GOVERNMENT OF TAMIL NADU

HIGHER SECONDARY FIRST YEAR

VOCATIONAL EDUCATION

NURSING

THEORY & PRACTICAL

A publication under Free Textbook Programme of Government of Tamil Nadu

Department of School Education

Untouchability is Inhuman and a Crime

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NURSING

THEORY & PRACTICAL

VOCATIONAL EDUCATION

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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 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.

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

1.1 INTRODUCTION

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.

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

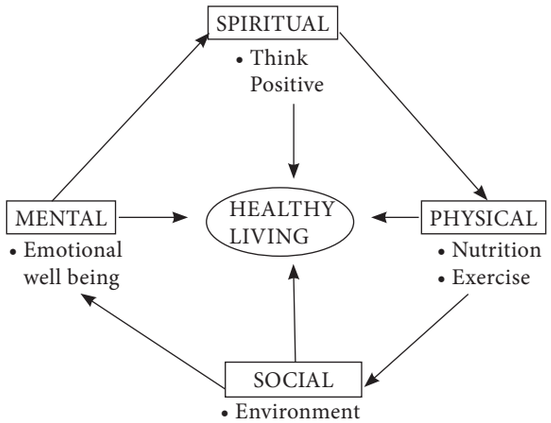
- Physical
- Mental
- Social and
- Spiritual

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

Health and illness are defined according 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

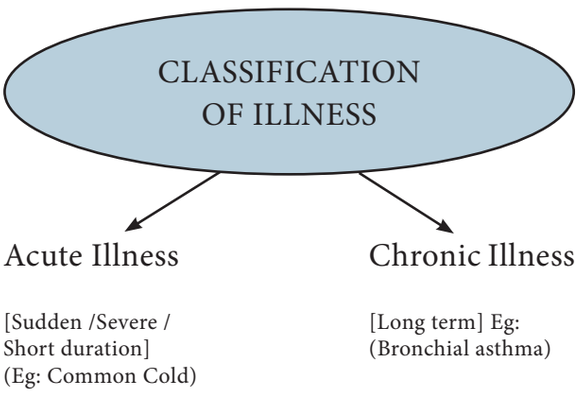
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and work (office) may no longer consider himself or herself ill.

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.



Health – Illness Continuum

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

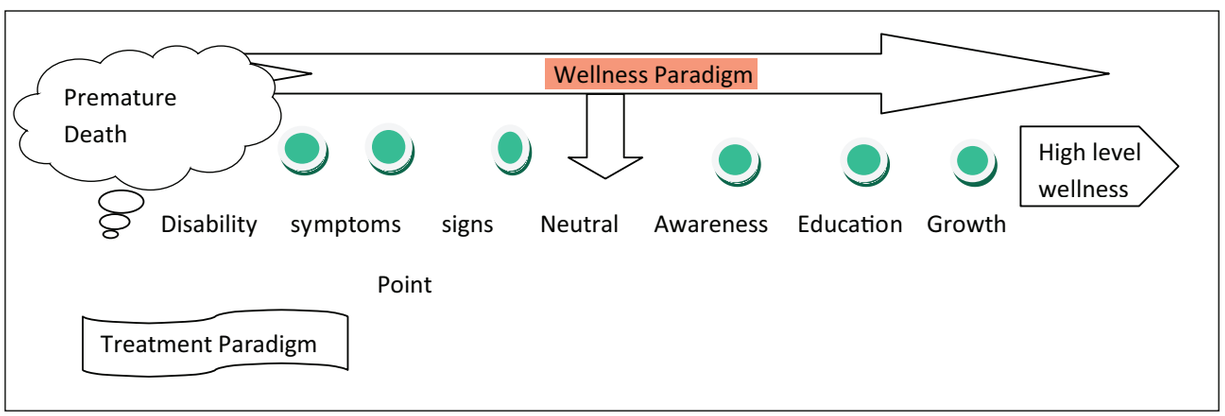
- Sick/injured are treated.
- Healthy persons are helped to promote and maintain an optimum level of well being
- Prevent diseases.

The word "HOSPITAL" derived from

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

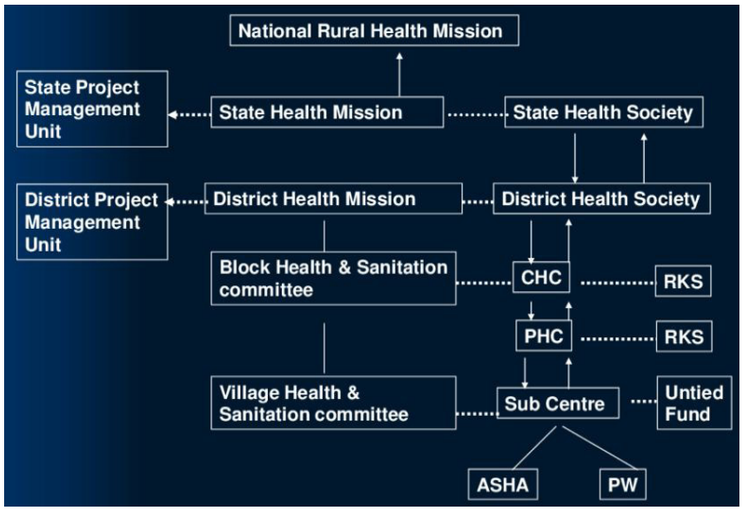
Types of hospital

- Government Hospitals
- Railway Hospitals
- Military Hospitals
- Christian Mission Hospitals
- ESI (Employee State Insurance Hospitals)
- Voluntary Health Agencies



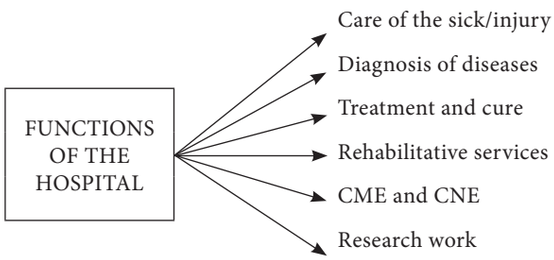
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Hospital Health Care Delivery System



Functions of the Hospital

The main aim of a hospital is patient care & comfort



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.

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.

Qualities of a Nurse

• **Cleanliness**	Clean, neat & Tidy
• **Resourcefulness**	Uses her wisdom / knowledge
• **Willingness to learn**	Coordinates with health team
• **Poise**	Control of her emotions, mental thoughts and actions
• **Loyalty & Honesty**	Her relationship with clients
• **Courage**	Ready to meet any problem with courage
• **A caring Attitude**	A sense of spiritual love
• **Self Discipline**	She needs to be a self disciplined person

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• **Willingness & Self Sacrifice**	These two qualities are complimentary to each other. She sacrifices her time, comfort and material benefits
• **Love**	Adds qualities like mercy, kindness, gentleness, patience and understanding

Functions of nurse

FUNCTIONS OF NURSE		
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

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

The vital aspects of nursing which the sub-commitee on code of ethics revised

FIVE MAJOR ASPECTS		
NURSES	The profession	• Role of a nurse - as a leader active participator • For setting up and carrying out standards of – practice - education
	People	• Nursing care • Values , customs and religious belief must be respected. • Maintain confidence
	Co-workers	• Maintain cooperation and work with the member of the health team.

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	Practice	• Best care possible at all times. • Maintain high standards of practice
	Society	• For positive promotion of health. • Initiating and supporting action to meet the health and social needs.

1.6 SCOPE OF NURSING

<table>
<tr><td>Independent Nurse Practitioner</td><td>Post Doctoral Degree in Nursing</td><td>Nurse Researcher
• Investigates Nursing problems to improve care
• Expand the scope of Nursing.</td></tr>
<tr><td></td><td>Phd in Nursing(5 years)
MPhil in Nursing (2 years).</td><td>Nurse Administrators
• In Education
• In Hospital Services</td></tr>
<tr><td>Diploma Certification Programme
• Critical care Nurse practioners.
• OT Nursing
• Cardio Thoracic Nursing
• Family Nurse practioner.</td><td>MSc. in Nursing (2 years)</td><td>Nurse Educator
• Works in Schools of Nursing
• Provides Educational Programmes for Student Nurses.
• Nursing Service.</td></tr>
<tr><td></td><td>Post Basic BSc (2 years)
Diploma in Nursing and Midwifery (3 years) (DGNM)
B Sc in nursing (4 years)</td><td>Clinical Nurse specialist
• Patient Care
• Clinical Educator
• Nurse Practitioners
• Nurse Midwives
• Nurse Anaesthetists
• Nurse Researcher</td></tr>
<tr><td>Auxillary Nurse Midwifery (2 years)</td><td>Higher Secondary Students</td><td>• Home Visit</td></tr>
</table>

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

1.7 HISTORY OF NURSING

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

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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 was absorbed in nursing and helped to improve the status of a nurse. Some of the examples of such women are as follows.

PHOEBA	• First Deaconesses, Intelligent and Educated • Best Nursing Care for the Sick in Their Homes • Compared as "Modern Public Health Nurse"
FABIOLA	• Daughter of a great Roman Noble • Converted her palace into a hospital – 'First Christian Hospital in Rome' • She collected the poor and sick, cared them all by herself
PAULA	• She devoted herself for the service of the sick • She built hospitals and monastery in Bethlehem for strangers, pilgrims, travellers and for the sick
MARCELLA	• She lead a group of women and indulged them in works of charity

Middle Ages

Monks and Nuns dedicated to the cause of human suffering worked as doctors and nurses. Late in the 12th & 13th 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.

1.8 MODERN 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 12th 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
- 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

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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"

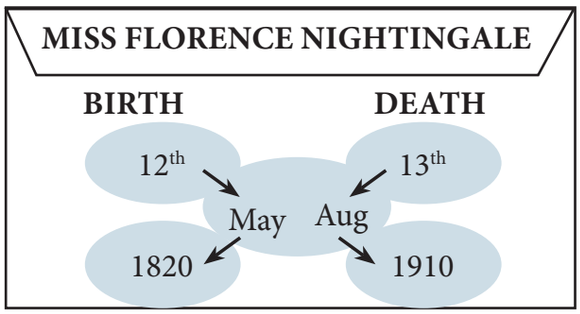


Miss Nightingale introduced enormous improvements in military hospitals. She also founded the first training school for nurses – St. Thomas Hospital, London, 1860. She shared her ideas about nursing and nursing education.

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

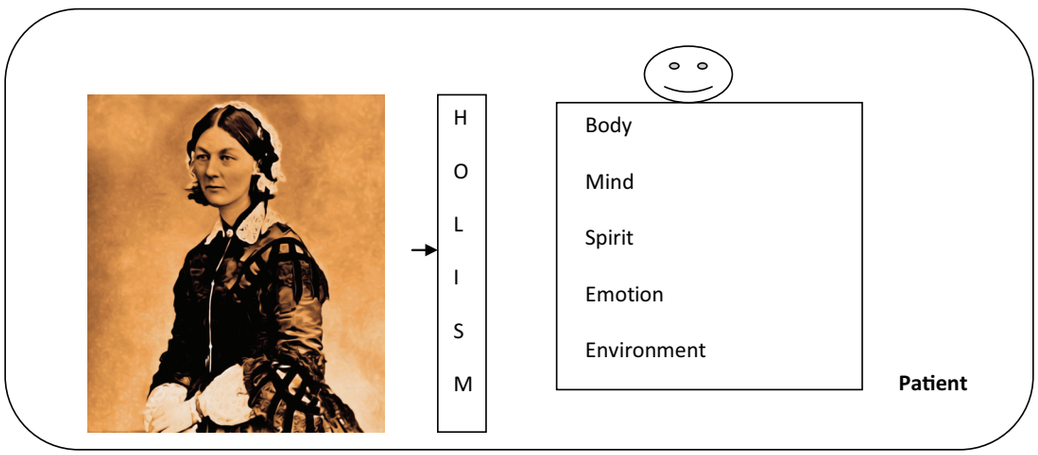
She died peacefully in her sleep at the age of 90 (13th Aug 1910)



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.

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.



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"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 12th - Nurses Day



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

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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.

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.

EVALUATION

ZMRQ3

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. Phoeba d. Marcella.

3. The founder of modern nursing is
   a. Fabiola b. Paula
   c. Phoeba d. Nightingale.

4. Miss.Florence Nightingale was born on
   a. 12th May 1821 b. 12th May 1820
   c. 13th May 1820 d. 13th May 1910

5. 'The Florence Nightingale Pledge' was composed by
   a. Miss. Florence Nightingale
   b. Theodore fliedner
   c. Hippocratis
   d. Mrs. Lystra. E. Gretter.

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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.

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- **https://en.wikipedia.org/wiki/History_of_nursing**
- **https://www.britannica.com/topic/nursing**
- **https://www.jblearning.com/samples/0763752258/52258_ch01_roux.pdf**
- **https://www.news-medical.net/health/History-of-Nursing.aspx**

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Unit 2

ANATOMY AND PHYSIOLOGY

LEARNING OBJECTIVES

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

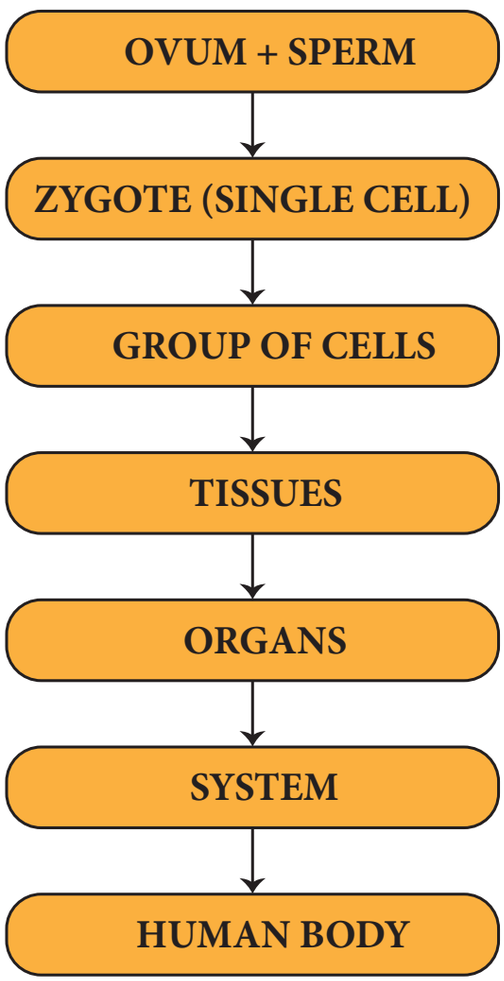
1. Identify various tissues, organs, systems of the human body.
2. Gain knowledge about the anatomy of various organs and the functions of them.
3. Gain knowledge about the sense organs and its functions.
4. Conduct an exhibition on anatomy and physiology with charts, models and working models.

P1ESH

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 carryout one of the essential functions of the body eg. Digestive system, respiratory system etc.,



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Definition

Anatomy - A study of the structure of the body.

Physiology - A study of the functions of the body.

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.

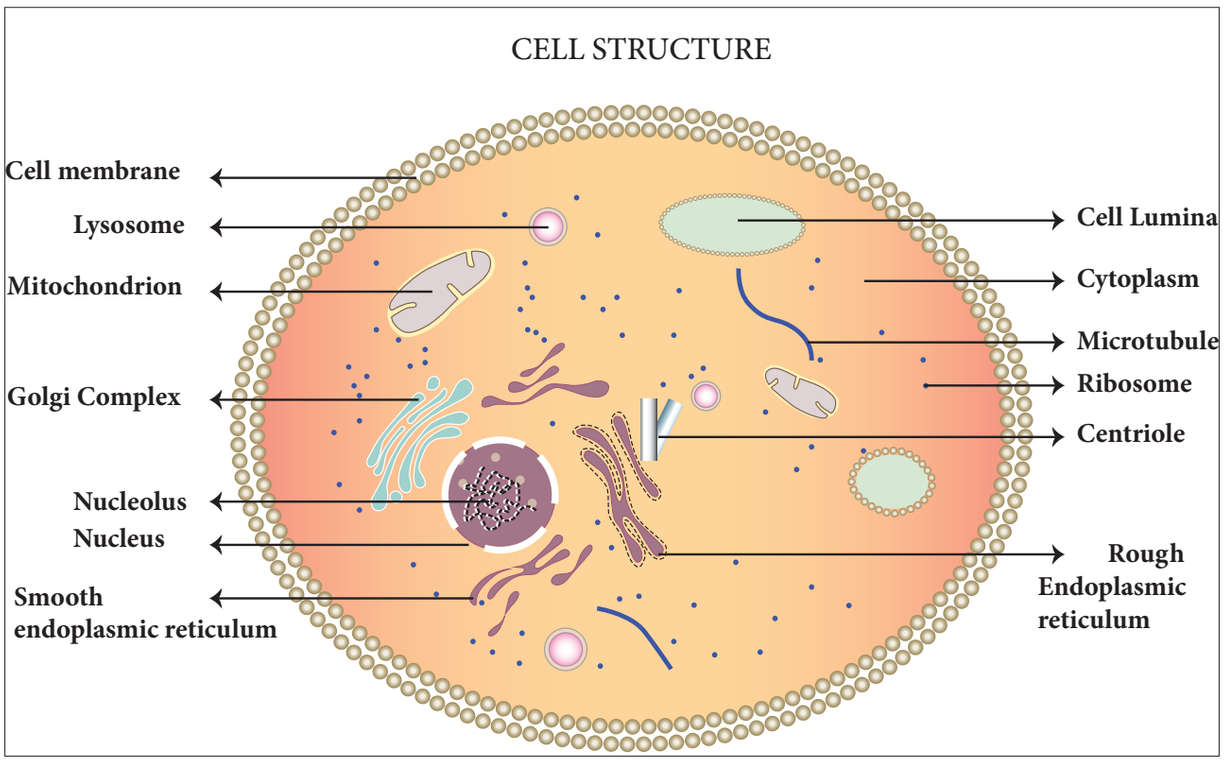
Functions of the Cell

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.



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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.,

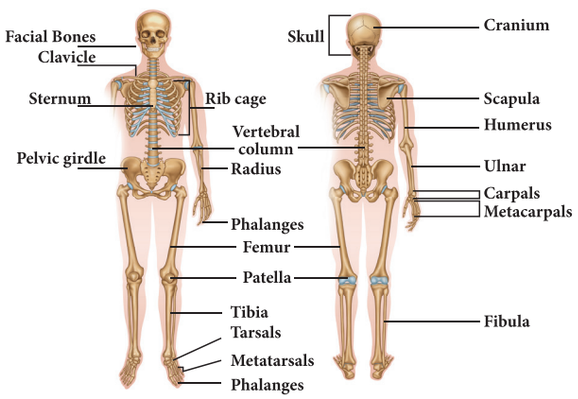
System

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 secretary 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

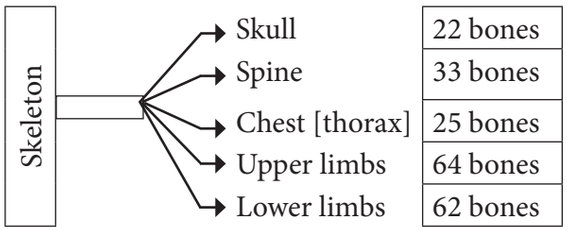
S.No	Systems of the body	Functions
1.	Skeletal system	Support, movement and protection
2.	Muscular system	Movements and productions of organs
3.	Nervous system	Control of body activities
4.	Circulatory system	Transport food, oxygen and waste products etc.,
5.	Respiratory system	Taking in oxygen and giving 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

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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.

Parts of Skeleton and Bones



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

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

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

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:

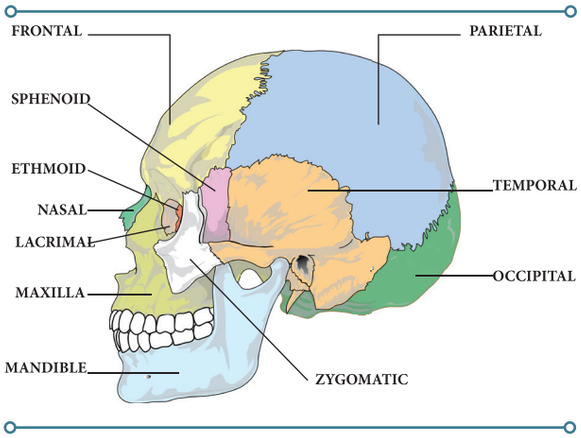
Frontal bone:	which forms the forehead and helps to protect eyes
Parietal bone:	one at each side of the top of the skull joined into the middle
Temporal bone:	One on each side below the parietal bones. These protect the inner parts of the ears
Occipital bone	This forms the back of the head and part of 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

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

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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 are forms the lower jaw.

Two curled bone, one in each side of wall of the nose.

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

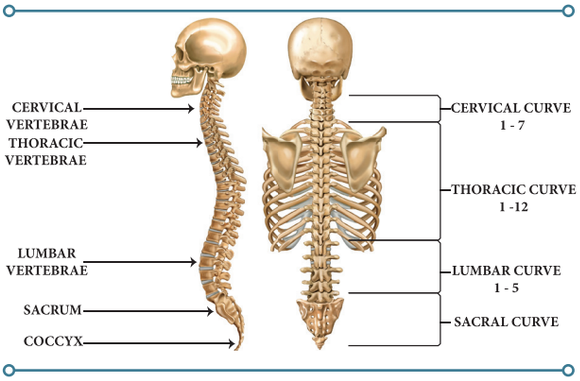
Skull Bone

Vertebral Column

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

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.

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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 pars are not connected at all and are called floating ribs.

Functions of the Thorax

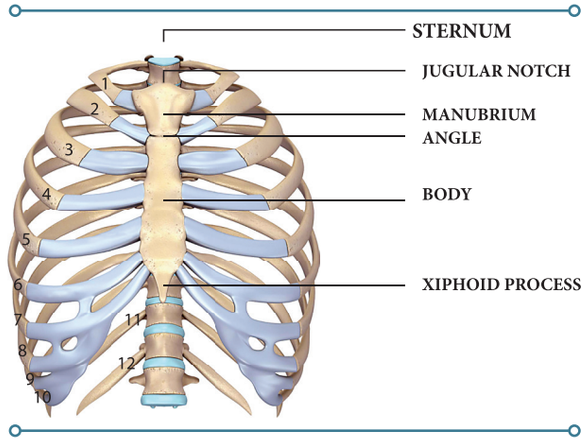
1. Protection for the heart, lungs, liver, stomach, and spleen.
2. Support for the bones of the shoulder girdle and for the breast.
3. Important in respiration.

Bones of the Limbs

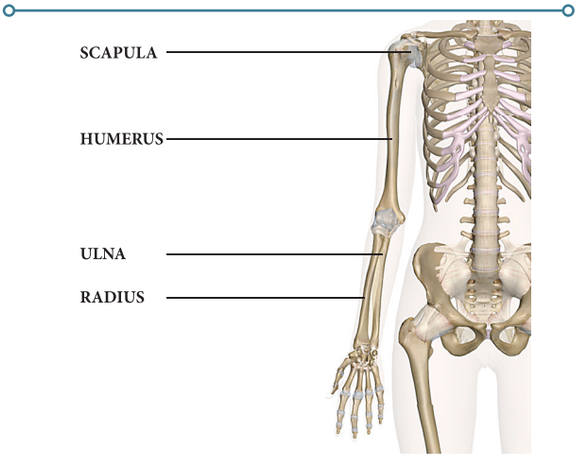
Bones of the Upper Limb

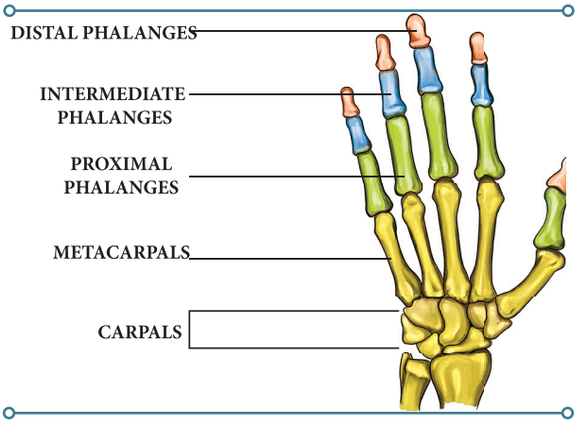
- Each upper limb consists of thirty bones.
- One collar bone.

STERNUM AND RIBS



- 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.





Bones of the lower limb

Each lower limb consists of 31 bones.

- Innominate bone – 1
- Femur bone – 1

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- 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.

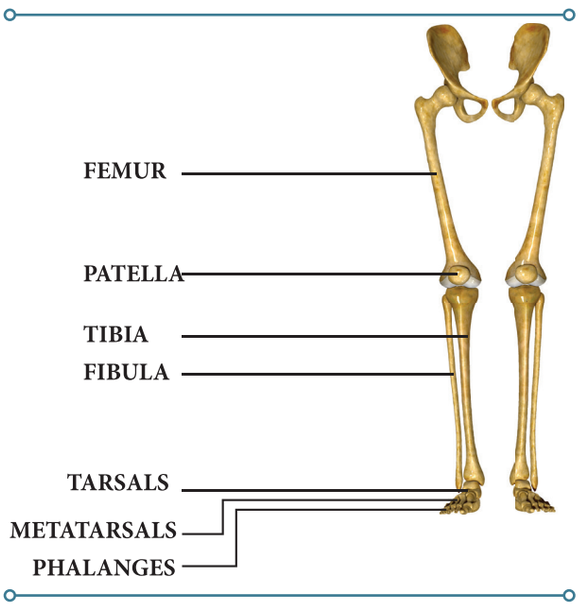
Fibula: Fibula is a long thin bone on the outer side of the leg.

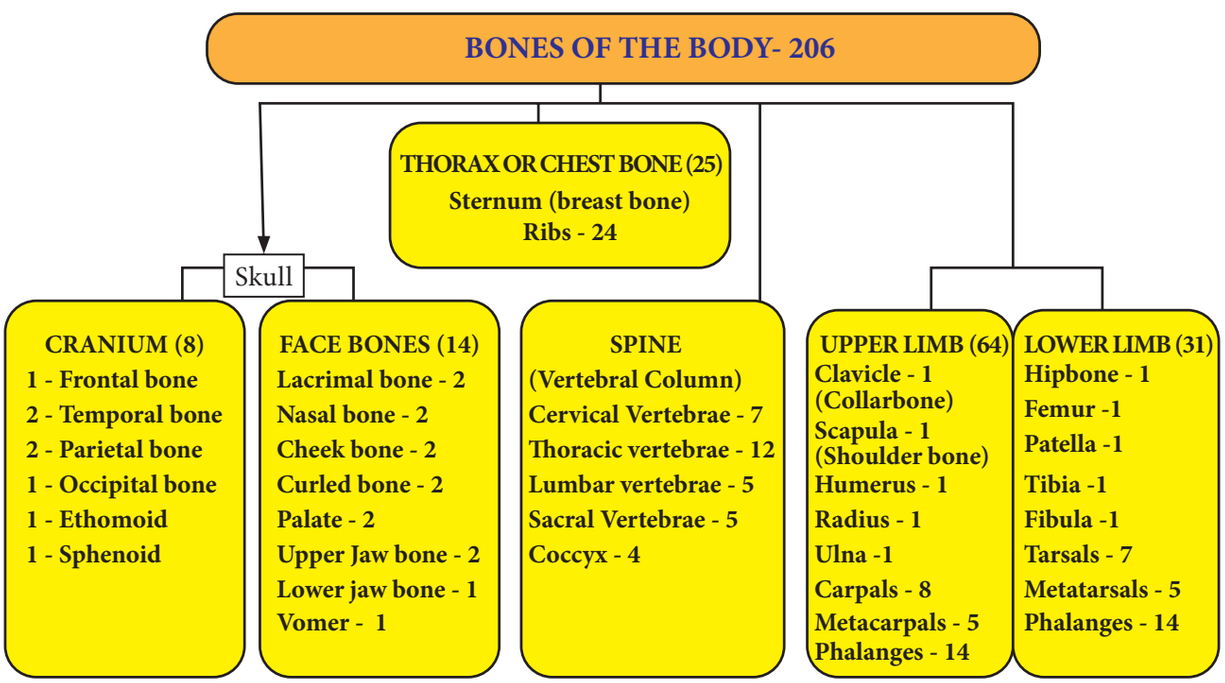
Tarsal bones: Tarsal bones of the ankle are seven short bones. The largest is the heel bone (calcanium).

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





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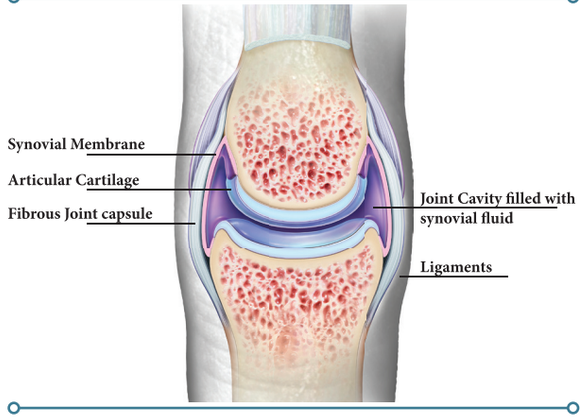
Joint

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

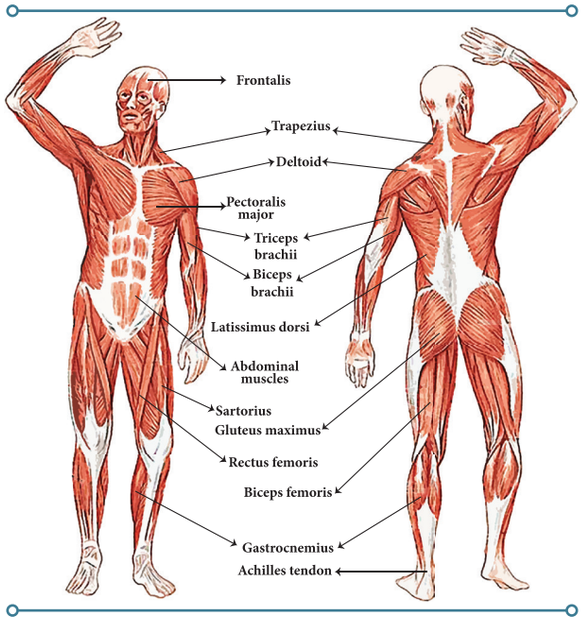
1. Fibrous Joints: In this joint there is no movement. Eg. Sutures of the skull. The bones are joined as though they were stitched (sutured) together.
2. Cartilaginous Joints: In which two bones are joined by a pad of fibrous cartilage, which allows slight movement. They are found in the vertebral column 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. Identity 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

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

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.

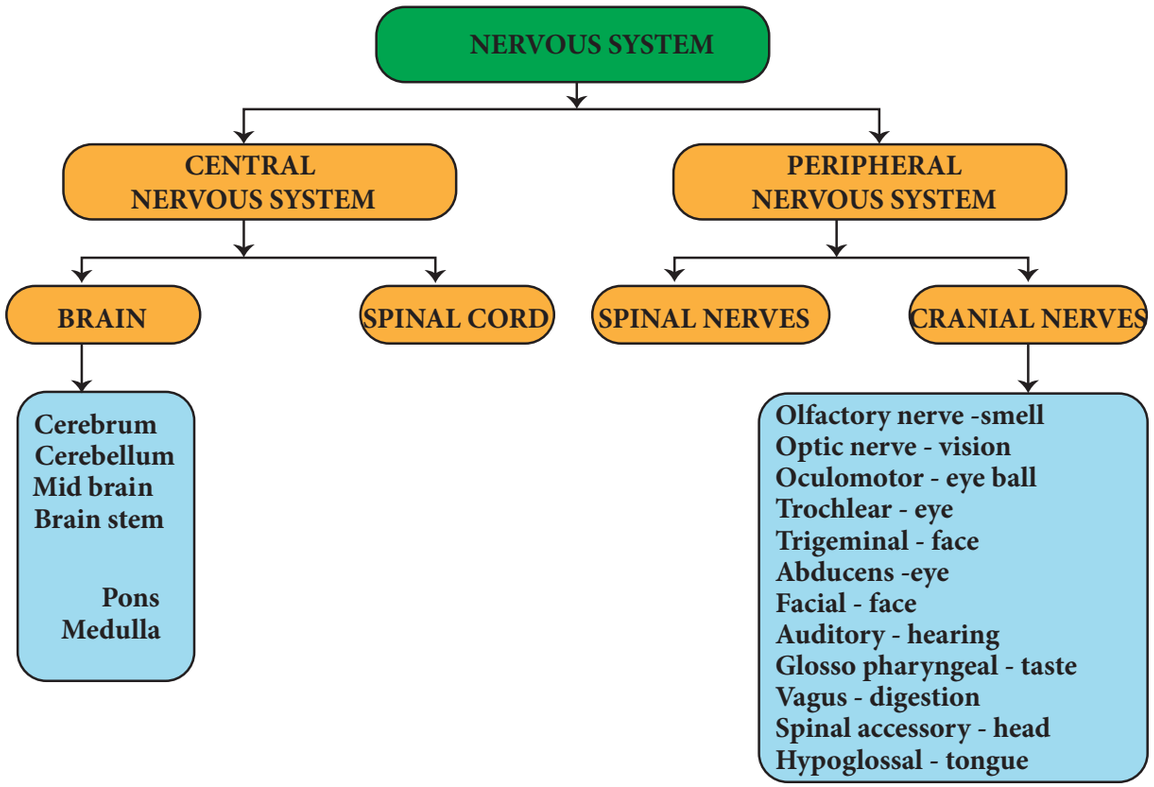
Cerebrum

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.

Functions of the Cerebrum

a. Frontal lobe – motor centres controlling voluntary muscles.
   - Speech centre
   - Mental power such as memory, intelligence and will.

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b. Parietal lobe – the sensory centres for sensations of touch, pain, heat, cold, and pressure.

c. Temporal lobe – for hearing

d. 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

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

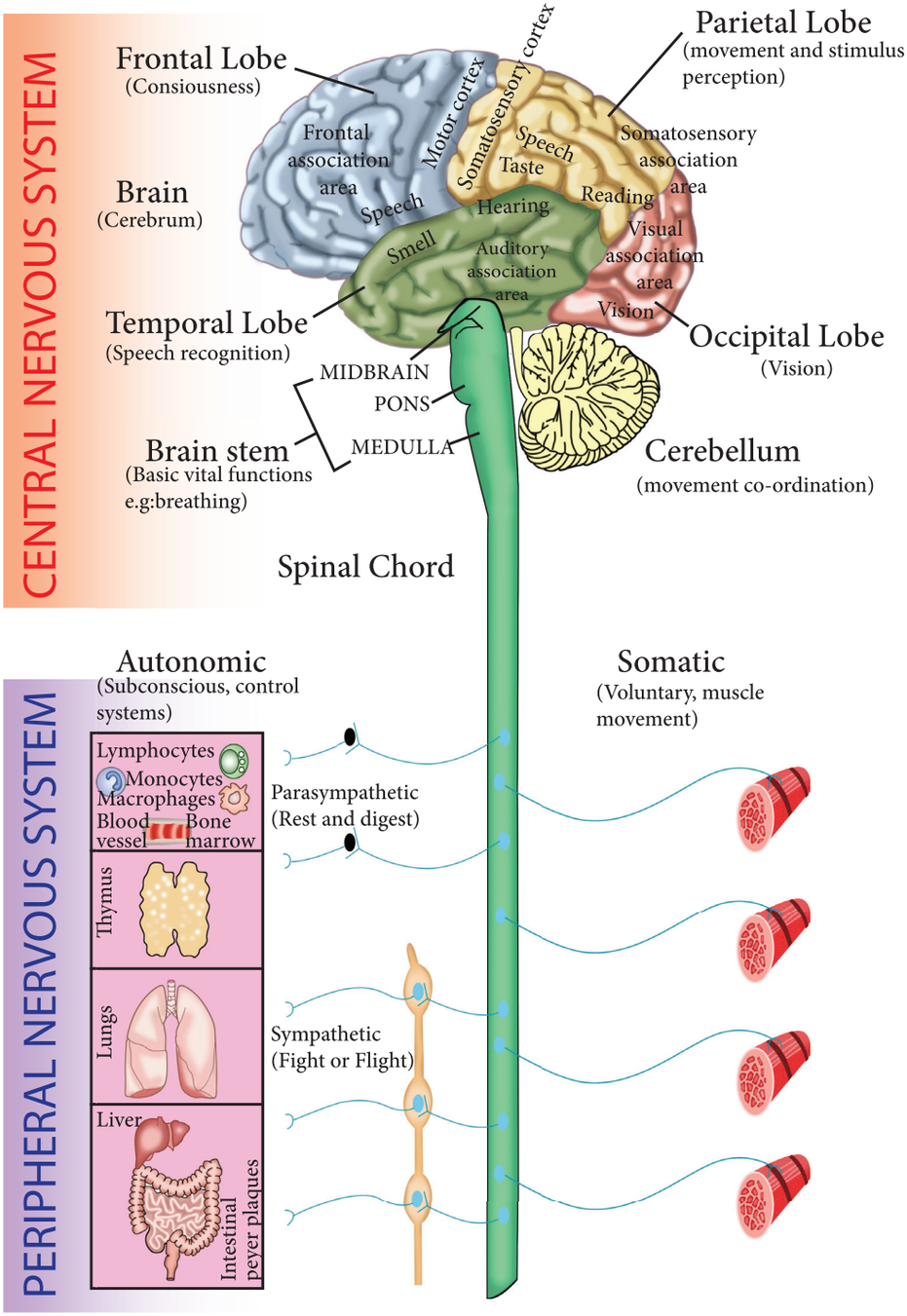
- Acts as a pathway for messages to and from the cerebrum.
- Contains reflex centres for vision and hearing.
- Contains centres for controlling body temperature, emotions and sexual responses.

