

# Health and Physical Education

## Grade - 7

Government of Nepal  
Ministry of Education  
**Curriculum Development Centre**  
Sanothimi, BhaktapurPreface

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## Preface

The curriculum and curricular materials have been developed and revised on a regular basis with the aim of making education purposeful, practical, relevant and job-oriented. It is necessary to instill the feeling of nationalism, national integrity and democratic spirit in students and equip them with morality, discipline and self-reliance so as to develop in them social and personal skills as well as the basic competencies of language, science, occupation, information and communication technology, environment and health, and life skills. It is also necessary to enable them to appreciate, preserve and promote arts and aesthetics, social norms and values and ideals. Moreover, in order to develop an equitable society, it is necessary to inculcate students with respect for ethnicity, gender, disabilities, languages, religions, cultures and regional diversity. Likewise, education should also help them to be well-informed of human rights and social norms and values so as to make them capable of playing the role of responsible citizens. This textbook has been developed in this form based on the Basic Education Curriculum 2069 (Grade 6 to 8), incorporating the feedback obtained from teachers, students, parents and other stakeholders during its piloting.

This textbook was translated and edited by Dr. Khem Bahadur Karki, Min Bahadur Achhami, Shanta Bahadur Shreshtha. In bringing out this text book in this form, the contribution of the Executive Director of CDC Mr. Diwakar Dhungel, Deputy Director Tukaraj Adhikari, Prof. Dr. Ramkrishna Maharjan, Dr. Chitra Bahadur Budhathoki, Krishna Prasad Dhakal, Shyamkrishna Bista, Gokarna Thapa and Punam Dangol is highly commendable.

Language of this book was edited by Chandra Kanta Bhusal and Madhu Upadhaya. Typing was done by Abhaya Shrestha. The layout design of the book was done by Jayaram Kuikel and Bhawana Sharma. The illustration of the book was done by Sunil Ranjit and Gautam Manandhar. CDC extends sincere thanks to all those who have contributed in the development and revision of this text book.

Textbook is considered as an important tool of learning. Experienced teachers and curious students can use various learning resources and tools to achieve the competencies targeted by the curriculum. An attempt is made to make this textbook activity oriented and interested as far as possible. The teachers, students and other stakeholders are expected to make constructive comments and suggestions to make this book a more useful learning material.

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# Health Education

## The Human Body

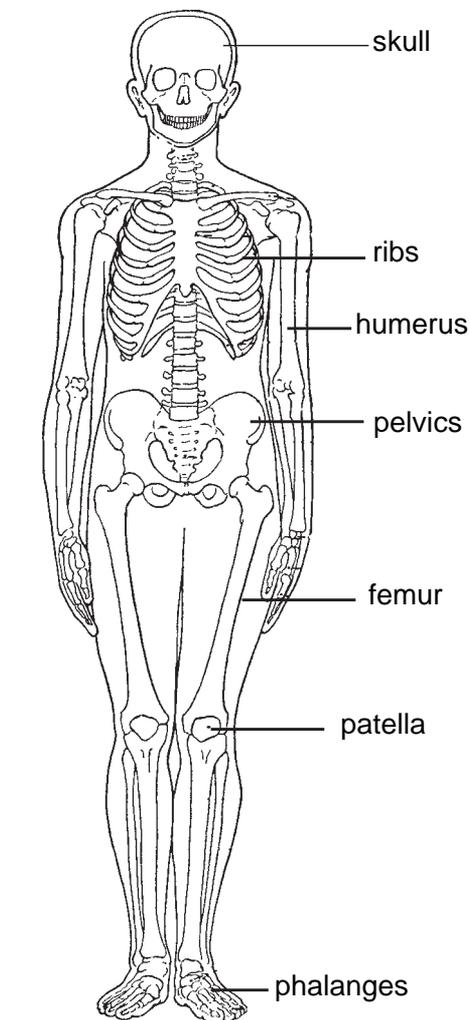
There are innumerable cells in our body. These cells help in the process of self repairing and production of new cells in our body continuously. Tissues are made up of a group of cells. Tissues help to perform specific functions in the body. Different types of tissues work together to build different organs in our body. Likewise, different organs work together to build various systems. Our body consists different systems that work together. In this lesson, we are going to learn about the functions of some important systems in our body.

### 1. Skeleton System

The skeleton system is a framework of different types of bones. Our skeleton support our body, protects the internal organs and give our body the shape. Due to the presence of calcium in the bones, they are repaired easily in case of any damage in them. Movement of the different joints is possible due to the structure of the bones. In order to make our bones strong, we should have balanced diet, do physical exercise or play different games regularly.

#### Types of Bones

The skeleton system of our body consists of 206 bones of different shapes and sizes. There are long bones, short bones, irregular bones and flat bones.



**a) Long Bones**

Long bones are found in our Limbs (arms and legs). Long bones are found in the following parts of our body.

- (i) Humerus (bone of upper arm)
- (ii) Radius and Ulna (bone of lower arm)
- (iii) Femur (bone of thigh) and
- (iv) Tibia and Fibula (bone of lower leg) etc.

**b) Short Bones**

Short bones don't are found in different parts of our body. The examples of short bones are:

- (i) Phalanges (bones of finger)
- (ii) Carpals (bones of wrist) and
- (iii) Metacarpals (bones of palm) etc.

**c) Irregular Bones**

Irregular bones don't have any definite shape and size. The examples of irregular bones are:

- (i) Vertebrate (backbone) and
- (ii) Facial bones (cranium)

**d) Flat Bones**

Flat bones are wider in size. Specially they are situated in various parts of our body where they are required to protect the internal organs. The examples of flat bones are:

- (i) Skull (bone of head)
- (ii) Scapula (shoulder-blade)
- (iii) Sternum (bones of chest) and ribs etc.

**Functions of Bones:**

The major functions of the bones are given below.

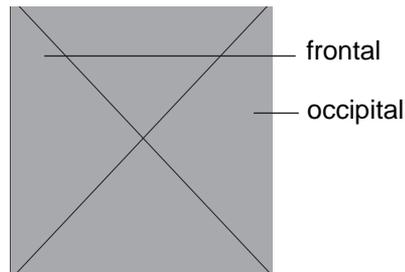
- (i) Bones give shape and size to our body.
- (ii) Bones assist in body movement with the support of muscles.
- (iii) Bones protect the delicate organs of the body such as heart, lungs, liver, brain, spinal cord etc.
- (iv) They store minerals like Calcium and Phosphorus.
- (v) They support the body.
- (vi) The bones provide the place for muscles to be attached.
- (vii) The bone marrow in the bones help in producing red blood cells.

## Joints

A joint is the meeting place of two or more than two bones. The movement in the joints is possible due to the flexibility of ligament that lies between the bones in the joints. The joints are of different types. We shall learn about some important joints here.

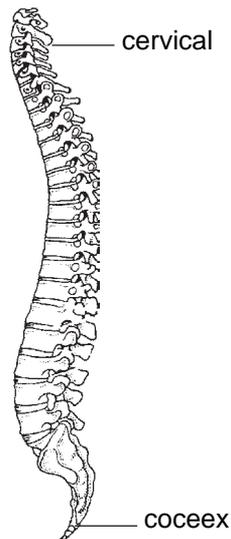
### a) Immovable Joints

These types of joints do not move at all. The fibrous connective tissue that looks like rubber (tough elastic substance) between such joints, connects the bones tightly. The joint of skull is a good example of immovable joint.



### b) Semi Movable Joints

The joints which can partially move are called semi movable joints. There is a layer of cartilage between these joints which permits the bones for their slight movement. The joints of sternum, the joints between bodies of vertebrate, joints of symphysis pubis etc. are the examples of semi movable joints.

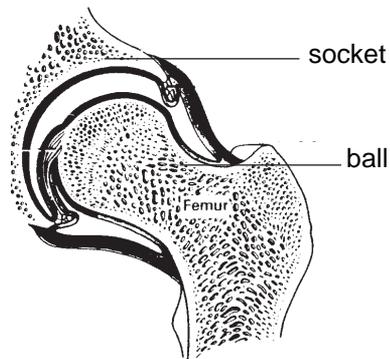


### c) Movable Joints

The joints which can move freely are called movable joints. Movable joints are classified into five different types according to their movement.

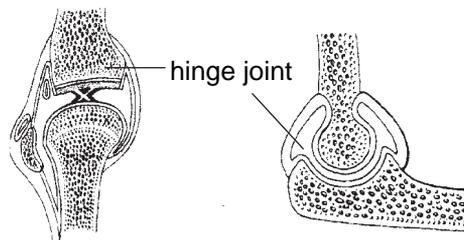
### (i) Ball and socket joint

In this type of joint, one bone which ends in a ball shape fits into the socket shape of the other and allows the movement in all directions. These kinds of joints are found in shoulders and the hips where, the ball shaped end of the humerus is connected with the socket of the shoulder and the ball shaped end of femur is connected with the socket of the pelvis respectively.



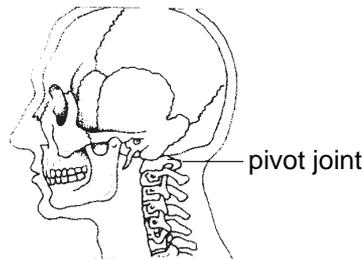
### (ii) Hinge Joint

In this type of joint, the bones can be contracted and stretched in one direction only but not in the opposite direction. The joints of knees, elbows and fingers are the examples of hinge joint.



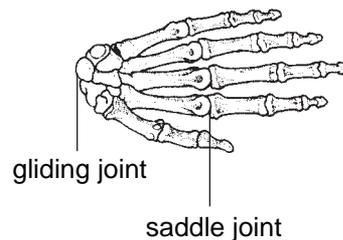
### (iii) Pivot Joint

In this type of joint, a bone can move easily in all directions on the top of another bone like a pin. For example, the top of the bone of cervical vertebrae. As a result we can move our head to the left and right. Likewise, radius and Ulna are also the examples of pivot joint.



### (iv) Gliding Joint

In this type of joint, one bone glides across the other bone. For example, the small bones of wrist and ankle are layered on each other. With the help of these joints, we can move our wrist in all directions and contract and stretch it left and right as well as back and forth.



### **(v) Saddle Joint**

In this type of joint, the convex surface of one bone is joined between the concave surface of another bone which permits the bones for back and forth movement. Phalanges and metatarsophalangeal joints are the examples of saddle joints.

The structure of joints or bones may be damaged due to accidents or any other reasons. This can lead us to temporary or permanent disability of different organs in our body. To overcome such situation, artificial joints and organs have been developed.

## **2. Muscular System**

Both the skeleton system and the muscular system play significant role equally for forming the shape and structure of our body. About 40 percent of our body is made up of muscles. The muscle not only supports the bones but also helps in the movement of the whole body due to its stretching and contracting features. The functions like blood circulation, sending the food to the digestive canal from the mouth, excretion of urine from the Urethra, respiration, giving birth to a baby etc. are possible because of contraction and stretching features of muscles.

### **Types of Muscles:**

There are three types of muscles in human body. They are

- (i) Voluntary Muscle
- (ii) Involuntary Muscle and
- (iii) Cardiac Muscle

Their short explanation is given below:

#### **a) Voluntary Muscle**

The muscles which move/function according to our wishes are called voluntary muscles. They are connected with the bones. Voluntary muscles are found in various parts of the body such as: head, neck, chest, arms, hands, vertebra, stomach, legs, etc.

#### **b) Involuntary Muscles**

The muscles which do not function according to our wishes are called involuntary muscles. These muscles are soft in nature. They are found in the stomach, intestine urinary bladder, glands, trachea, uterus, on the wall of blood vessels etc. These organs also work continuously and automatically whether we take rest or sleep on the bed at night.

#### **c) Cardiac Muscle**

These types of muscles are found in the heart only. We cannot move them also

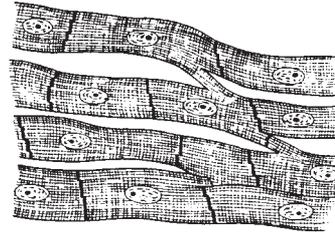
according to our wishes. The cardiac muscles function continuously, automatically and involuntarily.



Voluntary Muscle



Involuntary Muscle



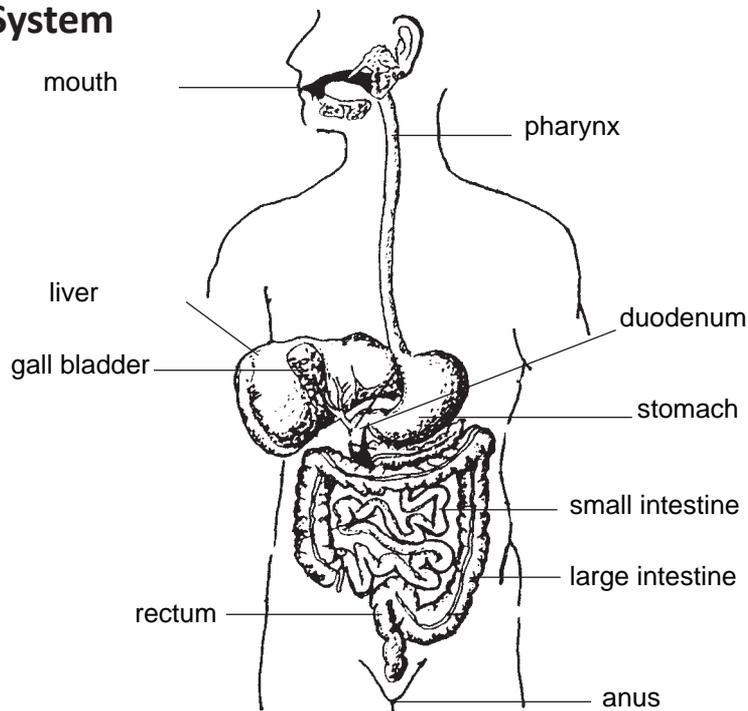
Cardiac Muscle

### Functions of the muscles

- (a) Muscles are attached to the bones and they furnish proper shape to the body.
- (b) Muscles produce movement to the whole body working together with the bones.
- (c) Muscles help in various process of the body like respiration, blood circulation, digestion etc.

Muscles cannot perform their respective functions if there is any infection or imbalance (deviation/cramp) or any injury in them. This may lead to physical disability in our body.

### Digestive System



Digestive system is the process of breaking down of food eaten into small soluble substances, absorbing the nutrients and excreting the undigested ones as stool, through the anus. It is necessary to know about the different organs and their functions in the digestion process. The functions of the organs that take part in the digestive system are given below.

**(a) Mouth**

Mouth is the first organ of the digestive system. It is here where the digestion of the food begins. Immediately after the food is taken into our mouth, the teeth chew and crush them into fine pieces. The tongue helps in mixing the food and the saliva secreted by the salivary glands helps in making the food juicy and smooth so that it can be swallowed easily.

**(b) Pharynx**

The pharynx is situated at the back of the mouth and the nose. It is triangular in shape. While swallowing the food, it passes to the Oesophagus through the Pharynx. If there is any kind defect in the structure of the Pharynx, we cannot produce clear or distinct sound. This situation is called voice-disability. This kind of disability may occur in Palatolabial.

**(c) Oesophagus**

The oesophagus joins the pharynx with the stomach. It is made up of muscles. Due to its slippery nature, the food easily passes to the stomach after being swallowed.

**(d) Stomach**

The stomach is composed of different muscles. It is connected with the Oesophagus in the upper part and the small intestine in the lower part. The swallowed food is stored in the stomach. There are many glands on the inner wall of the stomach to produce digestive enzymes. These enzymes help in the digestion of the food. The muscles of the stomach help in mixing up the food to there enzymes.

**(e) Small Intestine**

The small intestine extends from stomach to the large intestine. It is about 5-10 metres long. The beginning part of the small intestine is called duodenum. The bile juice from the liver and Pancreatic juice from the pancreas help in the process of digestion in this part. The middle portion of the small intestine is called jejunum and the last poriton of it is called ileum. There are innumerable fiber like projections in the inner wall of the small intestine called 'Villi'. They look like fingers if they are magnified. There is blood circulation in the 'Villi' which absorbs the nutrients from

the food and supplies to the various parts of the body through blood circulation.

(f) Large Intestine

The large intestine extends from the small intestine to the anus. It is about 1.5 metres long. The portion of the large intestine connected with the small intestine which moves upwards is called ascending colon. Likewise, the middle portion of the large intestine which has horizontal shape is called transverse colon and the last portion of it which moves downwards is called descending colon. This portion reaches to the anus through rectum. It does not have the role in digestion process. Instead, it absorbs water, glucose, minerals and excretes unwanted food particles through anus as faeces stool.

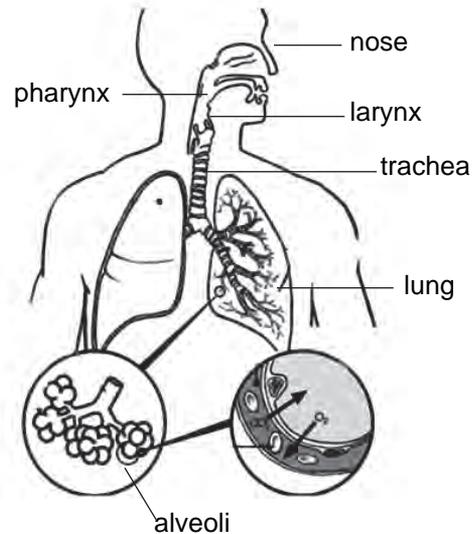
### **Digestive Process**

The digestion of food begins in the mouth. Our teeth help to chew and crush the solid food into fine pieces. The Saliva makes the crushed food fibrous and juicy. The tongue helps in mixing the food by overturning and shifting it. We Swallow the food when it becomes soft and juicy. Then the food passes to the stomach through pharynx and Oesophagus. Gastric juice makes the food softer and kills the harmful germs. Then, the food passes to the duodenum of small intestine where bile juice from the liver and pancreatic juice from pancreas chemically break down the food to even smaller particles.

The food then reaches to the jejunum where different digestive enzymes are excreted and mixed up with the food and change the food into softer and fine particles. There after, the Villi in the ileum of small intestine absorb nutrients from the food. Then the capillaries in the Villi carry the nutrients to each and every cell from there. The remaining solid waste of the food goes to the large intestine where water is absorbed. Various germs help to break down and decay the remaining undigested food particles there. Finally, the undigested and unabsorbed remains are passed/released out as stool/faeces through the anus.

