

# **Health and Physical Education**

## **Class - 6**

Government of Nepal  
Ministry of Education  
**Curriculum Development Center**  
Sanothimi, Bhaktapur

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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 ), incorporating the feedback obtained from various schools, workshops and seminars and interaction programmes attained by the teachers, students and parents.

In bringing out this text book in this form, the contribution of the Executive Director of CDC Mr. Khagaraj Baral, Deputy Directors Dr. Balkrishna Ranjit, Baburam Karakheti 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 Madhu Upadhyaya. Typing was done by Abhaya Shrestha. The layout design of the book was done by Jayaram Kuikel. 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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# **Content**

<b>Unit</b>	<b>Subject</b>	<b>Page Number</b>
<b>Health Education</b>		
<b>Unit - 1</b>	<b>Human Body</b>	<b>1-10</b>
<b>Unit - 2</b>	<b>Personal Health</b>	<b>11-15</b>
<b>Unit - 3</b>	<b>Nutrition</b>	<b>16-20</b>
<b>Unit - 4</b>	<b>Disease</b>	<b>21- 35</b>
<b>Unit - 5</b>	<b>Adolescence, Sexual and Reproductive Health</b>	<b>36-41</b>
<b>Unit - 6</b>	<b>Alcohol, Drugs and Smoking</b>	<b>42-44</b>
<b>Unit - 7</b>	<b>Environmental Health</b>	<b>45-52</b>
<b>Unit - 8</b>	<b>Safety and First Aid</b>	<b>53-58</b>
<b>Unit - 9</b>	<b>Family and Community Health</b>	<b>59-63</b>
<b>Physical Education</b>		
<b>Unit - 1</b>	<b>Physical Exercise</b>	<b>64-67</b>
<b>Unit - 2</b>	<b>Drill</b>	<b>68-74</b>
<b>Unit - 3</b>	<b>Physical Training</b>	<b>75-81</b>
<b>Unit - 4</b>	<b>Yoga</b>	<b>82-85</b>
<b>Unit - 5</b>	<b>Games</b>	<b>86-98</b>
<b>Unit - 6</b>	<b>Athletics</b>	<b>99-104</b>

**Unit: 1**

# **Human Body**

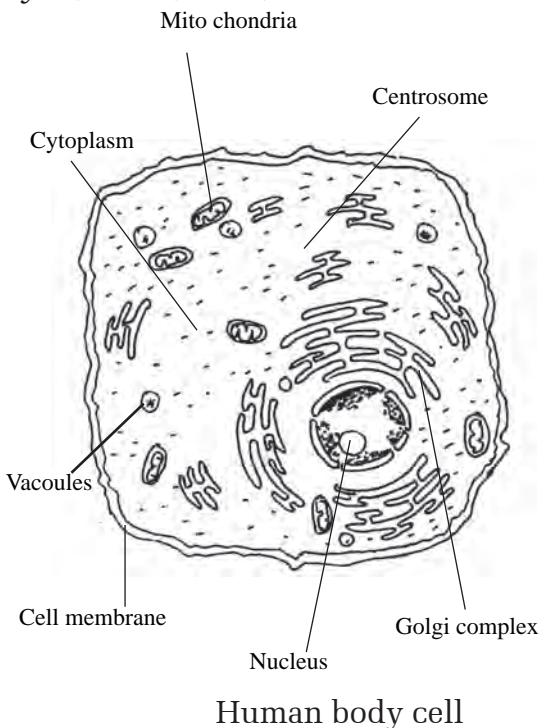
## **Introduction**

Human body is made up of various cells. Cells combine to form tissues and tissues combine to form organs. These organs perform various functions to form a system. A system is a group of organs that together performs an overall function. Skeletal system, digestive system, circulatory system and nervous system are the systems of human body. Similarly, the sense organs also have their own type of structure and functions. Eyes, nose, ears, tongue and skin are the sense organs.

It is necessary to get knowledge on structure of body organs and their functions in order to keep our body healthy. Similarly, it is important to know about the methods of keeping body organs safe and clean. In this unit, we will study about the cell, tissues, and different sense organs like eyes, nose, ears, skin and teeth.

## **Cells**

There are numerous cells in our body. Cells cannot be seen with the naked eyes. It can be seen only through a microscope. Cells can be elongated, rectangular and flat. However, most of them are circular. The outer part of a cell is covered by a thin membrane which is known as cell transparent membrane. The inner fluid part is known as protoplasm. In addition, it has living substances like



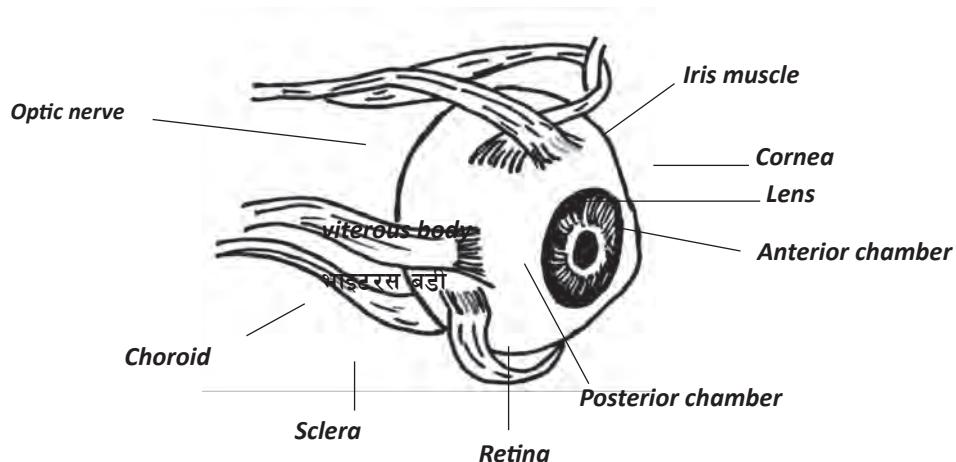
mitochondria, centrosome, golgi body complex etc. The central part of a cell is a nucleus. Energy production, sensation, cell division, cellular metabolism, cellular respiration and excretion are the major functions of cells.

## Tissue

A tissue is the combination of cells which have similar structure, size, characteristics and functions. The major tissues of human body are the epithelial tissue, connective tissue, muscular tissue, nervous tissue and bone tissue. The major functions of tissue are the production of energy in body, excretion and sensation.

## Eyes

Eyes are very important and delicate part of our body. Eyes see the surrounding and form image in our mind. Eyes are situated inside the hollow orbital cavity of frontal skull. There are two eyes each with diameter of 2.5 cm and almost spherical in shape. For a complete vision, both eyes are necessary. Eyes are the important sense organs which help us to identify brightness and colors. Without eyes, things cannot be seen or identified.



Internal structure of an eye

## **Care of eyes**

We have to apply the following methods to keep our eyes healthy:

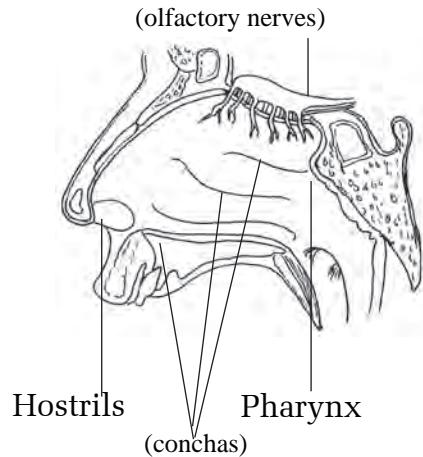
1. Wash eyes gently with clean water regularly in the morning and in the evening.
2. Consume balanced diet and foods containing vitamin 'A' (e.g., yellow fruits and green vegetables) daily.
3. Protect eyes from smoke, dust and direct light.
4. Eyes should not be rubbed if dirt or insects get into them. Instead, they should be cleaned by using tip of soft cloth and clean water.
5. It is not a good habit to study under very bright or dim light.
6. It's not good to see sunlight directly with the naked eyes. Vision of eyes can be lost if sun is seen with the naked eyes during eclipse.
7. Low quality sun glasses shouldn't be used in order to protect eyes from sunlight. It's better to use glasses on advice of a doctor.
8. The doctor should be consulted for treatment if any problem in eyes persists. Household medicines should not be used.
9. Habit of studying during travelling should not be done.