Brain Stem

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

1. Pons
2. Medulla

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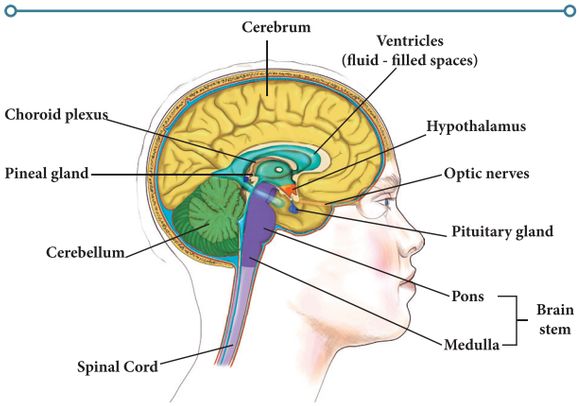


Functions of Medulla

- 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.

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Brain



Cranial Nerves

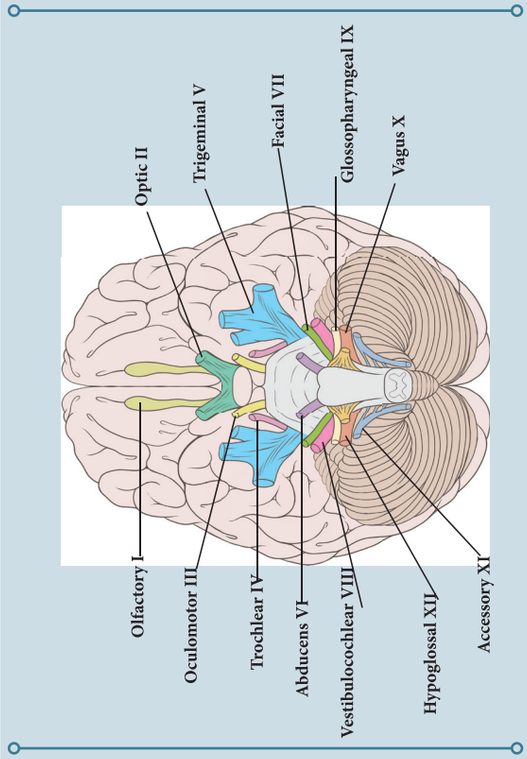
There are 12 pairs of cranial nerves which comes out from the brain and brain stem. They pass through the holes in the skull to the eyes, ears, face, tongue, throat, etc., The tenth cranial nerve called vagus, give branches to the larynx, lungs, heart and digestive organs. The vagus nerve functions as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

STUDENT'S ACTIVITY

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

Spinal Cord

- The spinal cord is a cord of nervous tissues. The thickness of a little finger and about 12cm longs. It lies inside a conal 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.

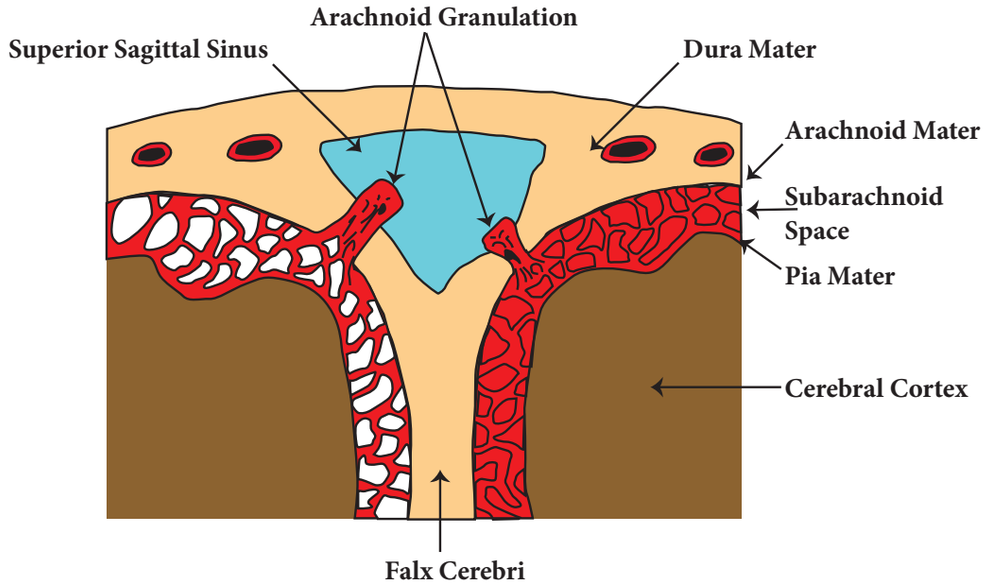


Cranial nerves

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

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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

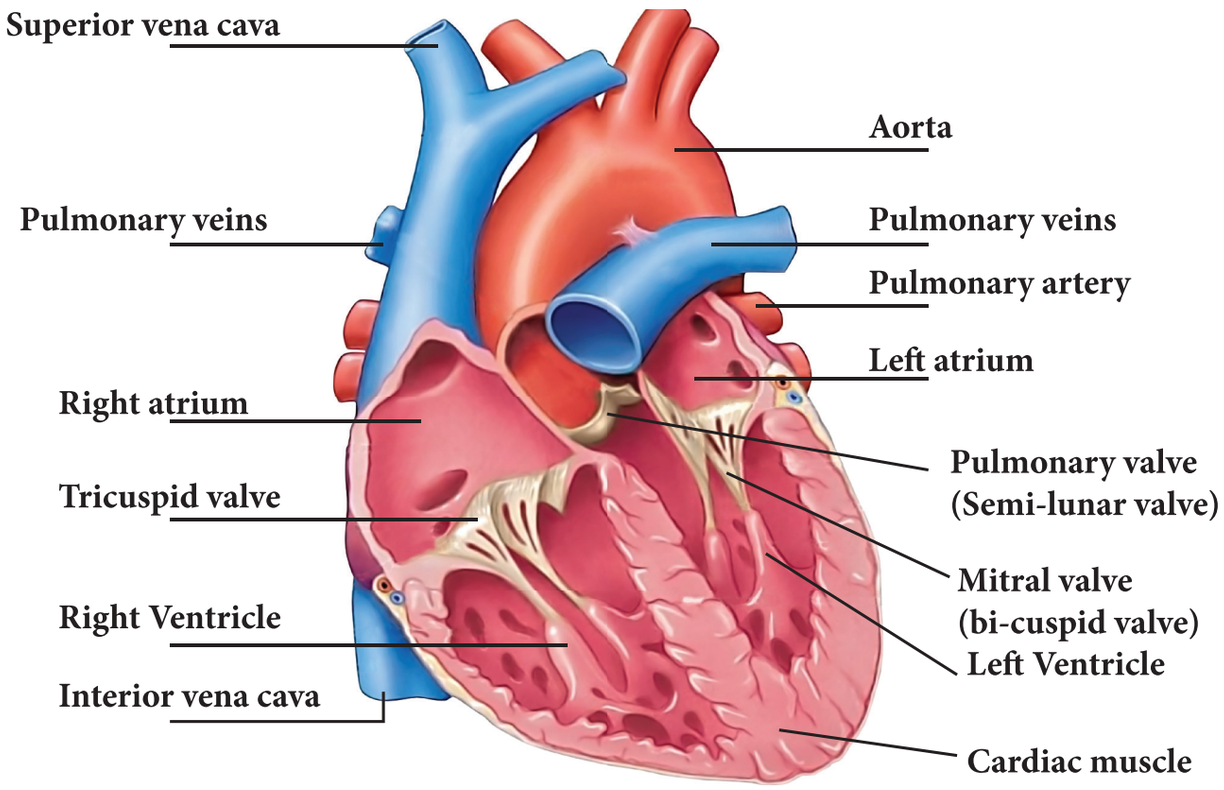
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impure or deoxygenated blood, and the left heart contains pure or oxygenated blood. Each portion is further sub divided into a superior and an inferior chamber. The superior chambers are called atrium and inferior chambers are called the ventricle.

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

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

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

Blood Circulation

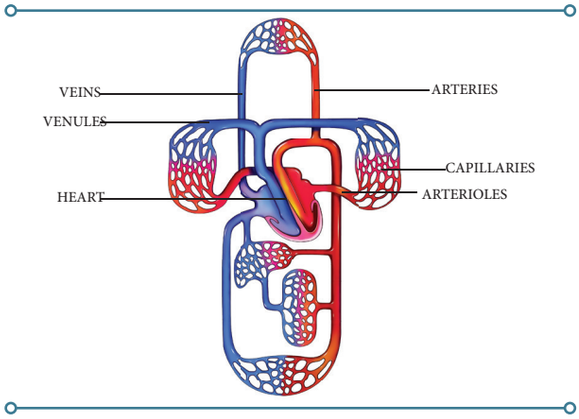
Circulation can be roughly divided into pulmonary and systemic circulation.

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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).

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.

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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.

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.

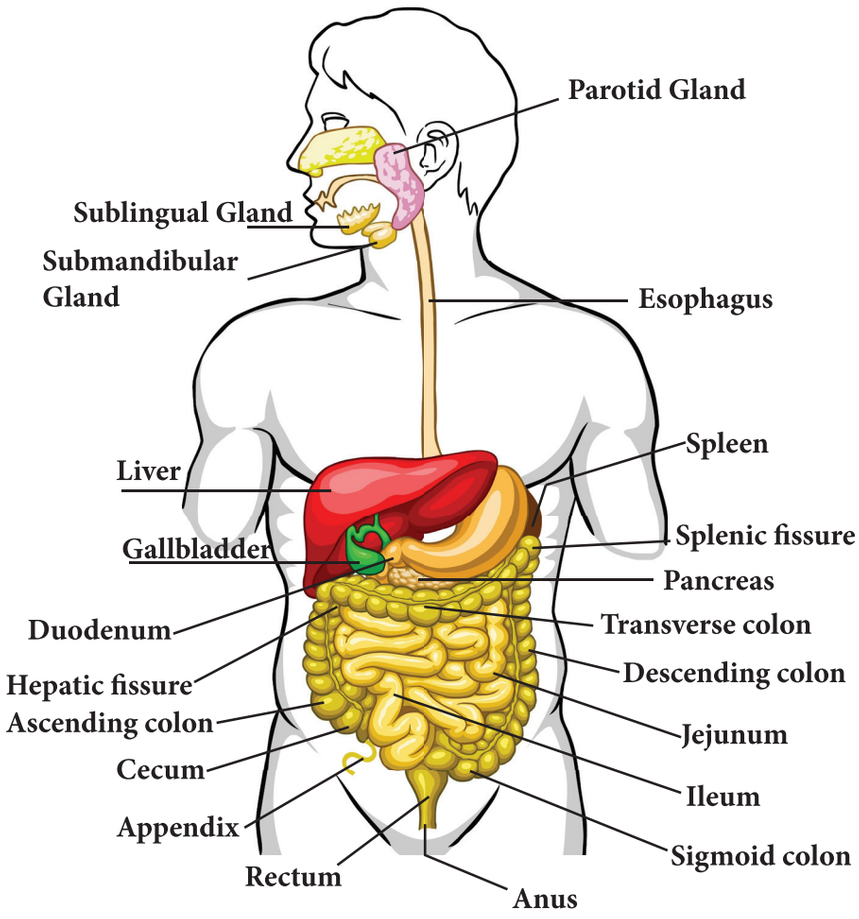
- The parotid gland
- The sub maxillary gland
- The sub lingual gland.

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

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

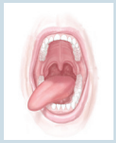
The small intestine is about 6 meters long. The parts of the small intestine are:

- Duodenum
- Jejunum
- Ileum

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

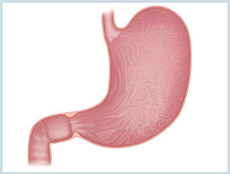
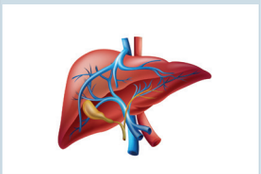
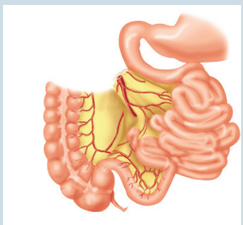
- Ascending colon
- Transverse colon
- Descending colon
- Sigmoid colon.

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

	Organ	Enzymes	Action
Food	Mouth  saliva	Ptyalin Maltase	Starch – maltose Maltose – glucose

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Physiology of Digestion

	Organ	Enzymes	Action
Bolus	Stomach 	Food – bolus – gastrin is released – discharges gastric juice contains – hydrochloric acid – kills bacteria in the food Enzymes • Pepsin – converts protein into peptones • Renin – converts indigestible protein of milk into digestible one • Lipase – converts fats into – fatty acid and glycerol	
	Liver 	Liver - bile Pancreas - Pancreatic juice • Pancreatin • Trypsin • Pancreatic lipase	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
		Final products of digestion takes place in small intestine Carbohydrate - Glucose Proteins – Amino Acids Fats – Fatty Acids, Glycerol	

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	Organ	Enzymes	Action
Faeces	Large intestine 		large quantity of water is absorbed.

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

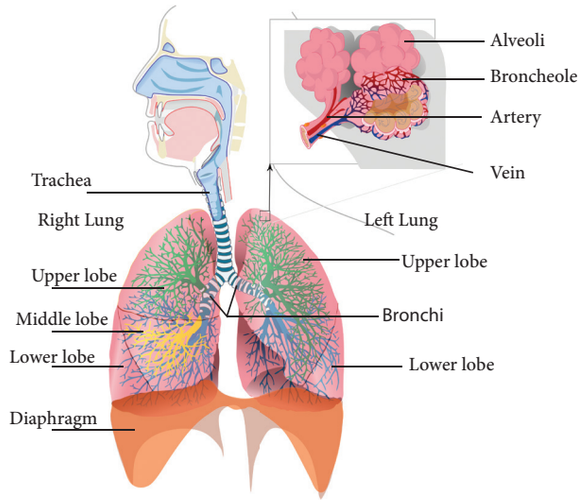
The lungs are two in number, and are cone shaped spongy organs. The base of the lungs rests on the diaphragm, and the apex behind the clavicle, the right lung has 3 lobes and the left lung has 2 lobes.

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.

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RESPIRATION

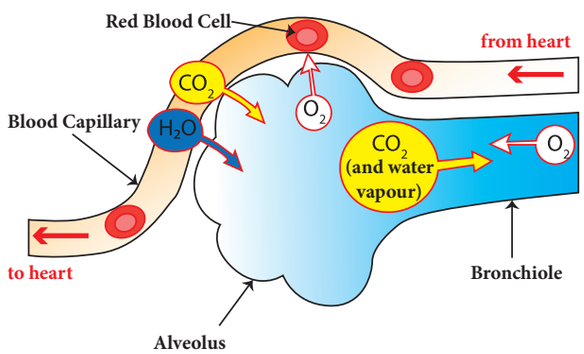


We breathe continuously from birth to death. Respiration may be defined as the mechanical process of breathing in and out. It involves both the respiratory system and muscles of the respiration.

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.

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Parts of the urinary system:

Parts	Functions
Kidney	Urine Formation
Ureter	Passes Urine to the Bladdder
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.

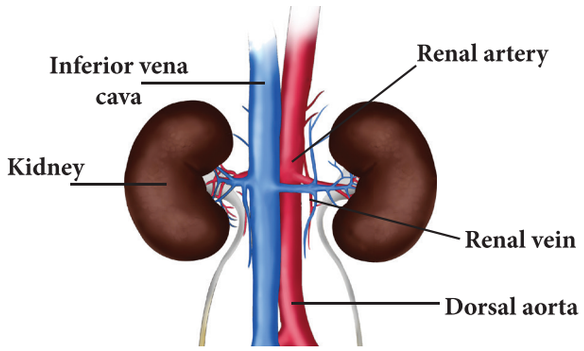
The kidneys are made up of basic units called nephrons. Each kidney contains about 10,00,000 nephrons approximately. A nephron has a t cup shaped part which acts as a filter part is connected to a long coiled tubule which carries the filtered liquid. All these tubules join together to form the ureter.

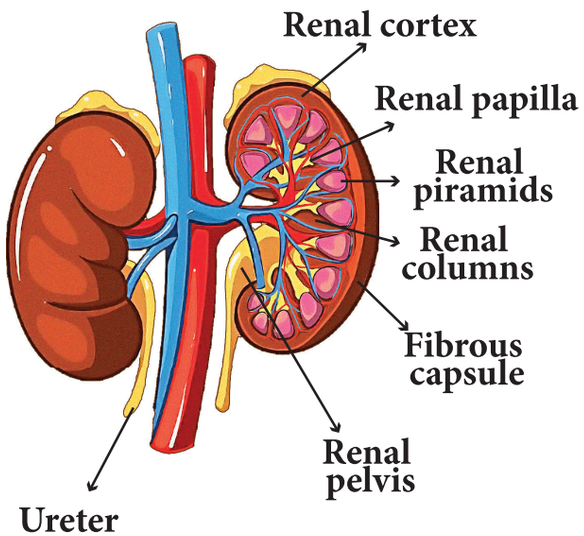
Ureters

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)

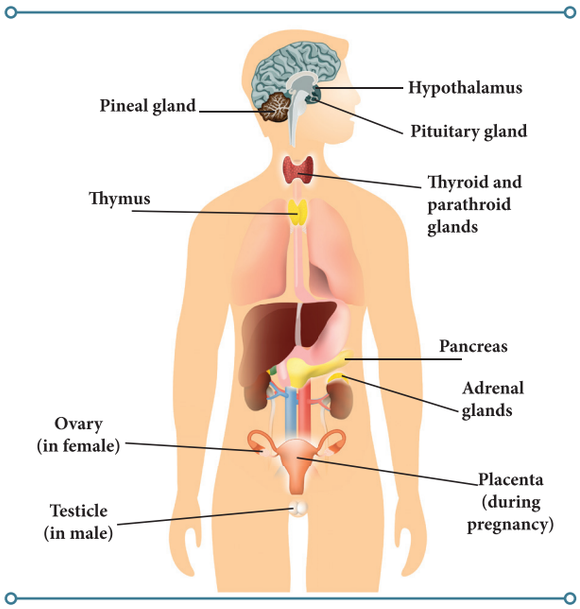
2.10 ENDOCRINE SYSTEM

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

- exocrinegland

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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



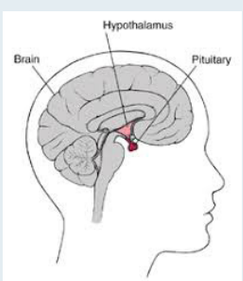
Hormones

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.

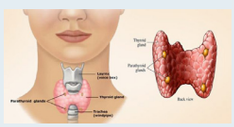
2.11 SENSE ORGANS

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



Endocrine gland	Structure	Hormone	Functions
Pituitary  	Small gland – size of a cherry [pea sized] Just below the hypothalamns 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

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Endocrine gland	Structure	Hormone	Functions
		Thyrotrophic stimulating harmone [THS]	Stimulates the activity of thyroid gland
		Adrenio corticotrophic harmone [ACTH]	Stimulates the production of harmones of adrenal cortex
		Follicular stimulating harmone [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 Oxytocin	Acts on muscles of the uterus during delivery – contractions
		Vasopressin	• Acts on smooth muscles of arterial system and increases the blood pressure • Decrease secretion – diabetes insipidus
Thyroid gland 	Largest of endocrine glands Located in the neck region It has 2 lobes seen on either side of trachea	Thyroxin	• Regulates tissue growth and development • Increases BMR thus raises body temperature • Stimulates breakdown of protein for energy • Decreases breakdown of fats • Helps in conversion of β carotens – vitamin A • Ca and P are removed from bones and excreted in increased amounts.

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Endocrine gland	Structure	Hormone	Functions
Para thyroid glands	Seen situated at the upper and lower poles of lateral lobes of thyroid glands	Para thyroxin	• Increases the reabsorption of calcium from bones • Increases the serum calcium levels • Increases the phosphate excretion in the urine stimulates lactation in mammary glands.
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	• Increases the blood glucose level • Breakdown of glycogen into glucose in liver • Stimulates the breakdown of fat in adipose tissue.
Adrenal gland	Also called supra renals It seen above the kidneys <u>Adrenal glands</u> Adrenal cortex Adrenal medulla	Glucocorticoids	Cause increase in blood sugar.
		Minerlocorticoids	Acts on Na & K and help in conversion of Na in the body.
		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.

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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 velvatte appearance covered by three varieties of papillae.

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

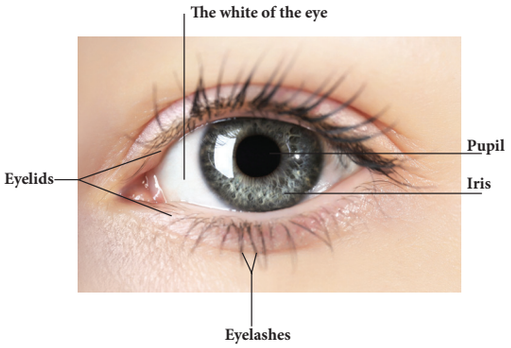


STUDENT'S ACTIVITY

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

Eye

Eye ball is spherical in shape situated in the anterior 2/3rd 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.

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

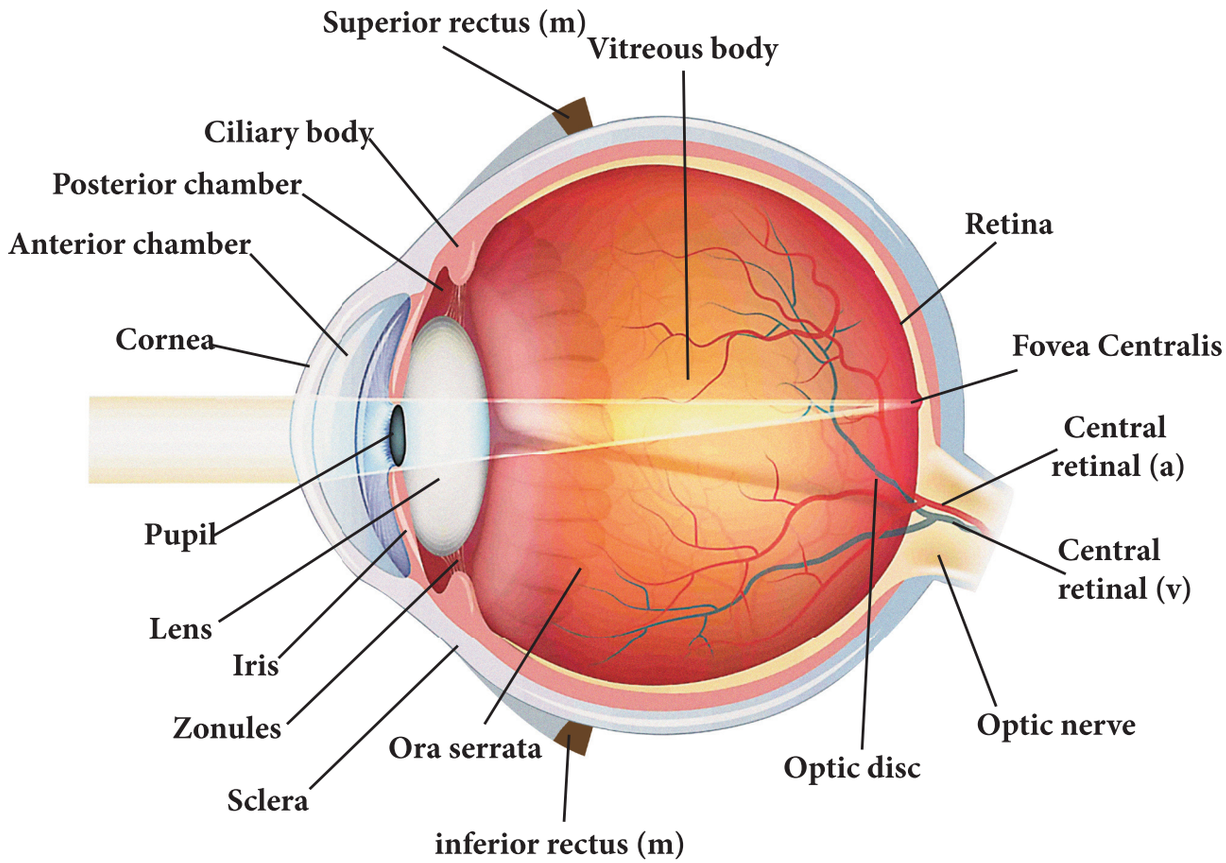
- Ear drum – communicates to the mastoid process

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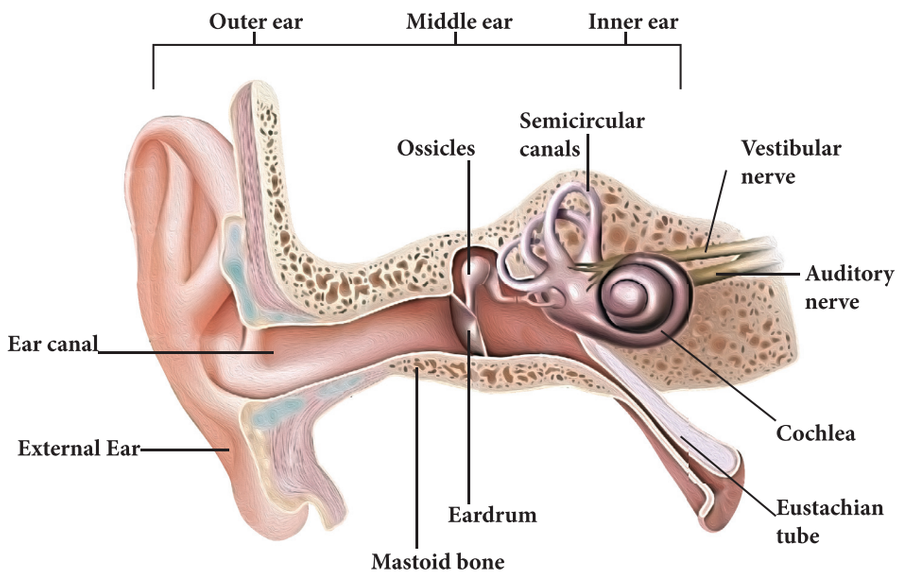
- Eustachian tube - maintaining the pressure of air
- Auditory ossicles – 3 small bones (malleus, incus, stapes).

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

STRUCTURE OF EYE



STRUCTURE OF EAR



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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

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

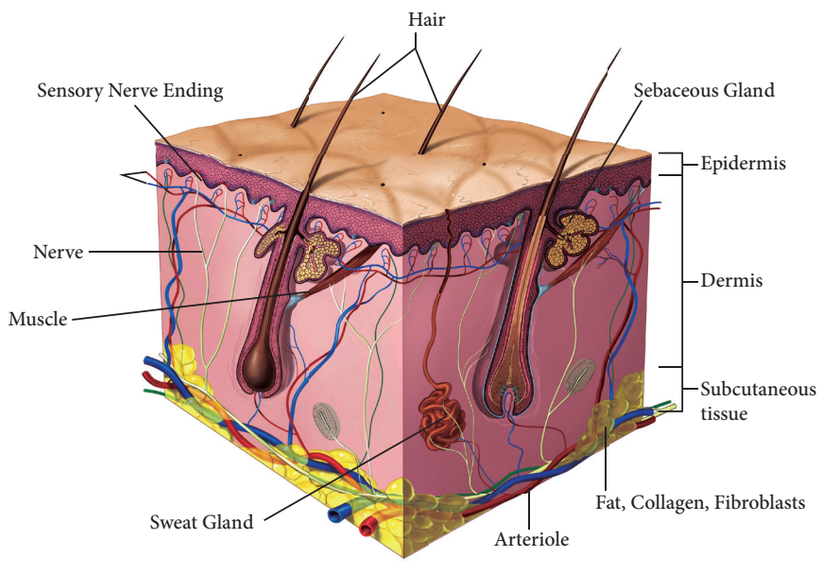
- Largest sense organ is SKIN. The surface area of skin is about 19.4 sq/ft.
- Lymph vessels are absent in epidermis, hair, nail, cartilage, cornea and central nervous system.

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



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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 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.

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 metablic 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 -7de-hydro 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 • Fat • Water • Salts • Glucose and such other substances.

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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

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.

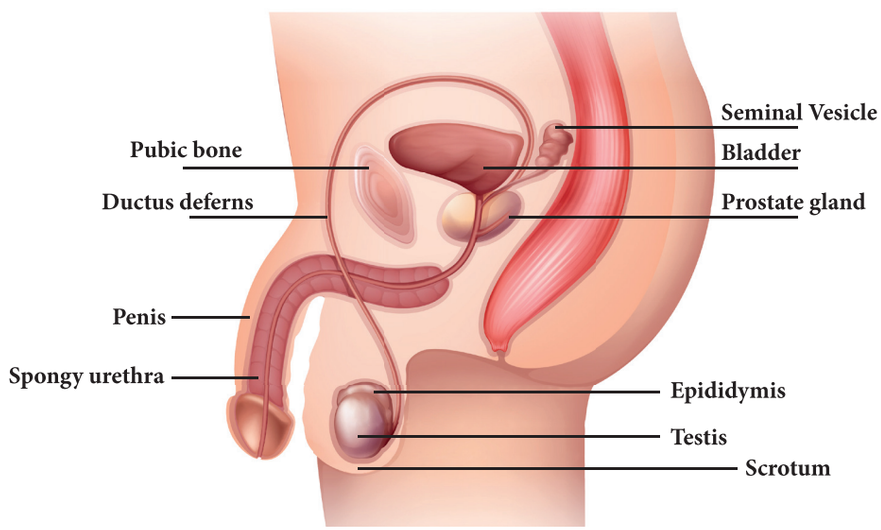
The penis: This is an external organ for both urinary and reproductive system.

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].

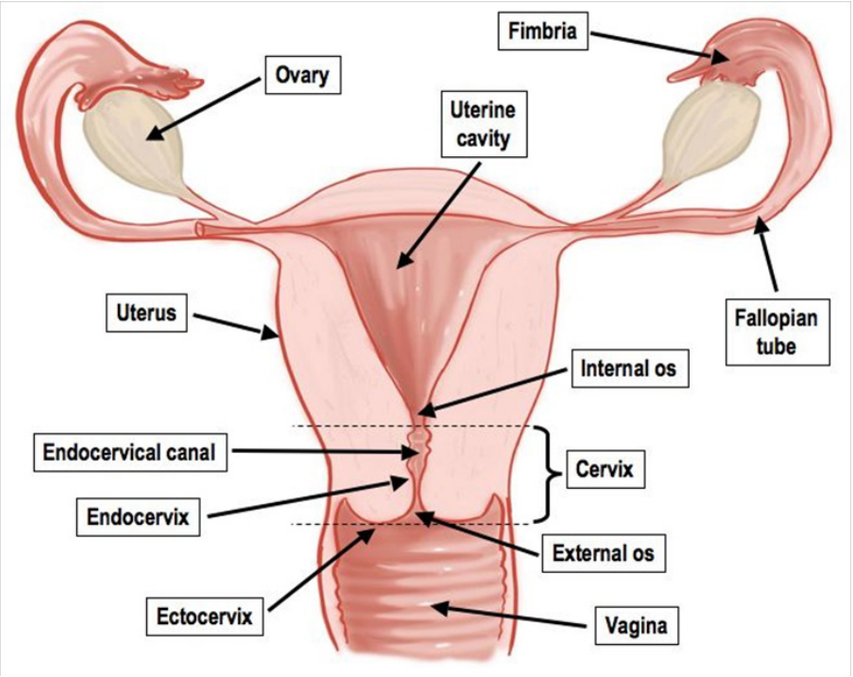
MALE REPRODUCTIVE ORGANS

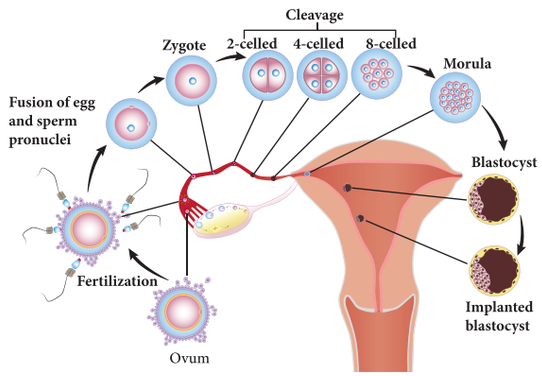


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FEMALE REPRODUCTIVE ORGANS

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.

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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 progestron.

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.

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.

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Meninges – (மூளை உறைகள்)	- The membranes covering the brain and spinal cord.
Vein – (சிரை)	- A vessel carrying blood from the capillaries back to the heart.
Capillariesn – (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

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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 shear and is to transmit impulses between and part of the body.



EVALUATION

L5T0E

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 vertebrate d. Lumbar bone

5. 4 small vertebrate 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.

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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)

1. Define anatomical position.
2. What is system?
3. Write about endocrine gland with examples.
4. Write the parts of skeleton.
5. Explain about cervical vertebral column
6. What are the functions of vertebral column.
7. What is meant by false ribs?
8. What is meant by joint?
9. Write the functions of muscular system.
10. Explain about Cardiac muscle.
11. Write the parts of brain.
12. Write the functions of cerebellum.
13. Explain about arachnoid mater.
14. Write the functions of cerebrospinal fluid.
15. Write the functions of heart.
16. Write the functions of lymph
17. What are the functions of digestive system?
18. What is meant by external respiration.
19. Write the parts of urinary system.
20. Define hormone
21. Explain the parts of urinary system.
22. Write the four layers of epidermis.
23. Mention the functions of uterus.
24. Write the internal and external organs of female reproductive system.
25. Explain about scrotum.

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26. Write the parts of middle ear?
27. Write the names of the papillae which is found in the upper surface of the tongue.
28. Mention the functions of parathyroid gland.

III. Write short notes (5 marks)

1. Draw the structure of a cell and identify its parts?
2. Write the types of tissues and explain.
3. Explain the systems of the body.
4. Draw the structure of skeletal system.
5. Explain about cranium.
6. Write the bones of upper limb.
7. 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.

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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Unit 3

INTRODUCTION TO PSYCHOLOGY AND SOCIOLOGY

LEARNING OBJECTIVES

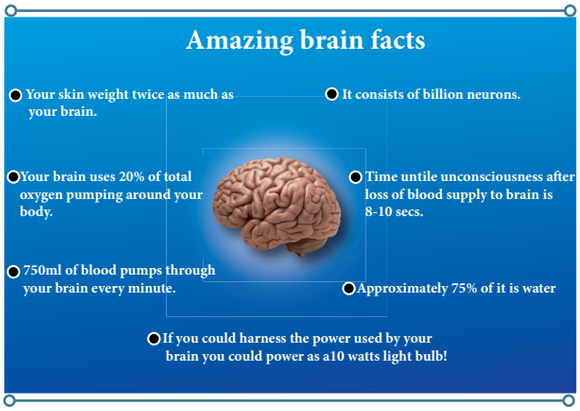
At the end of this chapter, the student will be able to,

- Define psychology and sociology
- Understand the importance of psychology in nursing
- Mental health
- Brief the characteristics and factors influencing mental health
- 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.

SYP70

3.1 INTRODUCTION

- **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.



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

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keep healthy behavior? What is social relationship? society, social structure etc.

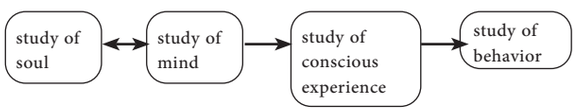
3.2 DEFINITIONS

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 McDoughall-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.

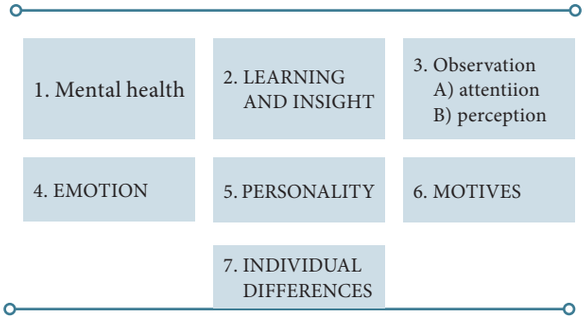
1. **To understand own self.**
2. **To understand patients.**
3. **To recognize abnormal behavior.**
4. **To understand other self.**
5. **To provide quality care to patients.**
6. **Help the patients to adjust the situation.**
7. **Help the student nurse.**
8. **Helps for Readjustment.**

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.

