mm of Hg.
14. Oxygen can be administered by the ways of nasal catheter/cannula, nasal prongs, B.L.B. mask, and an oxygen tent.
15. Elimination is the process by which waste products are removed from the bowel and bladder by means of faeces and urine.
16. Exercise is the performance of physical exertion for improvement of health or the correction of physical deformity.
17. Getting adequate rest and sleep is an important component of overall health and quality of life.

\*\*\*\*\*



## ICT Corner

### Skeletal System

Through this activity you will explore the Skeletal System.



- Step 1:** Use the URL to reach the 'Skeletal System' page. Surf the grid and select 'Skeleton Organization' and explore the skeleton's general anatomical arrangement and functions.
- Step 2:** Then reach the 'Skeleton Organization' page by clicking back button on the top of the window or use the 'Backspace' key. Select 'Upper Limb Bones' from the grid and explore the anatomy and functions of the clavicle, scapula, humerus, radius, ulna, carpal, and hand bones.
- Step 3:** Follow the above steps and explore each and every parts and their functions of Skeletal System.
- Step 4:** Use the reference given below the page to acquire additional details about Skeletal System.

Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## EVALUATION



### I. Choose the correct answers (1 mark)

1. The second step of the nursing process is:
  - a. Nursing Diagnosis.
  - b. Assessment.
  - c. Planning.
2. When a patient's condition is improved and stabilized, it represents which phase of the nursing process?
  - a. Evaluation Phase.
  - b. Implementation Phase.
  - c. Planning Phase.
3. The purpose of making a closed bed is:
  - a. For receiving the new patient.
  - b. Prepared for an ambulatory patient.
  - c. Prepared for a bed ridden patient.
4. How will you position the patient for child birth?
  - a. Supine.
  - b. Lithotomy.
  - c. Lateral.
5. The number of hours needed for a normal human being to sleep is:
  - a. 6 hours per day.
  - b. 10 hours per day.
  - c. 8 hours per day.
6. A urinal is used to collect the:
  - a. Pus.
  - b. Urine.
  - c. Faeces.
7. Which is the best position for defecation ?
  - a. Sitting on the commode.
  - b. Squatting.
  - c. Standing.

### II. Write short answers (3 marks)

1. Diagrammatically represent the Nursing process.
2. What are the purposes of admission of a patient to the hospital?
3. What is bed making?
4. What are the purposes of bed making for a patient?
5. List out any 3 types of special devices used for patients.
6. What is a psychologically safe space for a patient?
7. What is body mechanics?
8. What are the purposes of good body mechanics and posture?
9. What are the uses of the Fowlers position?
10. List the factors which can cause discomfort to the patients in the hospital.

11. List out the causes of infection in the hospital.....
12. What are some of the common bowel elimination problems?.....

### III. Write short notes (5 marks)

1. Explain the types of discharge of a patient.
2. What are the purposes of the therapeutic environment?
3. Enlist the benefits of exercise.
4. Write about the active exercises.
5. Write briefly on causes of sleep problems.
6. How can you help the patient transfer from the bed to wheelchair?
7. Write about the indications for oxygen inhalation.
8. What are the precautions to be taken when using the oxygen cylinder?

### IV. Write an essay for the following questions (10 marks)

1. Explain the admission procedure of Mr.X to the hospital.
2. Explain the discharge procedure of Mr.X to the hospital.
3. Explain the comfort devices for the patient.
4. Identify the factors that can promote sleep in patients.
5. Discuss on the types of moving, shifting and lifting patients.
6. Discuss the care of the oxygen cylinders.

## REFERENCES

1. Potter & Perry (2009) *Fundamentals of Nursing*, 7th Edition, Elsevier publication, St.Louis Missouri.
2. Patricia, P. (2009) *Fundamentals of Nursing*, 7th Edition, Mosby Company, St.Louis Missouri.
3. Virginia, H. (1997) *Basic Principles of Nursing Care*, 2ndEdition, 0965836002.

## INTERNET LINKS

## A-Z GLOSSARY

- Nursing Process** – (செவிலிய செய்முறை) - To take care of the patient, the nurse has to systematically plan her work. This work which is systematically planned is known as Nursing Process.
- Potential** - Possible, as opposed to actual.
- Cholesterol** – (கொழுப்பு) - That is, having high levels of fat within the blood.
- Discharge Against Medical Advice.** (AMA) – (மருத்துவ ஆலோசனைக்கு எதிராக) - Patient leaves the hospital against the doctor's advice.
- Absconding** – (தலைமறவாதல்) - When a patient escapes from the hospital without the knowledge of the hospital staff, he is treated as absconded in the records.
- Body mechanics** – (உடல் இயக்கம்) - It involves the coordinated effort of muscles, bones, and the nervous system to maintain balance, posture, and alignment during moving, transferring, and positioning patients.
- Deformities** – (அங்க குறைபாடு) - An abnormally formed part of the body.
- Alzheimer's disease** – (அல்சிமா நோய்) - It is a progressive disease that destroys memory and other important mental functions.
- Retrolental Fibroplasia** – (ரீட்ரோலெண்டல் பைபிரோ பிளேசியா) - An unusual eye disease occurring in premature infants, usually from being given high concentrations of oxygen, which causes abnormal formation of fibrous tissue behind the lens and often results in blindness.
- Oxygen toxicity** – (ஆக்சிஜன் நச்சு) - It is a condition resulting from the harmful effects of breathing molecular oxygen at increased partial pressures.
- Anoxaemia or Hypoxemia** – (இரத்தத்தில் ஆக்சிஜன் குறைதல்) - It is an abnormally low level of oxygen in the blood.
- Cyanosis** – (நீலம் பாரித்தல்) - It is defined as the bluish or purplish discolouration of the skin or mucous membranes due to the tissues near the skin surface having low oxygen saturation.
- Haemorrhage** – (இரத்த ஒழுக்கு) - Bleeding, or hemorrhage, is the name used to describe blood loss.

**Anaemia** –  
(இரத்த சோகை)

**Patients under  
anaesthesia** –

(நோயாளி மயக்க  
நிலையில் இருத்தல்)

**Asphyxia** –

(சுவாசத்திணறல்)

**Cyanide poisoning** –

(சயனைடு நச்சு)

**Thyroidectomy** –

(தைராய்டு சுரப்பியை  
எடுத்தல்)

- It happens when the number of healthy red blood cells in your body is too low.
- Anesthesia is a state of temporary induced loss of sensation or awareness.
- Or asphyxiation is a condition of severely deficient supply of oxygen to the body that arises from abnormal breathing.
- Is poisoning that results from exposure to a number of forms of cyanide.
- Is an operation that involves the surgical removal of all or part of the thyroid gland.

# Unit 5

## PERSONAL HYGIENE



புறந்தூய்மை நீரான் அமையும் அகந்தூய்மை  
வாய்மையால் காணப் படும்.

– குறள்: 298

Kural 298:

Purity of body is produced by water and purity of mind by truthfulness.



### LEARNING OBJECTIVES

At the end of this chapter the student is be able to:

- Do oral hygiene.
- Care the skin.
- Administer therapeutic bath.
- Do give hair wash.
- Care of the eyes.
- Administer foot and nail care.
- Oral hygiene.
  - Measures to maintain oral hygien:
  - Dentures.
- Skin care.
  - Importance of skin care.
  - Decubitus ulcer.
    - Definition.
    - Causes.
    - Preventive measures.
    - Management.
  - Back care, Bath & Therapeutic Bath.
- Care of hair.
- Pediculosis & Dandruff.
  - Definition.
  - Causes.
  - Preventive measures.
  - Management.
- Care of eyes.
  - Unconscious patient.
  - Exercises.
- Care of foot and nails.
  - Method of nail cutting.
  - Foot care management.
  - Common foot and nail problems.
    - Definition.
    - Causes.
    - Preventive measures.
    - Management.

### 5.1 INTRODUCTION

Personal hygiene may be described as the principle of maintaining cleanliness and

grooming of the external body. People have been aware of the importance of hygiene for thousands of years. The ancient Greeks

spent many hours bathing, using fragrances and make up in an effort to beautify themselves and be presentable to others.

Maintaining a high level of personal hygiene will help to increase self-esteem and confidence, while minimising the chances of developing imperfections.

## 5.2 PERSONAL HYGIENE

**Keywords:** *Personal hygiene, factors, cleanliness.*

### 5.2.1 Introduction

The word hygiene refers to “The science of health and its maintenance, the prevention of disease, and sanitary practices”.

### 5.2.2 Definition

Personal hygiene is the activity of self-care, including bathing and grooming. This includes the care of the skin, hair, nails, mouth, teeth, eyes, ears, nasal cavities, perineal and genital area.

Cleanliness is a fundamental basic human right. Therefore, if an individual became unwell, either physically or mentally and were unable to meet their own hygiene needs, they may require someone else to assist them in such needs, this is where the nurse's responsibility is vital for the patient.

Personal Hygiene



### 5.2.3 Factors influencing personal hygiene practices.

1. **Development level:** Children learn most of their hygiene practices at home and in their personal environment. They modify their behaviour with other family members. Many of these behaviours stick with them throughout life. The advancing age, hormonal levels and changes in the integumentary system often require hygienic practices.
2. **Cultural background:** Norms related to hygiene practices differ from culture to culture. For example, some cultures place a high value on personal cleanliness. Generally people have a habit of bathing daily where as people from some culture may or may not consider bathing as a daily practice.
3. **Social benefits:** Poor personal hygiene is considered offensive or a sign of illness. Caring for your body regularly can reduce bad odour and improve your personal appearance, subsequently improving others' perceptions of you.
4. **Socio economic status:** Financial status often affects a person's ability to purchase hygiene products, eg. soap, shampoo, tooth brush.
5. **Religion:** Some religions observe specific rules related to personal hygiene. For example, certain rules for women during their menstrual periods.
6. **Health status:** Persons who are ill are often unable to attend to the personal hygienic activities, either because they have a low energy supply or a specific physical deficit.

### Highlights.

Many infections, like colds and the stomach flu, (diarrhoea, cramps, nausea, vomiting and fever.) are the result of bringing germ-filled, unwashed hands into contact with the mouth. Other infections are caused when you eat food that has been contaminated by the dirty hands of other people.

### Fact

Soaps are water-soluble sodium, potassium or salts of fatty acids. Soaps are made from fats, oils, or fatty acids, by treating them chemically with a strong alkali.

### Quote

“Cleanliness is next to Godliness.”

## 5.3 ORAL HYGIENE

### 5.3.1 Introduction

In human anatomy, the mouth is the first portion of the alimentary canal that receives food and produces saliva. A nurse needs to maintain the oral hygiene of the patient in order to promote his appetite so that his nutritional needs are met.

### 5.3.2 Anatomy of the Oral cavity



The oral cavity represents the first part of the digestive tube. Its primary function is to serve as the entrance of the alimentary tract and to initiate the digestive process by salivation and propulsion of the alimentary bolus into the pharynx. It consists of the teeth, soft palate, tongue, uvula and tonsil. The oral cavity is lined with mucous membrane and continuous with the skin. The mucous membrane is an epithelial tissue that lines and protects organs, secretes mucous which keeps the passage of the digestive system moist and lubricated, and absorbs nutrition.

### 5.3.3 Oral hygiene

**Definition:** Oral hygiene is the practice of keeping one's mouth clean and free of disease and other problems (e.g. bad breath) by regular brushing and cleaning between the teeth. It is important that oral hygiene be carried out on a regular basis to enable prevention of dental disease.





Everyone wants to have a **great smile** that is why good oral hygiene is important! Having poor oral hygiene can lead to a variety of dental and medical problems in the future such as gum disease, infection, bone loss, heart disease, strokes and more. Regular checkups and cleanings can prevent these problems as well as provides with good oral hygiene.

#### 5.3.4 Purposes of Oral Hygiene.

- 1) Helps maintain the healthy state of the mouth, teeth, gums and lips.
- 2) Brushing cleanses the teeth of food articles, plaque and bacteria.
- 3) Brushing massages the gums.
- 4) Brushing relieves discomfort resulting from unpleasant odours and tastes.
- 5) Oral hygiene gives a sense of well being.
- 6) Proper oral hygiene stimulates appetite.
- 7) It improves taste.

#### 5.3.5 Measures to maintain Proper Oral Hygiene.

- 1) Cleanliness, comfort, and moisturizing the mouth structures prevents oral disease and tooth destruction.
- 2) Brushing, flossing and irrigation are necessary for proper cleansing.

- 3) To prevent tooth decay, reduce the intake of carbohydrates, especially sweet snacks between meals.
- 4) Brushing the teeth at least **two times a day** is basic to an effective oral hygiene. (after meals and at bed time)
- 5) Tooth brushes should be replaced every **three months**.
- 6) After brushing, thorough rinsing is important to remove dislodged food particles.
- 7) Flossing helps remove plaque and tartar from between teeth to reduce the gum inflammation and infection.
- 8) Going for regular dental checkup is important.
- 9) Most dental professionals agree that a **soft-bristled brush** is best for removing plaque and debris from your teeth.
- 10) **Salt water** is a good mouth wash solution. It is made by dissolving 1–0.5 teaspoon of table salt into a cup of hot water and rinsing the mouth. Saline has a mechanical cleansing action and an antiseptic action as it is a hypertonic solution in relation to bacteria, which undergo lysis.

#### 5.3.6 Food and Fluids maintain proper oral hygiene.

1. **Vitamin C** is needed for healthy gums, to prevent scurvy. (Gum disease.)
2. Eating a balanced diet and limiting snacks can help prevent tooth decay and periodontal disease.
3. Raw vegetables, plain yogurt, or fruit are beneficial.

4. Milk and cheese are also rich in calcium and phosphate.
5. Foods high in fiber may help to increase the flow of saliva.
6. Chocolates can cause damage to the teeth and cause dental cavities. Other carbohydrates, especially cooked starches, e.g. crisp potato chips can also damage to the teeth
7. Drinking orange juice or carbonated drinks like (cola, sprite, etc.) throughout the day raises the risk of dental cavities tremendously.
8. Chewing ice can cause chipping which can lead to a severe damaging effect in the teeth and tooth fracture.
9. Drinking dark coloured beverages such as wine, beer or alcohol may stain the teeth. Drinking high-concentration alcohol can lead to a dry mouth,


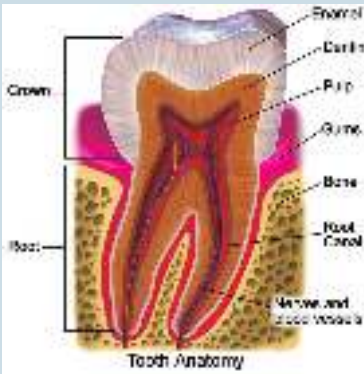
which affect the teeth with plaque and bacteria.

### 5.3.7 Risk factors for Oral problems.





- 1) Patients who are paralyzed or seriously ill.
- 2) Unconscious patients.
- 3) Diabetic patients.
- 4) Patients undergoing radiation therapy.
- 5) Patients receiving chemotherapy.
- 6) Patients having oral surgery and trauma.
- 7) Patients with immunosuppressant drug.






### 5.3.8 Common Oral problems

The two major types of oral problems are dental caries (cavities) and periodontal disease. (Pyorrhoea)

Oral problems	Images
1) <b>Dental caries</b> is the most common oral problem of younger people. The development of the cavities involves the <b>destruction of tooth enamel</b> through decalcification.	 



Oral problems	Images
2) <b>Periodontal disease</b> (Pyorrhoea) is the disease of the <b>tissue around the tooth</b> . It is an inflammation of the periodontal membrane.	
3) <b>Halitosis (Bad breath)</b> is a common problem of the oral cavity.	
4) <b>Cheilosis</b> is the disorder which involves cracking of the lips especially at the angle of the mouth.	
5) <b>Stomatitis</b> is an inflammatory condition of the mouth.	

Oral problems	Images
6) <b>Glossitis</b> is an inflammation of the tongue resulting from an infectious disease or injury such as burn or bite.	
7) <b>Gingivitis</b> is an inflammation of the gums usually resulting from poor oral hygiene.	
8) <b>Scurvy</b> is a disease resulting from lack of Vitamin C. It can lead to anemia.	
9) <b>Oral malignancies:</b> Lumps or ulcer appears in or around the mouth. The most common site is at the base of the tongue. 	

### 5.2.9 Dentures

#### **Dentures:**

Dentures (also known as false teeth) are prosthetic devices constructed to replace missing teeth; they are supported by the surrounding soft and hard tissues of the oral cavity.



### Highlights.

Toothpaste contains the following ingredients: binders, abrasives, suders, humectants, flavors (unique additives), sweeteners, fluorides, tooth whiteners, a preservative, and water.

### Fact

With proper care, dentures should last **five to seven years**.



### STUDENT'S ACTIVITY

- Can review the types of teeth and the structure of the mouth using the chart/model of the mouth.



## 5.4 SKIN CARE







### 5.4.1 Introduction

The skin is the outer covering of the human body. Nurses need to take special care of patients in the ward and help them to maintain a moist and healthy skin as it interfaces with the environment and plays an important role in immunity by protecting the body against pathogens and excessive water loss.

- Anatomy of the skin: (Refer Lesson 2)
- Functions of the skin (Refer Lesson 2)

### 5.4.2 Common skin problems.

Skin problem	Image	Treatment
1. <b>Shingles (Herpes Zoster):</b> A rash of raised dots that turns into painful blisters, shingles causes the skin to burn, itch, tingle, or become very sensitive.		<ul style="list-style-type: none"><li>• Creams for your skin.</li><li>• Antiviral drugs.</li><li>• Steroids.</li><li>• Antidepressants.</li></ul>
2. <b>Hives (Urticaria):</b> Hives look like welts and can itch, sting or burn. They vary in size and sometimes join together.		<ul style="list-style-type: none"><li>• Antihistamines.</li><li>• Skin creams.</li></ul>

Skin problem	Image	Treatment
3. <b>Psoriasis:</b> Thick, red patches of skin covered with white or silvery scales are signs of psoriasis.		<ul style="list-style-type: none"> <li>• Creams.</li> <li>• Ointments.</li> <li>• Light therapy.</li> <li>• Medications taken by mouth, injection, or IV.</li> </ul>
4. <b>Eczema:</b> Eczema means inflamed, red, dry, and itchy skin.		<ul style="list-style-type: none"> <li>• Several medications treat eczema.</li> <li>• There are tablets, creams and injections available.</li> </ul>
5. <b>Cold Sores (Fever Blisters):</b> The herpes simplex virus causes small, painful, fluid-filled blisters on the mouth or nose.		<ul style="list-style-type: none"> <li>• It can be treated with antiviral pills or creams.</li> </ul>
6. <b>Skin Tags:</b> This small flap of flesh-colored or slightly darker tissue hangs off your skin by a stalk.		<ul style="list-style-type: none"> <li>• These are treated by cutting, freezing, or burn them off.</li> </ul>
7. <b>Acne:</b> Acne breaks out when a pore clogged with oil and dead skin cells gets inflamed.		<ul style="list-style-type: none"> <li>• Keep oily areas clean and don't squeeze (this may cause infection and scars).</li> </ul>
8. <b>Moles:</b> Moles, which are usually brown or black, can be anywhere on the body.		<ul style="list-style-type: none"> <li>• <b>No medication</b>, but pay close attention to any change, with irregular borders, or has an unusual or uneven color, bleeding, or itching.</li> </ul>

### 5.4.3 Skin care.






Skin care is the range of practices that support skin integrity, enhance its appearance and relieve skin conditions.

#### Importance of maintaining proper skin care.


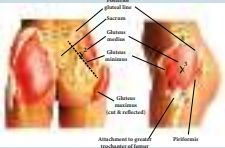




1. Proper nutrition.
2. Avoidance of excessive sun exposure.
3. Appropriate use of emollients.

### 5.4.4 Areas which are likely to be affected

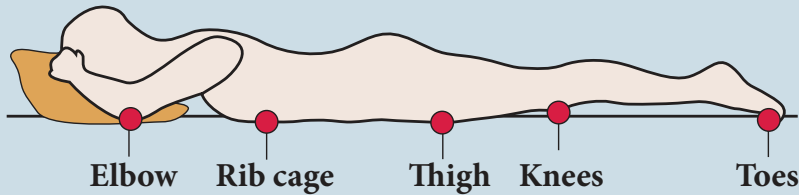
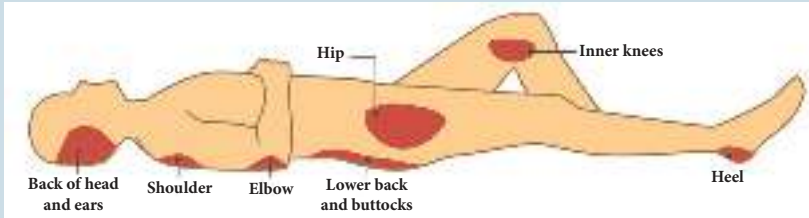
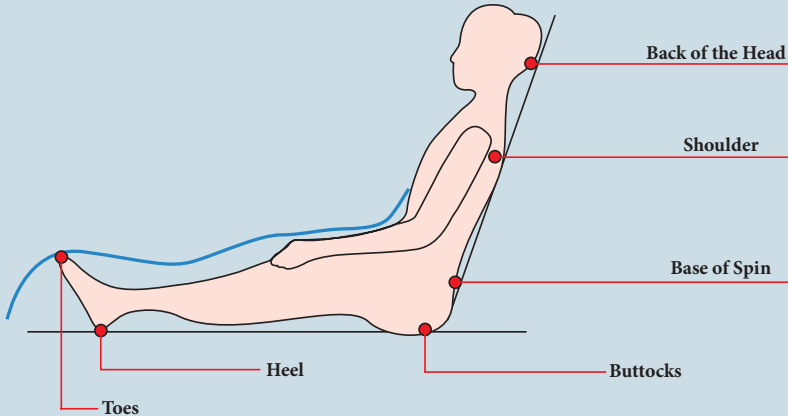
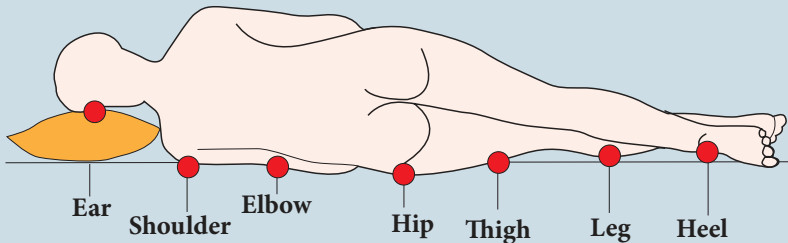
All or any of the *protuberant parts* of a bedridden patient may become liable to pressure sores.

Areas liable for pressure sores	Images
Heels (Calcaneus) in the leg.	
Sacrum Elbows (Olecranon Process) in the hand.	
Scapula of the shoulder.	
Back of head. (Occipital bone)	
Malleolus (medial and lateral) of the ankle and the foot.	

4. Use of cosmetics, botulinum, exfoliation, fillers, laser resurfacing, microdermabrasion, peels, retinol therapy.
5. Skin care is a routine daily procedure in many settings, such as skin that is either too dry or too moist, and prevention of dermatitis and prevention of skin injuries.
6. Skin care is a part of the treatment of wound healing, radiation therapy and some medications.

Areas liable for pressure sores	Images
Knee. (medial and lateral condyles)	
Greater trochanter of the femur.	
Ilium (hip bone).	
Shoulder. (acromial process)	
Side of head. (parietal and temporal bones.)	
Ear.	

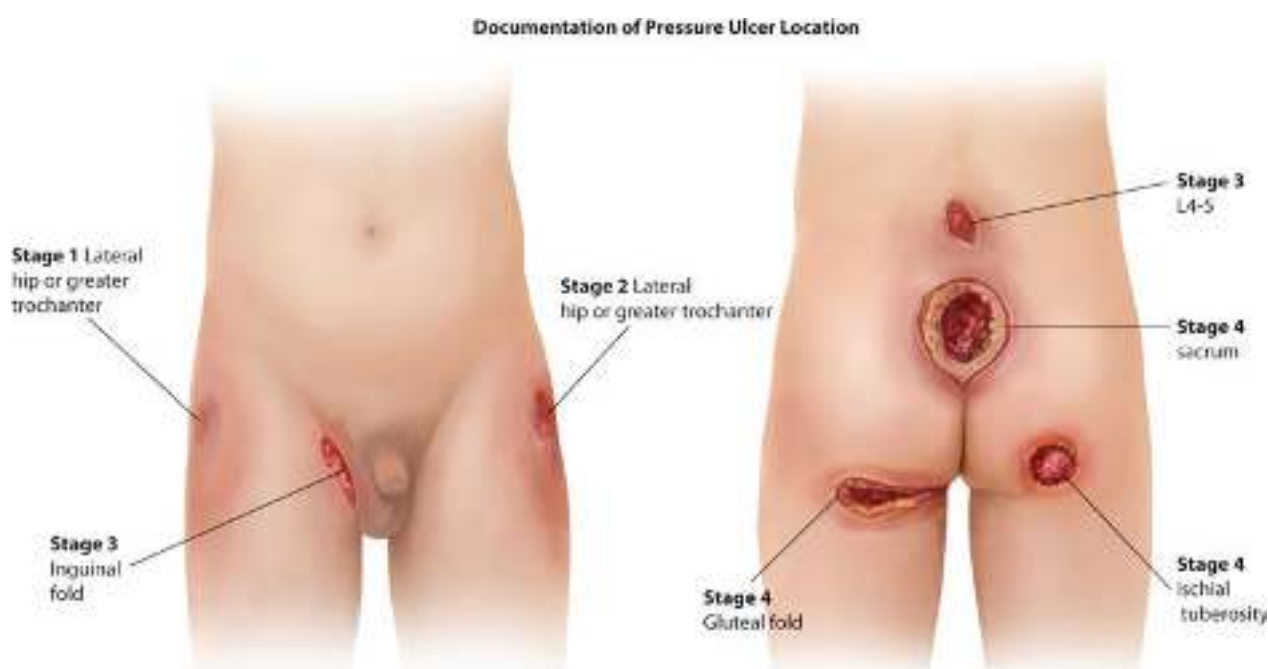
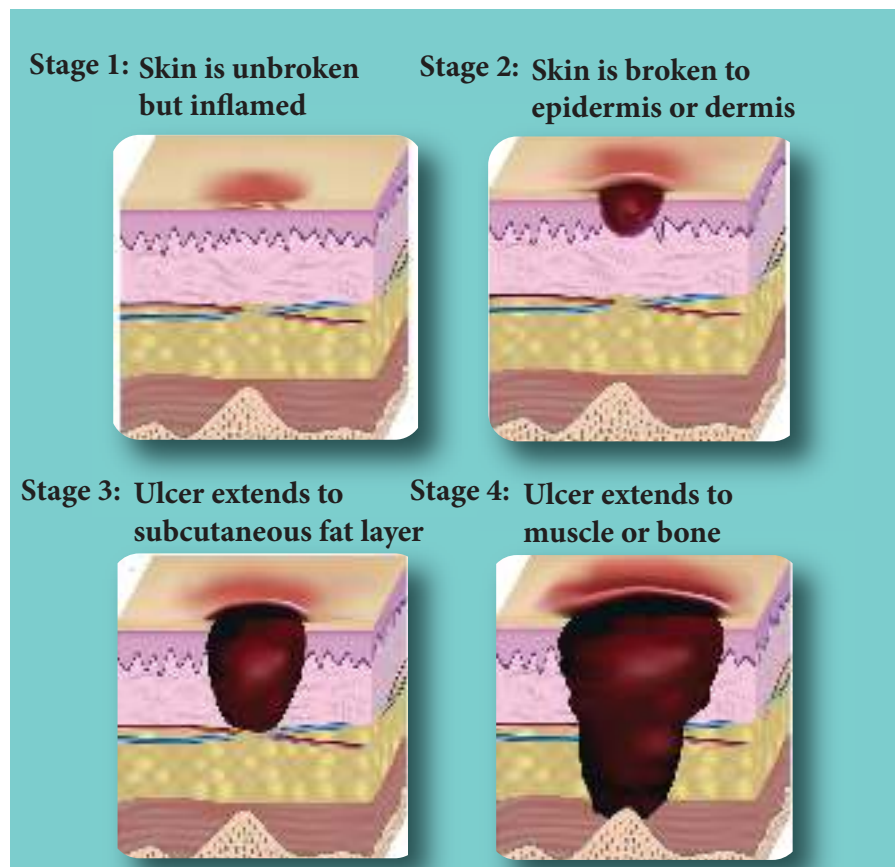
### 5.4.5 Positions and their pressure points

Position	Pressure points
Prone position.	 <p>Elbow Rib cage Thigh Knees Toes</p>
Supine position.	 <p>Back of head and ears Shoulder Elbow Hip Lower back and buttocks Inner knees Heel</p>
Fowler's position.	 <p>Back of the Head Shoulder Base of Spin Heel Toes Buttocks</p>
Lateral position.	 <p>Ear Shoulder Elbow Hip Thigh Leg Heel</p>

### 5.4.6 Care of pressure points and prevention of decubitus ulcer

**Definition of Decubitus Ulcer:** A decubitus ulcer is a pressure sore

resulting from prolonged confinement in bed. It is also known as *pressure sores* or *bed sores*.



#### 5.4.7 Pre - disposing factor for decubitus ulcer

- 1) **Unconscious, helpless or acutely ill patients:** These patients are unable to appreciate the weight of pressure and change their position.
- 2) **Paralysed patients (Paraplegic and quadriplegic patients):** They have lost motor and sensory functions of the limbs.
- 3) **Patients with incontinence. (Spinal injuries):** Void on the bed as the urinary sphincters loses its control.
- 4) Aged persons.
- 5) Very emaciated and malnourished people.
- 6) Patients with dehydration or oedema.
- 7) Very fat people.
- 8) Patients with disease affecting circulation. eg. Heart diseases and anaemia.
- 9) Patients with debilitating diseases such as cancer and tuberculosis.
- 10) Patients with metabolic disorders. eg. Diabetes.

##### 5.4.7.1. Causes, condition and prevention of decubitus ulcer

Causes	Conditions	Prevention
(a) <b>Pressure:</b> When any body prominence presses upon the bed, the tissues lying between them get reduced blood supply. If this condition prolongs, the superficial tissue necroses, skin breaks down and formation of an ulcer takes place.	<b>The following condition causes prolonged pressure:</b> <ol style="list-style-type: none"> <li>1) Leaving a patient in one position for a long time.</li> <li>2) Leaving a patient on a bedpan for a long while.</li> <li>3) Hard and lumpy mattress.</li> <li>4) Pressure exerted by splints and plaster casts.</li> </ol>	<ol style="list-style-type: none"> <li>1) Establish a turning schedule for bedridden patients; turn every second hourly.</li> <li>2) Have a firm cot and foam mattress for bed-ridden patients use extra pillows, pads and air rings to reduce pressure.</li> </ol>
(b) <b>Friction:</b> <ol style="list-style-type: none"> <li>1) Friction from bedclothes or any other cause irritates the skin leading to inflammation.</li> <li>2) If you lie on a bed sheet, which has a rough seam in the middle of it for a while, you will notice the impression of the seam on your back.</li> <li>3) You will also experience burning sensation and the part will be red colour.</li> </ol>	<b>The following factors which cause friction in a patient:</b> <ol style="list-style-type: none"> <li>1) Careless pulling of patient and his linen.</li> <li>2) Giving and removing bed pan carelessly.</li> <li>3) Leaving broad crumbs, orange seeds and food particles on the bed.</li> <li>4) Creases in the bottom sheet.</li> <li>5) General restlessness of patient.</li> <li>6) Rubbing two skin surfaces together.</li> </ol>	<ol style="list-style-type: none"> <li>1) When changing position of your patient lift him and do not drag him on to the bed.</li> <li>2) Keep sheets without wrinkles and seams.</li> <li>3) Keep bed clean and free from crumbs.</li> <li>4) If patient is restless, protect pressure points with soft pads.</li> </ol>

Causes	Conditions	Prevention
<p>(c) <b>Moisture:</b></p> <p>Moisture makes the skin swollen, unhealthy and easily breakable.</p>	<p><b>The following reasons result in moisture over the pressure areas:</b></p> <ol style="list-style-type: none"> <li>1) Incontinence of faeces and urine.</li> <li>2) Severe perspiration.</li> <li>3) Leaving a patient in wet linen</li> <li>4) <b>Heat:</b> Leaving a patient in one position for a long time, the part gets heated.</li> <li>5) Lack of cleanliness and irritating substances on the skin. Eg. Perspiration, faeces, urine and vaginal discharge.</li> </ol>	<ol style="list-style-type: none"> <li>1) Keep dressings and bed dry and clean.</li> <li>2) Clean and dry the incontinent patients promptly.</li> <li>3) If necessary, can use diapers.</li> </ol>

#### 5.4.7.2. Preventive measures:

- 1) Improve patient's health by means of good food, ventilation, sunlight and exercises.
- 2) Encourage circulation through massage.
- 3) Have patient to ambulate early.
- 4) **Observe early signs and symptoms of decubitus ulcers:** a) Redness. b) Dark discoloration. c) Bruising. d) Tenderness of the area. e) Burning sensation.
- 5) Give good care to pressure points: Careful cleaning and massage should be carried out 3 or 4 times a day for all bedridden patients. For some patients, it is necessary to give care as often as every two hours when the position of the patient is changed.

#### 5.4.7.3. Treatment of decubitus ulcer.

- 1) Clean ulcers with aseptic precautions Use antiseptics such as hydrogen peroxide.

- 2) Apply medication ordered by the doctor, eg. Antibiotic ointment, shark liver oil, zinc oxide, (or) any other topical applications.
- 3) Cover with sterile dressings and bandage.
- 4) Surgical formentation, ultraviolet rays (or) heat lamp are helpful in healing.
- 5) Provide good nutrition.
- 6) Prevent secondary infections.




#### 5.4.7.4. Sponging or Bed Bath

**Definition:** Bathing the patient while he is in the bed.

#### **Purpose:**

- 1) To cleanse the skin and thus increase elimination through it.
- 2) To stimulate circulation through slightly active (or) entirely passive exercise.
- 3) To refresh the patient by relieving fatigue and discomfort.

#### 5.4.7.5. Type of Therapeutic Baths.

Type of Therapeutic Baths	Related images
1) <b>Hot water tub bath:</b> Immersion in hot water helps relieve muscle soreness and spasm. Water temperature should be 45 °C to 46 °C.	
2) <b>Warm water tub bath:</b> Bathing in warm water relieves muscle tension. Water temperature should be 43 °C.	
3) <b>Cool water bath:</b> Bathing in tepid water helps to lower body temperature when the body temperature is over 40 °C. Water temperature should be 37 °C.	
4) <b>Sitz Bath:</b> The patient sits in basin of warm water, his buttocks fully immersed. Cleanses and reduces inflammation of the perineal and anal areas of a patient who has undergone rectal or perineal surgery or has haemorrhoids or fissures. Water temperature should be 43 to 45 °C.	
5) <b>Cold sitz bath:</b> Cold sitz bath is more effective in relieving pain in the postoperative period.	
6) <b>Back rub or back massage</b> promotes relaxation, relieves, muscular tension and stimulates skin circulation. An effective back rub takes 35 minutes.	

### Highlights.

Massage therapy has been used in China for more than 3,000 years. During massage therapy, a therapist will manipulate the muscles and other soft tissues to enhance their function, promote relaxation, or both.



### STUDENT'S ACTIVITY

Can demonstrate the different position and identify the pressure points.

### Fact

Perspiration contains **lysozyme** that breaks the bonds within the cell walls of bacteria.

### Quote



**Beauty is in the eye of the beholder.**  
– Shakespeare

## 5.5 CARE OF HAIR

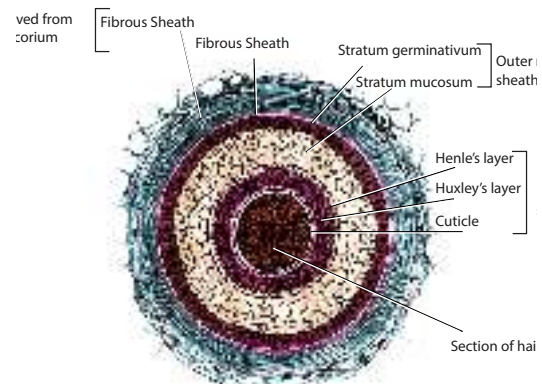
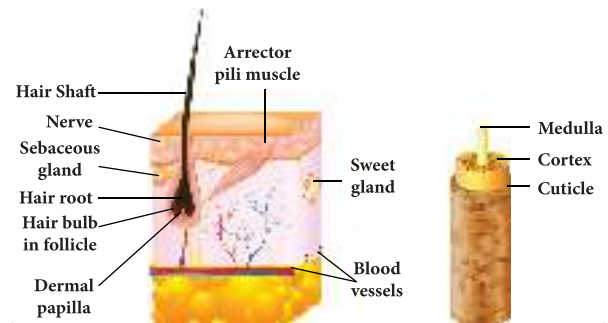
### 5.5.1 Introduction

Hair grows everywhere on the external body except for mucus membranes and glabrous skin (having a surface devoid of hair), such as that found on the palms of the hands, soles of the feet, and lips. It is important for nurses to help patients to maintain a scalp which is free of hair problems which will promote the wellbeing of the patient.

### 5.5.2 Anatomy of the hair

Hair is a protein filament that grows from follicles found in the dermis, the innermost layer of the skin. Hair is one of the defining characteristics of mammals. Attitudes towards different hair, such as hairstyles and hair removal, vary widely across different cultures and historical periods, but it is often used to indicate a person's personal beliefs or social position, such as their age, sex, or religion.

#### HAIR ANATOMY



**Cross sectional view of the hair follicle.**

### 5.5.3 Hair care

Care of the hair is a part of daily hygiene. A **person's appearance** and a feeling of well-being depends on the way the hair









looks and feels. Hair growth, distribution and pattern can be indicators of general health status.

### 5.5.4 Factors that affect the character of hair.

1. Hormonal changes.
2. Emotional and physical stress.
3. Ageing.
4. Infection.
5. Certain diseases like cancer.
6. Certain drugs like chemotherapy.

### 5.5.5 Common hair and scalp problems:

Hair and scalp problems	Images
<b>Dandruff:</b> Dandruff is the scaling of scalp accompanied by itching. In severe cases, dandruff is found on eyebrows.	
<b>Pediculosis (lice):</b> Tiny grayish-white parasite insects infest human beings.	
<b>Pediculosis capitis (head lice):</b> Parasite is found on scalp attached to hair strands.	

Hair and scalp problems	Images
<i>Pediculosis corporis (body lice)</i> : Parasites cling to clothing and sucks blood.	
<i>Pediculosis pubis (crab lice)</i> : Parasites are found in pubic hair.	
<i>Hair loss (alopecia)</i>	

### 5.5.6 Proper hair care:

1. Frequent combing helps keep hair clean and distributes oil evenly along hair shafts.
2. Short-tooth combs are adequate for short hairs.
3. Large-tooth combs are preferable for curly hair.
4. Avoid using combs with sharp and irregular teeth.
5. **Protect Your Hair:** Always protect your hair from sun, wind and rain. Exposure to excessive sun, heat, dirt, pollution, etc. adds to our already existent hair problems. These can lead to dirt accumulation, drying out of hair and scalp, and increased susceptibility to infections on the scalp.
6. Use the same shampoo and conditioner.
7. Avoid tight hair ties as it can damage the hair.
8. **Dry Hair Cautiously:** When drying hair, pat dry. Do not ever rub. You will dry your hair faster but the amount of hair that breaks and falls away also doubles up.
9. **Healthy Eating:** Health on the inside reflects on your hair too. For a healthier person, the hair looks better. If you want to have really good and healthy hair, eat a healthy balanced diet.

10. Don't use too many products, especially perfumed products as it can damage the hair and cause hair loss.

### Highlights.

The body doesn't produce more hair and nail tissue, but both of these do 'grow,' even after few days after death.



### STUDENT'S ACTIVITY

Can you examine the hair and try a new hair style for your friend.?

### Fact

Bananas are great for healthy hair. Being rich in potassium, they help in improving the elasticity and natural health of your hair.

## 5.6 CARE OF EYES

### 5.6.1 Introduction

Beautiful eyes come in many different colors on many different skin tones. But no matter what gorgeous combination these shades happen to be, stunning eyes are guaranteed to make people stop right in their tracks and take a closer look at what's in front of them. After all, as they say, eyes are the window to the soul. And you can tell so much about a person just by looking into their eyes.