## **Practical Exercise**

Keep clean water in a large bowl or vessel and immerse eyes in the water. Clean eyes by blinking inside the water. Demonstrate this technique and let the students practice.

## Nose

Nose is an essential organ for attractiveness of face, smelling and breathing. The two nostrils of a nose are separated by a septum. The nostrils contain cilia (small hairs) which filters dust particles. Nose is made up of cartilage and skin, while the internal part is made up of mucus membrane. It secretes mucus which keeps the nose



moist and maintains temperature of air during breathing. There are olfactory nerves situated in the upper part of the inner nose and carry the sensation of smell to the brain. Nose helps us to breathe and identify the smell of anything.

### Care of nose

Nose is a soft organ of our body. Problem of sinusitis, allergy and defect in ears may be created if precaution is not taken especially during common cold. Therefore, for the safety of the nose, following things should be considered:

1. Make a habit of breathing only through the nose.
2. Do not poke the nose with finger and do not pull the cilia of the nose.
3. Use clean and thin handkerchief to wipe nose. Hot water vapor can also be taken. Vapor balm can be used during common cold, but it should not be continued for long time.
4. Doctor should be consulted if there is pain in the nose, congestion and difficulty in breathing.

## **Ear**

Ear is also an important organ of our body. We can hear various sounds with the help of an ear. Ear can be divided into external, middle and inner parts on the basis of its structure.

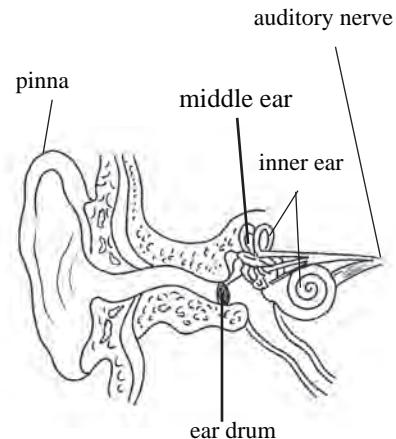
The external part of ear which is visible to us is the pinna. This part reaches to the ear drum. This is made up of cartilage covered by skin. This part collects sound and sends it inside. The part inside the

ear drum is the middle ear. Inner ear is inside the middle ear which has auditory nerves. Sound is identified and heard only after these auditory nerves transmit sound waves to the brain.

### **Care of ear**

Vigorous prodding of ear is not a good habit. Common cold, throat disease and wound by foreign object in ear can create problem. Deafness at young age can also cause loss of voice later. Therefore, following methods should be applied for caring of ears:

1. Any sort of pin, matchstick or instruments should not be used for the prodding of ear.
2. Do not put oil, water or milk into the ear.
3. Do not sneeze forcefully during common cold. It hampers ears.
4. Avoid listening to the loud noise. Cotton should be used in ears to prevent oneself from loud noise like sound of fireworks etc.
5. Regular use of headphone may reduce hearing capacity.

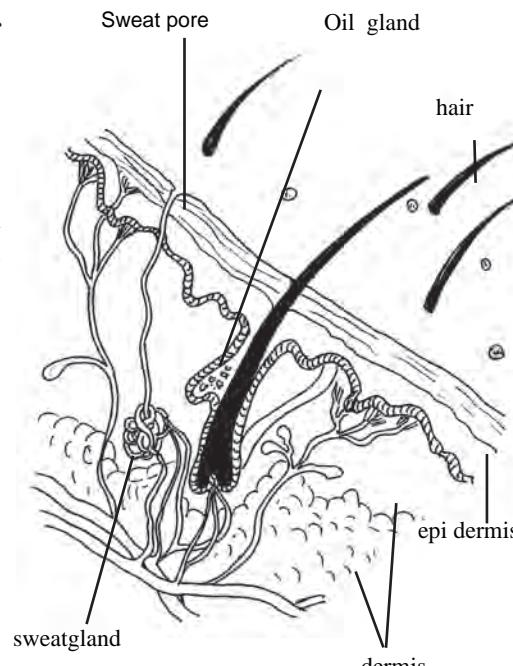


**Structure of Ear**

6. If earwax gets collected in the ear, it should be cleaned with the help of a health worker.
7. Clean the surrounding of an ear by a cotton or soft cloth during bathing.
8. Consult the related doctor if any problem in the ear exists.

## Skin

Skin is the outer covering of the body. It covers most of the parts of body. Skin is made up of various cells, neurons, blood vessels and glands. It has two major layers. Outer layer is called epidermis and inner layer is called dermis. The thickest skin is found on palm and feet. There are sweat pores and hairs in epidermis. The outermost cells die and shed off because there is no blood supply in this layer and a new layer is formed from the inner surface continuously. The



Structure of Skin

outer skin is continuously renewed. The inner skin (dermis) has blood vessels, nerve tissues, sweat glands and oil glands. The sweat gland excretes sweat which maintains the temperature of the body. Oil gland produces lubricating substance which keeps skin moist and soft.

Skin protects the body by covering it; excretes unwanted body products through sweating; senses hot, cold and touch stimuli; and produces vitamin D in presence of sunlight.

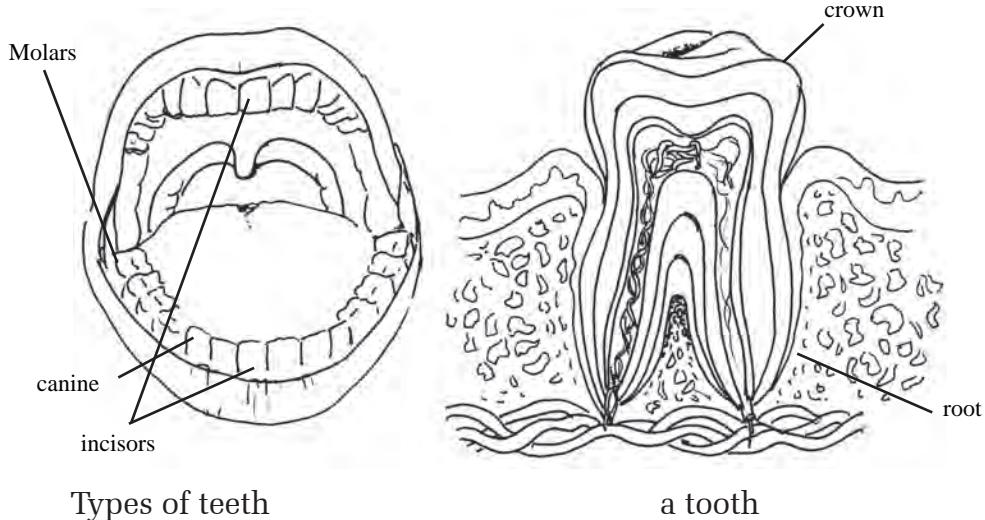
## Care of skin

It is very essential to keep skin healthy because it is an important body protecting organ. Following methods should be applied to care of the skin:

1. Keep skin clean by taking regular bath.
2. Wipe up skin with a clean and soft towel after bathing.
3. Bathing or swimming in a dirty pond or river should not be done.
4. Appropriate creams or pure mustard oil can be applied to the skin in winter season and if the skin is very dry.
5. Consult a doctor if any problem in skin appears.