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.



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3.7 MENTAL HEALTH

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).

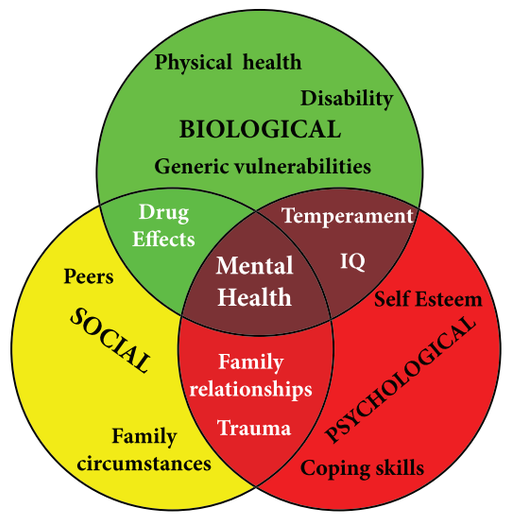
Characteristics of Mentally Healthy Person

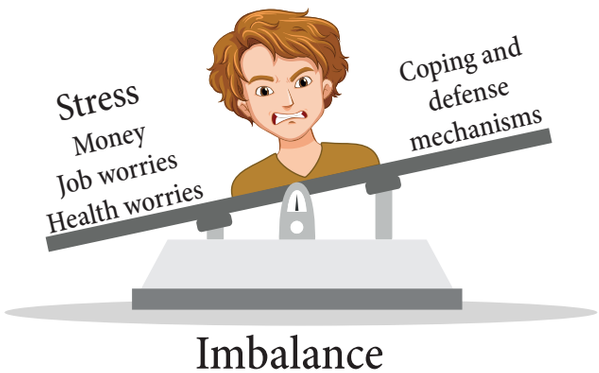
The mentally healthy person will be (refer picture)

- 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.

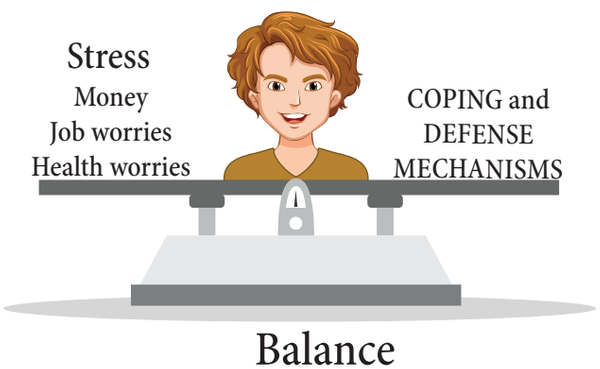
The people who are having balance between stress and coping skills will be mentally healthy person.

Factors Influencing Mental Health





Imbalance



Balance

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- **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.

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.

3.8 PERSONALITY

The Word Personality has been derived from the latin word 'persona' which was the mask which Greek acter wear while acting. This is however not the meaning taken in the modern word personality.

The personality is not fixed state but dynamic totality, which is continuously changing due to under actions with the environment. The way in which the individual adjusts with the external environment is personality.

Difinition of Personality

In the word of Munn, it is characteristic intergration of an individual's structure. Modes of behaviour, interests, capacities, abilities and attitudes. Behavior requires integrations.

The personality is the total quality of behaviors, attitudes, interests, capacitites, aptitudes and behaviour patterns, which are manifested in his relation with the environment.

An integrated personality leads to organized character. Disintegrated personality disorganized

The basis sources of personality development are hereditary and environment. However as a person genetic inheritance interacts with and shaped by environmental factors, The emerges a self structures that becomes an important influence in shaping further development and behaviour.

H.J. Evsenck speaks of three basic categories of personality.

1. Extraverts - They are out going uninhibites fond of activities, which bring them into contact with other people.

2. Neuroticism : In situations they are worried, panicking stress and over emotional.

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3. Psychotism : They are prone to take risks might engage in antisocial behaviour and impulsiveness.

Sheldon speaks of three types of body build.

1. **Endomorphic:** (round, fat and muscular) This types of personality is called as Visceroton, Which implies love of leisure and desire for food and sleep.
2. **Mesomorphic:** (Hard muscular). Have somatotonic personalities. Who exhibit persistence in behaviour desire for adventure, courage and involvement in action.
3. **Extromorphic:** (Delicate and lean). Have cerebrotonia which implies disciplined behaviour. Ready response to stimulation. Lack of interest in social interactions hyper sensitivity to pain etc.

According to Freud, the structure of an individuals personality consists of three separate agencies.

1. **Id:** Id is the unborn reservoirs of primitive Psychic energy called libido
2. **Ego:** Unconscious self immediate satisfaction on demands in pleasure.
3. **Super ego:** Develops and it consists of energy thing that is herited.

Freud also emphasis the early experiences in personality development the speaks of Psychosexual development of the individual.

1. The oral stage – During infancy
2. The Anal stage – between 1 -3 years
3. The phallic stage – between 3 – 5 years
4. Latency stage – 6 to the age of puberty
5. Genital stage – from puberty to the adulthood.

Personality Traits for successful Nurses.

1. Tenacious
2. Gregarious
3. Methodical
4. Optimistic
5. Patience
6. Empathetic

Learning Psychology will help us to understand the factors affecting our behaviours and also how to maintain normal or balanced behavious to help patients .

3.9 DEFENSE MECHANISMS

This is the another mode of reacting to difficulties mental mechanism or defence mechanisms. Wanted reactions to stress aims chiefly at protecting the self from hurt and disorganization.

1. **With drawal:** Protecting self from unpleasant, reality by refusal to perceive or face it.
2. **Fantasy:** Gratifying funstrated desires by imaginary achievement.
3. **Repression:** Preventing painful or dangerous thoughts from entering consciousness.
4. **Rationalism:** Attempting to prove ones behaviors rational and justifiable and thus project worthy of itself and social approval.
5. **Projection :** Placing blame for difficulties upon other or attributing one's own unethical desires to others.

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6. **Displacement:** Discharging pent up feeling usually of hositility on objects less dangerous than those, who initially aroused the emotions.

7. **Emotional insulations:** Reducing ego involvement and withdrawing into passivity to protect self from hurt.

8. **Intellectualization (isolation):** Cutting of affective charge from harmful situations of separating in compatible attitudes by logic light compartments.

9. **Undoing**: Counteracting immoral desires or act.

10. **Regression**: Retreating to earlier developments. Levels involving less mature responses and usually a lower level of aspirations.

11. **Identification**: Increasing feelings of worth by identifying oneself with person or institution.

12. **Intrajection**: Incorporating external values and standards into ego structure so that the individuals is not at their mercy as external threats.

13. **Compensations**: Covering up nearness by emphazing desirable trait or making up for frustrations in one or by one qualifying in another.

14. **Acting out**: Reducing the anxiety by forbidden or dangerous desires by permitting their expression.

15. **Reactionformation**: A person unconsciously replaces an anxiety or proroing impulse with its opposite in a showy way.

The above mentioned defense mechanisms are set of actions, thought patterns and behaviours that people use to separate themselves from harmful thoughts events or actions. The human brain uses these psychological strategies in order to distance itself from unwanted feelings and threats such on guilt or shame.

3.10 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.

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

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.

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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.

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.
- 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.

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.

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A-Z GLOSSARY

Psychology – (மனநலம்)	-	It is the science of the mind and behavior.
Personality – (தனித்திறன் (அ) தனிமனித தன்மை)	-	It is the combination of qualities and characteristics of a person.
Individual differences – (தனிமனித வேற்றுமைகள்)	-	These differences between individuals that distinguish or separate them from one another and make one as unique individual in oneself.
Sociology – (சமூகவியல்)	-	It is the science of society

EVALUATION

ASSIX

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. Behaviour
   d. Sociology
6. The study of behaviour and mental health is known as
   a. Psycology
   b. sociology
   c. physiology
   d. none of these

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7. The word "Persona" has been derived from _____ language.
   a. french
   b. greek
   c. latin
   d. tamil

II. Write short answers (3 marks)

1. Write the definition of psychology?
2. Define mental health
3. Explain psychoticism?
4. Why mental health is important for nurses?
5. What are the three types of body building in Sheldon's theory
6. What is compensation?
7. Define sociology?
8. Mention the three basic categories of personality

III. Write short notes (5 marks)

1. Describe the importance of psychology in nursing?
2. What are the factors influencing mental health?
3. What are the characteristics of mentally healthy person?
4. What is freud theory about personality?
5. Define personality?
6. What are the importance of society?

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

1. Explain the psychological factors influencing or affecting behaviour?
2. Write about the application of sociology in nursing?
3. Give an eassy on the defense mechanism?
4. What are the importance of sociology?
5. Write about the personality traits of successful nurse.
6. Write the principles of sociology.
7. What are the application of sociology in nursing?

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Unit 4

PRINCIPLES AND PRACTICE OF NURSING

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
- Create a therapeutic environment
- Body mechanics and positioning
- Meet the Hygienic needs
- Meet the Safety and Comfort needs
- Know the Activity & Exercises
- Do the Moving, Shifting & Lifting patients
- Meet the Oxygen needs
- Meet the Elimination Needs.

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).

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.

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4.2 NURSING PROCESS

This approach can be broken down into five separate steps.



Definition of Nursing Process

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

Steps of Nursing Process

Assessment Phase

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.

"The individualization of learning fundamentally redefines the role of assessment."

- Sebastian Thrun

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

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

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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.

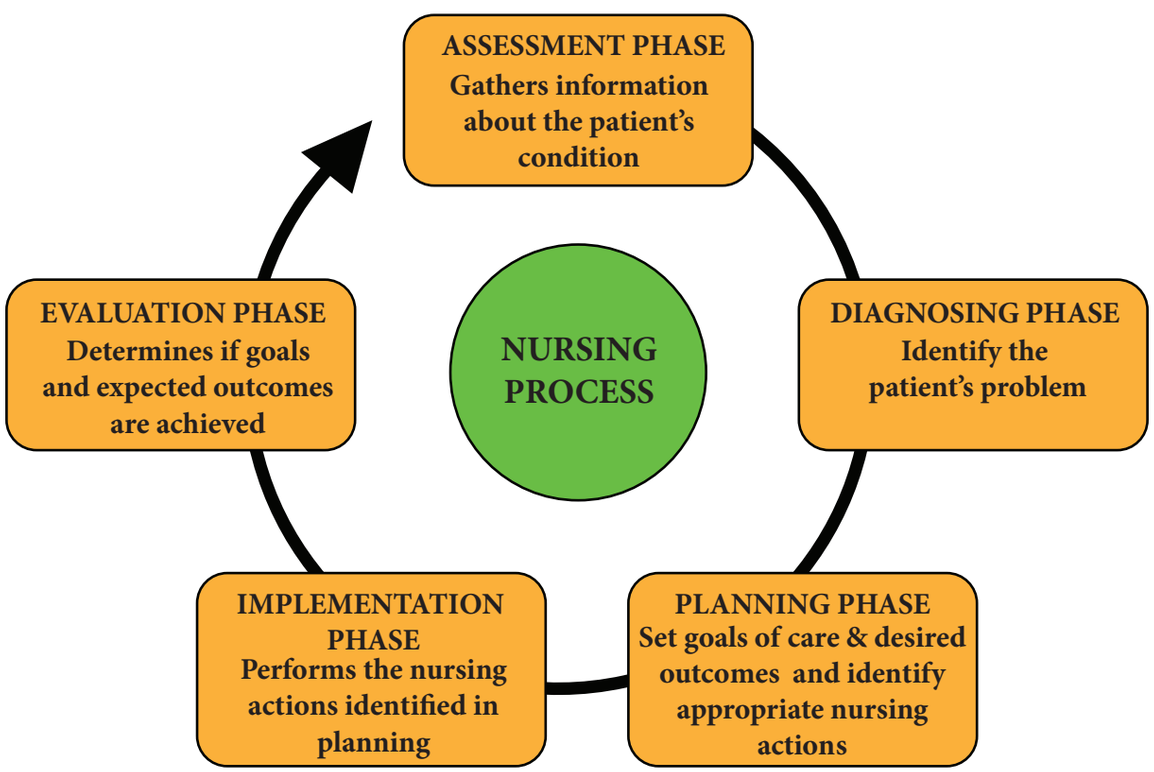
Evaluation Phase

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.





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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.

4.3 ADMISSION OF A PATIENT

Definition

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

Purposes of Admission

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

Types of Admission

1. Routine.
2. Emergency.

Patient Admission Procedure

Procedure: 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.

The admission to a hospital can be either routine (outpatient department) or emergency/casualty (seriously ill).

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.

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.

Due to sudden change and strangeness in the environment, patient can feel anxious, therefore, the nurse should take effective steps to establish interpersonal relationship.

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.

Provide a clean and safe environment, prepare the unit (bed making)

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.

Record the admission and inform the doctor.

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

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impression in the register. However, inform the patient that he will get back his valuables on discharge.

4.4 DISCHARGE OF A PATIENT

Definition

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

Purposes of Discharge

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

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.

Patient Discharge Procedure

1. The doctor has to write discharge orders in your chart.
2. 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.
3. The nurse informs the patient and the family about the discharge and makes an appointment for the follow up visit.
4. Financial arrangements are reviewed and finalized.
5. Transportation is confirmed.
6. **Discharge instructions** 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.)
7. Any delays are updated to the patient and family.
8. The nurse will review all the discharge instructions with the patient.
9. 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.
10. The understanding of the instructions will be confirmed.
11. Only after all of the above has been completed, the patient and the relatives will be helped to the vehicle.

4.5 HOME NURSING

Definition of home nursing

Home nursing is a nursing speciality in which nurse provides multidimensional home care to patients of all ages.

Concept of home health care

The concept of home health care is to mean any type of care given to a person in their home .

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- Home care providers render services in the patients' own home. These services may include some combination of professional health care services and life assistance services.
- People wanted to be in home and to direct their care even when their health is compromised
- With the increase in aging population, chronic disease or cost of health system and the demand for high quality, places a greater demand for home care .
- Home care is truly conducive to a client centered approach, which puts patients at a center of care and supports them through the care continuum .
- Home health nurses are highly skilled, and got strong interpersonal skills that support a patient centered approach and have proven a positive outcome, especially in older adult, wound care and end of life care .
- The current strong demand for home health nursing will only increase, and the profession is solidly positional to evolve by means of enhanced education and support

Purposes of Home Care

- In response to a need felt by an individual in the family as in case of sickness, delivery, surgery .
- As a part of a planned visiting programme e.g., routine prenatal visits .
- To investigate the source of an infectious disease in which case you may be rejected instead of being wanted.
- To follow through on some problem identified in the health center, school, industry or hospital .
- To assess nutritional and immunization status, environmental hazards and give health education.
- To follow treatment and care given by family members .
- To supervise and guide other health workers

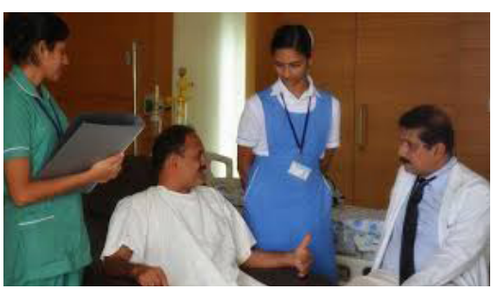
4.6 THERAPEUTIC ENVIRONMENT

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.

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.



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4.7 THERAPEUTIC COMMUNICATION

Therapeutic communication is defined as the face to face process of interaction that focuses on advancing the physical and emotional wellbeing of the patient.

Nurses use therapeutic communication techniques to provide education and support to the patients,while maintaining objectivity and professional distance.

Therapeutic Communication Techniques

Active listening, silence, focusing, using open ended questions, clarification, exploring, paraphrasing, reflecting, restarting, providing leads, summarizing, acknowledgement and the offering of self.

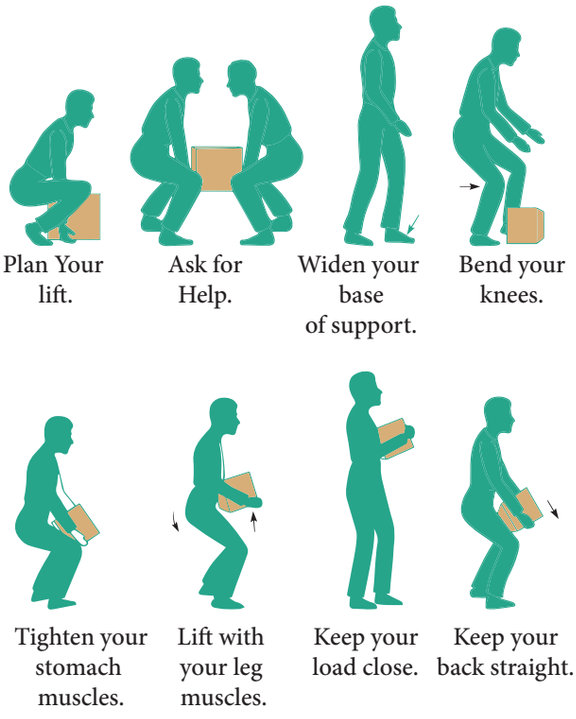
4.8 BODY MECHANICS AND POSITIONING

Definition

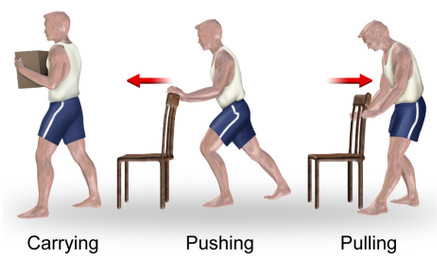
Body mechanics involves the coordinated effort of muscles, bones, and the nervous system to maintain balance, posture, and alignment during moving, transferring, and positioning patients. Proper body mechanics allows individuals to carry out activities without excessive use of energy, and helps to prevent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

Purposes of Good Body Mechanics and Posture

1. To provide maximum comfort and relaxation.



2. To aid in normal body function.

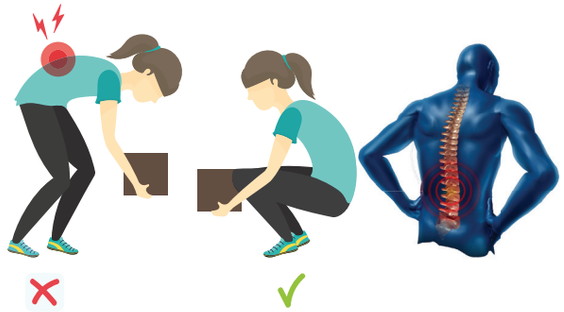


3. To prevent contractures and neuromuscular deformities and complications.



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

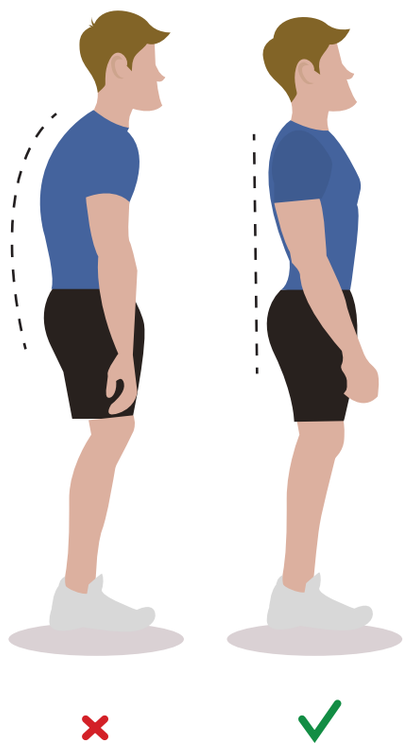


Normal Positions

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

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

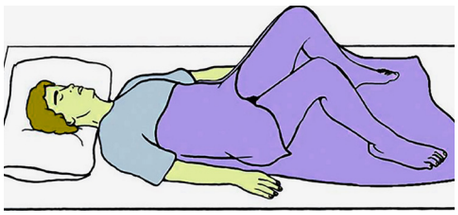
- Surgical procedures, it allows access to the peritoneal, thoracic and pericardial

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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.



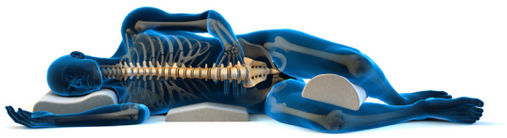
Indications

- 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.

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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

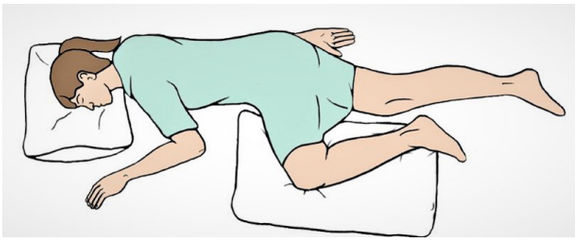
- For treatment on the back.
- To secure drainage of pus in front of the abdomen.
- When there is bedsore or burns or an injury at the back (spine.)
- Change of position for patients with fractured spine.

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

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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

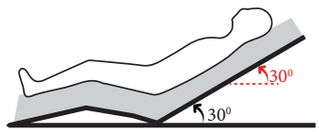
- Vaginal examination.
- For rest and relaxation.

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

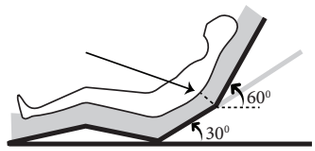
Patient is in a partially sitting position. The back of the bed is elevated to 45 degrees with the aid of a backrest and pillow or by adjustment of the cot. It can be elevated to 30 degrees as well as 90 degrees. Patient's back shoulder and head are supported well. The knees are flexed and supported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

Indications

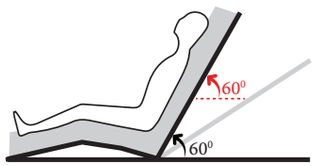
- To obtain good drainage in the pelvis.
- To localize infection in the pelvis and prevent it's spread to the peritoneum.
- To prevent strain of abdominal muscles.
- This position is used for patients with dyspnoea (difficulty in breathing), distended abdomen, abdominal surgery, cardiothoracic disorders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



WT30⁰



UT60⁰



WT60⁰

11. 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.

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.

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4.9 SAFETY AND COMFORT NEEDS

Safety:

Safety means protection from possible injury.

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

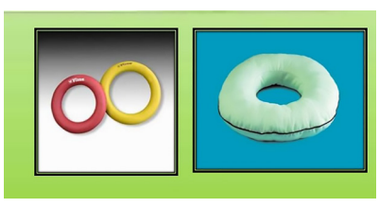
1. The hospital buildings should be structurally sound for ensuring safety for patients.
2. The floors should be clean and dry.
3. There should be mosquito mesh fixed in all the windows.
4. Fire extinguishers should be placed all over the building wherever necessary.

Comfort:

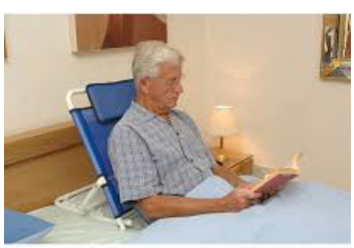
Comfort is a sense of mental and physical well being.

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.

Comfort & Safety Devices.	Images	Indications
1. Pillows:		Pillows can be used for giving support for the various part of the body.
2. Cotton rings:		They are used to relieve pressure on certain parts of the body like elbow and heels.
3. Air Mattress: 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.

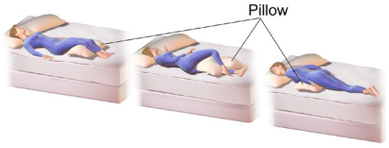
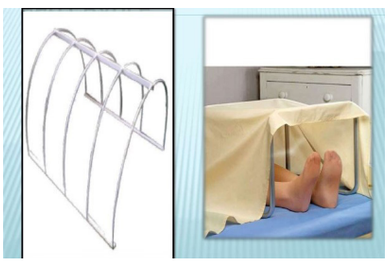
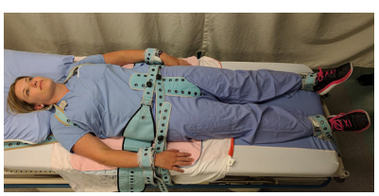
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4. Water Mattress: Water has been known to increase blood flow, stimulate blood circulation and properly support all areas of the body evenly and comfortably, allowing the person to wake up feeling more rested and better able to start the day. Most waterbeds can be heated and temperature controlled, so the person can set it to whatever temperature they find desirable.		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.
5. Air cushion: • Protective and void filling materials, including block and brace, corner protection, wrapping, interleaving, top and cross layering. • Water resistant seat cushion. • Inflatable bags.		Air cushion can be used for giving support for the various part of the body.
6. Bed bars (side rails): are used to prevent patients from falling out of bed.		Patients who require this safety measure are post operative patients, unconscious, semiconscious mentally disturbed, sedated, blind, children or old patients.
7. Back rest: These are usually made of wood or metal.		These are used to support the back of the patient in an upright position.

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8. Over bed table:(Cardiac table): 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.		When he wants to take food, read or write.
9. Footboards/Foot rests: 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).		These are used to prevent foot drop by maintaining good alignment.
10. Sandbags: These are canvas, rubber or plastic bags filled with sand and are 1,5 and 10 lbs in weight.		These are used to immobilizethe 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.
11. Blocks (shock blocks): These are made of wood, may be high or low.		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.

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12. Hand rolls: These are made of cloth that is rolled into a cylinder about 45 inches long and 23 inches in diameter and stuffed firmly.		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.
13. Thigh rolls (Trochanter rolls): 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.		In case of paralysis, fracture of the femur or hip surgery. To use the roll, place the lose end (flap) under the patients hips and thighs with the role under the flap end and then tucking snugly along the hip and thigh.
14. Cradle: 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.		These are used for patients affected by burns.
15. Restraints: The forcible confinement or control of a patient.		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.

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4.10 FALL

Definition

Fall is defined as an event that results in a sudden unplanned descent(fall) of a patient to the floor with or without injury.

Fall may be at different levels .i,e- from one Level to ground level eg, from beds,wheelchairs or downstairs.

The other level is,as a result of sliping, tripping or stumbling,pushing by another below ground level i,e: into a hole or other opening in surface.

Types of Fall

1. Accidental Fall:-

Occur when patients fall unintentionally because of an environmental hazard or equipment failure all Falls.

2. Anticipated physiological fall:-

Occurs in patients with known risk factor for tripping related to the patient's underlying medical condition (78% of all falls)

3. Unanticipated physiological fall:-

Falls which occur in patients do not have identified risk factors until the fall occur,eg: faints,seizures (8% of all falls)

Prevention of Patient Fall

1. Identifying the vulnerable groups.
2. Assessment of vulnerable patient within 2 hours.
3. Applying yellow band.
4. Applying side railings.
5. Applying brakes for all cots.
6. Education to the relative on fall risk prevention.
7. Education of the staff of fall risk assessment
8. Uses of grab bars and call bells.
9. Importance of using safety belts on stretchers and wheelchairs.
10. Keep the washrooms dry and never allow the patients alone to washrooms especially during nights.

Nursing Management

After a fall in the hospital:-

Stay with the patient and call for the help.Check the patient's breathing,pulse and blood pressure.If the patient is unconscious,not breathing or does not have a pulse,call a hospital emergency code and start CPR.Check for injury,cuts,scraps and broken bones.Write an incident report.

Incident report should contain

1. Type of incident
2. Address
3. Date of incident
4. Time of incident
5. Name of affected individual
6. Injuries if any.

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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.

Other Causes of Infection in the Hospital are

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

4.11 ACTIVITY AND EXERCISES

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.

Benefits of Exercise

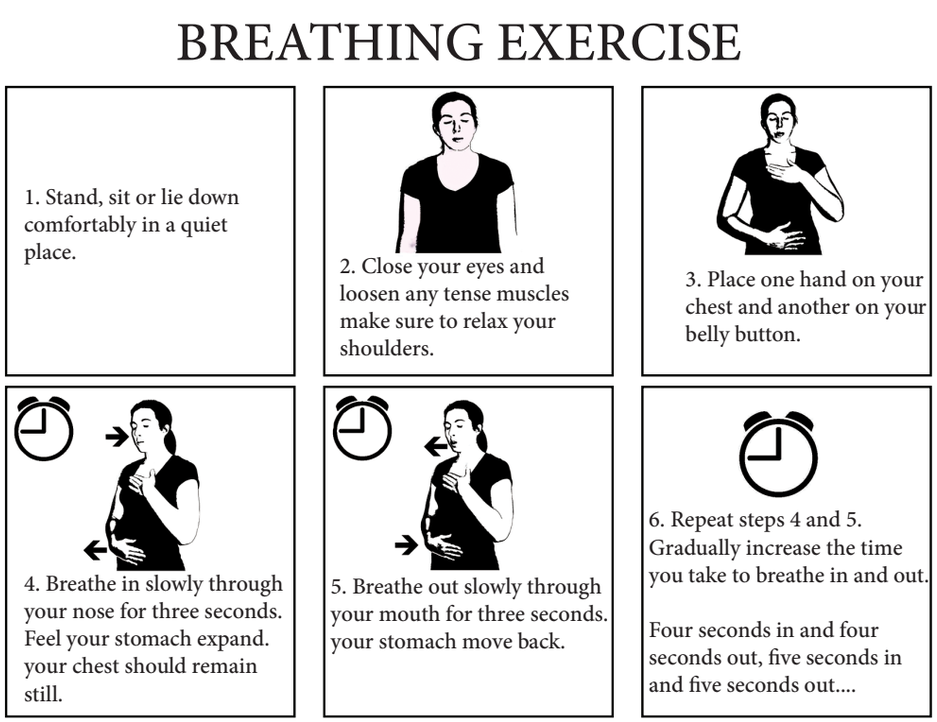
1. Exercise strengths muscles.
2. Helps to prevent constipation.
3. Increases appetite.
4. Improves sleep.
5. Stimulates blood circulation.
6. Improves lung ventilation.
7. Prevents obesity.
8. Promotes physical and mental well being.
9. Promotes urinary function.
10. Regulates body temperature.

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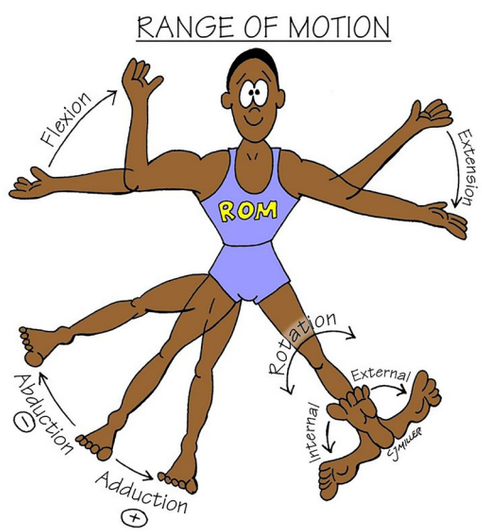
Types of Exercises

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.



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



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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.	
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.	Passive exercise is useful for patient with restricted movements, and deformities. Can be given for an unconscious patient. 

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Breath



Hip Roll



Normal



Bridging



Standing Rotation



Hand via knees



Seated knee tucks



Supermans

4.12 MOVING, SHIFTING AND LIFTING PATIENTS

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.

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.

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

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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 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.



4. Transferring from the Bed to Wheelchair:

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.

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.

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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.

4.13 OXYGEN NEEDS

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.

Purpose

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

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Indications for Oxygen Inhalation

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

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.

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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

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 Wolfs 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.

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.

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Key and Regulator



Oxygen cylinder

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.

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_2 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.)

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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.

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. Body mechanics means the cooriented use of the body parts to produce motion and maintain equilibrium in relation to both internal and external forces.
7. The hygiene refers to the science of health and its maintenance, the prevention of disease, and sanitary practices.
8. Comfort is a sense of mental and physical well being.
9. 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.
10. While lifting heavy objects flex your knees so that your strong muscles of the legs bear the weight of the object.
11. 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.
12. Oxygen can be administered by the ways of nasal catheter/cannula, nasal prongs, B.L.B. mask, and an oxygen tent.
13. Exercise is the performance of physical exertion for improvement of health or the correction of physical deformity.

****

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.

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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)	-	It happens when the number of healthy red blood cells in your body is too low.
Patients under anaesthesia – (நோயாளி மயக்க நிலையில் இருத்தல்)	-	Anesthesia is a state of temporary induced loss of sensation or awareness.
Asphyxia – (சுவாசத்திணறல்)	-	Or asphyxiation is a condition of severely deficient supply of oxygen to the body that arises from abnormal breathing.
Cyanide poisoning – (சயனைடு நச்சு)	-	Is poisoning that results from exposure to a number of forms of cyanide.
Thyroidectomy – (தைராய்டு சுரப்பியை எடுத்தல்)	-	Is an operation that involves the surgical removal of all or part of the thyroid gland.

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EVALUATION

Multiple choice questions

1. THE Nurse systematically plans her work, which is referred to as
   a) Caring
   b) Nurturing
   c) Nursing Process
   d) Planning
2. Which one of the Following is ensured by using the nursing process for the patient?
   a) The quality of patient care
   b) Basic requirements of the patient
   c) Managing the visitors of the patient
   d) The patient nurse relationship
3. Which one of the following is the last step of the nursing process?
   a) Nursing Diagnosis
   b) Evaluation
   c) Assessment
   d) Implementation
4. In which phase of the Nursing process does the Nurse gathers Information about a patients psychological, physiological, sociological and spiritual status?
   a) Planning
   b) Diagnosing
   c) Assessment
   d) Implementation
5. When the Nurse is administering the prescribe drugs and is giving health education for the patient, it represents which phase of the Nursing process?
   a) Implementation phase
   b) Evaluation phase
   c) Assessment phase
   d) Planning phase
6. When seriously ill patient is bought to the ward in an ambulance, it is considered as what type of admission?
   a) Routine
   b) Emergency
   c) Judicial
   d) Voluntary
7. What is the procedure to follow when the patient admitted in the hospital has valuables like money and gold ornaments?
   a) Register the items, get the patient's signature and give it to the office custody
   b) Register the items, get the patients signature and give it to the patient to keep it
   c) Get the patient's signature and give it to the office custocly
   d) Register the items, get the patient's signature and give it to the office custody

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8. A patient escapes the hospital without the knowledge of the hospital staff. This type of discharge is referred to as

   a) Discharge against medical advice

   b) Discharge to home

   c) Absconding

   d) Involuntary

9. Which is used to prevent patients from falling out from bed?

   a) Bedbars

   b) Backrest

   c) Pillow

   d) Blocks

10. Which one of the following position with a nurse prefer to give back care for a bed ridden patient?

    a) Jack knife

    b) Lateral

    c) supine

    d) supine

11. Restraints are used for which type of patients?

    a) unconscious patients

    b) patients ara sogastric tube feeding

    c) Ambuatory patients

    d) Agitated patients

12. Which one of the following problems can be prevented by performing the foot exercises?

    a) foot drop and toe deformities

    b) Foot pain

    c) pedal edema

    d) Foot ulcer.

13. Passive exercises can be given to which one of the following patient?

    a) Agitated patients

    b) patients on radiation therapy

    c) unconscious patients

    d) Ambulatory patients

14. What is the normal amount of oxygen in the blood?

    a) 40-20 mm of Hg

    b) 60-40 mm of Hg

    c)80-60 mm of Hg

    d) 100-80 mm of Hg

15. In this case you can see the steps to make the right decision about the patient.

    a) Assessment phase

    b) Diagnosing phase

    c) Planning phase

    d) Evaluation phase

16. The Amount of oxygen delivered through the Nose to adults in the hospital is

    a) 3 to 4 Litre/Minute

    b) 2 to 3 litre/Minute

    c) 2 to 4 Litre / Minute

    d) 1 to 2 Litre/Minute

17. Mention the second step of nursing process

    a) Assessment

    b) Nursing diagnosis

    c) Planning

    d) Implementation

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18. Mention last step of nursing process
    a) Assessment
    b) Nursing diagnosis
    c) Planning
    d) Evaluation

19. Mention the position for patient who is in child birth.
    a) Supine position
    b) Lithotomy position
    c) Lateral position
    d) Sims position

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. List out any 3 types of special devices used for patients.
4. What is a psychologically safe space for a patient?
5. What is body mechanics?
6. What are the purposes of good body mechanics and posture?
7. What are the uses of the Fowlers position?
8. List the factors which can cause discomfort to the patients in the hospital.
9. What are the causes of infection in the hospital?

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. How can you help the patient transfer from the bed to wheelchair?
6. What are the indications for oxygen administration?
7. What are the precautions to be taken while 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. Write about moving, shifting and lifting patients?
5. Discuss the care of the oxygen cylinders.