## Respiratory System

Respiratory system is made up of the organs and the process/structure which help in the respiration process or interchanging the gasses in our body. The process of inter exchanging of gasses between blood and the environment inside the lungs is called external respiration and the process of interchanging of gasses between tissue and blood is called internal respiration. It is necessary to know about the organs that take part in the respiratory system to learn more about the respiratory system. The organs of respiratory system are explained below:



### (a) Nose

The nose is taken as the external organ of the respiratory system. Its main function is to send fresh air to the lungs and release the carbon dioxide out. Cilia in the nostrils stop the impure dust particles from the environment and filter the air. Likewise, the nose makes the taking in air warm and increases its humidity.

### (b) Pharynx

The pharynx is connected to the nose and the neck. Pharynx works as the respiratory and digestive organ. Pharynx is also important for producing sound. It makes the air warmer, increases its humidity and sends it to trachea.

### (c) Larynx

The larynx is extended from the last portion of the tongue to the starting portion of the trachea. The upper part of the Larynx is wider in size. The lower part is smaller and round and is connected to trachea. The larynx works as a tube/passage to send the hot and moistened air into the trachea by warming and increasing its humidity. It releases the carbon dioxide gas that came out of trachea. It also helps in producing sound.

### (d) Trachea or wind pipe

The trachea is a muscular tube made up of the small round shaped pieces of cartilage joined together. It helps to supply oxygen and to release carbon dioxide gas out.

### **(e) Bronchi**

The trachea is divided into two small muscular tubes in its lower portion which are called the bronchi. They are similar in their structure with the trachea. The right bronchus is slightly longer than the left one. Bronchi are connected to the lungs where they are subdivided into the bronchioles. The bronchi work as the air passage to send the fresh air to the bronchioles and receive the carbon dioxide gas from the bronchioles and send back to trachea.

### **(f) Bronchioles**

The bronchioles are the smaller tubes subdivided from each bronchus which are finally connected to the Alveoli. In the wall of the Alveoli, the finest bronchioles are expanded which help in the interchange of oxygen and carbon dioxide gas. Similarly, the alveoli is surrounded by a network of the capillaries. The process of interchange of gases takes place in the Alveoli in which the carbon dioxide gas is sent to the trachea and the fresh air passes into the blood.

### **(g) Lungs**

The lungs are soft and delicate organs situated inside the ribs of our chest. The right lung is divided into three lobes (Upper, middle and lower). Likewise, the left lung is divided into two lobes (Upper and Lower). The lungs consist of bronchioles, alveoli, capillaries, pulmonary veins, arteries etc. Inside it, there are small alveoli. During the respiratory process, there is interchange of gases in them.

## **Respiratory Process**

The lungs get contracted and the chest gets expanded when we take in the fresh air. This is called inspiration. When the tissues and diaphragm of the chest return back to the former state, the chest gets smaller and the carbon dioxide gas is released out. This is called expiration. Generally, an adult during rest, respire 18-20 times in a minute. The rate of respiration gets increased during the time of fever, physical exercises and emotional stages.

The oxygen from the atmosphere reaches to the alveoli of the lungs through nose, trachea and bronchi. The blood capillaries are expanded in the alveoli with their network. The fresh air stored in the alveoli goes to such blood capillaries. The interchange of oxygen and carbon dioxide gases takes place there. After this process, the blood mixed with oxygen goes to the heart. The heart pumps the blood to each and every cell through the arteries. Thereafter, oxidation process takes place and energy, water and carbon dioxide are released. The carbon dioxide gas goes to the capillaries. The blood which is mixed with carbon dioxide goes to the heart through pulmonary veins. The heart sends it to the capillaries in the

lungs where interchange takes place between Oxygen and Carbon dioxide gases. Then, the carbon dioxide gas is released out through the bronchioles, bronchi, trachea and finally nose or mouth. Thus, human body continuously takes in oxygen and releases out the carbon dioxide gas produced in the body.

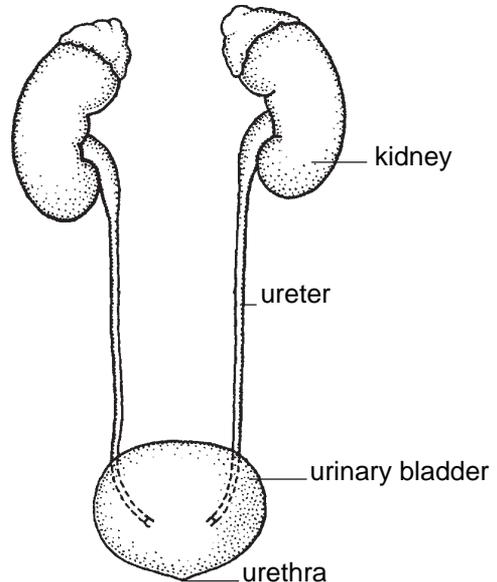
## The Urinary System

The Urinary system is concerned with filtering out excess fluid and other soluble substances and excreting them from our body in the form of urine.

### The organs of Urinary system

The Urinary system includes the following organs

- (a) Kidneys - two
- (b) Ureters - two
- (c) Urinary Bladder - one
- (d) Urethra - one



### (a) Kidneys

The Kidneys are a pair of bean shaped, reddish brown organs. They are situated just above the waistline on both sides of the vertebral column. They are covered by renal capsule. The kidneys have two parts. The outer portion is called cortex which is of dark grey colour. The inner portion is called medulla which is of violet colour. The cortex of kidney consists numerous tubules called nephrons. Nephrons filter the blood to form urine. Nephrons consist of bowl (cup) shaped Bowman's capsules and collecting tubules. The kidneys filter the waste materials like urea, minerals and excess water and other poisonous products from the blood and send it to the urinary bladder through ureters.

### (b) Ureters

The ureters are two tubes that extend from the kidneys to urinary bladder. Urine filtered in kidneys flows to the urinary bladder through these tubes.

### (c) Urinary Bladder

The Urinary Bladder is a reservoir for urine which is made up of involuntary or smooth muscles. Urine that flows through the ureters is stored here. When the urinary bladder collects nearly 300-400 ml of urine a person feels the need to urinate. The urinary bladder can hold 500-700 ml urine.

#### **(d) Urethra**

The Urethra in the males is important for both the urinary and reproductive systems as it helps to release both urine and sperm. But in the females, urethra and vaginal canal are different.

#### **Mechanism of Micturition**

The Kidneys filter urine and the waste materials like urea and other soluble substances from the blood and send it to the urinary bladder through the tubes called ureters. Urine is temporarily stored in the urinary bladder. When the bladder collects nearly 300-400 ml urine a person feels the need to urinate. This process is completed with the help of Autonomic Nervous System. Mechanism of the micturition depends on the amount of water or fluid a person has taken.

#### **Summary**

- (a) Skeleton system is made up of a framework of various bones which gives the shape and strength to the body.
- (b) Muscular system helps in the movement of bones, joints and our whole body. It also supports respiratory, digestive and blood circulation system.
- (c) Digestive system is a process of breaking down of food that we eat into small soluble substances, absorbing the nutrients and throwing away the undigested materials as stool.
- (d) Respiratory system is the process of supply of oxygen to the cells and tissues of our body from the environment, exchange of oxygen and carbon dioxide gases and the removal of carbon dioxide from tissues to the environment.
- (e) The Urinary system is related to the filtering out of the excess fluid and other soluble substances, and excreting them from our body in the form of urine.

## Exercise

### A. Fill in the blanks with suitable words.

- (a) Lungs, trachea, bronchi etc. are the organs of \_\_\_\_\_ system.
- (b) Urinary bladder works to collect \_\_\_\_\_.
- (c) Finger like projections found in the small intestine are called \_\_\_\_\_.
- (d) The muscles which function according to our wishes are called \_\_\_\_\_.
- (e) There are cup shaped \_\_\_\_\_ in kidneys for the filtration of urine.

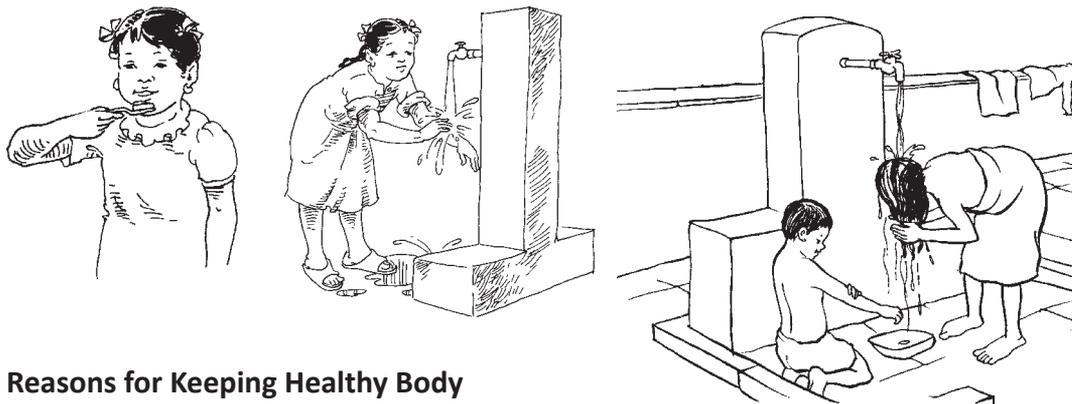
### B. Answer the following questions.

- (a) Explain the types of bone in brief.
- (b) Write down the functions of bone.
- (c) What are involuntary muscles? Where are they found?
- (d) How do the voluntary muscles work?
- (e) What is digestive system?
- (f) How does stomach help in digestion?
- (g) What juices are collected in the duodenum? Where do they come from?
- (h) How are the nutrients absorbed in the small intestine?
- (i) Explain the respiratory process in brief.
- (j) What is Urinary System? Name all the organs that are involved in this system.
- (k) Write short notes on
  - (i) Pharynx
  - (ii) Alveoli
  - (c) Ureters

Personal health can be defined as a state of complete physical, mental and social well-being through one's own active efforts and activities for healthy life. In order to maintain good personal health, we should develop healthy habits. Therefore, personal cleanliness is required for good health. Regular cleanliness of our external and internal organs leads us to be healthy. Washing hands with soap, taking a bath regularly, proper care of nose, ears, eyes and skin, brushing teeth, regular excretion of stool and urine, avoiding the consumption of tobacco, alcohol, drugs and other harmful substances etc. come under personal health.

## 1. Care of our body

Care of body refers to taking care of one's body. It is necessary during the stages of growth and development in which we can see many physical changes in our body, to follow the safety measures during the accidents and performing our daily duties and responsibilities. If we take care of our body properly all the systems in our body can carry out their respective functions well and we can be free from any kind of diseases.



### Reasons for Keeping Healthy Body

- To live a long and healthy life
- To be active and smart
- To live a happy, joyful and successful life
- To prevent diseases.

### Some Measures to Maintain Good Health

- We should focus on personal cleanliness.
- We should have nutritious food like grains, peas, fish, meat, milk, eggs, green vegetables and seasonal fruits regularly.

- c) We should do adequate physical exercises or play games.
- d) All doses of vaccination should be taken timely within the year after one's birth.
- e) Addiction of tobacco, wine, drugs and other harmful substances etc. should be avoided.

## **2. Care of Eyes, Nose and Ears**

Taking care and cleanliness of eyes, nose and ears are necessary for good personal health. We should brush our teeth daily, wash our face, focus on cleaning methods and proper care of eyes, nose and ears. In this lesson, we learn about cleaning methods and taking proper care of these organs of our body.

### **Care of the eyes**

- a) We should be very careful while using sharp-pointed objects. We should not use such objects if possible.
- b) We should stay far away from dust and smoke.
- c) We should protect our eyes from bright light.
- d) The books should be kept at a comfortable distance while reading them.
- e) We should not use the computers for longer hours.
- f) We should eat yellow coloured fruits and green vegetables frequently, as these food contains Vitamin A.
- g) We should consult the doctor immediately if there is any infection in the eyes.

### **Methods to keep the eyes clean**

We should not form the habit of rubbing the eyes. We should use neat handkerchief to remove dust, unwanted dirt and insects etc. from the eyes. We should regularly wash our eyes with clean water every morning and evening. We can also sink our eyes in a flat bowl filled with clean water and open and close them for several times in order to remove the dust particles from our eyes.

### **Care of the Nose**

- a) We should discourage habit of poking our nose or putting any objects into our nostrils.
- b) We should use mask to be protected from dust and smoke.
- c) We should not blow the nose with great force to waft mucus.
- d) We should not remove Cilia from our nostrils.
- e) If we feel any kind of nasal infection, we should consult a doctor.

### **Methods to keep nose clean**

We should not let the nose be blocked with mucus. We should use neat handkerchief to wipe mucus. To remove the dust and other nasal discharges out, we should close one of the nostrils and blow gently during the time of washing our face or as per the need.

### **Care of the Ears**

- a) We should avoid listening to loud music or sound.
- b) We should not try to remove the wax from the ears with any pointed object.
- c) We should not poke our ears with any object.
- d) We should not pour oil into the ears. We should consult the physician even for putting the ear-drops.
- e) We should avoid the habit of listening to music using the headphones.
- f) In case of any earache or ear infection, we should immediately consult a doctor.

### **Methods to keep the Ears clean**

We shouldn't develop the habit of poking our ears. But after taking a bath or as per the need, we can clean our ears with the cotton buds by moving them gently to remove dirt and dust from the external ears. We can splash water with our hands into the ears to remove the foams of soap at the time of taking a bath. While splashing water into the ears we should incline the head to the respective side.

## **3. Nutritional Status**

We should manage our weight according to the height of our body in order to be healthy. In the young age, the height and the weight must grow according to the age but later in the adulthood the weight of the body should be maintained according to the height. Therefore, to keep the records of weight and height is a good way to know about the condition of nutrition. If our body is underweight or overweight according to the height, the state of nutrition is not said to be good. To maintain good status of nutrition in our body, we should have balanced diet and do physical exercises regularly or play games.

## **4. Physical posture / state**

We should also take care of the physical posture for healthy body. We should maintain good posture while sitting, standing and walking. If we are unable to maintain good physical postures, the whole body structure may look ugly.

## 5. Mental State

The various changes may take place in the mental state of individuals along with the physical changes during the stages of growth and development. When a person develops to adolescence, the physical changes may take place rapidly and that can be the matter of strangeness for many boys and girls. But the adolescents should take the changes as natural phenomenon and accept the changes naturally.

### Project Work (Activities)

Find out the weight and height of all the students in your class with the help of your teacher and prepare a table with the names, address, age, height and weight of all students and paste it on the wall.

## Summary

We should focus on personal health for our healthy body. Taking care of the body having good knowledge of cleanliness and following the healthy way of living come under personal health.

## Exercise

### A. Put a tick (✓) to the correct sentence.

- a) Personal cleanliness is not necessary at home.
- b) Personal cleanliness is not essential for good health.
- c) Games and physical exercises help us to be fit and healthy.
- d) Sudden increase in weight is considered to be good for health.
- e) We should see bright light to keep our eyes healthy.

### B. Write short answer to the following questions.

- a) What do you mean by taking care of our body?
- b) Write down any three ways to take care of nose.
- c) What things should be considered to maintain good body posture?
- d) Write down any three measures / things while taking care of the ears.
- e) Why should we maintain healthy body? Give reasons.

# Nutrition

Foods are of different types. The amount of food that we need to eat depends on the basis of the size of body and the type of work we do. Too much and too less nutrients are harmful for the body. Specially, breast feeding mother and infants who don't get proper amount of nutritious food can be blind and physically and mentally disable. So, we need to eat according to our needs. We should care about the balance of nutrients in food while eating / having a meal. A meal should contain proper amount of nutrients like : carbohydrates, protein, fat, vitamins, minerals and water. This is called a balanced diet.

## A. Nutrients

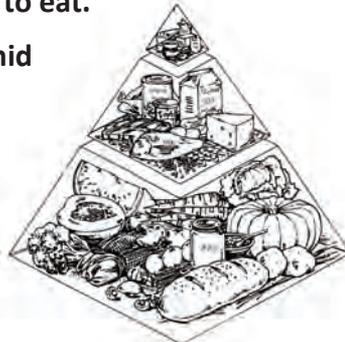
The useful chemical substances contained in the food are called nutrients. Nutrients included in meal like carbohydrates, protein, vitamins, fat, minerals, water etc supply the body with energy, help it to grow and protects the body from diseases. Generally, the major food resources are : rice, wheat, maize, buckwheat, barley etc. Likewise, gram, beans, peas are major cereals and apple, orange, banana, guava, mango, Mausam etc are fruits. Fish, buff, mutton, chicken, cheese, barfi, chhurpi, etc are major, meat and milk items (products). These different types of foods can be classified into three groups like energy giving, body building and body protecting foods which is presented in the table below :

Energy giving food	body building food	body protecting food
Potato	Pulses	Mango
Wheat	egg	lemon
rice	fish	carrot
oil	milk	onion
bread	dairy products	green vegetables
maize	meat	apple
barley	soyabean	orange
yam	cereals	banana
sweet		papaya
Mausam		
potato		

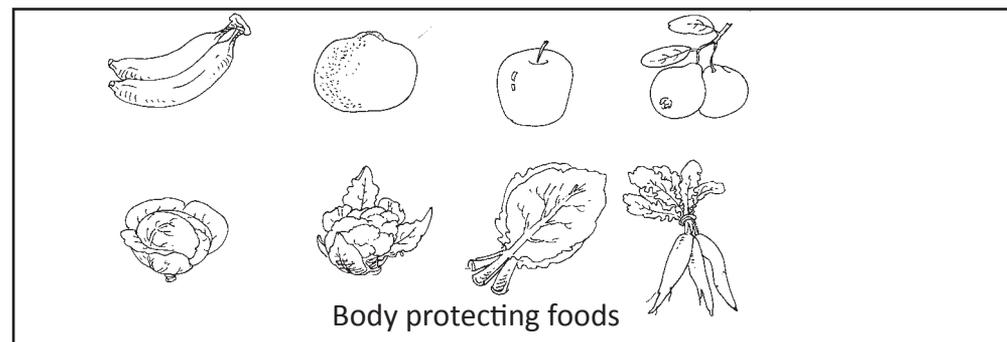
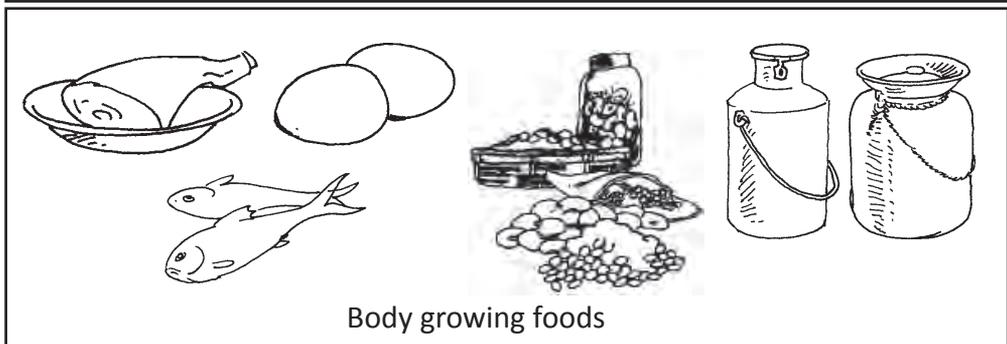
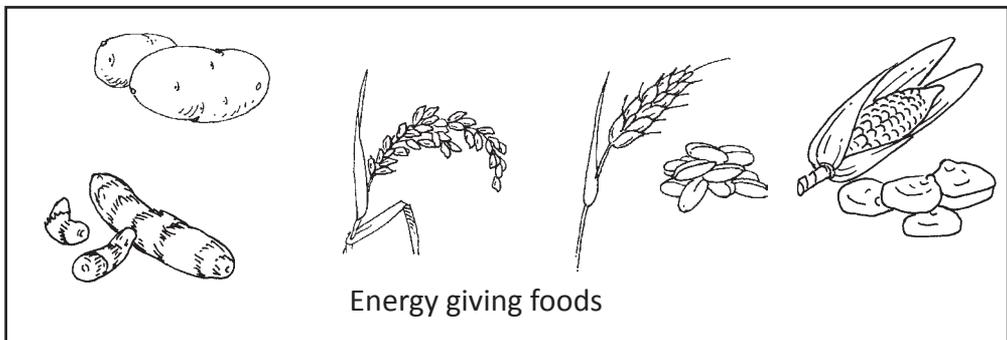
## Activities

1. Let's see the food pyramid given below and learn to prepare the amount of food that we need to eat.

Food Pyramid



2. Look at the pictures of the food below and write the names of foods you eat at in your copy.



## **Importance of nutrients**

All the human body systems can function well. If the body gets the nutrients. Beside this the importance of nutrients are as follows :

- a. Build new cells and tissues, repair old cells and tissues.
- b. Be safe from weakness and malnutrition.
- c. Grow antibody or immunity to fight against diseases.
- d. Regulate physical growth and development.
- e. Think and feel healthy.
- f. Regulate bodily functions.