## Teeth

Teeth are essential organ for chewing foods. Teeth start to appear in about six months of age. The first appearing teeth are called milk teeth. There are about twenty milk teeth. Milk teeth are replaced by new teeth during six to twelve years of age. Normally, there are thirty two teeth in an adult person.



Teeth are formed by bone cells. The visible part of teeth outside the gum is called crown and the part hidden inside gum is called root. There are four types of teeth as per their function. Eight incisors are present at the front in upper and lower jaws to bite and cut foods; then four canines are present to break hard food materials; and inside this are premolars and molars to grind the foods.

Most of the teeth are white and bright. This visible white part is called enamel. The part inside this is called dentine. Blood vessels and nerve tissues are present inside the dentine. Teeth chew and break food. Teeth help to make voice clear. It also helps to make ones face attractive.

### **Care of teeth**

Teeth are very important part of a body but much attention is not paid to the cleanliness and care of teeth. Special attention should be paid during falling of milk teeth. If the milk teeth are not taken out in time, the teeth will be damaged and it also damages the facial appearance. Similarly, earlier loosening of teeth may also be seen. Followings things should be considered for caring of teeth:

1. Teeth should be brushed up and down in the morning and night after meal for two minutes using a soft brush.
2. Avoid regular eating of too sweet, sour, cold and hot foods.
3. Mouth should be washed properly after eating sweet foods.
4. Continuous eating of hot and cold foods makes teeth weak.
5. The loosen milk teeth should be taken out in time. If necessary, dentist should be consulted.
6. Regular consumption of food containing vitamin D (e.g., milk) during the age of changing of teeth is a must.
7. Foods containing vitamin C (e.g., amala, orange, lemon, guava, green vegetables) should be consumed regularly.

## **Practical exercise**

Demonstrate the right method of brushing to the students by brushing up and down on teeth and let students practice. Inspect and provide necessary guidance to students.

## **Summary**

Our body is made up of various cells, tissues and organs.

To keep eyes healthy, wash eyes with clean water everyday and consume food containing vitamins A such as yellow fruits and green vegetables.

Sinusitis, allergy and problem on ear and brain may be seen if attention is not paid during common cold. One should prevent oneself from smoke, dust and cold during this time.

To keep ears healthy, pin, match stick, etc should not be used to remove earwax. Oil or other substances should not be used in the ear of small children. Similarly, one should avoid loud sound like that of fireworks.

Regular bathing is necessary to keep skin healthy.

Teeth should be brushed twice a day in the morning and night after meal. Milk teeth should be taken out in time. Vitamin C containing foods should be eaten regularly to keep teeth healthy.

## **Exercise**

### **1. Tick the right answer.**

- a. What is called to the outer most part of teeth?
  - i. Cotton
  - ii. Enamel
  - iii. Cornea
  - iv. Root
- b. Which of the followings is the major method of keeping teeth healthy?

- i. Not eating too sweet and sour foods
  - ii. Eating food containing vitamin D.
  - iii. Brushing teeth up and down regularly in morning and at night
  - iv. All of the above
- c. Which of the followings is not the part of eye?
- i. Optic nerve              ii. Retina
  - iii. Lens                    iv. Olfactory nerve
- d. Which of the followings affects the nose?
- i. Loud noise              ii. Bright light
  - iii. Alcoholism            iv. Smoke, dust and cold

**2. Write very short answer to the following questions.**

- a. What is the membrane which covers cell called ?
- b. What is the function of the optic nerve?
- c. Which vitamin should be taken for healthy eyes? Give three examples.
- d. What problems are created if nose is not cared? Write.
- e. What is the name of the nerve which transmits sound waves to brain from ears?
- f. What are the names of the two major layers of skin?  
Write.

**3. Write answer to the following questions.**

- a. What are the major functions of cell?
- b. Write the major ways of keeping eyes healthy.
- c. Write any of the three ways to take care of the nose.
- d. Write the methods of keeping ear healthy.
- e. How many layers are there in the skin?
- f. What are the ways of caring the skin?
- g. Write the methods of caring teeth.

## **Introduction**

Personal means ‘self’ and health means ‘physical, mental and social wellbeing’. If a body is clean, a person can be healthy, and this state is called personal health. Healthy habits and behavior make us healthy. Healthy body makes healthy mind. These two aspects are very important aspects of our life. Being healthy means being free from physical and mental diseases, and to obtain this, we must follow healthy behaviors. For example care of hair, face, etc; use of clean and pure drinking water; involve in regular exercise and entertainment; healthy dress up, etc. are healthy behaviors.

### **1. Care of hair**

Hair is the natural asset of people. Clean and shiny hair proves a person to be healthy. Dirty, uncombed hair and itchy scalp can negatively affect personal health. The following are the ways of caring hair:

1. Regular washing and bathing should be done.
2. Scalp should be washed properly using soap, mustard cake (pina), etc.
3. After washing the hair, it should be properly dried using a soft towel.
4. Hair should be combed to keep it clean.
5. Use of oil on the scalp and messaging it provide nourishment to the hair.
6. Combs should be made personal and cleaned frequently.
7. Hair cosmetics like head pin, ribbon, clips, hair band, etc should be cleaned regularly.

### **2. Care of face**

Clean face and glowing skin make a person healthy. Face indicates the eyes, nose, mouth, tongue, ears and hair, etc. keeping face clean means taking care of all these important organs. Followings are the ways to care the face:

1. Wash the whole face daily with clean water.
2. While washing face, secretions from eyes should be washed away. Every corner of the eyes should be cleaned and clean water should be splashed into the eyes 2-3 times.
3. Nose and back of the ears and neck should also be cleaned.
4. After washing the face, it should be wiped with a soft towel.
5. People away from home, players and farmers should wash mouth and face for more times than others.
6. It is better to use moistening creams, mustard oil, ghee or other oily substances on face and limbs by the people who have dry skin.

### **Practical Exercise**

At what time of the day and how frequently do your friends wash their face? Ask your 5 friends and note down. While washing face, demonstrate the method of cleaning tongue by fingers or a soft brush and let your friends do the same. Let them prepare recommendation on caring of face.

### **3. Use of Clean and pure drinking water**

Many people in Nepal drink unsafe water due to ignorance. They use direct water from well, tap, river, etc for drinking and cooking foods. Even if the water looks clean with our naked eyes, it may be impure and use of such water may cause water-borne diseases like diarrhea, dysentery, cholera etc. Pure water is that water which has no micro-organisms and chemicals, no odor, no color and looks clean. Water is pure if the sources of water, well and tap are clean and the drinking water must be kept covered. Methods of using clean and pure drinking water are as follows:

1. Water for drinking purpose should be boiled for 5 to 10 minutes.
2. It is better to use clay pot or copper vessel to store water.
3. Filter should be used to purify water.

4. Appropriate chemicals (e.g., potassium permanganate, chlorine, etc) can be used to make water pure.
5. While using chemicals in water, given directions should be followed.
6. SODIS (Solar water disinfection) method can also be applied to make water potable, for example safe to drink

#### **4. Regular rest, sleep, exercise and entertainment**

All the organs of the body must systematically work for having a healthy body. Our organs are active in home and out of the home too. When the organs are operated consciously in a managed way, it is called an exercise. Games are the major means of exercise for children and youth. Growth and development of body will be in an intended way if there is a regular habit of doing exercise. In addition, immunity power is also developed in a person. Regular exercise prevents a person from various non-communicable diseases (e.g., diabetes, heart diseases, stones, etc) and reduces mental tension too. After heavy works and exercise the body needs rest or sleep. The internal organs of body continuously work during rest or sleep. Diseases attack the body if it does not get adequate rest or sleep. To keep our mind healthy, rest, sleep and entertainment are required. Things to consider to keep body healthy are



1. Own favorite games should be regularly played.
2. It is better to do yoga and physical exercise from 30 to 45 minutes a day.
3. It is also a good exercise to walk 45 minutes or an hour a day.
4. Give rest to the body if you feel tired.
5. Taking a sleep when feeling sleepy makes body refreshed.
6. We can entertain by dancing, singing or watching other programs.
7. One should remove laziness and be active in good works.