### Beautiful eyes



### 5.6.2 Anatomy of the eyes (Refer Lesson 2)

#### Introduction:




Normally no special care is required for the eyes because they are continuously cleansed by tears, and the eyelids and the lashes prevent the entrance of foreign particles. A person needs only to remove any dried secretions that has been collected on the inner canthus or the eyelashes.



### 5.6.3 Common problems of the eye



Eyes are said to be the window to the soul, and it is imperative that we look after them properly. Unfortunately, we don't seem to always remember to do this, and thus, many people report a range of different eye problems.



### 5.6.4 Care of patient


1. Unconscious patients are at risk for eye injury because the blink reflex may be absent. In these clients, excessive drainage frequently collects along eyelid margins.
2. Special attentions are also needed for patients who have had eye surgery or an eye infection that can result in increased discharge or drainage.
3. The nurse often assists patients in the care of eyeglasses, contact lenses, or artificial eyes.

Problems of the Eye	Images	Causes and treatment
<p><b>1. Blepharitis:</b> Blepharitis is an inflammation of the eye lids. Usually, the skin near or around the eyes start to flake, the whites of the eyes turn red, vision becomes distorted, and people find their eyes to be itchy.</p>		<p>There are four main causes of blepharitis, which are:</p> <ul style="list-style-type: none"> <li>• Dust mites.</li> <li>• Dry Eye Syndrome. (DES).</li> <li>• Eczema.</li> <li>• Bacteria.</li> <li>• Treatment involves keeping the eyes and eyelids clean, and avoiding further contamination. Drops are usually prescribed.</li> </ul>
<p><b>2. Cataracts:</b> It happens when a small mass forms in front of the eye, ranging from opaque to transparent. The eye still functions properly, but blindness is induced because the mass gets in the way.</p>		<ul style="list-style-type: none"> <li>• It effectively stops light from getting to the retina, leading to impaired vision.</li> <li>• A surgical procedure is required to remove cataracts.</li> </ul>
<p><b>3. Eye Allergies:</b> Eye allergies are actually the world's first most common problem with the eyes. There are</p>		<ul style="list-style-type: none"> <li>• With allergies, the eyes become very itchy and red. The only cure is to prevent contact with the allergen.</li> </ul>

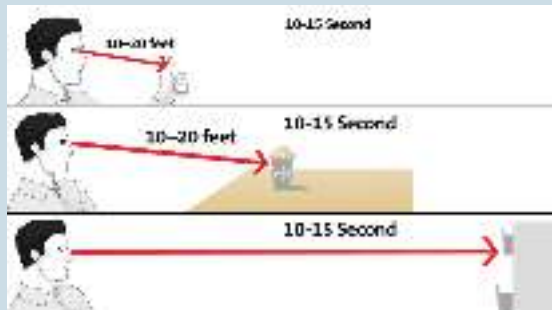
Problems of the Eye	Images	Causes and treatment
<p>endless causes of allergies, ranging from airborne toxins to direct sunlight, from perfumes to dust, and so on. A common cause of allergies are the foods we eat.</p>		<p>If that is impossible, there are drops that can be instilled to clean the eye. These are particularly useful for people who do not know the source of their allergy, or who suffer from seasonal rather than perennial allergies.</p>
<p><b>4. Dry Eye Syndrome:</b> Dry Eye Syndrome, or DES, happens when there is a malfunction in the tears. There are 3 possible symptoms with DES:</p> <ul style="list-style-type: none"> <li>• Insufficient tear production.</li> <li>• Poor quality tears.</li> <li>• Tears that evaporate too quickly.</li> </ul>	 	<p>DES is incredibly common and usually causes severe irritation. In rare cases, it can lead to loss of vision. There are several ways to deal with DES, including:</p> <ul style="list-style-type: none"> <li>• Eye exercises, such as no longer staring at screens and blinking.</li> <li>• Different types of eye drops.</li> <li>• Different types of eye gels.</li> <li>• Punctal plugs.</li> </ul>

Problems of the Eye	Images	Causes and treatment
<p>5. <b>Conjunctivitis:</b>  ink eye, or conjunctivitis, is a very common eye problem. It happens on the eyes' top layer and leads to itching and redness. A range of things can cause pink eye, including allergies, dirty hands, bacteria, infections, and more. Often, it also appears on the lining of the eyelid.</p>		<ul style="list-style-type: none"> <li>• Pink eye is particularly common in children and it is incredibly contagious. Proper hygiene, therefore, is the best way to prevent it.</li> <li>• Most cases usually clears up in a few days.</li> <li>• Will not permanently harm the vision if detected and treated promptly.</li> </ul>
<p>6. <b>Stye:</b>  A stye or sty is a bump that appears on the eyelid. The stye usually develops as an infection in the pore of the eyelashes, appearing as a red bump at the eyelid's base.</p>		<ul style="list-style-type: none"> <li>• It is a viral infection.</li> <li>• Harmless and doesn't pose any real threat.</li> <li>• Medication can treat it.</li> <li>• In extreme cases, surgery may be required.</li> <li>• Styes are particularly common during the summer season. It is important to not press on the stye as this can make the pain worse.</li> <li>• Pain can be relieved through warm compresses and wearing glasses instead of contact lenses.</li> <li>• Proper hygiene is the best way to prevent styes.</li> </ul>


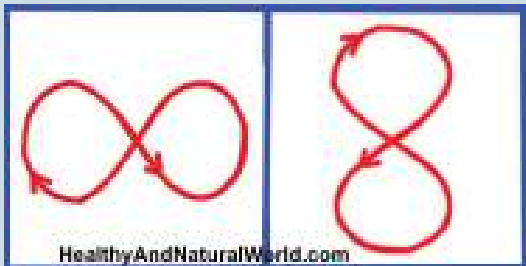

Problems of the Eye	Images	Causes and treatment
<p>7. <b>Glaucoma:</b></p> <p>Glaucoma refers to a range of different diseases. With glaucoma, damage has occurred on any part of the optic nerve because pressure in the eye fluid has increased. Should the pressure suddenly increase, there is danger. With the eye, that pressure is first felt in and around the optic nerve. This is known as “<b>Primary open angle glaucoma</b>”.</p>		<ul style="list-style-type: none"> <li>• The condition is usually asymptomatic for a long time.</li> <li>• Usually, a glaucoma is not dangerous and can be treated quite easily. Sometimes, a medical emergency that, if left untreated, can lead to permanent vision loss.</li> </ul> <p><b>Other causes of glaucoma include:</b></p> <ul style="list-style-type: none"> <li>• An inflammatory disorder that affects the eye,</li> <li>• A blocked blood vessel,</li> <li>• An eye injury,</li> <li>• Glaucoma is generally treated though surgery and/or prescription eye drops.</li> </ul>
<p>8. <b>Tearing:</b></p> <p>Having too many tears can come from being sensitive to light, wind or temperature changes. Protecting your eyes by shielding them or wearingsunglasses can sometimes solve the problem.</p>		<ul style="list-style-type: none"> <li>• Tearing may also mean that there is a more serious problem, such as an eye infection or a block tear duct.</li> <li>• Avoid allergens.</li> <li>• Prescribed eye drops.</li> </ul>

Problems of the Eye	Images	Causes and treatment
<p><b>Strabismus (squint):</b> The medical term for misaligned eyes is <b>strabismus</b>. If strabismus (squint) develops in an adult, perhaps after a trauma to the head or after a stroke, the person is likely to experience double vision.</p>		<ul style="list-style-type: none"> <li>• Double vision occurs because the two eyes are looking at different images.</li> <li>• There are six different muscles that are attached to each eye to help it turn and rotate.</li> <li>• The eyes may not appear straight because one or more muscles are pulling too hard or other muscles are too weak.</li> <li>• There are different treatments for strabismus depending on the specific cause.</li> <li>• Some cases are managed with eye muscle surgery, some simply need glasses.</li> </ul>

### 5.6.5 Exercises for the eyes.

Eye exercise	Demonstration
<p><b>1. Strengthen your eyes' near and far focusing:</b> This exercise will strengthen the muscles in your eyes and help you maintain your current vision level. Then, focus on an object that is 20–10 feet in front of you without moving your head. Focus on the object for 15–10 seconds. After 15–10 seconds, refocus on your thumb. Practice this five times.</p>	



Eye exercise	Demonstration
<p>2. <b>Practice zooming with your eyes:</b> This is a good eye focusing exercise, as you have to constantly adjust how well you can focus on an object from certain distances. Focus on your thumb. Then, bring the thumb closer to you, focusing until your thumb is about 3 inches in front of your face. Move your thumb away again until your arm is fully outstretched. Repeat this exercise three more times, once a week.</p>	 <p>Switch your focus from one pen to the other every 2 seconds.</p>
<p>3. <b>Make a figure eight with your eyes:</b> This is a great exercise to practice controlling the physical movement of your eyes. Imagine a giant figure eight on the floor, about 10 feet in front of you. Trace the figure eight with your eyes, slowly. Trace it one way for a few minutes and then trace it the other way for a few minutes.</p>	
<p>4. <b>End your exercises with palming:</b> Always finish up either with palming to relax your eyes after your intense exercise session. You can also end your eye workout by simply closing your eyes and keeping them shut in a dark, quiet room for several minutes. Let them cool down and rest.</p>	

### Highlights.

Eyes heal quickly. With proper care, it takes only about 48 hours to repair a minor corneal scratch.



#### STUDENT'S ACTIVITY

Demonstrate and practice the eye exercises.

#### Fact

Your eyeballs stay the same size from birth to death, while your nose and ears continue to grow.

## 5.7 CARE OF NOSE

### 5.7.1 Introduction

The visible part of the human nose is the protruding part of the face that bears the nostrils. The shape of the nose is determined by the ethmoid bone and the nasal septum, which consists mostly of cartilage and which separates the nostrils. When you inhale through your two nostrils, air travels up your nasal passages, moves into the nasal cavity, passes through the trachea and ends in the lungs. The nose warms, moistens and filters the air before it enters the lungs with the help of the olfactory epithelium — a tissue covered in mucus that lines the nasal cavity. The epithelium is also responsible for your ability to smell odours. It contains **millions of olfactory receptors** that bind with specific odour molecules to help you identify certain smells.

The anterior nasal spine is the thin projection of bone at the midline on the lower nasal margin, holding the

cartilaginous center of the nose. Adult humans have nasal hairs in the anterior nasal passage

### 5.7.2 Functions of the nose.

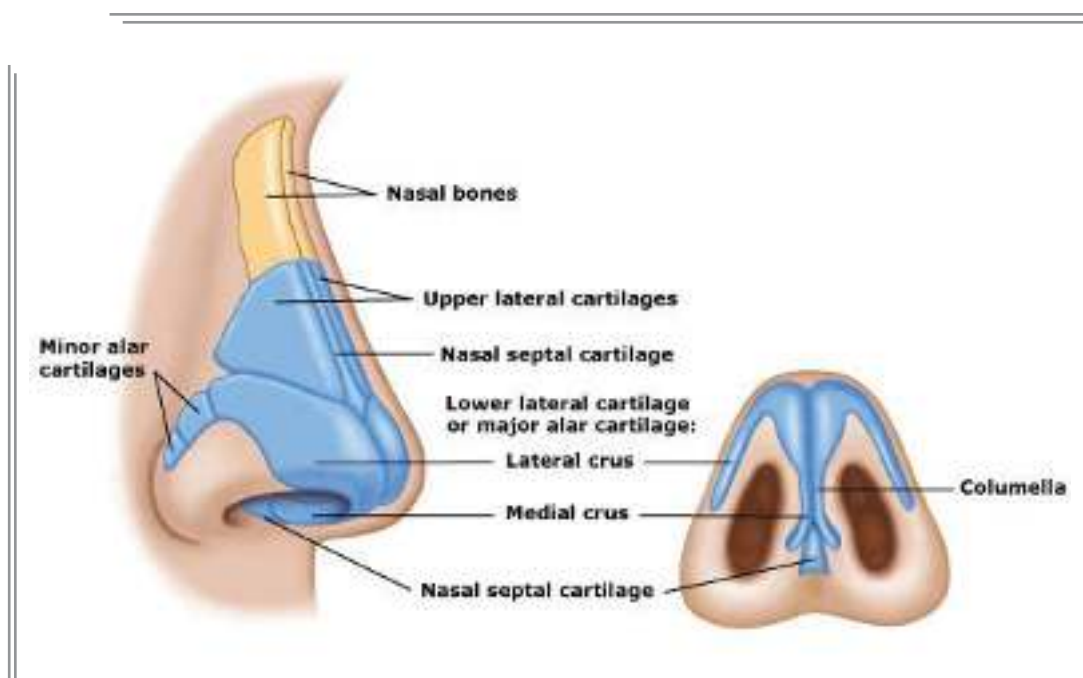
- 1) The nose helps us to smell.
- 2) It also controls the temperature and humidity of inhaled air.
- 3) It also prevents entrance of foreign particles into the respiratory system.



### 5.7.3 Common problems in the nose.


That first whiff of autumn in the air, the smell of your baby's head. The aroma of freshly brewed coffee, and the scent of your favorite cologne. All of these emotion-evoking, sensory delights are brought to you courtesy of your remarkable, impressive nose.

ENT physicians, or otolaryngologists, are specially trained in rhinology disorders of the nose and sinus. Let's look at three of the most common disorders that is diagnosed and treated.

### Anatomy of the nose.



Problems of the nose	Images	Symptoms and treatment
<p>1) <b>Sinusitis:</b> Sinusitis is an inflammation and infection in the sinuses, the air-filled cavities within the face that branch off from the nasal cavity. The physician may use X-rays or a CT scan to diagnose the sinus disease.</p>		<ul style="list-style-type: none"> <li>• Acute infection can be treated with antibiotics,</li> <li>• Decongestants, nasal steroid sprays, antihistamines and irrigations.</li> <li>• But if your infection does not respond to medication, an Endoscopic Sinus Surgery (ESS) will be performed.</li> </ul>
<p>2) <b>Deviated Septum:</b> The ideal nasal septum is exactly midline, separating the left and right sides of the nose into passageways of equal size. However, 80 percent of all nasal septums are slightly off-center. When the septum is severely shifted away from the midline, the condition is called a “deviated septum.”</p> <p>A deviated septum may cause:</p> <ul style="list-style-type: none"> <li>• Blockage of one or both nostrils that causes difficulty breathing through the nose.</li> <li>• Nasal congestion, sometimes one-sided.</li> <li>• Frequent nosebleeds.</li> <li>• Repeated sinu</li> </ul>		<ul style="list-style-type: none"> <li>• Septoplasty is a surgical procedure performed entirely through the nostrils to correct a deviated septum.</li> <li>• While it's usually done to improve nasal breathing, it's sometimes combined with sinus surgery.</li> </ul>

Problems of the nose	Images	Symptoms and treatment
<p>A deviated septum may cause:</p> <ul style="list-style-type: none"> <li>• Blockage of one or both nostrils that causes difficulty breathing through the nose.</li> <li>• Nasal congestion, sometimes one-sided.</li> <li>• Frequent nosebleeds.</li> <li>• Repeated sinus infections.</li> <li>• Facial pain, headaches, postnasal drip.</li> <li>• Noisy breathing during sleep in infants and young children.</li> </ul>		
<p>3) <b>Nasal Polyps:</b> Nasal polyps are soft, non-cancerous growths on the lining of the nose or sinus caused by inflammation often due to allergies. Although small nasal polyps may not cause symptoms, larger growths or multiple polyps can cause frequent infections and breathing problems.</p>		<p>Medications are sometimes sufficient to shrink or eliminate the polyps, but surgical removal is often required along with medications to prevent more from developing.</p>

### 5.7.3 Nasal Hygiene

Hygiene care of the nose is simple.

Nasal problems	Nasal hygiene
<p>1. The accumulation of encrusted secretions within the nose can impair olfactory sensation and breathing.</p>	<ul style="list-style-type: none"> <li>• The use of saline water is a safe and effective way to relieve cold symptoms or sinusitis. Clearing nasal passages diminishes nasal congestion and helps to prevent the presence of viruses and bacteria.</li> </ul>

Nasal problems	Nasal hygiene
2. Irritation of nasal mucosa can cause swelling leading to obstruction.	<ul style="list-style-type: none"> <li>The nose is in constant contact with allergens (mites, pollen, and mould). Some people develop allergic reactions accompanied by nasal congestion and sneezing. In addition to reduce the symptoms, the use of saline water eliminates allergens found in the mucous membrane.</li> </ul>

#### 5.7.4 Other methods of maintaining nasal hygiene are as follows.

1. Use petroleum jelly or vaseline. It can be applied gently to each nostril 3-2 times a day to promote moisturization of the nose. Triple antibiotic ointment such as Neosporin or Bacitracin can also be used.
2. Some nasal saline sprays have additives such as aloe vera and these are helpful.
3. Consider using a humidifier at home. If your nose feels dry and there is frequent nose bleeds, buy a humidifier for your home.
4. Avoid excessive manual manipulation of your nose and nostrils. Frequent rubbing of your nostrils and the passing of tissues or fingers in your nostrils may aggravate nasal irritation from dryness and nose bleeds.

#### 5.7.5 Patients who need special care.

1. Patients with nasogastric tube feeding.
2. Patients with the endotracheal tubes.
3. Unconscious patients.

#### Highlights.

To prevent reintroducing bacteria back into your nose, keep your irrigation equipment clean and dry between uses. Throw away and replace reusable irrigation equipment **every 3 weeks**.

#### Fact

In women, nose grows until the age of 15 to 17 and for men, it is 17 to 19.

### 5.8 CARE OF THE EARS

#### 5.8.1 Introduction


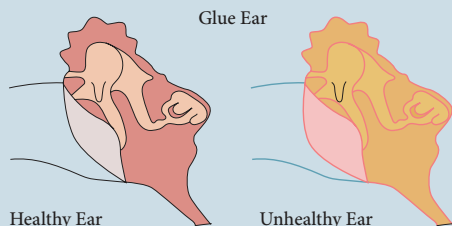

Hygiene of the ears has implications for hearing acuity when wax or foreign substances collect in the external ear canal, and they interfere with sound conduction. Older adults are particularly susceptible to this problem.


The nurse should be sensitive to any behavioral cues that might indicate a hearing impairment. When caring for patients with the hearing aid, the nurse instructs the patients on proper

cleansing and maintenance as well as communication techniques, that promotes hearing.

- Anatomy of the ears: (Refer Lesson 2)

### 5.8.2 Common ear problems

Ear problems	Image	Symptoms and treatment
<p>1. <b>Otitis media:</b> inflammation of the middle ear which causes a build-up of fluid, with or without an infection. If there is an infection, it is often viral. Many children will have several bouts of otitis media before they are 7 years old.</p>		<ul style="list-style-type: none"> <li>• Symptoms include crying, ear pulling, mild fever and irritability.</li> <li>• Antibiotic ear drops.</li> </ul>
<p>2. <b>Glue ear:</b> a type of chronic otitis media. A long-term build-up of thick or sticky fluid in the middle ear behind the eardrum causes hearing loss.</p>		<ul style="list-style-type: none"> <li>• This can make socialising and learning difficult, especially if hearing loss is not recognised in early childhood.</li> </ul>
<p>3. <b>Ear wax:</b> protects the ear and is normal. However, a build-up of wax may be a problem in some adults, and may require wax-softening ear drops.</p>		<ul style="list-style-type: none"> <li>• Impacted ear wax rarely causes an ear discharge or pain, but it may cause hearing impairment.</li> <li>• Sometimes the ears may also need to be syringed.</li> <li>• and cleaned by a doctor.</li> </ul>

Ear problems	Image	Symtoms and treatment
<p><b>1. Swimmer's ear:</b> develops when humidity, heat and moisture cause the skin layer inside the ear to swell. The addition of further water, for example, through swimming, makes the skin lining the ear canal even softer and liable to infection.</p>		<ul style="list-style-type: none"> <li>• Attempts to remove the water with cotton buds or other objects may make the condition worse, causing pain and itching.</li> <li>• Ear drops as prescribed.</li> </ul>

### 5.8.3 Preventing ear problems

Self-management of ear problems, particularly earache and ear discharge, is not recommended. However, the following tips may help prevent ear problems.

- Do not use cotton buds or other devices for cleaning your ears. Repeated attempts to remove earwax with a cotton bud or similar object may result in the wax becoming more deeply impacted.
- If the patient has swimmer's ear, he should use earplugs to help prevent water entering your ears.
- If the patient is working in a noisy environment, including a home environment, **use ear protectors**.
- Blow the nose correctly. Do not squeeze the nose when blowing and do not sniff.
- It is important that any hearing loss should be checked.

#### Highlights.

**Cerumen** is the proper name for ear wax, a substance that the human body naturally produces. Ear wax contains long-chain fatty acids, both unsaturated and saturated, as well as cholesterol, squalene, and alcohols.

#### Fact

Hearing impairment in a child is sometimes suspected if the child is inattentive at school, does not respond to instructions, seems to be disobedient or wants the television to be loud.

## 5.9 CARE OF THE NAIL AND FEET

### 5.9.1 Characteristics of a healthy nail

A normal healthy nail is transparent, smooth and convex with pink nail beds and translucent white tips.



### 5.9.2 Purposes of care of the nails





- 1) To keep nails harmless.
- 2) To prevent accumulation of dirt under the nails and reduce occurrence of infection.

### 5.9.3 Risk factors for foot and nail ailments

- 1) Patients with peripheral vascular disease eg. Diabetes mellitus.
- 2) Patients with neuropathy. (degeneration of peripheral nerves characterized by loss of sensation)
- 3) Poor ill fitting foot wear.
- 4) Poor knowledge of foot and nail care.

### 5.9.4 Common foot and nail problems

Foot and nail problems	Images
<p>1. <b>Callus:</b> It is a thickened portion of epidermis caused by local friction or pressure.</p>	
<p>2. <b>Corns:</b> It is caused by friction and pressure from shoes. It is seen mainly on toes, over bony prominence.</p>	

Foot and nail problems	Images
<p>3. <b>Plantar warts:</b> They are fungating lesions, appearing on sole of foot and are caused by papilloma virus.</p>	
<p>4. <b>Athlete's foot (Tinea pedis)</b> is the fungal infection of foot mainly induced by wearing of constricting footwear.</p>	
<p>5. <b>Ingrown nails:</b> Toenails or finger nails grow inward into soft tissue around nail resulting from improper nail trimming.</p>	
<p>6. <b>Paronychia</b> is the inflammation of tissue surrounding nails following an injury. It is common among diabetic patients.</p>	
<p>7. <b>Foot odour</b> or result of excessive perspiration promoting micro organism growth.</p>	

### 5.9.5 Feet and nails.

The feet and nails require special attention to prevent infection, odours, and an injury to tissue. People are unaware of foot or nail problems until pain or discomfort occurs. Problems may result from poor care of the feet and nails such as biting nails or trimming them improperly, exposure to chemicals and wearing poorly fitted shoes.

### 5.9.6 Care of feet and nails.

- 1) Inspect the feet daily including the tops and soles of the feet and the area between the toes.
- 2) Wash and soak the feet daily using luke warm water (37° C).
- 3) If the feet perspire, apply a bland foot powder.
- 4) If dryness is noted along the feet, apply soft oil and rub gently into the skin.
- 5) File the toe nails straight across and square.
- 6) Avoid wearing elastic stockings.
- 7) Wear clean socks daily.
- 8) Do not walk barefoot.
- 9) Wear properly fitted shoes.
- 10) Exercise regularly to improve circulation to the lower extremities.
- 11) Immediately wash minor cuts and dry them thoroughly. Mild antiseptics may be applied to the skin.
- 12) Cut the nails trimly and keep it clean and tidy.



Nail cutting



#### Highlights

Walking is the best exercise for your feet, and it's also a great way to get overall exercise for your body: it boosts circulation and helps to burn calories. Standing still is a way more tiring than walking, because only a few muscles are used when you are still standing, whereas walking distributes the weight and effort over more muscles.



#### STUDENT'S ACTIVITY

Practice nail care.

#### Fact

One quarter of your body's bones are in the feet. A normal foot has **33 joints, 26 bones, 19 muscles, and 107 ligaments.**



## ICT Corner

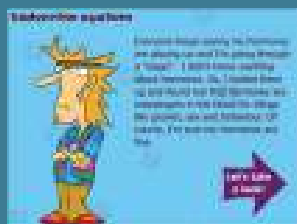
### Endocrine system

Explore position and functions of Endocrine system



- Step 1:** Use the URL to land in the Endocrine system page.
- Step 2:** Click on the gland to find out the position and functions of the gland.
- Step 3:** Click on the Hormone name to get additional details about it.
- Step 4:** Click the main menu on the top right corner to search back and go through the next gland.

Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## EVALUATION



### I. Choose the correct answer: (1 mark.)

1. The nurse needs to maintain the oral hygiene of the patient in order to:
  - a. Make the patient feel happy.
  - b. Promote the patient appetite.
  - c. Help the patient communicate well.
2. Which is the best brush recommended by most dental professionals for removing plaque and debris from your teeth?
  - a. A soft-bristled brush is best.
  - b. A medium-bristled brush is best.
  - c. A hard-bristled brush is best.
3. How frequently should a tooth brush be changed?
  - a. Once in 2 months.
  - b. Once in 3 months.
  - c. Once in 4 months.
4. Dental caries is commonly seen in which group of people?
  - a. Over 35 years.
  - b. Younger people.
  - c. Infants.
5. Jyothi, a housewife has complaints of cracking of the lips especially at the ankle of the mouth. Which one of the oral problems describes it best?
  - a. Halitosis.
  - b. Stomatitis.
  - c. Cheilosis.
6. From the above scenario, what can be the cause for Jyothi's oral problem?
  - a. Diabetes.
  - b. Riboflavin deficiency.
  - c. Tobacco chewing.
7. Which area of the body is pediculosis pubis is found in?
  - a. Head.
  - b. Pubic.
  - c. Body.
8. Dry Eye Syndrome is caused due to one of the following?
  - a. Poor hygiene.
  - b. Insufficient tear production.
  - c. Sleeping insufficiently.
9. Otitis media is the:
  - a. Infection of the ear lobe.
  - b. Inflammation of the middle ear.
  - c. Infection of the inner ear.
10. Athlete's foot is caused by one of the following:
  - a. Fungal infection.
  - b. Inflammation of the surrounding tissue.
  - c. Excessive perspiration.

### II. Write short answers: (3 marks.)

1. List three factors influencing personal hygienic practices.
2. What are the purposes of oral hygiene?
3. What is Psoriasis?

4. List the pressure points for a patient in Fowler's position.
5. List 3 types of bath.
6. What are the factors that affect hair growth?
7. What is blepharitis?
8. Which of the patients will need special care of the nose?
9. What are the bones of the inner ear?
10. List the risk factors for foot and nail diseases.

### III. Write short notes: (5 marks.)

1. What foods and drinks should be taken to maintain proper oral hygiene?
2. What are the things to avoid in the use of dentures?
3. List four areas liable for pressure ulcer.
4. Write a few methods to maintain proper nasal hygiene.
5. Write briefly on how we can hear.
6. How can you help the patient prevent any ear problem?

### IV. Write an essay for the following: (10 marks.)

1. Explain the care of the dentures.
2. Explain any five oral problems.
3. Explain the functions of the skin.
4. Explain the causes, condition and prevention of decubitus ulcer.
5. Explain in detail on the exercises for the eyes.
6. Discuss the care of the nail and feet.

## A-Z GLOSSARY

<b>Integumentary system</b> – (புறத்தோல் மண்டலம்)	- It comprises of the skin and its appendages acting to protect the body from various kinds of damage, such as loss of water or abrasion from outside. The integumentary system includes hair, scales, feathers, hooves, and nails.
<b>Saliva</b> – (உமிழ்நீர்)	- It is a watery substance formed in the mouths of animals, secreted by the salivary glands.
<b>Flossing</b> – (கொப்பளித்தல்)	- It is one way to clean between your teeth. It involves wrapping a piece of soft string around your fingers and navigating it up and down between.
<b>Decubitus ulcers</b> – (படுக்கைபுண்)	- It is a pressure sore resulting from prolonged confinement in bed. It is also known as pressure sores or bed sores.



<b>Immunity</b> – (நோய் எதிர்ப்பு சக்தி)	- Lack of susceptibility, especially to something unwelcome or harmful.
<b>Aesthetics</b> – (அழகுணர்ச்சி)	- The branch of philosophy which deals with questions of beauty and artistic taste.
<b>Antihistamines</b> – (ஒவ்வாமை எதிர்மருந்து)	- Used chiefly in the treatment of allergic disorders and colds.
<b>Light therapy</b> – (ஒளி சிகிச்சை)	- Or phototherapy (classically referred to as heliotherapy) consists of exposure to daylight or to specific wavelengths of light using polychromatic polarised light, lasers, light-emitting diodes, fluorescent lamps, dichroic lamps or very bright, full-spectrum light. The light is administered for a prescribed amount of time and, in some cases, at a specific time of day.
<b>Antiviral pills</b> – (வைரஸ் எதிர்மருந்து)	- Class of medication used specifically for treating viral infections
<b>Freezing</b> – (உறைதல்)	- Extremely cold.
<b>Acutely ill patients</b> – (தீவிர நோயாளி)	- In a way that progresses rapidly but lasts for a short period.
<b>Paralysed patients (Paraplegic and quadriplegic patients)</b> – (பக்கவாத நோயாளி)	- They have lost motor and sensory functions over the limbs.
<b>Incontinence</b> – (அடக்கிக்கொள்ளமுடியாத நிலை)	- Lack of voluntary control over urination or defecation.
<b>Oedema</b> – (வீக்கம்)	- a condition characterized by an excess of watery fluid collecting in the cavities or tissues of the body.
<b>Debilitating diseases</b> – (பலவீனமாக்கும் நோய்கள்)	- To make weak or feeble.
<b>Chemotherapy</b> – (கீமோதெரபி)	- The treatment of disease by the use of chemical substances, especially the treatment of cancer.
<b>Airborne toxins</b> – (வாயுநச்சுகள்)	- Airborne aerosol (liquid particles suspended in air) dust, fumes, gases, mist, or vapors containing toxic substances

**Allergies /allegens** –  
(ஒவ்வாமைகள்)

- A damaging immune response by the body to a substance, especially a particular food, pollen, fur, or dust, to which it has become hypersensitive.

**Nasal mucosa** – (மூக்கின்  
உட்சவ்வு)

- The lining of the nasal cavities and paranasal sinuses, made of pseudostratified ciliated epithelium with goblet cells.

**Nasogastric tube feeding**  
– (மூக்கு இரைப்பை  
குழாய் வழியாக  
உணவுட்டல்)

- To give feeding a thin tube is inserted through nostril to stomach

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1. Potter & Perry (2009) *Fundamentals of Nursing*, 7th Edition, Elsevier publication, St.Louis Missouri.
2. Patricia, P. (2009) *Fundamentals of Nursing*, 7th Edition, Mosby Company, St.Louis Missouri.
3. Virginia, H. (1997) *Basic Principles of Nursing Care*, 2nd Edition, 0965836002.

# Unit 6

## HEALTH ASSESSMENT AND PHYSICAL EXAMINATION



### LEARNING OBJECTIVES

At the end of this chapter students will be able to:

1. Define physical examination
2. List out the purposes of physical examination
3. Enumerate the methods of physical examination
4. State the principles of physical examination
5. Demonstrate the procedure of taking temperature
6. Discuss the assessment of pulse
7. Explain the purposes of blood pressure recording
8. Brief the pain assessment procedure
9. Demonstrate the urine testing procedure



### 6.1 INTRODUCTION

A complete health assessment also includes gathering information about a person's medical history and lifestyle, doing laboratory tests, and screening for disease. A physical examination is an evaluation of the body and its functions using inspection, palpation (feeling with the hands), percussion (tapping with the fingers) auscultation (listening).

### 6.2 DEFINITION

Health assessment involves collecting, validating and analyzing data about the patient health. It includes gathering both subjective and objective data.

### 6.3 PURPOSES OF PHYSICAL EXAMINATION

- To gather the information for each health history component.
- To supplement confirm or refute data obtained in the nursing history.
- To confirm and identify nursing diagnoses.
- To make clinical judgment about a client.
- Changing health status and management.
- To evaluate the physiological outcome.

“From the bitterness of disease, man learns the sweetness of health.”

- To initialize a nurse- patient relationship
- To plan intervention accordingly.
- To plan health education according to the information gathered.

“Don’t be afraid of the information you are going to start seeing. You will have better insight and probably learn more about your patients, thus building a far better relationship with your patient than you may have thought possible.”

## 6.4 METHODS OF PHYSICAL EXAMINATION

Describe how to perform inspection, palpation, percussion, and auscultation, and which areas of the body are assessed with each technique.

Techniques in physical assessment are:

### 6.4.1 Inspection

It means looking with eyes. It reveals any rash, scar, colour, size, shape, contour and symmetry of the body parts.



Inspection

### 6.4.2 Palpation

It means feeling using sense of touch. It reveals any swelling, coldness, hotness, stiffness, hardness, smoothness, roughness, pain, vibration, firmness and flaccidity.



Palpation

### 6.4.3 Percussion

It means striking or tapping with fingers. It elicits sounds which indicate whether the underlined tissues are solid or filled with fluid. The sounds may vary with varied conclusion.



Percussion

The sounds may vary.

- **Resonant:** A loud sound over the normal lung tissue.
- **Tympanic:** A drum like sound over the air-filled tissues such as gastric air bubble.
- **Dull:** A medium pitched sound with medium duration without resonance, heard over the solid tissue, such as heart, liver.
- **Flat:** A pitched sound with short duration without resonance, heard over the complete solid tissue, such as bones.



When performing physical examination, a nurse must consider all system which the person made up of.

#### 6.4.4 Auscultation

The action of listening to sounds from the heart, lungs, or other organs, typically with a stethoscope, as a part of medical diagnosis. It means listen with stethoscope or placing the ear against the body, it reveals sounds produced within the body and the vessels such as heart beat, bowel sounds.



Auscultation

#### 6.4.5 Reflex testing

Reflex tests measure the presence and strength of a number of reflexes. In so doing, they help to assess the integrity of the nerve circuits. It reveals reflex is present, or not present, strength and movements of hands and legs.

#### 6.4.6 Olfaction

It means sense of smell (odour) it reveals the nature of disease condition of the patient.

### 6.5 PRINCIPLES OF PHYSICAL EXAMINATION

It is the systematic collection of objective information that is directly observed or is elicited through examination technique. Which involves the use of one's senses to obtain information about the structure and function of an area being observed or manipulated.

**The General Appearance:** Whether he/she is obese, malnourished, acutely ill or chronically ill. Whether he is weak and



unable to walk or walk with aid whether he is in pain.

**Level of consciousness:** Is a measurement of a person's arousability and responsiveness to stimulate from the environment. Whether fully conscious, drowsy or comatosed.

**Skin:** The client's skin is uniform in color, unblemished and no presence of any foul odour. He has a good skin turgor and skin's temperature is within normal limit.

**Hair:** The hair is thick, silky hair is evenly distributed and has a variable amount of body hair. There are also no signs of infection and infestation observed.

**Nails:** The client has a light brown nail and has the shape of convex curve. It is smooth and is intact with the epidermis. When nails pressed between the fingers (Blanch Test), the nails return to usual color in less than 4 seconds.

**Head:** The head of the client is rounded; normocephalic and symmetrical.

**Skull:** There are no nodules or masses and depressions when palpated.

**Face:** The face of the client appeared smooth and has uniform consistency and with no presence of nodules or masses.

**Eyes:** The Bulbar conjunctiva appeared transparent with few capillaries evident. The sclera appeared white. The palpebral conjunctiva appeared shiny, smooth and pink.

There is no edema or tearing of the lacrimal gland.

**Mouth:** The lips of the client are uniformly pink; moist, symmetric and have a smooth texture. The client was able to purse his lips when asked to whistle.

**Teeth and Gums:** There are no discoloration of the enamels, no retraction of gums, pinkish in color of gums. The buccal mucosa of the client appeared as uniformly pink; moist, soft, glistening and with elastic texture. The tongue of the client is centrally positioned. It is pink in color, moist and slightly rough. There is a presence of thin whitish coating. The smooth palates are light pink and smooth while the hard palate has a more irregular texture. The uvula of the client is positioned in the midline of the soft palate.

**Nose:** The nose appeared symmetric, straight and uniform in color. There was no presence of discharge or flaring. When lightly palpated, there were no tenderness and lesions.

**Ears:** The Auricles are symmetrical and has the same color with his facial skin. The auricles are aligned with the outer canthus of eye. When palpating for the texture, the auricles are mobile, firm and not tender. The pinna recoils when folded.

**Neck:** The neck muscles are equal in size. The client showed coordinated, smooth head movement with no discomfort. The lymph nodes of the client are not palpable. The trachea is placed in the midline of the neck.

**Chest:** The chest wall is intact with no tenderness and masses. There's a full and

symmetric expansion and the thumbs separate 2–3 cm during deep inspiration when assessing for the respiratory excursion. The client manifested quiet, rhythmic and effortless respirations.

**Breast:** Whether there are any abnormalities in the shape and size. Whether there are any lumps or discharge from the nipples.

**Abdomen:** The abdomen of the client has an unblemished skin and is uniform in color. The abdomen has a symmetric contour. There were symmetric movements caused associated with client's respiration.

**Upper Extremities:** The extremities are symmetrical in size and length.

**Muscles:** The muscles are not palpable with the absence of tremors. They are normally firm and showed smooth, coordinated movements.

**Bones:** There were no presence of bone deformities, tenderness and swelling.

**Joints:** There were no swelling, tenderness and joints move smoothly. Whether the nails are broken or brittle. Whether there

is clubbing of fingertips, tremors of hands, swelling of extremities, pain in the joints or any other abnormality, all range of motions present

## 6.6 PHYSIOLOGICAL ASSESSMENT

The most frequently measurement obtained by health care providers are those of temperature, pulse, blood pressure and respiration as the indicators of health status, these measures indicate the effectiveness of circulatory, respiratory, neural and endocrine body functions.

**Vital signs** include the physiological measurements of temperature, pulse, Bp and respirations. Vital signs are a quick and efficient way of monitoring a patient's response to intervening changes. One vital sign can influence characteristics of other vital signs.

Assessment of vital signs allows the nurse to identify nursing diagnoses, to implement planned intervention and to evaluate success. When the nurse learns the physiological variables influencing vital signs and recognizes the relationship of vital sign changes to other physiological assessment findings.

Vital Sign Ranges			
Age-Appropriate Vital Signs			
	Heart Rate	Respirations	Blood Pressure
Newborn	80–180	30–60	60–80/30–60
Toddler	80–110	24–32	90–100/50–65
School Age	60–110	18–26	95–110/55–70
Adolescent	50–90	16–20	110–120/60–80
Adult	60–100	12–20	110–140/60–90

## GUIDELINES FOR ASSESSING VITAL SIGNS

- The nurse caring for the patient is responsible for assessing vital signs.
- The nurse should obtain the vital signs, interpret their significance and make decisions about interventions.
- Equipment used to measure vital signs must work properly to ensure accurate finding.
- Equipment should be selected based on the client's condition and characteristics.
- The nurse controls or minimizes environmental factors that may affect vital signs.
- The nurse uses an organized, systematic approach when taking vital signs. Each procedure requires a step – by – step approach to ensure accuracy.
- The manner of approach to the patient can alter the vital signs. The nurse should approach the patient in a calm caring manner while taking vital signs.
- Based on patient's condition, the nurse collaborates with the physician to decide the frequency of vital signs assessment.
- The nurse analyzes the results of vital signs measurement. The nurse is often

in the best position to assess all clinical finding about a patient.

- Vital signs are documented and communicated to the nurse assuming care of the patient and well as patient.

### 6.6.1 Temperature

Normal body temperature varies by person, age, activity, and time of day. The average normal body temperature is generally accepted as 98.6°F (37°C).

#### Physiology of body temperature

The body temperature is precisely regulated by physiological and behavioral mechanisms. For body temperature to stay constant and within normal range, the relationship between heat production and heat loss must be maintained.