## **Sources and Functions of Nutrients**

### **1. Carbohydrates**

Carbohydrates are energy giving foods. We need to eat foods like : rice, wheat, millet, fapar, buckwheat, maize, potato, yam, sugar regularly to supply the body with energy. Foods may not be similar in all parts of the country due to geographical diversity. That's why we should recognize and eat foods which contain carbohydrates.

### **Importance of Carbohydrates**

- a. Carbohydrates is taken as an important source of heat and energy in the body.
- b. It plays a vital role to remove poisonous substances from the liver.
- c. It helps to activate the muscles of the body.

### **2. Fats**

Fats gives more energy than carbohydrates to the body. So, our meal should contain a little amount of fats as well. But excessive fats can cause different types of diseases. That's why, we should eat fats as per the needs of the body. The following foods can be taken as the sources of fats: ghee, butter, cheese, soyabean, groundnut / almond, coconut, sunflower oil, mustard oil, fish oil etc

### **Importance of Fats**

The importance of fats are as follows :

- a. Fats help to protect and dissolve vitamin A, D, E and K.
- b. Helps to keep physical temperature constant.
- c. Covers and protects soft organs.
- d. Keeps the skin healthy, smooth and shiny.

- e. Provides the body with energy in the absence of carbohydrates and protein.
- f. Helps to increase appetite and food interest.
- g. Makes foods tasty and preserves vitamins in the green vegetables.

### **3. Protein**

Protein is required for the growth and repair of the body. Numerous cells get damaged in our body continuously. Protein plays a very important role to repair them all. Therefore, we should have milk, egg, fish, meat, maize, beans, pulses, gram, peas, green vegetables etc regularly. At least one item of food containing protein should be included in our daily meal. Mother's milk is the main source of protein for the babies.

#### **Importance of protein**

- a. Protein helps in physical growth and repairs damaged cells and tissues.
- b. Protein is quite essential for the growing children.
- c. It assists in metabolism process.

### **4. Vitamins**

We need very small amount of vitamin in order to protect our body from different diseases. Very few types of foods we eat includes Vitamin. Vitamin 'B' and 'C' are called water soluble vitamins whereas Vitamin 'A', 'D', 'E' and 'K' are called fat soluble vitamins. Here, we learn in brief about the sources and functions of each type of vitamin.

#### **Vitamin 'A'**

The sources of Vitamin 'A' are egg, butter, ghee, cheese, liver, fish oil, banana, mango, ripe pumpkin, carrot, turnip and green vegetables.

Importance of Vitamin 'A'

- a. It helps to enrich eye sight.
- b. Provides antibody and enables to fight against different types of diseases.
- c. Helps to keep the skin healthy.
- d. Prevents from eye diseases including night-blindness.

#### **Vitamin 'D'**

The sources of Vitamin 'D' are sunlight, fish oil, yolk (yellow part of egg), ghee, butter, cheese, milk, milk powder etc.

### **Importance of Vitamin 'D'**

- a. It helps in the growth and development of bones and teeth, and keep them healthy.
- b. Assists in keeping bones and skin healthy and strong.
- c. Protects mother and infants from bone related diseases.

### **Vitamin E**

The sources of Vitamin 'E' are mustard, soyabean, almond, groundnut, coconut, sunflower oil, maize and wheat flour, egg, fish, meat, milk, ghee, fruit, brocoli, green vegetables etc.

### **Importance of Vitamin - E**

- a. It helps to keep the skin healthy and shiny
- b. Increases sexual ability in the males and reproductive ability in the females.
- c. Preserves RBC from destruction.

### **Vitamin 'K'**

Vitamin K is found in the foods like animal liver, meat, fish, egg, rice, wheat, maize, fresh fruit, milk and different types of green vegetables.

### **Importance of Vitamin K**

- a. It helps in clotting blood.
- b. Prevent liver from various disease.

### **Vitamin 'B'**

There are several types of Vitamin 'B' as Vitamin B1, B2, B6 and B12. Here we discuss about the sources and such importance of Vitamin B in general. The sources of Vitamin 'B' are beaten rice, almond, groundnut, cashewnut, fresh fruit, pulses, cow and buffalo milk, egg, fish, meat, liver, green vegetables etc

### **Importance of Vitamin 'B'**

- a. It helps to keep the body healthy and strong.
- b. It assists in our mental development.
- c. It saves us from various diseases.
- d. It makes us feel hungry.
- e. It helps us to keep our skin and eye healthy.
- f. It helps us in healing wounds around the lips, mouth and skin.

- g. Prevents us from Anemia.

### **Vitamin 'C'**

Vitamin 'C' is also called Ascorbic Acid. Citrus food such as: lemon, orange, guava, grapes, mango, apple, peach etc are the sources of Vitamin C. It dissolves in water. So, we should include it in our daily meal.

### **Importance of Vitamin C**

- a. It helps the body to be safe from common cold and cold weather.
- b. It keeps our gum healthy.
- c. It helps to keep the skin of the face, hands, legs healthy, strong and beautiful.
- d. It helps in blood clotting and stops hemorrhage.

## **5. Minerals**

We need mineral in minimal amount to keep our body healthy and active. We should eat foods containing minerals for physical growth and maintaining physical posture. Besides, minerals help to balance the amount of fluids in the body.

The foods containing minerals are fish, meat, egg, mustard, turnip, radish, gundruk, grains, pulses, cashewnut, almond, groundnut, iodised salt, sea food, beans, fruit, green vegetables etc. At least one item of food with minerals should be included in our daily meal.

There are many types of minerals. Among them, Iron, Iodine, Calcium, phosphorus etc can be taken as major ones. Here, we discuss in brief about the sources and functions of iron and iodine.

### **Iron**

The major function of iron is to prepare hemoglobin in the blood. Specially children and pregnant women seem to be unhealthy in its scarcity. They feel tired after a little work. That's why, we should eat: green vegetable, fruits, beans, meat etc regularly. Pregnant women should take one tablet of iron daily from the fourth month of pregnancy up to six weeks after delivery. It is freely available in the Health Centres.

### **Iodine**

The main function of Iodine is to prepare thyroxin hormone. This hormone helps females in their fertilization process and physical development. The scarcity of Iodine causes goitre and the birth of immature infant. So, we should eat foods with iodine such as : iodised salt, sea food etc. Specially, pregnant women and children should use packaged iodized salt in their daily meal.

## **6. Water**

We can't live without water. Water is quite essential element for the body like other foods. Water occupies 65-70 percent of our body weight. Water is required to prepare the blood, inner cells and internal fluid substances of the body. We take water through food and drink it as well. Water is excreted in the form of stool, urine, sweat and vapour from the body.

### **Importance of water**

Each and every important functions of the body is done in the presence of water. Water plays a vital role in dissolving solid food; excreting waste materials from the body, regulating bodily temperature and preventing the body from constipation and dehydration. So, one should drink 1-3 litres of water everyday. A person should drink water on the basis of his / her daily work, age, climate and physical structure.

### **B. Importance of Balanced Diet**

The importance of various nutrients proves the importance of balanced diet. We can't maintain balance in our body in the absence of any of the nutrients. Therefore, balanced diet is quite necessary for the overall growth and development of the body. Only one type of food can't develop our body properly. So, balanced diet is a meal which consists of the proper amount of energy giving, body building and body protecting food.

### **C. Introduction to Junk Food**

Most of the foods packed in colourful packets lack proper amount of nutrients. These foods are junk foods. They are readymade food and are easy to use. They are prepared using soluble fat, excessive amount of salt, sugar and tasting powder. Such foods lack proper amount of nutrients required for the body. Consumers are physically, mentally and economically harmed by such foods. A study has found that regular consumption of such junk food affects the brain.

### **Activities**

- 1. Collect the names of junk foods available in the market. Then discuss about their price and nutrients they contain in groups in the class.*
- 2. Bring three different types of foods from your home about the nutritional value of these food. Discuss with your friends.*
- 3. Make small packets of different foods available in your home. Then classify the nutrients on a table and show to your teacher.*

## Summary

Food that contains proper amount of nutrients required by the body is called balanced diet. Carbohydrates and fats supply the body with energy. Protein helps in body growth as well as repairs the damaged cells. Likewise, minerals and vitamins protect the body from diseases.

### Exercise

#### (A) Match the words in Group 'A' and Group 'B'

##### Group A

Junk food

Vitamin 'B' and 'C'

Source of Vitamin 'D'

Protein

Carbohydrates

##### Group B

sun

Body building food

Energy giving food

water soluble

readymade food available in the market

Fat soluble

#### (B) Correct the following sentences, and rewrite them.

1. Junk food contains more nutrients and they are less attractive.
2. Iron, Iodine, Calcium etc are proteins.
3. Vitamin - 'D' helps to keep hand and skin healthy and strong.
4. Carbohydrates gives more energy than fats.
5. Potato, rice, sugar are body protecting foods.

#### (C) Give short answer to these questions.

1. What is junk food?
2. How many types of vitamins are there? Write the names of each vitamin.
3. Write the names of any four foods that contain minerals.
4. Write one function each of Protein and Carbohydrate.
5. Write any three importance of nutrients.

# Diseases

Disease is an illness that affects human, plants and animals. It is often caused by infection. Contaminated water, polluted air, physical inactivity, etc. can cause disease. We can prevent from being affected by disease if we take precautionary measures. Generally, disease can be categorized as communicable and non-communicable diseases.

## Communicable Diseases

Diseases caused by bacteria, virus, protozoa and fungi, which transmit from one person to another is called communicable diseases. Worms, Diarrhea, Kalazar, malaria, HIV/AIDS, syphilis, gonorrhoea, TB, Typhoid, Cholera, measles, whooping cough are some of the examples of the communicable diseases.

## Causes of communicable diseases

- a) Infection of bacteria, virus, fungi and parasites
- b) Bad personal hygiene
- c) Polluted environment
- d) Contaminated and rotten food
- e) Lack of knowledge of health and healthy habits

## Modes of transmission of communicable diseases

There are many routes of transmission. Some of them are as follows:

- a) Direct contact with diseased person such as skin to skin contact, unprotected sex, sharing food, etc.
- b) Air, food and water
- c) Mosquitoes, lice, fleas and animals bites
- d) Blood transfusion

## Process and cycle of communicable diseases

It is well understood that communicable diseases are the diseases which can transmit from diseased person to normal individual or from infected animals to human beings. There is interrelationship between diseased human, animals, microorganism and environment. Communicable diseases cycle is known as a series of conditions that happen after the entry of microorganism into the body.

## Some of the Communicable Diseases, Mode of Transmission and Prevention

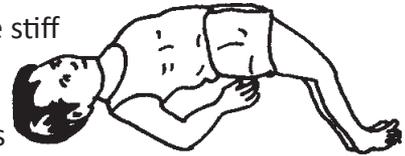
There are many kind of the communicable diseases. In this chapter, signs and symptoms, mode of transmission and prevention of some are diseases are discussed.

### 1. Tetanus

Tetanus is caused by clostridium tetani. It is a common disease among new born. This disease grow in soil and animal dung and gets transmitted to human through cut injury. It commonly transmits to newborn through umbilical cord. If the cord is cut with a dirty knife or blade or if mud or dung comes into contact with the cut on the cord.

#### Symptoms

- a. Newborn can not suckle
- b. Muscles around the mouth and cheek become stiff
- c. Body bends back and becomes like a bow
- d. Chewing and swallowing of the food materials becomes difficult and gradually breathing difficulty can also occurs
- e. Due to spasm on neck muscles, patient can speak properly.



#### Preventive measures

- a. New born baby should be vaccinated with DPT vaccines
- b. Women should take TT vaccine
- c. Soil and dung should not get contacted to be put on the wound
- d. The wound should be cleaned and dressed
- e. If there is cut injury by rusted knife or any equipment, TT vaccine should be taken within 24 hours
- f. Umbilical cord should be cut by sterilized objects only

### 2. Tape worms

Tape worms are flat type worms. It get transmitted to human if uncooked or poorly cooked pork meat is eaten. It is not found in water.

### **Symptoms**

- a. Mild abdominal pain and nausea
- b. Unconsciousness, if the egg of tapeworms goes inside the brain
- c. Loss of weight and feeling of weakness
- d. Symptoms of anemia

### **Preventive measures**

- a. Properly cook the pork meat before eating
- b. Take treatment as soon as possible
- c. Drinking water should be boiled

## **3. Hookworms**

Hookworms are hook like parasites. The larvae of the hookworms enter into the human body through skin of the foot while walking barefoot. The larvae then reaches to the lungs through blood circulation. While coughing out, the larva travels to food pipe.

### **Symptoms**

- a. Itching of the foot
- b. Dry cough
- c. Loose motion and abdominal pain
- d. Weakness and anemia
- e. Loss of appetite and abdominal discomfort
- f. Loss of weight

### **Preventive measures**

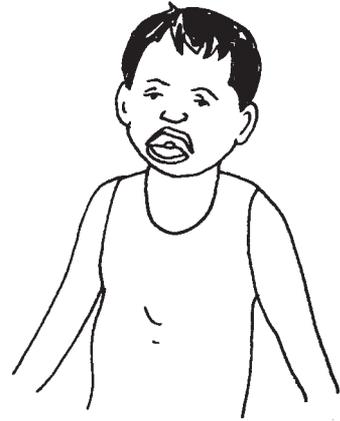
- a. Do not walk barefoot. Put on sandal or shoes while walking
- b. Defecate always in toilets
- c. Wash hands and legs properly
- d. Take medicines for deworming time to time
- e. Educate community people on prevention from worms

#### 4. Diphtheria

Diphtheria is an infectious childhood diseases caused by coryne bacterium Diphtheria that mostly affect the respiratory tract of the Childern. The disease is transmitted by infected sputum and nasal discharge. It is also transmitted by playing games with infected children.

##### Symptoms

- pain in neck and difficulty in swallowing
- difficulty in breathing
- Painful swallowing
- Mild fever
- Watery discharge from nose



##### Preventive measures

- DPT vaccination
- Patient should kept in light room
- The patient should be kept on clean room with enough light and fresh air
- The sputum and nasal discharge of the patient should be incinerated or dump in pit
- Patient should be kept in isolation
- Patient should take treatment from near by health post

#### Polio

Polio is a infectious viral diseases which affects children causing by weakness of hand and legs. It is also known as childhood paralysis. The disease is transmitted from one to another by infected nasal discharge, sputum, stool, urine. It is curative diseases but affect long term and develop physical disabilities.

##### Symptoms

- Fever, headache and vomiting
- Weakness of hand, leg and paralysed
- Muscle cramping and burning sensation
- Thin and dryness of the infected organs

### **Preventive measures**

- Three doses of oral polio vaccine should be provided within six month after birth.
- Proper disposal of patients stool and urine.
- Patients materials should be used after sterilization.

## **6. Pneumonia**

Infection from Pneumococcus bacteria which affects nose, ear, neck, upper respiratory tract of children known as pneumonia. Pneumonia is a diasease which leads to difficulty in respiration. Usually pneumonia is caused by cold and polluted air.

### **Symptoms**

- Sputum outflow
- Difficulty in respiration and increase respiration
- Swelling respiratory tract
- Nasal discharge Mucos
- Ear pain and chest endrowing
- Fever
- Bronchitis
- Wheezing during respiration
- If not treated properly in time leads to complication

### **Preventive measures**

- Environment should be kept clean
- Personal hygiene
- Child should be kept away from pollution
- Keep away from cold
- Smokeless stove

## **7. Kala Azar**

Kala-azar is a diseases caused by lesmina donovani. It affects liver and spleen of the people. It is transmitted due to the biting of a sand fly which is usually found

in sand. Later it affects the gall bladder, arms and face. Kala-azar is found mostly in the terai region of Nepal.

### **Symptoms**

- Fever
- Hepatomegali and splenomegali
- Liver and spleen dysfunction
- Pain in liver
- Swelling lymphnodes
- Coarse and dry skin
- Weight loss and weakness
- Black face and arms
- Anaemia

### **Preventive measures**

- Spraying insect ides and pesticides in sand to kill sandfly
- Avoid going to sand area
- Sanitation around home
- Use mosquito net during sleeping time
- Timely treatment
- Awareness on preventive measures and health education

## **8. Malaria**

Malaria is a disease transmitted through bite of a female anophilis mosquito. Patient suffers from high grade of fever.