## **Practical Exercise**

Prepare a list of exercises schedule that you and your family members do and discuss it with your friends.

## **Use of clean clothes**

There is a huge role of clothes in keeping body healthy. Appropriate dresses are needed to protect body from hot, cold, wind, water etc. Clean dress represents good personality of a person. Clothing should be appropriate at different climate and season. The following things should be considered while dressing up:

1. Always wear clean clothes to cover important parts of the body.
2. Clothing should be comfortable while walking and working.
3. Dresses should be mostly made of cotton. They should be soft and should not affect the skin.
4. Dresses as well as other clothes like handkerchief, towel, bed cover etc should be timely washed.
5. Clothes should be dried in sunlight and folded properly to keep safe.
6. Never wear others dresses.
7. Do not mix your clothes and that of the sick person at the time of working. This may transfer skin diseases if washed together.

## **Summary**

Personal health is the process of keeping oneself clean.

Dirty scalp may result in dandruff, lice, wound etc.

The face of a healthy person is bright, glowing and clear.

Water-borne diseases like diarrhea, dysentery, cholera, worms, etc. can be prevented if clean and pure water is drunk.

Regular exercise is very essential to keep body healthy. Similarly, timely rest, sleep and entertainment are equally important.

Clothes help to prevent body from cold, hot, air, water, etc.

## **Exercise**

### **1. Fill in the blanks with appropriate words.**

- a. \_\_\_\_\_ can appear if face is not kept clean.  
i. wounds      ii. dandruff      iii. pimples      iv. warts
- b. If the water vessel is of \_\_\_\_\_, it is good for health.  
i. aluminum    ii. copper      iii. plastic      iv. steel
- c. Body has \_\_\_\_\_ even while household works are done.  
i. clean       ii. exercise      iii. pure       iv. pain
- d. Clothes should be worn as per \_\_\_\_\_.  
i. fashion                          ii. culture  
iii. season                         iv. economic status

### **2. Write short answers to the questions below.**

- a. What is meant by personal health?
- b. Which aspects should be considered during caring of hair? Write.
- c. Why do we have to keep our face clean?
- d. Which method do you use to clean and purify water that you use?
- e. Why is it not good to use other's dresses?
- f. What are the advantages of regular exercise?
- g. How does healthy entertainment help to make us creative?

## Introduction

We perform many tasks daily. To do these works, our body must be healthy and strong. Foods help in the growth and development of a body. It also makes the body strong, keeps it healthy and enables it to engage in works. Nutrition means the process of consumption of food, digestion and use of nutrients in various parts of body. We obtain immunity against diseases from foods.



## Classification and function of foods

We all have seen newly born babies. They are so delicate at the time of birth, but after some months they are seen walking clutching their parent's finger. This has become possible due to nutrition. Nutritious foods provide us with energy. No life is possible without food. There is a variety in foods we eat. The functions of these foods are varying according to their type. Some of the foods are discussed below:

## **1. Cereals**

Cereals are necessary to all children, youth and adult. These foods include rice, wheat maize, millet, buckwheat, barley etc. These foods contain carbohydrates which gives us energy to work. Carbohydrates help us even in minor works like walking, studying, carrying loads, playing, running etc.

## **2. Beans and pulses**

We eat different type of beans. We consume beans like soybean, black eye beans (bodi), long beans, peas, gram etc produced from our fields in our major meal or in tiffin. Besides this, we consume various types of pulses too. For example, green gram (moong), red gram (arahar), black gram (maas), red kidney beans (rajma), etc. We get protein from these beans and pulses which are essential for growth and development of our body. These foods are also essential for maintenance of our body tissues.

## **3. Vegetables**

Mustard green (rayo), spinach (palungo), mustard leaves (tori ko saag), lambs quarter (betha), cress (chamsur), fenugreek (methi), etc are green leafy vegetables. Moreover, cabbage, colocassia leaf (karkalo), nettle (sisnu) etc are also the edible vegetables. We have to consume vegetables daily in the morning and evening to keep our body healthy, prevent it from various diseases, be active and for proper daily functioning of organs. Brinjal, tomato, lady's finger, carrot, radish, striped pear gourd (parwal), green chilies, etc are also some other vegetables that we need to eat. Adequate amount of minerals and various vitamins which help in keeping our body healthy are obtained from vegetables.

## **4. Fruits**

Guava, papaya, banana, apple, orange, mango, grapes, pear, rough lemon (jyamir), lemon, lime are seasonal fruits of our country. If we consume these fruits, we get minerals and vitamins which help us to fight against diseases. These minerals and vitamins help the body or organs to work efficiently. It will be highly beneficial if we consume variety of fruits daily.

## **5. Fish, meat, milk and milk products**

Non vegetarians eat meat, eggs etc. Vegetarians consume milk, curd, paneer, cheese and other milk products. These foods provide protein which helps in the growth and development and maintenance of cells and tissues. Consuming the flesh of ill animals or birds may cause various diseases to us. Thus, it is better to consider the status of meat before consumption.

## **6. Water**

Water is an essential liquid for our body. It helps in food digestion and blood circulation. At least two liters of water should be drunk daily to keep our body healthy. One should drink water immediately after bed in the morning, half an hour before meal and only after half an hour of meal. Purity of water should be given attention while drinking. Only such water should be drunk which is purified by filtering, boiling, using chlorine or SODIS method.

### **Practical exercise**

Make a schedule of foods you take at your home from the morning to night. Compare this with your friends.

Time	Major Cereal	Beans and Pulses	Vegetables	Fruits	Fish, meat, milk or milk products
Lunch					
Tiffin					
Dinner					

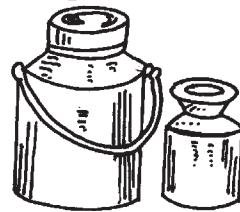
### **Introduction to balanced diet**

Balanced diet is the diet which is composed of all the necessary nutrients in right amount required for our body. Our body needs right amount of carbohydrate, protein, fat, minerals, vitamins and water. The amount of carbohydrate, protein, fat, etc. is determined by our age, sex, work, place etc. Food is classified into three major groups according to its function. We need to include one or two type of foods from each food group to prepare balanced diet.

## **1. Energy giving food group**

Following foods are listed under energy giving food group:

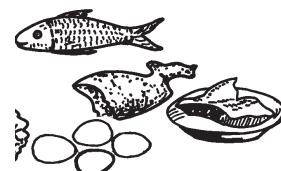
Rice, wheat, maize, millet, buckwheat (phapar), barley and other cereals, sugarcane, honey, sugar, oil, ghee, butter and root vegetables like potato, yam, sweet potato, etc.