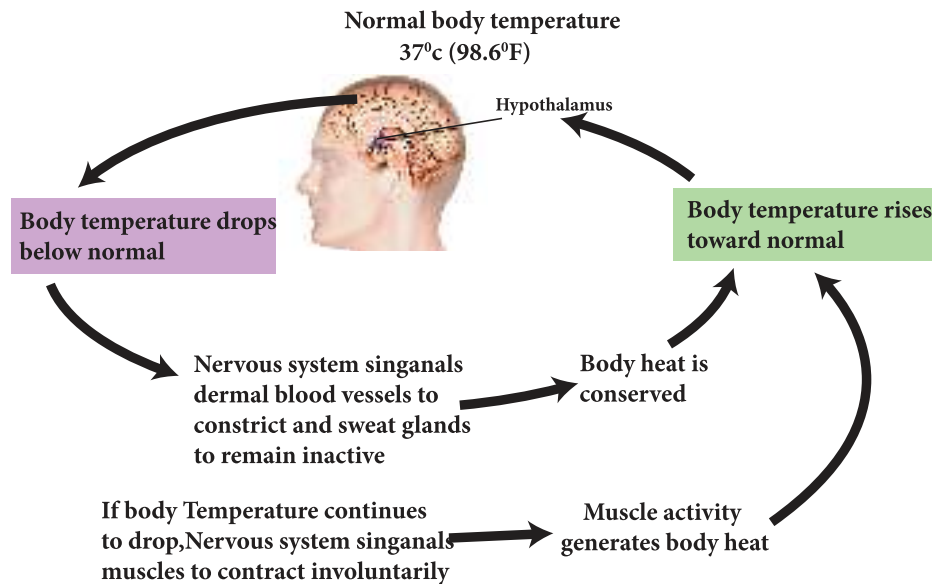


Body temperature undergoes minor changes throughout the day. It is the lowest in the morning, between 4 and 6 a.m. and highest in the evening, around 6 to 8 p.m.

Body temperature is the balance between heat loss and heat production.

Range of Normal Temperature				
°F	0–2 Years	3–10 Years	11–65 Years	>65 Years
Oral	–	95.9–99.5	97.6–99.6	96.5–98.5
Rectal	97.9–100.4	97.9–100.4	98.6–100.6	97.1–99.2
Axillary	94.5–99.1	96.6–98.0	95.3–98.4	96.0–97.4
Ear	97.5–100.4	97.0–100.0	96.6–99.7	96.4–99.5
Groin	97.5–100.0	97.5–100.0	98.2–100.2	96.6–98.8

## Homeostasis and Temperature Control



The relationship is regulated by neurological and cardiovascular mechanisms. The nurse applies knowledge of temperature control mechanisms to promote temperature regulation.

of blood vessels) reduces blood flow to the skin and extremities. Heat production is stimulated through voluntary muscle contraction and muscle shivering.

### Factors affecting body temperature

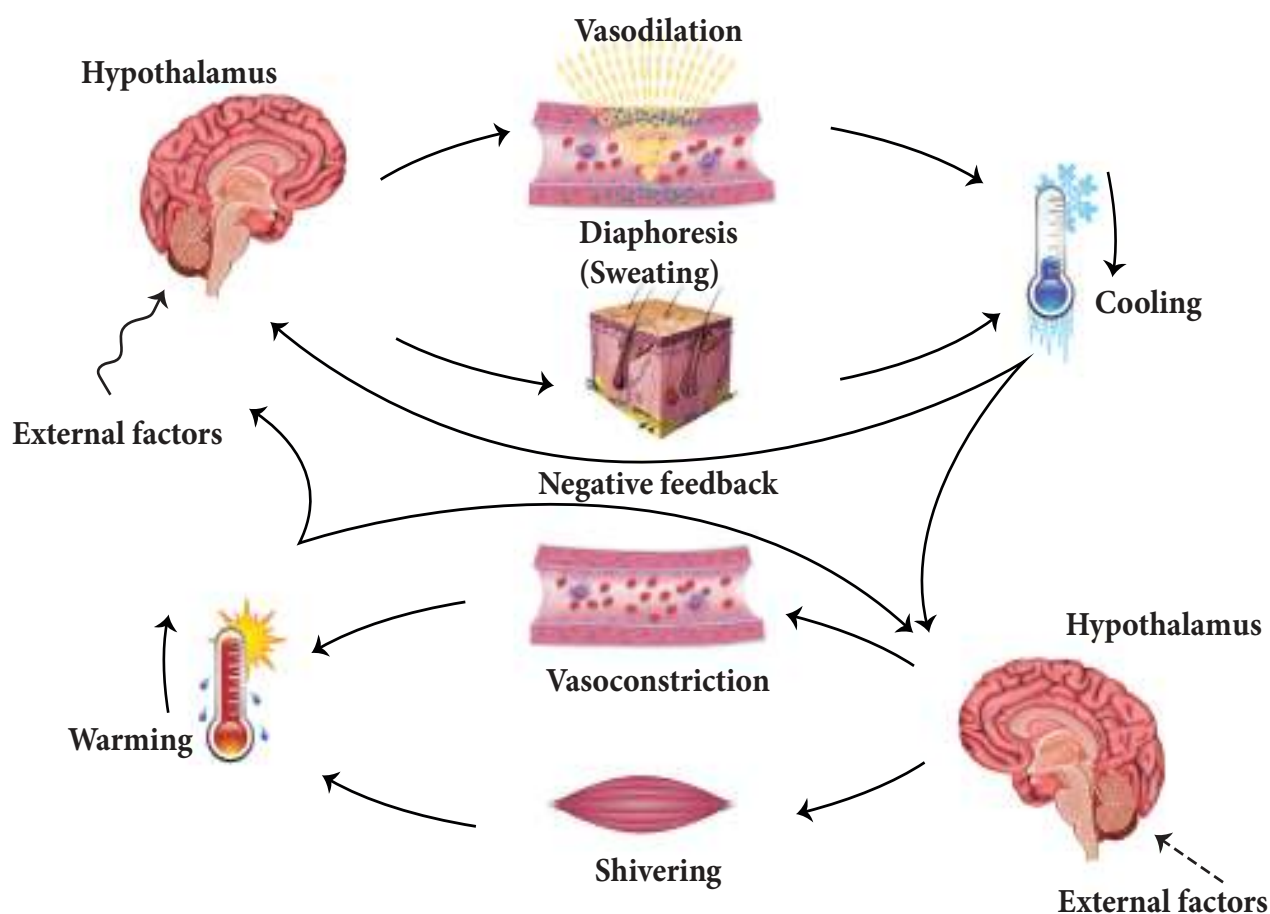
Many factors affect body temperature changes in body temperature. The nurse must be aware of these factors when assessing temperature variables and evaluating deviation from normal.

### TEMPERATURE REGULATION

The hypothalamus located between the cerebral hemispheres, controls the body temperature. The hypothalamus sense main changes in body temperature. The anterior hypothalamus controls the heat production. When the nerve cells in the anterior hypothalamus became heated beyond the set point, impulses are sent out to reduce body temperature. Mechanisms of heat loss include sweating, vasodilatation (widening) of blood vessels and inhibition of heat production. If the posterior hypothalamus senses the body temperature is lower than the set point, heat conservation mechanisms are instituted. Vasoconstriction (narrowing



- **Age:** For new born, the temperature – control mechanism are immature. An infant's temperature may respond drastically to changes in the environment. Temperature regulation is unstable until children reach puberty. Older adults are sensitive to temperature extreme because of deterioration in control mechanisms, reduced sweat gland activity, reduced amounts of subcutaneous fat and reduced metabolism.
- **Exercise:** Muscle activity causes increase metabolism by increasing carbohydrate and fat breakdown. Any



form of exercise can increase heat production and thus body temperature.

- **Hormone level:** women generally experience greater fluctuations in body temperature than men. Hormonal variations during menstrual cycle cause body temperature fluctuation.

Temperature changes occur in women during menopause.



- **Circadian rhythm:** Body temperature normally changes  $0.5^{\circ}$  to  $1^{\circ}\text{C}$  during 24 hour period. The temperature is usually lowest between 1.00 AM and 4.00 AM.
- **Stress:** Physical and emotional stress increases body temperature through hormonal and neural stimulation. These physiological changes increase metabolism, which increase heat production.
- **Environment:** Environment influences body temperature. In a very warm room, the body temperature will be elevated. In a cold weather, the body temperature may be low because of extensive radiant and conductive heat loss.

## Sites for assessing temperature

1. Oral
2. Rectal
3. Auxiliary
4. Tympanic route



## Types of thermometers

- Mercury – in glass thermometers
- Electronic thermometer



Electronic thermometer



Do you know who invented the first medical thermometer?

Sir Thomas Clifford Allbutt, English physician, the inventor of the short clinical thermometer.



Rectal Thermometer

## Purpose of taking temperature

To aid in diagnosis the patient's condition  
To find out the progress of the patient

## RECORDING ORAL TEMPERATURE

### Contraindications

- Oral temperature should not be taken immediately after the patient has had a hot or a cold drink or food.
- Oral temperature should not be taken for the following patients
  - Children below the age of five years
  - Patients receiving oxygen
  - Patients with nasal obstruction, dyspnea or sore mouth
  - Patient who are delirious, unconscious and not cooperating, hysterical, restless or mentally ill
  - Patients with oral surgeries



Recording oral Temperature

## Equipment

Tray containing

- 3 or 4 test tubes or bottles with antiseptic lotions (savalon %2) and a little cotton underneath
- A glass tumbler with clean water and little cotton underneath
- A bowl containing a bit soapy white wipers
- A small piece of clean cloth

- A kidney tray
- A paper bag
- Watch with second hand
- Red lead pen

## CONVERSION OF BODY TEMPERATURE



### Procedure

Explain the procedure take the patients cooperation

- Let the patient to sit or lie down.
- Remove thermometer from the lotion, was with clean water and dry with clean piece of cloth from the bulb upwards to prevent bacteria from setting down on the lower part which goes into the mouth of the patient.
- Shake down the mercury by a quick sudden movement of the wrist and bring down the mercury level to 95°F.
- Place the bulb of the thermometer under the tongue and tell the patient not to bite the thermometer but to hold it with his lip.
- Leave the thermometer in the mouth for 2 minutes (during this time take his pulse and respiration).
- Remove the thermometer and note the temperature clean the with soapy wiper from above downwards towards the bulb to prevent bacteria from spreading all over the thermometer.
- Collect the dirty soapy water in the kidney tray and place the dirty wiper in the paper bag.

- Replace the thermometer in the test tube or bottle with the lotion.
- Record the temperature in the chart.

### After care of the equipment

- Clean all the articles used.
- Wash the thermometer with soap and cold water.
- Keep the thermometer in the antiseptic lotion for 2 to 5 minutes.
- Reset the tray and keep it ready for the next use.

### Nursing care of individual with altered body temperature

#### Hyperthermia

- Tepid sponge bates.
- Bathing with alcohol – water solution
- Cooling fans.
- Allow rest period.
- Limit physical activity.
- Reduce external covering on patient's body to promote heat.
- Loss through reduction and conduction.
- Provide fluids (at least 3 liters per day) to replace fluids loss.
- Encourage oral hygiene because oral mucous membranes dry easily from dehydration.
- Provide measures to simulate appétit and offer well balanced metals.
- Provide supplemental oxygen therapy as ordered to improve oxygen to body cells.
- Control environmental temperature to reduce shivering. E.g. cooling fans.

#### Heat Stroke

The nurse teaches the patient:

- To avoid strenuous work in hot weather.

## Altered Body Temperature

**Hypothermia:** Heat loss during prolonged exposure to cold overwhelms the body ability to produce heat causing hypothermia.

**Heat stroke:** prolonged exposure to the sun or high environmental temperature can affect the body's heat loss mechanisms.

**Frost bite:** occurs when tissues freeze. This condition happens when you are exposed to temperatures below the freezing point in skin.

**False crisis:** A sudden fall in temperature not accompanied by an improvement in the general condition is called false crisis.

**Lysis:** The temperature falls in a zigzag manner for two of three days of a week before reaching normal during time, the other symptoms also gradually disappear.

**Continuous fever:** Constant fever or Continuous fever is one in which the temperature varies not more than two degrees from morning to evening and it does not reach normal for weeks.

**Remittent fever:** Remittent fever is a fever characterized by variations of more than two degrees from morning to evening but does not reach normal level.

**Low pyrexia:** In low pyrexia the fever does not rise above 99 to 100°F or 37.2 to 37.8°C

**High pyrexia:** The temperature remains between 103 to 105°F or 39.4 to 40.6°C

- To drink fluids such as clear fruit juices before, during and after exercise
- To wear loose cotton cloth.
- To avoid exercising in areas with poor ventilation.
- To wear protective hats over the head when going outdoors.

### Hypothermia

Educate patient to prevention to handle hypothermia


- Prevent a future decrease in body temperature.
- Remove wet clothes, provide dry ones and wrap the client in blanket.
- If the patient is conscious offer warm liquid such as milk or soups.
- Place the patient in a warm room.
- When the patient reaches emergency treatment, patients are closely monitored

for cardiac irregularities and electrolyte imbalances.

### 6.6.2 Pulse

The rhythmic dilation of an artery that results from beating of the heart. Pulse is often measured by feeling the arteries of the wrist or neck.

The pulse is regulated by the autonomic nervous system through the cardiac sinoatrial node. Parasympathetic stimulation of the SA node via vagus



Your adult heart beats about 100,000 times each day. Do the math, and that's at least one beat every second, or 60 to 100 times a minute, according to the American Heart Association.

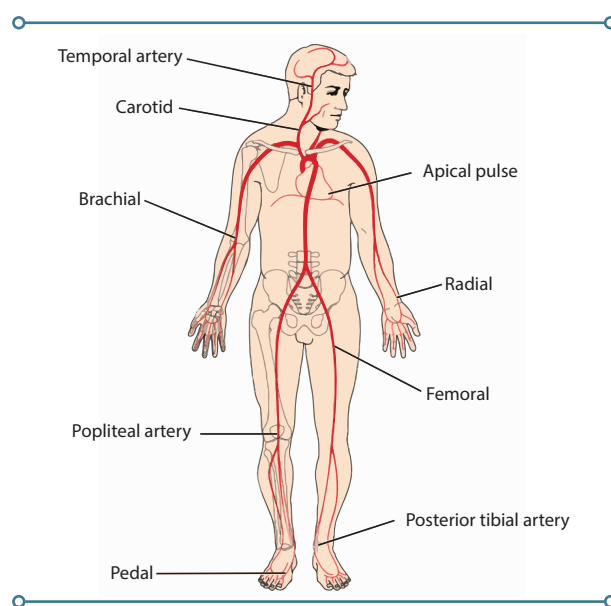
nerve decrease heart rate and sympathetic stimulation of the SA node increases the heart and force of contraction.

## ASSESSMENT OF PULSE

Any artery can be assessed for pulse rate, but the radial and carotid arteries are easily palpated.

## SITES FOR PALPATION OF PULSE

Site	Location
Temporal	Over temporal bone of head. Above and lateral to eye.
Carotid	Along medical edge of sternocleidomastoid muscle in neck.
Apical	Fourth and fifth intercostal space at left mid clavicle line.
Radial	Radial or thumb side of forearm at wrist.
Ulnar	Ulnar side of fore arm at wrist.



Sites for Palpation of Pulse

## Character of the pulse

Assessment of radial pulse includes measurement of the rate, rhythm, strength and equality.

## Rate

Pulse rate is counted for minute when the patient is in a sitting, standing and lying position.

## Rhythm

Normally a regular interval occurs between each pulse and heartbeat.

## Strength

The strength or amplitude of a pulse reflects the volume of blood ejected against the arterial wall with each arterial contraction.

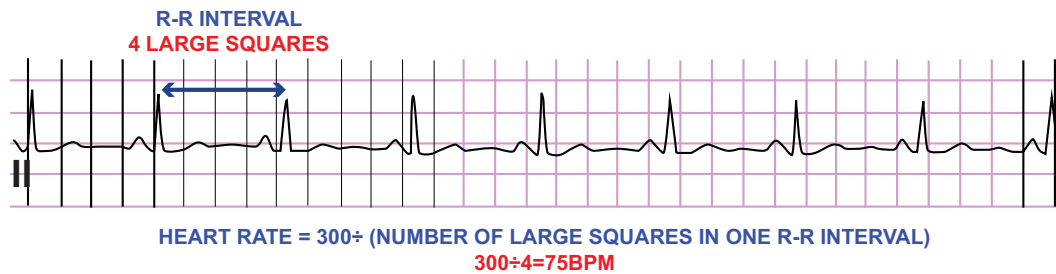
## Factors influencing pulse rate

- **Fitness level:** Short term exercise increases pulse rate. An athlete, who participates in long – term exercise will have lower pulse rate at rest.
- **Temperature:** Fever and heat increase pulse rate Hypothermia decreases pulse rate.
- **Emotion:** Pain and anxiety increase pulse rate.
- **Medication:** Epinephrine increase pulse rate. Digoxin decrease pulse rate.
- **Hemorrhage:** Blood loss increases pulse rate.
- **Body position:** In standing or sitting positions, pulse rate increases. In lying down position, the pulse rate decreases.
- **Pulmonary condition:** Caused poor oxygenation and decreases in pulse rate.

## Purpose of Recording pulse

- To test the health and efficiency of heart.
- To test the elasticity and the health of arteries.

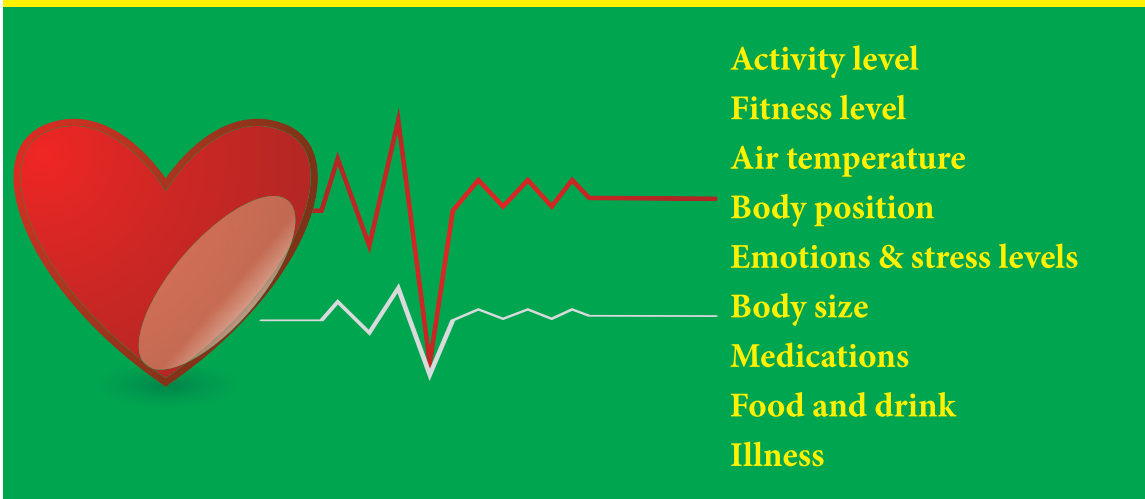
## HEART RATE (NORMAL ECG)



**HEART RATE = 75 BPM**

Normal Heart Rate = 70 to 80 BPM ( Beats per minute) in Adult

### Factors That Can Influence Heart Rate



- To get an approximately idea of how much blood is being pumped into artery system.
- To estimate the changes in the needs of body circulation.
- To understand the general condition of body, recovery, or death.
- To give emergency treatment if necessary.



#### STUDENT'S ACTIVITY

Mrs. king, an 87-year-old woman has been admitted with syncope. She lost her consciousness. What will be your assessment?

#### GENERAL INSTRUCTIONS

##### Procedure

- Watch to count the pulse
- Chart and pen for documentation
- keep the patient in a comfortable position

- Hold the wrist firmly, place first three fingers over the artery, and press it to make the pulsation distinct.
- Count the pulse for one minute.
- Note rhythm, volume and any other abnormalities.
- Record your observation.



Palpation of Pulse

#### Common Abnormalities in Pulse Rate

Rate	Number of beats per minutes
Tachycardia	Pulse rate too high
Bradycardia	Pulse rate too low
Rhythm	Regularity of pulse
Arrhythmias	Irregular or abnormal rhythm
Volume	Strength or intensity of pulse
Abnormal	Thready pulse, weak, strong and bounding

### 6.6.3 Respiration

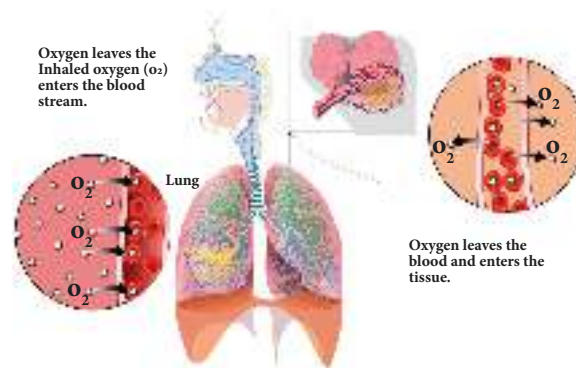
It is defined as the movement of oxygen from the outside environment to the cells within tissues, and the transport of carbon dioxide in the opposite direction.

Respiration involves: ventilation, diffusion and Perfusion

- **Ventilation** the movement of gases in and out of the lungs. The rate, depth and rhythm of ventilator movements indicate the quality and efficiency of ventilation.
- **Diffusion** is the movement of oxygen and CO<sub>2</sub> between the alveoli and the red blood cells.
- **Perfusion** is the distribution of red blood cells to and from the pulmonary capillaries.

**DO YOU KNOW?**

The average time an adult can hold her or his breath is between 30 to 60 seconds.



**DO YOU KNOW?**

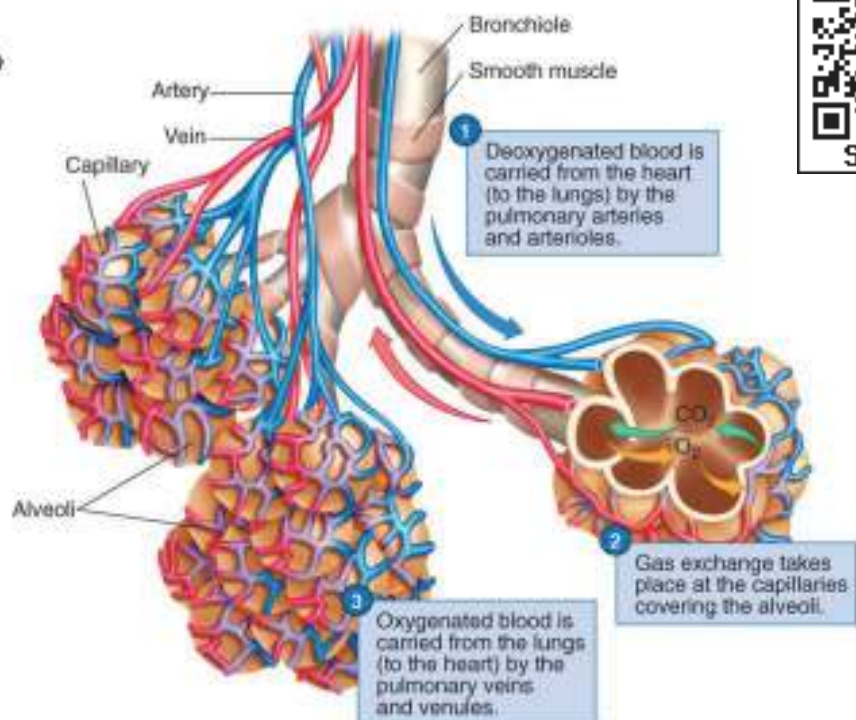
The lungs are the only organ that can float on water.

### Physiology of Respiration

The rate and depth of breathing can change in response to body demands. These changes are brought about by the the inhibition or stimulation of the respiratory muscles by respiratory centers in the medulla and pons.



## Physiology of Respiration



The most important factor in the control of ventilation is the level of  $\text{CO}_2$  in the blood. An elevation of  $\text{CO}_2$  in arterial blood causes the respiratory control system in the brain to increase the rate and depth of breathing.

Normal Respiratory Rate	
Age	Respiration Rate
< 1 Year	30–40
1–2 Years	25–35
2–5 Years	25–30
5–12 Years	20–25
> 12 Years	12–20

**DO YOU KNOW?** Assessment of respiration depends on

- Look for chest and abdomen movement.
- Listen and feel for airflow at the mouth and nose.

### Factors which regulate respiration:

- Respiratory center in the medulla.
- Nerve fibers of the autonomic nervous system.
- Chemical composition of blood.

### Procedure:

- Keep the patient in a relaxed and comfortable position.
- Try to count the respirations without the patient knowing that you are watching him or he may change the rate of respiration.
- Keep the fingers on the patient's wrist, as if for counting pulse and watch the rise and fall of the chest and abdomen or if the patient is sitting watch the movements of the shoulders.
- Chart the rate and record any abnormalities.



Assessment of Respiration



#### STUDENT'S ACTIVITY

A 68-year-old man was diagnosed with chest infection 10 years ago. He has a 40-year smoking history (is still smoking) and has been hospitalized twice due to chest infections during the last 12 months. He has trouble getting his breath. How do you assess the patient's condition?

### ALTERATION IN BREATHING PATTERNS

**Bradypnea:** The respiratory rate is abnormally slow (less than 12 breaths per minute) Occurs in coma due to cerebral hemorrhage or large doses of sedatives,

**Tachypnea:** The respiratory rate is abnormally rapid (greater than 20 breaths per minute)

**Apnea:** Respirations cease for several seconds.

**Hyper ventilation:** Rate and depth of respirations increase.

**Hypoventilation:** Rate is abnormally low and depth is shallow. Shallow respiration occurs in diseases of the lung such as pneumonia and pleurisy.

**Sighing or air hunger:** Indicates a need for more oxygen. Occurs in severe hemorrhage diabetic coma or due to stimulation of respiratory center by excess of acid.

**Wheezing:** Sound made during expiration may be due to obstruction in the lower respiratory tract as in the case of asthma.

**Stertorous breathing:** Noisy snoring inspiration occurs in unconscious patients which may be due to the tongue slipping back. Peculiar hissing respiration occurs in uremic coma.

**Orthopnea:** Inability to breathe easily unless in an upright position.

**Dyspnea:** Difficult breathing. If it is during inspiration it is due to laryngeal obstruction; if it is during expiration it is due to Asthma.

**Cheyne stokes or periodic breathing:** Alternative periods of hyperpnoea, occurring in a rhythmical cycle It is important to note this phenomenon as this is a serious sign.

**Asphyxia:** Occurs due to lack of oxygen supplied to the cells. This is found in drowning patients of persons who have inhaled poisonous gases.

### 6.6.4 Blood Pressure

Blood pressure (BP) is the lateral force on the walls of artery by pulsing blood under pressure from the heart. The heart's contraction forces blood under high pressure into the aorta. The peak of maximum pressure when ejection occurs is the systolic blood pressure. When the ventricles relax, the blood remaining in the arteries exerts a minimum diastolic pressure. Diastolic pressure is the minimal pressure exerted against the arterial walls at all times. The standard unit for measuring blood pressure is millimeters of mercury (mmHg). The BP is recorded with the systolic reading before diastolic.

E.g. 120/80 mmHg. 120 is systolic pressure and 80 is diastolic pressure. The difference between systolic and diastolic pressure is pulse pressure.

#### Physiology of BP

BP reflects inter relationship of cardiac output, peripheral vascular resistance. Cardiac output is the volume of blood pumped by the heart (stroke volume) in one minute.

- Cardiac output = heart rate  $\times$  stroke volume
- The BP depends on the cardiac output and peripheral vascular resistance (R).
- $BP = \text{cardiac output} \times R$

**Peripheral vascular resistance** is the resistance to blood flow determined by the vascular wall and diameter of blood vessels

when the diameter is less, the vascular resistance to blood flow is increased.

**Blood volume** the volume of blood circulating within the vascular system, affects BP. For adults, normal circulating blood volume is 5000 ml. If volume increases, BP elevates. E.g. rapid uncontrolled intravenous fluid. When circulating volume falls, blood pressure falls. E.g. hemorrhage, dehydration.

**Elasticity:** normally the arterial walls are elastic and easily distensible. In diseases such as arteriosclerosis, lose their elasticity and cannot stretch wall. When the blood is forced into blood vessels, due to the rigid blood walls, the systolic pressure rises.

**DO YOU KNOW?** Under normal conditions autonomic reflexes stabilize an individual's blood pressure from the lying to sitting/standing positions.

#### Factors influencing variations in BP

- **Age:** Normal BP levels vary throughout life. Big children have higher BP than smaller children of same age.
- **Stress:** Anxiety, fear, pain and emotional stress result in increase in heart rate resulting in increasing BP.
- **Race:** Certain races are more prone for high BP genetically and environmentally.
- **Medication:** some medications can affect BP directly or indirectly.
- **Diurnal variation:** BP levels vary over the course of a day. BP is lowest in the

early morning gradually arises during morning and afternoon and peaks in evening.

- **Gender:** After puberty males tend to have higher BP. After, menopause, women tend to have high BP. BP is measured by sphygmomanometer.

### Purposes of Monitoring BP

1. To aid in the diagnosis of the patient's condition.
2. To guide in his treatment.
3. To evaluate the patient's progress.

### General instructions

1. See that the patient is relaxed and is a comfortable position.
2. Help to take blood pressure for patients with the following conditions:
  - New patients.
  - Pre and post-operative patients.
  - Antenatal and post-natal patients.
  - Patients with shock and hemorrhage.
  - Patients with cardiac conditions and hypertension.
  - Patients with neurological disorders.
3. Record pulse along with blood pressure.
4. Blood pressure is taken at the same arm, same time, and same posture daily.

### Equipments

1. Sphygmomanometer
2. Stethoscope
3. Pen



Sphygmomanometer



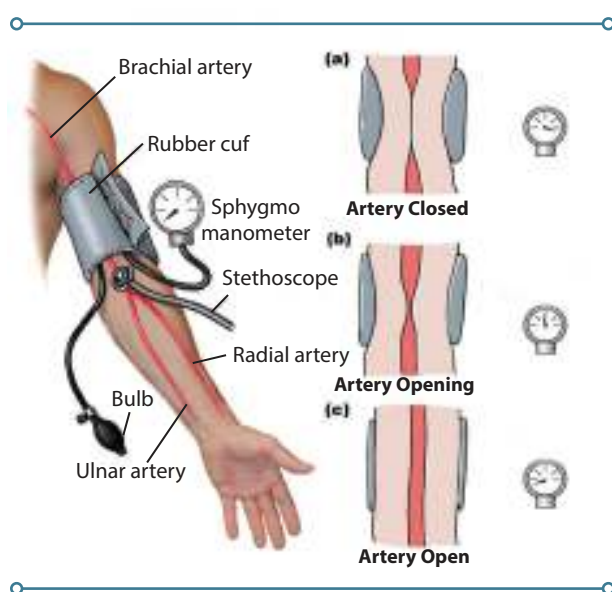
Do you know who invented the BP apparatus?  
The sphygmomanometer was invented by Samuel Siegfried Karl Ritter Von Basch in 1881.

### Guidelines for taking BP

- The sphygmomanometers generally used in clinical setting are mercury type. And aneroid type. The mercury type sphygmomanometers are more reliable than the aneroid type sphygmomanometers. The aneroid sphygmomanometer gives blood pressure reading on dial indicator.
- Systolic pressure is increased in pressure induced by systolic contraction and diastolic pressure is decrease in pressure induced by diastolic relaxation of the left ventricle of heart.
- Never take blood pressure when the patient is excited, exhausted and just after exercise, smoking or meals.
- Allow the patients to rest for five minutes before taking blood pressure.

- Do not use the extremity that is injured, diseased, paralyzed, receiving intravenous infusion or when a female patient is with radical mastectomy on the same side.
- When the arm cannot be used to measure the blood pressure, the thigh can be used being a good alternative site.
- Always take the blood pressure reading on the same side and in the same position to maintain consistency.
- Place the site (arm or leg) about the level of heart while taking blood pressure.
- The apparatus should be in working order. The cuff should be of appropriate size (12 – 14 cm for arm and 18 – 20 cm for thigh) and deflated before wrapping around the patient's site.
- While taking blood pressure, certain sounds are heard in sequence. These are called as korotkoff sounds and are described as under.

**Tapping:** The faint clear sounds that gradually become louder, the first tapping sound may be followed by an absence of sound (auscultator gap) and indicates systolic pressure reading.



**Systolic Pressure** is the top number. It represents the pressure as your heart contracts to pump blood to the body.

**Diastolic Pressure** is the bottom number. It represents the pressure between beats, when your heart relaxes.

**Murmuring:** The low swishing sounds that increase with cuff deflation.

**Knocking:** The crisp, clear sounds that occur with each heart beat.

**Muffling:** Abrupt change of sound indicates first diastolic pressure reading

**No sounds:** The sound disappears and indicates second diastolic pressure reading. When deflating the cuff to take the readings, deflate the cuff to 0. Do not stop in between and start inflating again as this gives a false reading.

Note the variations in blood pressure.

### Procedure:

- Explain the procedure to patient. See patient is relaxed and is in a



### STUDENT'S ACTIVITY

When you are working the day shift at medical ward. Sally Sims, a 72-year-old female was admitted to your unit with hypertension. What is your plan of assessment?

comfortable position. Support the arm.

- Expose the arm and keep it extended.
- Apply the end of the cuff with the rubber bag over the brachial artery two inches above the elbow.
- Apply the end of the cuff smoothly and snugly around the upper arm. Tuck the end neatly.
- Place the sphygmomanometer in position.
- Stay with the patient until the procedure is over.
- Remove the cuff from the patient's arm, roll neatly and replace in the box. See patient is comfortable.
- The reading is recorded in the chart.
- Systolic pressure is always written over the diastolic pressure E.g. 80/120mmHg.

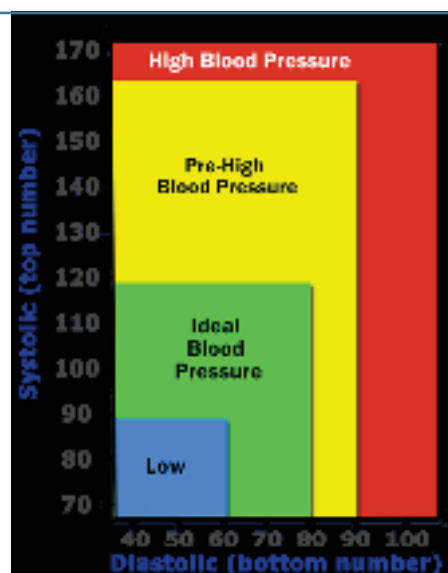


Recording of Blood Pressure

### Variation in BP

**Hypertension:** Elevated or high blood pressure is known as hyper tension. Hyper tension is a major factor causing deaths from strokes and myocardial infarction (Heart arrest)

**Hypotension:** When the systolic pressure falls to 90 mm Hg or below, that condition is known as hypotension.



### 6.6.5 Pain

It is a distressing feeling often caused by intense or damaging stimuli. Because it is a complex, subjective phenomenon, defining pain has been a challenge.



### STUDENT'S ACTIVITY

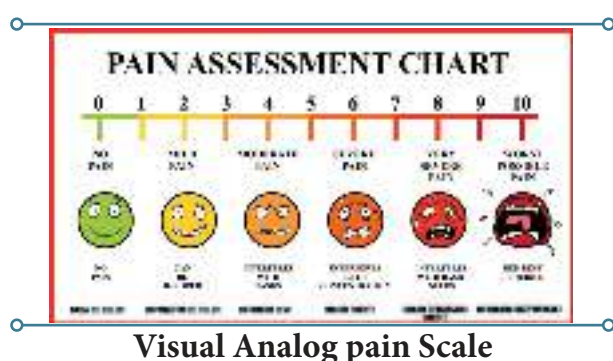
A 42-year-old woman has complained the severe pain in the lower quadrant of the abdomen for 6 hours. She has had nausea and vomiting for two days. She was pale and painful. How do you assess the patient's condition?

### Characteristics of pain:

1. **Severity:** Ranges from no pain to excruciating pain
2. **Timing:** duration and onset of pain
3. **Location:** body area involved.
4. **Quality:** what the patient feels the pain is
5. **Personal meaning:** how affects the persons daily life.

### Pain Assessment:

A pain scale measures a patient's pain intensity or other features. Pain scales are based on trust, cartoons (behavioral), or imaginary data. Self-report is considered primary and should be obtained if possible.



### 6.6.6 Testing and Examination Urine

The physical **characteristics of urine** include observations and measurements of color, turbidity, odor, specific gravity, pH and volume. Visual observation of a urine sample can give important clues as to evidence of pathology. The color of normal urine is usually light yellow to amber.

### Urine Testing:

The nurse often collects urine specimens for laboratory testing. The type of test determines the method of collection. Specimen collection: The nurse collects random. Clean voided or mid stream, sterile, and timed specimens.

**Specific gravity:** The specific gravity is the weight or degree of concentration of a substance compared with an equal volume of water

**Urine culture:** A urine culture requires a sterile or clean voided sample of urine. It takes approximately 24 to 48 hours

### Characteristics of Normal Urine

	CHARACTERISTIC	DESCRIPTION
	AMOUNT	1-2 liters, depending on intake
	COLOR	Straw/amber (darker, more concentrated)
	SPECIFIC GRAVITY	<b>1.010-1.025</b> MEASURE OF DISSOLVED MATERIAL IN URINE. LOWER VALUE = MORE DILUTED URINE
	pH	DIET HAS BIGGEST EFFECT ON URINE pH 4.6 6 8.0
	COMPOSITION (MAKEUP)	95%  5%  &
	NITROGENOUS WASTES	UREA – AMINO ACID METABOLISM CREATINE – FROM MUSCLE METABOLISM URIC ACID – FROM NUCLEIC ACID METABOLISM

before the laboratory can report findings of bacterial growth.

### Urine test for sugar

Purposes of Sugar test: Testing the urine for the persons and the amount of sugar provides the doctors with information about the amount of insulin needed by the patient.



### Preparation of the patient:

1. On the previous day explain the procedure to the patient.
2. Explain the patient when the urine to collect how to collect and the amount to be collected.
3. Provide an appropriate container and demonstrate to him how to use it
4. Instruct him not to contaminate the out side of the bottle.
5. Ask the patient to wash the internal genitalia with soap and water and rinse it with water.
6. If the patient is unable to do himself the nurse assists him.

### Preparation of articles

Correct collection and preparation of urinary specimens for diagnostic testing contributes to accurate test results. Bedside tests for urine glucose and

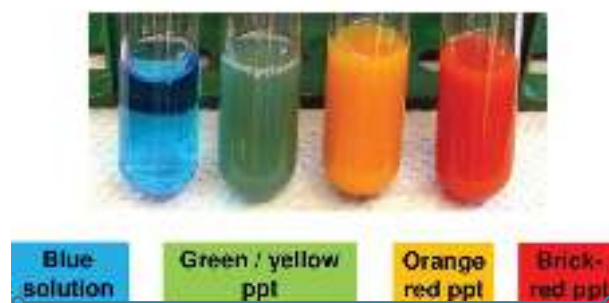
acetone must be done precisely according to the direction to obtain accurate results. Timing of reading is crucial and the result may be incorrect if the reading is taken too early or too late.



### Patient condition:

Presence of sugar in the urine is glycosuria  
Presence of ketone in the urine is ketonuria.

### Benedict's Test Results



### Sample of the Label

Name of the Patient: \_\_\_\_\_  
Ward/Bed No. \_\_\_\_\_  
Age: \_\_\_\_\_ Sex: \_\_\_\_\_  
OP/IP. \_\_\_\_\_  
Name of Specimen: \_\_\_\_\_  
Nature of Test to be Done: \_\_\_\_\_  
Date of Collection: \_\_\_\_\_

## ABNORMALITY OF STOOL

Blood in stool different forms are,

**Haematochezia:** Passage of bright red blood per rectum mixed with 'or' without stool, ex:haemorrhoids, anal fissure & fistula, trauma, ischemic colitis, diverticulitis, polyps, malignancy etc.

**Melena:** Characteristics are black tarry (sticky) stool (use to production of acid haematin). Offensive (acid haematin is altered by bacteria). Semisolid in consistency. Red coloured fluid comes out from the. Usually associated with vertigo, dizziness 'or' syncopal attack during defecation.

**Occult Blood Causes are:** Intake of NSAID, hookworm infestation & colorectal cancer etc.

## SPUTUM

Sputum is the mucous secretion from the lungs, bronchi and trachea. It is important to differentiate it from saliva, the clear liquid secreted by the salivary glands in the mouth, sometimes referred to "spit". 30 ounces of mucus produced/day.

Healthy Individuals do not produce sputum. Clients need to cough to bring sputum up from the lungs, bronchi, and trachea into the mouth in order to expectorate into a collecting container. Document amount of sputum collected, color, odour consistency (thick, tenacious, watery) and presence of haemoptysis.