### **Symptoms**

- Sudden onset of high grade fever
- Pain in hand, leg, joint and headache
- Fever with chills and rigor
- Fever from 104 to 106 degree Fahrenheit
- Severe fever with no rigor
- Decrease fever after sweating

- Intermittent fever within one hour
- infection in liver and spleen
- Weakness in body
- If not treated on time leads to complication

#### **Preventive measures**

- Remove stagnant water around house
- Cover the ditch around house
- Adopt various preventive methods
- Spraying of insecticides in the community.
- Fixing of net in the windows and door of the house
- Timely blood examination

### **9. HIV and AIDS**

HIV is possibly transmitted by unsafe sexual intercourse, infected blood, using infected injection and transplacental transmission. HIV is a virus and it reduces immune power. In English it is called Human Immuno Deficiency Virus. If this virus entered into human body it appears various symptoms called AIDS. Full form of AIDS is Acquired Immune Deficiency Syndrome.

#### **Symptoms**

- Weight loss in 10% of infected person
- Fever continuous for one month
- Continuous Diarrhoea for one month
- Prolong time to cure other diseases

#### **Preventive measures**

- Use condom and adopt safe sexual practice
- Blood should be taken or given after examination of blood
- Sterilize syringe should be used
- HIV/AIDS mother should avoid pregnancy.

## 10. Syphilis

Syphilis is caused by treponema pallidum transmitted from unsafe sexual practice with infected person. It is also transmitted to others by using materials from infected person and from infected mother to child through foetal infection.

### Symptoms

First stage	Second stage	Third stage
Hard lesion around genital area	Headache, fever and non itchy rash in skin	Effect on bone, heart and brain
Painless and non itchy Ulcerated lesion	Appears rose coloured lesion in mucous membrane, skin, hand and feet	Blockage arteries
swelling lymph gland in thigh	Hepato and spleeno megali, Eye swelling	large lesion around chik and chin
		appears mental disorder

### Preventive measures

- Prevent from unsafe sexual intercourse
- maintain cleanliness of vagina and penis
- Immediate management and treatment of neonate to prevent from diseases
- Do not use patient's materials from others
- Health education for community people
- Provide Treatment to all the people who have sexual contact with infected person

## 12. Gonorrhoea

Infection from neisseria gonorrhoea through unsafe sexual intercourse with infected people is called gonorrhoea. It is transmitted through vaginal discharge from infected mother. If the discharge comes into contact with the eye of a baby at the time of birth, the baby suffers from gonorrhoea. Symptoms of gonorrhoea are different in male, female and children.

### Symptoms

- Frequency of micturation
- Burning micturation
- Slightly Yellow pus comes out with urine

- Red lesion on skin
- Swelling sex gland and itching

### **Preventive measures**

- Avoid unsafe sexual practice
- keep vagina and penis clean
- Immediate treatment management of neonate to prevent from diseases
- Do not use infected person's materials from others
- Imparting health education about gonorrhoea to the common people

### **Activities**

*In your community, if a person is suffering from sexual disease, how do you help him/her? Discuss in class with friend.*

## **Exercises**

### **A. Write short answer the following questions:**

- (a) What are the symptoms of gonorrhoea?
- (b) How do you identify malaria?
- (c) What type of disease is kala-azar disease? Write.
- (d) What is the process of entering hookworm inside stomach? Explain it.
- (e) What is communicable disease? Give four examples

## 1. Adolescence: Definition and stages

According to WHO, 10 to 19 years of age is called adolescence. This is the age between the period of childhood and adulthood, so it is also called a transitional period. Adolescence is primarily divided into adolescence and post adolescence. Generally between the age of 10 to 14 years are called early adolescents and age between 15 to 19 are called late adolescents. In this period various changes occur in the persons characters.

- Mentally prepared for advantages and disadvantages of self and self physical changes.
- Taking responsibility and increase in decision making capacity
- Searching independence and feeling excited
- Think about future and develop mental plan

The above given characteristics make it clear that the adolescents are of the opinion that they could achieve the desired things. But if they go off the track and cultivate negative thoughts, they would fall into a difficult situation from which it would be difficult to come out, and in turn will lead them to a darken future.

## 2. Sexual orientation

Human sexuality differs from person to person. Sexuality is defined separately. Human sexuality is affected by culture, caste, religion, socio economic condition, physical condition and sex identification. Sexual perception depends on person's sexual identification. Sexual identification is a process of showing sexual behaviour and relationship. Depending upon sexual identification persons are divided into 3 categories:

- **Heterosexuals:** Male female sexual relationship are fall into this group.
- **Homosexuals:** Female and female or male and male sexual relationship are categorized in this group. An individual from this group is also called lesbian and gay relationship.
- **Bisexuals:** A person who is attracted to and involve in sexual intercourse with opposite sex or the same sex falls under this group.

### **3. Need of reproductive health education**

The need of Reproductive health education can be unified by the following:

- There are many wrong concepts about sex and reproductive health. Reproductive health education leads the people towards right direction by making them aware of this issue.
- It motivates to develop safe sexual behaviour on adolescent and youth people.
- It helps solve the curiosity about sex and sexuality among children and youths.
- It helps people learn and teach useful life skill related to sex.
- Reproductive health education helps to identify sex and reproductive complication and problems such as unwanted pregnancy, early pregnancy, abortion, etc.
- Reproductive health education helps event sex related infection, HIV and AIDS, hepatitis, reproductive pathway and other sex related problems on time.
- It teaches about to proper use of family planning methods and emergency contraceptives devices.

### **4. Mechanism of sperm production**

Seminiferous tubules are located in testes where there are spermatogonial cells attached to its wall. The cells develop to form spermatocytes. These spermatocytes are further developed and become spermatids. Similarly spermatids continue to develop and finally become full sperm. There is continuous production of semen in seminal vesicle during the time of sperm production in testes.

### **5. Wet Dream**

There is a continuous production of sperm right from the adolescence male. If there is continuous collection semen inside the semen bladder it ejaculates from penis when alive. Usually semen comes out from sex related dream and it is called nightfall. Nightfall occurs more in adolescent period and decreases as the age increases. Nightfall is a natural phenomena so there is no need to worry.

### **6. Ovum production and menstruation**

From adolescent period till 49 years of age, there is bleeding from vagina every month. The bleeding continues for two to eight days and stops. This bleeding

is called menstruation. During menstruation, blood and other tissues come out from uterus through vagina. In this period, the vagina should be kept clean and sanitary pads or soft cloth should be used. The soft cloth be washed with clean water and dried in the sun. The used pads should be disposed properly. Usually menstruation start from 12 to 13 years. But menstrual age depends upon person to person. Starting period of menstruation is called menarche. It stops between 40 to 50 years of age. This is called menopause.

Some hormones play an important role during menstruation. Follicle stimulating hormone and lutenizing hormone are produced by the pituitary gland in the brain. These hormones affect the follicles in ovary. As a result one follicle gets matured every month. In the follicles there remains an ovum. Similarly ovary also produces oestrogen and progesterone hormones.

The luteinizing hormone increases at once between menstrual cycle which helps the ovum to become matured and to come out. The act of coming out of matured ovum from follicle is called ovulation. Sexual intercourse after ovulation may result in pregnancy.

## **7. Pregnancy**

After development of ovum it comes out to the fallopian tube. If there is sexual intercourse the male sperm comes through uterus to the fallopian tube and it conjugates with the ovum and fertilize. Thus the pregnancy starts the fertilized ovum gets attached to the uterus wall within six days. This is called pregnancy.

## **8. Sexual and reproductive tract infection**

We have understood about reproductive organs from sex and reproductive health section. After having the knowledge of reproductive organs, it will be easy to understand about reproductive tract infection. We get panic on hearing the word infection: In fact infection occurs due to negligence. Reproductive tract infection also occurs due to negligence. So it is necessary to be conscious to prevent this. If the external reproductive organs are kept clean no micro organisms would be developed there and there won't be any kind of infection. This kind of infection also occurs if the health workers do not give importance to cleanliness at the time of medical treatment.

Due to unsafe sexual intercourse, every year around 34 million people in the world get this infection. These infection may take life and may lead to bad or long term effects like abortion, infertility, low birth weight, pre-term birth, cervical carcinoma and early death. Similarly sexual infection and reproductive tract infection are made more serious by HIV infected person.

If we become conscious and learn infection preventive measures from health sector, control or manage treatment, the risk of reproductive tract infection will be reduced. Effective and safe treatment helps reduce infection. Similarly if we make the people in the community aware of this infection, this sort of infection will be controlled, it helps to control more effectively.

**Sexual and reproductive tract infection can be reduced by adopting following measures**

- a. Aware people about sexual and reproductive tract infection and its results (Infertility, abortion, early death of mother and HIV/AIDS) and help in the work related to it.
- b. Help improve the quality of the health center that work for the prevention of sexual and reproductive infection.
- c. Identify the people in the risk of sexual disease and conduct special programme so that they can be prevented from such disease.
- d. Conduct programme to inform about the demerits of unsafe sexual activity and instruct how to use condom properly to prevent sexually transmitted diseases.
- e. Inform the women about keeping the genital organ clean so as to prevent the reproductive tract from being infected.
- f. Aware them about the symptoms and identification of sexual and reproductive tract infection and its preventive approach.
- g. Organize mass awareness programme on how sexual and reproductive tract infection can be totally cured.

**Activities**

*Suppose somebody is suffering from reproductive tract infection in your neighborhood. How would you suggest him/her for treatment?*

**Summary**

During adolescence stage a boy become matured enough to produce sperm and a girl also starts release ovum. If unsafe sex is practised at this age, the girl will become pregnant. Therefore, for living a healthy life it is important that both a boy and a girl practice safe sexual behavior so as to protect oneself from various sex related disease.

## Exercise

### A. Answer the following questions.

- (a) What are the features of adolescence period?
- (b) Why is sexual and reproductive health education important in school?
- (c) What is night fall?
- (d) Why sanitation is required during menstruation?
- (e) Who is more susceptible to reproductive tract infection? Why?
- (f) What is sexual and reproductive tract infection?
- (g) What are the consequences of delay treatment of sexual and reproductive tract infection?
- (h) What types of programme is required to create awareness for sexual and reproductive tract infection?
- (i) What are the preventive approaches of sexual and reproductive tract infection?

# Drugs, Smoking and Alcoholism

Alcohol consumption and smoking is being seen openly done at, hotel and restaurant in our society. In some societies, alcohol consumption is taken as expression of respect. Teenagers are mostly attracted to drugs and many of them becoming drug users in the present context. Use of alcohol, tobacco and drugs have negative effect on health. We will discuss alcohol consumption, smoking and drug use separately.

## Introduction to Alcohol

Any drink which has property of altering our sense is called Alcohol. It excites the emotional part of the human beings. As a result, physical activities change alcohol is made at home or in industries. Beer, Wine, Vodka, Rum, Whiskey, Brandy are some of the examples of alcohol.

## Causes of alcohol consumption

1. Peer pressure [bad company with friends who consume alcohol]
2. As a social respect
3. Imitation of the other people
4. Teenage curiosity
5. Effect of advertisement
6. Effect of social, cultural and religious works
7. Misconception about alcohol

## Preventing people from making alcohol

1. Create awareness on negative effects of Alcohol
2. Stop advertisement of alcohol
3. Conduct alcohol control campaign in the communities
5. Ban alcohol consumption in public area
5. Government should have effective control measures in production and distribution.

**Activities**

*Ask your family members about the negative effects of alcohol and discuss how you can be far from alcohol consumption.*

**Introduction to Drugs**

The substances which affect on perception, consciousness, and behaviour by altering in the function of central nervous system is called drugs. Drugs change people's individual behaviour, character and feelings. Heroin, Morphine and Cocaine are some of the examples of the drugs.

**Causes to use drugs**

1. Peer pressure [bad company with friends who uses drugs ]
2. Imitation of the other people
3. Teenage curiosity
4. Temporary pleasure
5. Effect of social and religious works
6. Inadequate legal enforcement

**Prevention of drug use**

1. Create awareness about the negative effect of drugs
2. A strong inspection system should be implemented where drug use is prevailing.
3. Strong legal enforcement should be done

**Activities**

*Prepare a note on how you can help to get rid of drug use if somebody in your society is addicted.*

## **Smoking**

Smoking is inhaling smoke from cigarette ,Bedi, Tamakhu, Gaaja etc. Smoking also means taking tobacco in the form of smoke.

### **Causes of Smoking**

1. Peer pressure and bad company with friends who smoke
2. From society
3. Imitation of friends and seniors
4. Teenage curiosity
5. Effect of advertisement
6. Effect of social and religions activities
7. Inadequate legal enforcement

### **Prevention of Smoking**

1. Do not smoke and stay away from smoking zone.
2. Keep away from friends who smoke
3. Create awareness about negative effect of smoking
4. Make smoking free zone
5. Make any social event smoking free
6. Strong legal enforcement aganist smoking .

### **Activities**

Organise a speech competition on "Smoking is injurious to health".

### **Summary**

Tobacco and alcohol affect our lungs, heart , liver, etc that cause chronic lung diseases, heart diseases and cancer. When a person uses drugs, its difficult to get rid of addiction. Therefore, we should be away from alcohol consumption, smoking and drug use in the first place.

## Exercise

### A. Select the right answer from the given choices as below

#### 1. Which one is strong form of drug ?

- i. smoking                  ii. Chewing tobacco                  iii. Marijuana

#### 2. Which one of the following is used for smoking ?

- i. Bidi                          ii. Jaad                                  iii. Rakshi

#### 3. What is heroine/morphin?

- i. Tobacco                  ii. Drugs                  iii. Cigarette/Bidi

### B. Answer in brief.

1. What is drug?
2. What is the difference between smoking and alcohol?
3. Write down any three points to avoid alcohol?
4. Write down any three causes of starting the use of Drugs?
5. How do teenagers start smoking ?

# Environmental Health

Environmental health is the relationship between environment and health. So, our surrounding environment is to be healthy. Air, water, soil, forest, river, stream, farm field, roads etc come under environment. So, each and every place where people live is to be clean.

## Harms of water pollution in health

Water is life/soul (Pran) for human being. Life without water is impossible. Water is necessary for every activity of human being. There is negative effect in human health if water is polluted. The harms of polluted water are as follows:

1. The diseases originated from polluted water like cholera, typhoid, diarrhoea etc. take the form of an epidemic.
2. Human health is affected directly due to skin and eye diseases.
3. A person becomes suffer if polluted water is used for bathing, cooking, drinking and cleaning. He may ever die.
4. Due to the effect in social, industrial and agricultural works there is the direct effect on human health. In the result of this a person can get disabled. Human health can also be affected if polluted water that come from industry and agriculture is used.

## Harms of dehydration in the body

If there isn't enough water in the body, we may die because human body is composed of various systems. The system is composed of organs and tissues and the tissues are made of cells. Thus, the cell is the smallest unit of our body. The components of cell become dry and all the cells stop working if there isn't enough water. The problems like constipation, urinal infection and the dryness of mouth, throat, lips etc. are seen as a result of dyhydration.

### **Activity**

*Prepare a list of the problems of water pollution by asking your seniors of your community and discuss with friends.*

## Solid Waste

All kinds of solid wastes that people throw as unusable matters are called solid wastes. These wastes are plastics, glass bottles, tin blade (tinpata), paper, iron, vegetables, cooked rice, dust. Solid wastes can be classified into two parts as decomposable and non-decomposable matters.



### A. Decomposable Waste

The solid waste that gets decayed is called decomposable waste. All organic wastes can be decayed. For example, the waste products that originate from animals and plants are organic wastes. These wastes get mixed with soil. Compost manure is made from these kinds of wastes.



### B. Non-decomposable Waste

The solid waste that doesn't get decayed is called non-decomposable waste. All inorganic wastes cannot decay. For example, glass bottles, plastics, metals, iron, tin cans are inorganic wastes. These wastes do not get changed. We can manage these wastes through different measures.

## **Waste Management**

We can manage wastes through different measures. Dumping, burying and composting etc. are the various measures of waste management. We can expect the improvement in environmental health through these ways of management.

### **Dumping:**

If the waste is collected in a place and classified, the dumping method becomes highly useful. The management becomes easier if different wastes are collected in different places.

### **Burying:**

The method of managing wastes in a big hole or trench is called burying method. In this method wastes are buried in a hole or trench and are covered with soil.

### **Compositing:**

The organic waste is to be dumped in a place. Every waste is to be covered with a thin layer of soil. During rainy season it is to be protected from water. The waste formed in this method becomes compost manure within one to two months.

### **Reuse of waste:**

The wastes that come from houses, schools, factories, offices, roads etc. can be managed through various techniques/methods. Among them reuse is also one of them. This kind of management decreases the unnecessary production of wastes and waste production gets less. The ways of reducing wastes through reuse are as follows:

1. Do not use plastic/polythene bags.
2. Use the copies of used books for envelopes, bags or for making other materials.
3. Use different kinds of glass bottles (sisi), tin cans(tinka batta bakas) for other works.
4. Make pillow, bed mattresses etc. from various kinds of rags/clothes.
5. Utilize for decorating houses.
6. Sell non-reusable solid wastes like iron, glass bottles (sisi), plastics, packets etc.

**Activity**

*How solid waste reused in your home? Share the experience before your teacher in the class.*

**Introduction to Toilet:**

A place made for disposing human excreta (dung/stool and urine/piss) properly is called latrine. According to the space bore hole, low cost or restful toilets can be constructed. The use of latrine makes the environment clean and it also prevents the transmission of various types of diseases.

**Use of Proper Kind of Latrines/Proper Use of Toilet:**

Latrines are of various types. Various kinds of latrines can be constructed according to physical facilities, sources of water, and economic status. In the village areas there is a greater prevalence of bore hole latrines where as the water seal latrines are used in city areas. Water seal latrine prevents the access of flies and nuisance of smell.

While making latrines they are to be made disable friendly. Latrine is to be cleaned with adequate water before and after its use. It is compulsory to manage lid for covering pan, brush for cleaning and soap for washing hands in the latrine.

**Harms of careless defecation (Harms that are caused from careless/random defecation and urination):**

Careless/random defecation and urination can cause the following kinds of diseases and harms:

1. There may be spread of diseases like diarrhoea, cholera, leech, hepatitis, dysentery, typhoid etc.
2. Several diseases may spread if excretion/excreta is used as fertilizer in nursery, garden.
3. Places where careless excretion/defecation and urination take place seem polluted.
4. Diseases may transmit from one person to another easily.

**Activity**

*Under the guidance/direction of teacher prepare/make compost manure from organic wastes collected in school.*

## Summary

Management and use of latrine including the management and cleanliness of water, drains, roads, *chowks* etc. come under environmental health. If the environment is polluted, it causes the negative effects on health. We have to work collectively to healthy environment.

## Exercise

### A. Read the lesson and fill in the blanks.

- a) The waste that is mixed in soil after chemical change is called... waste.
- b) Latrine in which we sit with water on its pan is .....latrine.
- c) .....manure/fertilizer is made up of organic waste.
- d) If the used waste is again used by cleaning it, that is taken as the use of ....theory of waste management.
- e) .....is the relationship between environment and health.