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- books.google.com.au › Medical › Nursing › Fundamentals & Skills
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Unit 5

PERSONAL HYGIENE

LEARNING OBJECTIVES

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

- Do oral hygiene
- Care of the eyes
- Skin care
  - Importance of skin care
  - Decubitus ulcer
    - Definition
    - Causes
    - Preventive measures
    - Management
  - Back care, Bath & Therapeutic Bath
- Care of foot and nails
  - Method of nail cutting
  - Foot care management
  - Common foot and nail problems
    - Definition
    - Causes
    - Preventive measures
    - Management

புறந்தூய்மை நீரான் அமையும் அகந்தூய்மை
வாய்மையால் காணப் படும்.

– குறள்: 298

Kural 298:
Purity of body is produced by water and purity of mind by truthfulness.

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

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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

Introduction

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

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.

Personal Hygiene



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.

5.3 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

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between the teeth. It isimportant 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.

Measures to Maintain Proper Oral health.

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.

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

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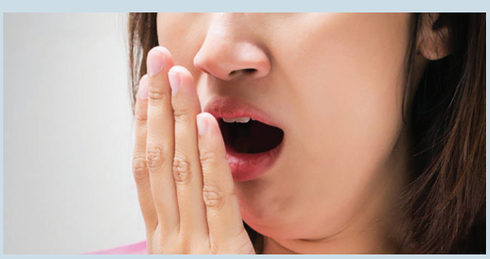
7. Drinking orange juice or carbonated drinks like (cola, sprite, etc.) throughout the day raises the risk of dental cavities tremendously.
8. Chewing ice can cause chipping which can lead to a severe damaging effect in the teeth and tooth fracture.
9. Drinking dark coloured beverages such as wine, beer or alcohol may stain the teeth. Drinking high-concentration alcohol can lead to a dry mouth, which affect the teeth with plaque and bacteria

1. 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.

Common Oral Problems

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

Oral problems	Images
1) ***Dental caries*** is the most common oral problem of younger people. The development of the cavities involves the ***destruction of tooth enamel*** through decalcification.	
2) ***Periodontal disease*** (Pyorrhoea) is the disease of the ***tissue around the tooth***. It is an inflammation of the periodontal membrane.	
3) ***Halitosis (Bad breath)*** is a common problem of the oral cavity.	

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4) ***Cheilosis*** is the disorder which involves cracking of the lips especially at the angle of the mouth.	
5) ***Stomatitis*** is an inflammative condition of the mouth.	
6) ***Glossitis*** is an inflammation of the tongue resulting from an infectious disease or injury such as burn or bite.	
7) ***Gingivitis*** is an inflammation of the gums usually resulting from poor oral hygiene.	
8) ***Scurvy*** is a disease resulting from lack of Vitamin C. It can lead to anemia.	

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9) ***Oral malignancies:*** Lumps or ulcer appears in or around the mouth. The most common site is at the base of the tongue.	

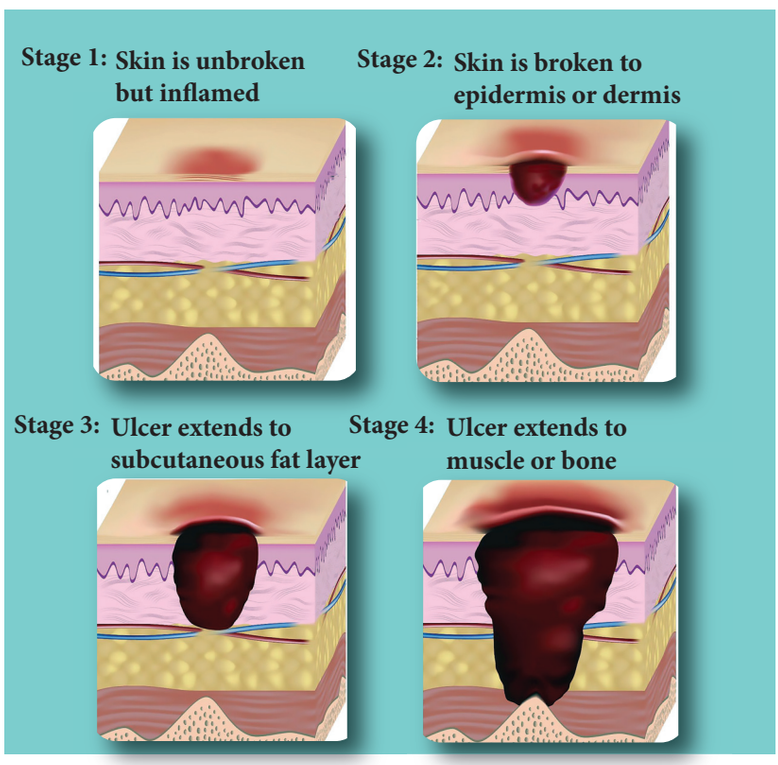
Dentures

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.	

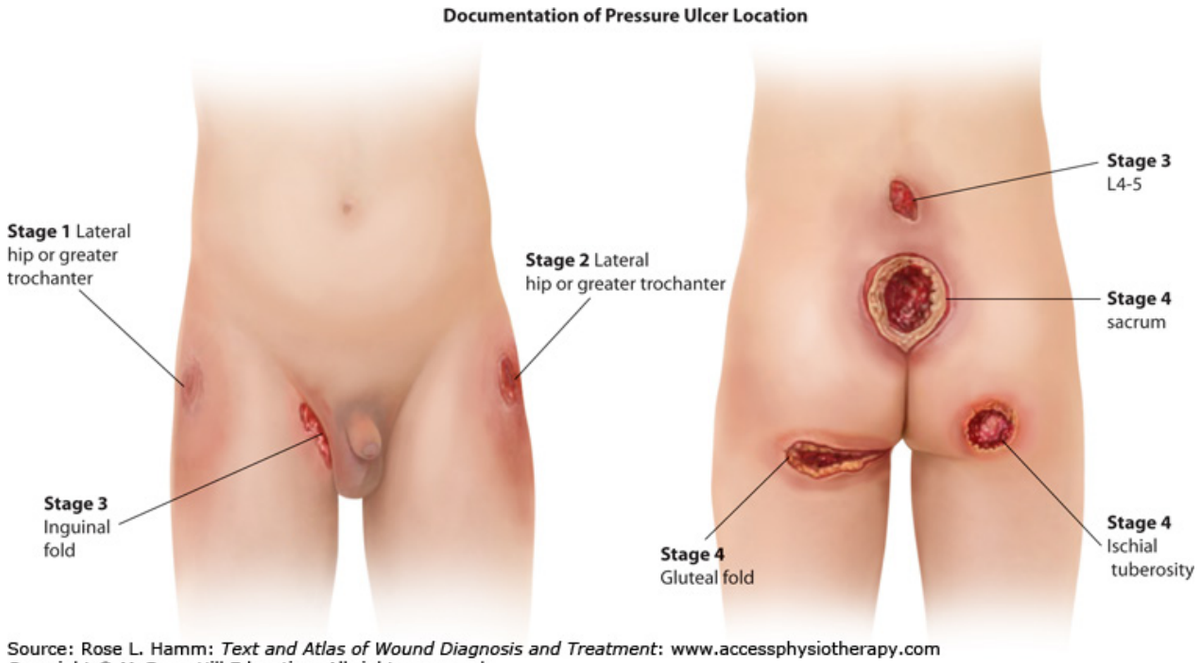
5.4 SKIN CARE

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.*



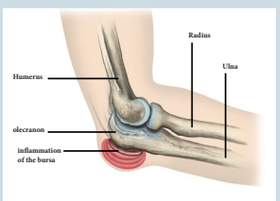
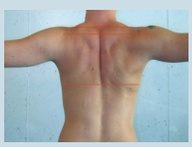
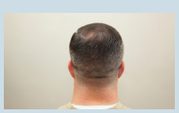
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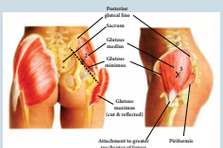
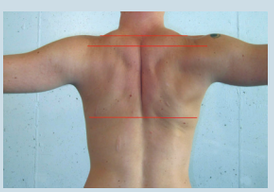


Source: Rose L. Hamm: *Text and Atlas of Wound Diagnosis and Treatment*: www.accessphysiotherapy.com
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1. Areas which are likely to be affected

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)	

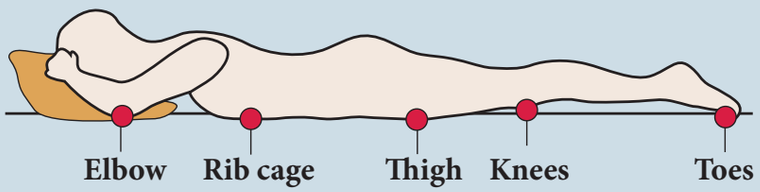
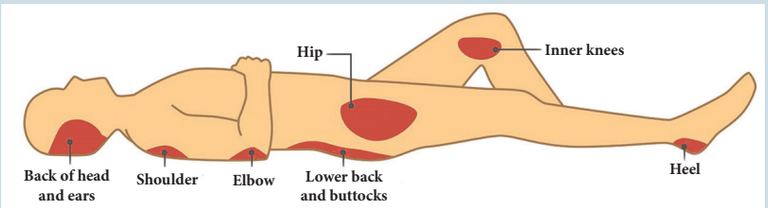
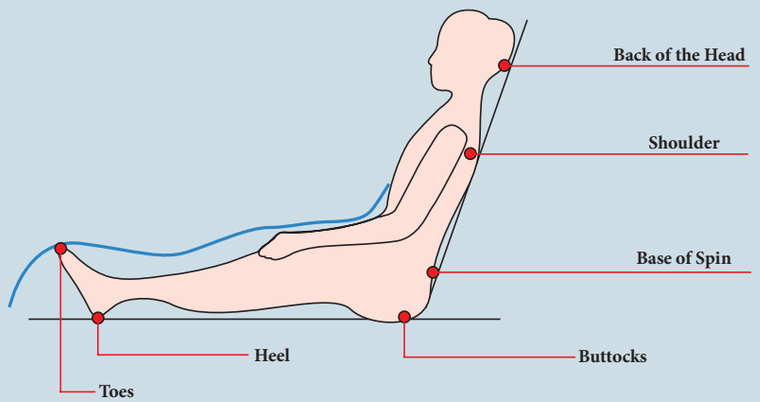
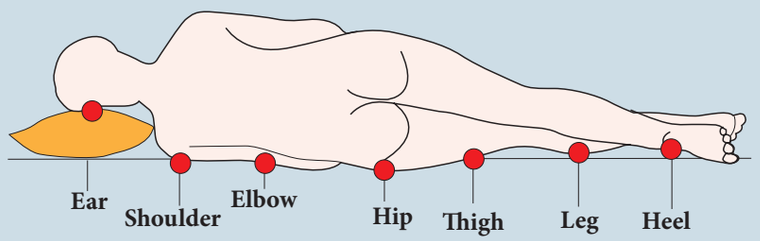
Areas liable for pressure sores	Images
Malleolus (medial and lateral) of the ankle and the foot.	
Knee. (medial and lateral condyles)	
Greater trochanter of the femur.	
Ilium (hip bone).	
Shoulder. (acromial process)	

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Areas liable for pressure sores	Images
Side of head. (parietal and temporal bones.)	

Areas liable for pressure sores	Images
Ear.	

Positions and their Pressure Points

Position	Pressure points
Prone position.	
Supine position.	
Fowler's position.	
Lateral position.	

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Pre - Disposing Factor for Decubitusulcer

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.

Causes of Decubitus ulcer

Pressure

The following condition causes prolonged pressure:

1) Leaving a patient in one position for a long time.
2) Leaving a patient on a bedpan for a long while.
3) Hard and lumpy mattress.
4) Pressure exerted by splints and plaster casts.

Friction

The following factors which cause friction in a patient:

1) Careless pulling of patient and his linen.
2) Giving and removing bed pan carelessly.
3) Leaving broad crumbs, orange seeds and food particles on the bed.
4) Creases in the bottom sheet.
5) General restlessness of patient.
6) Rubbing two skin surfaces together.

Moisture

The following reasons result in moisture over the pressure areas:

1) Incontinence of faeces and urine.
2) Severe perspiration.
3) Leaving a patient in wet linen
4) ***Heat:*** Leaving a patient in one position for a long time, the part gets heated.
5) Lack of cleanliness and irritating substances on the skin. Eg. Perspiration, faeces, urine and vaginal discharge.

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.

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Treatment of Decubitusulcer

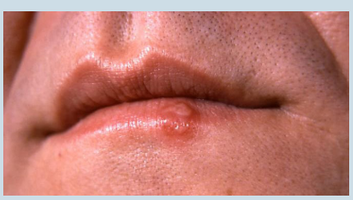
1) Clean ulcers with aseptic precautions Use antiseptics such as hydrogen peroxide.
2) Apply medication ordered by the doctor, eg. Antibiotic ointment, shark liver oil, zinc oxide, (or) any other topical applications.
3) Cover with sterile dressings and bandage.
4) Surgical formentation, ultraviolet rays (or) heat lamp are helpful in healing.
5) Provide good nutrition.
6) Prevent secondary infections.

Type of Therapeutic Baths

Type of Therapeutic Baths	Related images
1) **Hot water tub bath:** Immersion in hot water helps relieve muscle soreness and spasm. Water temperature should be 45 °C to 46 °C.	
2) **Warm water tub bath:** Bathing in warm water relieves muscle tension. Water temperature should be 43 °C.	
3) **Cool water bath:** Bathing in tepid water helps to lower body temperature when the body temperature is over 40 °C.Water temperature should be 37 °C.	
4) **Sitz Bath:** 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) **Cold sitz bath:** Cold sitz bath is more effective in relieving pain in the postoperative period.	

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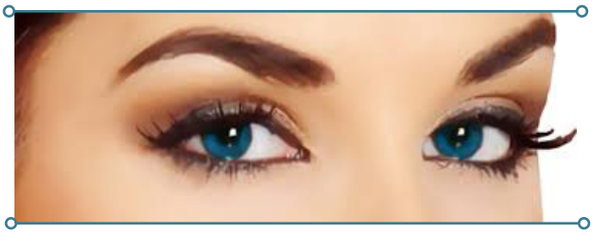
Common Skin Problems

Skin problem	Image	Treatment
1. ***Shingles (Herpes Zoster):*** A rash of raised dots that turns into painful blisters, shingles causes the skin to burn, itch, tingle, or become very sensitive.		• Creams for your skin. • Antiviral drugs. • Steroids. • Antidepressants.
2. ***Hives (Urticaria):*** Hives look like welts and can itch, sting or burn. They vary in size and sometimes join together.		• Antihistamines. • Skin creams.
3. ***Psoriasis:*** Thick, red patches of skin covered with white or silvery scales are signs of psoriasis.		• Creams. • Ointments. • Light therapy. • Medications taken by mouth, injection, or IV.
4. ***Eczema:*** Eczema means inflamed, red, dry, and itchy skin.		• Several medications treat eczema. • There are tablets, creams and injections available.
5. ***Cold Sores (Fever Blisters):*** The herpes simplex virus causes small, painful, fluid-filled blisters on the mouth or nose.		• It can be treated with antiviral pills or creams.
6. ***Skin Tags:*** This small flap of flesh-colored or slightly darker tissue hangs off your skin by a stalk.		• These are treated by cutting, freezing, or burn them off.

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7. ***Acne:*** Acne breaks out when a pore clogged with oil and dead skin cells gets inflamed.		• Keep oily areas clean and don't squeeze (this may cause infection and scars).

5.5 CARE OF EYES



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.

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
1. ***Blepharitis:*** 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.		There are four main causes of blepharitis, which are: • Dust mites. • Dry Eye Syndrome. (DES). • Eczema. • Bacteria. • Treatment involves keeping the eyes and eyelids clean, and avoiding further contamination. Drops are usually prescribed.

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2. ***Cataracts:*** 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.		• It effectively stops light from getting to the retina, leading to impaired vision. • A surgical procedure is required to remove cataracts.
3. **Eye Allergies:** Eye allergies are actually the world's first most common problem with the eyes. There are 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.		• With allergies, the eyes become very itchy and red. The only cure is to prevent contact with the allergen. 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.
4. **Dry Eye Syndrome:** Dry Eye Syndrome, or DES, happens when there is a malfunction in the tears. There are 3 possible symptoms with DES:		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:

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• Insufficient tear production. • Poor quality tears. • Tears that evaporate too quickly.		• Eye exercises, such as no longer staring at screens and blinking. • Different types of eye drops. • Different types of eye gels. • Punctal plugs.
5. ***Conjunctivitis:*** 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.		• Pink eye is particularly common in children and it is incredibly contagious. Proper hygiene, therefore, is the best way to prevent it. • Most cases usually clears up in a few days. • Will not permanently harm the vision if detected and treated promptly.
6. ***Stye:*** 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.		• It is a viral infection. • Harmless and doesn't pose any real threat. • Medication can treat it. • In extreme cases, surgery may be required.

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		• Styes are particularly common during the summer season. It is important to not press on the stye as this can make the pain worse. • Pain can be relieved through warm compresses and wearing glasses instead of contact lenses. • Proper hygiene is the best way to prevent styes.
7. ***Glaucoma*:** 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 "***Primary open angle glaucoma***".		• The condition is usually asymptomatic for a long time. • 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. ***Other causes of glaucoma include:*** • An inflammatory disorder that affects the eye, • A blocked blood vessel,

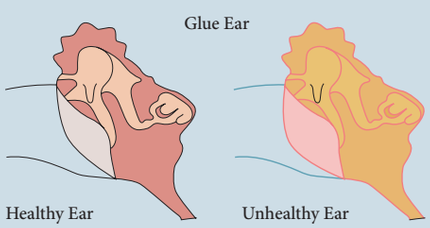
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		• An eye injury, • Glaucoma is generally treated though surgery and/ or prescription eye drops.
8. ***Tearing:*** Having too many tears can come from being sensitive to light, wind or temperature changes. Protecting your eyes by shielding them or wearingsunglasses can sometimes solve the problem.		• Tearing may also mean that there is a more serious problem, such as an eye infection or a block tear duct. • Avoid allergens. • Prescribed eye drops.
Strabismus (squint): The medical term for misaligned eyes is ***strabismus***. 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.		• Double vision occurs because the two eyes are looking at different images. • There are six different muscles that are attached to each eye to help it turn and rotate. • The eyes may not appear straight because one or more muscles are pulling too hard or other muscles are too weak.

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		• There are different treatments for strabismus depending on the specific cause. • Some cases are managed with eye muscle surgery, some simply need glasses.

5.6 CARE OF THE EARS

Ear problems	Image	Symptoms and treatment
1. ***Otitis media***: 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.		• Symptoms include crying, ear pulling, mild fever and irritability. • Antibiotic ear drops.
2. ***Glue ear:*** 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.		• This can make socialising and learning difficult, especially if hearing loss is not recognised in early childhood.

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3. ***Ear wax:*** 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.		• Impacted ear wax rarely causes an ear discharge or pain, but it may cause hearing impairment. • Sometimes the ears may also need to be syringed • and cleaned by a doctor.
1. ***Swimmer's ear:*** 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.		• Attempts to remove the water with cotton buds or other objects may make the condition worse, causing pain and itching. • Ear drops as prescribed.

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.

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5.7 CARE OF THE NAIL AND FEET

Characteristics of a Healthy Nail

A normal healthy nail is transparent, smooth and convex with pink nail beds and translucent white tips.





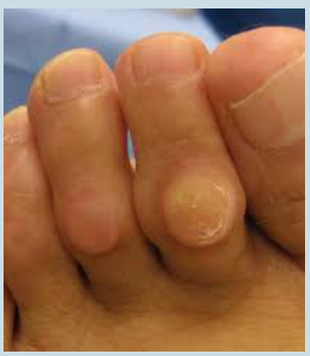
Purposes of Care of the Nails

1) To keep nails harmless.
2) To prevent accumulation of dirt under the nails and reduce occurrence of infection.

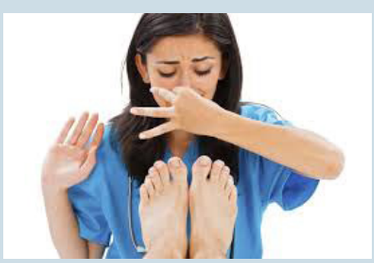
Risk Factors for Foot and Nail Ailments

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.

Common Foot and Nail Problems

Foot and nail problems	Images
1. ***Callus*:** It is a thickened portion of epidermis caused by local friction or pressure.	
2. ***Corns:*** It is caused by friction and pressure from shoes. It is seen mainly on toes, over bonyprominence.	

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Foot and nail problems	Images
3. **Plantar warts:** They are fungating lesions, appearing on sole of foot and are caused by papilloma virus.	
4. **Athlete's foot (Tinea pedis)** is the fungal infection of foot mainly induced by wearing of constricting footwear.	
5. **Ingrown nails:** Toenails or finger nails grow inward into soft tissue around nail resulting from improper nail trimming.	 
6. **Paronychia** is the inflammation of tissue surrounding nails following an injury. It is commonamong diabetic patients.	 
7. **Foot odour** or result of excessive perspiration promoting micro organism growth.	 

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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.

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



A-Z GLOSSARY

Integumentary system – (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.

Saliva – (உமிழ்நீர்) - It is a watery substance formed in the mouths of animals, secreted by the salivary glands.

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A-Z GLOSSARY

Flossing – (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.
Decubitus ulcers – (படுக்கைபுண்)	- It is a pressure sore resulting from prolonged confinement in bed. It is also known as pressure sores or bed sores.
Immunity – (நோய் எதிர்ப்பு சக்தி)	- Lack of susceptibility, especially to something unwelcome or harmful.
Aesthetics – (அழகுணர்ச்சி)	- The branch of philosophy which deals with questions of beauty and artistic taste.
Antihistamines – (ஒவ்வாமை எதிர்மருந்து)	- Used chiefly in the treatment of allergic disorders and colds.
Light therapy – (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.
Antiviral pills – (வைரஸ் எதிர்மருந்து)	- Class of medication used specifically for treating viral infections
Freezing – (உறைதல்)	- Extremely cold.
Acutely ill patients – (தீவிர நோயாளி)	- In a way that progresses rapidly but lasts for a short period.
Paralysed patients (Paraplegic and quadriplegic patients) – (பக்கவாத நோயாளி)	- They have lost motor and sensory functions over the limbs.
Incontinence – (அடக்கிக்கொள்ளமுடியாத நிலை)	- Lack of voluntary control over urination or defecation.
Oedema – (வீக்கம்)	- a condition characterized by an excess of watery fluid collecting in the cavities or tissues of the body.
Debilitating diseases – (பலவீனமாக்கும் நோய்கள்)	- To make weak or feeble.

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A-Z GLOSSARY

Chemotherapy – (கீமோதெரபி) - The treatment of disease by the use of chemical substances, especially the treatment of cancer.

Airborne toxins – (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 உணவூட்டல்) - To give feeding a thin tube is inserted through nostril to stomach



EVALUATION

XLAP8

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 patientcommunicate 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 35years.
   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.

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6. Dry Eye Syndrome is caused due to one of the following?
   a. Poor hygiene.
   b. Insufficient tear production.
   c. Sleeping insufficiently.
7. Otitis media is the:
   a. Infection of the ear lobe.
   b. Inflammation of the middle ear.
   c. Infection of the inner ear.
8. 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 causes of decubitus ulcer?
3. What is Psoriasis?
4. List the pressure points for a patient in Fowler's position.
5. List 3 types of bath.
6. Define Decubitus Ulcer?
7. What is blepharitis?
8. 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. 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 common skin problems.
4. Explain the causes, condition and prevention of decubitis ulcer.
5. Discuss the care of the nail and feet.

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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.

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INTERNET LINKS

- www.webhealthcentre.com/HealthyLiving/personal_hygiene_index.aspx
- www.personalhygiene.in
- https://www.everydayhealth.com/.../guide-to-good-hygiene.aspx
- https://www.betterhealth.vic.gov.au/.../personal-hygiene
- https://www.wikihow.com/Exercise-Your-**Eyes**

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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. Discuss the assessment of pulse
6. Explain the blood pressure recording
7. Brief the pain assessment procedure

UGK46

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 thepatient 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 repute data obtained in the nursing history.
- To confirm and identify nursing diagnoses.
- To make clinical judgment about a clients.
- Changing health status and management.
- To evaluate the physiological outcome.

"From the bitterness of disease, man learns the sweetness of health."

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- 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:

Inspection

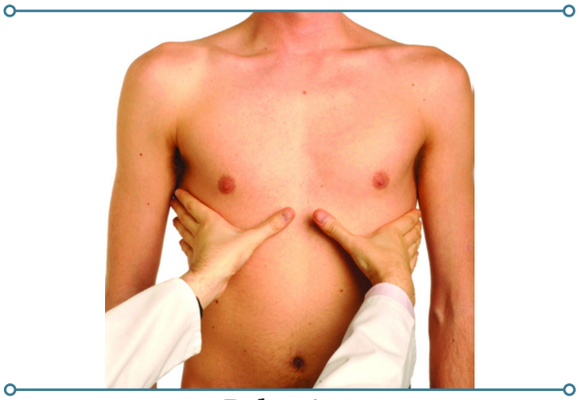
It means looking with eyes. It reveals any rash, scar, colour, size, shape, contour and symmetry of the body parts.



Inspection

Palpation

It means feeling using sense of touch. It reveals any swelling, coldness, hotness, stiffness, hardness, smoothness, roughness, pain, vibration, firmness and flaccidity.



Palpation

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.

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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

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.

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.



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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 uvala 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

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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.

Temperature

Normal body temperature varies by person, age, activity, and time of day. The average normal body temperature isgenerallyaccepted as 98.6°F (37°C).

Physiology of Body Temperature

The body temperature is precisely regulated by physiological and

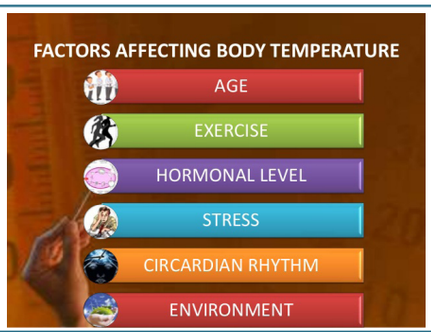
Vital Sign Ranges			
Age-Appropriate Vital Signs			
	Heart Rate	Respirations	Blood Pressure
Newborn	80–180	30–60	60–80/30–60
Toddler	80–110	24–32	90–100/50–65
School Age	60–110	18–26	95–110/55–70
Adolescent	50–90	16–20	110–120/60–80
Adult	60–100	12–20	110–140/60–90

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behavioral mechanisms. For body temperature to stay constant and with normal range, the relationship between heat production and heat loss must be maintained.

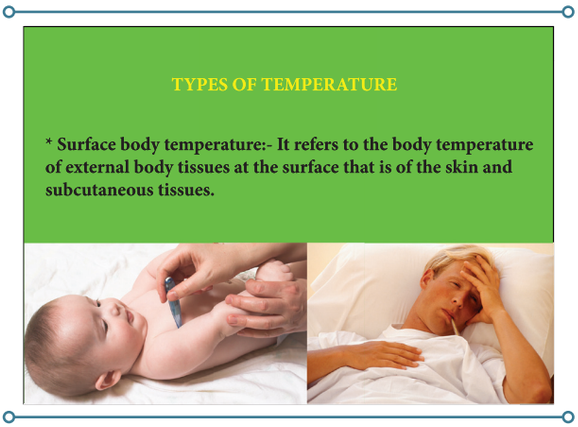
The relationship is regulated by neurological and cardiovascular mechanisms. The nurse applies knowledge of temperature control mechanisms to promote temperature regulation.

Factors Affecting Body Temperature



Sites for Assessing Temperature

1. Oral
2. Rectal
3. Auxiliary
4. Tympanic route

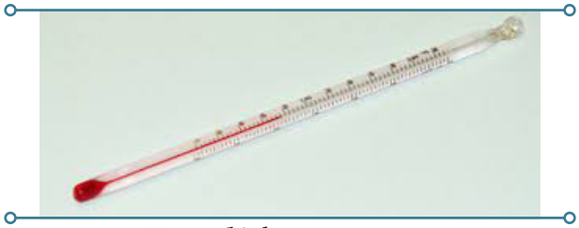


Types of Thermometers

- Mercury – in glass thermometers
- Electronic thermometer



Electronic thermometer

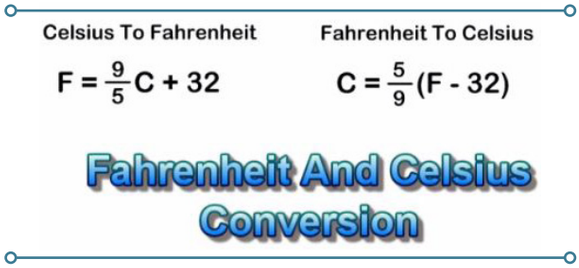


Rectal Thermometer

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

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Conversion of Body Temperature



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

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 normalduring 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

Pulse

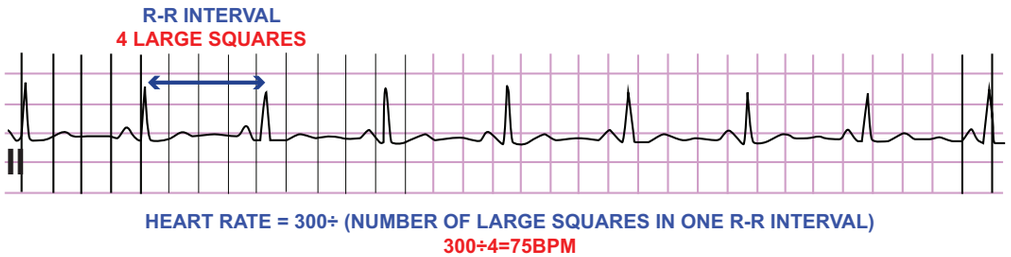
The rhythmic dilation of an artery that results from beating of the heart. Pulse is often measured by feeling the arteries of the wrist or neck.

The pulse is regulated by the autonomic nervous system through the cardiac sinoatrial node. Parasympathetic stimulation of the SA node via vagus nerve decrease heart rate and sympathetic

Site	Location
Temporal	Over temporal bone of head. Above and lateral to eye.
Carotid	Along medical edge of sterno-cleido mastoid 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.

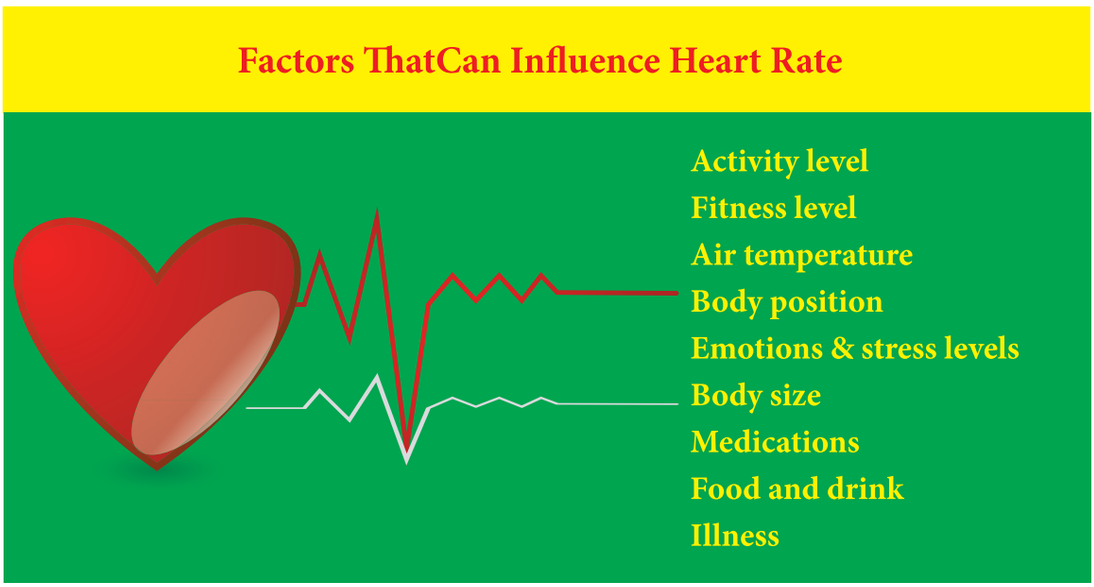
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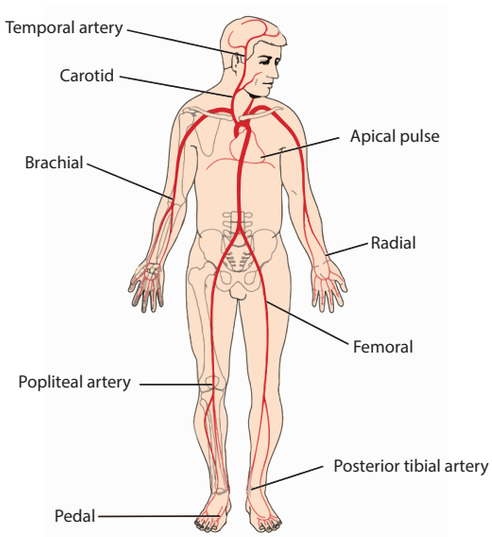
HEART RATE
(NORMAL ECG)



HEART RATE = 75 BPM

Normal Heart Rate = 70 to 80 BPM (Beats per minute) in Adult





Character of the Pulse

Assessment of radical 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.

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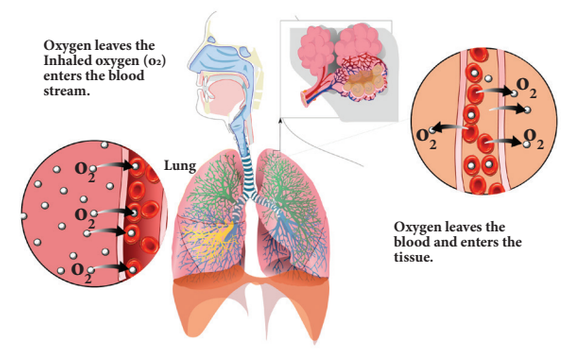
Strength

The strength or amplitude of a pulse reflects the volume of blood ejected against the arterial wall with each arterial contraction.

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.

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



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.

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.

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Sighing or air hunger: Indicates a need for more oxygen. Occurs in serve hemorrhage diabetic coma or due to simulation 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 breath 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.

Blood Pressure

Blood pressure (BP) is the lateral force on the walls of artery by pulsing blood under pressure from the heart. The hearts 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 a 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 x stroke volume

Factors Influencing Variations in BP

- **Age**
- **Stress**
- **Race**
- **Medication**
- **Diurnal variation**
- **Gender**

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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.



Sphygmomanometer

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)



Recording of Blood Pressure

Hypotension: When the systolic pressure falls to 90 mm Hg or below, that condition is known as hypotension.

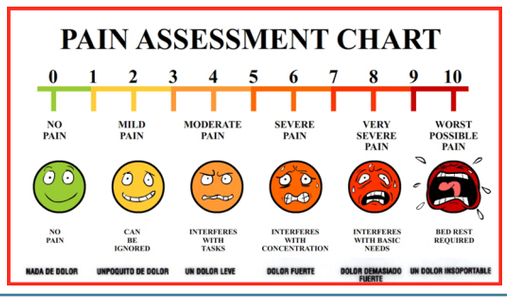
Pain

Definition

The league of nation is defined that pain is an unpleasant sensory and emotional experience,associate with or expressed in terms of actual or potential tissue damage.

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.



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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.

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 normalurine is usually light yellow to amber.

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.

Sample of the Label

Name of the Patient:_____
Ward/Bed No. _____
Age: _____ Sex: _____
OP/IP. _____

Characteristics of Normal Urine

	CHARACTERISTIC	DESCRIPTION
	AMOUNT	 1-2 liters, depending on intake
	COLOR	 Straw/amber (darker, more concentrated)
	SPECIFIC GRAVITY	**1.010-1.025** MEASURE OF DISSOLVED MATERIAL IN URINE. LOWER VALUE = MORE DILUTED URINE
pH	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

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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. Redcoloured 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 differentiait from saliva, the clear liquid secreted by the salivary glands in the mouth, sometimes referred to "spit". 30 ounces of mucus produced/day.

Characteristics	Normal	Abnormal
Amount	No sputum of very little is expectorated	Amount may vary according to the disease.Eg, Asthma,Bronchitis
Colour	It is colour less and translucent	Yellowish colour indicates bacterial infection
		Blackish colour indicates carbon pigment Eg.Smoking
		Bright red/Dark red ,tarry colour indicates blood
		Greenish colour indicates bronchiectasis
		Brown colour indicates gangrenous condition of lung.
Odour	Odourless	Unpleasant odour indicates lung abscess,lung cancer,lung gangrene
Consistency		Frothy -watery tenacious and thick depending on type of condition

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 at into a collecting container. Document amount of sputum collected, color, odour consistency (thick, tenacious, watery) and presence of haemoptysis'.