## **2. Body building food group**

Following foods are listed under body building food group:

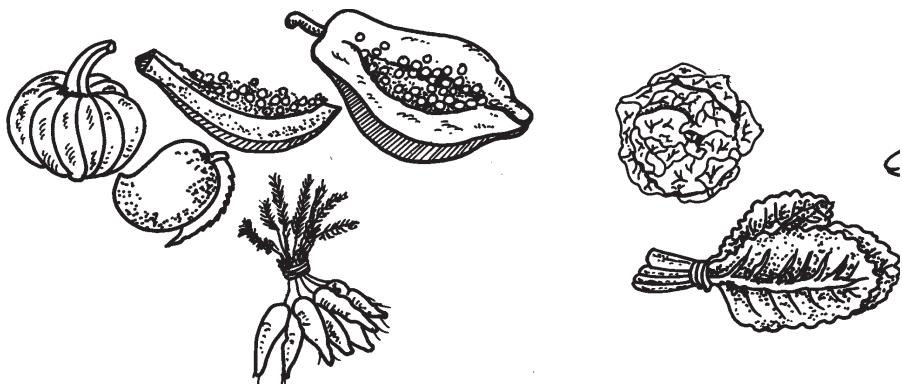
Fish, meat, eggs, beans, pulses, milk and milk products, paneer, cheese, churpi, lassi, etc.



## **3. Body protective food group**

Following foods are listed under body protective food group:

Green leafy vegetables, other vegetables, fruits etc.



## **Summary**

Food helps in the growth of body, and it provides energy and immunity against diseases to the body.

Major foods are classified into five types such as cereals, beans and pulses, vegetables, fruits and fish, meat, milk and milk products.

Food is classified into three groups on the basis of function such as energy giving foods, body building foods and body protective foods.

## Exercise

**1. Fill in the blanks with appropriate words.**



**2. Write short answer to the following questions.**

- a. What is nutrition?
  - b. What is the importance of nutrition?
  - c. How is food classified?
  - d. What are the energy giving foods?
  - e. Why is balanced diet needed?
  - f. How can a diet be a balanced one?

**Introduction**

Disease is an illness often caused by infection. It is the condition of feeling discomfort and lack of ease in the body. There are many causes of disease. Infections due to germs, hereditary disorders or environmental consequence, etc are some of such causes. Diseases can be classified into two types on the basis of cause: communicable disease and non-communicable disease.

**(A) Communicable disease**

The disease which transfers from one person to another through some medium is called communicable disease. This disease is usually caused due to germs. This disease sometimes transfers to healthy person through direct contact with a diseased person or through contaminated water, food etc, or through cloth of a diseased person. Common cold, measles, chicken pox, bird flu, swine flu, diarrhea, dysentery, jaundice, typhoid, rabies etc are communicable diseases.

**(B) Non-communicable disease**

The disease which does not transfer from one person to another is called non-communicable disease; however, some non-communicable diseases can transfer from parents to their children through heredity. There are several causes of non-communicable diseases like inactive life, physical disorder, lack of balanced diet, anxiety, over eating, environmental pollution etc. We can prevent ourselves from occurrence of disease if we become aware. Cancer, diabetes, asthma, heart diseases are non-communicable disease.

**(A) Causes, symptoms and prevention of some communicable diseases****1. Diarrhea**

Intake of impure water and foods contaminated by flies cause diarrhea. Watery stool is discharged for more than 3 times a day.

It is caused usually due to poor sanitation. Many children in our country suffer from this disease.

### **Symptoms**

1. Watery stool discharge for 3-4 times or more in a day
2. Loss of appetite
3. Abdominal pain
4. Dryness of mouth and sunken eyes if liquid food is taken less
5. Muscle cramp in limbs
6. Weakness
7. Wrinkled skin and scanty urination.

### **Mode of transmission**

1. Diarrhea is transmitted to others if patient prepares food without washing hands after defecation.
2. It is transmitted to others due to spread of germs when defecation is done on open place and raw vegetables and fruits are consumed without proper cleaning.
3. This disease may spread if food is not covered and contaminated by flies.

### **Preventive measures**

1. Habit of washing hands cleanly with soap-water should be developed.
2. Defecation should only be done in latrine.
3. Vegetables should be properly washed before cooking.
4. Raw fruits and vegetables should be eaten after proper cleaning.
5. Hygiene and fresh foods should be consumed.

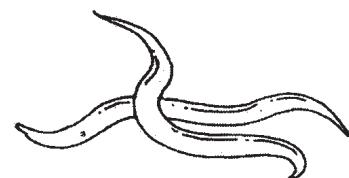
6. Pure water should be drunk.
7. Prepared foods should always be covered.
8. Stale and rotten foods should not be consumed.
9. Before taking meal and after using latrine, hands should be washed with soap.
10. Adequate water and liquid foods should be consumed because there is deficiency of water in body during diarrhea.

**b. Roundworm**

Roundworm is the commonest worm disease in Nepal. An adult roundworm is 10 to 30 cm long. This worm lives in our intestine. A female roundworm can lay 2 lakhs eggs in a day. Thus, many eggs and minute worms are passed in stool of affected person.

**Symptoms**

1. Loose motion
2. Abdominal pain
3. Loss of appetite and nausea
4. Swollen abdomen
5. Pass of roundworms in stool if the number of roundworms is more
6. Presence of live worms in vomiting
7. Dry cough and difficulty in breathing



Roundworm

**Mode of Transmission**

If the patient defecates openly, the eggs may spread to vegetables, fruits and water, and then transmit to people. They may transfer to other people if foods are prepared, distributed or consumed without washing the hands properly after using the latrine. The eggs and larva of roundworm enter into the stomach through mouth if the river water is consumed without purification. If the

eggs and larva enter the stomach, they may enter the lungs. The patient suffers from cough and fever in this stage. Worms enter to stomach through esophagus from lungs and start to grow there. Thus the patient loses appetite, has nausea etc.

### **Preventive measures**

1. Drink water only after purification.
2. Cook vegetables after washing them properly.
3. Pass stool and urine only in the latrine.
4. Wash hands with soap and clean water properly after defecation.
5. Never eat stale, flies infected and open foods.
6. Have timely health check up and take medicine of worm.

### **c. Scabies**

Scabies is a skin disease. It is a communicable disease caused by itch mite parasite. This parasite infects beneath skin and produces very itchy sensation. Usually these parasites reside in hand, finger, wrist, feet and genitals.



### **Symptoms**

1. Small rashes and severe itching sensation in hand, finger, feet etc are seen.
2. Lack of attention to other things due to itching.

### **Mode of transmission**

1. Scabies parasites transfer to other people if slept together or have direct contact with the infected person.
2. Scabies may transfer if the clothes, handkerchief etc of patient are used.

### **Preventive measures**

1. Take regular bath and wear clean dress.
2. Do not play in the dirty water, mud or dust, and do not have direct contact with scabies patient.
3. Never share clothes with others.
4. Maintain clean environment and use clean water.
5. Make others aware about diseases and sanitation.

### **d. Conjunctivitis**

The inflammation in conjunctiva of the eye is called conjunctivitis. This disease may be caused due to the infection of virus of common cold or other viruses. Dust, smoke and cosmetics may also cause it. The main causes of this disease among children are playing in the dirt and poor sanitation. Regular washing of eyes with clean water may prevent conjunctivitis and trachoma.

#### **Symptoms**

1. Watery eyes
2. White parts of eyes are seen red
3. Burning sensation and pain in the eyes
4. Unable to see things in the sunlight
5. Release of pus from eyes
6. Difficult to open eyes in the morning due to dried pus

#### **Mode of transmission**

1. Use of handkerchief, cloth, towel of the diseased patient causes infection.
2. Tears, water and pus of the patient may infect and transfer this disease to the person close by.

## **Preventive measures**

1. Develop the habit of washing eyes with clean water.
2. Do not play in the dust, smoke dirt etc.
3. Do not rub eyes. If irritation persists, clean the eyes with clean water and wipe them with clean handkerchief.
4. Never use other's handkerchief, towel, cloth etc.
5. Do not rub eyes if dirt gets into them. Get help from seniors to clean them.