## CONCLUSION

Health assessment includes physical assessment, mental status examination, laboratory investigation. Techniques of physical assessment are inspection, palpation, percussion, manipulation, auscultation and observation. Vital signs are measurements of the body's most basic functions. The four main vital signs routinely monitored by medical professionals and health care providers include the following: Body temperature, Pulse rate, Respiration rate, Blood Pressure. Vital signs are useful in detecting or monitoring medical problems. Vital signs can be measured in a medical setting, at home, at the site of a medical emergency, or elsewhere.



## ICT Corner

### Respiratory System

Through this activity you will explore the structure and function of the Respiratory system



- Step 1:** Use the URL to reach the 'Respiratory System' page. Surf the grid and select 'Nasal cavity' and explore the nasal cavity structures and functions.
- Step 2:** Then reach the 'Respiratory System' page by clicking back button on the top of the window or use the 'Backspace' key. Select 'Pharynx' from the grid and explore the anatomical regions of pharynx.
- Step 3:** Follow the above steps and explore each and every parts and their functions of respiratory system.
- Step 4:** Use the reference given below the page to acquire additional details about Respiratory System.

Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## ICT Corner

### Hospital Care for Children

Through this activity you will be understand the procedures of First Aid.



**Step – 1** This is an Android app activity. Open the Browser and type the URL given (or) Scan the QR Code. (Or) search for “WHO Hospital Care for Children” in google play store.

**Step -2** (i) Install the app and open the app, (ii) click on the Menu “GUIDELINES”,

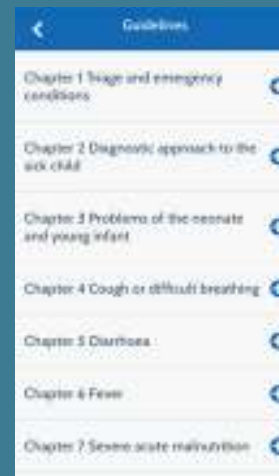
**Step - 3** In the opened page “Guidelines” click the menu “Browse by Chapter ” and then select any “Chapter”



Step 1



Step 2



Step 3

\*Pictures are indicative





## EVALUATION



### I. Choose the correct answers (1 mark)

1. You can count respirations while,
  - a. Taking Temperature
  - b. Recording Blood pressure
  - c. Reflex testing
  - d. None of the Above
2. The taking vital signs includes,
  - a. Temperature
  - b. Pulse
  - c. Respiration
  - d. All of the above
3. The most accurate temperature is obtained when taken,
  - a. By oral
  - b. At Axilla
  - c. At Groin
  - d. At rectum
4. Which one is normal blood pressure?
  - a. 170/80 mmHg
  - b. 150/90mmH
  - c. 120/80 mmHg
  - d. 100/110 mmHg
5. When counting the pulse rate, you may use the pulse at what points?
  - a. Carotid artery
  - b. Radial artery
  - c. Apical area of heart
  - d. None of the above
6. Bradycardia is a pulse rate below
  - a. Below 60 bpm
  - b. Below 100 bpm
  - c. Above 120 bpm
  - d. Above 100 bpm
7. An irregular pattern of heartbeats is called a
  - a. Sinus tachycardia
  - b. Sinus bradycardia
  - c. Arrhythmias
  - d. Atrial fibrillation
8. When a person has a normal body temperature it is called,
  - a. Afebrile
  - b. Pyrexia
  - c. Hyperpyrexia
  - d. None of the above
9. When one is exposed to extreme heat for long periods of time, it may result in
  - a. Heat stroke
  - b. Frost bite
  - c. Hypothermia
  - d. Pyrexia
10. An instrument placed against a patient's chest to hear both lung and heart sounds.
  - a. Sphygmomanometer
  - b. Otoscope
  - c. Telescope
  - d. Stethoscope

## II. Write short answers (3 marks)

1. Define Respiration.
2. What is mean by Reflex testing?
3. List down the four principles physical examination.
4. Define Frost bite.
5. Which are the routes of recording temperature?
6. Mention two purposes Blood pressure recording.
7. What is mean by Resonant?
8. List out the characteristics of pain.
9. Difine Tachycardia.
10. Mention three purposes of urine testing.

## III. Write short notes (5 marks)

1. Explain the factors affecting blood pressure.
2. Discuss the different techniques of health assessment.
3. Describe the abnormalities of pulse.
4. Write brief note on urine testing
5. Explain the abnormal breath sound.

## IV. Write an essay for the following questions (10 marks)

1. Explain about Head -Foot Assessment.
2. Discuss about alteration in body temperature.

## A-Z GLOSSARY

<b>Olfaction</b> – (நுகர்தல்)	- Sense of smell
<b>Reflex testing</b> – (அனிச்சை செயல் பரிசோதனை)	- Measure the presence strength of reflexes
<b>Hypothermia</b> – (உடல் வெப்பம் குறைதல்)	- Heat loss during prolonged exposure to cold.
<b>Resonant</b> – (ஒத்ததிர்வு)	- A loud sound over the normal lung tissue.
<b>Tympanic</b> – (டிம்பேனிக்)-	A drum like sound over the air-filled tissues such as gastric air bubble
<b>Frost bite</b> – (பனிகடுப்பு)	- This condition happens when you are exposed to temperatures below the freezing point in skin.
<b>Lysis</b> – (லைசிஸ்)	- The temperature falls in a zigzag manner for two of three days of a week before reaching normal during time, the other symptoms also gradually disappear
<b>Tachycardia</b> – (டேக்கிகார்டியா)	- Pulse rate too high (PR more than 100/min)
<b>Bradycardia</b> – (பிரடிகார்டியா)	- Pulse rate too low (PR less than 50/min)
<b>Apnea</b> – (ஏப்னியா)	- Respirations cease for several seconds.
<b>Tachypnea</b> – (டேக்கிபினியா)	- The respiratory rate is abnormally rapid (RR more than 32/min)
<b>Bradypnea</b> – (பிரடிபீனியா)	- The respiratory is abnormally slow (RR less than 12/min)
<b>Wheezing</b> – (வீசிங்)	- Sound made during expiration
<b>Murmur</b> – (மர்மர்)	- The low swishing sounds that increase with cuff deflation.

## SUGGESTED PRACTICAL'S

Demonstration of various technique of physical examination.

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Patrica PA Fundamental of nursing, 7th edition Mosby St Louis Missouri 2009.

# Unit 7

## FIRST AID

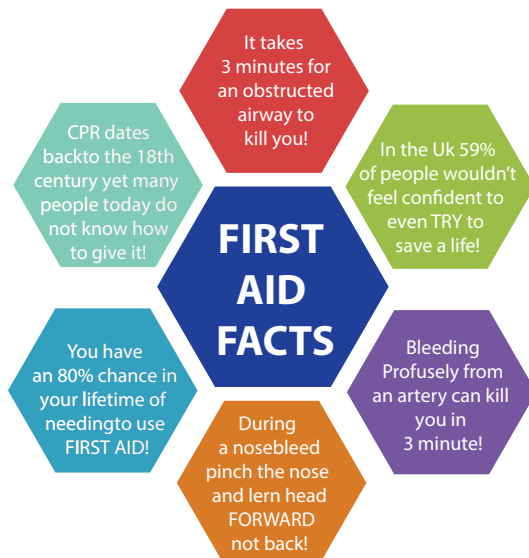


### LEARNING OBJECTIVES

At the end of this chapter students will be able to:

1. Define First Aid
2. List out the principles of First Aid
3. Discuss the first aid measure in shock
4. Explain the immediate management of drowning
5. Describe the plan of action for wound and fracture hemorrhage
6. Apply the skill various extreme heat abnormalities
7. Discuss the immediate management of poisoning
8. Demonstrate the skill in CPR technique.

Safety brings first aid to the uninjured  
– F.S Hughes



### 7.1 INTRODUCTION

Not a day goes by that there is not some potential for injury, illness, or sudden health emergency to occur in the places

where we live, work, learn, and play. While many of these situations require no more than a Band-Aid, others are more serious and may even be life-threatening. Knowing what to do when an accident happens or when someone becomes suddenly ill can help ensure that minor injuries don't develop into major medical conditions. More importantly, it can save a life.

First aid was being practical from ancient times. It was the famous surgeon who was the first to conceive the idea of first aid. He was **General Esmarch (1823 – 1908)**.

In 1877 **St John Ambulance Association** of England was formed. In 1920, **The Red Cross society** of India was established with more than 400 branches all over India.

## 7.2 DEFINITIONS

**Medical Aid:** refers to treatment by a doctor either on the spot at home or in hospital

**First Aid:** It is the immediate and temporary care given to an injured or sick person until the services of a qualified doctor are obtained with such material as may be available. The first aid is not an end by itself. It indicates that the person is in need of a secondary aid. First aid is based on the knowledge of biology, medicine and surgery. It can be a lifesaving skill.

**First aider:** The person who renders emergency service on the spot until the medical aid is obtained.

A sound knowledge based on first aid enables a nurse to give skilled services during accidents and sudden illness to preserve life promote recovery and prevent injury or illness being aggravated until the medical aid has been obtained.

## 7.3 RULES AND PRINCIPLES OF FIRST AID

### Golden Rules of First Aid

- Do first things first, quickly, quietly and without panic.
- Reassure the casualty and his relatives sympathetically.
- Is there any failure of breathing? If yes start artificial respiration.
- Is there any failure of circulation? If yes start external cardiac massage.
- Is there self the cause of the accident is still there, remove it or the casualty from danger.

- Be calm, Methodical and quick but gentle in handling the casualty. (4)
- As far as possible keep the casualty where he is until everything is ready for transporting him.
- Look for the following and treat this first (a) Failure of Breathing. (b) Bleeding. (c) Unconsciousness
- Reassure the casualty and others present to reduce shock.
- See that the casualty is in best position to aid recovery.
- Clear the crowd tactfully. The casualty needs fresh air. Any other first aider present may help you. Get help also to call the police, direct traffic etc as needed.
- Diagnose injuries and give first aid that is essential. Make use of available first aid equipment's. If there is none, improvise the material at hand.
- Arrange for medical aid as soon as possible, for careful transport, and for informing relatives.
- Stay with the casualty, continuing to observe and give care until handing over to the doctor.
- Do not attempt too much: do the minimum first aid so that the conditions does not become worse and life can be saved.
- Do not remove clothing unnecessarily, as this may add to shock.
- Do not give anything by mouth to a casualty who is unconscious, who may have an internal injury or who may soon be given an anaesthesia.

## 7.4 FIRE

Rapid clear thinking at the fire is vital. Fire spreads very quickly, so warn any people



at risk, and alert the emergency services immediately.

If arriving at a fire or burns incident. STOP, OBSERVE and DO NOT RUSH IN. There may be flammable or explosive substances such as toxic fumes or a risk of electrocution.

During fire DO NOT use lifts in any circumstances.

### Leaving A burning building

- Activate fire alarm you see
- Close each door behind you as you go
- Do not run, but walk quickly and calmly.

### Fire on Cloth

- a. STOP the casualty panicking or running around or outside, any movement or breeze will fan the flames.
- b. DROP the casualty to the ground.
- c. If possible WRAP the casualty tightly in a coat, curtain, blanket, rug or heavy fabric

- d. ROLL the casualty along the ground until the flames have been smothered.
- e. If the water or another non- flammable liquid readily available, lay the casualty down with burning side upper most, and extinguish the flames by dousing him in plenty of the liquid.

## 7.5 BURNS AND SCALDS

Burns result from dry heat, extreme cold, corrosive substances, friction or radiation including sun rays.



Scalds are caused by wet heat from hot liquids and vapours.

## Degrees of burns

### Degree of Burn



## Types of burns

### TYPES OF BURNS

- **Thermal**  
exposure to flame or a hot object
- **Chemical**  
exposure to acid, alkali or organic substances
- **Electrical**  
result from the conversion of electrical energy into heat. Extent of injury depends on the type of current, the pathway of flow, local tissue resistance, and duration of contact
- **Radiation**  
result from radiant energy being transferred to the body resulting in production of cellular toxins

**DO YOU KNOW?**

### Do you Know the facts in Burns?

- DO NOT break blister or otherwise interfere with the injured area
- DO NOT apply adhesive dressings or adhesive tape to the skin. The burn may be more extensive than the first
- DO NOT apply lotions and ointments to the injury; they can further damage the tissue and increase the infection.

## Minor burns and scalds

Small and superficial burns are often caused by domestic accidents. Most can be treated by a First Aider and will heal naturally.

### Treatment includes

- Flood the injured part with cold water for at least 10 minutes
- Gently remove any jewellery, watches, belts or constricting clothing
- Cover the area with a sterile dressing or some other clean material like plastic bag or kitchen film

## Major burns and scalds

The longer the burning continues, the more the injury will be.

### Treatment includes

- Lay the casualty down and protect the burned area from the ground
- Douse the burn with plenty of cold water for at least 10 minutes

- Watch for signs of difficulty in breathing and shock
- Gently remove any jewellery, watches, belts or constricting clothing
- Cover the area with a sterile dressing or some other clean material like plastic bag or kitchen film
- Monitor and record for breathing and pulse rates
- Reassure the casualty and treat for shock

## 7.6 FRACTURE

A break is a break or crack in a bone.



### Causes

**Direct force-** A bone may break at the point where a heavy blow is received.

**Indirect force;** - may be produced by a twist or a wrench a trip or stumble can break a leg bone.

### Types of fracture

Simple fracture	This is the clean break or crack in the bone
Comminuted fracture	This type of fracture produces multiple fragments
Greenstick fracture	A split in a young immature bone is common in children
Open fracture	In a open fracture the overlying skin is broken

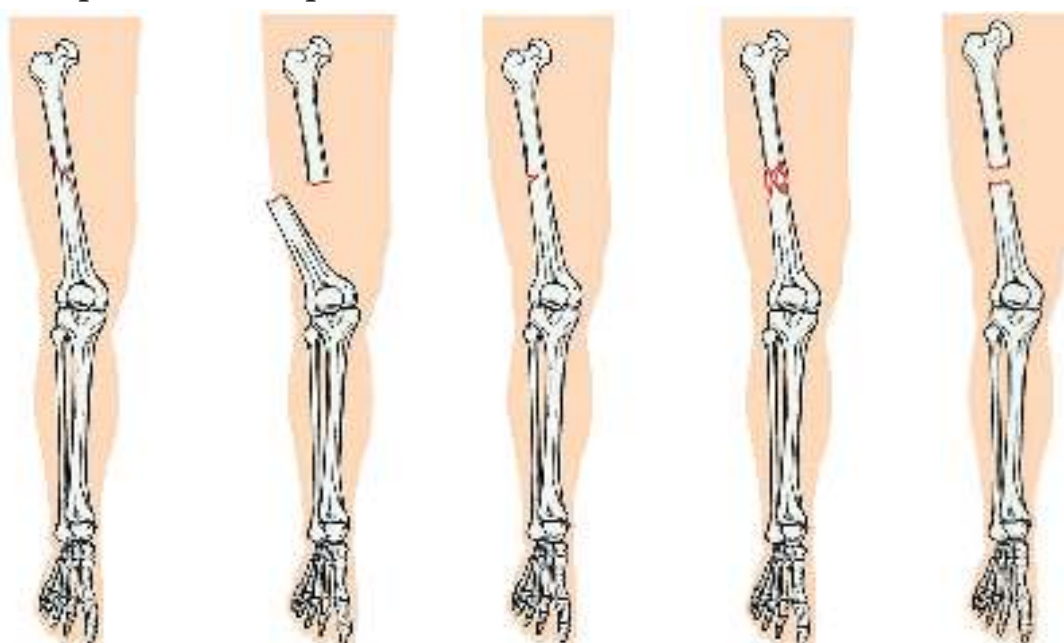
Simple

Open

Greenstick

Comminuted

Closed



Closed fracture	The surrounding skin is unbroken but internal injury to surrounding tissue.
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### Signs and symptoms

- Difficulty in moving a limb normally.
- Pain at or near the site of injury, made worse by movement.
- Tenderness over a bone if gently touch is a sign of fracture.
- Distortion, swelling and bruising at the site of the fracture.
- Coarse grating of the bone end may be heard or felt.
- A shortening, bending, or twisting of the affected limb.

### To Remember

- DO NOT move the casualty until the injured part is secured and supported unless he/she is in danger
- DO NOT let the casualty eat or drink
- DO NOT try to replace a disclosed bone into its socket

## TREATMENT



### For open fracture

- Cover the wound with clean pad or sterile dressing, apply pressure to control the bleeding.
- Without touching an open wound with your fingers, carefully place some clean padding over and around the dressing.
- Secure the dressing and padding. Bandage firmly, but not tightly that the circulation is impeded.
- Immobilize the injured part as for a closed fracture

### For the closed fracture

- Tell the casualty to keep still, steady and support the injured part with your hands until it is immobilized.
- For firmer support, secure the injured part to a sound part of the body. And bandage from the uninjured side.



### STUDENT'S ACTIVITY

On a walk through your neighborhood with friends, you find a man lying on the ground under a ladder. He is in obvious pain and his arm is clearly broken, with a piece of bone protruding from the skin. How to handle the situation?

- Check the circulation beyond any bandages every minute.



## STUDENT'S ACTIVITY

What you will do with the victim has shallow and rapid breathing, fainting with feeble pulse and fall of blood pressure.

## 7.7 SHOCK

Shock is a syndrome that results from a decrease in effective circulating blood volume in the body as a result of injury or illness. It can vary from faintness to complete collapse.

### Shock can lead to;-

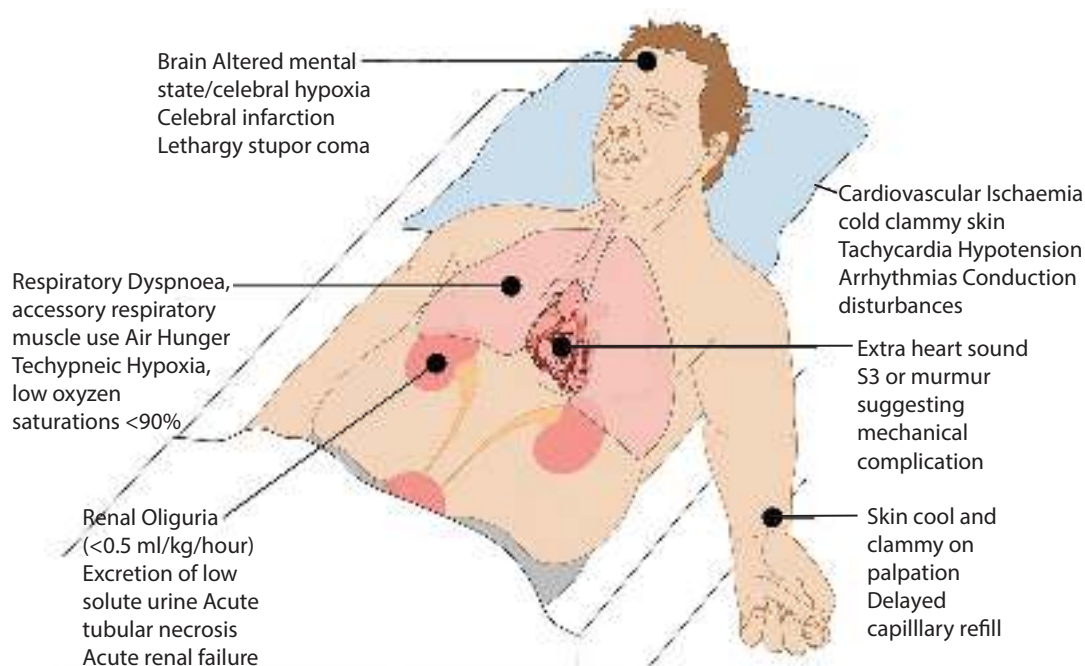
- Early loss of consciousness that mainly involves the nervous system and that may be fatal.
- Progressive loss of blood from active circulation, which may lead to falling heart output and insufficient oxygen to cells that are vital for survival.
- Sustained lowered blood pressure which may lead to liver and kidney failure.

### Causes of shock;-

- Severe or extensive injuries
- Severe pain
- Loss of blood
- Severe burns
- Electric shock
- Exposure to extreme heat and cold
- Allergic reaction
- Bites or stings
- Gas poisoning
- Emotional illness.

### Symptoms;-

- Casualty is anxious and restless
- Weakness and fainting
- Giddiness & disorientation
- Shallow, rapid or gasping breathing
- Skin become pale, cold and clammy




### Signs:-

- Pulse rate increased
- Blood pressure falls
- Pupils are dilated
- Lustreless eyes
- Shaking and trembling of arms and legs
- Unconsciousness may develop.

Types of Shock	
<b>Neurogenic</b>	Spinal or head injury resulting in loss of nerve control
<b>Haemorrhagic</b>	Loss of blood due to wound and internal bleeding.
<b>Respiratory</b>	There is an insufficient amount in the blood due to inadequate breathing
<b>Cardiac</b>	Cardiac muscle not pumping effectively due to heart attack
<b>Metabolic</b>	Loss of body fluids with a change in biochemical equilibrium
<b>Septic</b>	Severe infection can cause septic shock
<b>Anaphylactic</b>	Severe allergic reaction of the body to sensitization by a foreign protein

### Management

- Immediately reassure and comfort the casualty.
- Body positioning for shock.

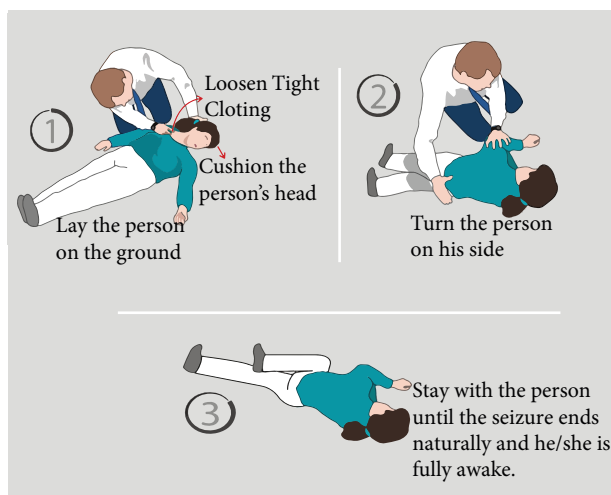


- DO NOT let the casualty smoke, eat drink, or move unnecessarily. If he complains of thirst moisten her lips with little water.
- DO NOT leave the casualty unattended.
- DONOT try to warm casualty with a hot water bottle or any other direct source of heat.

- Normally the lower extremities should be elevated. By gravity this reduce the blood in the extremities and may improve the blood supply to the heart.



- If there are indications of the head injuries, the head could be raised slightly to reduce pressure on the brain.
- If there are breathing difficulties, the victim may be more comfortable with head and shoulders raised
- Loosen the tight clothing to help the circulation and assist breathing.
- Treats the cause of shock, stop bleeding, immobilize fracture.
- If breathing and heart beat stop then;-
  - Establish the airway
    - Begin resuscitation immediately.
    - Keep patient in recovery position.



- Transport the client to the hospital immediately.

## 7.8 DROWNING

Drowning causes asphyxia by water entering the lungs or by causing the throat to go into spasm so constricting the air passages.



### Effects of drowning; -

Drowning is a major source of accidental death and can be a result of cold, fatigue, injury, disorientation, intoxication etc.,

The drowning victim struggles to inhale air as long as possible, but eventually he goes beneath the water where he /she must exhale air and inhale water and it also leads to.,

- Airway obstruction
- Asphyxia
- Congestion of lungs
- Hypothermia

### Signs and symptoms; -

- Uncontrollable gasping on entering the water, with the consequent risk of water inhalation.
- A sudden rise in blood pressure which can precipitate a heart attack.
- Sudden inability to swim
- Hypothermia.

### Management: -

#### 1. Reaching the victim:

- Pull the patient from the water using rope, branch, fishing pole, stick, towel, shirt.
- Lie down flat on your stomach and extend your hand or leg.
- Throw him an object that will float with line i.e tyre, foam, cushion logs boards.
- Make sure that your own position is safe.
- Use boat and life jacket if available.
- Tow the victim to the shore.



#### 2. stabilization of the victim in the water:

- Keeping the victims head and body aligned., place one of your hands in the middle of his

/her. Your arm directly your hands in the his /her back. Your arm directly over the victim's head.

- b. Place your other hand under the victim's upper arm, near the shoulder.
- c. Slowly and carefully rotate the victim over in the water by lifting the shoulder up and rotating it over.
- d. Support the victim in the neutral position in water start mouth to – mouth ventilation.



### 3. **Resuscitation:**

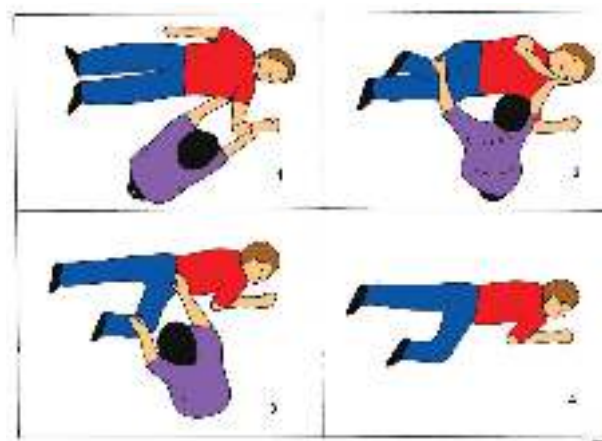
- a. Quickly remove any obstruction such as sea-weed, mud from the nose and mouth.
- b. If with in your depth use one arm to support the casualty body and use the other hand to support the haed and seal the nose while you perform mouth to mouth ventilation.
- c. Turn the victim face down with head to one side and arms stretched beyond his head.
- d. Use postural drainage to clear water aspiration.
- e. Check breathing and heart beat and continue resuscitation.
- f. As soon as breathing begins keep casualty in recovery position.

- g. Remove wet clothing keep the body warm cover with blankets.
- h. Shift him to hospital in recovery position.



### STUDENT'S ACTIVITY

While swimming in a country pond, one Scout jumps from a rock ledge and does not come back up to the surface. The other Scouts notice he is gone, jump in, and pull him out. He is not breathing and has a gash on his forehead that is bleeding profusely. What you will do with this condition?



**Recovery Position**

## 7.9 WOUNDS

Any abnormal break in the skin or the body surface is known as a wound. Open wounds allow blood and other fluids to be lost from the body and germs to enter.

### Types of wound

<b>Incised wound</b>	A clean cut from a sharp edge
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## Types of Wound



### Types of Wound

<b>Laceration</b>	Crushing or ripping forces result in rough tears or laceration
<b>Abrasion</b>	This is a superficial wound in which the top layers of skin are scraped off.
<b>Contusion</b>	A blunt blow or punch can rupture capillaries beneath the skin
<b>Puncture wound</b>	Standing on a nail or being stabbed
<b>Gunshot wound</b>	A bullet or other missile may drive into or through the body.

#### Treatment

- Make the patient sit or lie down.
- Handle the injured part gently.
- Wash the wound with clean water and soap. Always clean away from the wound.
- Remove as much dirt or foreign matter as possible.
- Wash the wound with antiseptic lotion.
- Stop any bleeding by using direct pressure or by applying a tourniquet.
- Apply antiseptic solutions (dettol) and dust wound with sulphonamide powder.
- If the wound is gaping, apply strips of adhesive plaster to bring the edges together.
- Apply a clean dressing and bandage.
- If necessary treat for shock.
- Give pain reliever, if policy permits.
- Support the arm in sling when necessary.



### STUDENT'S ACTIVITY

A boy zigzagging on a bicycle is hit by a car. He receives a cut on his left forearm that severs an artery. He also sustains a simple fracture of his right leg.

**How do act for it?**

## 7.10 HAEMORRHAGE

Haemorrhage or bleeding is a flow of blood from an artery, vein or capillary. Accompanies an accident in which a wound, a fracture or damage to organs occurs.



There are three different types of hemorrhage or bleeding,

### Arterial bleeding

- Blood is bright red in color
- It spurts at each contraction
- Flow is pulsatile

*Falling teaches us to walk safely.*

### Venous Bleeding

- Blood is dark red in color
- It does not spurts
- Steady flow.

### Capillary Bleeding.

- It does not spurt
- Slow but even flow

### MANAGEMENT

#### 1. Apply direct pressure to the bleeding wound:

- Apply firm pressure over the wound. Use a sterile or clean bulky pad and apply it firmly with hand pressure. Apply a bandage to keep the dressing in place.

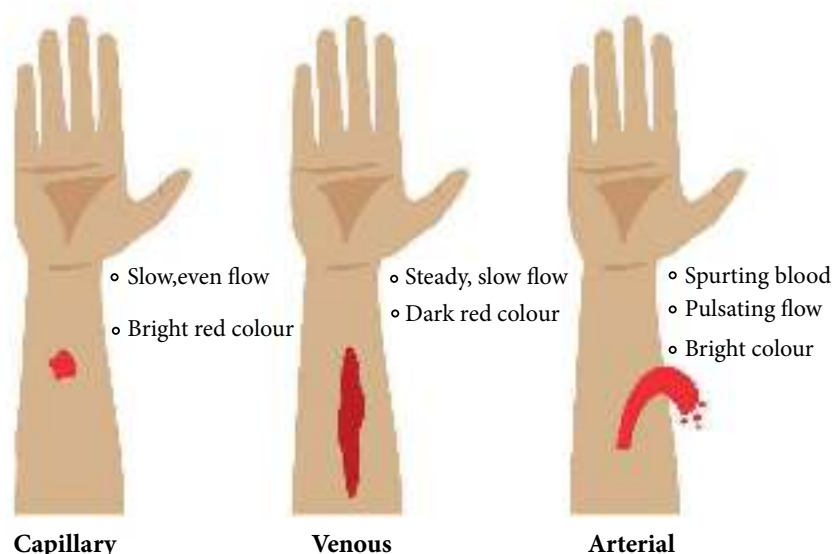
#### Caution.....?

DO NOT apply a tourniquet it can worsen the bleeding and may result in tissue damage

DO NOT give the casualty anything to eat or drink

DO NOT touch or attempt to remove embedded foreign body

## Hemorrhage Classification



- If bleeding is severe, DO NOT waste time looking for suitable padding, but be prepared to use the patient's hand or your hand to hold the wound together if the patient is unable to do this unaided.



## 2. Raise the injured area

- If the wound is on a limb, raise it in a supported position to reduce blood flow to the injured area.
- If an arm is injured, you could apply an arm sling or elevation sling.

Try to avoid any direct contact with the patient's blood or other body fluids. Use disposable gloves if possible. If gloves are not available, place your hands inside a plastic bag.

- If there has been any contact with blood or any other body fluids, wash your hands or any blood splashed on the skin thoroughly with soap and water as soon as possible after the incident.
- If you are concerned about a possible risk of infection, obtain advice from your doctor as soon as possible.



## 3. If a foreign body is embedded in the wound:

- DO NOT remove it but apply padding on either side of the object and build it up to avoid pressure on the foreign body.
- Hold the padding firmly in place with a roller bandage or folded triangular bandage applied in a criss-cross method to avoid pressure on the object.



## 4. Keep the patient at total rest:

- Even if the injury involves the arm or upper part of the body, the patient should rest in a position of greatest comfort for at least 10 minutes to help control the bleeding.

### 5. Seek medical assistance:

- If the wound appears to be minor and the patient is able to travel by car, arrange an urgent appointment with a local doctor to assess and treat the injury.
- If the injury is severe or the patient is very unwell – call 108 for an ambulance as soon as possible.
- While waiting for an ambulance to arrive, observe the patient closely for any change in condition.

### 6. If blood leaks through the pressure pad and bandage:

- Apply a second pad over the first. Use a tea towel or similar bulky fabric and apply maximum pressure to the area.
- For major uncontrolled bleeding quickly remove the blood-soaked pad and bandage then replace with a fresh bulky pad and bandage. The continuing bleeding may be due to the pad slipping out of position when the first bandage was applied.



## NOSE BLEED

A blow to the nose, flying at high altitude, or scuba diving may all cause a bleeding nose. For a child, always check whether there is a foreign body present – e.g. a

bead or coin. If this has occurred, seek prompt medical advice and DO NOT try to remove the object yourself because this may cause further damage.



### Management

1. Sit the casualty down with her head held well forward.
2. Ask the patient to breath through her mouth and to punch her nose just below the bridge. Help her if necessary.



### Caution.....?

DO NOT let her head back, blood may run down her throat and induce vomiting

3. Tell her not to speak, swallow, cough, spit or shift.
4. Give her clean cloth or tissue to mop her dribble.
5. After ten minutes, tell the casualty to release the pressure. If her nose is still bleeding reapply the pressure for the further periods of ten minutes.
6. Once the bleeding is under control and with the casualty still leaning forward

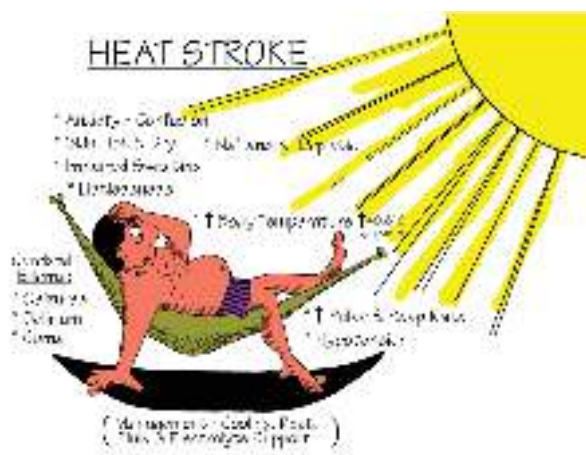
gently clean around her nose and mouth with luke warm water.

7. Advise the casualty to rest quietly for a few hours and to avoid exertion and in particular not to blow her nose as this will disturb any clot.

## EFFECTS OF EXTREME HEAT

### 7.11 HEAT STROKE

- It occurs when body can no longer controls its temperature by sweating and can quite suddenly.
- It is caused by very high environment temperature or illness like malaria.
- Exposure to heat and humidity for long time
- Prolonged confinement in hot atmosphere.
- Consumption of alcohol



Heat Stroke

**The signs and symptoms of heat stroke are as follows:**

Body is very hot with temperature (up to 40°C)

No sweating

Full bounding pulse

Headache

Dizziness

Nausea and vomiting

Muscular Cramps

Dry flushed, hot skin



### STUDENT'S ACTIVITY

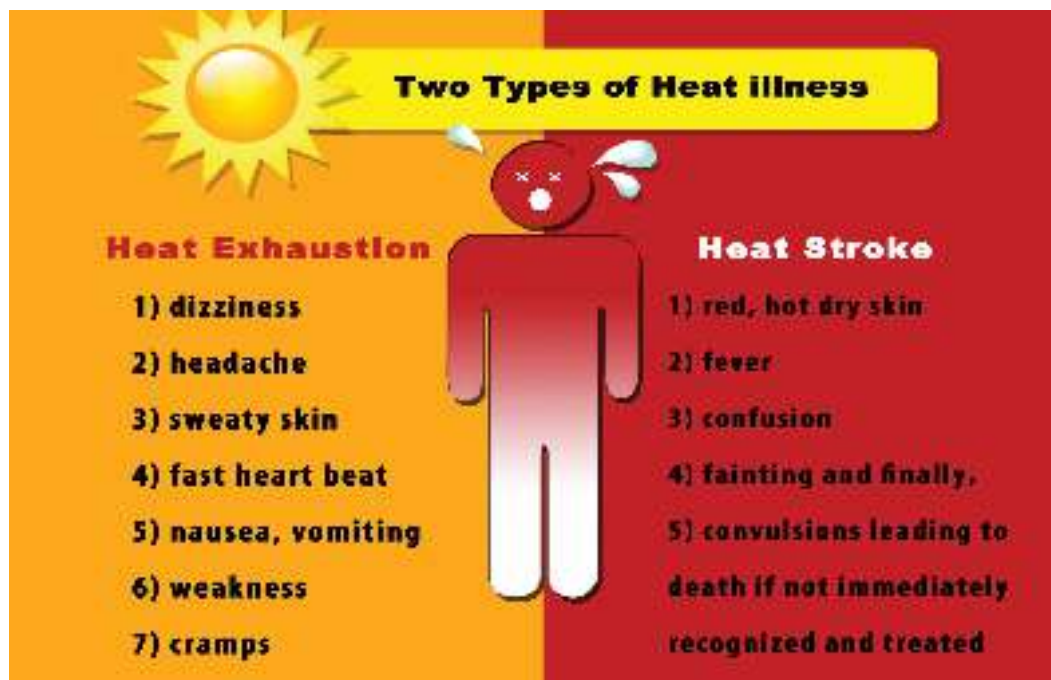
**You come across a man who looks very pale and weak and is breathing rapidly. His skin is extremely warm to the touch, he seems confused and irritable, and his speech is not clear. You notice his water bottle is empty. How to handle the situation?**

### Management

- Move the casualty to cold place and remove the clothing.
- If the casualty is conscious, then place him in half sitting position with head and shoulders supported.



- If the casualty is unconscious, then place in recovery position.
- Wrap the casualty in a wet sheet and keep it wet. Fan should be on. pour water all over the body. Cold sponging should be started
- Replace the body fluids. Give cold water to drink
- Apply ice cap with ice pieces over the head and neck.
- Cold water enema can be given



- If required, shift him to hospital.

## 7.12 HEAT EXHAUSTION

- It occurs after heavy and prolonged sweating with failure to replace salt and water on a hot day.
- It occurs in hot and humid environment

### Signs and symptoms

- Exhaustion and restlessness
- Headache
- Tiredness, nausea, dizziness
- Pallor
- Skin may remain cold and clammy.



### STUDENT'S ACTIVITY

On an extremely hot day, several Scouts are sitting on a fence in front of their high school, watching a parade. One of the Scouts falls to the ground. His face is hot, dry, and flushed, and his pulse is exceptionally rapid. His left ear is torn and bleeding profusely.

**How to handle the situation?**

- Muscle cramps in lower limbs
- Pulse is rapid and weak
- Fainting.

### Management

- Remove casualty to cooler place in fresh air
- Lay him down and loosen all clothing's
- Give him plenty of cold water with little salt in it (1 teaspoonful to ½ litre of water)
- If he /she is unconscious, then keep him in recovery position and shift to hospital immediately

## 7.13 HEAT CRAMPS

- Heat cramps, a type of heat illness, are muscle spasms that result from loss of large amount of salt and water through exercise.



- Heat cramps are associated with cramping in the abdomen, arms and calves. This can be caused by inadequate consumption of fluids or electrolytes.

### Treating Heat Cramps

#### Identify when you have a heat cramp.

Heat cramps are painful muscle spasms that result from dehydration, typically due to exercising or working in hot environments. Heat cramps are not simply caused by heat or being in a hot environment, as the name might suggest. Intense sweating from the exertion results in a loss of both fluid and the electrolytes (salt) needed for proper muscle function.

**Stop exercising.** Heat cramps are not something you “push through” during exercise. That are body’s way of telling that it needs a break. The first step to treat a heat cramp is to cease the exercise routine or activity that led to the cramp.

#### Rest in a cool environment

Heat cramps are most commonly associated with overexerting yourself in the summer heat. If this is the case, get out of the sun as well. Find a cooler spot in the shade or indoors and give yourself time to rest and cool down.

- You can help your body cool down by applying a wet towel to the back of your neck.

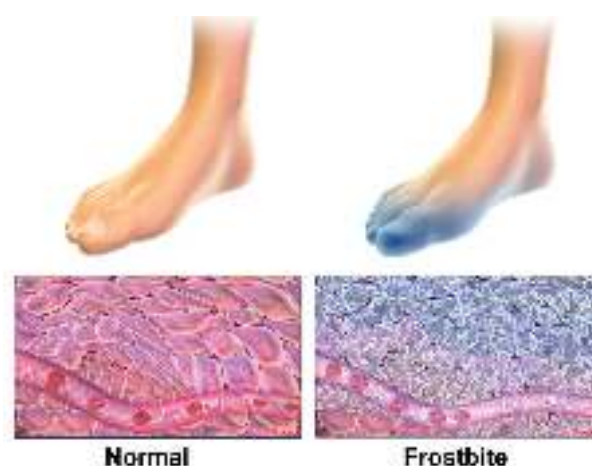
#### Drink plenty of fluids

The cramp is a response to dehydration and loss of electrolytes, so you should also drink lots of fluids while you rest, preferably a sports drink (Gatorade, etc.) or an electrolyte beverage such as Pedialyte. Sports drinks with 25 – 200 mg of sodium are best.