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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.

GLOSSARY

Olfaction – (நுகர்தல்)	-	Sense of smell
Reflex testing – (அனிச்சை செயல் பரிசோதனை)	-	Measure the presence strength of reflexes
Hypothermia – (உடல் வெப்பம் குறைதல்)	-	Heat loss during prolonged exposure to cold.
Resonant – (ஒத்ததிர்வு)	-	A loud sound over the normal lung tissue.
Tympanic – (டிம்பேனிக்)	-	A drum like sound over the air-filled tissues such as gastric air bubble
Frost bite – (பனிகடுப்பு)	-	This condition happens when you are exposed to temperatures below the freezing point in skin.
Lysis – (லைசிஸ்)	-	The temperature falls in a zigzag manner for two of three days of a week before reaching normalduring time, the other symptoms also gradually disappear
Tachycardia – (டேக்கிகார்டியா)	-	Pulse rate too high (PR more than 100/min)
Bradycardia – (பிரடிகார்டியா)	-	Pulse rate too low (PR less than 50/min)
Apnea – (ஏப்னியா)	-	Respirations cease for several seconds.
Tachypnea – (டேக்கிபினியா)	-	The respiratory rate is abnormally rapid (RR more than 32/min)
Bradypnea – (பிரடிபீனியா)	-	The respiratory is abnormally slow (RR less than 12/min)
Wheezing – (வீசிங்)	-	Sound made during expiration
Murmur – (மர்மர்)	-	The low swishing sounds that increase with cuff deflation.

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EVALUATION

8BV5W

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. 150/90mmHg
   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

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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. What are the sites for assessting temperature?
6. List out the characteristics of pain.
7. Difine Tachycardia.

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. 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.

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SUGGESTED PRACTICALS

Demonstration of various technique of physical examination.

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WEB LINKS

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Unit 7

FIRST AID AND EMERGENCIES

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, fracture and hemorrhage
6. Apply the skill in various extreme heat abnormalities
7. Discuss the immediate management of poisoning
8. Describe First Aid Kit.

9YQFA

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.

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7.2 DEFINITIONS

Medical Aid: refers to treatment by a doctor either on the sport 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

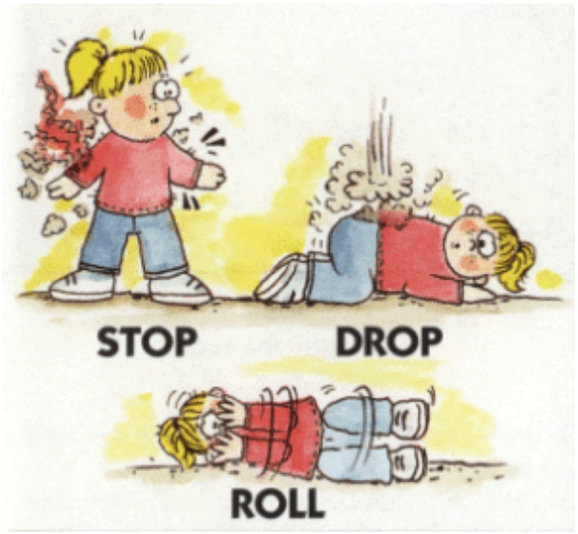
- Do first things first, quickly, quietly and without panic.
- Reassure the causality and his relatives sympathetically.
- Is there any failure of breathing? If yes start artificial respiration.
- Is there any failure of circulation? If yes start external cardiac massage.
- Is there self the cause of 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
- Reassurethe casualty and others present to reduce shock.
- See that the casualty is in best position to aid recovery.
- Clear the croud tactfully. The casualty needs fresh air. Any other first aider present mayhelp you. Get help also to call the police, direct traffic etc as needed.
- Diagnose injuries and give firstaid 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

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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

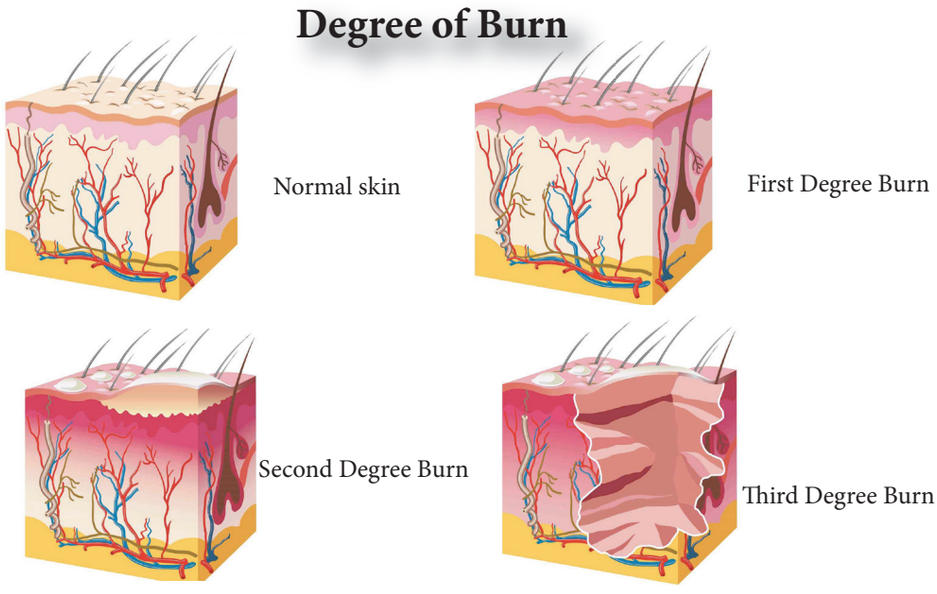
Burns result from dry heat, extreme cold, corrosive substances, friction or radiation including sun rays.



Scalds are caused by wet heat from hot liquids and vapours.

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Degrees of Burns



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

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

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7.6 FRACTURE

A fracture is a break or crack in a bone.

Causes

Direct force - A bone may break at the point where a heavy blow is received.

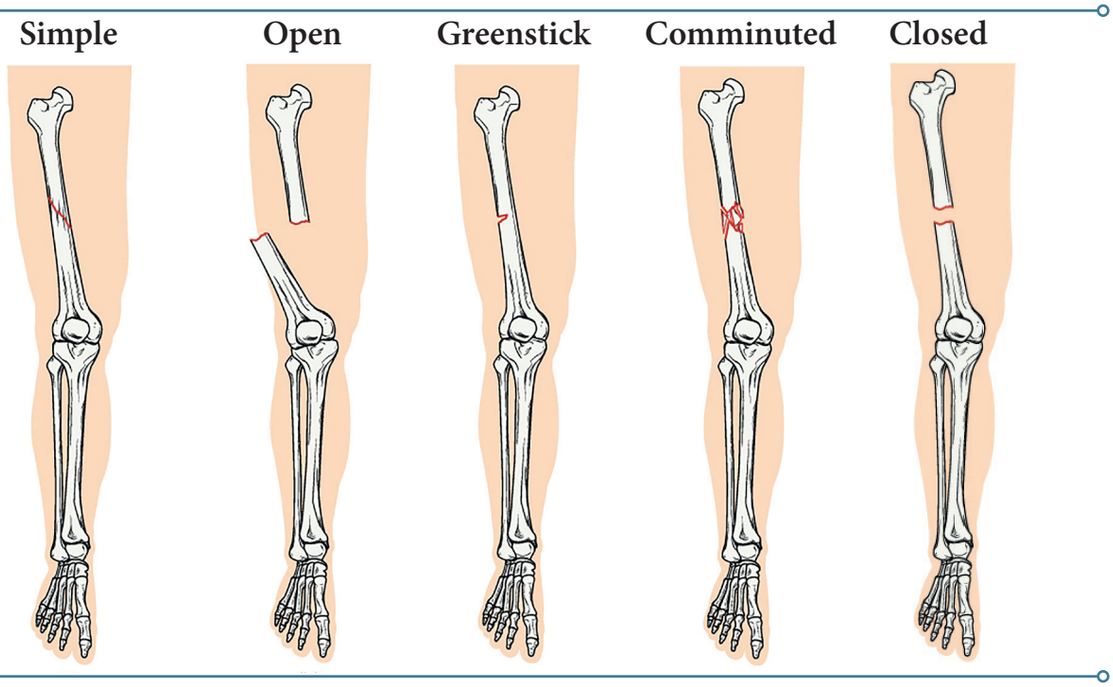
Indirect force - may be produced by a twist or a wrench a trip or stumble can break a leg bone.



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
Closed fracture	The surrounding skin is unbroken but internal injury to surrounding tissue.

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.



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- Distortion, swelling and brushing 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

a. Cover the wound with clean pad or sterile dressing, apply pressure to control the bleeding.
b. Without touching an open wound with your fingers, carefully place some clean padding over and around the dressing.
c. Secure the dressing and padding. Bandage firmly, but not tightly that the circulation is impeded.



d. Immobilize the injured part as for a closed fracture

For the Closed Fracture

a. Tell the casualty to keep still, steady and support the injured part with your hands until it is immobilized.
b. 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?

c. Check the circulation beyond any bandages every minute.

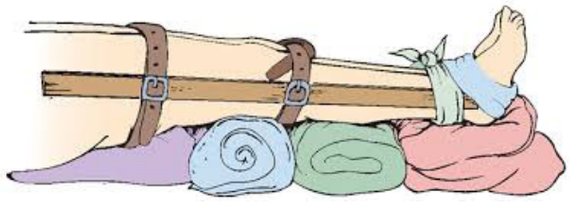
7.7 SHOCK

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.

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- 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.

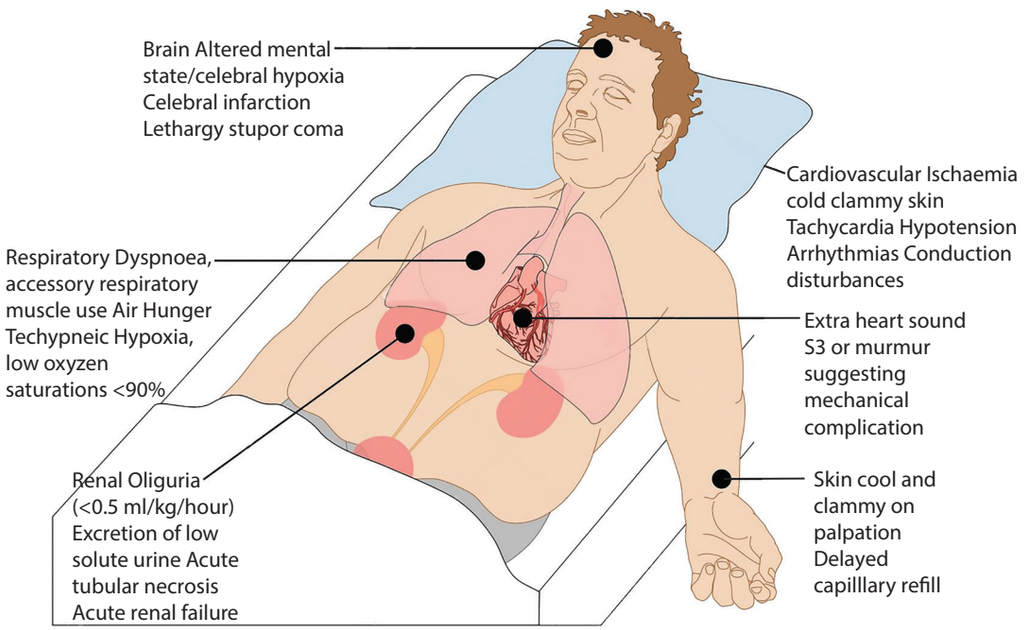
Symptoms

- 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	
Neurogenic	Spinal or head injury resulting in loss of nerve control
Haemorrhagic	Loss of blood due to wound and internal bleeding.
Respiratory	There is an insufficient amount in the blood due to inadequate breathing



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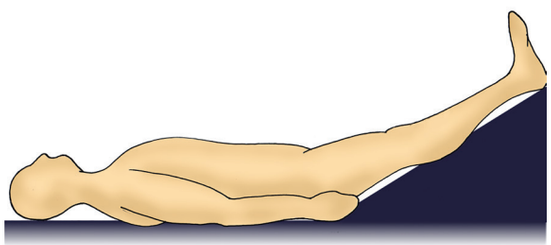
Cardiac	Cardiac muscle not pumping effectively due to heart attack
Metabolic	Loss of body fluids with a change in biochemical equlibrium
Septic	Severe infection can cause septic shock
Anaphylactic	Severe allergic reaction of the body to sensitization by a foreign protein

Management

a. Immediately reassure and comfort the casualty.

b. Body positioning for shock.

c. 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.



d. If there are indications of the head injuries, the head could be raised slightly to reduce pressure on the brain.

e. If there are breathing difficulties, the victim may be more comfortable with head and shoulders raised

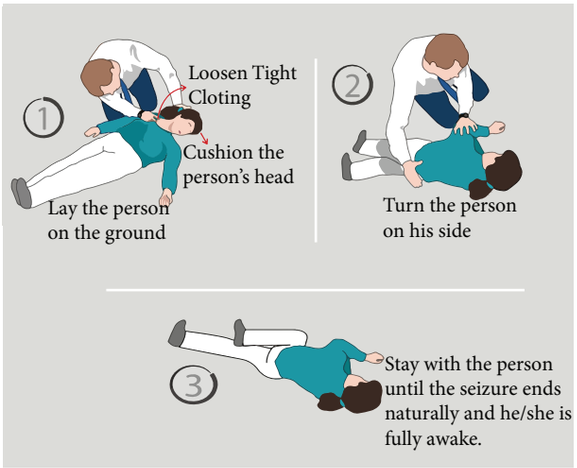
f. Loosen the tight clothing to help the circulation and assist breathing.

g. Treats the cause of shock, stop bleeding, immobilize fracture.

h. 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.



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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:***
    a. Pull the patient from the water using rope, branch, fishing pole, stick, towel, shirt.
    b. Lie down flat on your stomach and extend your hand or leg.
    c. Throw him an object that will float with line i.e tyre, foam, cushion logs boards.
    d. Make sure that your own position in safe.
    e. Use boat and life jacket if available.
    f. Tow the victim to the shore.

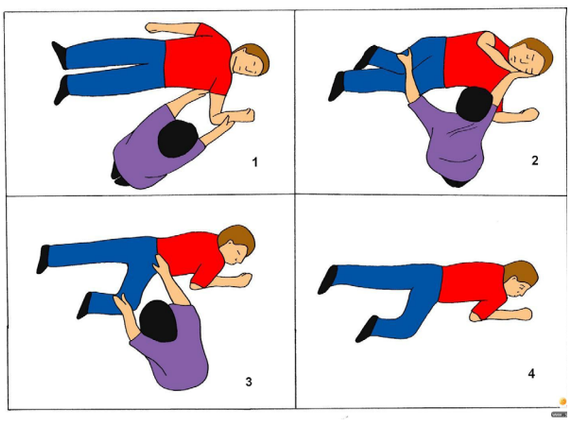
2. ***stabilization of the victim in the water:***
    a. Keeping the victims head and body aligned., place one of your hands in the middle of his /her. Your arm directly your hands in the his /her back. Your arm directly over the victim's head.
    b. Place your other hand under the victim's upper arm, 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.

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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.



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	
Incised wound	A clean cut from a sharp edge
Laceration	Crushing or ripping forces result in rough tears or laceration
Abrasion	This is a superficial wound in which the top layers of skin are scraped off.
Contusion	A blunt blow or punch can rupture capillaries beneath the skin
Puncture wound	Standing on a nail or being stabbed
Gunshot wound	A bullet or other missile may drive into or through thebody.

Treatment

a. Make the patient sit or lie down.
b. Handle the injured part gently.
c. Wash the wound with clean water and soap. Always clean away from the wound.
d. Remove as much dirt or foreign matter as possible.
e. Wash the wound with antiseptic lotion.
f. Stop any bleeding by using direct pressure or by applying a tourniquet.
g. Apply antiseptic solutions (dettol) and dust wound with sulphonamide power.
h. If the wound is gaping, apply strips of adhesive plaster to bring the edges together.
i. Apply a clean dressing and bandage.
j. If necessary treat for shock.
k. Give pain reliever, if policy permits.
l. Support the arm in sling when necessary.

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Types of Wound

7.10 HAEMORRHAGE

Haemorrage 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

Venous Bleeding

- Blood is dark red in color
- It does not spurts
- Steady flow.

Capillary Bleeding

- It does not spurt
- Slow but even flow

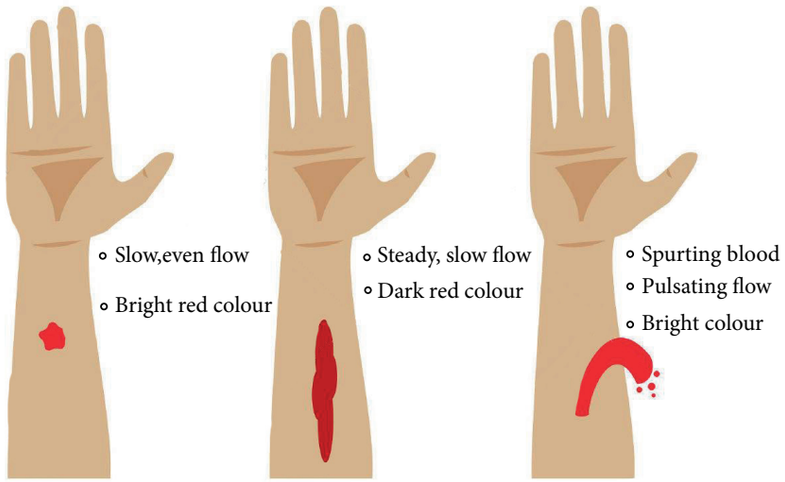
Management

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

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

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Hemorrhage Classification



pressure. Apply a bandage to keep the dressing in place.

- 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

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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

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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.



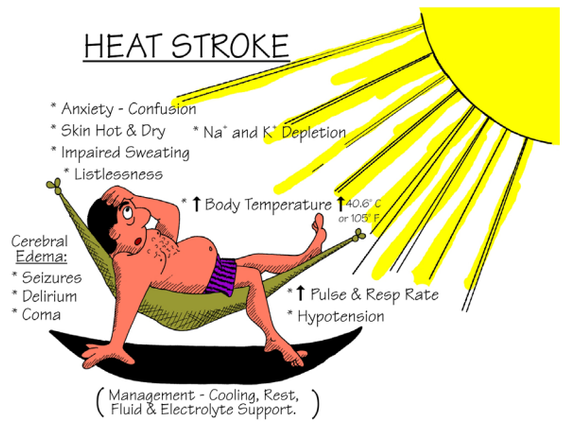
> ***Caution.....?***
> DO NOT let her head back, blood may run down her throat and induce vomiting

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

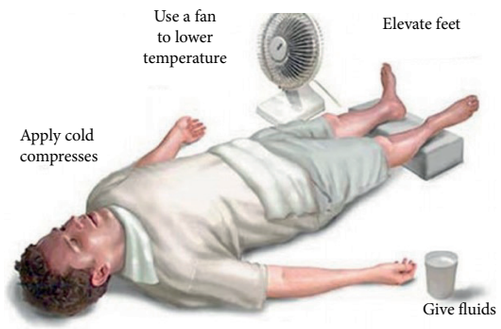
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STUDENT'S ACTIVITY

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 casuality to cold place and remove the clothing.
- If the casualty is conscious, then place him in half sitting position with head and shoulders supported.



Have the person lie down

- 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.
- 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

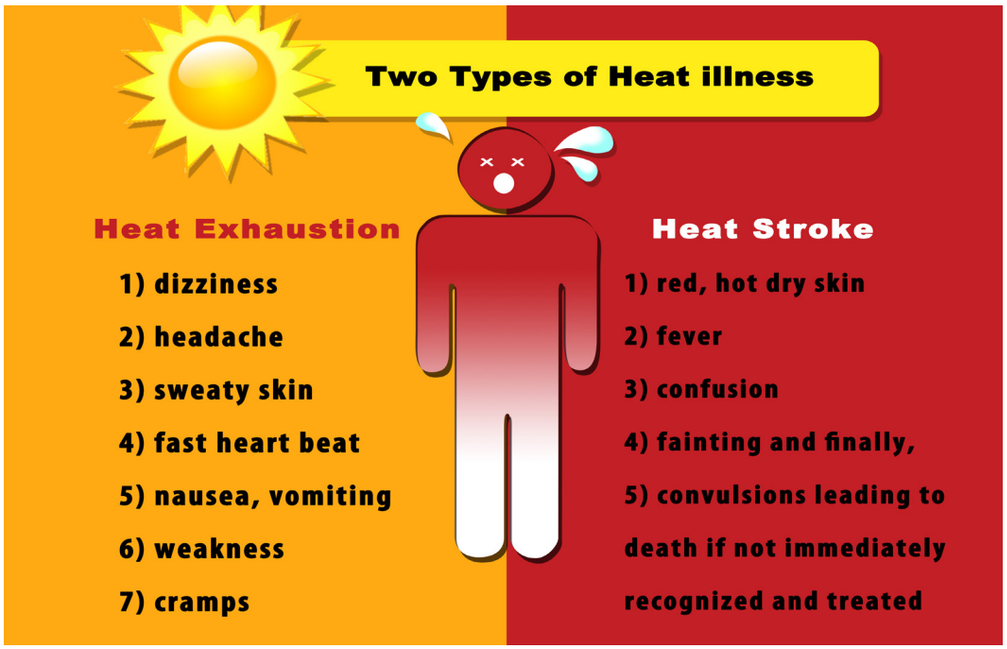
- Heat cramps, a type of heat illness, are muscle spasms that result from loss of large amount of salt and water through exercise.
- Heat cramps are associated with cramping in the abdomen, arms and calves. This can be caused by inadequate consumption of fluids or electrolytes.

Treating Heat Cramps

Identify when you have a Heat Cramp.

Heat cramps are painful muscle spasms that result from dehydration, typically

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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.

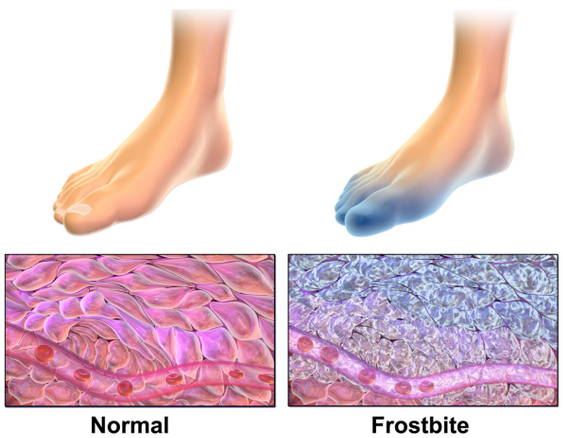
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7.14 FROST BITE

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.

Signs and Symptoms

- At first, "pins-and-needles"



DO NOT put affected part by direct heat, it is danger of it refreezing.
DO NOT warm the part very fast.

- 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

a. Very gently remove gloves rings and other constriction, such as boots

b. Warm the affected part with your hands in your lap or in the casualty armpit. Avoid rubbing because it can damage skin and tissue.

c. Warm the affected part with your hands in your lap or in the casualty armpit. Avoid rubbing because it can damage skin and tissue.

d. Move the casualty into warm before you thaw the affected part, carry her if possible when the feet is affected.

e. Place the affected part in warm water

f. Dry carefully, and apply a high dressing of fluffed-up, dry gauze bandage.

g. Raise and support the limb to reduce swelling.

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

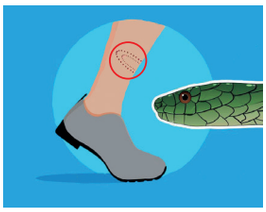
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- Labored breathing in extreme cases
- Disturbed vision.
- Increased salivation and sweating.

Examples of Snakebites



Venomous Snake



Nonvenomous Snake

Treatment

- Reassure the casualty.
- Lay the casualty down. Tell her to keep calm and still.
- Wash the wound well and pat dry with clean swabs.
- Lightly compress the limb above the wound with a roller bandage.
- Immobilize the injury.

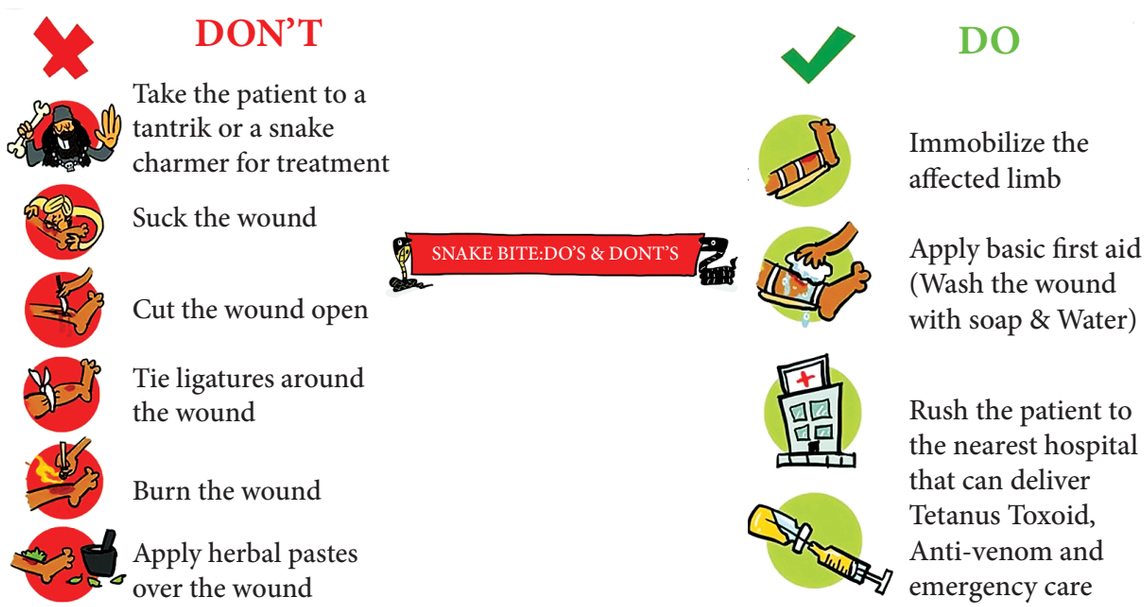
Scorpion Sting

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





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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

a. To maintain the airway
b. Patients must be send to a hospital or a doctor
c. 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

1. Reassure the casualty and sit her down
2. Gently flood the ear with tepid water so that the insect floats out.
3. The insect will float up and can be removed easily.
4. If there is nothing floating up, leave it alone. Do not meddle.

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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.

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Foreign body in Throat

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

a. Quickly assess the casualty shift them only if they are in danger, then dolifesaving treatment.

b. Deal with the life saving condition first.

c. Search the area thoroughly, so that you do not overlook a casualty

For an Unconscious Casualty

a. Assume there is neck injury until proved otherwise.

b. Support the head and neck with your hands, so that the casualty can breathe freely.

c. Apply a collar if possible.

d. Treat any life-threatening injuries.

e. Monitor and record breathing, pulse and level of response every ten minutes.

For a Casualty Trapped Under a Vehicle

a. Mark the exact position of the vehicle and the casualty first.

b. The police will need this information.

c. Try to find help to lift or move the vehicle and only if it is absolutely necessary, drag the casualty clear.

7.19 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

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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.

A-Z GLOSSARY

Burns and scalds – (தீக்காயம் மற்றும் வெந்த புண்) - Burns result from dry heat, extreme cold, corrosive substances, friction or radiation including sun rays

Fracture – (எலும்பு முறிவு) - Break or crack in the bone

Shock – (அதிர்ச்சி) - Is a syndrome that results from a decrease in effective circulating blood volume in the body

Drowning – (மூழ்குதல்) - Drowning is the process of experiencing respiratory impairment from submersion/immersion in water.

Wound – (காயம்) - An injury to living tissue caused by a cut, blow, or other impact, typically one in which the skin is cut or broken.

Hemorrhage – (இரத்த ஒழுக்கு) - An escape of blood from a ruptured blood vessel.

Heat stroke – (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.

Heat Exhaustion – (வெப்ப சோர்வு) - Fatigue and collapse resulting from prolonged exposure to excessive or unaccustomed heat.

Heat cramps – (வெப்ப தசைபிடிப்பு) - Brief muscle cramps that occur during or after exercise or work in a hot environment.

Frost bite – (பனி கடுப்பு) - Injury to body tissues caused by exposure to extreme cold

Poisoning – (விஷம் அருந்துதல்) - Administer poison to (a person or animal), either deliberately or accidentally.

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EVALUATION

JHMFO

I. Choose the correct answers (1 mark)

1. Multiple bone fragments formed in _____ fracture.
   a. Simple
   b. Comminuted
   c. Greenstick
   d. Open
2. Abnormal break in the skin or the body surface is known as
   a. Wound
   b. Fracture
   c. Sprain
   d. Shock
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

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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?
   a. Allow the wound to bleed in order to minimize infection.
   b. Apply direct pressure and elevate the injured area. (If no broken bones)
   c. Use a tourniquet to stop all blood flow.
   d. 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. Explain the types of shock.

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

1. Define Shock? Describe the causes symptoms and management of shock.
2. Define fracture. Explain about the management of fracture.
3. Write an eassay about Wounds

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2. TNAI "Fundamentals of nursing", A Procedural Manual New Delhi; 2005
3. Potter PA, Perry AG, "Fundamentals of Nursing" 7th 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

WEB LINKS

https://first-aid-product.com
www.emssafetyservices.com
https://www.redcross.org

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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.,

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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.



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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.

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

Common Enamel wares used in hospitals are

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- Kidney trays

Measuring Cup



Feeding Cup



- Bed pan
- Urinals
- Sputum mugs
- Feeding cups and
- Trays

Care of Enamel ware in hospitals:

- The contents of the bedpans should be emptied into a lavatory
- Rinse with cold water under gushing into the bed pan.

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

- 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
- Same procedure as of bedpans

Kidney tray



Urinal



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

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8.7 CARE OF GLASS WARE



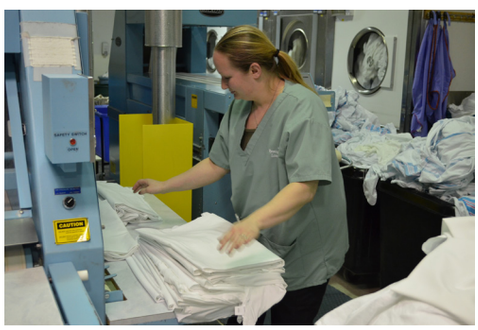
The commonly used glassware in hospitals

- Ounce glasses
- Drainage bottles
- Suction bottles

Care of glassware in Hospital:

- Hard glassware in 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

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 clean and neat linen installs psychological confidence in the patients.

Care of Mattress and Pillows

- Mattress should be brushed at regular and frequent intervals.
- Examine the mattress for stains and tears which needs to be mended.
- Disinfected mattress and pillow with Lysol 1:40 solution and exposed them in direct sunlight.

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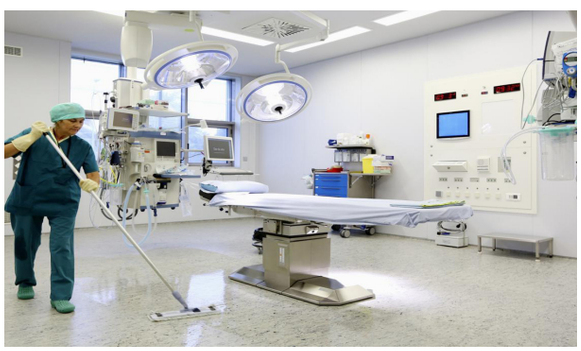


- Staining with body fluids can be prevented and protected using mackintoshes.

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



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

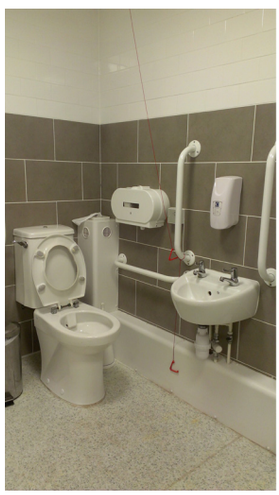
Care of Walls

- Cement and tiled walls can be cleaned in the same way as the floors

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

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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

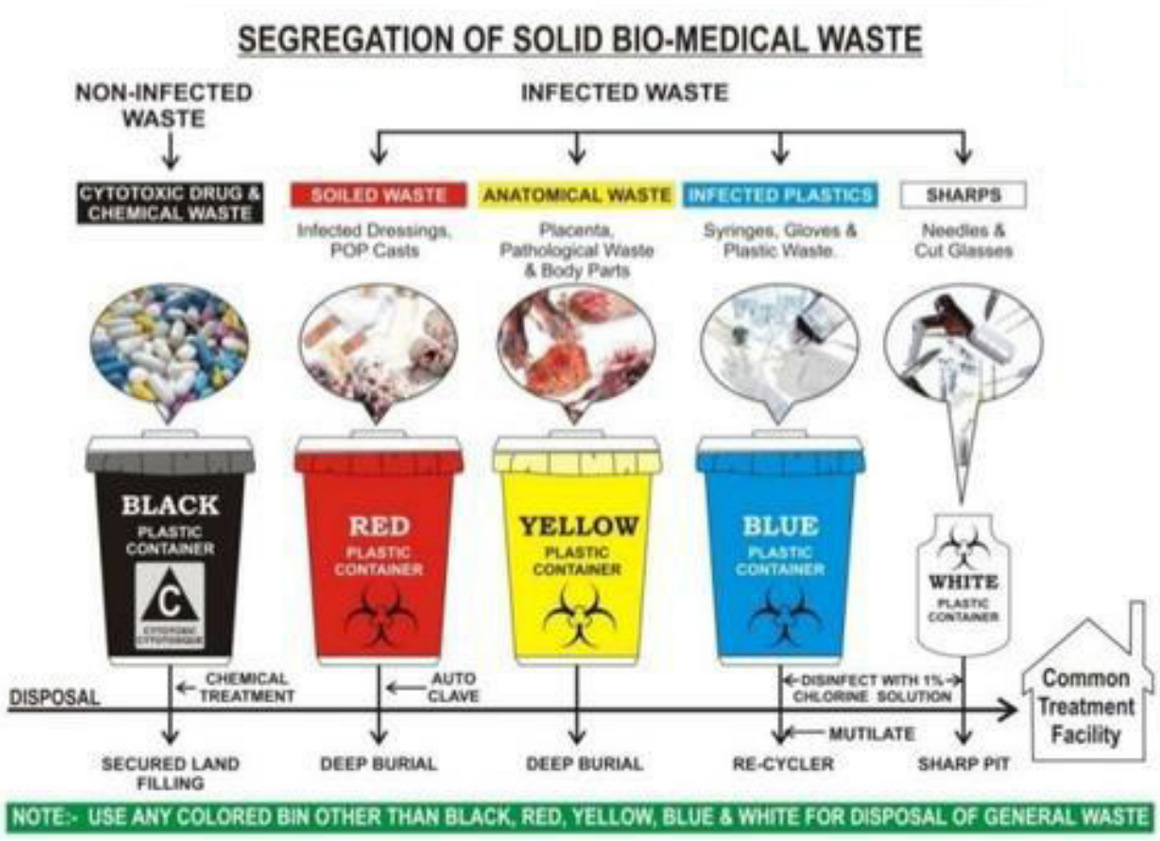
Hand washing sinks

- 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."

8.10 BIOMEDICAL WASTE

Biomedical waste or hospital waste are any kind of waste containing infectious (or potentially infectious) materials. It may also include waste associated with the generation of biomedical waste that visually appears to be medical or laboratory origin(eg.packaging,unused bandages,infusion kits etc.), as well research laboratory waste containing biomolecules or organisms that are mainly restricted from environmental release.



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As detailed below, discarded sharps are considered biomedical waste whether they are contaminated or not, due to the possibility of being contaminated with blood and their propensity to cause injury when not properly contained and disposed. Biomedical waste is a type of biowaste.

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.

GLOSSARY

Mackintosh	– (இரப்பர் விரிப்பு)	-	Rubber sheets used on beds.
High Dusting	– (ஒட்டடை அடித்தல்)	-	Dusting of roofs for cob webs and insects.
Aesthetic Sense	– (புத்துணர்ச்சி)	-	Concerned with beauty.



EVALUATION

RYB1X

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.

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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
2. Explain biomedical waste

REFERENCES

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INTERNET LINKS

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- www.bengalasonline.com/hospital/housekeeping/hospital-housekeeping...
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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 Purposes of Documentation
3. Identify the General guide lines for documentation
4. Explain the Characteristics of Good Recording
5. Mention the Principles in Maintaining Records
6. List the types of records
7. Assist in Arrangement of records
8. Describe the Nurses responsibility in record keeping.
9. Explain Basic IT Skills

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9.1 INTRODUCTION

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.