### B. Write short answers to the following questions.

- a) What do we understand by organic and inorganic waste?
- b) Mention any two advantages of water-seal latrine.
- c) Write any three methods of waste management.
- d) Mention any three harms that are caused due to polluted water.
- e) What happens if there is the scarcity of water in human body, write.

# Safety and First Aid

## Security from accident and Measures of Prevention

With modern way of life the dangers are increasing in daily activities. There is possibility by accident in every human activity. We can be the victim of accidents any moment. We can be safe from accidents in places like house, school, roads, factories, forest, play ground ,river, stream etc. if we do have safety education; for example if the materials like matches, lighter, sharp weapons, electric current, insect killing medicines etc. in houses are kept out of reach of children. We can be safe from the accident if we follow traffic rules while crossing roads and driving vehicles. If proper care is taken in the classroom, while playing in the playground, climbing on the ladder, we can prevent accidents.

## Objectives of First Aid

First Aid is the immediate assistance/treatment given after accident to prevent further worsening of wounds and injuries. The major objectives of first aid are as follows:

1. To treat the patient using locally available resources.
2. To prevent the worsening condition of injured person.
3. To take the patient to the healing centre as quickly as possible.
4. To give consolation to the injured.
5. To provide full information of the injured person's condition to the doctor.

## First Aids of Some Accidents

### A. Burning

Burning is caused when fire or extremely hot thing comes in contact with body. The safety measures preventing burning of any organ of the body are as follows:

1. Keep children away from fire.
2. Keep the matches, lighter and inflammable materials away from the access of children.

3. Children should not be given too hot things to eat or drink.
4. Keep electric heater or other heating materials safely after use.

**In case of burning of any organ of the body, the first aid can be done in the following ways:**

1. Burnt spot/part is to be covered by clean clothes.
2. If there is no bubble on the burnt part, and if the skin has got red only, then keep it immersed in cold water.
3. If there is bubble having full of water, it shouldn't be broken.
5. Take the patient to the hospital immediately if he/she is unconscious.
6. An ointment for burning can be used.

### **B. Foreign Body in the Eyes, Nose, Ears and Throat**

Foreign body (material) can enter in our eyes, nose, ears and throat while walking on the road, doing day to day activities, eating food or scratching nose and ears. We have to be careful to protect ourselves from these sorts of events. If something enters in our body in any way, we have to take the thing out carefully. Here we explain in brief the measures to be followed not to let the entry of foreign body into those organs and take the thing out if entered.

**Safety measures preventing the entry of foreign body into the eyes are as follows:**

1. Safety equipment preventing/saving eyes are to be managed/kept in the play or work places.
2. Care is to be taken from the entry of dust and rubbish/dirt while cleaning house.
3. Spectacles are to be used on eyes to protect from the movement of smoke, dust, sand etc .during walking here and there.
4. Eye piercing sharp piece of wood, stick etc. are to be kept in safe places.

**The following first aids can be applied if any foreign body enters into eyes:**

1. Do not rub eyes.
2. Pick out the foreign body of eyes using wet cotton or clean handkerchief.
3. Go to the doctor without using force if something is pasted on the pupil (nani) of eyes.
4. Clean the eye with clean water if dust and sand particles are there.

5. Go to the doctor washing eyes with water if there is the infection of acids. Wash eyes with plenty of water in case of acid accident. Go to the doctor in the situation is worse.

**Safety Measures Protecting Nose from the entry of foreign body are as follows:**

1. We should not play putting beans, eraser and marbles into the nose.
2. We should cover nose to protect it from smoke, dust, insects etc. while walking here and there.

**In case of the entry of foreign body into the nose the first aids can be done through the following ways:**

1. Do not try to take out (the foreign body) forcibly.
2. Try to take out the foreign body by sneezing.
3. Go to the doctor if object is not removed by other ways.

**Safety Measures Protecting Ears from the entry of foreign body are as follows:**

1. We should not play putting beans, eraser, clothes, paper , plastics etc. inside the ears.
2. We should use/put/keep a little cotton in the ears during work, play and sleep.

**In case of the entry of foreign body into the ears the first aids can be done through the following ways:**

1. Do not try to take out (the foreign body) forcibly.
2. Do not scratch ears with needle like sticks (Sinka) etc.
3. Go to the doctor if the object is not removed by other ways.

**Safety Measures protecting the throat from the entry of foreign body are as follows:**

1. We should take care while eating fish and meat with bones.
2. We should not play putting marbles, coins and the pieces of wood into mouth.

**In case of the entry of foreign body into the ears the first aids can be done through the following ways:**

1. Give the patient water to drink.
2. Get the clothes around the throat loose.
3. Do not try to take out the foreign body forcibly.
4. Keep the injured person in an easy posture.
5. Go to the doctor if the object is not removed by other ways.

**C. Heatstroke/Sunstroke (Loo):**

The effect of hot air is called heatstroke/sunstroke(Loo).

**Safety Measures protecting from heatstroke/sunstroke (Loo) are as follows:**

1. We should follow cooling measures while visiting highly hot places/areas.
2. We should put on thin cotton clothes as far as possible.
3. We should manage safety measures where we stay or work.

**In case of heatstroke/sunstroke (Loo) the first aids can be done through following ways:**

1. Rush the patient to a cool place.
2. Sprinkle the patient with cold water.
3. Get a wet handkerchief or a piece of cloth and put it on the patient's head.
4. Give the patient water or cold drinks if he/she is conscious.
5. Rush the patient immediately to the hospital.

**D. Frostbite (Hiunle Khanu):**

Blood circulation stops if we walk on bare foot or work with bare hands in snow frozen areas. The cells and tissues die and become useless. This situation is called frostbite. In this situation, physical disability may take place in a person.

**Safety Measures Protecting (Preventing )from frostbite are as follows:**

1. We should not play and work during very cold time.
2. We should put on clothes, gloves, shock and shoes covering all the organs while visiting highly cold areas..

In case of frostbite the first aids can be done through the following ways::

1. Try to increase blood circulation in the organs which has got frostbite by slight massage or by other measures of heating.
2. Cover the frostbite area with thick clothes to get it keep warm.
3. Give the patient hot drinks.
4. Warm the patient's room.
5. Take the patient to the hospital immediately as per his/her condition.

### **E .Road/Traffic Accidents**

With the development of technology, the use of the means of transportation has increased in cities/towns and markets. The road accident is increasing day by day due to lack of care while driving vehicles.

Safety Measures protecting from road/traffic accidents are as follows:

1. We should test the condition of the vehicle before driving.
2. We should drive vehicles in a limited speed.
3. We should never drive vehicles drunk.
4. We should follow rules and care while overtaking (from right hand side).
5. The pedestrians should follow traffic rules while crossing the roads.
6. We should look on both sides (left and right) while crossing the roads.
7. We should not allow children to play on the roads.
8. We should repair the roads in time.
9. We should punish the traffic rules breakers severely.

In case of road accidents the first aids can be done through the following ways:

There may be the possibility of losing one's life or getting disable if the road accidents happen. In case of injury, broken backbone, bleeding the first aids can be done in the following ways:

1. Keep the patient in a safe place as per his/her condition.
2. Console the injured if he/she is conscious.
3. Take (the patient) to nearby hospital or health centre.

### **F. Teeth Break**

Teeth may break in case of stumble (in solid matter), fight and playing boxing.

Safety Measures Protecting /Preventing from teeth break are as follows:

1. We should use helmet while driving the vehicles like motorbike and bicycle.
2. We should compulsorily use helmet and mouth guard according to the games.
3. We should take care/be careful while walking in height/high places and places to be stumbled.
4. We should be careful while chewing hard food item.

**In case of teeth break the first aids can be done through the following ways:**

1. Console the patient.
2. Support molar tooth with clothes or a handkerchief.
3. Catch the top of the tooth and take to hospital putting it in cold water or under the tongue inside the mouth if the tooth has come out.

### **Activity**

***Demonstrate a role play(Perform) in the class on the first aid to be used in case of entry of foreign body in the throat.***

### **Summary**

Accidents take place all of a sudden. If we follow safety measures we can be safe from major accidents. If accidents happen, we have to provide the patient the services of hospital or health centre or health worker as soon as possible.

### **Exercise**

**A. Write short answer to the following questions:**

- 1) What is first aid?
- 2) What causes the heatstroke/sunstroke?
- 3) What is the main cause of frostbite?
- 4) What is to be used to protect teeth while playing games?
- 5) What is the objective of speed limit during driving vehicles?

**B. Write short answer to the following questions:**

- a) What is the difference between heatstroke and frostbite?
- b) What is the first aid measure/method for teeth break?
- c) What sort of first aid can be followed for foreign body in the throat?
- d) Mention any three safety measures to be used to protect from road accidents.
- e) Write any three safety measures to be used to protect from getting burnt.

# Family and Community Health

## Concept and Importance of Family Health

The health condition of all the members of a family is family health. We can expect a healthy society from the good health condition of the members of family. Similarly, the development of a country is impossible without healthy citizen.

There should be good relationship, love, happiness, respect/admiration etc. among the members of a family whether it is single or joint family. Family is considered as the smallest unit of the society. A person fulfills his/her(one's) basic needs as well as enhances the capacity for being self dependent. In this way, under the process of growing up in the family, a person develops social, mental, physical and emotional aspects. Due to the need of healthy family environment for every person of the family, there will be the development of positive knowledge, skill and attitude. In this sense, we can clarify the importance of family health from the following points:

1. to nurture infants and children
2. to prepare a plan of a family
3. to prevent or protect from various kinds of diseases
4. to protect from possible physical accidents
5. to protect or prevent from bad habits and bad companies
6. to keep the surrounding environment clean
7. to spend the family life in happiness
8. to fulfill the interests and needs
9. to eliminate or eradicate the concept of health related bad cultures and traditions prevailed in the society
10. to take care of pregnant mother
11. to make pleasant elderly life

## Community Health Problems of a Community

Community health refers to the good health of all people of the community. It is the government's responsibility to improve the health condition of people. Nowadays, focus is given on collective concerns, habits (practices) and participation of people for developing and promoting their health. We have to consider the various aspects while talking about the health of community. Under this, there come

plan of population, environment of the community, control of diseases, economic development, malnutrition, games and play, entertainment etc.

In the present condition of Nepal; there are following health problems. We will also discuss on the solutions of each of them.

### **1. High Population Growth or High Increase in Population**

There is the rapid growth in population day by day despite Nepal being a small country. In a country having less resources of income food and health services the population growth has been adding problem rather than solving it. Increase in number of sick people, decrease in the distribution of food items, less availability of medications etc. are the results of population growth. It increases the number of unhealthy citizens but does not increase the strong and capable citizens in the country. So, the population growth has become a major problem of Nepal.

### **2. Environment Pollution/Pollution of Environment**

The Environmental Pollution is one of the major problems that arise due to population growth. The environmental pollution which has been increasing in the city areas of Nepal is quite dangerous. Deforestation, unplanned urbanization, increased wastes etc. have negatively effect in the health of people .Many people in the community have been badly suffering from communicable and non-communicable diseases. The health problems like the attack of new diseases and mental and physical disabilities can be considered as the results of environmental pollution.

### **3. Epidemic of Diseases**

In Nepal, there is spread of especially communicable diseases, due to ignorance, poverty, environmental pollution, population growth, superstition etc.

There is the epidemic communicable diseases like kalajar, malaria, diarrhoea, pneumonia, aulo fever, hattipaile, yellow fever(Jaundice),dysentery(aaun) and AIDS in our community. The development of a community and nation certainly falls behind in case of chronic health of people. So, spread of diseases is the hindrance of development. The health problem is the major problem of Nepal.

### **4. Malnutrition**

An extreme loss or increase in weight of a person caused by inadequate food or overeating is called malnutrition. Due to the imbalance of nutritious elements in food the children have become victim of it. The main reason of getting the children of today who are considered as the future (Karnadhar)of the country is ignorance

and poverty. Until the citizens get distressed/ oppressed of malnutrition, the nation becomes unable to get able and capable citizen. Thus, malnutrition is also a major health problem of Nepal.

## **5. Poverty**

Poverty is taken as the main enemy of the society. Poverty prepares weak, unhealthy and sick citizens in place of able and capable ones. Poverty expanded society cannot consume nutritious food. They cannot buy medicines even in the condition of sickness. In this way, there comes the condition of being the victim of death rather than getting them involved in the development of the country.

### **Solutions for Community Health Problems/Ways of Solving Community Health Problems**

By finding the main/root causes of health problems prevailed in Nepal, the following measures can be applied for solving them:

1. There should be the provision of compulsory education to all children.
2. There should be the provision of non -formal education to the ignorant/ uneducated people of society.
3. There should be the creation of alternative income generating/increasing resources.
4. Various kinds of awareness programs are to be implemented to control population growth.
5. There should be the provision of attractive rewards while making a plan for a family.
6. There should be the provision of instruction adjusting/adapting health education and population education in schools, campuses and colleges.
7. There should be the organization/ introduction of effective programs to make nutrition programs more effective.
8. There should be the distribution of free nutritious food to the poor families of the community.
9. There should be the implementation of environmental education to all places; village and city.
10. There should be the mobilization of volunteers and the educated persons of community to make the vaccination program effective.
11. There should be the organization of counseling programs regarding scientific and practicable education to eliminate superstition(superstitious beliefs).

12. There should be the provision/formulation of strong laws to discourage smoking, use of alcohol, drugs, and stealing/thieving, looting, abduction etc.
13. There should be encouragement for the use of health post, sub health post, health centre, hospital, clinic etc. available in the community.

### **Activity**

*What practices/exercises are there for environmental improvement in your community. Enlist them and show to the teacher.*

### **Summary**

We can expect of a good health in a happy/well built family. The members of happy/well built family only can contribute in a community .Some of the health services cannot be given/provided only in an individual efforts. In that context/case, all the members of community jointly with the assistance of government and donor agencies as well have to provide these sorts of services.

### **Exercise**

#### **A. Mark to the best alternative of the following.**

1. Which of the following aspects is to be active to promote the health status of community people?
  - a. Foreign assistance
  - b. Community health
  - c. Government hospital
  - d. Educated society
2. What is the inevitable factor to improve the health status of a nation?
  - a. Poverty
  - b. Education
  - c. Low population growth
  - d. Waste management
3. Which is not the importance of family health?
  - a. Nurturing children and elderly people
  - b. making care of mother and infant
  - c. Making bad company, bad habits and bad culture/rituals
  - d. fulfilling the needs of family

**B. Write answer to the following questions in brief.**

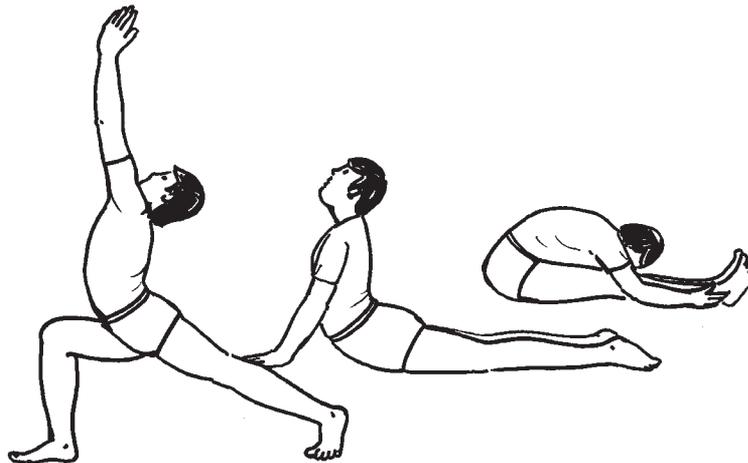
1. What are any three problems of your community?
2. Why is poverty considered as the health problem of Nepal?
3. Malnutrition is also a health problem, how?
4. Mention any three measures for eliminating health problem of community.
5. Population growth is the main cause of all the problems. Clarify.

# Physical Education

## Exercise

### Introduction

Physical education emphasizes the development of person's physical, mental, social and emotional aspects. The important medium for the achievement of physical education are physical activities and games.



Physical activity and sports support through the exercise. Through the exercise, internal physical organs become strong. Similarly, various group exercises help to develop social qualities. Since physical exercise depends upon activities of person and it should be done very carefully. Exercise can be divided into three types; aerobic or endurance, strength or resistance and flexibility. While doing any kind of exercise we need to consider following things:

- (a) Exercise should not be done immediately after eating.
- (b) We can drink water if we feel thirsty before, after or during the exercise.
- (c) Exercise should be reduced according to the change of weather and tiredness.
- (d) Warm up and cool down exercise should be done in each exercise.

We have learned some exercises in class 6. We will be doing similar kind of exercises for 'warm up' exercise.

## 1. Warming up exercise

Simple jogging is done to warm up body. Meaning of jogging is the movement of the body. We can do different kinds of physical activities to move the body. Here, we will discuss about the jogging to be done while isometric condition.

### Activity 1: Running while standing

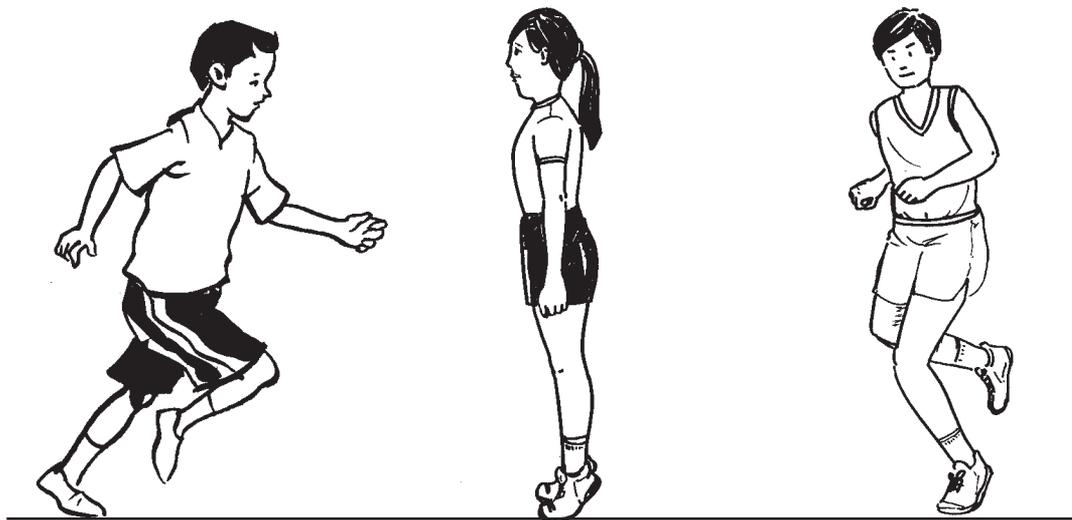
Stand in a line. With the command of the teacher, stand still and run with raising the leg in the same place. Change the running style with the demonstration of teacher.