- Clear juice is also an option that will provide both the fluids and electrolytes you need.
- If all you have available is water, then dissolve a quarter or half teaspoon of regular table salt into one quart of water. It might not taste as good as a sports drink, but it will do the trick.
- Perform gentle stretches to the affected muscle group.
- Help make the cramp go away more quickly by gently stretching the muscle group. Use range-of-motions stretches rather than intense stretches. This will help reduce the spasming and pain in the muscles.

### 7.14 FROST BITE

This condition usually occurs in freezing and often dry and windy conditions. Frost bite occurs when the ears, nose, chin, hands and feet are exposed to prolonged or intense cold. Frostbite is often accompanied by hypothermia.



DO NOT put affected part by direct heat, it is danger of it refreezing.  
DO NOT warm the part very fast.

## Signs and symptoms

- At first, “pins-and-needles”
- Paleness followed by numbness
- A hardening and stiffening of the skin.
- A color change to the skin of the affected area. First white, then mottled and blue, eventually black on recovery red, hot painful and blistered.

## Management: -

- Very gently remove gloves rings and other constriction, such as boots
- Warm the affected part with your hands in your lap or in the casualty armpit. Avoid rubbing because it can damage skin and tissue.
- Warm the affected part with your hands in your lap or in the casualty armpit. Avoid rubbing because it can damage skin and tissue.
- Move the casualty into warm before you thaw the affected part, carry her if possible when the feet is affected.
- Place the affected part in warm water
- Dry carefully, and apply a high dressing of fluffed-up, dry gauze bandage.
- Raise and support the limb to reduce swelling.



### STUDENT'S ACTIVITY

On at extreme cold, an adult starts experiencing paleness, followed by numbness. Hardening and stiffening of the skin. He then started to see color changes in skin, what could be your plan of action?

## 7.15 BITES & STINGS

### Snake bite

Bites from sharp pointed teeth cause deep puncture wounds that can carry germs far into the tissues. Snake bite results in punctured wounds caused by the fangs of a snake.



### Signs and symptoms

- A pair of puncture marks.
- Severe pain at the site of the bite
- Redness and swelling around the bite
- Nausea and vomiting
- Labored breathing in extreme cases
- Disturbed vision.
- Increased salivation and sweating.

### Examples of Snakebites



Venomous Snake



Nonvenomous Snake

### Treatment

- Reassure the casualty.
- Lay the casualty down. Tell her to keep calm and still.



## DON'T



Take the patient to a tantrik or a snake charmer for treatment



Suck the wound



Cut the wound open



Tie ligatures around the wound



Burn the wound



Apply herbal pastes over the wound



## DO



Immobilize the affected limb



Apply basic first aid (Wash the wound with soap & Water)



Rush the patient to the nearest hospital that can deliver Tetanus Toxoid, Anti-venom and emergency care



### STUDENT'S ACTIVITY

On casualty if you receive the person with a pair of punch marks and severe pain at the site of the bite. He shows redness and swelling around the bite. What do you think is going on?

- Wash the wound well and pat dry with clean swabs.
- Lightly compress the limb above the wound with a roller bandage.
- Immobilize the injury.

### SCORPION STING

Stings are usually being painful rather than dangerous. Some people are allergic to stings and can rapidly develop the serious condition of anaphylactic.



### Symptoms and signs

- Itching swelling
- Burning pain
- Increased sensation or numbness
- Lacrimation
- Salivation
- Nausea and vomiting
- Profuse sweating



### Treatment

If the sting is on the extremity apply a tourniquet proximal to the site of the sting and release it every 5 to 10 minutes.

Apply ice pack on the region to slow down the absorption of poison.

Shift the patient to hospital



### 7.16 POISONING

A poison is a substance which if taken into the body in sufficient quantity, may cause temporary or permanent damage. Poison may be swallowed, inhaled, absorbed through the skin.

#### First aid for poisoning

- To maintain the airway
- Patients must be send to a hospital or a doctor
- Preserve packets or bottles, which was suspected to contain the position.

#### Caution.....?

DO NOT induce vomiting, if it is often ineffective and it may cause the casualty further harm.

#### If the victim is unconscious

- Do not induce vomiting
- Make the causality lie on his back or on a hard flat bed without any pillow and turn the head to one side.
- If breathing is very slow or stopped, start artificial respiration and keep it up, till the doctor comes/respiration gets restored.

### FOOD POISONING

This may be caused by eating food that is contaminated by bacteria or toxin produced by the bacteria that were already in food.

#### Signs and symptoms

Nausea and vomiting  
Cramping abdominal pain  
Diarrhea  
Headache or fever  
Features of shock  
Collapse

#### Treatment

Help the casualty to lie and rest.

Give the casualty plenty of water to drink and bowl to use if she vomits

### 7.17 FOREIGN BODIES

Any object, large or small, that finds its way into the body either through a wound in the skin or via one of the body's orifices such as the ear, nose, eye, vagina or rectum is called as foreign body



#### EAR; -

If any object become lodged in the ear, it can create temporary deafness by blocking the ear canal

#### Treatment

- Reassure the casualty and sit her down
- Gently flood the ear with tepid water so that the insect floats out.
- The insect will float up and can be removed easily.
- If there is nothing floating up, leave it alone. Do not meddle.



**DO NOT** attempt to remove the object you may cause serious injury and push the foreign body even further.

5. Never pour the water and irrigate the ear since this may cause damage to the ear drum, for blockage due hardened blocks take to him to the doctor.

## EYE

A speck of dust, loose eye lash or even a contact lens can literally float on the white of the eye and is usually easily removed, however anything that sticks to the eye, penetrates the eye ball, or rest on the colored part of the eye.

Foreign body in Eye



## Treatment

1. Advice the casualty not to rub the eye.
2. Sit her down facing the light
3. Gently separate the eyelids with your finger and thumb

4. Examine every part of the eye

## NOSE

1. Young Children often insert foreign bodies such as button pencil and beads into nose.
2. Unless it is obviously easy to remove the foreign body the nurse should not try to remove.
3. The child should be warned not to inhale through her nose because this provokes the danger of drawing the foreign body further upward.
4. Advice mouth breathing until removing the foreign body. Refer the child to the doctor.



**Foreign body in Nose**

## THROAT

Small objects like safety pin, irregular objects, fish bone or prawn lodged or obstruct the throat. The nurse should refer the victim to the doctor.



**Foreign body in Throat**

DO NOT give the casualty anything to eat or drink

### 7.18 ACCIDENTS

Road accident range from a fall from a bicycle to a major incident with many casualties. Often the accident site will present serious risk to safety largely because of passing traffic. It is essential to make the area safe to protect yourself and other road users

#### Check the casualty

- Quickly assess the casualty shift them only if they are in danger, then do lifesaving treatment.
- Deal with the life saving condition first.
- Search the area thoroughly, so that you do not overlook a casualty

#### For an unconscious casualty

- Assume there is neck injury until proved otherwise.
- Support the head and neck with your hands, so that the casualty can breathe freely.
- Apply a collar if possible.
- Treat any life-threatening injuries.
- Monitor and record breathing, pulse and level of response every ten minutes.

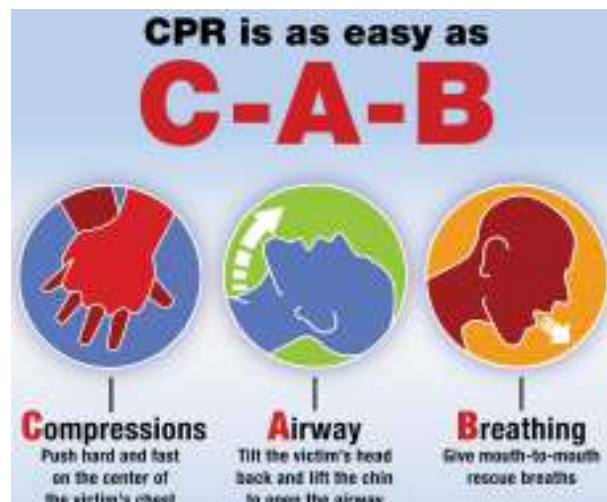
#### For a casualty trapped under a vehicle

- Mark the exact position of the vehicle and the casualty first.
- The police will need this information.
- Try to find help to lift or move the vehicle and only if it is absolutely necessary, drag the casualty clear.

### 7.19 CARDIO - PULMONARY RESUSCITATION (CPR)

#### Checking the response

- On discovering a collapsed casualty, you should first establish the whether he /she is conscious
- A fully unconscious casualty client will not respond at all
- The casualty response to pain try gently pinching the skin.
- Observe **A.B.C** of resuscitation  
**A = Airway,**  
**B = Breathing,**  
**C = Circulation.**



#### Open the airway

- Open the victim's airway
- There are three methods to open the airway: the preferred head – tilt/chin – lift, the head – tilt/chin – lift, or the jaw thrust without head – tilt.
- To use the head – tilt/chin – lift method, place your hands that is closest to the victim's head on his forehead and tilt his head slightly. Place the fingertips of your other hand under his lower jaw on the bony part near the chin. Gently lift the chin up, taking care not to his mouth.

- To use the head – tilt/chin – lift method, place the palm of your hand that is closest to the victim's head on forehead and your other hand under his neck. Place the hand lifting his neck close to the back of his head to minimize cervical-spine extension.



#### Air way

- Then gently press back on his forehead while lifting up and supporting his neck.
- Use the jaw – thrust without head – tilt method if you suspect the victim has a neck or spine injury. Kneel at the victim's head, facing his feet.
- Listen for any air movement and look to see if his chest or abdomen is moving up and down. Feel with your chest for any flow of air. If the victim has started to breathe, maintain airway until help arrives.

#### ■ Giving mouth to mouth respiration

- With the casualty lying flat on his back remove any obvious obstruction., including broken or displaced dentures from the mouth.
- Open the airway by tilting the head and using two fingers to lift the chin.

- Close the casualty's nose by pinching it with your index finger and thumb. Take full breath, and place your lips around his mouth making a good seal.
- Blow into the casualty's mouth until you see the chest rise. take about two seconds for full inflation.



#### ■ Mouth -To – mouth Respiration

- Remove your lips and allow the chest to fall fully, which takes four seconds. Repeat this once and then assess for the sign of circulation.
- When you see the victim's chest rise, then fall, you will know that air is entering and escaping his lungs.

#### ■ Giving chest compression

- Check the victim's carotid pulse for ten seconds.
- Kneel beside the casualty. locate one 4th and 5<sup>th</sup> intercostal space
- Place the heel of your hand on the breast bone That is the where you should apply pressure.
- Place heel of your first hand on top of the other hand, and interlock your fingers.

- e. Leaning well over the casualty with your arms straight, press vertically down and depress the breastbone approximately 5-4 cm. Release the pressure without removing hands.
- f. Compress the chest 15 minutes aiming for a rate of 100 compression per minute. Then give two breaths of artificial ventilation.
- g. If you are only rescuer, time your compressions at a rate of 100 a minute. Count, "one two and three and four and five and ..." Up to the count of fifteen.
- h. Then deliver two quick breaths without allowing the victim to exhale between them.
- i. Perform CPR for 1 minute; check the victim's pulse then quickly telephone for help if none has arrived. Return quickly and resume CPR. If there is no phone available, continue CPR.

### Cardiopulmonary resuscitation for small children

- a. Use adult CPR techniques for children older than 8 years. In emergency, of course, you are not going to delay CPR until you determine the child's age. Instead, consider his body size relation to the size of your hand.



**Cardiopulmonary Resuscitation**

- b. For example, if looks too small to use both hands for cardiac compression, use the heel of one hand. If he is too small for that, use two, three fingers.
- c. If he has a small face, place your mouth over his mouth and nose, when ventilating, give only enough air to make the child's chest rise.
- d. Try to palpate the child's carotid pulse. If you find a pulse. Do not give cardiac compression but do ventilate the child a rate of one breath every 4 seconds.
- e. If you can't locate a pulse, find the proper location for compression. Use the same technique you would for an adult.
- f. Then compress about 1 to 1. ½ inches (2.5 to 3.8 cm), using the heel of one hand (as shown).

## 7.20 BANDAGES AND SLINGS

Bandages have a number of purposes they are used to hold dressing in position over wounds, to control bleeding, to support and immobilize injuries, and reduce the swelling.

### General Rules for bandaging

- a. Reassure the casualty and explain clearly what you are going to do.
- b. Bandages should be applied firm enough to keep dressing and splints in position.
- c. But no so tight as to cause injury to the part or to impede the circulation of the blood.
- d. A bluish tinge of the finger or nails may be a danger sign that the bandages are too tight.
- e. Loss off sensation is another sign.

## Types of bandages

1. Triangular bandages.
2. Roller bandages
3. Tubular bandages

## Triangular bandage

The triangular bandage may be used in nursing for slings to support an arm after injury.



Triangular Bandages



### STUDENT'S ACTIVITY

A driver is speeding along a country road when one of his tires blows out. The car crashes into a pole. The driver receives a simple fracture of the right forearm and a gash on his right shoulder, causing arterial bleeding.  
**Tell the response!**

## Roller bandages

Roller bandages are used for the following purpose.

- a. To cover and to retain dressing and splints in position.
- b. To exercise pressure on a part in order to prevent or to reduce swelling.
- c. To provide support for a part, sprained or dislocated

- d. To prevent and control hemorrhage.
- e. To restrict movement.
- f. To correct deformity.

## Applying Roller Bandage

1. Use a tightly rolled bandage or the correct width.
2. Support the part to be bandaged throughout.
3. For the forearm, the hand should be prone.
4. Always stand in front of the patient except when applying a cape line bandage.
5. Bandage a limb in the position in which it is to remain.
6. Hold the bandage with the head uppermost and apply the outer surface of the bandage to the part, never unroll more than a few inches of bandage at a time.
7. Bandage from within outwards and from below upwards, maintain even pressure throughout.
8. Begin the bandage with a firm oblique turn to fix it and allow each successive turn to cover two thirds of the previous one, with the free edges lying parallel.
9. Make any reverse or a crossing a line on the outer side of the limb, expect, when this brings them over a wound or prominence of bone, in which case, they must be on the front of the limb.
10. Pad the axilla or groin when bandaging these parts, so that, two of two surfaces of skin do not touch beneath the bandage.

11. Finish off with a straight turn above the part, hold in the end and fasten with a safety pin.

### Terms used in roller bandaging

1. Simple spiral
2. Reverse spiral
3. Figure of eight
4. Spica



**Roller Bandages**

### Simple spiral

It is used for parts which are of uniform thickness, such as a finger or a wrist.

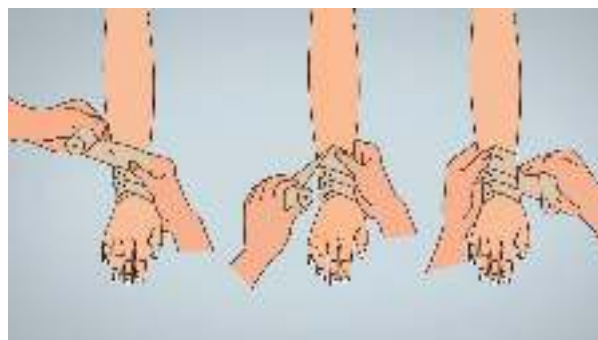
The bandage is applied obliquely round the part, each turn cover two thirds ( $2/3$ ) of the proceeding one, and the edge being kept parallel.



**Simple spiral**

### Reverse spiral

It is used for parts which vary in thickness and upon which the bandage of circular turns cannot be tied properly like leg and forearms. One or two simple spiral turns are usually made to carry the bandages to the point at which the spiral can no longer be employed. The bandage is then reversed and brought down and carried round the former one. These reverses are repeated as far as necessary and the bandage completed with one or two.



**Reverse spiral**

### Figure of Eight

Is used for bandaging limb and for covering joints. In consists of series of



**Figure of Eight**

loops, encircling the part in the form of a figure of eight. The upper loops being completely hidden by the successive turns and the lower loops forming the pattern. Each one covers the two thirds of the preceding loop and crossing in the same line.

### Spica

Is a form of the figure of eight in which one turn is very much larger than the other. It is used for joints at right angles to the body. E.g.: shoulder, groin and thumb



Spica

### Wrist, forearm upper arm bandages

The wrist and forearm are bandaged by use of the simple and reverse spiral until the elbow is reached.



### Bandages for the foot, ankle and leg

If the patient is in bed, the heel should be elevated on a support, about 6 inches high. If he is up and about, he should be seated in a chair with the foot supported on a stool or another chair. To avoid stooping, the nurse may, if she prefers sit opposite to the patient and take his foot on her knee.



Foot and ankle bandage

### Head and other bandage

#### Cape line bandage

The bandage is, sometimes, used when the whole scalp is to be covered; a double headed roller bandage is used. The patient should be seated and the nurse should stand behind the patient. Place a center of the outer surface of the bandage in the center of the forehead, the lower border of the bandage lying just above the eyebrows. The bandage is completed by a circular turn round the head and pinned in the center of the forehead.



Cape line bandage

### Ear bandage

Lay the outer surface of the bandage against forehead and carry the bandage round the head in one circular turn, bandaging away from the injured ear. Towards the sound side, carry the bandage round to the back of the head, low down in the nape of the neck again, repeat these.



Ear bandage

### Eye bandage

Lay the outer surface of the bandage against the forehead and take the circular turn round the head, bandaging away from the injured eye. Carry the bandage on, round side for the second time. Take it obliquely to the back of the head, under the prominence at the back of the skull and from there bring it upwards beneath the ear of the affected side, over the pad of the circular turn and continue.



Eye bandage

### Tubular gauze bandage

This is a special form of tubular bandage, which can be applied with an applicator to any part of the body, it is ideal for small dressing on hands and limbs.

1. Inspect the nails to see, if there is any bluish colour. A bluish colour shows that there is a dangerous tightening of splint or plasters and therefore, free flow of blood is not possible.
2. If the casualty is not wearing a coat, place a soft pad under the neck portion of the sling to prevent rubbing of the skin in that place.

### Collar and cuff sling

This sling is used to support the wrist only.

1. The elbow is bent and the forearm is placed across the chest in such a way that the fingers touch the opposite shoulder. In this position, the sling is applied.
2. A clove hitch is passed round the wrist and the ends tied in the hollow above the collar bone on the injured side.



Collar and cuff sling

## Triangular sling

A triangular sling is used in treating a fracture of the collar bone. It helps to keep the and raised high up, giving relief from pain due to the fracture.

1. Place the forearm across the chest with the figures pointing towards the opposite shoulder and the palm over the breast bone.
2. Place an open bandage over the chest, with one end over the hand and the point beyond the elbow.
3. Tuck the base of the bandage comfortably, under the forearm and hand.
4. Fold the lower end, also round the elbow and take it up and cross the back over the uninjured shoulder and tie it with the other free hand into the hollow, above the collar bone.
5. Tuck the point between forearm and bandage,
6. Tuck the fold, so formed, backwards over the lower half of the arm and fix it with a safety pin.



Triangular sling

## 7.21 FIRST AID KIT

The box should be labeled clearly with **Red Crossing** and “First Aid” should be written on it. The box should be kept away from children

- a. It should contain
- b. Triangular bandages
- c. Rollar type bandages
- d. First aid dressing
- e. First aid dressing
- f. Sterilized small dress
- g. adhesive plaster



- h. Safety pins (6 packets)
- i. Roller bandages
- j. Cotton wool small pocket
- k. Eye pad
- l. Small scissors
- m. Small forceps

## CONCLUSION

First – aid is the immediate and temporary care given to an injured or sick person until the medical aid is obtained. The objectives of first – aid are to save life and to avoid further injury.



## ICT Corner

### Body Fluids and Circulation

Through this activity you will be able to understand the 'Phases of Cardiac Cycle'.



- Step 1:** Type the following URL in the browser. 'Circulatory System' page will open. Select 'Phases of Cardiac Cycle' from the grid.
- Step 2:** From the given Phases of Cardiac Cycle, Play one after another using 'Play' button and observe the valve movements and blood circulation in the heart.
- Step 3:** The last animation shows the entire functions and flows of the Cardiac cycle. Use Play, Forward and Backward buttons and observe the nuances of Heart function.
- Step 4:** Use the links below the Phases to get more details about the locations, size, chambers and pericardium structures.

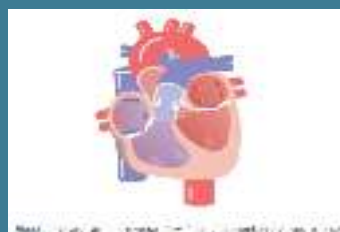
Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## ICT Corner

### First Aid

Through this activity you will be understand the procedures of First Aid.



- Step 1:** Open the browser and paste the link given below (or) by typing the URL given. You can download and install the “First Aid” app.
- Step 2:** Open the App, you can see many options like Emergency, Instructions, Call etc. Among these options, select ‘Emergency’ and you can see many types of illnesses and select ‘Burns’.
- Step 3:** You can see the First Aid steps to be followed in case of burns.
- Step 4:** Click on ‘Instructions’ in main page and select CPR. You can see the first aid steps for CPR.



Step 1



Step 2



Step 3



Step 4

\*Pictures are indicative





## EVALUATION



### I. Choose the correct answers (1 mark)

1. How should you open the airway of an unconscious casualty?
  - a. Head tilt and chin lift.
  - b. Head tilt and jaw thrust.
  - c. Head tilt and jaw thrust.
  - d. Head tilt and jaw thrust.
  - e. None of the above
2. Which is the correct ratio of chest compressions to rescue breaths for use in CPR of an adult casualty?
  - a. 2 compressions: 30 rescue breaths.
  - b. 5 compressions: 1 rescue breath.
  - c. 5 compressions: 2 rescue breaths.
  - d. 30 compressions: 2 rescue breaths.
3. What is an open fracture?
  - a. A fracture in which the bone ends can move around.
  - b. A fracture in which the bone is exposed as the skin is broken.
  - c. fracture which causes complications such as a punctured lung.
  - d. A fracture in which the bone has bent and split.
4. Which medical condition will develop from severe blood loss?
  - a. Shock.
  - b. Hypoglycemia.
  - c. Anaphylaxis.
  - d. Hypothermia.
5. What names are given to the three different depths of burns?
  - a. Small, medium and large.
  - b. First, second and third degree.
  - c. Minor, medium and severe.
  - d. Superficial, partial thickness, full thickness.
6. What steps would you take to control bleeding from a nosebleed?
  - a. Sit casualty down, lean forward and pinch soft part of nose.
  - b. Sit casualty down, lean backward and pinch soft part of nose.
  - c. Lie casualty down and pinch soft part of nose.
  - d. Lie casualty down and pinch top of nose.
7. The recognition of shock includes
  - a. Slow, deep breathes
  - b. Slow, strong pulse
  - c. Pale, clammy skin
  - d. Flushed, dry skin
8. Some people are very allergic to insect bites and stings. This condition is called:
  - a. Septic shock
  - b. Cardiac arrest
  - c. Toxic shock syndrome
  - d. Anaphylactic shock
9. In general a splint should be....
  - a. Loose, so that the victim can still move the injured limb.
  - b. Snug, but not so tight that it slows circulation.
  - c. Tied with cravats over the injured area.
  - d. None of the above.

10. Which should be part of your care for a severely bleeding open wound?

k. Allow the wound to bleed in order to minimize infection.

l. Apply direct pressure and elevate the injured area. (If no broken bones)

m. Use a tourniquet to stop all blood flow.

n. Both b and c

## II. Write short Answer (3 marks)

1. Write four symptoms of heat stroke.

2. List down the management of drowning.

3. Define poisoning.

4. Write four equipment's in first Aid kit.

5. List down the types of wound.

6. Define heat exhaustion.

7. Mention three types of fracture

8. Define Burns.

9. Write four symptoms of snake bite

10. List down the symptoms of shock.

## III. Write short Notes (5 marks)

1. Explain about the management of hemorrhage.

2. write the rules and principles of First Aid.

3. Discuss the management of foreign body in Eye.

4. Explain the immediate management insect sting.

5. list down the purposes of bandages.

## IV. Write an essay for the following questions (10 marks)

1. Define Shock? Describe the causes symptoms and management of shock.

2. Discuss the Cardio-pulmonary Resuscitation.

3. Define fracture. Explain about the management of fracture.

### A-Z GLOSSARY

#### Burns and scalds –

(தீக்காயம் மற்றும் வெந்தபுண்) - Burns result from dry heat, extreme cold, corrosive substances, friction or radiation including sun rays

**Fracture** – (எலும்புமுறிவு) - Break or crack in the bone

<b>Shock</b> – (அதிர்ச்சி)	- Is a syndrome that results from a decrease in effective circulating blood volume in the body
<b>Drowning</b> – (மூழ்குதல்)	- Drowning is the process of experiencing respiratory impairment from submersion/immersion in water.
<b>Wound</b> – (காயம்)	- An injury to living tissue caused by a cut, blow, or other impact, typically one in which the skin is cut or broken.
<b>Hemorrhage</b> – (இரத்தஓழுக்கு)	- An escape of blood from a ruptured blood vessel.
<b>Heat stroke</b> – (வெப்பத்தாக்கு)	- A condition marked by fever and often by unconsciousness, caused by failure of the body's temperature-regulating mechanism when exposed to excessively high temperatures.
<b>Heat Exhaustion</b> – (வெப்பசோர்வு)	- Fatigue and collapse resulting from prolonged exposure to excessive or unaccustomed heat.
<b>Heat cramps</b> – (வெப்பதசைபிடிப்பு)	- Brief muscle cramps that occur during or after exercise or work in a hot environment.
<b>Frost bite</b> – (பனிகுப்பு)	- Injury to body tissues caused by exposure to extreme cold
<b>Poisoning</b> – (விஷம் அருந்துதல்)	- Administer poison to (a person or animal), either deliberately or accidentally.

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3. Potter PA, Perry AG, “Fundamentals of Nursing” 7<sup>th</sup> edition, Elsevier Publications, St Louis Missouri 2009.
4. Sister Nancy, Fundamental Of Nursing; Principle &Practice of Nursing 12th edition. Volume. I
5. L.C Gupta Abhitabh Gupta. “Manual of First Aid” First edition Jaypee Publications 2007.
6. In the case of burns, it says if there is no running water then improvise. If the only source of water was a lake, which would be the priority

# Unit 8

## HOSPITAL HOUSE KEEPING



### LEARNING OBJECTIVES

At the end of this chapter students will be able to

- Gain knowledge about hospital house keeping.
- Gain knowledge on how to care for hospital equipments like
  - Care of rubber goods
  - Care of enamel ware.
  - Care of glass ware etc.,
- Students will gain knowledge on how to maintain a healthy hospital environment like
  - Care of patients unit.
  - Care of flooring and walls.
  - Care of sanitary annex etc.,

### 8.1 INTRODUCTION:

Sanitation is more important than Political Freedom”

-Mahathma Gandhi

House keeping services in a hospital are entrusted with maintaining a hygienic and clean hospital environment conducive to patient care.

House keeping services has a direct effect on the health, comfort and morale of the patient, staff and visitors, Hence it is also an important public relations variable.

Good housekeeping is one of the basic essentials of nursing.

A well managed housekeeping department can reduce the cost of hospital operation considerably.

Hospital housekeeping is an activity upon which all health – providing services (Dietary, Laundry, Laboratory) of the hospital depend on.



## 8.2 PRINCIPLE OF GOOD HOUSE KEEPING:

- Damp dusting is better than dry dusting as dust easily flies out into the environment.
- Dusting is done after sweeping.
- Soap and water (or) Disinfectant solutions are used for cleaning.
- Dusting should be done frequently. Use brush on grooved surfaces.
- Blood, Body discharged coagulate by heat. So it should be removed with cold water.
- Bacteria grows in dark. So provide maximum exposure to sunlight.
- Articles should be stored and arranged in proper and clean place, so that it can be conveniently located.

## 8.3 CLEANLINESS AND ORDERLINESS:

Cleanliness and orderliness go hand in hand. Nurses are held responsible for the cleanliness of the wards.



About 6,000 children die, each day from water & sanitation related illness (2016)

### PURPOSE OF CLEANING:

- To avoid dirt accumulation
- To get rid of breeding places of micro-organisms and insects.
- To keep the articles in such a condition that they are ready for use at anytime.
- To maintain the aesthetic sense.

## 8.4 CARE OF RUBBER GOODS:



Common rubber goods used in hospitals are

- Air cushions
- Mackintoshes
- Hot water bags
- Rubber tubes
- Catheter
- Gloves
- Rubber beds etc

### Care of rubber goods in hospitals:

- Rubber goods should be washed with a mild soap, rinse and dried in the utility room.
- Mackintoshes needs to be spread on a flat surface, wet with cold water, apply soap and water to remove blood and body discharges.
- Disinfection with Disinfectant 1:40 solution is done and dried by hanging them on cylindrical pole
- Both surfaces are dried and powdered
- Store them rolled in a dark cool place
- Rubber tubes (catheters) after cleaning with soap and water under running water, boil it for 5 mts and dry it by hanging and then, stored in air tight containers.
- Reboil/autoclave them before use. Check for kink in tubes before use.

## 8.5 CARE OF ENAMEL WARE:

Measuring Cup



Feeding Cup



Common Enamel wares used in hospitals are

- Kidney trays
- Bed pan
- Urinals
- Sputum mugs
- Feeding cups and
- Trays

### Care of Enamel ware in hospitals:

Bed Pan



- The contents of the bedpans should be emptied into a lavatory
- Rinse with cold water under gushing into the bed pan.
- Wash with soap & water using a brush
- Disinfect with disinfectant 1:40.
- Place the bed pan in direct sunlight and keep them dry

Kidney tray



- Used Kidney trays should be emptied into a lavatory
- Rinse the kidney tray with cold water
- Wash with soap & water using a brush
- Disinfect with disinfectant 1:40.
- Place in direct sunlight and keep them dry

Urinal



- Same procedure as of bedpans

## 8.6 CARE OF INSTRUMENTS:

- Operation theatre instruments should be immersed in water and washed with soap & water. Rinse them and dry it.

- After which Instruments are cleaned with 2% sodium carbonate and hot water

### 8.7 CARE OF GLASS WARE :



The commonly used glassware in hospitals

- Ounce glasses
- Drainage bottles
- Suction bottles

#### Care of glassware in Hospital:

- Hard glassware is resistant to heat and mechanical shocks.
- Avoid cleaning glassware with abrasive material.
- After use of glassware wash with cold water and soap
- Glassware used for parenteral therapy should be rinsed with freely distilled water
- Send glassware for autoclaving by padding it adequately to prevent damage
- Glassware will be sterilized by the hot air oven.

### 8.8 CARE OF LINEN :



Care of linen is important and expensive item in the hospital

The commonly used linen in the hospitals are as follows:

- Clothing's used by health team member
- Operation theatres
- Bed linen
- Trolleys
- Mattresses
- Pillows
- Blankets
- Sheets
- Towels
- Patient
- Gown
- Curtains

#### 8.8.1 Care of linen in hospitals:

- Soiled linen with urine, motion or body discharges should be rinsed with cold water.
- Torn linen should be mended if possible.
- Soiled linen should not be placed on the floor.
- Damp linen should be dried immediately.
- Send linens for ironing.
- Ironing of linen gives a neat appearance and clean and neat linen instills psychological confidence in the patients.

#### 8.8.2 Care of mattress and pillows:

- Mattress should be brushed at regular and frequent intervals.
- Examine the mattress for stains and tears which need to be mended.
- Disinfect mattress and pillow with Lysol 1:40 solution and expose them in direct sunlight.
- Staining with body fluids can be prevented and protected using mackintoshes.

## 8.9 CARE OF PATIENTS UNIT:



The patients unit maintenance include

- Flooring
- Walls
  - Cement walls
  - Painted walls
- Sanitary annex
  - Bath room
  - Lavatories
  - Hand washing sink

### 8.9.1 Care of the floor:



- Dusting of floor is done with a soft broom or vacuum cleaner
- The floors are washed with hot water and weak solution of sodium bicarbonate
- Floors are mopped with disinfectant solutions

### 8.9.2 Care of walls:

- Cement and tiled walls can be cleaned in the same way as the floors

### 8.9.3 Care of the sanitary annex:



The sanitary annex attached to the wards consist of the following:

- Bathing rooms
- Lavatories
- Hand wash sinks
- Soiled utility rooms (washing and storing place of soiled linen bedpans, urinals etc.)

### Bathing rooms

- The floor should be scrubbed and washed daily to prevent slipping
- Use toilet sanitizers and toilet freshener's to give a pleasant feeling to the patient

### Lavatories

- Lavatory pans should be cleaned with toilet cleaners. Brush and acid are used to remove stains.
- The patients and relatives should be taught about proper use of lavatories

### Hand washing sinks

- The sinks are cleaned with soap and water.
- Stains are removed using mild acids.

- Blocks of drains needs immediate attention
- Awareness about healthy practices to patients and their relatives is needed to avoid blocks due to food waste

#### Fact:

“You can't Flush diapers, sanitary napkins and tampons in the lavatories or else you'll make the toilet Gush.”

### CONCLUSION

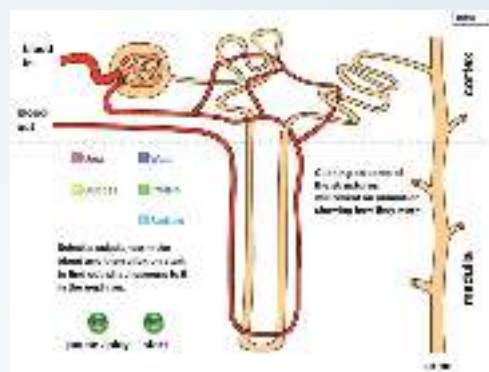
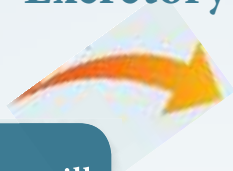
Hospital housekeeping, care of equipments used in hospital settings, care of patients unit such as floor, walls, sanitary annex are essential for nurses as nurse administrators/ward incharges in a hospital settings.



## ICT Corner

### Excretory System

Through this activity you will be understand the functions of nephrons.



- Step 1:** Use the URL to land in 'Biomed heads-Kidney' page. Press the 'Continue' button near the kidney diagram to download an interactive flash file.
- Step 2:** Open the downloaded flash file and then click the 'Continue' button to start the interactive activity.
- Step 3:** By selecting the molecules given in the list, we could understand how the nephrons process these molecules in accordance with their properties.
- Step 4:** Use the drop-down menu on the top right corner of the window to understand the parts of the nephrons and their functions.

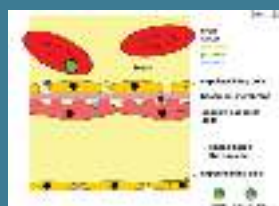
Step 1



Step 2



Step 3



Step 4



\*Pictures are indicative





## EVALUATION



### I. Choose the correct answers (1 mark)

1. Air cushions comes under
  - a. Enamel wares
  - b. Sanitary annex
  - c. Rubber goods
  - d. Linen
2. Dusting can be done best by
  - a. Wet duster
  - b. Dry duster
  - c. All of the above
  - d. None of the above.
3. Mosaic floors should be cleaned with
  - a. Alkaline solution
  - b. Acidic solution
  - c. Water
  - d. Sodium bicarbonate.
4. Exposure to sunlight destroys
  - a. Bacteria
  - b. Virus
  - c. Fungi
  - d. Spirochete
5. Rubber goods should never be dried by
  - a. Artificial heat
  - b. Natural heat
  - c. Air
  - d. Dusting.
6. Dusting is done by
  - a. Before sweeping
  - b. After sweeping
  - c. During sweeping
  - d. After mopping.

### II. Write short answers (3 marks)

1. What does hospital housekeeping mean?
2. Name some common rubber goods used in hospital.
3. Name some common enamel wares used in hospital.
4. Name the commonly used linen used for patient care.

### III. Write short notes (5 marks)

1. What are the principles of good house keeping?
2. Care of rubber goods in hospitals.
3. Care of enamel ware in hospitals.
4. Care of linen in hospitals.
5. Care of sanitary annex in hospitals.

### IV. Write an essay for the following questions (10 marks)

1. Hospital housekeeping
  - Care of linen
  - Care of patients unit
  - Care of sanitary annex

## A-Z GLOSSARY

Mackintosh	– (இரப்பர்விரிப்பு)	-	Rubber sheets used on beds.
High Dusting	– (ஒட்டடைஅடித்தல்)	-	Dusting of roofs for cob webs and insects.
Aesthetic Sense	– (புத்துணர்ச்சி)	-	Concerned with beauty.

## REFERENCE BOOKS:

Ward Management – Mrs. Dorothy

Finkbiner.

# Unit 9

## DOCUMENTATION



### LEARNING OBJECTIVES

At the end of this chapter the students will be able to:

1. Define the Records and reports
2. List Purpose of Documentation
3. Understand the Methods of Documentation
4. Identify the General guide lines for documentation
5. Explain the Characteristic of Good Recording
6. Mention the Principles In Maintaining Records
7. List the type of records
8. Assist in Arrangement of records
9. List the Types of reports
10. Describe the Nurses responsibility in record keeping.



### 9.1 INTRODUCTION

Mr. Arul is admitted in the Medical ward with fever. His temperature was 102 Degree F<sup>0</sup> (Farenheat). Sister Lucy gave Tablet. Paracetamol at 8am and went. At 08.10 am, Sister Mary came and checked the temperature, it was 102 Degree F. So, Sister Mary also gave one more Tablet Paracetamol.

Mr. Arul did not tell Sister Mary that he took one tablet already. Patient had 2 tablets instead of one tablet. It comes under Negligence and Malpractice, which is one of the legal issue. This is due to the poor communication between the sisters. Even if not able to communicate they should have entered in the patient chart. Patient

chart is a ideal way of communicating the information to the next person. Since Sister Lucy did not record or enter in the chart, Mr. Arul had two tablets. This incident tells about the importance of recording and reporting. This chapter is going to discuss about the importance of documentation which includes recording and reporting.

Nursing practice needs accurate record keeping and careful documentation. The Nursing and Midwifery Council (NMC 2002) stated that 'good record keeping helps to protect the welfare of patients. Records and reports reveal the essential aspects of service in logical order, so that the new staff may be able to maintain continuity of service to individuals, families and communities.

## 9.2 DEFINITIONS

### 9.2.1 Records

- Records contain a written evidence of the activities of an organization in the form of letters, circulars, reports, contracts, invoices, vouchers, minutes of meeting, books of account etc.

[ S.L.Geol, 2001 ]

- A record is a permanent written communication that documents information relevant to a client's health care management, e.g. a client chart is a continuing account of client's health care status and need.

(Potter and Perry)

- It is a written communication that permanently documents information relevant to a client's health care management. It is a continuing account of the client's health care needs.

[ Sr. Mary lucita ]

### 9.2.2 Report

It is a summary of activities or observations seen, performed or heard.

(Potter and Perry)

### 9.2.3 Reporting

It is a process takes place when two or more people share information about client care, either face to face or by telephone.

### 9.2.4 Documentation

It is a permanent record of client information and care. It is otherwise called as Charting.

## 9.3 PURPOSE OF DOCUMENTATION

- It is a guide for reimbursement of costs of care

- Is a legal record that can be used as evidence of events that occurred or treatments given
- Contains observations by the nurses about the patient's condition, care, and treatment delivered
- To have clear Communication between health care workers.
- Aids in diagnosis of patients condition
- Written nursing care plan or interdisciplinary care plan is a framework for documentation
- Implementation of each interventions has to be documented on flow sheet or in nursing notes
- Evaluation statements are written in nurse's notes which indicate the progress of patient.

## 9.4 METHODS OF DOCUMENTATION (CHARTING)

- Source-oriented (narrative) charting
- Problem-oriented medical record (POMR) charting
- Focus charting
- Charting by exception
- Computer-assisted charting
- Case management system charting.

### 9.4.1 Source-Oriented or Narrative Charting

- Organized according to source of information (from records, relatives, patient, family, and health care workers etc.

2. Separate forms for nurses, physicians, dietitians, and other health care professionals to document assessment findings and plan the patient's care
3. Narrative charting requires documentation of patient care in chronological order
  - Physician's order sheet
  - Medical history
  - Nurses notes
  - Special records and reports (Referrals, X-Ray Reports, laboratory findings, report of surgery, anesthesia record, flow sheets, vital Signs, intake and output chart, Medications chart and etc)

#### 9.4.2 Problem-Oriented Medical Record Charting (POMR)

- Focuses on patient status rather than on medical or nursing care
- The record integrates all data about the problem, gathered by the members of the health team.