Documentation

Documentation is any communicable material that is used to describe explain or instruct regarding some attributes of an object, system or procedure.

There are four kinds of documentation

- Learning oriented
- Goal Oriented
- Understanding Oriented
- Information Oriented

Records:

Records means to somehow preserve a note or evidence of something so that it can be consulted later or prove that something.

Purposes of documentation in nursing

1. It is a guide for reimbursement of costs of care.
2. It is a legal record of treatments given
3. It is contains observations made by nurses
4. It is an aid in diagnosis of patiently condition
5. It is an evaluation statement which indicate the progress of patient

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9.2 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 t responses.
- Document in chronological order.
- Use permanent ink.
- Document all telephone calls that you received that are related to patient case.

9.3 CHARACTERISTICS OF GOOD RECORDING

Brevity: Start each entry with a capital letter.

Accuracy: Be specific and definite in using words or phrases.

Appropriateness: Only information that pertains to the patients health problems and care to be recorded.

Confidentiality: Only the health personnel who participate in the care of the patient are allowed to read the chart.

Legal awareness: chart only what you personally have done,observe,heard,smelled or felt.

Legibility: Writing must be clear and easily read by others.If writing is not legible, then print the information.

9.4 PRINCIPLES IN MAINTAINING RECORDS

The Data Protection Act 1998 defines a health record as "consisting of information about the physical or mentalhealth 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:

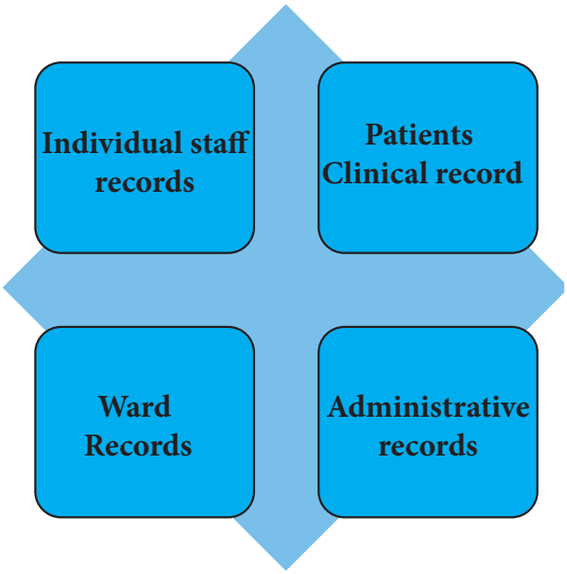
- Principle of Accountability
- Principle of Transparency
- Principle of Integrity
- Principle of Protection
- Principle of Compliance
- Principle of Availability
- Principle of Retention
- Principle of Disposition.

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

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- Incident reports and statements
- Photographs
- Videos
- Tape-recordings of telephone conversations.



9.5 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, carrier 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.

4) Administrative records

These records are maintained purely for administrative purpose of the hospital or unit

- Research or statistics data records
- Audit and nursing audit records
- Quality of care records
- Personnel performance. records
- Other administrative records

Examples of other important records maintained by the nurses
- Vital Signs Chart
- Intake Output Chart
- Drug Chart
- Nurses Chart

Vital Signs Chart: It is used to record temperature, pulse, respiration and blood pressure (TPR).

Intake Output Chart: It is used to calculate the fluid balance.

Drug Chart: It is used to record the medicines given to the patient.

Nurses Chart: It is used to enter the patient clinical findings and progress.

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9.6 VITAL SIGNS CHART

BLOOD GROUP :

ON ADMISSION

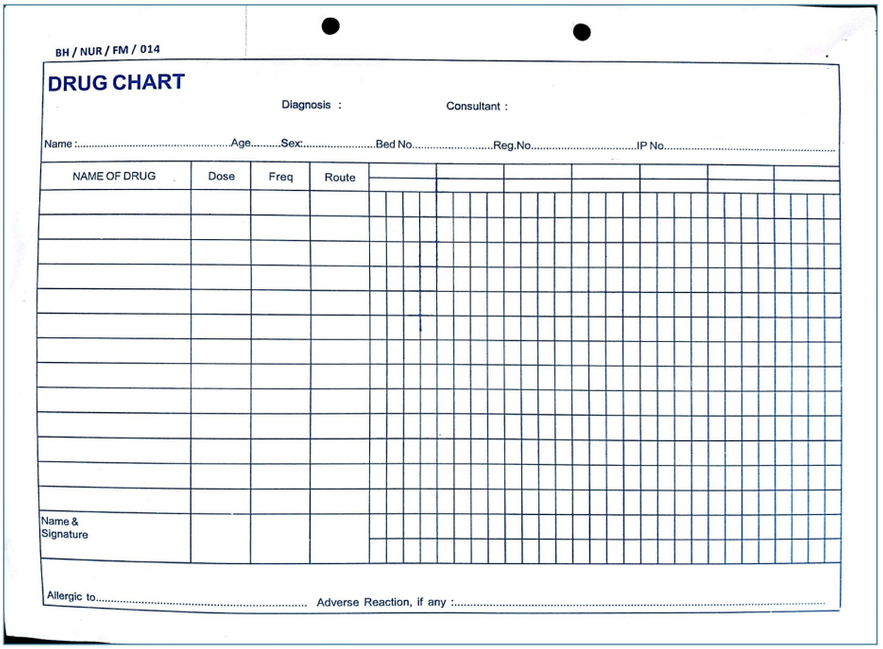
HEIGHT..... ....CM VITAL INFORMATION SHEET WEIGHT .....KG.

Name : Age : Sex : Reg.No.....IP No .....

Diagnosis : Procedure :

| DAY OF DISEASE | | |

9.8 DRUG CHART



BH / NUR / FM / 014

DRUG CHART

Diagnosis : Consultant :

Name :.....Age.....Sex:.....Bed No.....Reg.No.....IP No.....

NAME OF DRUG	Dose	Freq	Route	
Name & Signature				

Allergic to..... Adverse Reaction, if any :.....

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
  - Dictionary order
  - Encyclopaedic order
- Numerically-
  It can be done in two ways
  - Serial number
  - Digit filing
- Geographically-
  geographical area or the place name.
- With Index cards -

It was invented by Carl Linnaeus around 1760.

9.10 REPORTS

Introduction

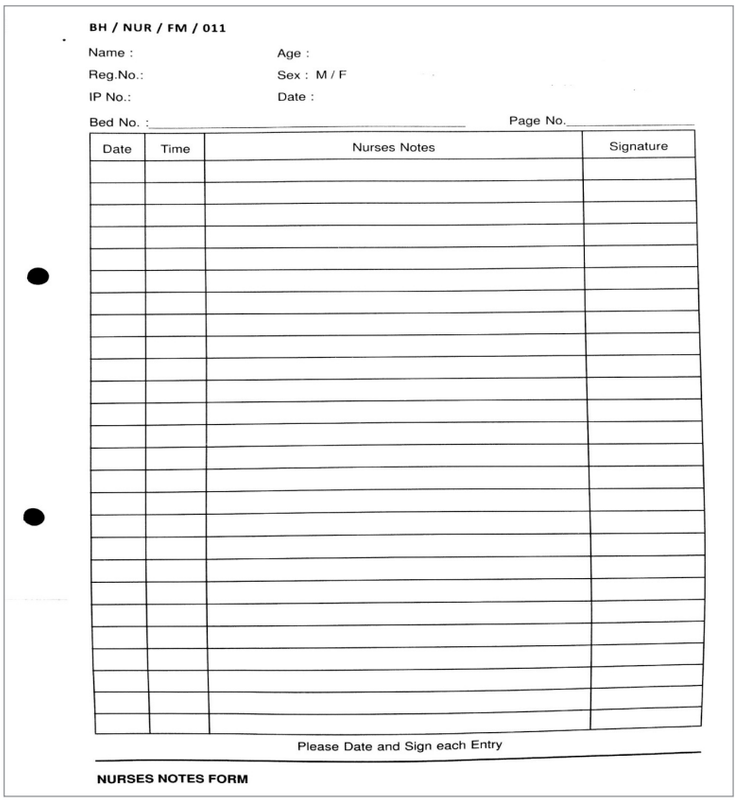
Reports are information about a patient either written or oral. It takes place when two or more people share information about patient care, either face to face or by telephone.

- 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.

Definition

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]

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BH / NUR / FM / 011

Name : Age :

Reg.No.: Sex : M / F

IP No.: Date :

Bed No. : Page No.

Date	Time	Nurses Notes	Signature

Please Date and Sign each Entry

NURSES NOTES FORM

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

Classification of Reports Based on Types

- Oral reports
- Written reports

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.

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?)

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9.11 BASIC IT SKILLS

Introduction

- Computers influence every sphere of human activity and bring in many changes in industry, education, health care, scientific research, social service, law and even in arts, music and painting.

• The computer revolutionized the nursing profession. Clinical and technological advancements led to a nursing specialty called nursing informatics the application of computer and information science to promote and support the practice of nursing and the delivery of nursing care.

Uses Of Computers In Clinical Practice:

Admission, Discharge and Transfer (ADT) ADT system allows to obtain basic biographical information on clients before they arrive to the unit. When a discharge or transfer is entered in the computer, all the appropriate departments are automatically notified, thus saves many phone calls, information about beds and clients location on the unit is also readily available.

Bedside Data Entry (medication record etc)

Computer-Based Patient Records

Client Monitoring- Local and Distant

Telenursing

Practice Management(scheduling)

Documentation, Assessments, clients care plan, medication administration records, nursing notes and discharge plans are some of the forms of administration that are computerized. Advantage of this documentation is legible and it can store standard nursing care plans in a format determined by the institutions, to be used by the nurses as the basis for developing individualized client care plan.

Hospital Information System

A health information system (HIS) refers to a system designed to manage healthcare data. This includes systems that collect, store, manage and transmit a patient's electronic medical record (EMR), a hospital's operational management or a system supporting healthcare policy decisions.

Health information systems also include those systems that handle data related to the activities of providers and health organizations. As an integrated effort, these may be leveraged to improve patient outcomes, inform research, and influence policy-making and decision-making. Because health information systems commonly access, process, or maintain large volumes of sensitive data, security is a primary concern.

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.

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A-Z GLOSSARY

Records (பதிவுகள்)
- 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
- information or knowledge preserved in writing or the like

Report (அறிக்கை)
- it is a summary of activities or observations seen, performed or heard.
- list, or aggregate of actions orachievements

Reporting (அறிக்கையிருதல்)
- it is a process takes place when two or more people share information about client care, either face to face or by telephone.

Documentation (ஆவணபதிவு)
- it is a permanent record of client information and care. It is otherwise called as Charting
- it is the written comments, graphic illustrations, flow charts, manuals etc.



EVALUATION

TU4PA

I. Choose the correct answer

1. Permanent record of client information and care is called as
   a. Report
   b. Document
   c. Chart
   d. Record
2. Two or more people share information about patient care is called as
   a. Report
   b. Document
   c. Chart
   d. Record
3. The "Data Protection Act" was formed at
   a. 1998
   b. 1898
   c. 1988
   d. 1888
4. In "Data Protection Act" there are _____principles.
   a. 8
   b. 9
   c. 6
   d. 7
5. Discharge record is a _____ record.
   a. Patient clinical record
   b. Individual staff record
   c. Ward record
   d. Administrative record

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II. Write short answers (3 marks)

1. Define record
2. Define document
3. Name the record keeping system
4. What is hospital information system

III. Write Short notes

1. Write the principles in maintaining records
2. Mention the characteristics of good records
3. Role of nurse in maintaining records

IV. Write an essay for following questions

1. Write in general guidelines for documentation
2. List down the record in the hospital
3. Uses of computer in clinical practice

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WEBSITE RESOURCES

www.google.com

www.rcn.org.uk/firststeps6701

http://www.arma.org/principles

http://www.arma.org/principles

http://www.arma.org/gprinciples

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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 of 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. Phoeba
   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.

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7. 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.

   d. Sclerosis

8. An irregular pattern of heartbeats is called a

   a. Sinus tachycardia

   b, Sinus bradycardia

   c. Arrhythmias

   d. Atrial fibrillation.

9. The taking vital signs includes,

   a. Temperature

   b. Pulse

   c. Respiration

   d. All of the above

10. Which record is used to calculate the fluid balance of the patient?

    a. Vital signs chart

    b. Intake and output chart

    c. Drug chart

    d. Nurses chart

11. Inflammation of tissue surrounding nails following an injury is _____

    a. Paronychia

    b. Ingrown nails

    c. Foot odour

    d. Callus

12. Few seconds cessation of breathing is called as _____

    a. Bradypnea

    b. Tachypnea

    c. Apnea

    d. Hyper ventilation

13. Mention the normal blood pressure

    a. 170/80 mmHg

    b. 150/90 mmHg

    c. 120/80 mmHg

    d. 100/110 mmHg

14. Who is the father of Psychology

    a. Wilhelm wundt

    b. G.A Land berg

    c. Kimball young

    d. Max weber

15. Mosaic floors should be cleaned with _____

    a. Alkaline solution

    b. Acidic solution

    c. Water

    d. Sodium bicarbonate.

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II - ANSWER ANY 10 QUESTIONS IN BRIEF (10x3 =30)

16. Define-Nurse
17. Explain about arachnoid mater
18. What is meant by joint?
19. What are the functions of skin?
20. Define Bio medical waste.
21. What is body mechanics?
22. What are the purposes of oral hygiene?
23. Define Tachycardia
24. Define Frost bite.
25. What is meant by hospital information system?
26. Define heat exhaustion.
27. What is meant hospital housekeeping?
28. Mention the types of fall.

III - WRITE SHORT NOTES ON ANY 5 QUESTIONS ONLY (5x5=25)

29. What are the functions of a hospital?
30. Write an essay about pituitary gland?
31. Enlist the benefits of exercise.
32. List four areas liable for pressure ulcer.
33. What are the classification of wastes seen in hospital?
34. How will you take care of glass materials at home?
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 intial assessment of his condition? Write a first aid measure for his recovery.

OR

Write in detail on skeletal system of man with a neat labelled diagram.

37. Explain in detail the care that should be taken of the nail and feet.

OR

Write in detail about Head-Foot Assessment.

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Practical

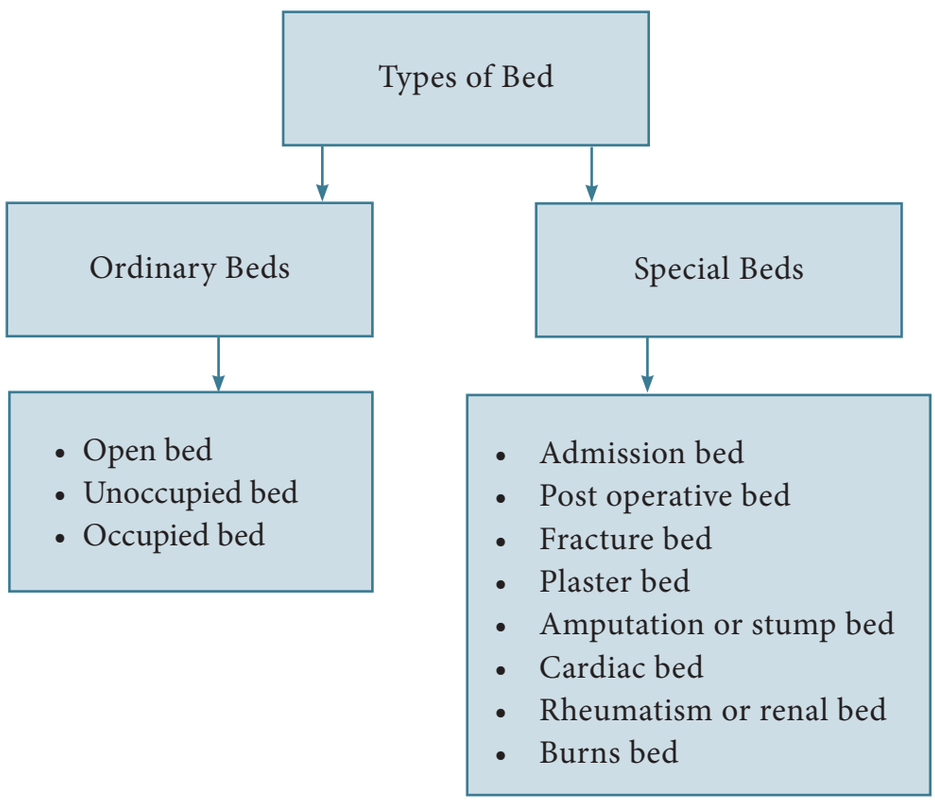
1

BED MAKING

LEARNING OBJECTIVES

1. To describe the purposes of bed making
2. To follow the guidelines of bed making.
3. To acquire the skills of doing an occupied bed and unoccupied bed.
4. To enumerate the types of bed.

OPERATIONS/EXERCISES COVERED UNDER THE PROJECT



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TOOLS AND EQUIPMENTS REQUIRED

Activity /Title	S.NO	Name of the tools	Range	Quantity
Bed Making	1	Cot	Length=75 inch Breadth=38 inch Height=28 inch	1
	2	Mattress	Length=190 cms Breadth=90 cms	1
	3	Topsheet	Length=3 mts Breadth=2 mts	1
	4	Draw Mackintosh	As per needed	1
	5	Draw sheet	Length=150 cms Breadth=110cms	1
	6	Bottom sheet	Length=3 mts Breadth=2 mts	1
	7	Pillow	Length=60 cms Breadth=45 cms Thickness=10 cms	1
	8	Pillow case	Length=60 cms Breadth=45 cms	1
	9	Bucket	15 liter	1
	10	Dusting cloth	Length=50 cms Breadth=50 cms	1
	11	Kidney tray	Small	1

Definition

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.

Occupied Bed



Unoccupied 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

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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.

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 mitering
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

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Mitering

- 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

Costing Sheet

S.No	Name of the components required (raw materials)	Range/ Specifications	Quantity	Cost (approx.) (Rs)	Value in the nearby store (Rs)
1	Bedsheet	Length=3 mts Breadth=2 mts	2	600	650
2	Mackintosh	As per needed	1	300	350
3	Dettol	1 bottle	50 ml	50	50
4	Kidney tray	Small	1	50	50

CONCLUSION

Hence after classroom demonstration bed making is done properly.

Video Suggestions

S.no	Title	Link
1	Bed making -Nursing procedure	https://youtu.be/8740TJ4m5N8
2	Carbolization procedure for bed making	https://youtu.be/qUqsC-nqtUY

Simple Assessments

1. How many ml of dettol can be added in 2000 ml of water to prepare a 1:40 dettol solution.

Student project	To do the sheet folding in the paper and practice
Guest lecture suggestion	Staff from the medical ward from nearby hospital
Field Visit	Hospital visit-Inpatient department

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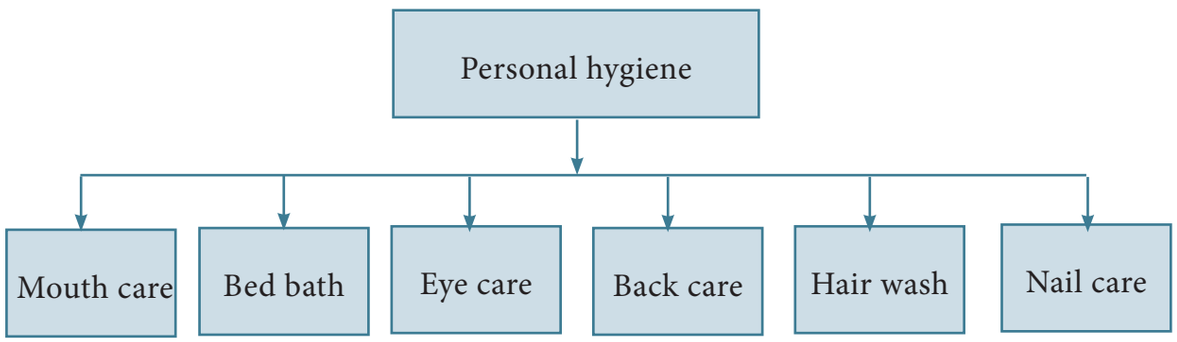
Practical

2 PERSONAL HYGIENE

LEARNING OBJECTIVES

1. To demonstrate the following procedures
   - Mouth care.
   - Bed bath.
   - Eye wash.
   - Hair wash.
   - Nail care.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Activity Title	S.No	Name of the tools/Equipments	Range/Value	Quantity
Mouth care	1	Cotton swab	Small	15
	2	Artery Forceps	Small	1
	3	Dissecting Forceps	Small	1
	4	Cups	Small	2
	5	Feeding cup	Small	1
	6	Salt solution		50 ml
	7	Kidney trays	Small	2

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	8	Swab Sticks	Small	10
	9	Rubber sheet	100*100 cm	1
	10	Towel	1m	1
Bed bath	1	Mackintosh	Small	1
	2	Bed sheets		2
	3	Soap		1
	4	Soap dish		1
	5	Sponge towel		2
	6	Bath towel		1
	7	Hot water jug		1
	8	Cold water jug		1
	9	Basin		1
	10	Bucket		1
	11	Screen		1
	12	Urinal pan		1
	13	Bed pan		1
Eye Care	1	Mackintosh	Small	1
	2	Towel	50*100 cm	1
	3	Sterile bowl	Small	1
	4	Sterile cotton swabs	Small	50
	5	Sterile normal saline	50ml	1
	6	Kidney tray	Small	1
	7	Clean face towel	100*200cm	1
Back care	1	Basin with warm water	Big	1
	2	Soap		1
	3	Wash cloth		1
	4	Towel		1
	5	Spirit	50 ml	1
	6	Talcum powder		1
Hair wash	1	Jug with hot water		1
	2	Jug with cold water		1
	3	Buckets	Big	2
	4	Basin		1

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	5	Mug	Medium	1
	6	Blanket		1
	7	Towel		2
	8	Shampoo		1
	9	Wash cloth		1
	10	Cotton balls		5
	11	Kidney tray		1
	12	Paper bag		1
	13	Comb and oil		50)1ml)
Nail care	1	Water proof pad		1
	2	Wash cloth		1
	3	Towel		1
	4	Wash basin with warm water		1
	5	Lotion		1
	6	Disposable gloves		1 set
	7	Nail clippers		1
	8	File		1
	9	Polish remover		1 bottle

MOUTH CARE

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.



Purposes of Mouth Care

1. Oral Hygiene helps maintain to 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.

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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 ballaround 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.
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.

EYE CARE

Definition

It is a nursing intervention to prevent or minimize the threats to eye or visual integrity.

Procedure

1. Wash hands.
2. Pour sterile saline into the bowl and wet the cotton swabs.
3. Stand infront 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.

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.

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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 in the first bath after admission. It offers an opportunity for the nurse to observe any rashes or pressure sores.

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 patients 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 patients 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 wrinked 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).

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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.

BACK CARE

Definition

Scientific form of massaging the back using different massaging strokes to provide cutaneous stimulation and this promotes comfort



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

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.

HAIR WASH

Definition

Hair washing is the cosmetic act of keeping hair clean by washing it.

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

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

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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.

NAIL CARE

Definition

It is an act to promote clean,neat attractive nails and prevention of skin lesions related to improper care of nails.



Purpose

1. Maintain skin integrity around nails
2. Provide for clients comfort and sense of well being
3. Maintain foot function
4. Encourage self-care

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.

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CONCLUSION

Thus, the personal hygiene -mouthcare, bed bath, back care ,hair care and nail care demonstration has been completed successfully.

Video Suggestions

No	Title/purpose	Title/purpose
1	Conscious oral care	https://youtu.be/etqBFOX5YT0
2	Unconscious oral care	https://youtu.be/4qjF6RZy3GE
3	Procedure of eye care	https://youtu.be/rHPCUGTbcfg
4	How to give bed bath	https://youtu.be/poN5KXJT_iE
5	Giving patient a bed bath	https://youtu.be/hyXYc0ItT6aE
6	Back care Procedure	https://youtu.be/mqEaD3etPL0
7	Hair wash	https://youtu.be/fu6kGcDpPWU
8	Nail care	https://youtu.be/YHff8hWC4xQ

Simple Assessments

1. Write the purpose of mouth care?
2. Define eye care?
3. Write the purposes of eye care?
4. Define bed bath
5. Write the temperature of water while giving a bed bath?
6. Write the purposes of a bed bath?
7. What are the purposes of backcare?
8. What is the purpose of hair wash.
9. Write briefly about hair wash?
10. How will you keep your nails clean and tidy?

Student project	Prepare a tray setting for nail care and mouth care.
Guest lecture suggestion	Nursing superintendent from nearby hospital
Industrial/ Field visit suggestions	Hospital visit- In patient department

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Practical

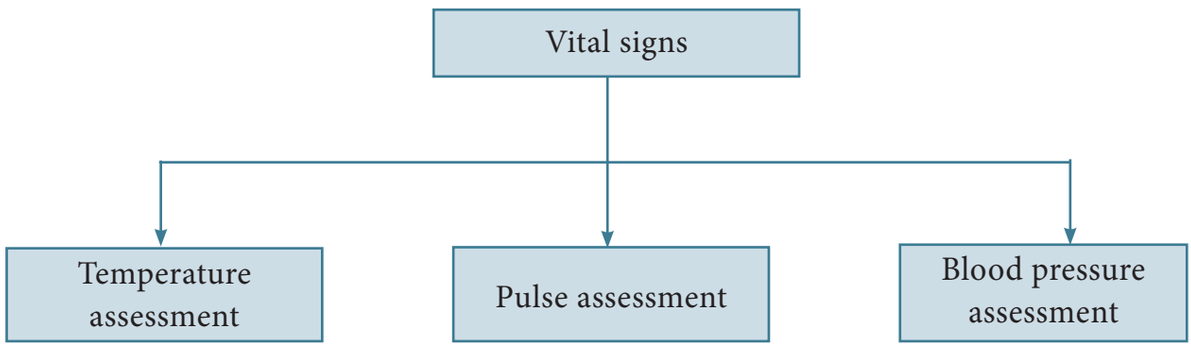
3

VITAL SIGNS

LEARNING OBJECTIVES

1. To assess body temperature by using oral thermometer
2. To assess pulse rate
3. To assess blood pressure .
4. To define vital signs.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Activity /Title	S.No	Name of the tools/Equipments	Range	Quantity
Temperature Monitoring	1	Thermometer coral	Normal	1
	2	Dettol solution	1:40 ratio	100 ml
	3	Bottle with water	100 ml	1
	4	Kidney tray	Small	1
	5	Cotton Balls	Small	10 nos
	6	Red and blue pen	-	1
	7	TPR – Chart	Normal	1
	8	Wrist watch with seconds	-	1
Assessment of Blood Pressure	9	Stethoscope	-	1
	1	Sphygmomanometer	-	1

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TEMPERATURE TAKING AND RECORDING



Definition

Body temperature is defined as the measure of the heat inside the body, the balance between heat produced and heat lost.

Temperature varies with the following factors,

- Time of day
- Age
- Exercise
- Temperature
- 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 temperature

1. Mouth
2. Axilla
3. Groin
4. Rectum

Purposes

1. To aid in diagnosis of patient condition
2. To find out the progress of the patient.
3. Nurse Responsibilities :
4. Identify the patient
5. Check the diagnosis
6. Bring back the mercury level of thermometer below 95F

Procedure

1. Wash hands before and after the procedure.
2. Thermometer to be disinfected in a proper disinfectant to prevent cross infection.
3. Before taking an oral temperature check whether the patient had any hot or cold drinks, chewing sun / betel leaves. Wait for at least 15 minutes.
4. Before placing the thermometer in mouth, rinse the thermometer in cold water to remove all disinfectants.
5. Explain the procedure to the patient
6. Make the patient in a comfortable position.
7. Bring down the level of mercury to obtain accurate reading.
8. Before placing the thermometer in mouth, wipe it from bulb to stem, to keep the bulb clean
9. Before keeping the thermometer in mouth, instruct the patient not to bite.
10. Never leave the patient alone with the thermometer in position.
11. After taking the thermometer from mouth, wipe it from stem bulb to avoid contaminating the fingers of the caregiver with saliva.
12. Never hold the thermometer at the bulb.
13. Read the thermometer at eye level against light
14. Record the temperature in TPR-Chart immediately and accurately

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15. Use a separate thermometer for patients suffering from infectious diseases.
16. Taking and replacing the thermometer should be in rotation making sure they remain in disinfectant for at least 3 minutes before being used for another patient.
17. After the procedure, clean and reset the tray for next use.

ASSESSMENT OF PULSE RATE

The rhythmic dilation of an artery that results from beating of the heart.

PURPOSE OF RECORDING PULSE

- To test the help and efficiency of the heart.
- To test the elasticity and health of arteries.
- To get an approximately idea of how much blood is being pump into artery system.
- To estimate the changes in the needs of body circulation.
- To understand the general conditions of body, recovery or death.
- To give emergency treatment if necessary.

Procedure

- Watch to count the pulse
- Chart and pen for documentation .
- Keep the patient in a comfortable position.
- Hold the wrist firmly,place the first three fingers over the artery,press it to make the pulsation distinct.
- Count the pulse for minute.
- Note rhythm ,volume and any other abnormalities.
- Record your observation.

ASSESSMENT OF BLOOD PRESSURE

Definition

Blood pressure is the force or pressure of blood against the wall of blood vessels as it flows through them.

Purposes

1. To aid in the diagnosis of the patient condition
2. To guide in his treatment
3. To evaluate the patient's progress.

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.

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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.



CONCLUSION

Thus the vital signs including temperature,pulse and blood pressure have been studied and demonstrated successfully.

Video Suggestions

S.no	Title	Link
1	Temperature assessment by oral route	https://youtu.be/AVHR485DHmA
2	Manual blood pressure	https://youtu.be/UGOoeqSo_ws

Simple Assessments

1. Conversion from
   a. From Celsius to fahrenheit
      1. 39 ° Celsius
      2. 41 ° Celsius
   c. From fahrenheit to Celsius
      1. 100 ° fahrenheit
      2. 110 ° fahrenheit
2. Define blood pressure
3. Draw the diagram of stethoscope
4. Define pulse rate.

Student project	1. Students should take temperature for 2 persons from family everyday and mark it in the chart for 10 days 2. Ask the students to do a model of sphygmomanometer
Guest lecture suggestion	Nursing staff from general unit
Field Visit	Hospital visit in general unit

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Practical

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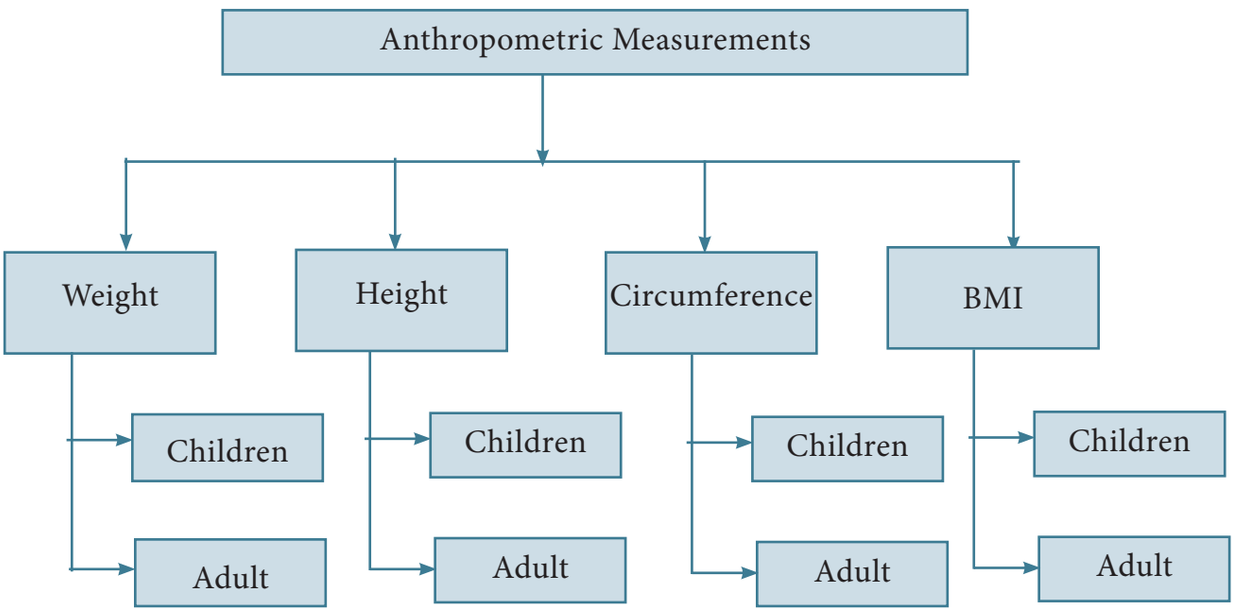
ANTHROPOMETRIC MEASUREMENT

LEARNING OBJECTIVES

To assess the anthropometric measurements-

- Weight and Height (Infant)
- Head circumference
- Chest circumference
- Mid arm circumference
- Height and Weight (Adult)

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Activity	S.No	Name of the tools	Range	Quantity
Anthropometric measurements	1	Infantometer		1
	2	Draw sheet	Length=100 cms Breadth=50 cms	1
	3	Duster	Length=50 cms Breadth=25 cms	1

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	4	Paper	-	1
	5	Pencil	-	1
	6	Inch tape	-	1
	7	Weight and measuring scale	-	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.

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 loosing weight depending on disease condition

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.

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.

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Length of the baby can be measured in weighing scale by marking with scale between head and heel points.

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.

MEASUREMENT OF CHEST CIRCUMFERENCE

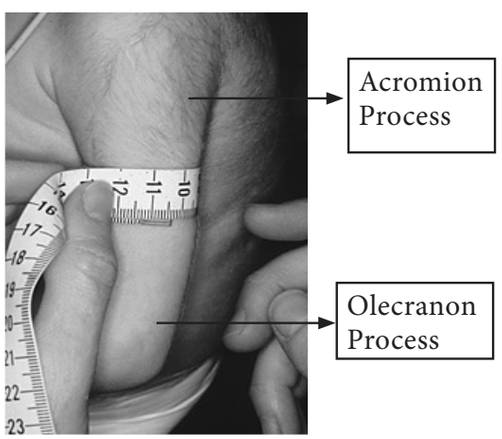
Place tape measure underneath the back of baby and bring it to front measured at nipple line gives the chest circumference.



MEASUREMENT OF MID-ARM CIRCUMFERENCE

1. Place the tape vertically, alone 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.





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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

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, heals 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.



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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

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.

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/m2 resulting from mass in kilograms and height in meters.

$$BMI = \text{mass}_{kg} / \text{height} m^2$$

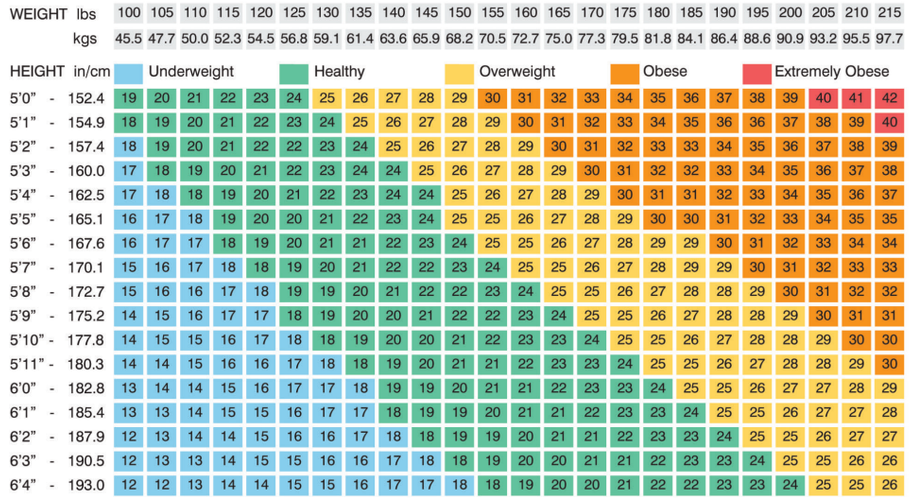
WHO regards a BMI of less than 18.5 as underweight and may indicate malnutrition. While a BMI equal to or greater than 25% considered overweight and above 30 is considered obese.

Category	BMI (Kg/m^2)	
	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

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- 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	97.7
HEIGHT in/cm	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" - 154.9	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
5'2" - 157.4	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	38	39
5'3" - 160.0	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38
5'4" - 162.5	17	18	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	36	37
5'5" - 165.1	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	35
5'6" - 167.6	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	34
5'7" - 170.1	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	33	33
5'8" - 172.7	15	16	16	17	18	19	19	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	32	32
5'9" - 175.2	14	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	31
5'10" - 177.8	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	27	28	28	29	30	30
5'11" - 180.3	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30
6'0" - 182.8	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29
6'1" - 185.4	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28
6'2" - 187.9	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27
6'3" - 190.5	12	13	13	14	15	15	16	16	17	18	18	19	20	20	21	21	22	23	23	24	25	25	26	26
6'4" - 193.0	12	12	13	14	14	15	15	16	17	17	18	18	19	20	20	21	22	22	23	23	24	25	25	26

CONCLUSION

Thus the anthropometric measurement has been demonstrated properly and BMI calculated with formula.