## **Practical exercise**

*Share your experience of conjunctivitis if you had with your friends in the class. Or prepare a list of suggestions to a conjunctivitis patient, and tell that to your friends in classroom.*

### **e. Common cold**

The viral infection of nose and throat is called common cold. In this disease the viruses transfer to other person through cough or sneezing. Thus it is called air-borne disease. Common cold may be caused due to cold allergy.

#### **Symptoms**

1. Running nose and watery eyes
2. Headache, mild fever and cold
3. Throat pain and cough
4. Blocked nose and change in voice
5. Body ache

#### **Mode of transmission**

1. When a patient sneezes, coughs or talks, the liquid particles from his/her nose, mouth and eyes that contain its viruses are transferred to healthy persons and common cold is caused.
2. This disease may transfer to a person if he/she uses the patient's handkerchief, towel, cloth and other materials.

## **Preventive measures**

1. Take rest by consuming hot foods during common cold.
2. Handkerchief and towel should be personal.
3. Cover mouth and nose while sneezing or coughing. Remain far from the group of many people.
4. Use latrine or other safe place to dispose nasal discharge or spit.
5. Always remain safe from cold, dust and smoke. Wear dresses according to season.
6. Habit of regular exercise develops immunity against diseases.
7. Consume a lot of warm liquid food.

### **f. Rabies**

Rabies is a viral disease. It is transferred through saliva of infected person to others. Main sources of this disease are infected dog, cat, bat etc. The symptoms of the disease are seen within 10 days to 1 year after the contact with infected animal or person. However, usually the symptoms appear within 2 months of infection. Anti-rabies vaccine should be taken immediately after animal bite.

### **Symptoms**

1. Fever, laziness and feeling gloomy
2. Restlessness
3. Frightened, throat pain and excessive salivation
4. Extreme pain in throat while drinking water causes hydrophobia (fear of water)
5. Difficulty in swallowing
6. Difficulty in breathing due to contraction of throat muscles and paralysis



## **Mode of transmission**

The rabies viruses present in the saliva of infected animal (dog, cat, fox, etc.) are transferred to healthy person's body through bite. Brain is the organ affected by this virus.

## **Preventive measures**

1. Vaccinate the pet dogs against rabies.
2. Rehabilitate street dogs with help from government and non-government organizations.
3. If a dog bites, firstly get information about its vaccination and check records.
4. One can be safe even after he/she has been bitten by a mad animal if anti-rabies vaccine is taken as soon as possible.
5. Do not tease dog, cat etc.
6. Rabies infected animals must be properly recognized. These types of dogs or other animals have red eyes, excessive salivation and downward bent tail.
7. If any pet animal is bitten by other animal and it dies, the head of the animal should be cut and taken for rabies test. If rabies is found, all the members of the family must be vaccinated against rabies.

### **g. Dysentery**

Dysentery is also a communicable disease. Infected person has frequent loose motions. Dysentery is of two types. Commonly, they are amoebic dysentery and bacillary dysentery. These two types of dysentery have different symptoms. Like:

<b>Symptoms of Amoebic Dysentery</b>	<b>Symptoms of bacillary Dysentery</b>
Defecation for 6-7 times in a day and only mucus is seen in stool.	Loose motion for 10-12 times a day and mucus and blood are seen in stool.

Mild pain in abdomen and no fever.	Severe abdominal pain and fever.
The portion of stool is seen more than mucus and it stinks.	The portion of mucus and stool is less but blood is seen more. The stool does not stink much.
The liver may be swollen but the possibility of dehydration is low in this type of dysentery.	The liver is not affected but dehydration occurs and patient becomes weak due to loss of liquid from body through frequent defecation.
This is caused due to amoeba.	This is caused due to bacteria.

### **Mode of transmission**

1. Transmitted by contaminated water and food to healthy person.
2. Transferred due to contamination of food by flies in polluted place.
3. Transferred by use of rotten and stale foods and by eating foods without washing hands.

### **Preventive measures**

1. Home and courtyard should be kept clean and pure water should be drunk.
2. Should develop habit of washing hands and being clean.
3. Street foods which are kept open for sale should be avoided.
4. Symptoms of dysentery may not be seen among some infected people, thus it is better to have regular health check up.

### **Practical exercise**

You must have seen patients of diarrhea and dysentery in your community. What should be done and fed to them to prevent them from dehydration? Prepare a list of suggestion and present it in your classroom.

## **h. Jaundice**

Jaundice is a medical condition in which the skin, nail and the white parts of the eyes become yellow due to spread of virus in the blood. Jaundice itself is not a disease but it is a symptom of several possible illness. Jaundice may indicate serious problem with liver. The major causes of jaundice are habit of drinking much alcohol, use of drugs, excessive use of medicines, polluted water and food, infection of virus, etc.

### **Symptoms**

1. Loss of appetite and nausea
2. Vomiting and burning abdomen
3. Passing of pale stool but oil like yellow colored urine
4. Yellowish skin and eyes
5. Mild fever
6. Increased fatigue

### **Mode of transmission**

1. Transferred by contaminated food consumed without washing hands
2. Transferred by use of dirty water
3. Transferred to a healthy person through donated blood of an infected one

### **Preventive measures**

1. Pure water and fresh foods should be consumed.
2. Hands should be washed properly after defecation and urination.
3. Special attention should be paid while keeping personal contact with jaundice affected person.
4. Blood should be used after proper test.

5. Alcohol should not be taken during jaundice. It is bad to be addict of drugs and alcohol. One should not consume medicines haphazardly.

## I. **Typhoid**

Typhoid is caused due to infection of a germ named 'Salmonella typhi'. These germs are transferred to a healthy person through dirty water, milk or foods. Typhoid affects small intestine and makes ulcer. If treatment is not done properly, typhoid can make puncture in intestine and cause death of the patient. The liver and spleen of typhoid patient may be swollen due to infection.

### **Symptoms**

1. High fever which rises at night
2. Extreme headache and loss of appetite
3. Swollen abdomen and feeling of discomfort
4. Watery stool, burning abdomen and small marks are seen in the abdomen
5. Pain in the right side of abdomen

### **Mode of transmission**

1. Consumption of dirty food, water, milk and other food products
2. Flies infected surrounding and poor condition of waste management
3. Consuming stale, rotten and date expired food

### **Preventive measures**

1. Keep the environment clean and use clean water.
2. Do not consume stale and flies infected foods.
3. Conserve rivers and sources of water and do not let them be polluted.
4. Proper management of wastes should be done.

## **J. HIV and AIDS**

HIV and AIDS are the two stages of a same disease. This is caused due to retro virus. Immunity system to fight against disease of a person is weakened due to HIV infection. People infected with this disease die due to attack of many diseases at the end. HIV is the next name of retro virus which is called Human Immunodeficiency Virus or HIV. AIDS is the final stage of HIV when a patient is severely attacked by various diseases. It is called Acquired Immune Deficiency Syndrome or AIDS.

HIV and AIDS have been a big challenge for the present world. Vaccine is not invented to prevent this. There is no any medicine to cure them. The medicines available in the market are only to raise immunity power of the body to some extent.

In the United States of America in the year 1981 AD HIV and AIDS were firstly identified. This was first seen in Nepal in 1988 AD in four people. In Nepal, there are about 75 thousand such patients (UNAIDS, November 2010).

### **Symptoms and Stages**

The symptoms and stages of HIV and AIDS are as follows:

#### **i. Window stage:**

Window stage is the first stage of HIV infection in a person. HIV positive result is not seen in blood test of patient in this stage but the person is able to transfer HIV to others. Thus the stage, is also termed as ‘carrier stage’ of virus. This stage lasts for one and a half month in some people and 12 months in others. The patient does not know that he/she has the disease because no symptoms are seen.