### Activity 2: Jogging in different ways with the movement of the legs and hands while standing position

According to the teacher's demonstration, stand in your own place and move your legs and hand. Sometimes widen up your legs and join it again, sometimes jog while rising your legs and balancing the body.

### Activity 3: Skipping

Under this activity we make two or three groups of file before skipping. In front of each file, there should be a circle for skipping. Under the teacher's command skipping is done within the circle turn by turn.



## 2. Foot exercise

Foot is taken as the base of the body. Exercise of toe and part of heel should be done carefully. In this situation any physical movement done by the leg will not be difficult.

### Activity 1: Jump with touching by foot

In this activity, standing in one place, we can jump by touching the ground with the foot. Other times we jump up with count one and two by touching the foot and in the guidance of teacher's up we jump much higher.

**Activity 2: Under the guidance of teacher we do it 16 times.**

### Activity 3: Stretching of foot in sitting position

In this activity, we sit with line in plane ground. We straighten up our left leg and put our right leg on top of its thigh. Then with the help of our left hand the stretching is done pushing back and forth.

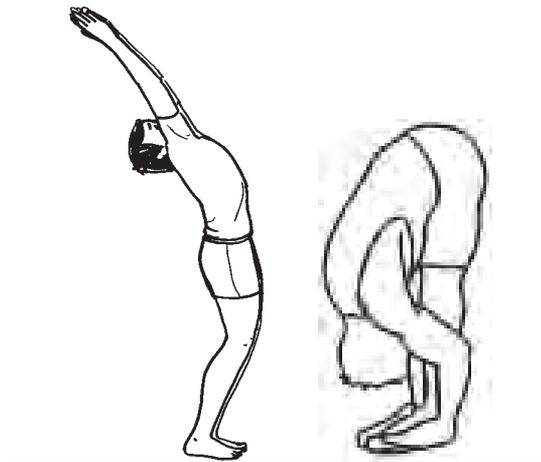
## 3. Exercise of Vertebrae and hand and legs

There are semi movable joints in vertebrae. Hands and legs are taken as the most

movable part of the body. Therefore, we take care of different aspects while doing exercise. For the exercise of vertebrae, hands and legs the following activities should be followed:

### Activity 1: Bending forward and leaning backward

In this activity, according to the order of



teacher we stand in a line. Under the guidance and demonstration of teacher, we keep our hands on ground on the count of one, on the count of two on the knee, on the count of three on waist and on the count of four we keep our hands on our waist seeing at sky we lean backwards. This is done four times.

### Activity 2: Giving support from our vertebrae to our teammate (fellow)(friend)

According to the weight of our friends, we make pair. We catch each other's hand

and give support from our vertebrae to bend. And we take our friend's weight.

### Activity 3. Push up and modified pushing

First of all we make sure that the boy students are ready for the push up and girls are for modified push up. We make different groups of boys and girls then with the



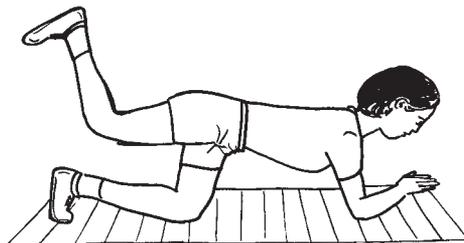
help of our hands and legs, we lift our body. In modified push up we touch with our knees instead of our toe. Figure 4(page 67)

### 4. Exercise of stomach and thigh

Stomach is the sensible organ of a human body which is below the chest. It is in direct contact with liver, intestine, part of stomach, kidneys etc. Following ways are

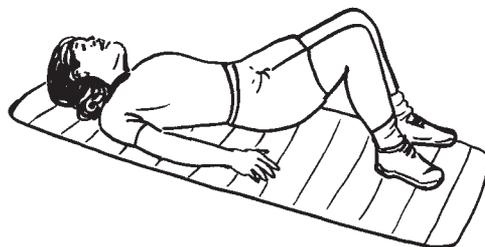
the technique of doing exercise of stomach and thigh:

#### Activity 1: Raising the thigh with the support of knees on the ground



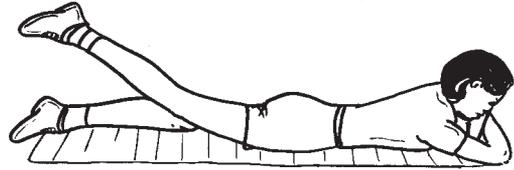
For the exercise of stomach and thigh, one knee is taken to touch the ground and both elbows are leaned against the ground. Raise the other leg bending it. Do this activity until the rest of your body is straight along with your thigh. Slowly put down the leg and start again with the other leg.

#### Activity 2: Raising the hip and putting it down



Sleep straight facing the sky and bend both your legs. Putting both

hands straight on the side of your body, raise your hip and put it down without any strength applied in it. This exercise is very easy and effective.

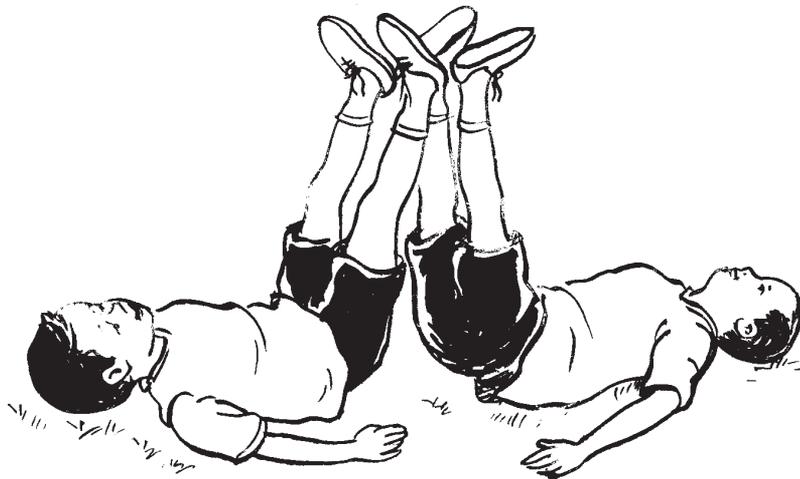


### **Activity 3: Make your body upside down and move your legs up and down**

While doing this exercise we lie upside down. We make sure that our waist and stomach are flat and we don't raise it. Turn by turn the leg which is raised brings it slowly downward.

### **5. Exercise of rising pair attached foot**

While doing this exercise, attach your foot with your teammates and both sleep straight. With the help of your hands support on ground, both raise up your legs bending it. When the leg is vertical to the ground with the help of your vertebrae and hip, control your breath for sometime and bring it down slowly bending it.



# Drill

It is necessary to be disciplined to have social reputation. Drill makes us healthy and strong.



According to the commander of the team, activity done in group is called Drill. In drill, according to the command of commander and the team leader, different physical activities done are repeatedly. The objective of drill is to make us physically fit, obedient and disciplined and development of social quality. Drill develops the exercise of hands and legs and improves digestion, sleeplessness and make us look smart.

While doing any activities of drill, people should stand in a line or file. Number of lines can be increased if needed activity of drill the halt activity is also important. That is why the halt activity should be learnt along with the drill. Activities of drill look more attractive if it is done in the beat of music.

In previous class we have learnt the introduction of drill activities like attention and stand at ease. That is why, in this class, we are going to perform those activities on the beat of drum.

**a) Cover Up**

Before doing drill activity, students are kept in a line. After that, the order is given for the cover up to check whether it is organized properly or not. In this activity it will be better not to use the drum. But for the students' attention it will be better to beat the drum twice.

**b) Attention and stand at ease**

Before every drill activity the students are kept in an attention position. Similarly in every ending of the drill activity they are kept in stand at ease position. When both activities are done on the movement of the legs, the drum is beaten. Example: after the order attention is given arrangement of the legs and beat of the drum should be at the same time. Similarly in stand at ease when the leg is about to touch the ground, the drum should be beaten.

**c) Right Turn, Left Turn and About Turn**

From attention position, turn right, turn left in any activity after checking on the count 1-2 turning activity is complete. Thus, on the use of drum, these orders are followed fast two times and on the count of 1-2 the drum is beaten only once.

**d) Mark Time**

Mark time is done in the attention position or marching position. After getting command for this action in the attention position, we should first raise our left leg then put it on the ground and immediately raise the right leg. If it is in marching position then first check by the right leg and counting one leg should be in the mark time position. In this way, closing out first slowly and putting our hands on the side of our body the activity is continuously done in the same place and this drill is known as mark time. With the order of finishing of the mark time on the count of 1 2 3 – 1 2 3, the drum should be beaten. For continuing the activity, mark time should be beaten. The drum should be beaten from 1 to 7 times continuously. For mark time, it will be better if the drum is beaten on the rhythm 1-2-3, 1-2-3, 1-2-3-4-5-6-7.

It will be easy if the group is kept at attention position when mark time activity is done. It will be better if the groups which are kept in file or line are allowed to do 2-4 times attention and stand at ease, turn left or turn right before the mark time activity starts. When the captain orders his words should be clearly heard.

**e) Quick March, Eyes Right and Eyes Straight**

This activity of drill is done from the position of mark time. In the order from the team captain cheering the right leg on, left leg should move forward. In this way, when the left moves forward at the same time close your first and move it to the level of the shoulder. For quick march activity, the rhythm should continue from the position of mark time.

The rhythm of the drum and the movement of the legs should be same. Similarly, the use of the drum should be same for the eyes right or eyes straight.

When the team captain commands the team for the quick march, following commands is -

Group ready for *quick march, quick.....march.*

Participants of quick march should straighten up their eyes right, widen up their chest and move forward touching the heels. Practice should be done in order to do it in an organized manner.

#### **f) Halt**

For the ending of drill activity, command of halt is very important. Every beginning needs an ending. In the continuous activities of marks time and quick march done by groups before stop or dismissed activity is called halt. The command given for the halt by the group leader are given in mark time or quick march condition. On the command of halt by the team leader, the right leg is checked, while 1 for the left leg and 2 for the right leg is stopped. In the activity of halt, the drum should be beaten in the rhythm 1-2, 1-2, 1. In this way, while beating the drum on right leg 1-2, left leg 1-2 and beating of the drum is stopped on 1 in right leg.

#### **Do and Learn**

On the guidance of the teacher divide yourself in small groups and be the team leader turn by turn and do the following drill activities and practice how to beat drum and learn it.

1. Mark Time
2. Quick March
3. Halt

#### **Activity 1**

1. Keep the students in 1 or 2 line or file on the basis of their number
2. After doing attention and stand at ease in the position of attention, take their roll calls.
3. Teacher himself should stand in the middle of the line and order the mark time activity of drill along with the drum rhythm.
4. Check whether the students are performing or not according to the given order.

### **Activity 2**

1. According to the number of students divide them in small groups and put them in 1 or 3 line or file.
2. Choose a team captain in every group who is smart and performs well and let them do the activity attention and stand at ease and in the position of attention take their roll call.
3. Put the team captain in front of every line and order them to perform the drill activity themselves and give them the chance to beat the drum.
4. Teacher and team captain should check whether the students are performing well or not according to the order given to them.
5. Students, who are performing well, make them team captain turn by turn and repeat the practice activity again and again.

### **Exercise**

1. **Answer the following questions in very short:**
  - (a) Which activity is done? According to the order of commander or team captain
  - (b) Write any one advantage of drill
  - (c) Which leg should be moved forward while doing the quick march activity from mark time?
  - (d) In which leg the halt should be when the team halt order is given?

- (e) In which side of participants should be moving short steps, when the command of left turn is given?

**2. Answer the following question in short.**

- (a) What is drill?
- (b) Write any two advantages of drill.
- (c) Write the process of performing mark time activity.
- (d) Write the process of performing halt.
- (e) Write any two things while the left turn activity is practiced.

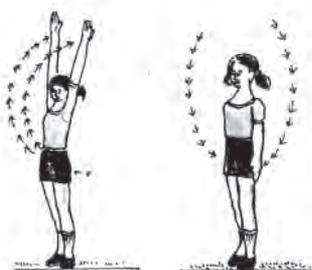
# Physical Training

Saririk byayam is 'physical training' in English. In short it is called PT. The true meaning of PT is exercise of all organs of the body. In other words, physical training is physical activities that help to keep the body fit and healthy. In the past, PT was considered as the exercise of military and police but today people take it normally. It is used as regular activities of school these days. Physical training is considered as the best activity for maintaining fitness and health of the whole body. Physical training can be done alone or in group. But one should select it on the basis of need and condition of the individual. There are many forms and ways of physical training. Some of the ways of performing PT is presented in ray diagrams below.

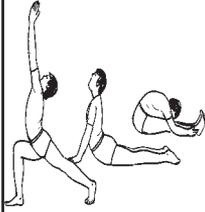
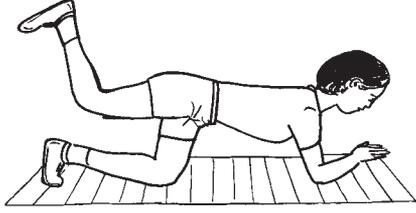
## 3.1 Stretching of body

### Ray diagram of physical training

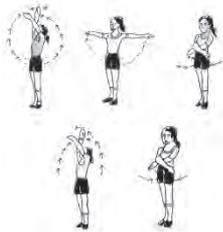
#### PT no. 1 PT of stretching body

Initial stage	Process	Final stage
Stand in the attention position joining ankles 	<ul style="list-style-type: none"> <li>-On counting 1 and 2 raise both hands up stretching straight from the front.</li> <li>- On counting 3 and 4, come to initial stage bringing the hands from right and left to the sides of the body.</li> <li>-Perform the PT regularly and stop at counting 8.</li> </ul> 	Stand with crossing both wrists gently putting them on abdomen at the front. 

### PT no 2. PT of hand and foot

Initial stage	Process	Final stage
<p>Stand with crossing both wrists gently putting them on abdomen at the front.</p> 	<ul style="list-style-type: none"> <li>- On counting 1, spread the crossing hands gently to the right and left side by relaxing both knees.</li> <li>- On counting 2, keep both hands bringing from right and left on crossing stage. During it, step on heel first then toe at the end.</li> <li>-Keep continuing the PT and stop at counting 16.</li> </ul> 	<p>Stand with crossing both wrists gently putting them on abdomen at the front.</p> 

### PT no 3. PT of arm

Initial stage	Process	Final stage
<p>Stand with crossing both wrists gently putting them on abdomen at the front.</p> 	<ul style="list-style-type: none"> <li>-On counting 1 and 2, round the both hands in front of body without relaxing from downward.</li> <li>- Spread the hands at right and left side crossing them over the forehead.</li> <li>-On counting 3 and 4, bring the hands down to keep them crossing on abdomen and round again both hands to spread side and put them with crossing at front.</li> <li>-Continue the PT and stop at counting 16.</li> </ul> 	<p>Stand with crossing both wrists gently putting them on abdomen at the front.</p> 

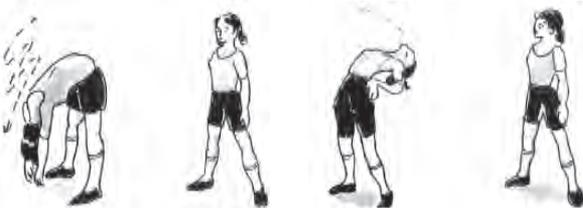
**PT no 4. PT of chest**

Initial stage	Process	Final stage
<p>Stand with crossing both wrists gently putting them on abdomen at the front.</p> <p>Body condition while doing PT</p> 	<ul style="list-style-type: none"> <li>- On counting 1, spread both hands at right and left side start from crossing hands with left foot keeping nearly 20 cm apart.</li> <li>- On counting 2, bring the spread hands from right and left up and put them back with chest stretching.</li> <li>- On counting 4, bring both hands down and keep them cross.</li> <li>- Continue the PT and stop at counting 16.</li> </ul> 	<p>Stand straight with 20 cm legs apart and keeping hands at sides of the body.</p> 

**PT no 5. PT of waist**

Initial stage	Process	Final stage
<p>Stand straight with 20 cm legs apart keeping hands at sides of the body.</p> 	<ul style="list-style-type: none"> <li>- On counting 1, bend the body towards left with raising right hand from right side.</li> <li>- On counting 2, reverse the same hand to bring it at original place.</li> <li>- On counting 3 and 4, repeat the above activities.</li> <li>- On counting 5, 6, 7 and 8, repeat the same process as in the counting 1 by left hand.</li> <li>- Continue the PT and stop at 16.</li> </ul> 	<p>Stand straight with 20 cm legs apart keeping hands at sides of the body.</p> 

**PT no. 6 PT of trunk**

Initial stage	Process	Final stage
<p>Stand straight with 20 cm legs apart keeping hands at sides of the body.</p> 	<ul style="list-style-type: none"> <li>- On counting 1, 2 and 3, try to touch the floor with fingers bending the body at front.</li> <li>- On counting 4, stand the body straight.</li> <li>- On counting 5, 6 and 7, body is bent towards back supporting behind on the waist by both hands.</li> <li>- On counting 8, stand the body straight.</li> <li>- Continue the PT up to the counting 16.</li> </ul> 	<p>Stand straight with 20 cm legs apart keeping hands at sides of the body.</p> 

**PT no. 7 PT of chest and waist**

Initial stage	Process	Final stage
<p>Stand straight with 20 cm legs apart keeping hands at sides of the body.</p> 	<ul style="list-style-type: none"> <li>- On counting 1, 2, 3 and 4, body is twisted left and right at first then repeat same process again but at counting 5, both hands should be raised towards left side. On counting 6 bring the hands back to left but at counting 7, hands should be reached at left side again and put hands at sides on counting 8.</li> <li>- In the same way, the process is done at right side and stops the PT at counting 16 moving left leg towards right.</li> </ul> 	<p>Come to attention position keeping left leg together with the right.</p> 

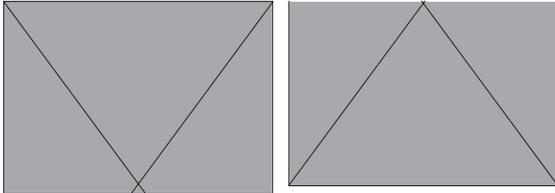
**PT no. 8 PT of shoulder and neck**

Initial stage	Process	Final stage
<p>Attention position keeping hands at sides of the body.</p> 	<ul style="list-style-type: none"> <li>-On counting 1, keep apart the left leg touching shoulders by both hands.</li> <li>-On counting 2, stand on toes of the feet raising both hands straight.</li> <li>-On counting 3, stand on heel touching shoulders by both hands.</li> <li>-On counting 4, come to attention position keeping hands at sides.</li> <li>-In this way, on counting 5, above activity is done by right leg at right side.</li> <li>-Continue the PT up to the counting 16.</li> </ul> 	<p>Attention position keeping hands at sides of the body.</p> 