Video Suggestions

S.no	Title	Link
1	Anthropometric measurements	https://youtu.be/G9oaMMSQrDs
2	BMI Calculation	https://youtu.be/PpuiO6WJxic

Simple Assessments

1. Identify the anthropometric measurements
2. Calculate the BMI for the following measurements

   Height :152 cms ;Weight:75 kgs

   Height :150 cms ;Weight:40 kgs

   Height :172 cms ;Weight:98 kgs

Student project	1. Every student has to calculate their BMI and to be categorized 2. Take the height and weight of family members and calculate BMI for that 3. Draw BMI chart with different colours
Guest lecture suggestion	Nursing staff from pediatric unit
Field Visit	Hospital visit in pediatric unit and visit in primary health centre

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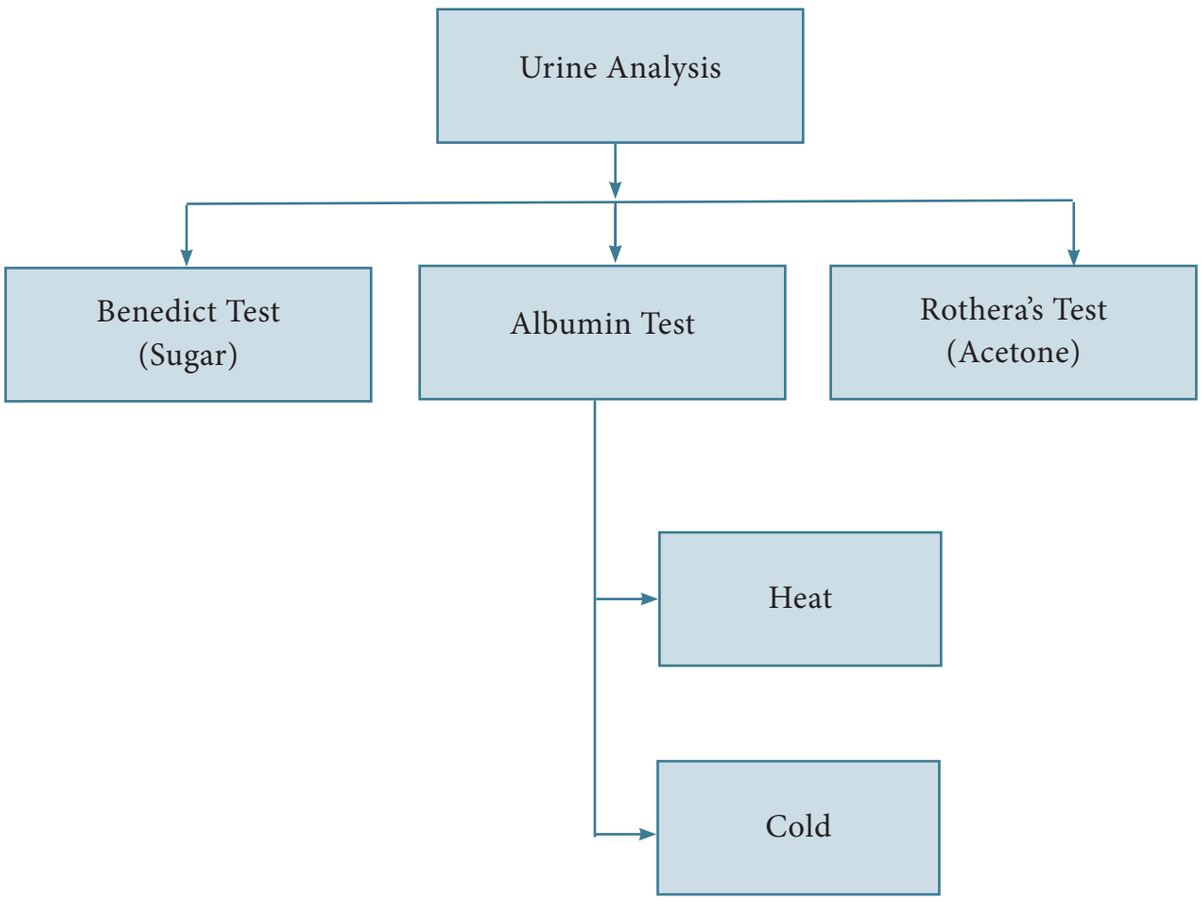
Practical

5 URINE ANALYSIS

LEARNING OBJECTIVES

- To analyze the presence of albumin in urine by hot and cold method.
- To analyze the presence of acetone by rothera's test
- To analyze the presence of sugar in urine by Benedict test

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



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TOOLS AND EQUIPMENTS REQUIRED

Section	S.No	Name of the tools	Range	Quantity
Albumin Test	1	Spirit lamp		1
	2	Test tube		3
	3	Test tube holder		1
	4	Acetic acid	2 %	50ml
	5	Filtered urine		50ml
	6	Nitric acid		50ml
	7	Sulphosalicylic acid		50ml
Rothera's Test	1	Ammonium sulphate crystals		10g
	2	Sodium nitroprusside crystals		10g
	3	Liquor ammonia		50ml
Benedict Test	1	Spirit lamp		1
	2	Test Tube		2
	3	Test tube holder		1
	4	Filtered urine		5ml
	5	Benedict solution		100ml

ALBUMIN TEST

An albumin test - Checking the presence of albumin in the given urine sample.

Hot Test

Hot test means when the result is obtained after boiling.

Procedure

- Fill ¾ of the test tube with urine.
- Heat the upper third of urine with a spirit lamp.
- Allow it boil
- Acetic acid to be added drop by drop in the boiled urine.
- The cloudy appearance indicates the presence of albumin in the urine.

Cold Test

Definition

Cold test means the result is obtained directly without boiling the urine sample.

Procedure

- Add equal amounts of nitric acid and urine in a test tube.
- Wait for a minute.
- A white precipitate in junction indicate the presence of albumin in the urine.

ACETONE TEST

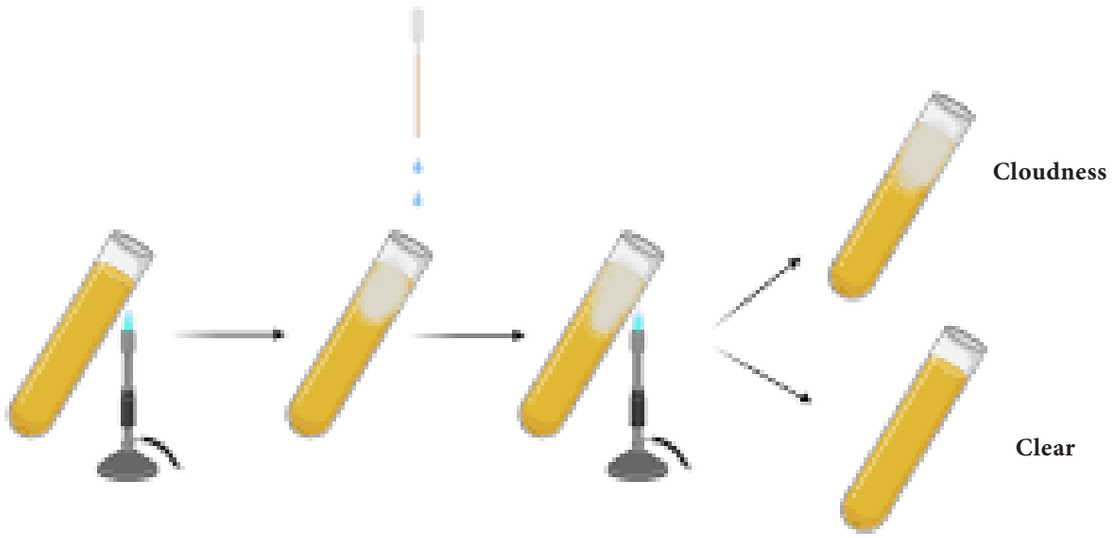
Definition

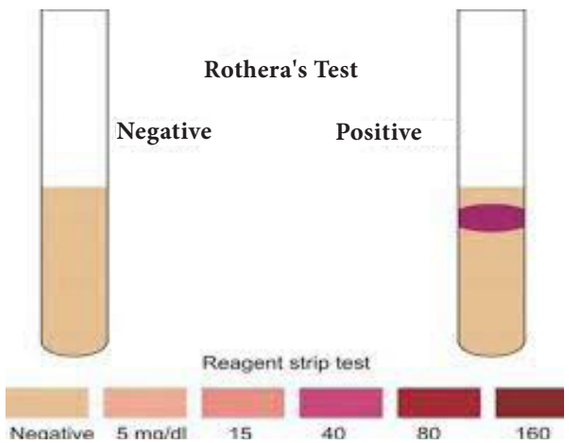
This test is used to detect acetone whether it is present in the given urine sample. It is otherwise called as Rothera's Test.

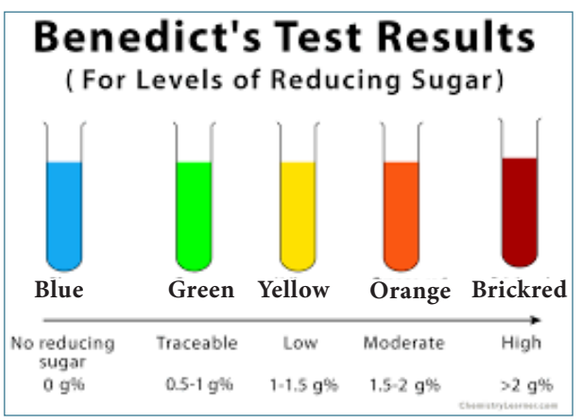
Procedure

1. Take 2 cm depth of ammonium, sulphate crystals in a test tube and add equal amounts of urine and sodium nitroprusside crystals .
2. Close the test tube and shake it well.
3. A purple ring at the junction of the liquid indicates the presence of acetone in the given urine sample.

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SUGAR TEST

(Benedict Test)

Definition :

This test is used to detect the presence of sugar in the given urine sample.

Procedure :

- Take 5ml of Benedict solution in the test tube
- Heat the bottom of the test tube with a spirit lamp.
- Allow it to boil
- Add 8 drops of urine in the test tube and boil it
- Check for any colour changes.

Blue - Nil
Green +
Yellow ++
Orange +++
Brick red ++++

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Costing Sheet

S No	Name of the components required (raw materials)	Range/ Specifications	Quantity	Cost (approx.)	Value in the nearby store
1.	Test Tube		10	25	250
2.	Test tube holder		2	250	500
3.	Acetic acid		100ml	250	250
4.	Ammonium sulphate crystals		50g	330	330
5.	Sodium nitroprusside crystals		50g	100	100
6.	Liquor ammonia		100ml	110	110
7.	Benedict solution		500ml	200	200

CONCLUSION

Thus the given urine sample was analyzed for sugar , albumin and acetone with the benedict test hot and cold, albumin test and the rothera's test.

Video Suggestions

S.No	Title	Link
1	Benedict test	https://youtu.be/-eg_MHdoJ_Q
2	Albumin test	https://youtu.be/MqCall(pu6E
3	Rothera's test	https://youtu.be/fe_KGUeTH60

Simple Assessments

1. How will you find out sugar in the urine?
2. Do the albumin test?
3. Explain rothera's test?

Student project	Chart preparation-benedict test result
Guest lecture suggestions	Lab technician from nearby hospital
Field visit suggestions	Hospital visit-Lab visit

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Practical

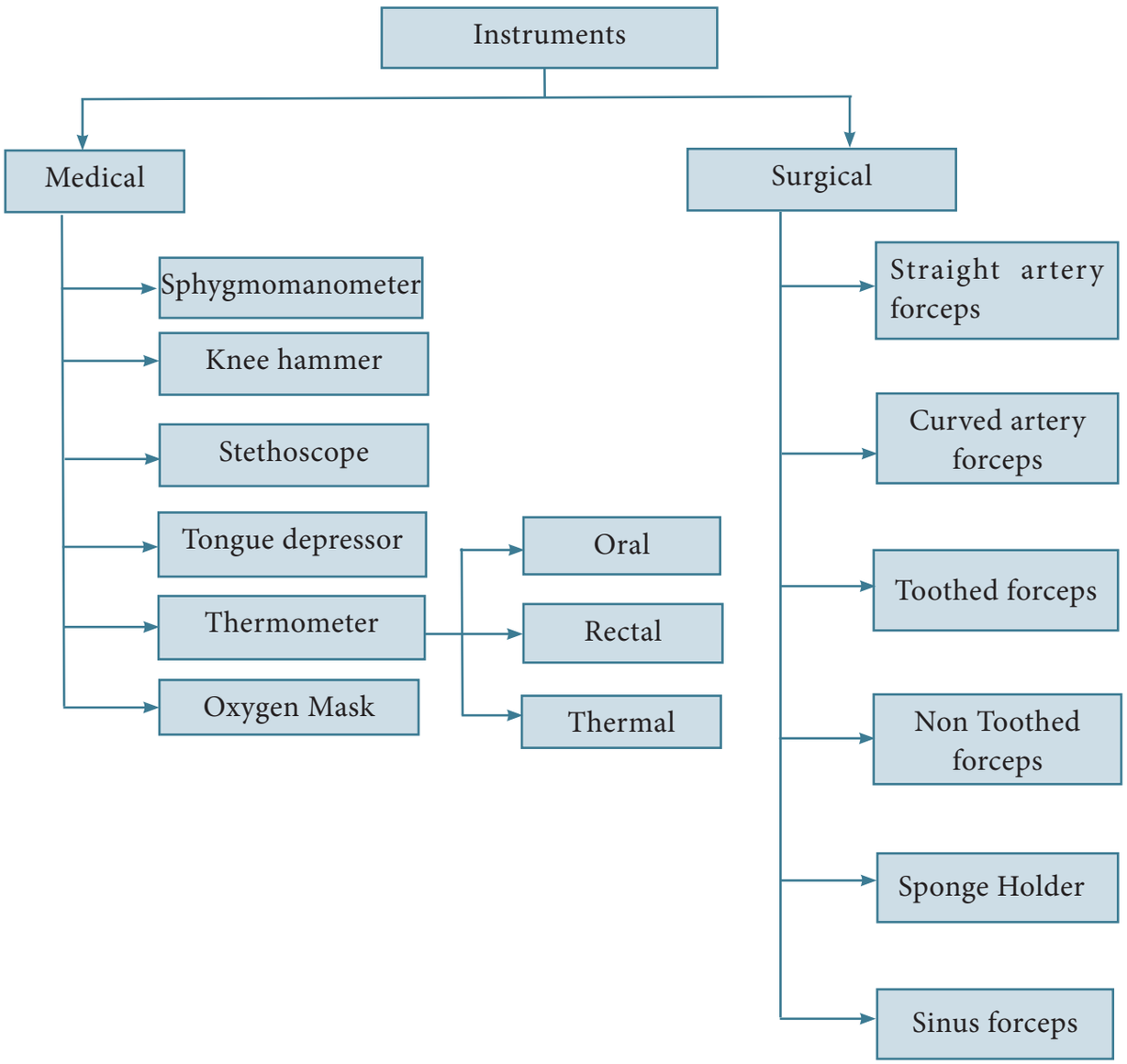
6

IDENTIFICATION OF INSTRUMENTS

LEARNING OBJECTIVE

- To identify the instruments and describe its purposes.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



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TOOLS AND EQUIPMENTS REQUIRED

Activity	S.No	Name of the tools	Range	Quality
Instruments	1	Sphygmomanometer		1
	2	Knee Hammer	Small	1
	3	Stethoscope		1
	4	Tongue depressor	Small	1
	5	Thermometer		1
	6	Syringes	10 ml	1
	7	Straight artery forceps	5 inches	1
	8	Curved artery forceps	5 inches	1
	9	Toothed forceps	5 inches	1
	10	Non thoothed forceps	5 inches	1
	11	Sponge holder	5 inches	1
	12	Scissors	5 inches	1
	13	Sinus forceps	5 inches	1

OXYGEN MASK



Oxygen mask is used to give when O2 concentration of over 25% is needed. Oxygen flow of 8–12 litre/minutes will be sufficient to maintain the concentration of O2 to 25%. O2 mask should be properly fitted over the nose and mouth and fastened with ties at the back of the head.

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.

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.

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KNEE HAMMER



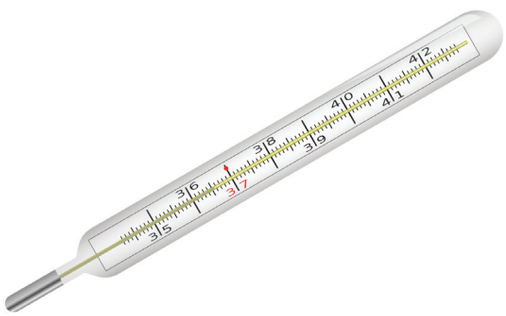
The knee or reflex hammer is a medical instrument used by practitioners to test deep tendon reflexes.

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.

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

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.



SCISSORS

Scissors are hand operated shearing tools. They are used to cut or dissect tissues, used during dressings and bandaging, removal of sutures.



FORCEPS



Forceps are hand held, hinged instrument used for grasping and holding objects. Forceps are a surgical instrument used

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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

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

SPONGE HOLDER



Sponge holding forceps or sponge holder are used by doctors to hold cotton sponges during surgery to arrest bleeding.

CONCLUSION

Thus the instruments had been identified and described with its purposes successfully.

Video Suggestions

S. no	Title	Link
1	Surgical instruments	https://youtu.be/k54Y6pnciz8
2	General surgical Instruments	https://youtu.be/DPbIPyrK8eA

Simple Assessments

1. Write the uses of the artery forceps
2. Draw the diagram of sponge holder and mention its uses

Student project	Do the models of any 5 instruments
Guest lecture suggestion	Operation theater technical staff from the nearest hospital
Field Visit	Hospital visit in casualty ward Observation of dressing in casualty

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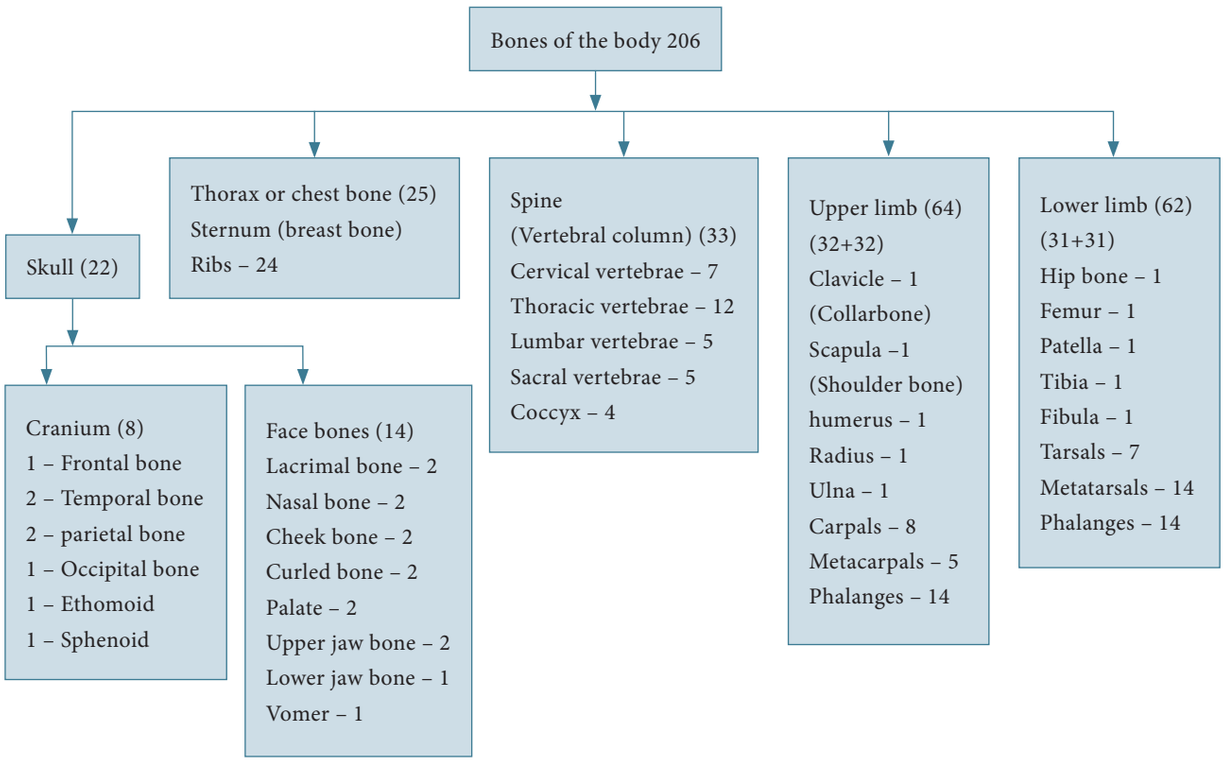
Practical 7

IDENTIFICATION OF BONES

LEARNING OBJECTIVE

To identify the bones and describe the functions of bones.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Activity	S.No	Name of the tools	Range	Quantity
Identification of bones	1	Whole skeleton system of human body	-	1

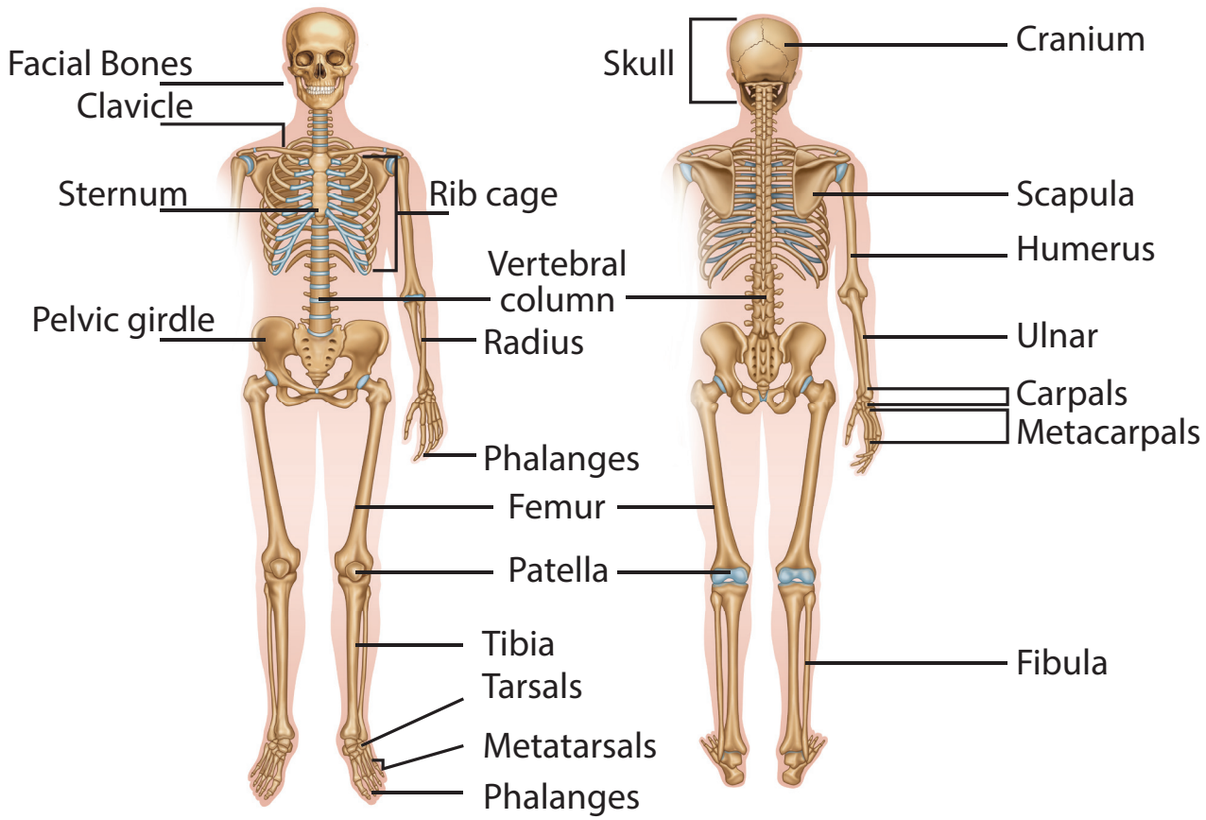
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DEFINITION

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.

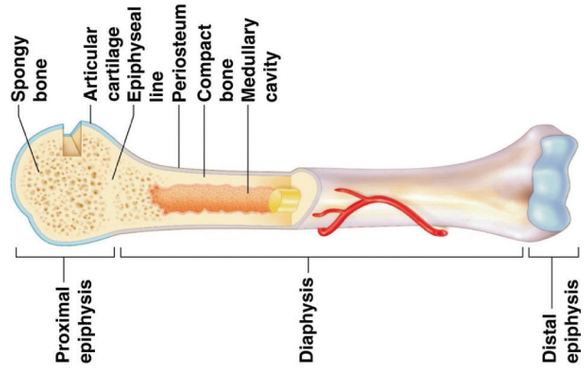
FUNCTIONS

- Support of body
- Provides attachment for muscles, ligaments, tendons and fascia.
- Encloses vital organs such as heart and brain
- Production of blood cells. Produce movements as levers
- Store house of calcium.



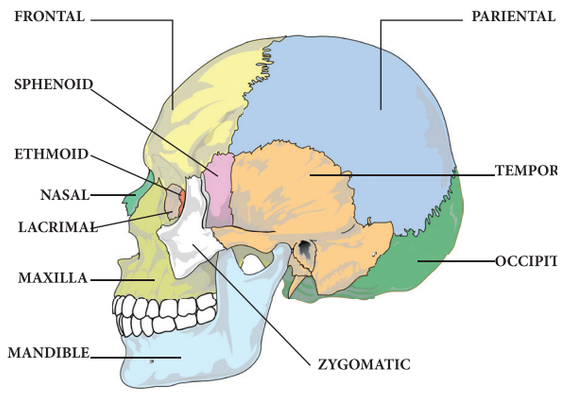
BONE STRUCTURE

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. It consists of outer "Compact bone" and inner "Spongy" bone.



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SKULL



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

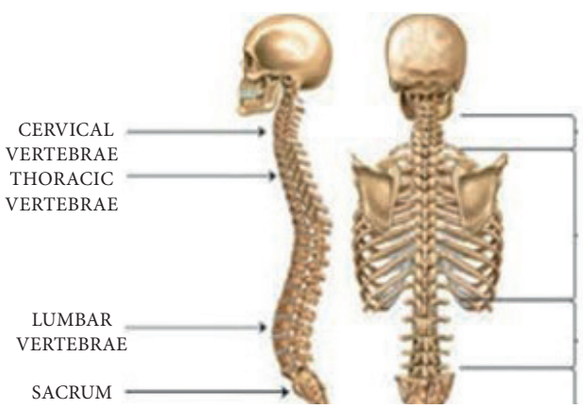
Cranial bones

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 an 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.

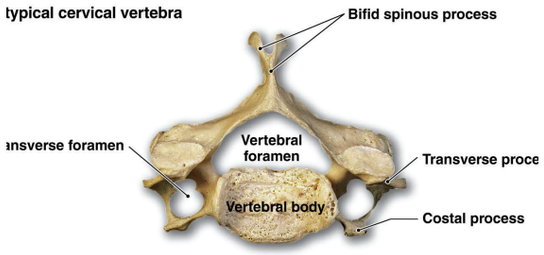
Facial skeleton (bones)

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 zycomatic bones
d. Palatebones – 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

VERTEBRAL COLUMN



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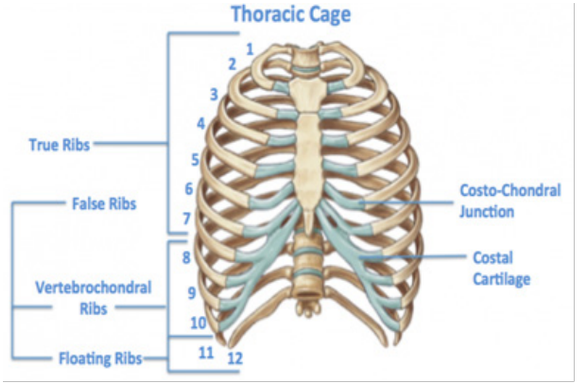


Spine or backbone is the central part of the skeleton. It supports the head and encloses the spinal cord. It consists of 33 regular bones called 'vertebrae'

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.

The sacrum and the coccyx are called fixed vertebrae and the others are called movable vertebrae



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.

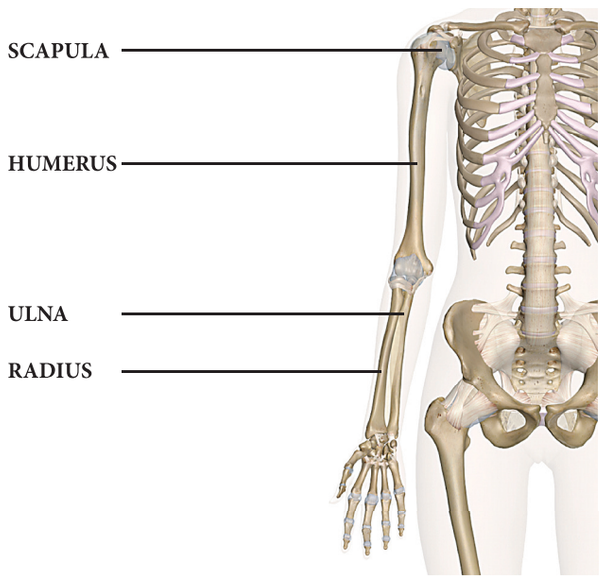
The last two pairs are not connected to the sternum at all and are called floating ribs.

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

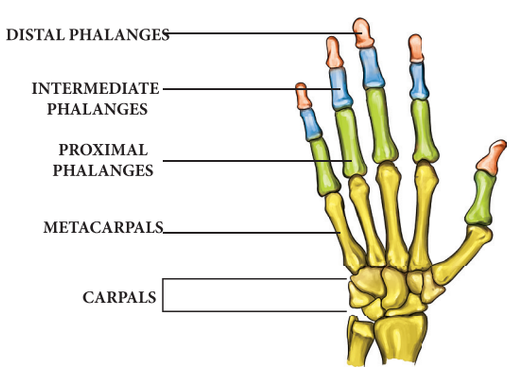
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Carpal bones – 8	It consists of short bones arranged in two rows
Meta carpal – 5	It consists of 5 bones seen in the palm.
Phalanges – 14	These form the skeleton of the fingers. 3 phalanges in each finger and only 2 phalanges in the thumb

BONES OF THE UPPER LIMB

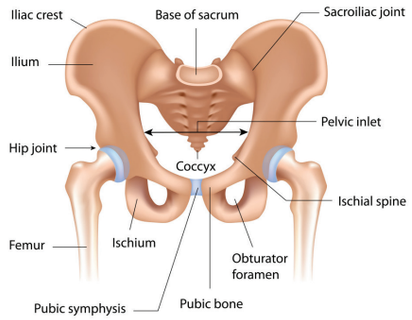


Each upper limb consists of thirty two bones.



LOWER LIMB BONES

The Pelvic Girdle



Each lower limb consists of thirty one (31) bones.

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.
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 – calcanium
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.

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CONCLUSION

Hence the bones had been identified and described with its structure successfully.

Video Suggestions

S.No	Title	Link
1	Skeletal system	https://youtu.be/f-FF7Qigd3U

Simple Assessments

1. Enumerate the facial bones
2. Explain the types of bones
3. Draw the structure of bones

Student project	Draw the skeletal system in chart and identify the bones with different colours
Guest lecture suggestions	HOD from anatomy department
Field visit suggestions	Hospital visit in anatomy and physiology department

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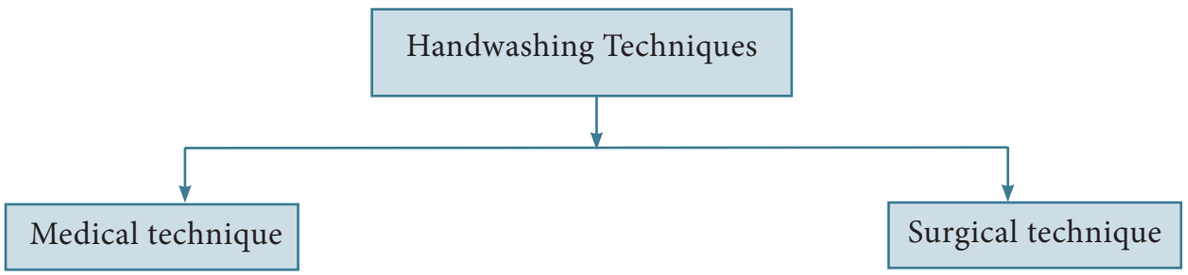
Practical 8

HAND WASHING TECHNIQUES

LEARNING OBJECTIVES

- To demonstrate the medical handwash
- To demonstrate the surgical handwash
- To describe the indications of hand wash

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Activity	S.No	Name of the tools	Range	Quantity
Handwashing techniques	1	Antiseptic solution	100 ml	1
	2	Sterilized Towel	Small	1
	3	Brush	-	1
	4	Handwash solution	100 ml	1
	5	Running water	-	As per required

HANDWASHING

Definition

A technique of cleaning hands is to prevent transmission of micro-organisms.

Purposes

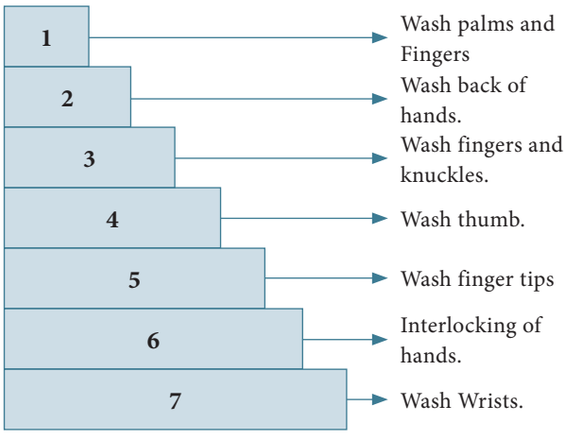
- Cleanliness and Aesthetic Feeling.
- To prevent cross infection.

Indications

- At the end of each task.
- Before handling clean articles.
- Before surgical procedures and delivery.
- Before serving or eating food.
- Whenever necessary.

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Effective hand washing steps



Guidelines for Maintaining and washing

- Cut nails short to prevent accumulation of dirt.
- Remove jewelery to ensure through 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.

MEDICAL HAND WASHING

Procedure

- Stand in front of sink, keeping hands and uniform away from sink surface.
- Open tap and wet hand (hold hands below level) thoroughly under running water.
- Keep hands and forearms lower than elbows during washing.
- Apply 1ml of antiseptic liquid soap to hands lathering thoroughly.
- 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.
- Dry hands thoroughly from fingers to wrist and forearms with towels.
- Discard towel in soiled bin.
- Turn of water.

SURGICAL HAND WASHING / SCRUB

- Wet hands and arm under running warm water.



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SURGICAL HAND WASH



- 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.
- Use one side to dry one hand and reverse side for other hand.
- Discard towel to the soiled bin.

CONCLUSION

Hence the handwashing techniques of medical and surgical were demonstrated properly .

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Video Suggestions

S.No	Title	Link
1	Handwash techniques	https://youtu.be/IisgnbMfKvI
2	Surgical handwash	https://youtu.be/TUwCVvGnk-U

Simple Assessments

1. Mention the purposes of handwash.
2. Enumerate the steps of handwash technique.

Student project	Instruct the students to do 7 steps of hand wash in demonstration method
Guest lecture suggestions	Nursing staff from operation theater
Field visit suggestions	Visit the general hospital operation theater for observing the surgical handwash technique

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Practical

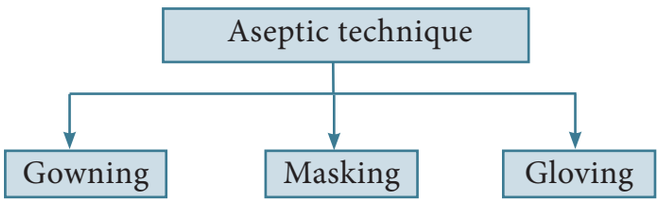
9

ASEPTIC TECHNIQUE

LEARNING OBJECTIVES

1. To identify the indications of wearing a glove,gown and mask.
2. To demonstrate the gloving technique
3. To demonstrate wearing mask and gown.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



TOOLS AND EQUIPMENTS REQUIRED

Section	S.No	Name of the tool	Range	Quantity
Wearing of gloves,gown and mask	1	Facemask		1
	2	Gloves	6	1
	3	Disposable surgical gown		1



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Aseptic technique

Asepsis are term used to describe methods which prevent contamination of wounds and other sites by ensuring that only sterile object and fluids come into contact with them.