#### **ii. HIV stage:**

In this stage blood test shows HIV positive results in patient, but the person is not ill remarkably. Common cold may be seen frequently but is cured as in other people. HIV can be transferred to other people in this stage. In Nepali context, this stage remains for 5 to 7 years.

### **iii. AIDS Stage:**

Usually, HIV infected person reaches to AIDS stage within 7 to 10 years of infection. If antiretroviral medicines are taken in HIV stage, the patient will not enter to AIDS stage and lives longer. AIDS stage can also be classified into two stages, early and late AIDS.

<b>Early AIDS stage and symptoms</b>	<b>Late AIDS stage and symptoms</b>
Continuous common cold for long time.	Attack of opportunistic diseases due to weakened immunity system of body.
Continuous diarrhea for a long time.	Tuberculosis, typhoid, measles, chicken pox, pneumonia, skin cancer, etc are caused.
Continuous fever for a long time.	Person dies within 6 months to 2 years after reaching this stage.
Gradual weight loss.	
Sore in body, mouth, etc.	
Lymph nodes are swollen beneath armpits.	

### **Mode of transmission of HIV and AIDS**

1. Unsafe sexual intercourse with infected person
2. Use of unsterilized syringe, needle, tattooing instrument, etc
3. Transfusion of infected blood
4. From infected mother to her child
5. Use of injecting syringe drugs

## **Preventive measures of HIV and AIDS**

1. Have sexual relationship with a single partner.
2. Involve only in safer sexual intercourse.
3. Blood transfusion should be done only after proper testing.
4. Use syringe, instruments, etc . only after sterilization.
5. If infected mother wishes to bear a child, she must use anti-retroviral medicine properly before being pregnant.
6. Be away from drug addiction.

## **Practical exercise**

How can you support a person in your community whom you came to know that he/she has HIV or AIDS? Which of the following things would you give preference to ? Why? Discuss in class.

- (a) Suggest having health examination in a health centre.
- (b) Encourage to live a normal life as others.
- (c) Tell preventive measures of this disease to him/her.

## **Summary**

1. Disease is classified into 2 types, communicable and non-communicable.
2. Common cold, diarrhea, dysentery, jaundice, typhoid, rabies etc are communicable diseases.
3. Cancer, heart disease, diabetes, etc. are non-communicable diseases.
4. Diarrhea, dysentery, jaundice, typhoid, etc. diseases can be prevented by the habit of washing hands properly and keeping the environment clean.
5. Rabies disease can be prevented if a pet dog is vaccinated against rabies and pet animals are prevented from bite of other animals.

6. HIV and AIDS are caused due to a virus named retrovirus which reduces immunity to fight against diseases and the patient suffers from various diseases and dies at the end.
7. Symptoms of some diseases can't be identified. So regular health examination needs to be done.

## **Exercise**

### **1. Copy the correct answer for the following questions:**

- a. Which of the followings is a non-communicable disease?  
i. Measles              ii. Rabies  
iii. Cancer              iv. Diarrhea
- b. What should not be done during the conjunctivitis?  
i. See              ii. Rub  
iii. Wash              iv. Hide
- c. In which disease patient cannot drink water due to throat pain?  
i. Common cold              ii. Rabies  
iii. Jaundice              iv. Throat cancer
- d. Which of the following diseases can be caused due to not washing of hands?  
i. T.B              ii. Typhoid  
iii. HIV              iv. Measles
- e. Why do many people suffer from round worm infestation in Nepal?  
i. Because of being dirty  
ii. Because of being poor  
iii. Because of ignorance  
iv. Because of consuming stale food

# **Adolescence, Sexual and Reproductive Health**

## **(A) Adolescence**

The World Health Organization (WHO) defines adolescence as the age range 10 to 19 years. Adolescence is the period of changes. This stage is either childhood or adulthood. Adolescence is considered as a transitional period from childhood to adulthood, therefore, this is a challenging period for an individual. The adolescents have to face the period of puberty, too. Therefore, it is also considered as a period of stress and storm. In this stage, the boys and girls are known as adolescent boys and adolescent girls.

Many changes such as physical, mental, emotional and social changes take place during puberty. Puberty starts in girls in the age between 11 to 13 whereas it starts in boys little later from 13 to 14 years of age.

### **Changes that take place in an adolescence**

In childhood our body does not excrete hormones so we cannot notice changes in our sex organs. Excretion of hormones starts with the beginning of the puberty. As a result of this, physical, mental, emotional and social changes take place in boys and girls. These changes are listed below:

<b>Physical changes in adolescent boys</b>	<b>Physical changes in adolescent girls</b>
<ul style="list-style-type: none"><li>• Height and weight increase.</li><li>• Musculature develops.</li><li>• Hair grows in different parts of body (e.g., moustache, pubic hair and hair in the armpit)</li><li>• Changes in voice and have wet dreams</li><li>• Pimples on the face can be observed and the size of genitals increases.</li></ul>	<ul style="list-style-type: none"><li>• Height and weight increase</li><li>• Increase in size of hip but reduce in the waist girdle, breasts develop</li><li>• Hair grows in genital areas and armpit, increase in the size of uterus.</li><li>• Starts menstruating</li><li>• Pimples on the face can be observed and the genitals mature</li></ul>

## **1. Physical change**

We cannot observe physical changes in adolescent boys and girls at the same age. Because of the secretion of hormone, the adolescent girls can be seen changed.

## **2. Mental change**

Mental change can be observed almost in the same way in adolescent boys and girls. For example:

Become responsive and self stand

Devoted in encouraging activities

Development of memory and logical power

Think creatively

Ability to analyse

## **3. Emotional change**

Emotional changes in adolescent boys and girls look almost the same, however, adolescent boys are comparatively more exposed to express their emotions and the adolescent girls hesitate to express their emotions in the society. Following are the emotional changes in adolescents.

Be sensitive

Show encouragement

Development of assertive emotions like affection, happiness and love

Development of negative emotions like hate, jealous, envy and anger

Fluctuations in emotions (e.g., get prompt angry and become happy quickly.)

## **4. Social change**

Adolescent boys and girls have same social changes which are listed below:

- Make new friends
- Like to work in groups
- Develop the feeling of leadership
- Show responsibility
- Attract towards opposite sex
- Try to experiment new ideas

### **Practical exercise**

List the changes you have noticed during adolescence and also list the expectations and help from elder people and show them to your teacher.

### **(B) Sexuality Education**

The joint concept of sex, sexual orientation and roles, attraction, sexual gratification and reproduction is sexuality. Sexuality education is the process of changing knowledge, attitude and behavior of sexuality. In our society we generally have male and female and they behave accordingly. If people get positive knowledge of sexuality they develop positive value, beliefs and concepts.

We can get right instruction about how and why genitals are developed and how sexual desire is managed. Sexuality education teaches us the building of relationship with other which helps in developing mutual respect. It also helps to know how sexuality is expressed, how responsible behaviors are shown and how sexuality and health are made good.

Sexuality education should be understood not only by male and female but also by the third sex or gender. Because of the biological and mental reasons a male may behave as a female and a female may behave as a male or they may not attract with the opposite sex. We must respect the third sex.

### **Concept and importance of sexual and reproductive health**

Sexuality education is the process of bringing positive changes in knowledge, attitude and behavior regarding sexuality. The word 'sex' is not only used to denote sexual intercourse, it also reflects sexuality.