**PT no. 9 PT of chest**

Initial stage	Process	Final stage
<p>Attention position keeping hands at sides of the body.</p> 	<ul style="list-style-type: none"> <li>-On counting 1 and 2, bend the body twice to touch the thumb of the left foot keeping it apart to left side.</li> <li>-On counting 2 and 3, body is bent slightly back with chest stretching along the hands kept behind.</li> <li>-On counting 5 and 6, counting 1 and 2 is repeated towards right leg.</li> <li>-On counting 7 and 8, counting 2 and 3 is repeated again.</li> <li>-Start the PT again and continue up to the counting 16.</li> </ul> 	<p>Stand the body with 20 cm leg apart keeping both hands spreading towards right.</p> 

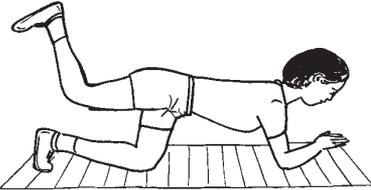
**PT no. 10 PT of moving round the body**

Initial stage	Process	Final stage
<p>Stand the body with 20 cm leg apart keeping both hands spreading towards right.</p> 	<p>-On counting 1, 2, 3 and 4, both hands pointing right side should be moved round towards left at the front including whole body to stay same side.</p> <p>-On counting 5, 6, 7 and 8, the action is repeated in the reverse and both hands are kept pointing towards right.</p> <p>-Continue the PT up to the counting 16.</p> 	<p>Come to the attention position keeping left leg together with the right.</p> 

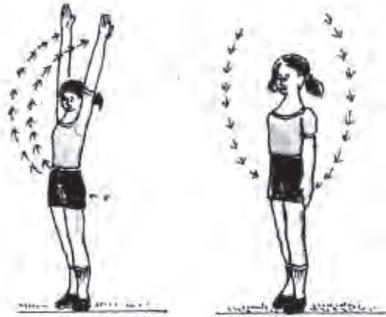
**PT no. 11 PT of jumping by both legs**

Initial stage	Process	Final stage
<p>Attention position.</p> 	<p>- Jump gently on both feet for four times counting 1, 2, 3 and 4 keeping hands at sides.</p> <p>- On regular counting 5, 6, 7 and 8, the hands and legs are opened up and closed during jump.</p> <p>- Continue the PT up to the counting 16.</p> 	<p>Stand straight with both hands crossed on the abdomen at the front.</p> 

**PT no. 12 PT of cool down No. A**

Initial stage	Process	Final stage
<p>Stand straight with both hands crossed on the abdomen at the front.</p> 	<p>-On counting 1 and 2, lower down the body with knee bent as well as hands open and stand up on toes.</p> <p>-On counting 2, the opened hands at right and left should be crossed and stand on the heel.</p> <p>-Continue the PT up to counting 16.</p> 	<p>Stand straight with both hands kept at sides.</p> 

**PT no. 13 PT of cool down No.B**

Initial stage	Process	Final stage
<p>Attention position</p> 	<p>- On counting 1 and 2, bring both hands up through the front with long breathing in.</p> <p>- On counting 3 and 4, bring both hands down to keep at sides from right and left with breathing out.</p> 	<p>Attention position.</p> 

## Yogasan

In yogasan, different asanas are practiced. Yogasana is the exercise done physically and mentally so it develops mental and physical state of human being. Before doing yogasan, warm-up exercise must be done. Warm up exercise makes the body ready for further exercise.

### Importance of yogasan

Healthy body has a healthy heart. The life style which follows this attitude is called yoga. Human is physically, mentally, spiritual living being. Yoga helps in developing all three aspects in a proper manner. Besides these, the importance of yagasan which is practiced in daily life are mentioned in the following points:

- Yoga helps to have good sleep. Person who practises yoga daily gets a deep sleep.
- A person who does daily yoga, doesn't feel tired and helps him to be active whole day.
- People who practise yogasan daily, have the power to fight with all kinds of disease.

In class 6 we practised Padamasa, Pajrasan, Bhujangasan, Mandukasana and Sawasana. In this chapter, we will practice these asanas more.

### Half lord of the fish pose

Half lord of the fish pose is taken from the name Machendranath. This name is taken from the Sanskrit word Ardha means half, Machhe means fish. Indra means lord and aasana means pose. In this asana spinal cord is bent from the bottom to top. This asana makes a great impact on nerves, villi and in digestive system. Following steps are followed for this asana:

- First extend the legs in the front.
- Turn the right leg and put it on the left thigh just touching by the heel.



- c) Produce the left leg towards the right leg
- d) Catch the toe and heel sticking right arms and elbow and left thigh and calf

In this asana, take a long breath and while releasing it turn the body left and turning the left hand through the vertebrae move to left hand. We turn our head also to left side as much as we can. Similarly opposite of this, we bend it to right side and turning the right hand through the vertebrae and move it to left hand side.

Head is also bent towards the right side. This asana can be done for one minute with normal breathing. But people who are suffering from spinal disease shouldn't do this asana.

### **Cow face pose**

Cow face pose is done in sitting position. while sitting the knees are bending with each other and this forms the face. Similar to cow so it is called cow-face-pose. Spinal disease can be cured by this asana. Following steps should be followed while practicing this asana.

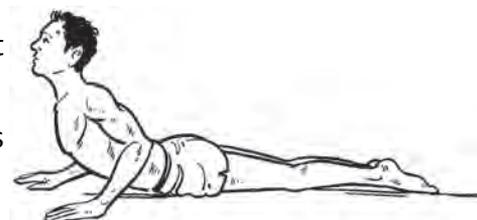


- a) First we sit bending our knees and above the right leg left leg is kept bending.
- b) After that both feet are placed left and right side of the thigh and both knees are seen upward. So this looks similar to the face of cow.
- c) Now, the right hand from the shoulder and left hand from the back side should meet each other.
- d) Taking a deep breath vertebra should be straight, chest high and stomach should be inward position.
- e) Similarly it is practiced from left side

### **Bhujangasna**

Bhujanga is called cobra. This asana is also called Sarpasana. It helps people who are suffering from spinal cord pain and constipation. Following steps are followed for this asana:

- a) First sleep upside down.
- b) After that both knees and heels are kept together.
- c) After that with the support of both hands we raise our chest and head slowly.
- d) We stay in the same pose by taking a deep breath.



## Fish Pose

It is combination of two words fish and pose. Here we stay in the position like fish. For this asana, we follow the following steps:



- We sit in padmasan by folding our legs.
- Chest is raised slowly after we lie straight on the back.
- While practicing it our head touches the ground. But the weight of our body is not included.
- While this asana is being practiced both the thumbs of the legs are caught by the hands and we bend ourselves backwards.

## Supta Bajrasan

Practicing supta bajrasan, it helps in blood circulation in our brain and develops creativeness in the peoples mind. For this, first we stay in bajrasan. Then slowly bending towards the back side, we touch our head to the ground.



After that knees should be kept together firmly on the ground. Then slowly we put our neck, shoulder and vertebrae in the ground. After that both hands are kept straight in top of thigh. Help of elbow and hand is taken to come at the first position.

## Yoga Mudrasan

Yoga mudrasan helps to remove constipation and helps in the digestive system. First we stay in the half lord of the Fish Pose. Then both hands are kept backwards and catch each other first.



Keeping the body straight, we take in a deep breath. Taking deep breath we close our eyes and release it slowly bending our body downward and touching the ground with our forehead. We take the breath in and out continuously and after few moments return to the original position.

## Wind Releasing Pose

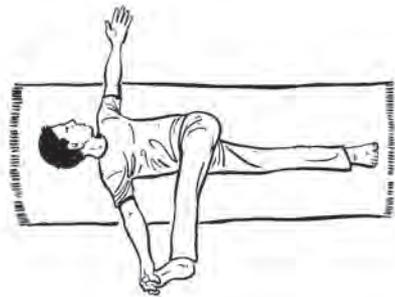
If we do wind releasing pose all the gases from our stomach comes out. Fats of our stomach are removed. Flexibility of knees and hip is increased. In this asana we sleep in the support of our vertebrae and take in the breath. Then contraction of left leg is done on the knees.



Fingers of both hands are touched with each other and leg is brought to touch the stomach. Now head is raised and nose is touched with the knees while the other leg is kept straight. Then we stop our breath for a while. After some time we go back to our original position and release our breath. Similarly we repeat this activity with the other leg. This asana can be done with both legs contracting.

## Monkey Pose

Monkey pose is the asana which twists our different body parts. This should be done in lying position. Here we do the Monkey pose by the help of following steps:



- Legs are kept together after they contract
- While doing this asana we lie and right leg is kept straight and the other leg is in the position of scissor and with our hands we catch the thumb, other hand is in the other direction where the head is in the same direction and is done by seeing the palm of the other hand.
- We can perform it from the other side and finish this asana.

## Exercise

**Answer the following questions.**

- Write the importance of Yogasana
- Differentiate between Half Lord of the Fish Pose and Cow face pose
- Write the steps for doing Cobra pose and Fish pose
- Write the ways for performing Supta Bajrasan and Yoga Mudrasan
- Differentiate between Wind releasing Pose and Monkey Pose

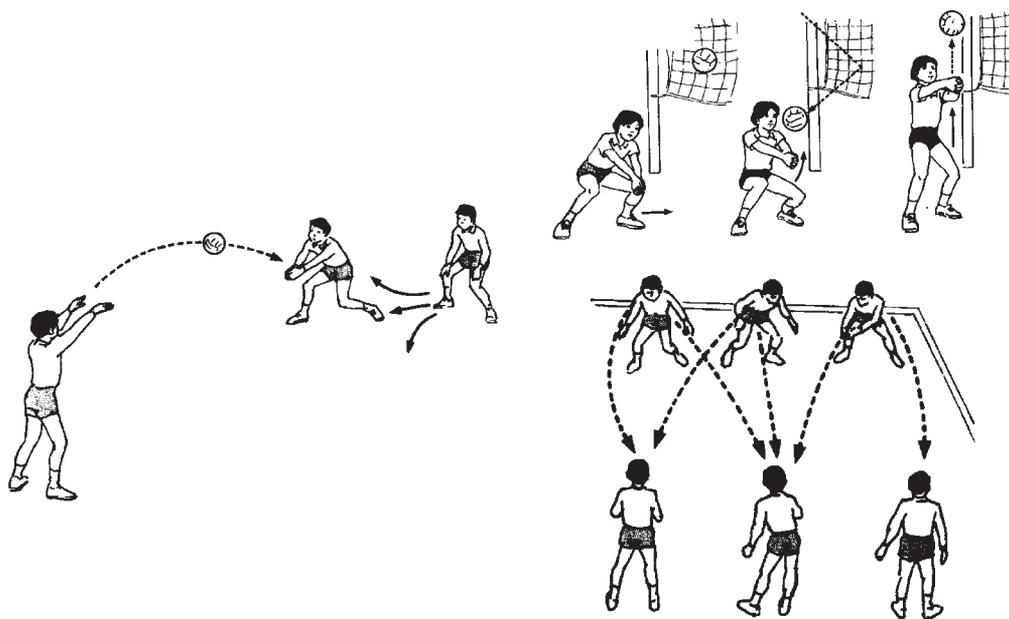
Game is an important aspect for creativity. Besides improving physical aspect, it plays an important role in developing decision making ability. It helps to expose hidden talent and develops ability of leadership, management of time and group activities. In this chapter we will practise some basic skills of volley ball.

### (A) Basic skills of Volley ball

To play volleyball properly its basic skills should be learnt first. Among different basic skills of the game we will learn two skills - service and digging.

#### 1) Digging

Digging is one of the basic skills of volleyball game. In this skill the ball striken under the chest level is raised with both hands without bending the elbow. The ball is hit with wrist or the wrist put little above the fist and little down the elbow. Practice is needed for this and leg should be little bent while digging.



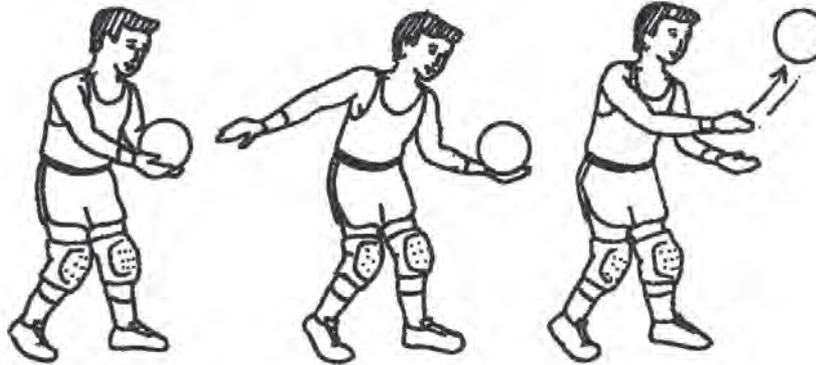
#### Practice of digging

##### Activity 1

Make a group of three players. Two teammates who are digging stay on one side and the other one stay on other side that will help in practicing the digging by throwing the ball turn by turn. Practice this activity turn by turn.

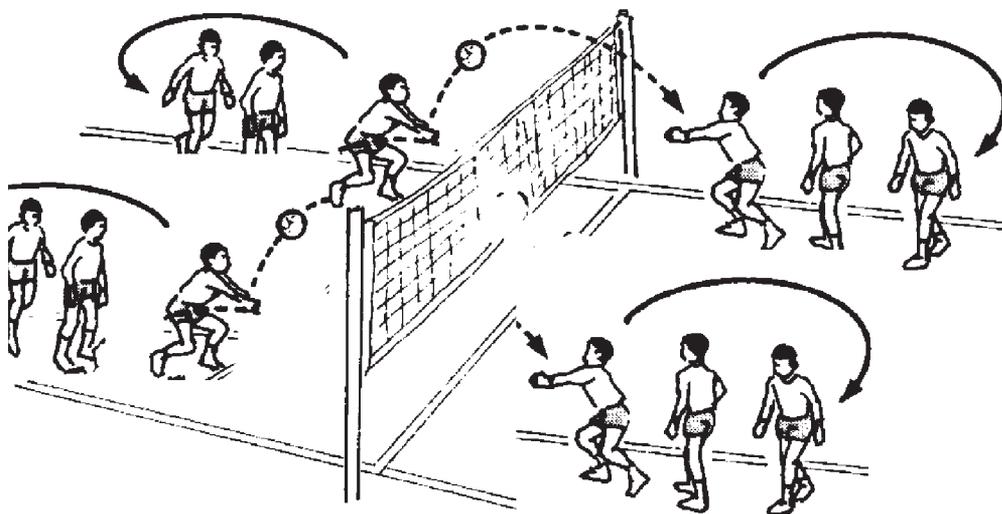
### Activity 2

Make a group of 6 players and stand in a line of 3 each as shown in fig. Pass the ball from one side and return by digging from the other side. Perform this activity turn-wise.



### Activity 3

In the volleyball court with the net, stay in a group of 3 players in a line on both sides standing opposite to each other. After digging the ball by the first player, go to the last of the line and continue this process until all practice the digging.



## 2. Underhand Service

Under hand service is one of the basic skills of volley ball. In this skill the ball is raised by one hand and striken by the other. To hit the ball in the right place and forward it to the other half of the court in right direction more practice is needed. It will be easy if the ball is hit with the end of the palm and send to the opposition side.

### Ways of practicing underhand Service

#### Activity 1

In one side of the court, two lines each consisting of 3 players stand front and back the other side of the net standing in line and going inside the court turn-wise then practise the under hand service 3 meter, 6 meter and 9 meter far from the net. Practice to return the service ball from other side of the net.

#### Activity 2

Stand around in the volley ball court, then one by one turn-wise going inside the middle of the court and trying to hit the under hand service ball.

### (B) Basic skills of Football game

Football is a popular game. Many people play football and love this game. Its rules are easy to understand so almost all the people play this game. To play this game basic skills are needed. In this chapter we will practice, kicking, trapping and heading.

#### 1) Kicking

Kicking is one of the basic skills of football. The ball is hit back without trapping the ball or it is after tracking it.



## 2) Inside kicking

The inner part of the foot is used in inside kicking. The flat area between the ankle and the toe is used to strike the ball. If we want to kick the ball with the right leg then slow run up is taken and the left leg is just kept beside the ball and the ball is kicked with the right leg.

## 3) Instep kicking

In instep kicking, the ball is kicked from the place where shoe lace is tied. The method of kicking is similar to that of inside kicking.

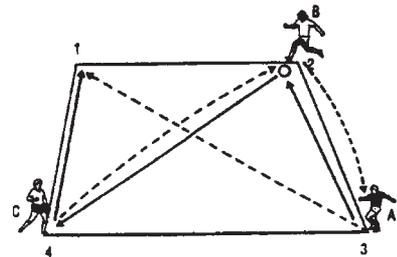


### Practice of kicking

Now we will practice the skills, inside kicking and instep kicking.

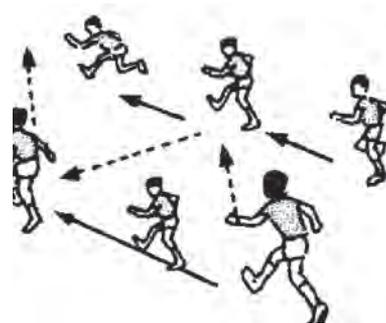
#### Activity 1

Make a group of 3 players. Place cones each corner of the ground. Pass the ball to the open corner and the other friend will try to get the ball. Running should be done outside the marked line. While practicing inside kicking, instep kicking should be used.



#### Activity 2

Two teams of 3 players each are formed and they run forward. The last friend of a line should pass the ball to the middle friend of the other line using instep kicking. At that time friends of 1st line rush a little forward. The friend who has got the ball will pass it to the friend of 1st



line who is standing 1st by inside kicking. Running should be slow while practicing this activity. After practicing it, other friends should get the chance to practice it. If there are many numbers of balls then we can practice it by making many groups.



## 5) Trapping

Trapping is one of the most important basic skills of football game. Different body parts can be used to control the ball. Trapping can be done in different ways depending upon speed, direction and height of the ball.