##### 9.4.2.1 Five basic parts in POMR

1. Database. – (it includes patients age, sex, address, habitat, chief complaints etc)
2. Problem list - ( needs and problems Ex. Headache, vomiting, fever and etc which patient has)
3. Initial list of orders or care plans- (the first orders written by the physician and nurses initial assessment, planning etc.)
4. Progress notes - ( patient status in the hospital has been written by the doctors and nurses)
5. Discharge summary - ( Discharge notes by the doctors)

##### 9.4.2.2 In POMR there are few styles of charting

###### (i) SOAPIER format

- S - SUBJECTIVE. = What patient tells you.( I have leg pain)
- O - OBJECTIVE. = What you observe, see (observe the leg and Facial Expressions)
- A - ASSESSMENT. = What you think is going on based on your data (assess the leg for any injury, wound, Swelling and tenderness)
- P - PLAN. = What you are going to do. (plan for any nursing intervention to reduce pain, informing physician, giving Medications and comfort position)
- I - INTERVENTION = Specific Interventions implemented like hot or cold fomentation, administration of Medications etc.
- E - EVALUATION = Patient Response to Interventions. (patient may say, I am feeling better, my leg pain is reduced or, patient can say it is the same)
- R - REVISION = Changes in treatment. (If the pain is not reduced look for the Cause of pain and change the medication as per the order)

###### (ii) PIE Charting

It is Similar to SOAP charting, both are problem-oriented

- PIE comes from the Nursing Process; SOAP comes from a Medical Model.
- P-Problem Identification
- I-Intervention
- E-Evaluation

Ex:

- P - Risk for trauma related to dizziness.
- I - Instructed to call for assistance when getting Out of Bed. Put the Call light in Reach.
- E - Consistently call for assistance before getting Out of Bed because the patient continues to experience dizziness.

It follows the nursing process and uses nursing diagnoses while placing the plan of care within the nurses' progress notes.

### 9.4.3 Focus Charting

Focused only on nursing diagnosis, patient problem, signs, symptom, or event and writing the interventions it has three components (DAR)

- DATA – subjective or objective that supports the focus (concern)
- ACTION – nursing intervention
- RESPONSE – Patient response to

Ex:

- D – complaining of pain at incision site, pain score: 7/10
- A – Repositioned for comfort. -----Analgesics 50mg IM given.
- R – States a Decrease in Pain, “Feels Much Better.”

intervention

### 9.4.4 Charting by Exception

A longhand note is written only when the standardized statement on the form is not met

Ex.

Mr. Sunil, 70 yrs is going to the doctors room and finding out what doctors are doing with his chart and report. Usually this type of behaviour is not mentioned in the chart. But out of interest we can go for mentioning in separate chart to highlight his anxiety behaviour

- Highlights abnormal data of patient
- Decreases narrative charting time
- Eliminates duplication of charting.

### 9.4.5 Computer-Assisted Charting

- It is an Electronic Health Record (EHR). Computerized record of patient's history and care across all facilities and admissions.
- It initiates Computerized Provider Order Entry (CPOE) which saves time.
- Provides efficient work flow.
- Documentation done as interventions are performed using bedside computers.
- Some produce flow sheets with nursing interventions and expected outcomes.
- Others use a POMR format to produce a prioritized problem list.

#### Advantages

- Date and time of the notation automatically recorded.
- Notes always legible and easy to read.
- Quick communication among departments about patient needs.
- Many providers have access to patient's information at one time.
- Can reduce documentation time.



- Electronic records can be retrieved very quickly.
- Reimbursement for services rendered is faster and complete.
- Can provide a complete record of the patient's medical history.
- Can reduce errors.

#### 9.4.6 Case Management System Charting

- A method of organizing patient care through an episode of illness so clinical outcomes are achieved within an expected time frame and at a predictable cost.
- A clinical pathway or interdisciplinary

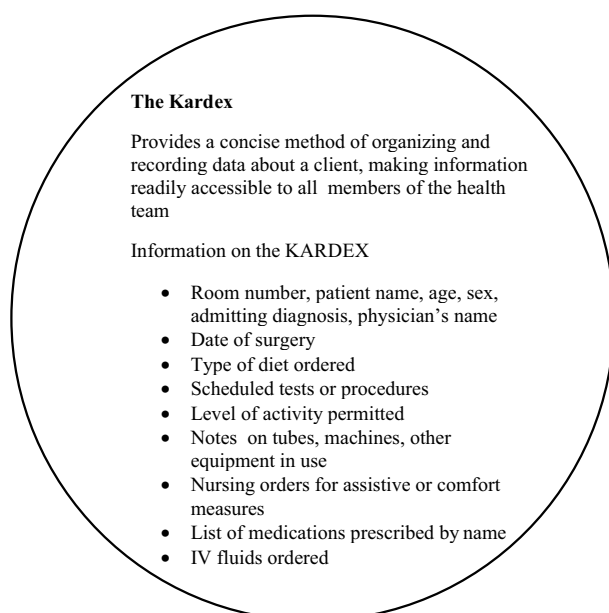
*Ex:*

Patient with Appendicitis we can write only about the care given to him.

The information can be charted in the Kardex format

care plan takes the place of the nursing care plan.

#### Kardex format



It also includes

- Personal data
- Basic needs
- Allergies
- Daily nursing procedures
- Medications and intravenous (IV) therapy
- blood transfusions
- Treatments like oxygen therapy, steam inhalation, suctioning, change of dressings, mechanical ventilation etc.
- Entries usually written in pencil. This implies the kardex is for planning and communication purpose only.

#### 9.5 GENERAL GUIDELINES FOR DOCUMENTATION

- Ensure that you have the correct patient record or chart.
- Document as soon as the patient encounter is concluded to ensure accurate recall of data.
- Date and time of each entry.
- Sign each entry with your full legal name and with your professional credentials.
- Do not leave space in between entries.
- If an error is made while documenting, use a single line to cross out the error, then date, time and sign the correction.
- Never change another person's entry even if it is incorrect.
- Use quotation marks to indicate direct patient responses.
- Document in chronological order.
- Use permanent ink.

- Document all telephone calls that you received that are related to patient case.



## 9.6 CHARACTERISTICS OF GOOD RECORDING

### 9.6.1 Brevity

- Start each entry with a capital letter
- Articles (a, an, the) may be omitted
- The word “patient” to be omitted when starting of sentence

Ex:

1. Mr. Arul Vomited at 5 am. Tab. Antiemetic 1 given orally as per the order.  
(start entry with capital letter)
- a. Mr. Arul slept well no vomiting. (The word “patient” to be omitted when starting of sentence)
- b. Mr. Arul transferred to W/I (W/I – means with instructions. It is accepted within that organization).

- Abbreviations, acronyms, symbols acceptable as per the hospital policy to save time and space

### 9.6.2. Accuracy in Charting

- Be specific and definite in using words or phrases that convey the meaning you wish expressed

Ex:

X - Ate 50% of the food served.

✓ - Ate with poor appetite.

✓ - Refused medications.

X - Uncooperative.

✓ - Seen crying.

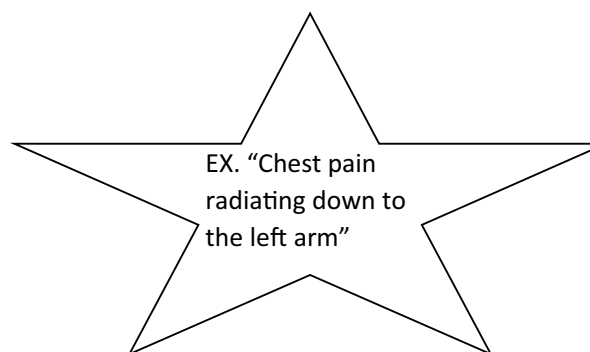
X - Depressed.



X = In correct

✓ = Correct

- Words that have ambiguous meanings and slang should not be used in charting
- Chart objective facts, not your interpretations or opinions
- Place complaint of the patient in quotation marks to indicate that it is his statement.



- Objective data to be charted as follows:

Ex:

Skin cold and clammy. Diaphoretic. Prefers to sit up. Vital signs taken are as follows: Temp-37.6°C, Pulse Rate-110/min., Respiration Rate -26/min. Blood Pressure-140/90 mmHg

- Describe behaviors rather than feelings to allow other health team members to determine the actual problems of the client.
- Refusal of medications and treatments must be documented.

### Appropriateness

Only information that pertains to the patients health problems and care are recorded. Any other personal information that is conveyed to the nurse is appropriate for the record. The following information should be charted:

- Physician's visits.
- Times the patient leaves and returns to the unit, mode of transportation and destination.
- Medications should be charted immediately after administration.
- Treatments should be charted immediately after being done.

### 9.6.3 Use of standard terminology

*Ex:*

All due Medicines are given to Mr.Govind at 8pm by *G.Stella* (Mrs. G.STELLA,RN) Registered Nurse  
Bed bath given to Mrs. Sivagami at 6 am by *R.Grace* (MISS.R.GRACE,SN) Student Nurse

- Use only those abbreviations and symbols approved by the institution;
- spell correctly;
- Use proper grammar.
- Put signature.
- Affix signature, place at the end of charting, at the right hand margin of the nurse's notes.
- Sign each entry with your full name and status, e.g. SN for Student Nurse, RN for registered nurse.
- In case of error.
  - Correct errors by drawing a single horizontal line

✓ GIVE

✓ GIVEN

- Write the word error above the line, then sign your signature
- No ink eradication, erasures or use of occlusive materials

### 9.6.4 Confidentiality.

- Only the health personnel who participate in the care of the patient are allowed to read the chart.

### 9.6.5 Legal Awareness

- Chart only what you personally have done, observe, heard, smelled, or felt.
- Do not discard any of the client record.

### 9.6.6 Legibility

- If writing is not legible, misperceptions can occur
- Record information about the patient's needs and problems and also specify the nursing care given for those needs and problems
- Writing must be clear and easily read by others
- If writing is not legible, then print.
- A horizontal line drawn to fill up a partial line. This is to prevent other

*Ex:*

Mr. khan needs are attended and referred accordingly \_\_\_\_\_ Ms. Sujatha., RN, RM

persons from adding information in the nurse's notes.

## 9.7 PRINCIPLES IN MAINTAINING RECORDS

The Data Protection Act 1998 defines a health record as "consisting of information about the




physical or mental health or condition of an identifiable individual made by or on behalf of a health professional in connection with the care of that individual”.

There are other eight principles:

- Principle of Accountability
- Principle of Transparency
- Principle of Integrity
- Principle of Protection
- Principle of Compliance
- Principle of Availability
- Principle of Retention
- Principle of Disposition.

The principles of good record keeping apply to all types of records, regardless of how they are held. These records can include:

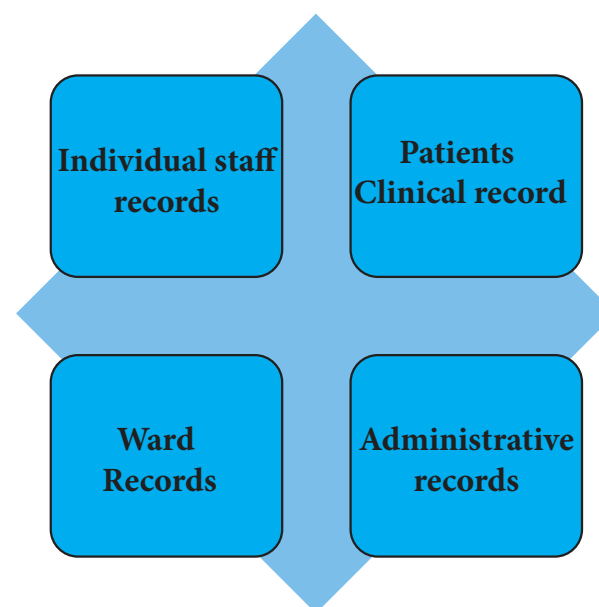
- Handwritten clinical notes
- Emails
- Letters to and from other health professionals
- Laboratory reports
- x-ray sheets
- Printouts from monitoring equipment



Generally ARMA is the world’s leading membership organization serving the professionals who manage and govern information assets. ARMA is the strongest community of professionals in the information management industry,

Accepted **Recordkeeping Principles** (The **Principles**), were created by ARMA International as a common set of **principles** that describe the conditions under which business **records** and related information should be maintained.

- Incident reports and statements
- Photographs
- Videos



- Tape-recordings of telephone conversations.

## 9.8 LIST OF RECORDS

- 1) Patients Clinical Records
  - It is the record of events of the patient illness, progress in his or her recovery and the type of care given by the hospital personnel.
- 2) Individual staff records.
  - A separate set of record is needed for staff, giving details of their sickness and absences, career development activities and a personnel note.
- 3) Ward Records.
 

These records are maintained in the each ward, following are some records

  - Census records.
  - Change in medical staff and non nursing personnel for the ward.
  - Inventory and stock records

- Leave records of staff
- Admission records
- Transfer records
- Discharge records
- Medicine records etc.
- Research or statistics data records
- Audit and nursing audit records
- Quality of care records
- Personnel performance. records
- Other administrative records
- Legal documents: for the patients with poisoning, assault, rape, burns etc.

#### 4) Administrative records

These records are maintained purely for administrative purpose of the hospital or unit

Examples of other important records maintained by the nurses

### Vital Signs Chart

ON ADMISSION

BLOOD GROUP :  HEIGHT.....CM VITAL INFORMATION SHEET WEIGHT .....KG.

Name :  Age :  Sex :  Reg No :  IP No :

Diagnosis :  Procedure :

DAY/UP/DISEASE																														
DATE																														
HOUR	2	4	6	8	10	12	2	4	6	8	10	12	2	4	6	8	10	12	2	4	6	8	10	12	2	4	6	8	10	12
TEMP																														
PULSE																														
RESP																														
B.P.																														
DAILY WEIGHT																														
DAYS IN NURSING																														
IN - OUT																														
WATER INTAKE																														

## Intake Output Chart

[illegible]

## Drug Chart

[illegible]

## Nurses Chart

### 9.9 ARRANGEMENT OF RECORDS

Different systems may be adopted depending on the purpose of the records and on the merits of a system. The records could be arranged:

- Alphabetically
- Numerically
- Geographically and
- With Index card
- Alphabetical Type
 

It can be done in 2 orders

  - Dictionary order (aa,ab,ac,ad,ae,af-.....az and ba,bb,bc,bd,be,bf, .....bz)
  - Encyclopaedic order
- Numerically
 

It can be done in two ways

  - Serial number



- Digit filing
- Geographically
 

Information is arranged alphabetically by geographical area or the place name.
- With Index cards
  - An index card consists of heavy paper cut to a standard size, used for recording and storing small amounts of discrete data. It was invented by Carl Linnaeus, around 1760.
  - Eg: - forms, case records and registers.

### 9.10 REPORTS

#### Introduction

Reports are information about a patient either written or oral. It takes place when two or more people share information about patient care, either face to face or by telephone.

- Reports can be compiled daily, weekly, monthly, quarterly and annually.
- Report summarizes the services of the nurse and/ or the agency.
- Reports may be in the form of an analysis of some aspect of service.
- These are based on records and registers and so it is relevant for the nurses to maintain the records regarding their daily case load, service load and their activities. So, the data can be obtained continuously and for a long period.

### 9.10.1 Definition

Reports may refer to specific periods, events, occurrence, or subject and may be communicated or presented in oral or written form. [ Sr. Mary lucita ]

Reports are oral or written exchanges of information shared between care givers of workers in a number of ways. A report summarises the service of the personnel and of the agency [ Jean b. 2002 ]

### 9.10.2 Purposes

- To show the kind and quantity of service rendered over a specific period.
- To show the progress in reaching goals.
- As an aid in studying health conditions.
- As an aid in planning.
- To interpret the services to the public and to other interested agencies.
- Report is an essential tool for communication

### 9.10.3 Classification of reports based on types

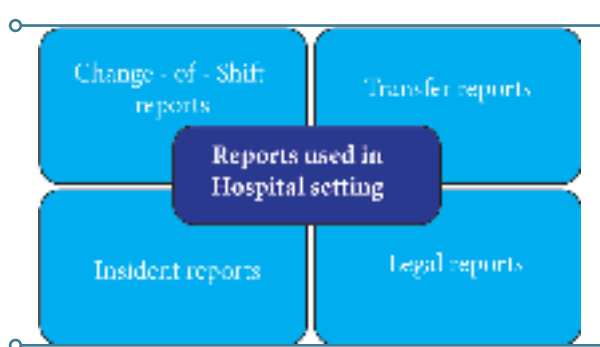
- Oral reports
- Written reports

### 9.10.4 Criteria for a good report

- Made promptly.

- Clear, concise, and complete.
- If it is written all pertinent, identifying data are included-the date and time, the people concerned, the situation, the signature of the person who write the report.
- It is clearly stated and well organized
- Important points are emphasized.
- In case of oral reports they are clearly expressed and presented in an interesting manner.

### 9.10.4.1 Reports Used In Hospital Setting



- Change – of – shift reports: Regarding the continuation of care to the next shift staffs.
  - Intra shift -Verbal reports during your shift to other team members
  - Inter shift – verbal reports given to next shift members while you complete your shift and go home
- Transfer reports: While transferring the patient from one ward to another ward (i.e) postoperative to general ward
- Incident reports: ( i.e) any accidental fall of patient in ward.
- Legal reports : medical legal cases like poisoning, road traffic accident, raped victim and physical abuse

- Telephone reports: sometimes lab investigation reports collected through phones or doctors order in case of emergency.

#### 9.10.5 Other types of reporting

- Reporting to physician- Informing doctors about the significant changes in Physical assessment, abnormal laboratory findings, test results
- Report to nursing administrators- Written or Verbal reporting from each shift about the data on critically ill clients ,Unusual occurrences at any time and Problems with patient, families or other disciplines
  - Written policies and procedures are the backbone of the quality system
  - Complete quality assurance records make quality management possible
  - Keeping records, facilitates reporting requirements

### 9.11 NURSES RESPONSIBILITY FOR RECORD KEEPING AND REPORTING

*Ex:*

- Keep under safe custody of nurses.
- No individual sheet should be separated.
- Not accessible to patients and visitors.
- Strangers are not permitted to read records.
- Records are not handed over to the legal advisors without written permission of the administration.
- Handed carefully, not destroyed.
- Identified with bio-data of the patients such as name , age, admission number, diagnosis, etc. (Legal Issues?)

Conclusion; Records and reports reveals the essential aspects of service in such logical order so that the new staff may be able to maintain continuity of service to individuals, families and communities.

### 9.12 EXAMPLES OF DOCUMENTATION



#### 9.12.1 Critical Lab Values Documentation

- The lab will call the nurse (as well as the physician) responsible for taking care of the patient with the critical lab value
- The telephonic critical lab value result, upon receipt, will be read back to the technologist/technician and to be documented as having been read back. If that does not happen, the technologist/technician will request the nurse receiving the critical result to read it back.

Procedure

- Verify the result by verbally reading the result back to the technologist/ technician
- Notify the nurse assigned to the patient of the critical result if she/he was not the one to receive the telephonic notification.
- Document the received phone call about, critical value, the critical result, and what you did about the result on the Critical Lab Values Intervention also to be documented.

Ex:

Mrs. Papu results are received by Sister Luzy. The lab technician Mrs. Rose called over the telephone and said Mrs. Papu blood urea is 30mgm and blood creatinine is 1.5 mgm. Sister Luzy read back to Mrs. Rose and confirmed the blood results. Then she entered in the chart as follows

Name of the patient	Mrs. PAPU	Age 51 yrs
I.P NO;	Ward no; B1	Bed No; 116
Referring consultant	Dr. Raghu	Patient Diagnosis; CKD

Investigation Chart				
Name of the investigation	Value of patient	Normal value	Reference Range	Remarks
Blood Urea	30mgm	40-20mgm	increased	At 10.00am report Collected and Entered by- Sister.Lucy Informed to Dr. Raghu at 10.05 am
Creatinine	1.5mg	1-0.8mgm	increased	

### 9.12.2 Discharge Documentation

- The physician writes the discharge instructions
- The nurse is responsible for reviewing all instructions with the patient and obtaining the patient signature

Ex:

Mr. A. Sundar 70 yrs got discharged at 11 am today (date ..... ) from Medical ward as per the Dr. Nirmal order. Patient was given instructions to come for check up after 3 weeks. Discharge medications given to the patient with instructions. Patient went home at 11.30 am by walk with discharge summary. The patient chart was send to Medical records.

- The nurse should make sure the patient understands the complete list of medications the patient has to take after the discharge. (compared to any medications the patient was taking on

admission), as part of the medication reconciliation process

- Original form goes to medical records and a copy is given to the patient upon discharge

### 9.12.3 Blood Administration Documentation

- Blood Transfusions are documented as:
  - Blood Administration Verification (completed just prior to starting infusion)
  - (name of recipient, age,sex,ward and IP number,blood group, what type of blood product, whether it is negative for HIV and Hepatitis)
  - Blood Product Infusion (start time and initial rate)
  - Infusion Changes (any rate changes during infusion)
  - Blood Product Completion (completed at end of infusion)



- Blood Vital Signs (baseline vitals taken at start, then q15min x 2 after initiation, then hourly)

#### Nurses notes:

Mrs. Suja 45 yrs female ( IP.No 45612) with O+ve blood group, receiving the O+ve whole blood 500ml and it is HIV & HBSAG negative, it is cross matched and ready for infusion.

DATE.....at 09.00am blood was started with 125 ml/hour for 4 hours.

Patient was monitored closely. Transfusion chart maintained

Vital signs are stable initially, every 15 minutes and every hourly.

Patient did not have any allergic reactions. So blood transfusion came to an end at 1pm. patient was stable after the blood transfusion.

By NURSE- Mrs.Gayatri. RN.RM

#### Ex Nurses notes:

29.11.2017 Mrs. Kanmani, 30 years, female, in ward 2 admitted with left hand forearm wound in III stage with 3cm depth and 2cm wide. Patient complaints of pain in the site of the wound. Dressing changed.

30.11.2017 Wound is the same. Still subcutaneous fat is visible but, no drain of pus or blood from the wound. Dressing changed.

1.12.2017 Wound is healing. No drain from the wound. Patient feels that, the pain is better. Dressing changed. wound is with 2.6 cm depth and 1.8cm wide.



#### STUDENT'S ACTIVITY

1. Practice charting the vital signs in copy of vital signs chart
2. Practice writing nurses notes in nurses record
3. Practice recording intake and output details of your own.
4. Write practicing Transfer documentation (transferring notes from one unit to other unit.

#### 9.12.4 Documentation of Wounds



- Wounds are documented as
  - size of the wound, site of the wound, stage of wound, in initial, weekly, and change of status wound .
  - Wound Care / Dressing Change Assessment: for daily documentation of dressing changes (focused on assessment specifically for dressing changes)

#### CONCLUSION

Documentation is the process of communicating in written form about essential facts for the maintenance of history of events over a period of time. An effective health record shows the extent of health problems and other factors that affect the ability of the individual. Reports can be compiled daily, weekly, monthly, quarterly and annually. Registers provide indication of total volume of services and type of cases seen. Reports summarize the services of the nurses and/or the agencies. Thus the reports and records reveal the essential aspects of service in a logical order so that the new staff may be able to maintain continuity of service to individuals, families and community.

## A-Z GLOSSARY

<b>Records</b> (பதிவுகள்)	<ul style="list-style-type: none"> <li>- It is a written communication that permanently documents information relevant to a client's health care management. It is a continuing account of the client's health care needs</li> <li>- information or knowledge preserved in writing or the like</li> </ul>
<b>Report</b> (அறிக்கை)	<ul style="list-style-type: none"> <li>- it is a summary of activities or observations seen, performed or heard.</li> <li>- list, or aggregate of actions or achievements</li> </ul>
<b>Reporting</b> (அறிக்கையிருதல்)	<ul style="list-style-type: none"> <li>- it is a process takes place when two or more people share information about client care, either face to face or by telephone.</li> </ul>
<b>Documentation</b> (ஆவணபதிவு)	<ul style="list-style-type: none"> <li>- it is a permanent record of client information and care. It is otherwise called as Charting</li> <li>- it is the written comments, graphic illustrations, flow charts, manuals etc.</li> </ul>



## EVALUATION



### I. Choose the correct answers (1 mark)

- Which of the following documentation used by the head nurse to communicate information about patient has sudden hemorrhage to another head nurse in the next shift?
  - Kardex record
  - Assignment record
  - Shift report
  - Incident report
- Which of the following is a important characteristics of maintain a record?
  - Accuracy
  - Consequences
  - Neatness
  - Stability
- An incident report is to be completed because the client climbed over the side rails and fell in to the floor. The correct reporting of an incident involves which of the following?
  - The witnessing nurse completes the report.
  - Details of the incident are subjectively described.
  - An explanation of the possible cause for the incident is entered.
  - A notation is included in the medical record that an incident report was prepared.
- The nurse is preparing the information that will be provided to the staff on the next shift. Which of the following should the nurse include in the inter-shift report to nursing Colleagues?
  - Audit of client care procedures
  - The client's diagnostic-related group

- c. All routine care procedures required by the client
  - d. Instructions given to the client in a teaching plan
5. Nurse has made an error and is documenting such on the client's record and notes. The action that the nurse should take is to
- a. Draw a straight line through the error and initial it.
  - b. Erase the error and write over the material in the same spot.
  - c. Use a dark color marker to cover the error and continue immediately after that point.
  - d. Footnote the error at the bottom of the page.

## II. Write short answers (3 marks)

- 1. Define records
- 2. Define reports
- 3. Four ways of arranging records
- 4. Name the record keeping systems
- 5. List the common problems occurring during reporting

## III. Write short notes (5 marks)

- 1. Write the principles in maintaining records
- 2. Explain the types of registers
- 3. Mention the characteristics of good record.
- 4. Role of nurse in maintaining records

## IV. Write an essay for the following questions (10 marks)

- 1. Write the purpose of keeping records
- 2. Explain the types of records
- 3. Elaborate on classification of reports.

## REFERENCES

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- 2. C.P Thresyamma Foundamental of Nursing Procedure Manual for General Nursing of Midwifery course First Edition 2006, Jaypee Brother Medical Publishers New Delhi
- 3. Dugas, Introduction to patient care A comprehensive approach to Nursing, fourth edition 2006, Elseiver India private limited, New Delhi.
- 4. Sr. Nancy Principles and Practice of Nursing, fourth edition 2005 Revised o2013 N.P Publishing House Madhya Prathesh.
- 5. Annamma Jacob Clinical Nursing Procedure. The art of nursing practice; first edition 2007 jaypee brother medical publisher, New Delhi.

## CASE STUDY

### CASE STUDY: 1

1. Mr. John, 44 years old male came with the complaints of epigastric pain since two hours from today morning. The pain is of sharp, which radiates to the back. He also felt nauseated and vomited twice. On examination, she looked dull with considerable pain. His vital signs temperature was 98° F, with mild elevation in the pulse rate 88/min, his respiratory rate was 18/min and his BP was 120/80 mmHg. The patient had tenderness in the epigastric region with mild rebound tenderness.
  - Maintain vital signs for this patient and record the above findings.
  - Describe the physical examination method.

### CASE STUDY: 2

1. Mr. Somu 65 years old male, who is a chronic smoker and alcoholic came with the complaints of pain in the chest for last few weeks he is experiencing occasional tightness across his chest and sometimes it also radiates to his left arm. He looks distressed with tachypnoeic (44 breaths/min) and profuse sweating. He also has the evidence of peripheral cyanosis.
  - Identify the condition and discuss the emergency management for Mr.Somu.

- Prepare a tray for oxygen administration and list the principles of oxygen administration

### CASE STUDY: 3

1. Mrs. Janaki 50 years old female who had been subjected to abdominal surgery is nil per oral in the immediate post operative period. The IV fluids D5 and RL on flow with 100cc /hr. As you entered the room and noticed that IV fluids has stopped running. The patient has poor skin turgor and is hypotensive. The patient tells you that the IV line is irritating and painful.
  - What is your initial assessment for this patient?
  - How do you calculate I/O chart?

### CASE STUDY: 4

1. Mrs. Rose is a 91 year old resident of a long term care facility centre who tells the nurse, "I have an ache in my right foot". I must have stepped on something or twisted my ankle or maybe I got hit by a bug when I was outside yesterday. The nurse noticed that her right ankle is reddened, slightly swollen and warm. But her temperature is within normal limits. He has a strong pedal pulse.
  - Explain the first aid for the above condition.
  - Describe your observation.

## HISTORY COLLECTION FORMAT

### PATIENT PROFILE

- Name:
- Age:
- Sex:
- Place of Domicile:
- Education:
- Occupation:
- Income,:
- Marital status:
- Religion:
- language,
- I.P No, ward:
- Date of admission:
- Date of discharge, and diagnosis:
- Surgery: Name:
- Date, POD:
- Care started:
- Care ended:

### CHIEF COMPLAINTS:

- According to the patient
- Complaints number of days it presents

### IV) PAST HISTORY

#### B. PAST MEDICAL/SURGICAL/ NEUROLOGICAL HISTORY

- History of similar illness/episode in the past [date and duration]
- Any other complaints in the past [date and duration]
- Details of treatment undergone
- History of remission/Chronic illness
- Head injury/ headache/accidents/ seizure
- Infections
- Metabolic disorders/Hypertension
- Any other illness

## VII) HISTORY OF PRESENTING ILLNESS

### Present medical history

- Details of each complaints
- Major chief complaint [Onset, Incident, Frequency, Course/duration, Precipitating factors, perpetuating factors]
- Treatment undergoing
- Any associated medical complaints

### Present surgical history

- Pre Operative diagnosis and treatment
- Surgical plan
- Date of surgery
- Post operative day
- Surgical notes

### III) Family history

- Genogram [3 generation]
  - Description of significant family members
1. Composition Of The Family  
(Responsibility/role function  
Relationship with patient/Health Status)  
S.No family  
Member  
Age  
Gender  
Relationship  
Educational Qualification  
Occupation income  
Health  
Status
  2. Attitude of the family towards illness of the patient.
  3. Type of family(joint/nuclear/extended)
  4. Medical/Hereditary/Communicable diseases
  5. Pedigree chart

## II) SOCIO ECONOMIC HISTORY

- Bread Winner Of The Family, Monthly Income
- Environmental Sanitation, drainage open/closed (Electricity, Drinking Water, Ventilation and Sewage Disposal)
- Type Of Home

## IV) Marital history

- Age of marriage
- Type of marriage (Consanguineous/ Non-Consanguineous)
- Number of children
- Others

## V) Personal history

- Life style (smoking, alcohol and others), hobbies and nature of habits.)
- Diet
- Sleep pattern
- Menstrual history
- Elimination pattern
- Allergic history diet/drug

## PHYSICAL AND SYSTEM WISE EXAMINATION

Major findings in physical and system wise examination.

## VIII) DIAGNOSTIC EVALUATION:

S.No date name of  
The test  
Patient  
Value  
Normal  
Value

## IX) DRUG CHART:

S.No name dose freq/route action  
side  
Effect

Inferences

Nurses

Responsibility

## X) IDENTIFICATION OF NEEDS AND PROBLEMS OF THE PATIENT

### XI) NURSING DIAGNOSIS: {PRIORITIZE PROBLEM}

NURSING:

ASSESMENT:

SUBJECTIVE:

DATA:

OBJECTIVE:

DATA:

CLINICAL:

DATA:

## XII) NURSING CARE PLAN

### NURSING

DIAGNOSIS:

GOAL PLANNING/

INTERVENTION:

SHORT TERM:

LONG TERM:

## XIII) HEALTH EDUCATION:

- PERSONAL HYGIENE
- DIET
- EXERCISE
- MEDICATION
- FOLLOW UP

## XIV) RECORDING AND REPORTING

RATIONALE

IMPLEMENTATION:

## NURSES RECORD

DATE VITAL

SIGNS

DIET INTAKE/OUTPUT

MEDICATION NURSES

NOTES

T P R BP

EVALUATION

SIGN

NAME

AGE

SEX

I.P NO

DIAGNOSIS

DATE OF ADMISSE

TIME PLANNING

DATE PLANNING

IMPLEMENTATION

8:00 AM -8:30 AM Maintaing

rapport with patient

8:30 AM -9:00 AM Checking vital

signs

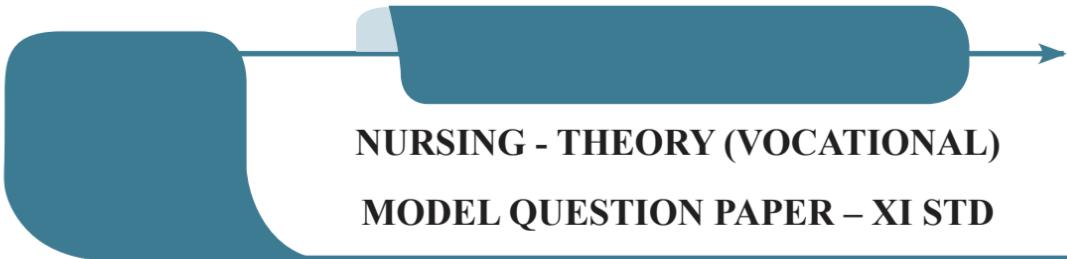
10:00 AM -11:00 AM Bed making

11:00 AM -12:00PM History

collection

12:00PM-1:00PM Prioritizing the  
patient need

### **PRIORITIZING THE CARE:**



**NURSING - THEORY (VOCATIONAL)**  
**MODEL QUESTION PAPER – XI STD**

**Part-III – VOCATIONAL SUBJECTS**  
**(Health Area)**

Time: 2hrs-30 minutes

Maximum Marks : 90

**Instructions:-**

- i. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall supervisor immediately.
- ii. Use Blue or Black Ink to write and underline and pencil to draw diagrams.

**I - MULTIPLE CHOICE QUESTION (15X1=15)**

1. The founder of modern nursing is
  - a. Fabiola
  - b. Paula
  - c. Phoebe
  - d. Nightingale.
2. How many bones are present in the cranial cavity?
  - a. 206
  - b. 22
  - c. 8
  - d. 14
3. Which is the largest and important organ of the abdomen?
  - a. spleen
  - b. Intestine
  - c. Pancreas
  - d. Liver
4. A study of human behavior is called as
  - a. Sociology
  - b. Psychology
  - c. Behaviorism
  - d. Behavior Theory
5. How will you position the patient for child birth?
  - a. Supine.
  - b. Lithotomy.
  - c. Lateral.
  - d. Sims.
6. How frequently should a tooth brush be changed?
  - a. Once in 2 months.
  - b. Once in 3 months.
  - c. Once in 4 months.
  - d. Once in 6 months.

7. Jyothi, a housewife has complaints of cracking of the lips especially at the angle of the mouth. Which one of the oral problems describes it best?
- Halitosis.
  - Stomatitis.
  - Cheilosis.
  - Sclerosis
8. An irregular pattern of heartbeats is called a
- Sinus tachycardia
  - Sinus bradycardia
  - Arrhythmias
  - Atrial fibrillation.
9. The taking vital signs includes,
- Temperature
  - Pulse
  - Respiration
  - All of the above
10. Hot air oven works at -----  
----- for one hour.
- 160°C
  - 161°C
  - 121°C
  - 120°C
11. Fumigation/Gas sterilization is done at ----- humidity
- 180°C
  - 80°C
  - 18°C
  - 118°C
12. Which is the correct ratio of chest compressions to rescue breaths for use in CPR of an adult casualty?
- 2 compressions: 30 rescue breaths.
  - 5 compressions: 1 rescue breath.
  - 5 compressions: 2 rescue breaths.
  - 30 compressions: 2 rescue breaths.
13. Mosaic floors should be cleaned with-----
- Alkaline solution
  - Acidic solution
  - Water
  - Sodium bicarbonate.
14. An incident report is to be completed because the client climbed over the side rails and fell on to the floor. The correct reporting of an incident involves which of the following?
- The witnessing nurse completes the report.
  - Details of the incident are subjectively described.
  - An explanation of the possible cause for the incident is entered.
  - A notation is included in the medical record that an incident report was prepared.
15. Which of the following documentation used by the head nurse to communicate information about patient has sudden hemorrhage to another head nurse in the next shift?
- Kardex record
  - Assignment record
  - Shift report
  - Incident report

## **II - ANSWER ANY 10 QUESTIONS IN BRIEF (10x3 =30)**

- |  |  |
|--|--|
| 16. Define-Nurse                           | 23. Define Tachycardia                                   |
| 17. Explain about arachnoid mater          | 24. Define Frost bite.                                   |
| 18. What is meant by joint?                | 25. What is fumigation?                                  |
| 19. What are the functions of skin?        | 26. Define heat exhaustion.                              |
| 20. Define emotion.                        | 27. What is meant hospital housekeeping?                 |
| 21. What is body mechanics?                | 28. List the common problems occurring during reporting. |
| 22. What are the purposes of oral hygiene? |  |

## **III - WRITE SHORT NOTES ON ANY 5 QUESTIONS ONLY (5x5=25)**

- |  |  |
|--|--|
| 29. What are the functions of a hospital?      | 33. What are the classification of wastes seen in hospital?        |
| 30. Write an essay about pituitary gland?      |  |
| 31. Enlist the benefits of exercise.           | 34. How will you take care of glass materials at home?             |
| 32. List four areas liable for pressure ulcer. | 35. Write briefly about the care of rubber goods in the hospitals. |

## **IV - ANSWER IN DETAIL (10x2=20)**

- |  |   |
|--|---|
| 36. Mr. Raju 58 years of age, a road laying worker, fainted suddenly due to the effect of hot sun. What is your initial assessment of his condition? Write a first aid measure for his recovery. | 37. Explain in detail the care that should be taken of the nail and feet. |
|--|---|

OR

Write in detail on skeletal system of man with a neat labelled diagram.

OR

Write in detail on Autoclaving (steam under pressure) with a neat labelled diagram.

# Unit 1

## BED MAKING



### 1.1 INTRODUCTION:

Bed making is an art. Skillful bed making contributes materially to the patients

comfort. Clean and comfortable bed includes the patient unit in the hospital.

Unoccupied Bed



### Types of Beds

#### Ordinary Beds

- Open bed
- Unoccupied bed
- Occupied bed

#### Special Beds

- Admission bed
- Post operative bed
- Fracture bed
- Plaster bed
- Amputation or stump bed
- Cardiac bed
- Rheumatism or renal bed
- Burns bed

Occupied Bed



### Purposes

1. To receive the patient comfortably
2. To give the unit or ward a neat appearance
3. To provide a safe bed to the patient.

### Guidelines:

1. Work systematically
2. Plan the work
3. Collect equipment in the order that they are to be used.
4. Arrange the environment conveniently
5. Accomplish a task with each movement
6. Avoid torn linen
7. Prevent bed linen away from your contact
8. Fold linen and prevent touching the floor
9. Avoid placing dirty linen on the floor
10. Shake gently, do not flap
11. Face direction of work
12. Work from head to foot, from near to far and from clean to unclean
13. Make the bed smooth, unwrinkled and flat.
14. Tuck linen for enough under the mattress and keep it fixed, tight and smooth.
15. Do not alter the shape of the mattress
16. Maintain body mechanics
17. Ensure your own personal safety.

## 1.2 OCCUPIED BED

### Introduction

Occupied bed is prepared for bed ridden patient, lying in the bed. It is used to provide a clean and comfortable bed with the least disturbance of the patient in it.

### Articles required

1. Carbolization articles  
Dettol solution 1:40  
Duster  
Kidney tray
2. Pillow
3. Pillow case
4. Blanket
5. Top sheet
6. Draw sheet
7. Draw mackintosh
8. Bottom sheet
9. Long mackintosh
10. Air cushion
11. Bed cradle / back rest
12. Foot rest
13. Additional pillows

### Procedure

1. Untuck sheet, all around, roll it on the right side.
2. Turn covered patient to the left side and support with pillows
3. Carbolize right side.
4. Roll top sheet lengthwise and place on the right side
5. Roll draw mackintosh and place on the right side.
6. Gently turn the patient to the right side and support with pillows.
7. Second nurse removes soiled sheets and carbolize.

8. The patient lies in the supine position
9. Both nurses, should tighten the tuck, the sheets on their respective sides and make corners [fan fold draw sheet on the left side]
10. Lift patient's legs [second nurse]
11. Place the foot sheet [first nurse] at the foot end
12. Spread the sheet to opposite side
13. Tuck top layer and make mitten corner at foot end [right side]
14. First nurse lifts patients leg and cover him
15. Pull other end of the top sheet over patient leg and cover him
16. If patient can be lifted but not turn do bed from head end to the foot end.