GOWNING PROCEDURE

Clean or disposable gowns or plastic aprons are worn during procedures when the nurse's uniform is likely to become soiled.

Indications

- 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.,

Purposes

- 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.

GLOVING TECHNIQUE



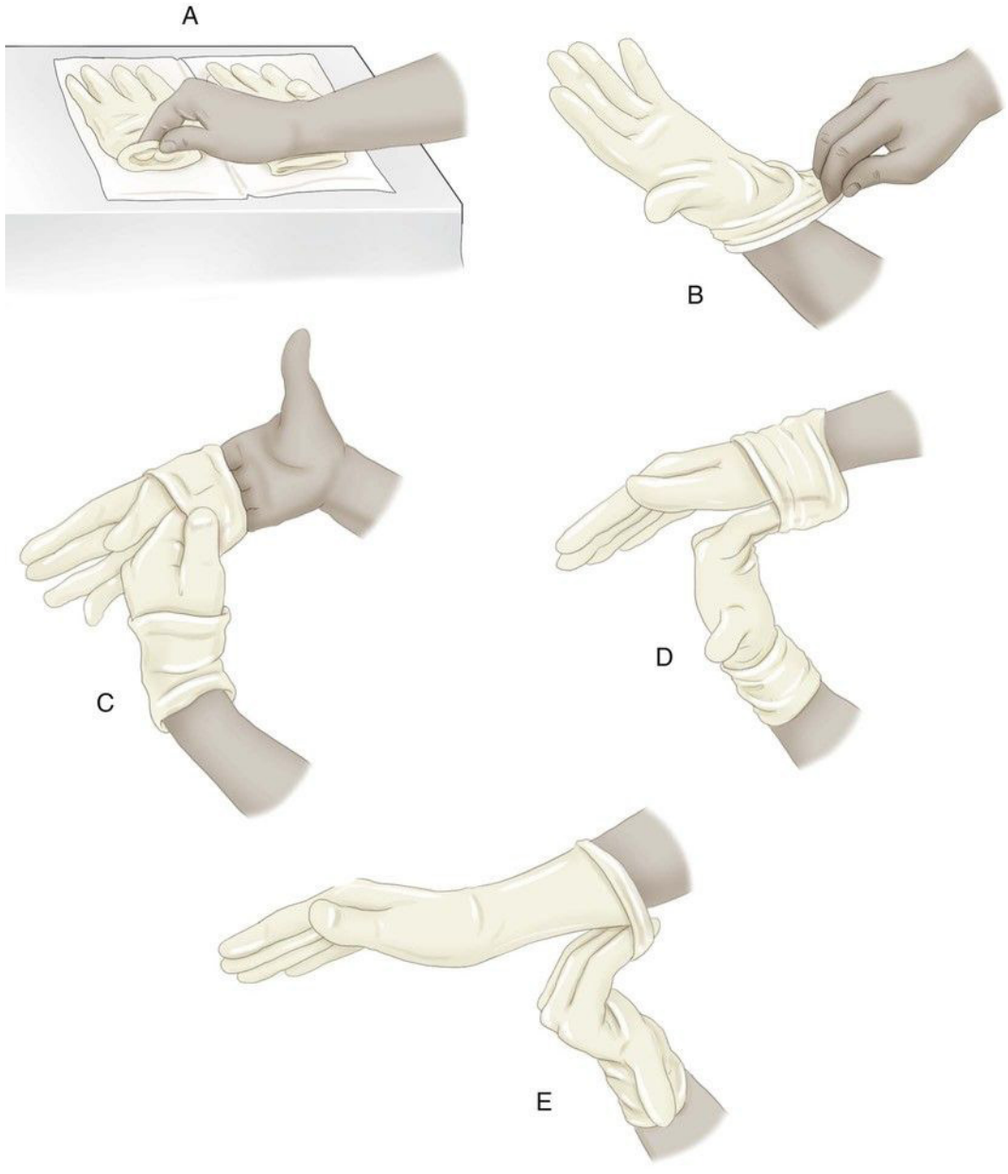
Gloving is defined as the putting on of a pair of sterile glove to protect one's own hand from pathogenic micro organisms and to avoid contamination of a sterile area by hand.

Purpose

- To protect the nurse from the pathogenic micro organisms.
- To safely use her hands to handle without contaminating any objects.

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Steps to Procedure



Indications

- 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.

Procedure

1. When the glove packet is collected from When tthe 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.

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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.

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.

Purposes

- 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.

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.

COSTING SHEET

S.No	Name of the component required	Range	Quantity	Cost	Value in the nearby store
1	Facemask		1	10	10
2	Gloves	6	1	70	70
3	Disposable surgical gown		1	250	250
Total				330	330

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CONCLUSION

Hence the demonstration has been done for wearing mask, glove and gown.

Video Suggestions

S.no	Title	Link
1	Putting on Sterile Gown and Gloves	https://youtu.be/e79YJ4ckwj0
2	Open glove technique aseptic procedure	https://youtu.be/MVyRVhnMWX0

Simple Assesments

1. Write the purposes of wearing a mask?
2. Mention the indications for wearing gloves?

Student project	Practice the glove and mask wearing technique in classroom
Guest lecture suggestions	Nursing incharge from operation theater
Field visit suggestions	General hospital-operation theater-Post surgical ward.

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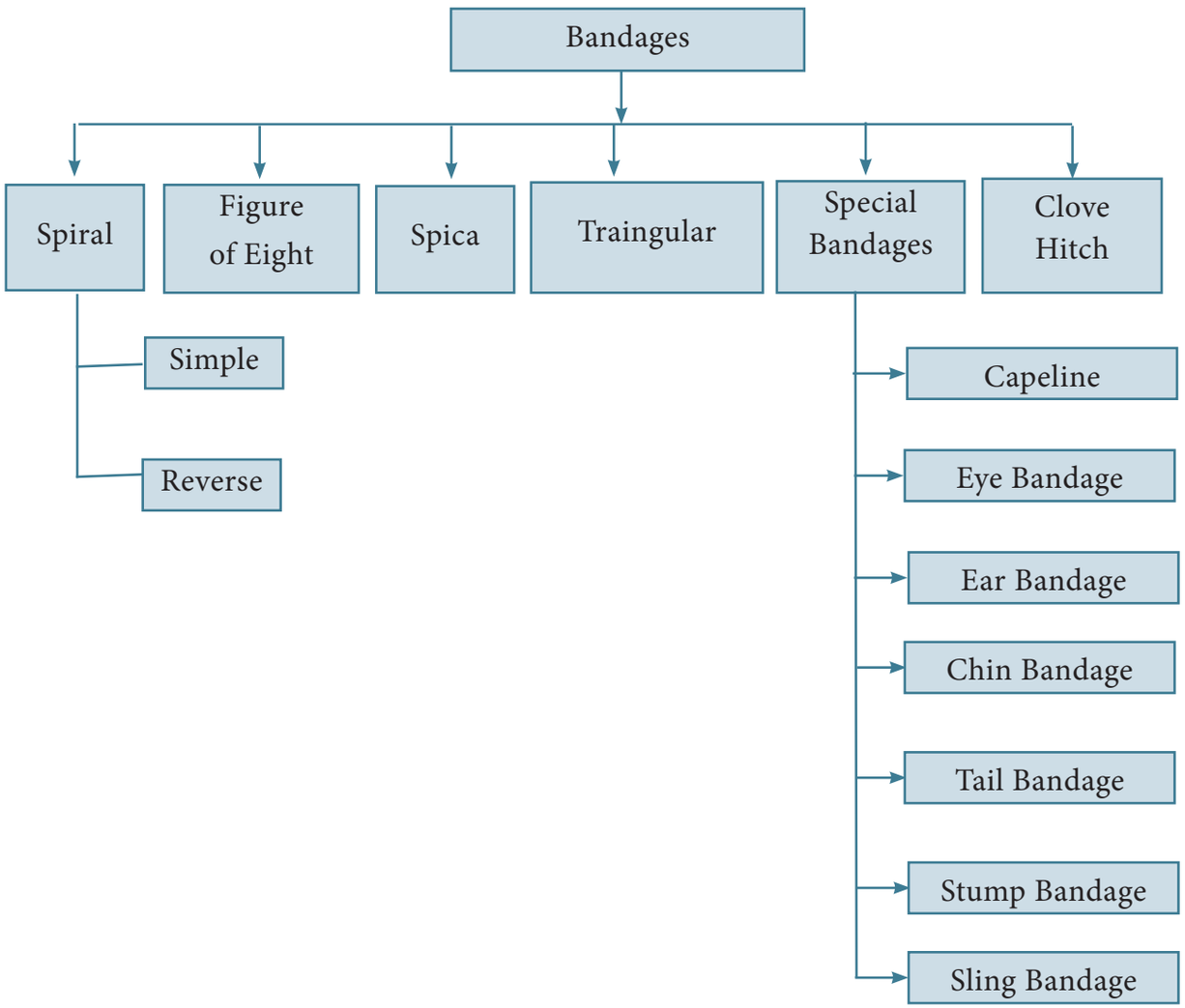
Practical

10 APPLICATION OF BANDAGES

LEARNING OBJECTIVE

1. To describe the different types of bandages and its uses.
2. To practice the application of bandages.
3. To explain the rules for applications of bandages.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



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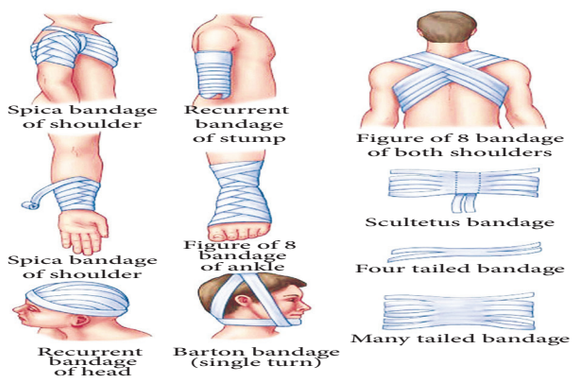
TOOLS AND EQUIPMENTS REQUIRED

Section	S.No	Name of the tools	Range	Quantity
Bandages	1	Gauze bandage roll	5cm	1
	2	Gauze bandage roll	10cm	1
	3	Elastocrepe bandages	10cm	1
	4	Scissor	15 inch	1
	5	Plaster	2.5cm	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



Uses

Bandages are used to:

1. Maintain direct pressure over a dressing to control bleeding.
2. Keep dressings or splints in position.
3. Support a limb or joint.
4. Prevent movement.
5. Prevent or reduce swelling.
6. Help in lifting and carrying casualties.

Types

1. Triangular bandages
2. Roller bandages

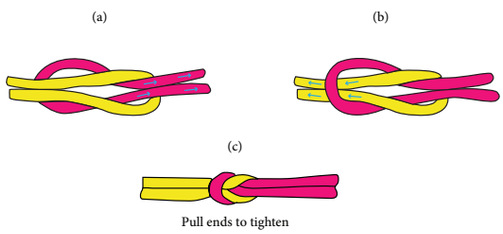
It comes in various widths lengths and types of material. For best results, use different widths for different body areas.

For e.g

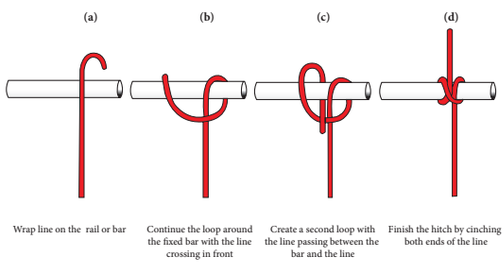
Fingers	—	1 inches
Hand & arm	—	2 to 2.5 inches
Leg	—	3 to 3.5 inches
Trunk	—	4 to 6 inches



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'.

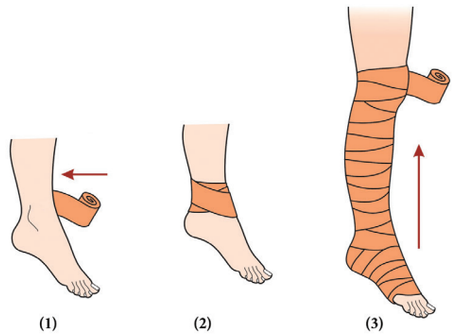


A clove hitch made from a narrow bandage, is placed round his wrist. The ends of the bandage are taken around the neck and tied.



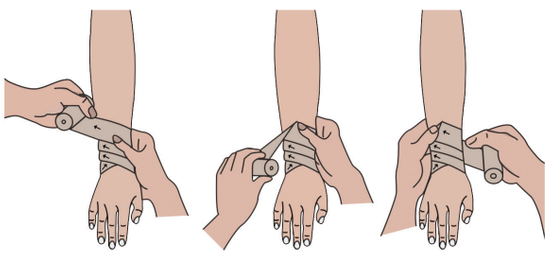
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Simple Spiral Bandage



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.

Triangular Bandage

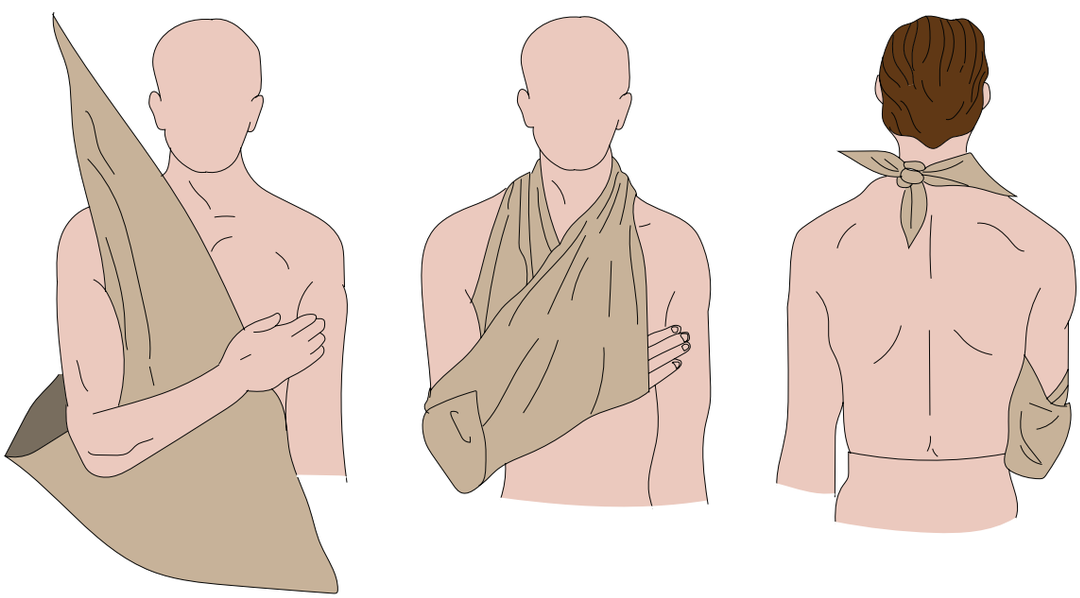
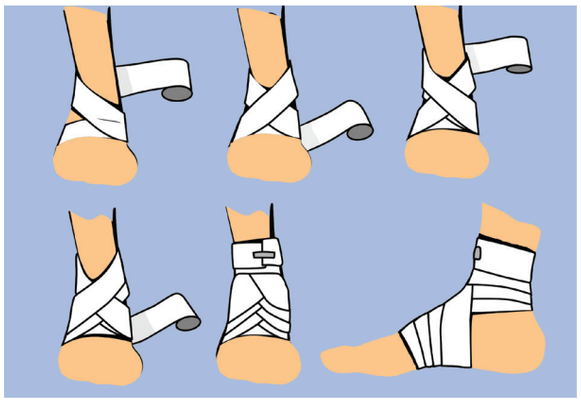


Figure of Eight

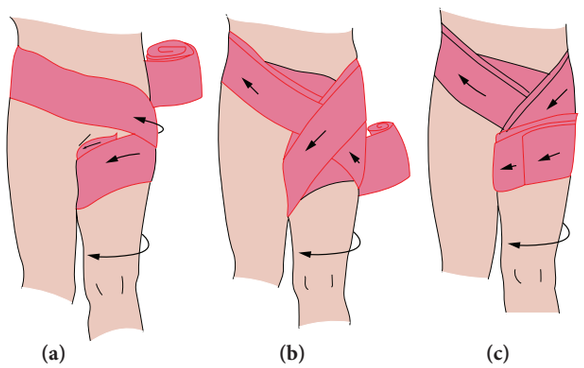


This may be used on limbs instead of the reverse spiral also for the hand and foot.

Spica

This is used for shoulder, hip and thumb. And this is a modified figure of eight.

HIP SPICA

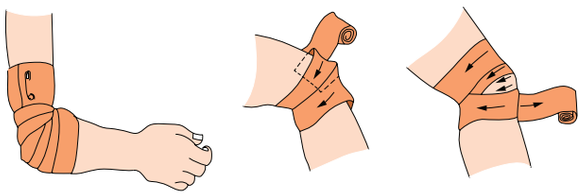


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A triangular bandage is used in treating a fracture of the collar bone. It helps to keep the hand raised high up, giving relief from pain due to the fracture.

Divergent Spica

This bandage pattern encloses a flexed joint or projection. It is used for a flexed joint. e.g Elbow, knee, heel



SPECIAL BANDAGES

Capeline bandage for head.

- one end being continued round the scalp and other going order it
- scalp turn secured by horizontal turn
- capline bandage completed

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
5. This may be used on limbs instead of the reverse spiral also for the hand and foot.
6. Spica, used for the shoulder, hip and thumb
7. Divergent Spica, for a flexed joint, e.g elbow, knee, heel
8. Recurrent to cover tips of fingers or a stump.

Eye and Ear Bandage





8. Special bandages such as the capeline for the head, eye bandage, ear and breast bandages.

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.

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- 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.

Procedure

- 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.
- 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

Five 'P'

- Pain
- Pallor
- Pulselessness
- Palpate skin for warmth
- Paralysis

COSTING SHEET

S.no	Name of the component	Range	Quantity	Cost	Value in the nearby store
1	Gauze bandage roll	5cm	1	20	20
2	Gauze bandage roll	10cm	1	25	25
3	Elastocrepe bandage	10cm	1	175	175
4	Scissor	15 inch	1	75	75
5	Plaster	2.5cm	1	50	50
			Total	345	345

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CONCLUSION

Hence the demonstration and practice was given for applications of bandages.

Video Suggestions

S.no	Title	Link
1	Figure of eight	https://youtu.be/C8VfEvZVyhc
2	Types of bandages	https://youtu.be/Lv5wxDNnsEY

Simple Assessments

1. Mention the types of bandages?
2. What are the 5 P's to be observed after the application of bandage?

Student project	Practice the following bandages in the classroom 1. Simple spiral Bandage 2. Figure of eight 3. Arm Sling 4. Reefknot 5. Clove Hitch
Guest lecture suggestions	Casualty nurse
Field visit suggestions	Hospital visit- Casualty Orthopedic department

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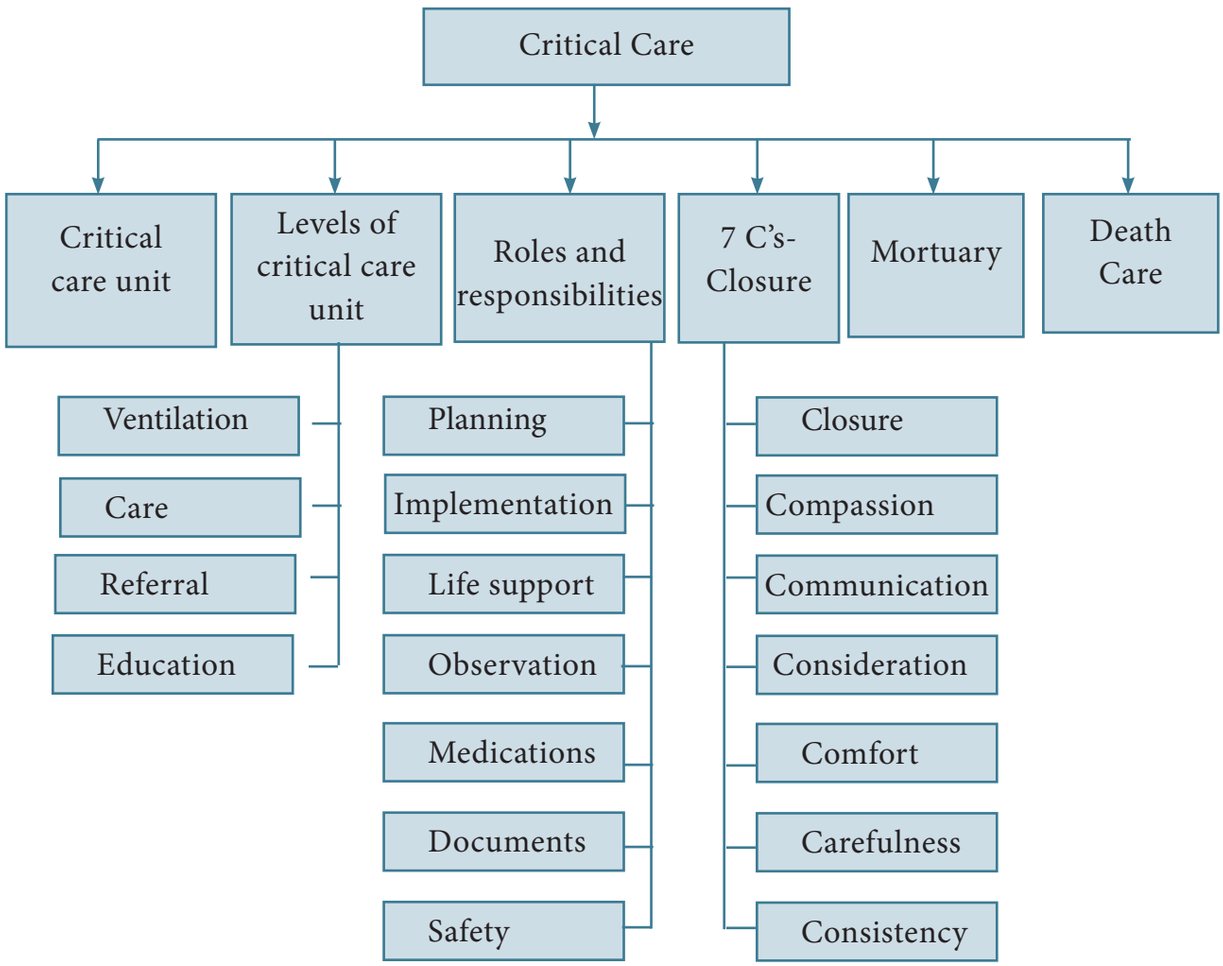
Practical 11

CRITICAL CARE NURSING

LEARNING OBJECTIVES

1. To enumerate the responsibilities of critical care nursing.
2. To explain the principles of critical care nursing.
3. To observe the death care.
4. To describe the equipments used in critical care.

OPERATIONS/ EXERCISES COVERED UNDER THE PROJECT



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TOOLS AND EQUIPMENTS REQUIRED

Section	S.No	Name of the tool	Range	Quantity
Critical care Unit	1.	Cardiac Monitor		1
	2.	Ventilator		1
	3.	Sphygmomanometer		1
	4.	BiPAP		1
	5.	CPAP		1
	6.	Pulse Oxymeter		1
	7.	Laryngoscope		1
	8.	Endotracheal Tube		1
	9.	Defibrillator		1
	10.	AMBU Bag		1

CRITICAL CARE NURSING

Definition

Critical care nursing is that specialty within nursing that deals specifically with human responses to life threatening problems.

7 C's of Critical Care

- Compassion
- Communication
- Consideration(of patients,relatives and colleagues) and avoidance of conflict.
- Comfort-Protection of patient from suffering
- Carefulness -Avoidance of injury
- Consistency (of observation and care)
- Closure(ethics and withdrawl of treatment)

Critical care nurse

A critical care nurse is a licensed professional nurse who is responsible for ensuring that acuity and critically ill patients and their families receive optimal care.

Critical Care Unit

Critical care unit is a specially designed and equipped facility staffed by skilled personnel to provide effective and safe care for patients with life-threatening problem that is potentially reversible.

Principles of Critical Care Nursing

- Anticipating nursing care
- Early detection and prompt action
- Expertise
- Supportive care
- Communication
- Collaborative practice
- Preservation of Patient's psychological defenses
- Prevention of infection
- Crisis intervention
- Stress reduction
- Ethical principles

Intensive Care Unit must have

- Electric power
- Water supply
- Oxygen,compressed air,vacuum
- Lighting

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- Environment control system

ICU EQUIPMENTS

Cardiac monitor

Cardiac monitor is a device that shows the heart's electrical activity as a wave pattern on a monitor.



Ventilator

Ventilator is a machine that provides mechanical ventilation by moving breathable air into and out of lungs, to deliver breaths to a patient who is physically unable to breathe or breathing insufficiently.



Sphygmomanometer

A Sphygmomanometer also known as blood pressure monitor. It is a device used to measure blood pressure, composed of the inflatable cuff to collapse and then release the artery under the cuff in a controlled manner and a mercury or aneroid manometer to measure the pressure.



BiPAP

BiPAP refers to bilevel or two-level positive airway pressure,

BiPAP-Inhale pressure
Exhale pressure
BiPAP- It is a machine can help push air into the lungs.



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CPAP continuous positive Airway pressure

This machine helps to a person who has obstructive sleep Apnea, to breathe more easily during sleep. ACPAP machine increases air pressure in throat so that our airway does not collapse while breathing.





Pulse oximeter

An Oximeter that measures proportion of oxygenated hemoglobin to total hemoglobin in blood of pulsating vessels, specially the capillaries of the finger or ear.

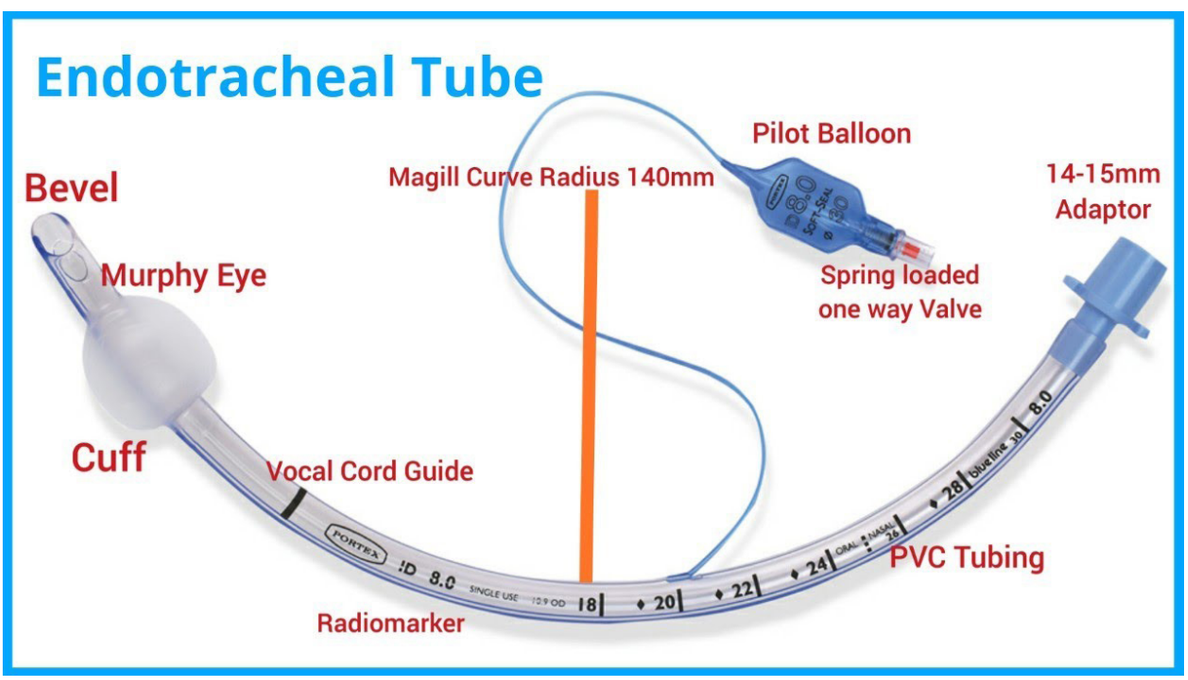
Laryngoscope

An instruments for examining the larynx,or for inserting a tube through it.



Endotracheal tube

The endotracheal tube is a tube constructed of polyvinyl chloride that is placed between the vocal cords through the trachea.



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Defibrillator

Defibrillator is used to treat for life-threatening cardiac dysrhythmias,specifically ventricular fibrillation and non-perfusing ventricular tachycardia.A defibrillator delivers a dose of electric current to the heart.



AMBU Bag

Artificial Manual Breathing Unit.

AMBU bag is a hand held device commonly used to provide positive pressure ventilation to patients who are not breathing or not breathing adequately.



Roles and responsibility of critical care

- Assessing a patient's condition and planning and implementing patient care plans.
- Provides comprehensive bedside care to patient
- Treating wounds and providing advanced life support
- Assisting physicians in performing procedures
- Able to attach equipment on patients as ordered and interprets the data, graphs on monitor etc
- Observing and recording patient vital signs
- Ensuring the ventilators, monitors and other type of medical equipment function properly
- Administering intravenous fluids and medication
- Collaborating with fellow members of critical care team
- Responding to life saving situations, using nursing standards and protocols for treatment
- Acting as patient advocate
- Documents appropriately
- Ensures patient safety
- Follows the policies and procedures of the unit and institution
- Is an expert in nursing knowledge and practice
- Promotes Quality Assurance in nursing
- Providing education and support to patient families

HOSPITAL EMERGENCY CODES

Hospital emergency codes are used in hospitals worldwide to alert staff to various emergencies. The use of code is intended to convey essential information quickly.

Medical centre hospital has a system for responding to the following code.

EMERGENCY CODES

Code Blue	-	Medical Emergency
Code Red	-	Fire Emergency
Code Pink	-	Child Abduction
Code Orange	-	Hazardous Materials
Code Green	-	Emergency Operation Plan Activation
Code Yellow	-	Disaster

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CARDIO-PULMONARY RESUSCITATION (CPR)

Definition

Resuscitation is a method which includes all measures that are applied to revive patients who have stop breathing suddenly and unexpectedly due to either respiratory or cardiac failure.

Purposes

1. To maintain and open and clear airway(A)
2. To maintain breathing by artificial ventilation(B)
3. To maintain blood circulation by external cardiac massage(C)
4. To save life of the patient
5. To provide basic life support

Indications

Cardiac Arrest

1. Ventricular fibrillation(VF)
2. Ventricular tachycardia(VT)
3. Asystole
4. Pulseless electrical activity

Respiratory Arrest

1. Drowning
2. Stroke
3. Foreign body in throat
4. Smoke inhalation
5. Drug overdose
6. Electrocution or injury by lighting
7. Suffocation
8. Accident,injury
9. Coma
10. Epiglottis paralysis.

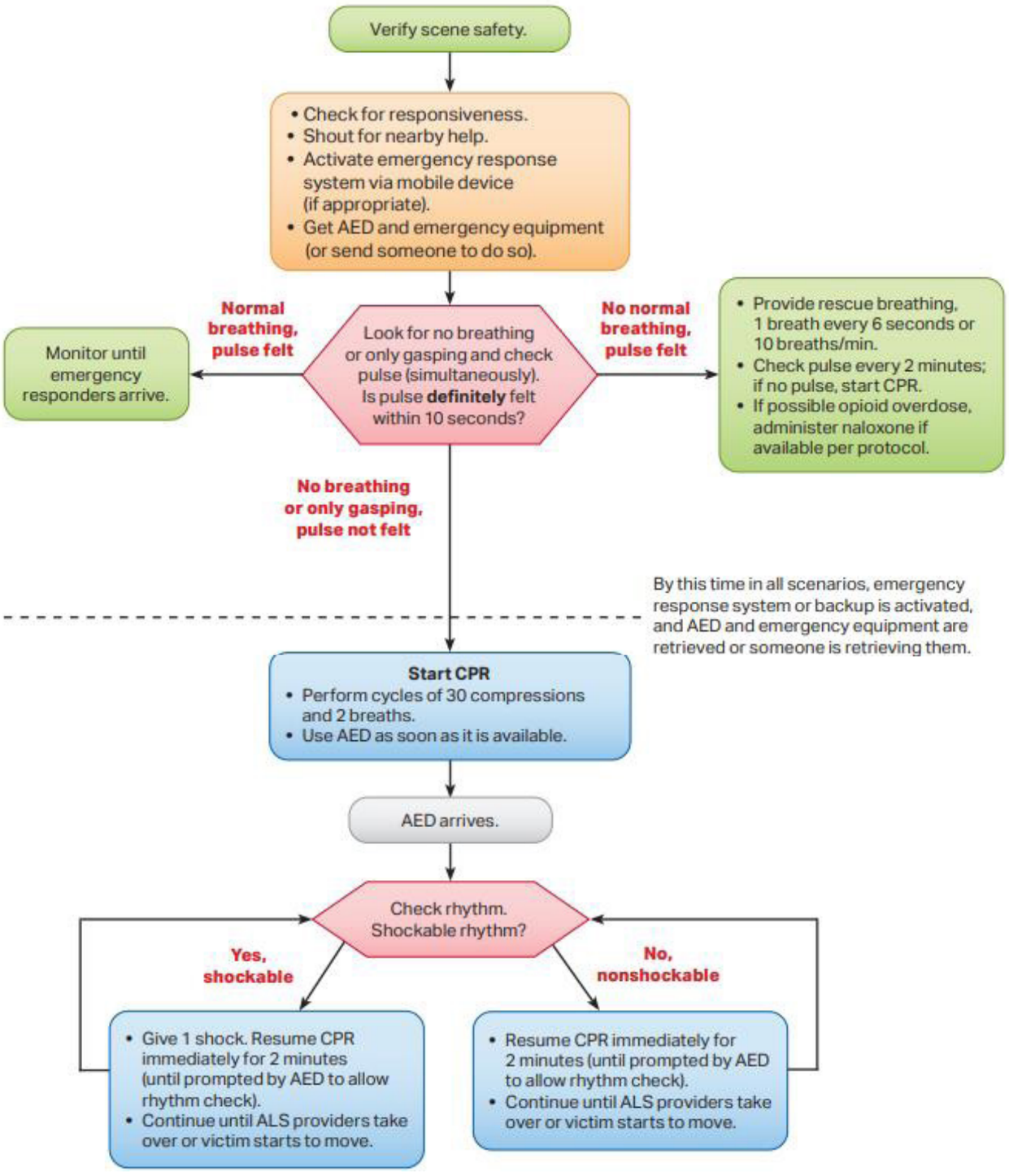
PRINCIPLES OF CPR

1. To restore effective circulation and ventilation
2. To prevent irreversible cerebral damage due to anoxia.



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Adult Basic Life Support Algorithm for Healthcare Providers



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DEATH CARE

After death the body undergoes many physical changes.So care must be provided as early to prevent tissue damage/disfigurement of body parts.

Purpose of dead body care

- To prepare the body for the morgue
- To prevent discoloration or deformity of the body.
- To protect the body from postmortem discharge.

Care of the body after death

- Death declaration/death certificate by physician.
- Autopsy(written permission)
- Customs and principles are kept in the mind.
- Positioning body straitened arms laid of the side.
- Eyes are closed as in sleep
- Dentures are removed and prepare chin in position with bandaging.
- Remove a appliances used for patient care(eg.Catheter tubings etc)
- Remove all appliances used for patient care(eg.Catheter tubings etc)
- Remove ornaments and list them to relatives.
- All orifices are to be plugged with cotton to prevent escape of body discharges.
- Prevent escape of the body discharges.
- Prevention of spread of diseases.
- Send body clean and neatly dressed
- An identification tag for body.
- If relatives are present then body is handed over them with proper written legal authority for register of death.
- Care of unit

Law during handover dead body

Federal and state law require that institutions develop policies and procedures for certain events that occur after death.

- Requesting organ or tissue donation
- Autopsy
- Certifying and documenting the occurrence of a death
- Providing safe and appropriate post mortem care.

Mortuary room

A mortuary is a room or area, often in a hospital,where dead bodies are kept.You can also use the word mortuary to talk about a funeral home. When a person dies in a hospital,his body is usually moved to a mortuary before autopsy takes place.A mortuary is also where a body is kept until its buried or cremated.

CONCLUSION

Nurse working in critical care unit should be aware of equipments used and her responsibility in critical care unit.

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Video Suggestions

S.no	Title	Link
1.	Machines used in ICU	https://youtu.be/ouMtxOqFNug
2.	Death care procedure in nursing	https://youtu.be/2nJY8U31rOk

Simple Assesments

1. Define critical care nursing.
2. Mention the equipments used in Critical Care Unit
3. Write the purposes of dead body care

Student project	1. Observation in Critical Care Unit 2. Assess the nurse while giving death care
Guest lecture suggestions	Nursing incharge in critical care unit
Field visit suggestions	Hospital visit in intensive care unit

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VOCATIONAL - Class XI
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