### Following points should be noted while practicing trapping activity:

- 1) For trapping the rolling ball, of the body is balanced with one leg and the other leg is raised slightly and the ball is pulled backward keeping it under the foot.
- 2) Thigh can be used to trap the ball is stopped. As the ball hits the thigh, the thigh is pulled downward. .
- 3) While doing stomach trapping, before the ball touches the stomach, stop the breath for a while and take the stomach a little bit inside.
- 4) While doing the chest trapping, similar steps are followed as of stomach trapping.

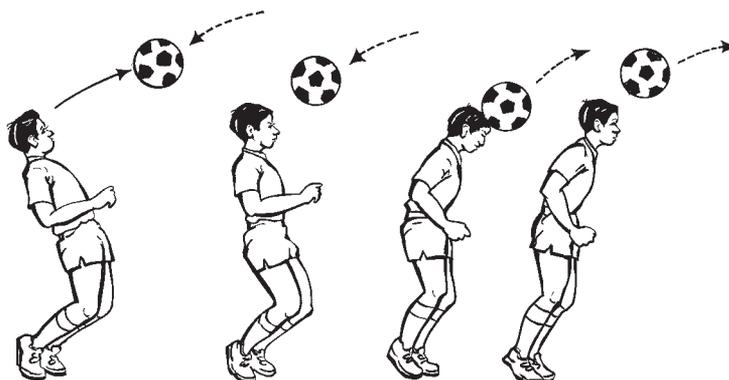
### Activity 1

Make a group of seven players. Organize the group in the English letter 'C' and turn wise one by one pass the ball by rolling in the ground or lifting it practice it by trapping it either by leg, thigh, chest or stomach.

### Activity 2

Two groups of the same number of students stand in line practice the trapping activity by leg, thigh, chest and stomach.

### (c) Heading



Heading is also one of the basic skills of football game. Here the ball is hit from the front part of the head. According to the speed, height and direction, heading is done and continuous practice is necessary.

**While practicing heading, following points are followed:**

1. The ball which comes above the head should be taken care.
2. While heading the ball in low height, we should take care if there is an opposition or not.
3. While heading usually front part of the head is used.
4. To control our body while heading the ball our hands should be extended properly.
5. While hitting the ball without trapping by the head, the shock should be given by the head with the force of the muscles of the legs.
6. Eyes should not be closed while heading.

**Ways of practicing heading**

**Activity 1**

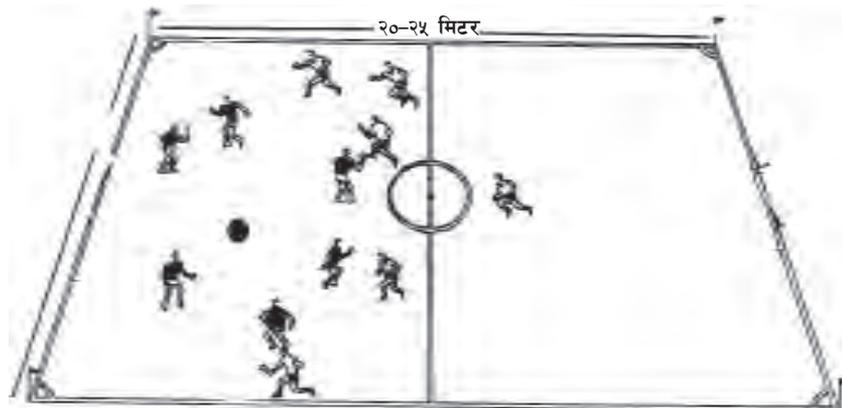
According to the number of balls provided, practice heading in pair.

**Activity 2**

According to the number of balls, making a circle ensure a student stand in the middle and passing the ball practice it turn by turn.

**Five or Seven Men Football**

Football can be played in a small group on a small ground. After learning the basic skills of football, for practicing it in a better way, we can improve it by playing



matches. Now by using the heading, trapping and kicking skills, football is played and practiced. There should be equal number of players in both the teams for playing 5 men and 7 men football. Length of the ground should be minimum of 20 to 25 m. and keep the goal post of minimum 60 cm. For goal post we keep bricks, cones or bags. After the signal of starting the game, toss the coin in the middle of the ground and let the team kick off which wins the toss. Try to score either by heading or giving short passes and short kicking. There will be no goalkeeper in this game. In 10 minutes of play the side which obtains more goals will be announced winner.

### **Some rules of the game.**

1. Pushing is not allowed while playing.
2. The ball shouldn't be kicked hard.
3. Use of hand is prohibited inside the ground.

### **(C) Basic Games and Skills of Basket ball**

Basket ball is played between two teams in a rectangular court. The court is equally divided into two parts. A backboard with a basket is kept at the end of the court on either side of the court.

Toss is done before the game and the winning team can choose from which side they want to play. Each player of both the teams stands in the centre. Jump ball is done by the referee to start the game. Both the teams try to basket the ball in each other's basket. Game is divided into 4 quarters of 10 minutes. Two min break is given after every quarter finishes. But there is 15 minutes break in between 2nd and 3rd quarter. After the break the players change their side. In 40 minutes of play the team which scores more (basket) wins the game.

A country like Nepal whose economic status is not so good every school in Nepal cannot afford a basketball court. Some basic games will help in playing basketball.

#### **1. Port Ball**

Port ball is similar to basket ball in its manner of playing but it lacks back board. In this game instead of backboard one chair is kept in either side of the court. One player of one team stays at end of the court on each chair and other one of other team similarly at the end of the court on other chair. As soon as the game starts the players pass the ball to the teammate who is standing on the chair at the other end of the line to score as much as possible. In the given time the team scoring more points is announced the winner. Many skills should be learned for this game. Here we will practice underhand pass and over head pass.

## **Underhand Pass**

Underhand pass is used to score points in port ball. For this, we can use one hand or both hands for passing the ball.

## **Overhead pass**

Overhead pass is normally used to pass the ball over the head. This can also be used by one hand or both hands for passing.

## **2. Dodge ball**

Dodge ball is played by hitting and dodging. It develops dodging and throwing skills. Sometimes we need to catch the ball passed by our friends, so it helps in catching practice. Therefore this game is called ball game. Here we will practice the skills of hitting, dodging and passing the ball.

### **Hitting and dodging**

While hitting the ball one hand or both hands can be used. Here dodging is also done controlling the body and quick decision should be made for catching. Dodge means fake. So a player can fake from front or back.

### **Passing**

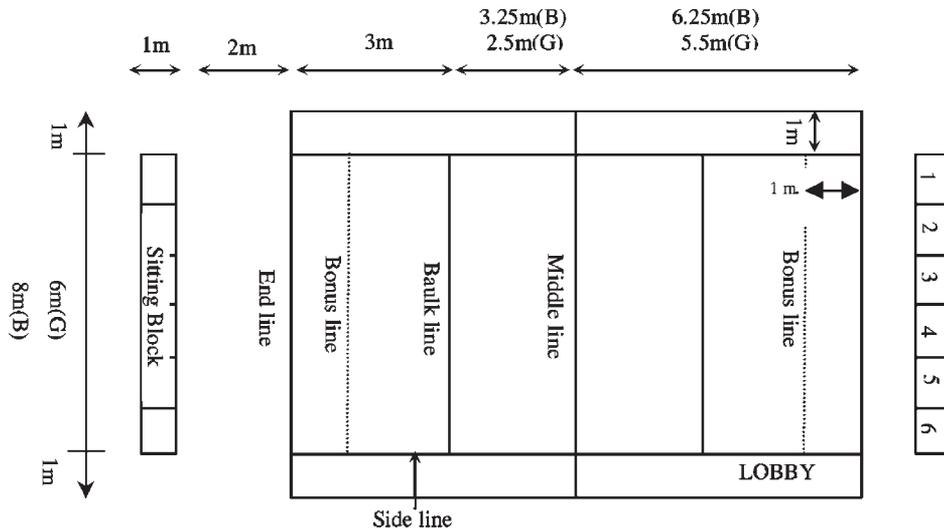
In dodge ball the skill of passing is very important. By passing the ball with our team mates we can score many points.

## **D) Kabaddi**

Kabaddi is the game played between two teams having 7 players in each team. Among two teams once they become raider and other time anti-raider and play the game. Toss takes place before starting the game. Toss winning team can choose raider or the other side. After the signal of the referee the raider team sends one



player from their team to the opposition court. The player who is going to raid has to say 'Kabaddi..... Kabaddi' in one breath. This type of sound produced is called Cant. The raider who is going to raid has to return after crossing the Baulk line of anti-raider's court or only after touching the antiraider. Otherwise raider will be out and antiraider will gain 1 point. If the raider can touch any of the antiraider without stopping the cant and can return to his own court then, the number of players he

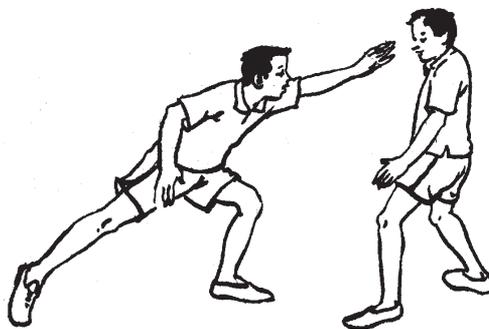


has touched will be out. As many numbers of players has been out, same number of points, the raider will benefit.

Basic skills should be practiced in order to play Kabaddi successfully. Hence we will practice dodging and kicking.

### 1. Dodging

Dodging is one of the attacking skills used by the raider. Here we will dodge the anti-



raider. This activity makes the anti-raider confused and we can easily gain the points. While dodging, the raider seems to be attacking at one place but attacks at other part. For this, speed is needed in the physical movement.



out.

If first 3 runners are out then second 3 runners have to enter the ground, second 3 runners out then third 3 runners enter the court, if third 3 runners are out then again first 3 runners enter the court. In this way the game continues for 9 minutes.

After 9 minutes one turn of both the teams finishes and there will be 5 minute break. After the break the team which played as runners before the break will now play as chasers and the team which played as chaser will now play as runners. After the end of second 9 minutes 1st inning terminates and they get break of 9 minutes again. Then again the game resumes as chasers and runners. Each team plays as runner and chaser twice in the game. The team which gains more points while chasing two times in a game is announced as the winner.

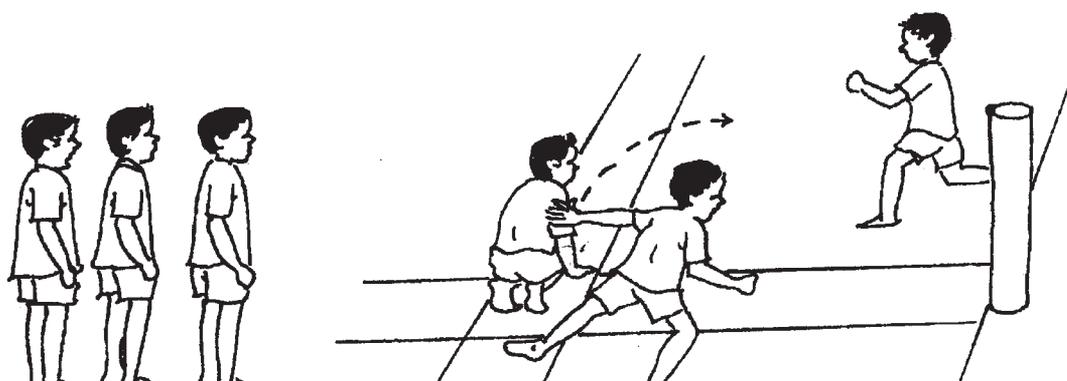
To play kho kho basic skills should be learnt. Here we will practice some skills for on kho kho.

### 1) Dodge

Dodge is the defensive skill used by the runner. The runner will get more advantage if he wastes the time by dodging the chaser. For this we need to change the direction by going in front of the chaser and have to make chaser change his directions too.

### 2) Playing in pole

This is the skill used by a chaser. The best place to out the runner is near the post. We need to practice activity like diving near the pole or taking round of the pole. Fake kho and late kho should be used as much as possible.



# Athletics

Athletics is the physical activity comprising of actions like walking, running, jumping, and throwing. Walking and running take place basically in tracks and jumping and throwing activity in field. So this is also called track and field. In athletics there is normal movement. Hence it can contribute to all kinds of games. A person who is successful in athletics can be successful in other games too. In this chapter we will practice middle distance running.

## **Middle distance running**

In middle distance running, there are 800 meter and 1500 meter run. To run middle distance running, speed and endurance is necessary. In middle distance running, the runner has to use his speed remarkably compared to other skills. Use of endurance is more compared to speed if the distance is increased. In the 800 meter running 65% of speed and 35% of endurance is used. In 1500 meter running 50% of speed and 50% of endurance is used.

## **800 meter running**

To complete 800 meter running, a runner has to run a 400 meter standard track twice. Running is started from stagger. The runner can only change the track after he crosses the turning track of the other side. In 800 meter running, only 8 runners can participate. So if there are more than 8 runners, they have to go through heat stage only then 8 runners are selected.

## **1500 meter running**

To complete 1500 meter run, the runner should complete 400 meter track quarter to four times. Starting of the run begins from the curve. There can only be 12 participants in 1500 meter run finals, so if there are more runners then they have to cross the heat stage.

## **Stages of middle distance running**

### **Foot plant**

Foot plant is an important stage of running. While doing foot plant we have to leave the ground by pushing with the foot. In this way when we support with leg, less weight is on the foot and it will be easy to run forward. For this we should first practice it by bare foot.

### **Posture**

We bend our body slightly while running. This activity helps to balance the body. Contrary to this, if the body is leaning backward we should take long foot. It doesn't help to create any physical movement.



## **Stride length**

In middle distance running, the movement of foot should be fast and light. While moving the legs it should be felt like foot rotating under the body. While moving like this the center of gravity of the body should lie on the middle of the rotating foot. While completing the running, the foot should take a long stride in order to increase the speed.



## **Stride mechanics**

In middle distance running, the body should be bending forward while moving the foot. Knees should be raised up while running. As a whole the running should be continuous and smooth.

## **Movement of arms**

The main purpose of moving the arms is to balance and co-ordinate the body and legs. Arms should be moved gently forward and backward as they almost touch the body. While moving the arms, elbow remains in 90 degree. Fist should be gently opened.

## **Practice of middle distance running**

In training of middle distance running, we practice some exercises necessary for 800 meter and 1500 meter running.

### **Activity 1**

#### **800 m. running**

In 800 m. running endurance as well as speed should be considered. For practice 800 m. running make a circle of 400 m. Mark 50 meter, 200 meter and 250 meter in the circle. Then after first run 50 m and slowly walk 150 m. Again run 50 m. and walk 150 m. In this circle take a round 4 times in 4 days in a week and on the last day run 400 m. When the time of competition is nearing then except 400 m. run 600 m and 800 m. To make it more clear see in the figure shown below. Figure 73 (page 99)

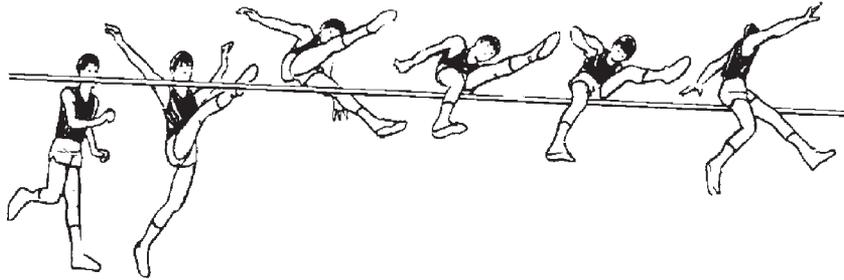
### **Activity 2**

In 1500 m. running, speed and endurance should be practiced equally. For middle distance running interval training is a suitable one. We can practice this running by adjusting the distance of 800 m. For example we should run 100 m and walk 100 m. In this readymade circle 6 rounds should be taken for 4 days in a week. Sometimes we can play football and basketball where endurance and speed is necessary. When the competition is coming near we should practice 1500 m. running on alternative day.

## **High jump**

### **Introduction**

High jump is an event of athletics in which a participant jumps as high as possible to cross a bar. To perform high jump clearly more practice is necessary. Approach, take off, coordination, balance and landing help in doing high jump properly. High jump develops our hand and leg muscles to be strong and also strengthens our



muscles of waist and stomach. To perform high jump safely, a safe place should be managed. The place where landing takes place flexible mat or sand should be put. Among different methods of high jump scissors style is also used. According to this method while doing high jump to cross the high jump bar, one should approach from an angle of 45 degree. In this approach, the leg that takes off should cross the bar and the other leg should do the bar first by making it into scissors position and safe landing should cross done.

High jump can be practiced in the following ways:

### Activity 1

#### Jumping over joined hands of two friends

With guidance of the teacher, run to the side line of the ground turn-wise. On the difference of at least 10-15 m., make a bar by joining hands and let the other friends cross it. The friends who have already crossed should also make a similar bar. Practice high jump in this way for a certain time.



### Activity 2

Jumping over the rubber band held on both sides

Make a bar of rubber and try to cross it where there is a place for landing. The friends who are participating stand in a file on the side of the bar and cross the



bar turn wise. After their turn, tell them to go back to the file again.

### **Shotput**

Among the various events of athletics shotput throw is a field event. It is also one. It is the event where a heavy metal ball is thrown as far as possible from the circle. The radius of the throwing circle is 1 meter and 07 centimeter.

Basic skills of shotput throw are holding, stance, gliding, throwing and follow through.

#### **Activity 1**

##### **Stand in the circle and throw the shot without moving the leg**

Stand in a file outside the circle. Practice to throw, as far as possible, the shot which is kept inside the circle turn by turn

#### **Activity 2**

##### **Stand in the circle and throw the shot by gliding the leg**

Stand in a file outside the circle. Practice to throw the shot turn by turn along with gliding which is kept inside the circle as far as possible.

### **Relay Game**

Relay is the game played among two or more than two friends by passing an object to each other. There should be equal number of player in each team. Relay game is suitable to develop competition attitude, increase the unity of the team. Relay game can be played in the static position or changing the place. In this class we will play crossing (jumping) relay game and carrying own friend and walking relay game.

#### **Crossing Relay game**

This game is very helpful in running and jumping. In this game every team should cross the distance provided to team. Players' standing in equal number, after getting the signal first player goes and bends in the ground at the first sign. The next player jump over the player who is bending towards the ground and himself bends towards the ground at next sign. Similarly other player crosses the player who is bending and himself bends in the ground. At last the team which reaches the fixed point the game.

#### **Carrying the player and walking relay game**

This game helps in improving running skills. It is good if the pair is chosen according to height, weight and sex. In this game each pair of own team should cross the fixed line provided to them. Players stand in a line, after getting the signal, the first pair runs and crosses the end line and along with them second pair cross the end line. In this way after all the pair cross the end line the game is finished. The pair which crosses the end line first is announced as winners.