### 1.3 UNOCCUPIED BED

#### Articles required

1. Carbolization articles  
Dettol solution 1:40  
Duster  
Kidney tray
2. Pillow
3. Pillow case
4. Blanket
5. Top sheet
6. Draw sheet
7. Draw mackintosh
8. Bottom sheet
9. Long mackintosh

#### Procedure

1. Wash hands thoroughly
2. Arrange thoroughly in order to use on a stool at the foot end of bed
3. Carbolize the mattress and cot
4. Turn the mattress and pull the cover on
5. Place bottom sheet with the increase in the middle and rest in upper right quadrant of mattress
6. Unfold and spread straight.
7. Tuck 12-18 inches under the mattress on right head end with hands straight and palms down
8. Make a mittening
9. Tuck at foot end
10. Pull tight and tuck the sheet along the right side
11. Place draw mackintosh 15 inch. From the top and tuck it along the right side.
12. Place draw sheet over the mackintosh about 3.5 inches. Above the mackintosh and tuck it along the right side.
13. Go to opposite side left and tuck in each linen as done on the right side but fan fold and tuck the draw sheet on the left side.
14. Come to the right side and place the top sheet with the increase in the middle and rest of the sheet in right lower quadrant.
15. Unfold the top layers and tuck at the foot end and make mitten corner on the right side.
16. Spread the other end over the mattress about 15 inches from the head end.

17. Tuck along the right side.
18. Go to the left side and tuck as done on the right side
19. If a blanket is used then spread and tuck it like a foot sheet
20. Place the pillow with the cover at the head end [open end away from the entrance]
21. Cover bed with counter pan
22. Straighten the unit, in order
23. Clean and replace the articles
24. Wash hands

#### **Metering**

- Pick up the side edge of the sheet, so that the sheet forms a triangle with the head of bed and the side edge perpendicular to the bed.
- Hold the sheet against the side of mattress using the palm of your hand and tuck the excess. Sheet under the mattress
- Drop the sheet from your top hand to the side of mattress

# Unit 2

## PERSONAL HYGIENE



### 2.1 INTRODUCTION

The word hygiene refers to “the science of health and its maintenance, the prevention of disease, and sanitary practices”. Personal Hygiene is the activity of self-care, including bathing and grooming. Care of the skin, hair, nails, mouth, teeth, eyes, ears, nasal cavities and perineal and genital areas.

Factors influencing personal hygiene practices

1. Development level
2. Cultural back ground
3. Socio economic status
4. Religion
5. Health status

### 2.2 MOUTH CARE

The mouth cavity is lined with mucus membrane continuous with the skin. The mucus membrane is an epithelial tissue that lines and protects organs, secretes mucus to keep passage ways of digestive system moist and lubricated and absorbs nutrition.

#### Purposes of Mouth Care



1. Oral Hygiene helps maintain the healthy state of the mouth, teeth, gums and lips.
2. Brushing cleanses the teeth from food articles, plaque and bacteria.
3. Brushing massages the gums.
4. Brushing relieves discomfort resulting from unpleasant odours.
5. Flossing helps remove plaque and tarter from between teeth to reduce the gum inflammation and infection.
6. Oral hygiene gives a sense of well being
7. Proper oral hygiene stimulate appetite.
8. To improve taste.

#### Articles Required:

##### A tray containing

- 1) Cotton swab or clean rag pieces in bowl
- 2) Forceps (artery and dissecting forceps)
- 3) Gallicups 2 nos. (one for Glycerine borax another for salt solution)
- 4) Feeding cup with salt solution
- 5) Kidney trays 2
- 6) Swabs Sticks
- 7) Rubber Sheet
- 8) Towel
- 9) Wash towel

### Procedure:

1. Place all the articles at conveniently on the bed side table.
2. Explain the procedure to the patient.
3. Put the rubber sheet (mackintosh) with towel and kidney tray under the chin.
4. Have the patient rinsed his mouth with salt solution from the feeding cup.
5. Turn the patient's head to one side.
6. Take the artery forceps, wrap a piece of rag pieces/cotton ball around the tip of the forceps.
7. Dip inside the saline water and clean the teeth with up and down movements.
8. Pay special attention to inside the mouth.
9. Change rag pieces or cotton balls as often if necessary.
10. Discard used cotton in the other kidney tray.
11. Allow the patient to gargle as much as necessary.

### Care of Dentures

If the patient has dentures, care should taken to keep the dentures clean. If the patient is unable to do so, the nurse has to remove the dentures by grasping it with gauze pieces. Place them in a tumbler or cup containing water. Dentures are washed carefully using brush, toothpaste and cool water. Water, which is too hot, may injure the composition of dentures. If the patient is to do by himself, he may be assisted. Remove dentures of patients who are unconscious, mentally ill and who have vomiting, cough or spasm.

12. Dip the swab stick in glycerin borax, swab gums, root and sides of the mouth.

### After care equipments:

1. Clean kidney trays and feeding cups with soap and water.
2. Boil forceps and gallicups after cleaning
3. Place all articles in their places after cleaning and boiling.

### 2.3 EYE CARE:

A common problem of the eyes are secretions that dry on the lashes as crusts. If new borns, the eyes are treated soon after the baby is born to prevent ophthalmia neonatorum. Eyes are cleaned from the inner to the canthus.

### Articles Required:

1. Mackintosh and towel.
2. Sterile bowl with sterile cotton swabs.
3. Sterile normal saline or any other ordered solution.
4. Kidney tray and paper bag.
5. Clean face towel.

### Procedure:

1. Wash hands.
2. Pour sterile saline into the bowl and wet the cotton swabs.
3. Stand in front of the patient clean the eyes with the sterile swabs. Discard the swabs into the paper bag continue cleaning till all discharges are removed from the eyes.
4. For crusted secretion, place a wet warm gauze piece or cotton swab over the closed eye. Leave it in place until the crust becomes soft.

5. When the eyes are clean, stop the procedure. Wipe the face with the face towel.

#### **After care of the patient and articles:**

1. Take all articles to the utility room. Clean them. Boil the bowl. Send the towels to laundry. Replace the articles to proper places.
2. Wash hands thoroughly.
3. Record the treatment with date and time. Record the observations made on the nurse's record.

### **2.4. BED BATH**

#### **Definition:**

Bathing a bedridden patient in bed.

#### **Purpose**

1. To cleanse the skin and thus increase elimination through it
2. To stimulate circulation through slightly active or entirely passive exercise.
3. To refresh the patient by relieving fatigue and discomfort.

#### **General Instructions**

1. The temperature of the water should be 105° - 100° F (40° - 44° c)
2. The water should be changed when it is cool or soapy.
3. Be sure to remove all the soap as it is irritating to the skin.
4. Do not expose the patient unnecessarily.
5. Observe the patient's skin while bathing. Particularly if it is in the first bath after admission. It offers an opportunity for the nurse to observe any rashes or pressure sores.

#### **Articles Required:**

1. Mackintosh (long) and two bed sheets

2. Soap in a soap dish
3. Two sponge towels
4. Bath towel – one
5. Linen to change (Gown)
6. Two jugs containing hot and cold water
7. Basin
8. Bucket
9. Screen
10. Urinal and bed pan

#### **Procedure:**

1. Close the window or door and screen the bed to prevent draught and to avoid exposure.
2. To collect the equipment next to the patient's bed.
3. And arrange the items conveniently at the bed side.
4. Explain the procedure to the patient and get his cooperation.
5. Protect the bed with mackintosh and sheet.
6. Remove the patient's linen and cover the patient.
7. Take water in the basin and feel with the back of your hand. The temperature should be comfortably hot.
8. With wet sponge towel, moisten the patient's face first.
9. Apply soap. Carefully wash patient's face, ears and front of the neck. Dry with the towel.
10. Wash the left hand first and the right hand. Support patient's arm by holding the wrist. Wash well between fingers. The patient may place hands in basin.

11. Remove the sheet up to the waist, ask the patients and keep the arms above his head. It will be easy to clean the axillae in this position. Clean chest and abdomen.
12. Change water and turn the patient to the side and sponge his back. Give long firm strokes from back of neck to the buttocks. Watch for any redness over the pressure areas.
13. Do the left leg first and then the right. Have the patient's knee flexed so to facilitate washing. Give the bed pan and ask the patient to clean the genitals. If the patient is unable to do help to do it for him. Patient should be given privacy during this.
14. This back care is done applying alcohol, massage back, use long firm strokes starting from back of the neck out over the shoulders and down to the buttocks. Use also rotation motion to increase the blood circulation. Extra attention to be given to the pressure areas.
15. Apply powder if indicated. This depends upon the condition of the skin. If the skin is wrinkled the application of oils/creams is advisable.
16. If the patients is having dribbling of urine, zinc cream is applied.
17. Role up the mackintosh and sheet when the patient is on the side. Then remove it from the other side. Put the soiled linen in the receptacle (bucket for soiled linen).
18. Dress up the patient and remove the top sheet.
19. The bed is kept tidy and dry.
20. The patient is given a warm drink.

21. Remove the articles from the bed side.
22. Clean and replace in respective places.
23. Send soiled linen for wash.

## 2.5 BACK CARE



### Purpose

1. To cleanse the skin and back
2. To stimulate circulation
3. To refresh the patient by relieving fatigue and discomfort
4. To prevent bed sore

### Articles Required:

1. Basin of warm water
2. Soap wash cloth and towel
3. Back rub lotion or spirit
4. Talcum powder

### Procedure:

Bring the tray to the bedside, and screen the bed. Explain to the patient, get him into position, and protect the bed with the towel, wash the part, then leaving it wet, soap the palm of the hand well and massage with circular movements. So that the tissues under the skin are moved and the circulation is stimulated.

Then rinse the soap off the skin with the wash cloth, and dry well with the towel. Back rub lotion or spirit is then rubbed into harden the patients skin. Talcum powder is applied to leave the skin dry and smooth.

It is usual to treat first the back and hips and then if necessary the elbows, knees and ankles. Leave the bed tidy and the patient comfortable.

If the patient is incontinent, it is better to use ointment such as zinc, castor oil instead of spirit and powder, to protect the skin from moisture.

## 2.6 HAIR WASH

### Purpose

1. To keep the hair clean and healthy
2. To prevent itching, infection, infestation
3. To provide a sense of well being
4. To destroy pediculi

### Articles Required:

1. Jugs with hot and cold water
2. Two buckets
3. A basin and mug
4. A blanket to cover the patient
5. Two towels
6. Shampoo, crushed soap nut or soap
7. Wash cloth to cover the eyes
8. A little cotton to put into the ears
9. Kidney tray and paper bag
10. Comb and oil

11. Hot water bag in cold season to dry the hair

### Procedure:

1. Explain the procedure to the patient, and screen the bed
2. Bring the articles to the bed side
3. Move the patient near the edge of the bed.
4. Protect the patients shoulders with a small rubber sheet and a towel and pin it in front
5. Fold and place the wash cloth over the eyes and put cotton in the ears
6. Loosen the hair and comb out tangles
7. Mix the hot and cold water and test the temperature
8. Wet the hair with warm water. Apply shampoo or soap, and rub the scalp and hair well.
9. Rinse the hair well. Squeeze the water from the hair.
10. Remove the bucket of dirty water, and collect the rubber sheets into the second bucket.
11. Place a clean towel under the patients head and dry the hair well
12. Make the patient comfortable. The hot water bottle may be placed underneath the towel on which the hair is spread to dry
13. When dry, comb the hair and braid it.
14. Remove all articles, clean and replace them chart the procedure.

## 2.7 NAIL CARE



### Purpose:

- Maintain skin integrity around nails
- Provide for clients comfort and sense of well being
- Maintain foot function
- Encourage self-care

### Articles Required:

- Water proof pad
- Wash cloth, towel
- Wash basin, warm water, soap
- Lotion
- Disposable gloves
- Nail clippers, file
- Polish remover (if necessary)

### Procedure:

1. Wash your hands
2. Help client to sit if possible. Elevate head of bed for bedridden client.
3. Remove colored nail polish if client is scheduled for surgery.
4. Fill washbasin with warm water [100-104oF], place water proof pad under basin.
5. Soak client's hands or feet in basin for 10-20 Minutes.
6. Dry the hand or foot that has been soaking. Rewarm water, and allow other

extremity to soak while you work on the softened nails.

7. Gently clean under nails.
8. Beginning with large toe or thumb, clip nail straight across
9. Push cuticle back gently.
10. Repeat procedure with other nails
11. Rinse foot or hand in warm water.
12. Dry thoroughly with towel, especially between digits
13. Apply lotion to hands or feet
14. Help client to comfortable position
15. Remove and dispose of equipment.
16. Wash your hands.

# Unit 3

## VITAL SIGNS



### 3.1 INTRODUCTIONS:

Vital sign are very important indicators of the state of health of a person. They help in diagnosis of disease. This vital signs indicate the basic functioning of the body as follows: **temperature** is the degree of body heat. It shows the ability of the body to produce and lose heat and whether or not the balance is maintained as in normal temperature.

**Pulse and BP** indicate the action of the heart and condition of the circulatory system. **Respiration** is a vital function of life. By observing respirations we find out how well the respiratory system is working in regard to both lung function and the act of breathing.

Temperature varies with the following factors

- Time of day
- Age
- Exercise
- Temperament
- Place of taking
- Climate

### Conversion Scale:

To Convert Fahrenheit into Celsius

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

To Convert Celsius into Fahrenheit

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

### Sites for taking temperature:

1. Mouth

2. Axilla
3. Groin
4. Rectum

### 3.2 TEMPERATURE TAKING AND RECORDING:

Equipments for taking oral temperature

1. A tray taking oral thermometer in a jar of disinfectant, such as carbolic 1 in 20 (or) dettol 1 in 40
2. clean water in a container
3. clean cotton swabs, and small swabs moistened in soap solution
4. kidney tray or paper bag for soiled swabs
5. red and blue pens, temperature book or chart
6. watch with seconds hand

### Procedure:

1. Bring the tray to the bedside and explain to the patient, who should be at rest sitting or lying down position.
2. Make sure the patient has not just taken a bath, nor had a hot or cold drink within fifteen minutes.
3. Take a thermometer from the lotion, dip in clean water and wipe with cotton, using a circular movement, from the bulb towards the stem. Avoid touching the part that goes into the mouth.
4. Read the thermometer and be sure it is shaken down to 35°C (95°F) or below.



5. Place the thermometer under the patients tongue and instruct him not to bite it but to close his lips gently. He should not talk or cough.
6. Keep the thermometer in the mouth for 1 to 3 minutes.
7. Place the tips of three fingers (never the thumb) gently over the radial artery at the wrist.
8. Feel the pulsation carefully before starting to count. Note the strength and regularity of the beats.
9. Using a watch with seconds hand, count the number of beats for one minute.
10. Feel or watch the rise and fall of the patient's chest.
11. Count each rise and fall as one respiration. Count for a full minute.
12. While counting the rate, note also
  - i. Rhythm – regular or irregular
  - ii. Depth – shallow, normal or deep
  - iii. Sound – quiet or noisy
  - iv. Any discomfort or difficulty in breathing
13. Record the temperature, pulse and respiration on the chart or in the TPR chart
14. Taking and replacing thermometer should be in rotation making sure they remain in disinfectant for at least 3 minutes before being used for another patient.
15. After the procedure, clean and reset the tray for next use.

### 3.3 BLOOD PRESSURE

#### Definition:

Blood pressure is the force or pressure of blood against the wall of blood vessels as it flows through them.

It depends on the following factors.

- Force of the heart beat
- Elasticity of the blood vessels walls
- Volume of blood in circulation
- Dilatation of contraction of the small arteries and capillaries.

Systolic blood pressure is the highest pressure in the arteries, due to contraction of the heart.

Diastolic pressure is the lowest pressure.

It occurs between the heartbeats

Pulse pressure is the difference between the systolic and diastolic pressures

It is normally about 35 and is a measure of the heart's strength

### Articles Required:

- Sphygmomanometer: To measure arterial pressure
- Bladder and cuff: To exert equal pressure around the artery being auscultated.
- Stethoscope: To auscultate arterial pressure waves
- Pen, pencil and flow chart: For timely documentation of findings.

### Procedure:

1. Explain the procedure to the patient, and have him seated by a table or lying down, with the arm supported and relaxed.



2. Place the centre of the cuff of the BP apparatus over the brachial artery and wrap it smoothly and firmly around the patient's arm 5 cm above the elbow tuck the end in neatly.
3. Find the brachial pulse with the fingers and place the stethoscope over it.
4. Close the screw valve, and inflate the cuff until the pulse disappears and above that about 20 mm mercury.
5. Open the valve slowly, and listen for the first sound while watching the manometer reading. The first sound gives the systolic reading. As air escapes the sounds become louder and clearer.
6. Continue to let air out slowly. As you listen the sounds suddenly become dull, and at then point take the diastolic reading.
7. Allow all the air to escape and the mercury to fall to zero.
8. Repeat the procedure if there is any doubt about the reading
9. Record the reading. The systolic pressure is always written over the diastolic pressure eg. 120/80 mm Hg.
10. Remove the cuff from the patients arm roll and replace in the box.



# Unit 4

## ANTHROPOMETRIC MEASUREMENT



### 4.1 INTRODUCTION:

Anthropometric measurement includes height, weight, head circumference, chest circumference and mid-arm circumference.

Quantitative expression of body mass, which indicates state of growth and health, is measured in kilograms or pounds using adult or infant weighing scale.

### 4.2 CHECKING WEIGHT OF AN INFANT



Infant-weighing scale [Infantometer]

#### Purposes:

- To check whether an infant has adequate weight for age
- To calculate food requirements
- To calculate intravenous fluids and medications
- To monitor whether an infant gaining or losing weight depending on disease condition

#### Required articles

- Infant weighing scale- infantometer

- Draw sheet
- Duster
- Paper and pencil for calculation

#### Procedure:

1. Clean the weighing scale with wet duster
2. Place draw sheet on the scale
3. Balance the scale to read zero
4. Place the weighing scale close to the wall to prevent the child from falling
5. Instruct mother to stand beside the scale
6. Undress the child before weighing
7. Mummify the infant with the same draw sheet and place the infant on the scale
8. Place the left hand over the infant without touching
9. Note the weight
10. Lift the infant from the scale and help the mother to dress the infant
11. Check and compare previous weight
12. Difference of more than 100 gms, needs to be clarified by rechecking the infants weight immediately
13. If the difference is still the same, it should be informed to the doctor concerned.
14. If the weight is in pounds and it must be converted to kilograms using conversion table.
15. Document the weight.

$$1 \text{ Kg} = 2.2 \text{ lbs}$$

#### 4.3 MEASURING THE LENGTH OR HEIGHT OF AN INFANT



Measurement of length by placing the child on a paper covered surface. Making the end points of the top of head and heels of the feet, and measuring between the two given points gives the length of the child.

Length of the baby can be measured in weighing scale by marking with scale between head and heel points.

#### 4.4 MEASUREMENT OF HEAD CIRCUMFERENCE



1. Place light drape or paper on flat surface
2. Place infant in supine position or seated on paper drape
3. Place tape measure over the most prominent point of the occiput, around the head just above the eyebrows and

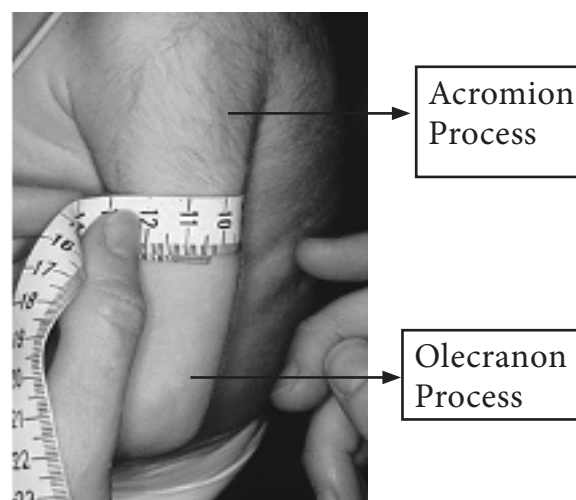
pinna. This point is should be taken as head circumference.

#### 4.5 MEASUREMENT OF CHEST CIRCUMFERENCE

Place tape measure underneath the back of baby and bring it to front measured at nipple line gives the chest circumference.



#### 4.6 MEASUREMENT OF MID-ARM CIRCUMFERENCE



1. Place the tape vertically, along the posterior aspect of the upper arm to the acromion process and the olecranon process.
2. Half measured is the mid point
3. Place the inch tape at the midpoint and measure around the arm. It gives the mid arm circumference.

#### 4.7 MEASUREMENT OF HEIGHT & WEIGHT OF ADULT



##### MEASUREMENT OF HEIGHT:

**Height** is a measurement from head to toe that indicates the state of growth and health. It is measured in feet, inches or centimeters.

##### Purpose:

To measure accurate height of the patients

##### Required articles:

1. Measuring scale attached to the wall
2. A straight object or scale
3. Paper and pencil
4. Newspaper

##### Guidelines:

1. Have the patients shoes / slippers removed while taking height to avoid any variations in the reading
2. If thick object or scale is placed on the top of the head at right angle to the scale indicating the reading, note the bottom reading of the object.

##### Procedure:

1. Gather the equipment
2. Explain the purpose and procedure to the patient
3. Wash your hands
4. Tell the patient to remove the slippers or shoes.
5. Assist the patient to stand on a lean newspaper kept on the floor
6. Tell the patient to stand with the buttocks and the back of head against the scale on wall, feet flat, heels together and eyes looking straight ahead.
7. Place the straight object on the top of the head at right angles to the scale on the wall, touching the scale calibration. Note the reading where the said object touches the scale.
8. Tell the patient to put on slippers
9. Place the patient in a comfortable position
10. Replace the equipment
11. Wash your hands
12. Record the date and time of the procedure and height in the nurse's notes or graphic sheet.

### Measurement of weight:



**Weight** is the quantitative expression of a body that indicates the state of growth and health. It is measured in kilograms, pounds and grams.

### Purposes:

1. To obtain accurate weight of the patient
2. To help in accurate diagnosis of the patient
3. To evaluate patient's response to treatment

### Required articles:

1. Weighing scale
2. Newspaper

### Guidelines:

1. Weigh on weighing scale when the patient is ambulatory
2. Daily weigh the patient at the same time with the same scale and with same clothing
3. Weigh before meals and after voiding
4. Weigh on admission to provide base line information to subsequent daily weight recording and assess any significant increase or decrease in the patient's weight.

5. The weighing scale must be accurate, hence the balance scale, be prepared before weighing the patient.

### Procedure:

1. Collect the equipments
2. Explain the procedure to the patient
3. Wash your hands
4. Assist the patient to void or empty the bladder
5. Check the commonly used flat weighing machines reading is set at zero level
6. Tell the patient to remove the slippers or shoes and extra cloths
7. Assist the patient to step on the centre of the scale platform
8. Assist the patient to step off the scale platform
9. Assist the patient to return to the bed
10. Wash your hands
11. Record the weight in the graphic sheet or nurse's notes.

### 4.8 BODY MASS INDEX (B.M.I)

**BMI** is an attempt to quantify the amount of tissue mass (muscle, fat and bone) in an individual, and then categorize that person as underweight, normal weight, overweight, or obese based on that value.

The body mass index is a value derived from the mass (weight) and height of an individual. The BMI is defined as the body mass divided by the square of the body height and is universally expressed in units of Kg/m<sup>2</sup> resulting from mass in kilograms and height in meters.

$$BMI = \text{mass}_{kg} / \text{height}^2$$

### Student Activity:

Every student has to calculate their BMI and to be categorized

WHO regards a BMI of less than 18.5 as underweight and may indicate malnutrition. While a BMI equal to or greater than 25% considered overweight and above 30 is considered obese.

Category	BMI (Kg/m <sup>2</sup> )	
	From	To
Low		18.5
Normal	18.5	25
Obese (level 1)	25	30
Obese (level 2)	30	35
Obese (level 3)	35	40
Obese (level 4)	40	

BMI ranges are based on the relationship between body weight and disease and death. Overweight and obese individuals are at an increased risk for the following diseases

- Coronary artery disease
- Dyslipidemia
- Type 2 diabetes
- Gall bladder disease
- Hypertension
- Osteoarthritis
- Stroke

WEIGHT	lbs	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
		kgs	45.5	47.7	50.0	52.3	54.5	56.8	59.1	61.4	63.6	65.9	68.2	70.5	72.7	75.0	77.3	79.5	81.8	84.1	86.4	88.6	90.9	93.2	95.5
HEIGHT	in/ft	Underweight				Healthy				Overweight				Obese				Extremely Obese							
5'0" -	152.4	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5'1" -	154.8	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
5'2" -	157.1	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
5'3" -	160.0	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
5'4" -	162.5	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
5'5" -	165.1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
5'6" -	167.6	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
5'7" -	170.1	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
5'8" -	172.7	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
5'9" -	175.2	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
5'10" -	177.8	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
5'11" -	180.3	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
6'0" -	182.8	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
6'1" -	185.4	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
6'2" -	187.9	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6'3" -	190.5	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
6'4" -	193.0	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35

# Unit 5

## POSITIONS USED FOR PATIENTS

### 5.1 INTRODUCTION:

Nursing is a job that needs a lot of bending our backs, flexing our arms and legs and pushing and pulling patients. Because of this, many nurses are at risk for developing physical strain and back injuries or even fractures. One way to prevent these from happening is to practice proper body mechanics.

#### Definition

Body mechanics involves the coordinated effort of muscles, bones, and the nervous system to maintain balance, posture,



and alignment during moving, transferring, and positioning patients. Proper body mechanics allows individuals to carry out activities without excessive use of energy, and helps prevent injuries for nurses and patients.



#### Purposes of good body mechanics and posture.

- (1) To provide maximum comfort and relaxation.
- (2) To aid in normal body function.
- (3) To prevent contractures and neuromuscular deformities and complications.
- (4) To conserve maximum possible energy by preventing unnecessary strain.

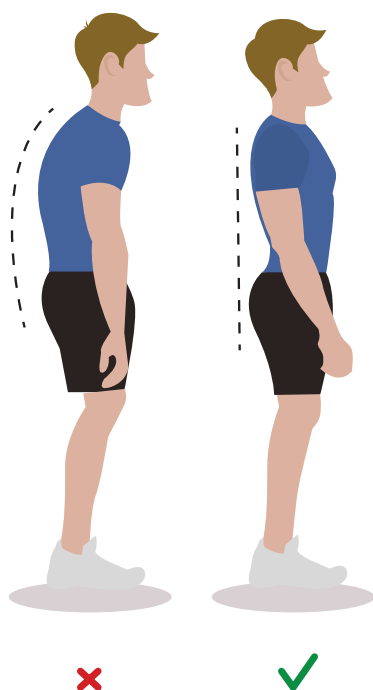


## Normal positions.

### Positions

#### 1. Standing position:

In a standing position, the back should be straight; feet firmly on the ground, about 4 to 6 inches apart to give an adequate base of support, with the toes pointing straight ahead or slightly toed out; head and rib cage held high; chin, abdomen, and buttocks pulled in; and knees slightly bent.



#### 2. Sitting position:

In a sitting position, the back should be straight, with the weight resting equally on the buttocks and under surface of the thigh, but not on the base of the spine.



## Positions used for patients.

### Positions

#### 3. Dorsal position (Supine.):

Patient is flat on the bed with legs extended and arms at the sides of the body. This is not a comfortable position, as the curves of the body are not supported.



### Indications

- Surgical procedures, it allows access to the peritoneal, thoracic and pericardial regions; as well as the head, neck and extremities.

#### 4. Dorsal recumbent position:

Place patient flat on back with one pillow under head; have knees flexed and separated and feet flat on bed.



### Indications

- Rectal, vaginal and pelvic examinations and treatments.
- For normal Deliveries.

#### 5. Lateral Position:

Patient lies on his side with spine straight. The knees are flexed; the upper knees are more flexed than the lower one. Pillows may

be provided for the head, in between the legs, and to support the back and abdomen. The lower arm is kept above the head and the upper arm is placed on a pillow in front.



### Indications

- General comfort, rest and relaxation.
- Back care.

The arms and legs do not bear the weight of the body.

### 6. Sims or Left Lateral position:

Place patient on left side somewhat obliquely across the bed with buttocks to edge of mattress. Incline the body forward, draw the left arm back under patient and place the right arm free in front. The thighs should be flexed upon the body, the right more than the left.



### Indications

- Vaginal examinations.
- Perineal examination.
- Rectal examinations.
- Post operative, to maintain a clear airway.

### 7. Jack knife position:

Place patient on a prone position with the hips directly over the band of the examining table. Tip the table with the head lower than the hips. Lower the foot part of the table so that the patient's feet are below the level of his head.



### Indications

- For drainage after any procedures.
- Operation on the rectum and coccyx.

### 8. Knee Chest Position:

Place patient in the prone position, then assist her to kneel so that her weight rests on her chest and knees. Turn head to one side and flex her arms at the elbows extending, then to the bed in front of her. Be sure the thighs are perpendicular to the level of the head. Watch pulse and general condition of the patient.



### Indications

- To obtain better exposure of the vagina, cervix, and rectum.

- To examine the bladder.
- To help correct retroversion of the uterus.
- To administer caudal and sacral anesthesia.
- Vaginal and rectal examinations.
- Operative procedures on the vagina, rectum and perineum.
- Operative deliveries

#### 9. Lithotomy Position:

A position of the body for medical examination, pelvic or abdominal surgery, or childbirth in which the individual lies on the back with the hips and knees flexed and the legs spread and raised above the hips often with the use of stirrups.



#### Indications

- Abdominal surgeries.
- Childbirth.
- Pelvic examination.
- Urologic examination of the prostate.
- Male urethral surgery. Examination or operations on rectum and genital organs.

#### 10. Prone Position:

Patient lies flat on his abdomen with head kept on a pillow and turned to one side and another pillow under the lower chest. Pillows are kept under the waist and under the lower legs. The arms are flexed at the elbow and kept above the head.



#### Indications

- For treatment on the back.
- To secure drainage of pus in front of the abdomen.
- When there is bed sore or burns or an injury at the back (spine.)
- Change of position for patients with fractured spine.

#### 11. Sims position or semi prone position:

This is a modified left lateral

position. The patient lies on the left side. Head, shoulders and chest are turned forward so that her chest rests on the pillow. The right knee is well flexed and rests on the bed in front. The left knee is slightly flexed and is positioned behind the right knee.

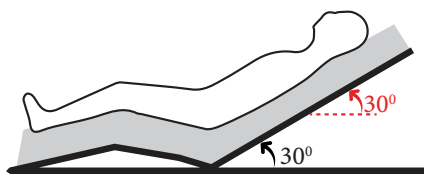


#### Indications

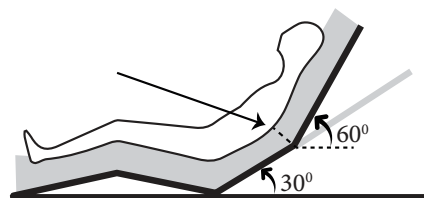
- Vaginal examination.
- For rest and relaxation.

## 12. Fowler's Position and Semi-Fowler's Position:

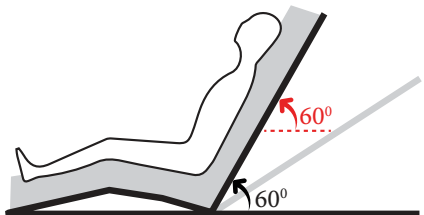
Patient is in a partially sitting position. The back of the bed is elevated to 45 degrees with the aid of a backrest and pillow or by adjustment of the cot. It can be elevated to 30 degrees as well as 90 degrees. Patient's back shoulder and head are supported well. The knees are flexed and supported with a pillow or by cot adjustment. A footrest is provided to prevent foot drop.



WT30°



UT60°



WT60°

### Indications

- To obtain good drainage in the pelvis.
- To localize infection in the pelvis and prevent its spread to the peritoneum.
- To prevent strain of abdominal muscles.
- This position is used for patients with dyspnoea (difficulty in breathing), distended abdomen, abdominal surgery, cardiothoracic disorders and ascites.
- The position is also useful while passing Ryle's tube. And while performing tapping of ascites fluid.

## 13. Trendelenburg position:

The patient lies on his back with the foot at the bed elevated on wooden blocks. Patient's head and trunk are lower than the legs.



### Reverse Trendelenburg Position:

The head and shoulders are at a higher level than the hips, legs and feet. This position is used for reducing intracranial pressure and for other treatment measure.



### Indications

- Gynecological surgery and suprapubic prostatectomy cases.
- To prevent shocks.
- To prevent or relieve post-partum hemorrhage.

# Unit 6

## IDENTIFICATION OF INSTRUMENTS

### 6.1 OXYGEN MASK



Oxygen mask is used to give when O<sub>2</sub> concentration of over 25% is needed. Oxygen flow of 8–12 litre/minutes will be sufficient to maintain the concentration of O<sub>2</sub> to 25%. O<sub>2</sub> mask should be properly fitted over the nose and mouth and fastened with ties at the back of the head.

### 6.2 STETHOSCOPE



The stethoscope is an important medical device for auscultation or listening to the internal sounds of human body.

The sounds heard on auscultation in human body are heart sounds, breathing sounds, bowel sounds, fetal heart rate etc.,

### 6.3 TONGUE DEPRESSOR



A tongue depressor is a tool used in medical practice to depress the tongue to allow for examination of the mouth and throat for physical examination.

### 6.4 KNEE HAMMER



The knee or reflex hammer is a medical instrument used by practitioners to test deep tendon reflexes.



### 6.5 SPHYGMOMANOMETER [BLOOD PRESSURE APPARATUS]



A Sphygmomanometer is a device used to measure blood pressure. This consists of an inflatable cuff, bulb a mercury reservoir, and a manometer. Normal blood pressure is adults is 120/80 mm Hg.

### 6.6 CLINICAL THERMOMETER



The clinical thermometer is an instrument used to measure body temperature. Normal body temperature 98.4° F to 98.6° For 37° C

### 6.7 SYRINGES AND NEEDLES



The parental route of medication is given by injection. The syringes vary in sizes like 2, 5, 10, 30 and 50 ml.

### 6.8 SCISSORS



Scissors are hand operated shearing tools. They are used to cut or dissect tissues, used during dressings and bandaging, removal of sutures.

### 6.9 FORCEPS



Forceps are hand held, hinged instrument used for grasping and holding objects. Forceps are a surgical instrument used during operation of body organs for grabbing, holding tissues, arteries, removing tissues within or from the body.

There are many types such as straight forceps.

- Curved forceps
- Alice forceps
- Sinus forceps
- Migills forceps
- Needle holding forceps

## 6.10 THUMB FORCEPS



Thumb forceps are hand help instrument used for holding during surgery dressing and debridement of wounds.

There are two types commonly used are

- Toothed thumb forceps
- Non-toothed thumb forceps

## 6.11 SPONGE HOLDER

Sponge holding forceps or sponge holder are used by doctors to hold cotton sponges during surgery to arrest bleeding.



# Unit 7

## IDENTIFICATION OF BONES

### 7.1 DEFINITION

Bone is a hard living connective tissue, which forms the skeleton of human body. Bone is highly vascular organ made up of bone. Cartilage, loose and dense connective tissue and nerve tissue.

- Production of blood cells
- Produce movements as levers
- Store house of calcium.

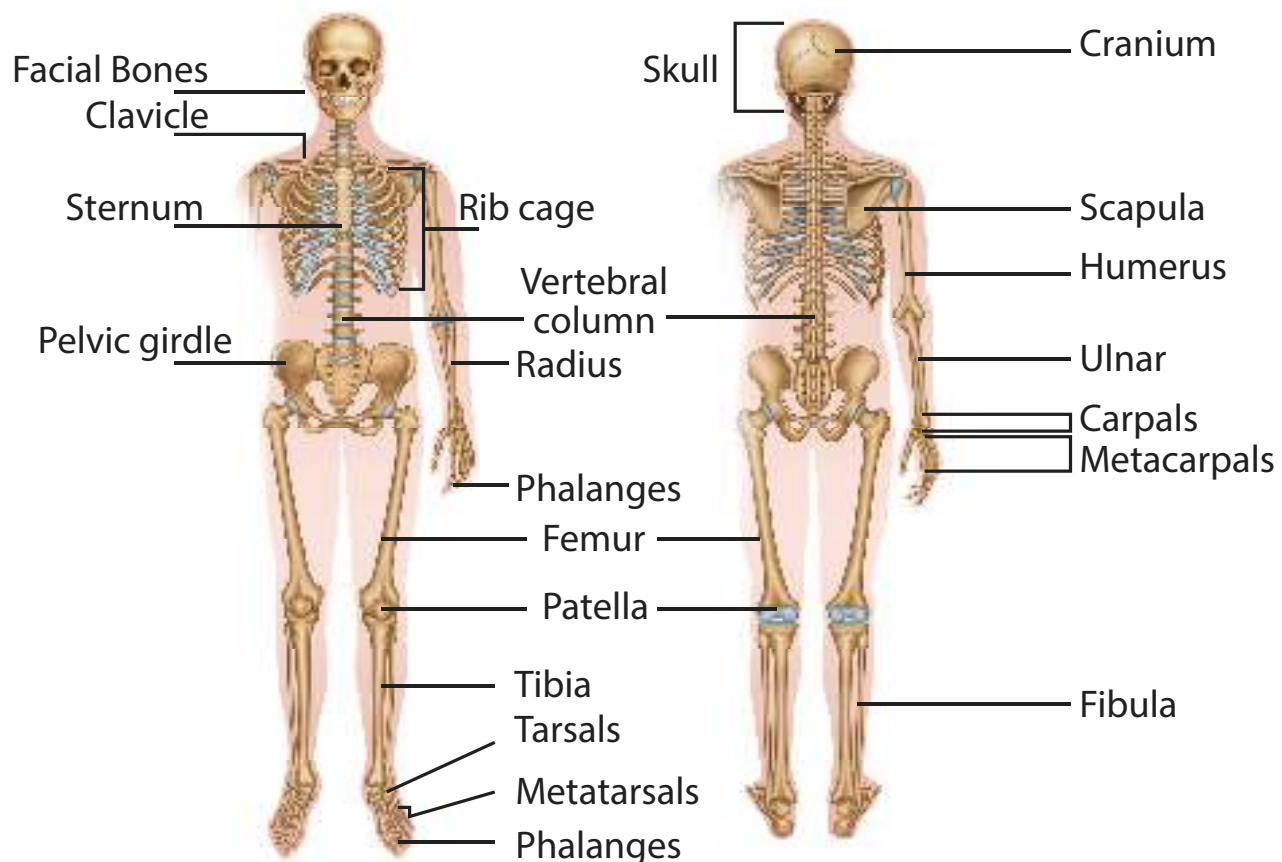


### 7.2 FUNCTIONS

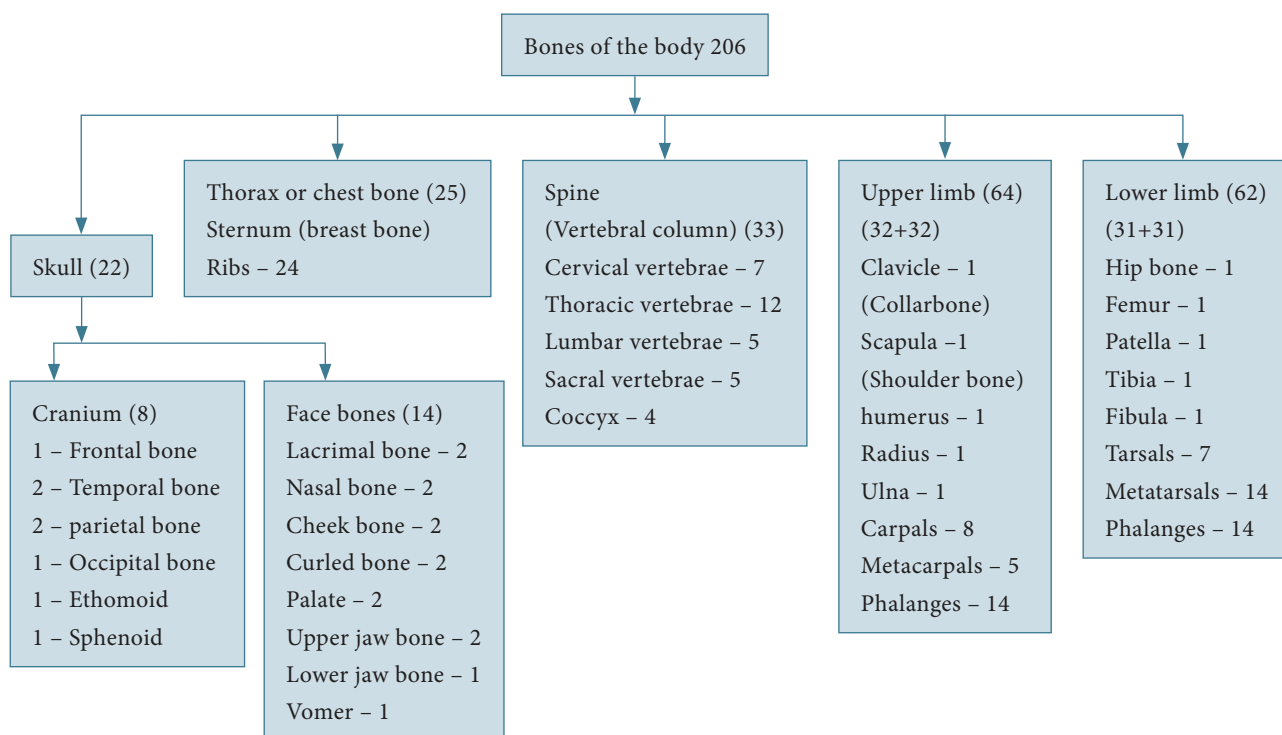
- Support of body
- Provides attachment for muscles, ligaments, tendons and fascia.
- Encloses vital organs such as heart and brain

### 7.3 BONE STRUCTURE

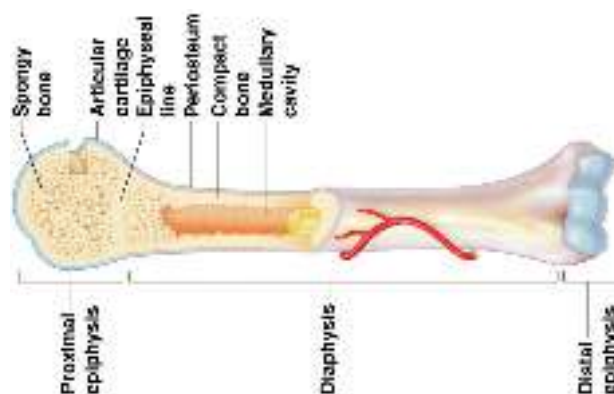
Bone consists of organic and inorganic materials. The organic substance includes and about 1/3rd of interstitial substance or matrix. The inorganic substance consists of remaining 2/3rd of matrix which is made up of calcium and phosphorus.



## 7.4 BONES OF THE BODY



It consists of outer “Compact bone” and inner “Spongy” bone.



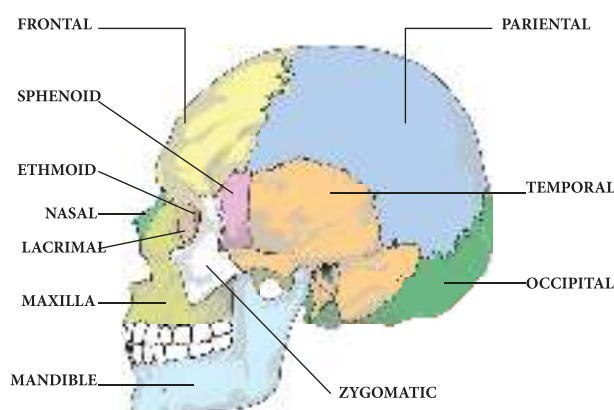
### The skull consists of 2 parts

1. The cranium is made up of eight bones
2. The facial skeleton is made up of 14 bones

### Cranial bones

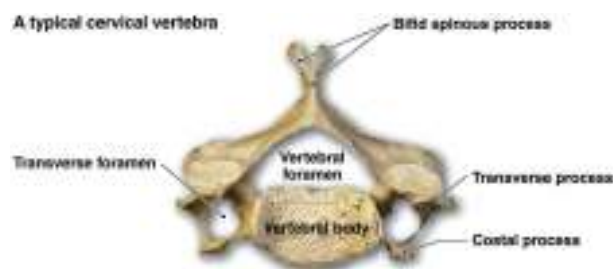
a. Frontal bone - 1	Which forms the forehead and helps to protect the eyes.
b. Parietal bone - 2	One on each side of the top of the skull, joined into the middle.
c. Temporal bone - 2	One on each side below the parietal bones. These protect the inner parts of the ears.
d. Occipital bone - 1	Which forms the back and base of the skull. It has a large hole on its base called the foramen magnum, for the spinal cord to pass through
e. Sphenoid bone - 1	A hat shaped bone.
f. Ethmoid bone - 1	Which form the roof of the nose between the eyes.

## 7.5 SKULL



## Facial skeleton (bones)

a. Nasal bones – 2	Which form the bridge of the nose
b. Lacrimal bones – 2	Near the eyes, which contain tear ducts
c. Cheek bones – 2	Otherwise called zygomatic bones
d. Palate bones – 2	Which join with the upper jaw bones
e. Curled bones – 2	One in each side of the wall of the nose
f. Vomer bone – 1	Helps to form the nasal septum
g. lower jaw – 1	Which forms the Mandible. Only the lower jaw can be moved during chewing (mastication)
h. Upper jaw – 2	Which form the projections on the inner sides of the nasal cavity

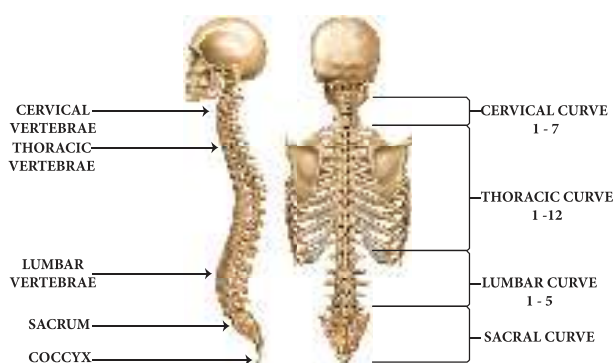


Spine or backbone is the central part of the skeleton. It supports the head and encloses the spinal cord. It consists of 33 regular bones called 'vertebrae'

## The parts of the vertebral column

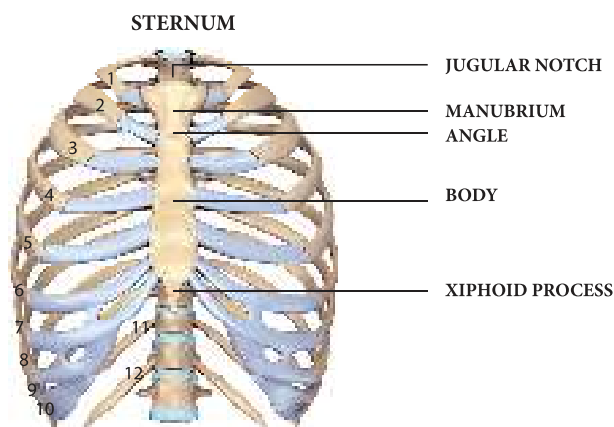
a. Cervical vertebrae – 7	This is in the neck region. The first two bones called atlas and axis are important for nodding and turning the head.
b. Thoracic vertebrae – 12	Forming the back position of the thoracic cavity
c. Lumbar vertebrae – 5	Found in the waist region. These are big and strong for giving support
d. Sacral vertebrae – 5	Fused together to form the sacrum
e. Coccygeal – 4	Fusing to form the coccyx which forms the tail end of the vertebral column.

## 7.6 VERTEBRAL COLUMN



The sacrum and the coccyx are called fixed vertebrae and the others are called movable vertebrae

## 7.7 THORAX



Thorax is formed by 12 thoracic vertebrae at the back, the sternum [breast bone] in front and the 12 pairs of ribs with their cartilages on sides.

The ribs are twelve pairs of the long curved bones. The upper seven pairs which are separately attached to the sternum by its cartilages are called true ribs.

The next five pairs of ribs are called false ribs because they are joined by their cartilages to those of the ribs above and not directly to the sternum.

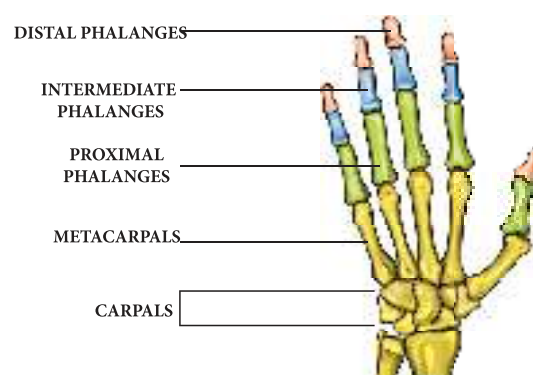
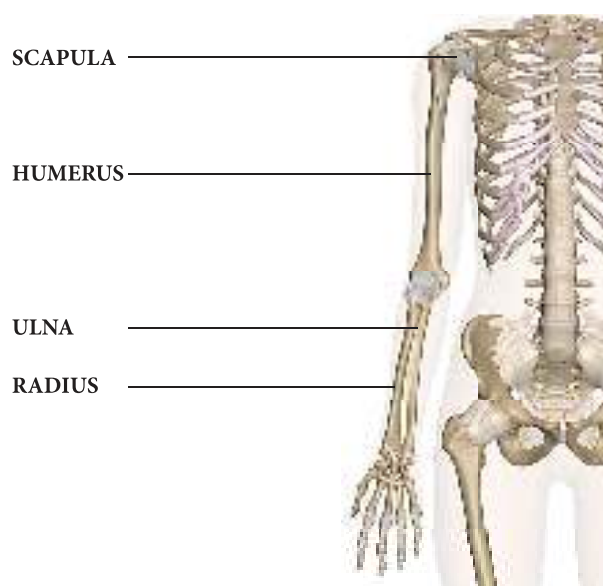
The last two pairs are not connected to the sternum at all and are called floating ribs.

Clavicle – 1	The clavicle or collarbone is a long curved bone forming the interior part of the shoulder girdle.
Scapula – 1	It is a large, flat, triangular shaped bone. This is otherwise called shoulder blade.

Humerus – 1	It is the longest bone in the upper limb
Radius – 1 Ulna – 1	They extends from the elbow joint to the wrist joint
Carpal bones – 8	It consists of short bones arranged in two rows
Meta carpal – 5	It consists of 5 bones seen in the palm.
Phalanges – 14	These form the skeleton of the fingers. 3 phalanges in each finger and only 2 phalanges in the thumb

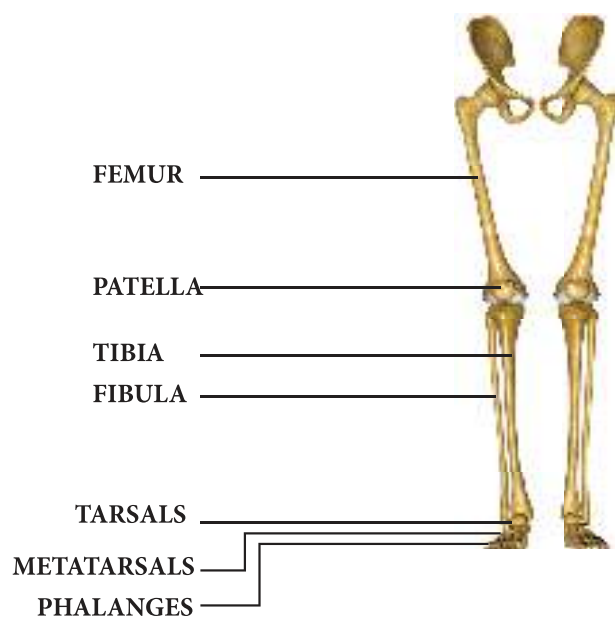
## 7.8 BONES OF THE UPPER LIMB

Each upper limb consists of thirty two bones.



## 7.9 LOWER LIMB BONES

Each lower limb consists of thirty one (31) bones.



The Pelvic Girdle



Tibia – 1	It is the long bone on the inner side of the lower leg.
Fibula – 1	Fibula is a long thin bone on the outer side of the leg.
Tarsal bones – 7	Tarsal bones of the ankle are seven short bones. The largest is the heel bone – calcaneum
Meta tarsal bones – 5	They are 5 long bones in front of the feet. They support the toes.
Phalanges [toe bones] – 14	Fourteen in number. Two in the big toe and three in each of the other toes.

Innominate bone – 1	It is otherwise called as hip bone. Irregular flat bone, which has 3 parts, Ilium, ischium and pubis
Femur bone – 1	It is the largest and strongest bone in the body. Otherwise called as thighbone.
Patella 1 [knee cap]	It is the small bone at the front of the knee joint.

# Unit 8

## HANDWASHING TECHNIQUE



### 8.1 DEFINITION

A technique of cleaning hands is to prevent transmission of micro-organisms.

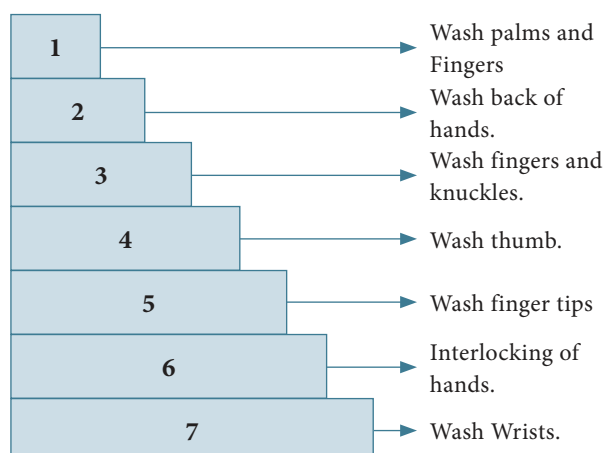
#### Purpose

- Cleanliness.
- Aesthetic Feeling.
- To prevent cross infection.

#### Indication

- At the end of each task.
- Before handling clean articles.
- Before surgical procedures and delivery.
- Before serving or eating food.
- When even necessary.

### 8.2 EFFECTIVE HAND WASHING STEPS



### GUIDELINES FOR MAINTAINING AND WASHING

- Cut nails short to prevent accumulation of dirt.
- Remove jewelery to ensure thorough cleaning.
- Remove the wrist watch and push long uniform sleeves above wrists.
- Inspect the surface of the hands and fingers for breaks or cuts in skin and cuticles.

### 8.4 MEDICAL HAND WASHING

#### Equipments needed

- Sink with warm running water.
- Antimicrobial soap / Regular soap.
- Clean towel.

#### Procedure

- Stand in front of sink, keeping hands and uniform away from sink surface.
- Open tap and wet below hand (hold hands below level) thoroughly under running water.
- Keep hands and forearms lower than elbows during washing.
- Apply 1ml of regular 3ml antiseptic liquid soap to hands lathering thoroughly.

## STEPS OF HAND WASHING



- Wash hands using plenty of lather and friction for atleast 10 to 15 seconds.
- Interlock fingers and rub palms and back of hands with circular motion atleast 5times each.
- Rinse hands and wrist thoroughly keeping hands down and elbows up.

## SURGICAL HAND WASH



- Dry hands thoroughly from fingers to wrist and forearms with towels.
- Discard towel in soiled bin.
- Turn of water.

- Use one side to dry one hand and reverse side for other hand.
- Discard towel to the soiled bin.

For assist one person need to stay while surgical hand washing.

## **| SURGICAL HAND WASHING/SCRUB**

- Wear cap and mask.
- Turn on water.
- Wet hands and arm under running warm water.
- Hand should be held above elbows. Use circular movements to wash palms, back of hands, wrists, forearms and interdigital spaces for 20–25sec.
- Rinse hands and arms thoroughly under running water.
- Clean and scrub nails of each hand with 15 strokes using microbial agent.
- Holding the brush perpendicular scrub palm, each side of thumb and fingers and posterior side of hand with 10 strokes each.
- Scrub from wrist of 5cm above each elbow.
- Entire scrub should last for 5–10minutes.
- Discard brush to soiled bin.
- Take care not to touch the tap or sides of the sink during the procedure.
- Rinse hands well under running water from fingers to elbow.
- Use a sterile towel to dry one hand moving from fingers to elbow.

# Unit 9

## WEARING OF GOWN, GLOVE & MASK

### 9.1 GOWNING PROCEDURE:

Clean or disposable gowns or plastic aprons are worn during procedures when the nurse's uniform is likely to become soiled.

#### Indication:

- When the nurses changes the dressings of a client with extensive wounds, burns, etc.,
- During delivery procedure and surgical procedure.
- Patient susceptible to infection.

- Strict aseptic diagnostic procedure like FNAC (Fine needle aspiration cytology), L.P (Lumbar Puncture), bone marrow biopsy, Thoracentesis, etc.,



#### Purpose:

- To prevent soiling of clothing during contact with the patient.
- To protect healthcare personnel from coming in contact with infected materials.



### Procedure:

- After hand washing technique if followed.
- Pick up a sterile gown and allow it to unfold keeping inside of the gown towards the body without allowing the outside of the gown to touch any area.
- With hands at shoulder level, slip both arms into arm holes simultaneously. Ask the assisting nurse to bring the gown over shoulders.
- The assisting nurse fastens the ties at the neck. Overlap the gown at the back as much as possible and fasten the waist, ties or belt.
- Prevent the gown from becoming wet.
- While removing avoid touching soiled parts on the outside of the gown. Roll up the gown with soiled part inside and discard in the appropriate container.

## 9.2 GLOVING TECHNIQUE:



**Gloving** is defined as the putting on of a pair of sterile glove to protect one's own hand from pathogenic micro organisms and

to avoid contamination of a sterile area by hand.

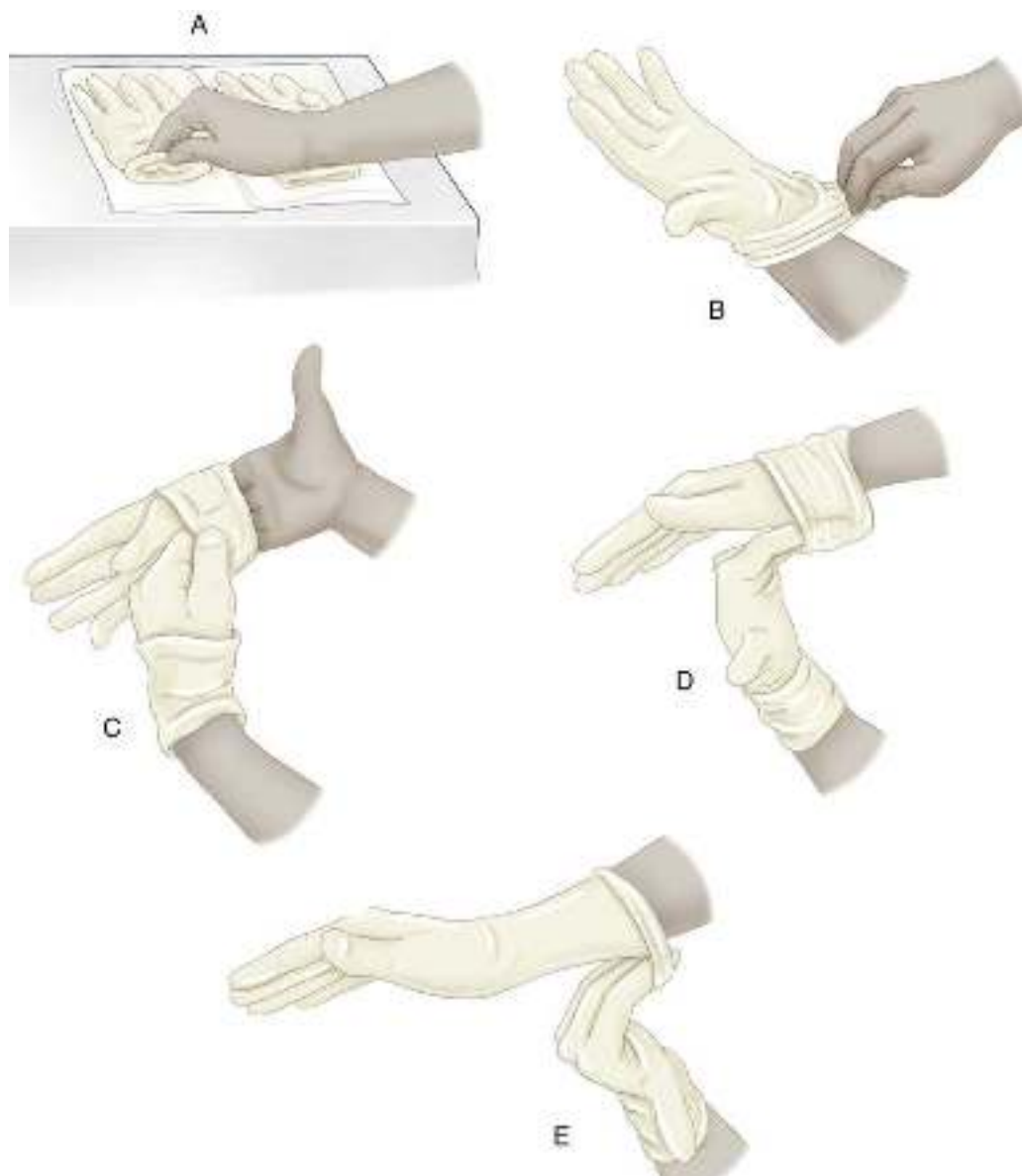
### Purpose:

- To protect the nurse from the pathogenic micro organisms.
- To safely use her hands to handle without contaminating any objects.

### Indication:

- Contact with open wound.
  - For strict aseptic diagnostic procedures.
  - Handle with infected materials like blood, urine, faeces etc.
  - Nurse or health personnel with any cut injury in hands or fingers.
  - For surgical procedure and delivery procedure.
1. When the glove packet is collected from the autoclaved bin, it is placed flat on the sterile towel.
  2. The packet of powder is removed from the glove pack and the hands are powdered.
  3. Identify right and left hand
  4. Pick up the left glove with the right hand, by the inside turned down cuff.
  5. Carefully push the fingers of the left hand into the glove until it reaches the cuff.
  6. Pick up the right glove by putting the gloved hand under the cuff.
  7. Carefully push the fingers of the right hand into the glove and pull the glove cuff over the cuff of the gown.
  8. Now pull the cuff on the left glove completely over the gown cuff of the left hands.
  9. Adjust the gloves.

### Steps to Procedure:



### 9.3 WEARING MASK:

**Mask** are worn to reduce the risk for transmission of organisms by the droplet contact, air borne routes and splatters of body substances.

#### Purpose:

- The mask should be worn by personnel who work close to the client if the infection is transmitted by large particles aerosols e.g measles, mumps, acute respiratory diseases in children.

- The mask should be worn by all personnel entering the room if the infection is transmitted by small particle aerosols. e.g pulmonary tuberculosis.





### Steps to Procedure:

1. Find top edge of mask
2. Hold the mask by top two strings. Tie two top ties at the top of the back of the head with ties above the ears.
3. Tie two lower ties snugly around the neck with the mask well under the chin.
4. Ensure that the mask covers the mouth and the nose adequately.
5. If glasses are worn, fit the upper edge of the mask under the glasses.
6. When removing the mask, first untie the lower strings of the mask.
7. Discard the used mask in the waste container without touching the soiled part.
8. Wash your hands.

# Unit 10

## APPLICATION OF BANDAGES



### 10.1 INTRODUCTION

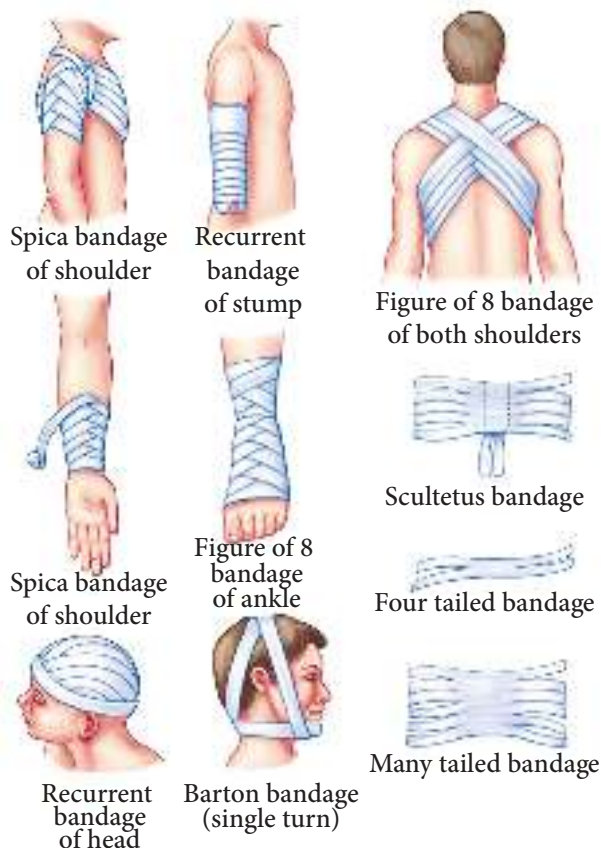
A bandage is a piece of material used either to support a medical device such as a

- Dressing
- Splint
- Support or
- To restrict the movement of a part of the body

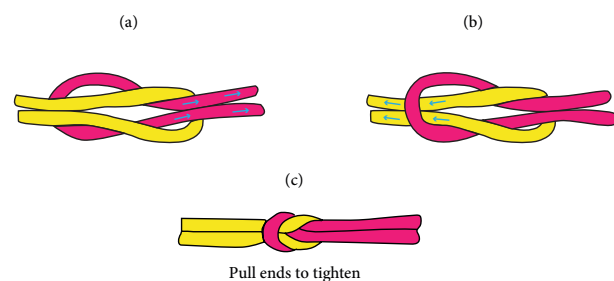
3. Support a limb or joint.
4. Prevent movement.
5. Prevent or reduce swelling.
6. Help in lifting and carrying casualties.

### 10.2 TYPES

1. Triangular bandages
2. Roller bandages



A reef knot is used to tie the ends of the bandage, because it is flat and will not slip. The rule for tying a reef knot is 'right over left then left over right'.

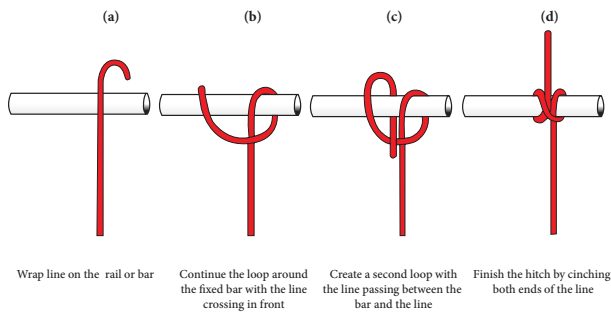


### Uses

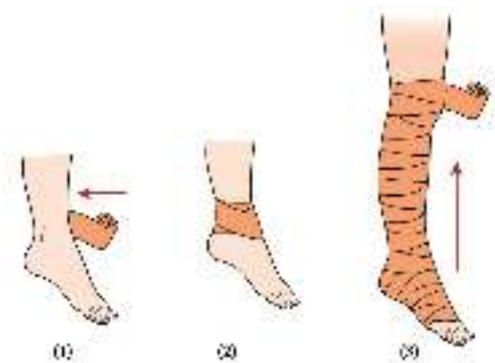
Bandages are used to:

1. Maintain direct pressure over a dressing to control bleeding.
2. Keep dressings or splints in position.

A clove hitch made from a narrow bandage, is placed round his wrist. The ends of the bandage are taken around the neck and tied.

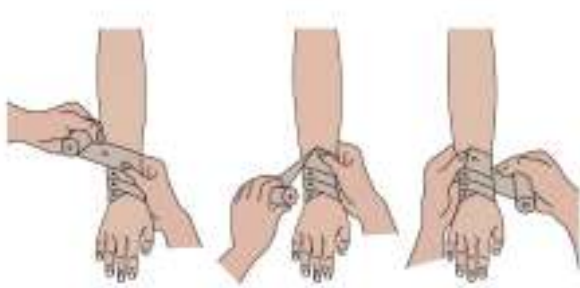


### Simple Spiral Bandage:



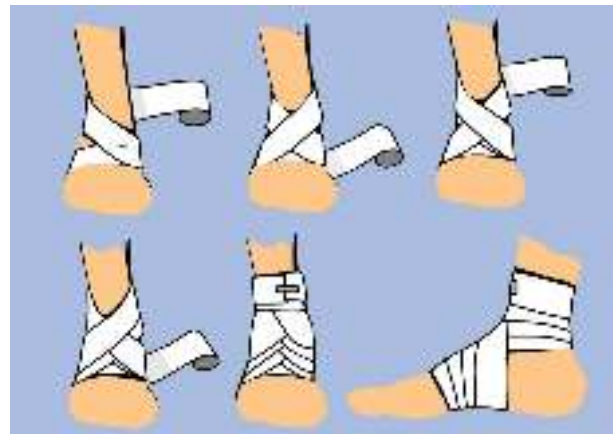
This is used on fingers or other uniform surfaces. This bandage is just round in spirals.

### Reversed Spiral Bandage:



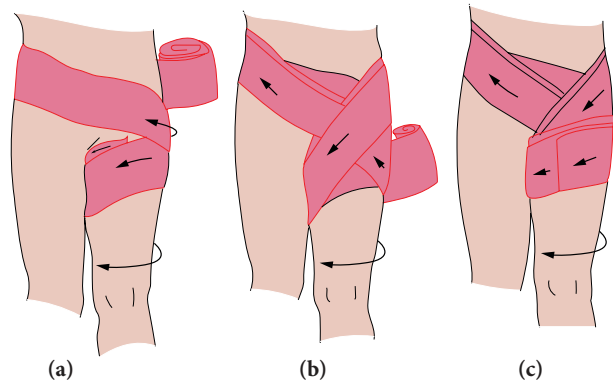
This is used on limbs where the thickness of the part varies. e.g Fore arm & Legs.

### Figure of Eight



This may be used on limbs instead of the reverse spiral also for the hand and foot.

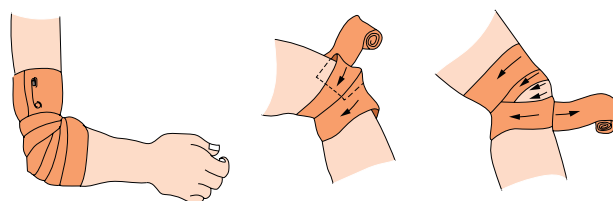
#### HIP SPICA



### Spica:

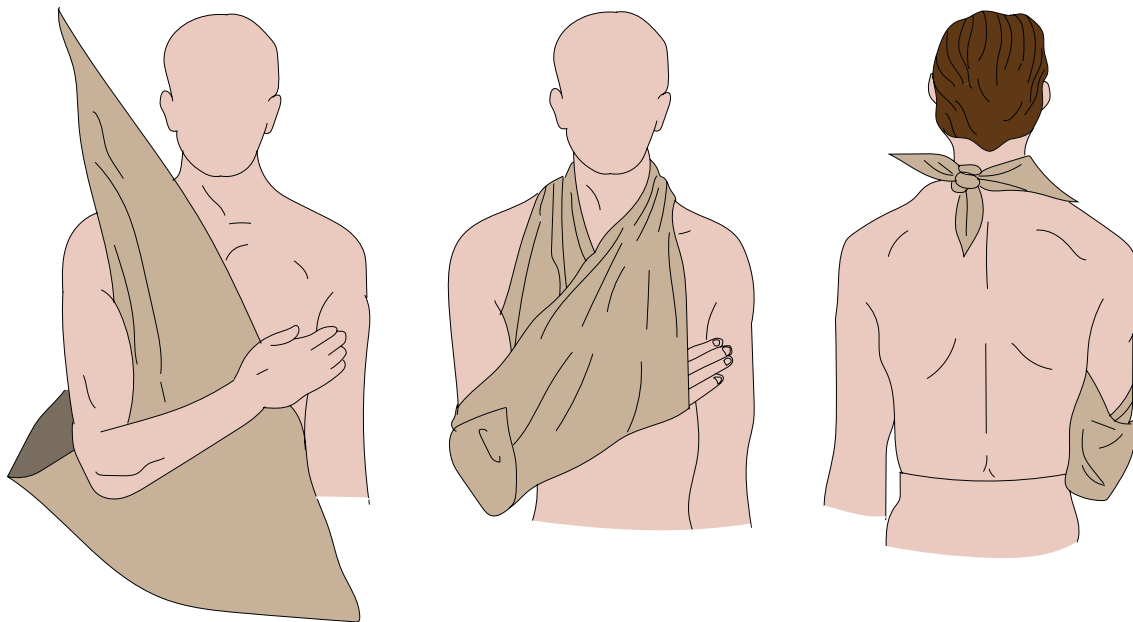
This is used for shoulder, hip and thumb. And this is a modified figure of eight.

### Divergent Spica:



This bandage pattern encloses a flexed joint or projection. It is used for a flexed joint. e.g Elbow, knee, heel

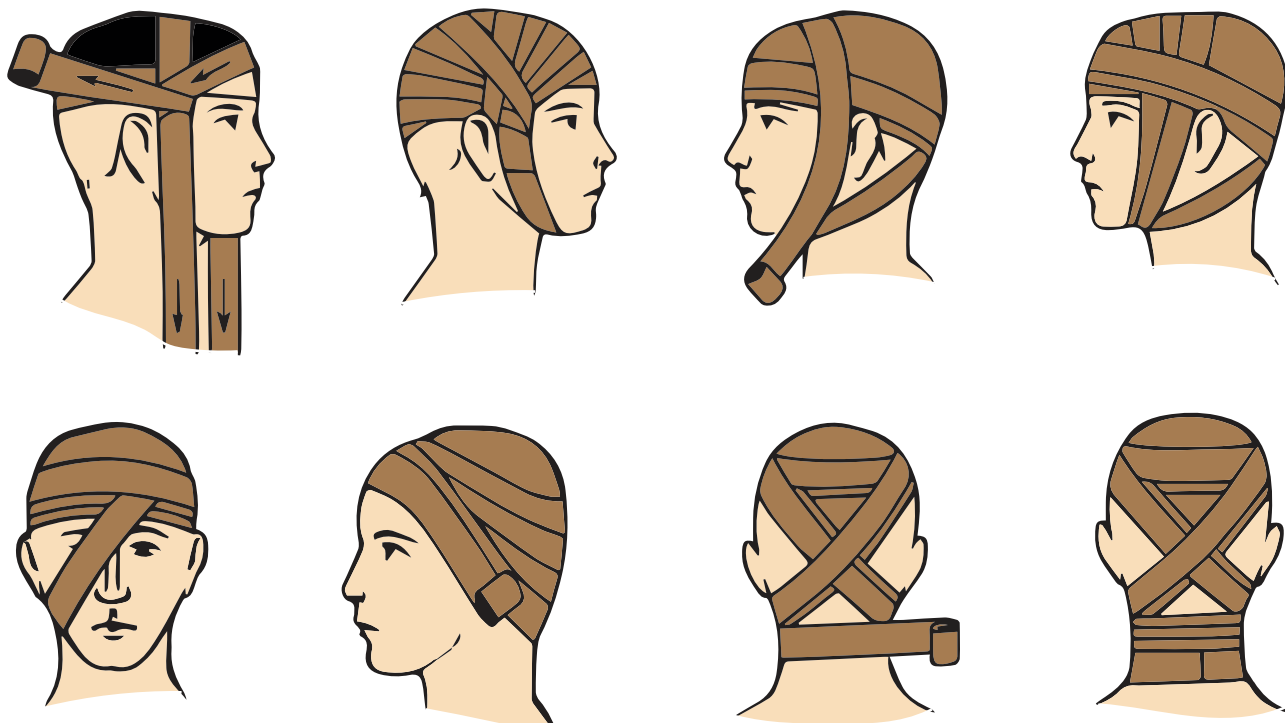
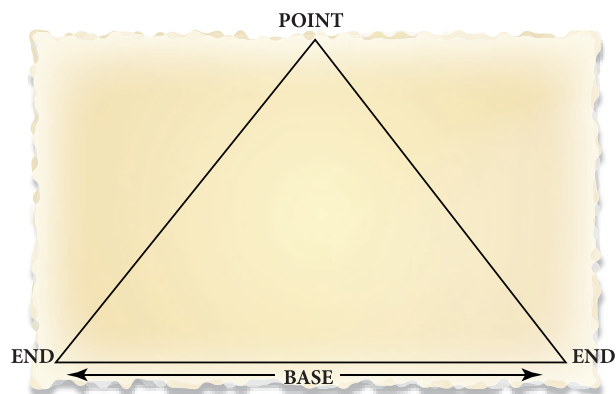
## Triangular Bandage:



A triangular bandage is used in treating a fracture of the collar bone. It helps to keep the hand raised high up, giving relief from pain due to the fracture.

### 10.3 SPECIAL BANDAGES:

Capeline bandage for head.



- one end being continued round the scalp and other going over it
- scalp turn secured by horizontal turn
- capline bandage completed

### Eye and Ear Bandage



### 10.4 PATTERNS USED IN BANDAGING

1. Circular turns, as used for head and trunk.
2. Simple spiral, for parts of uniform thickness, eg. Fingers wrist.
3. Reverse spiral, used on limbs where the thickness of the part varies, e.g forearm leg.
4. Figure-of-Eight

This may be used on limbs instead of the reverse spiral also for the hand and foot.

5. Spica, used for the shoulder, hip and thumb
6. Divergent Spica, for a flexed joint, e.g elbow, knee, heel
7. Recurrent to cover tips of fingers or a stump.
8. Special bandages such as the capeline for the head, eye bandage, ear and breast bandages.

### 10.5 APPLICATION OF BANDAGE

#### Preliminary Assessment

- Check the doctors order to see the specific precautions if any regarding the positioning and movement.
- Assess the patients need for application of bandage.
- Monitor vital signs.
- Assess the patients mental status.
- Assess the need for pain medication
- Assure the patient, the patient's family.
- Assess the adequacy of circulation by noting surface temperature, skin colour, and sensation of body parts to be wrapped.
- For tying the bandage a 'reef knot' must be always used.
- The knot should be made where it does not hurt the skin or cause discomfort.
- Tuck the loose ends of the bandage out of sight.
- Not in use the triangular bandages should be folded narrow. Bring the two ends to the centre and fold again. It becomes a packet which measures 16 x 9 cm handy to carry.
- Wrinkled Bandages are uncomfortable.
- Never ignore any complaints of pain experienced by the patient. This should be investigated and the cause is removed immediately.
- Do not use extra turns in order to use all the bandages.

- When completed, fix the bandage with a circular turn and secure it with a safety pin or other suitable materials such as adhesive strapping.

### Preparation of the patient

- Explain the sequence of the procedure to the patient and explain how the patient can assist you.
- Place the articles needed conveniently in the bed side table.
- Bring the patient to the edge of the bed.
- Provide privacy.
- Help the patient to assume comfortable and correct position.
- Perform hand hygiene.

### Rules for Application

- Face the patient.
- When bandaging left limb, hold the head of the bandage in the right hand vice versa.
- Apply the outer side of the bandage over the pad and wind it around the injury twice so that it is firm.
- Bandage from below upwards over the limb. Also make it a roll to apply bandage from the inner side to the outer side.
- See that the bandage is neither too loose nor too tight.
- Roll bandage so that each layer covers two-thirds of the earlier layer. Fix the bandage by pinning it up or using adhesive plaster. The usual practice of tearing the final end into two long tails and tying them up is quite satisfactory.

### Articles Required

1. Correct width and number of bandages.
2. Disposable gloves (if necessary)

3. Safety pins
4. Scissors
5. Adhesive tapes
6. Rubber Sheet (if necessary)

### Procedure

- Apply bandage from distal point toward proximal boundary using variety to turns to cover various shapes of body parts.
- Unroll and very slightly stretch bandage
- Over lap turns by one half to two thirds width of bandage rolls.
- Apply additional rolls without leaving any uncovered skin surface. Secure last bandage applied.
- Remove gloves if worn and perform hand hygiene.
- Assess distal circulation when bandage application is complete and atleast twice during 8 hours period.
- observe the bandage site for 5 – P

It comes in various widths lengths and types of material. For best results, use different widths for different body areas.

For e.g

Fingers	—	1 inches
Hand & arm	—	2 to 2.5 inches
Leg	—	3 to 3.5 inches
Trunk	—	4 to 6 inches

#### Five 'P'

- Pain
- Pallor
- Pulselessness
- Palpate skin for warmth
- Paralysis

# NURSING - THEORY VOCATIONAL - Class XI

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This Book has been printed in 80 GSM Elegant  
Maplitho paper by



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