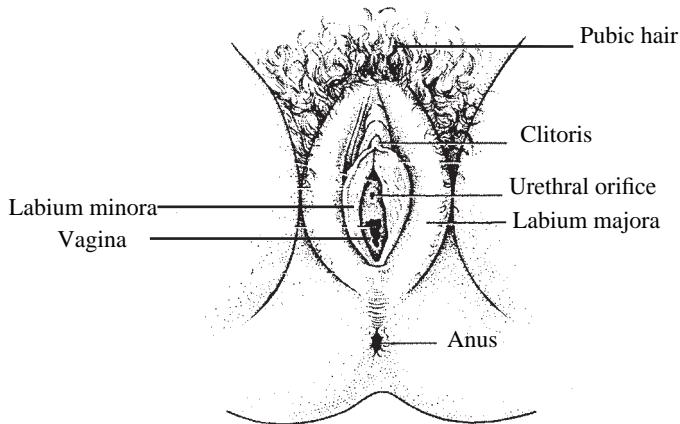
We should know about sexuality in time. It helps to follow healthy sexual conduct and it also helps others to live healthy lives.

Reproduction means the process of giving birth. For giving birth to an infant we need male and female. WHO defines reproductive health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes”.

## **1. Structure of external reproductive organs of males and females**

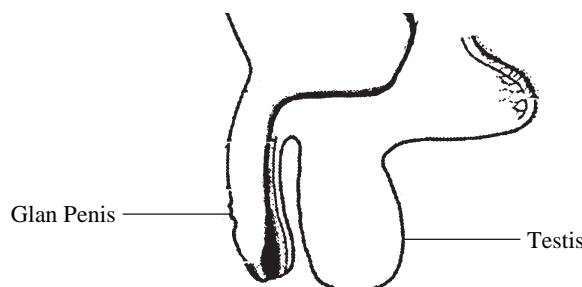
### **a. Female external reproductive organs**

There are internal and external reproductive organs that are important for reproduction. The diagram of external reproductive organs of female is as follows:



### **b. Male's external reproductive organs**

Male has also internal and external reproductive organs. The diagram of male's external reproductive organs is as follows:



## **2. Cleanliness of reproductive organs and importance**

Reproductive organs of both male and female are important . Our reproductive organs are closely associated with urinary system. Some organs of male are common like urethra. But contrary to that female's reproductive organs are not directly associated. However, they affect each other because of their close locations. For example urethra and vagina are located very close and urinary bladder and uterus are located very closely.

Reproductive organs should be kept clean to prevent from different infections. Sex organs may be wet because of sweating and fluid discharge from genitals. If we are careless about the cleanliness of genitals, we may be affected by infection. Especially viruses may expand in female genitals . Therefore, we must clean genitals to prevent from infections.

## **3. Methods of cleaning reproductive organ**

- a. Clean genitals at least two times a day with clean water. Males should clean under foreskin to prevent from penis cancer.
- b. Females should clean their genitals frequently especially in menstrual period. They should also use soft clean cotton or sanitary pad during menstruation. Avoid using old pads.
- c. Do not use soap and cream to clean vagina. It will harm the microbes which are beneficial to us.
- d. Undergarments should be regularly cleaned. Wet undergarments should not be worn.
- e. Do not use other's undergarments. It can spread infections of others.

## **Summary**

Age's between 10-19 are called adolescents.

Puberty also comes during adolescence where rapid physical, mental, emotional and social changes take place.

Sexuality education is the process of bringing changes in knowledge, attitude and behaviour regarding sexuality.

We can prevent infections of reproductive organs and live a healthy

life if we follow the cleanliness practice of reproductive organs.

## **Practice**

### **1. Fill in the blanks using appropriate words**

- a. Adolescence is the age between ..... years.
- b. In ..... period, rapid changes take place in adolescent boys and girls
- c. Discharge of white fluid from penis during sleep is termed as.....
- d. During 11-13 years, adolescent girls discharge blood from vagina, it is called .....
- e. Logical presentation capacity of adolescents comes under ..... change
- f. We also recognize ..... sex these days.

### **2. Write short answers to the following questions.**

- a. Why is adolescence considered as a period of stress and storms?
- b. What emotional changes are observed in adolescent boys and girls?
- c. What is sexuality?
- d. How does sexual and reproductive health education help individual?
- e. List the parts of the external reproductive organ of female.

## Introduction

Medicines are chemicals which affect positively or negatively in our body. Similarly, drugs affect our brain and make us numb or stimulate us. If people misuse these drugs it will spoil the life, and it even results to death.

Common substances used as drugs are marijuana, brown sugar, bhang, opium, heroin, cocaine etc. In addition to these the drug addicts use many more drugs by mixing different substances. These may immediately affect our brain, heart, liver and kidneys. Therefore, these substances are harmful to our health.

In our society people openly use Jaand, Raksi, Tongba, etc. which also affect as drugs do. Using these alcoholic substances may result physical, mental and social harm. Tobacco is used for chewing and smoking. It is used to make cigarette, Khaini, Bidi, Tambakhu, cigar, etc . People who use these substances defend themselves by giving different reasons, but whatever be the reason, these substances harm our health in many ways.



## Consequences of drug use and measures to prevent it

### 1. Consequences of drug use

- a. Lack of concentration in reading
- b. Behaving like being hypnotized
- c. Weakening of memory power
- d. Can cause malnutrition due to not taking food properly
- e. Over dose may cause brain hemorrhage and spot death
- f. Sharing syringe while using drugs may transmit HIV

- g. The infection in the skin takes place where the syringe is frequently used.
- h. Addicts may get involved in criminal activities to get drugs.
- i. Effect in liver may result death in early age.

## **2. Safety measures**

- a. Do not develop friendship with drug addicts.
- b. Encourage those friends who are engaged in drug abuse to get rid of it.
- c. Say no to drugs even if your friends pressurize you
- d. Tell others the negative consequences of drug use
- e. Report to the police if someone is involved in drug trafficking
- f. Obey the rules and regulations to control drug use
- g. Involve in creative and recreational activities and games, physical exercise to keep yourselves busy.

### **Practical exercise**

You may find someone in your neighborhood who is a smoker, a drug addict or an alcoholic. Study when s/he started taking those substances. What were the harms s/he faced? Has s/he tried to quit it? Are there any health problems or not? Finally make a report to present in the class.

### **Summary**

Effects of drugs in brain and nerves will result to be passive and active.

Marijuana, brown sugar, opium. Heroin, etc . are drugs.

Smoking,cigarette, Bidi, Tambakhu and chewing tobacco are harmful to health .

Intake of drugs, tobacco and alcohol may harm physical, mental, social and economic aspects of the individual.

Tobacco, alcohol and drug use may form habit and they affect brain, liver, lungs. gum and kidneys as a result people may untimely die.

## **Exercise**

### **1. Fill in the blanks.**

- a. Drugs affect brain and.....
- b. Marijuana is considered as .....
- c. Use of smoke from tobacco is called .....
- d. People ..... like individuals who use alcohol
- e. Drug addict decreases .....

### **2. Write short answers to the following questions:**

- a. What are drugs?
- b. Which material is used for smoking?
- c. Why is drug abuse harmful to us?
- d. Write any five measures to prevent from drug abuse.
- e. What are your expectations from the community to control the use of tobacco, alcohol and drugs?

## Introduction

Environmental health is considered as the favourable conditions of our surroundings like air, water, soil, drain, road, forest etc. Clean and beautiful environment makes our health better. We cannot live a healthy life even if we follow the health rules unless the environment is not favorable. In environmental health, we study about the effects of pollution in our surroundings and measures to prevent them.



## Water

Water is very important to our life. Two third of our body contains water. Most of the food we eat consists water. We use water for different purposes, besides drinking.

## **Personal use**

We need water to drink, bath, wash, clean and cook. These are domestic use of water. Water is very important because without water our domestic activities are not possible. If the water we drink is contaminated, many diseases can attack us. Therefore, we must use clean and safe water.

## **Community use**

Water is necessary to keep our community clean. Water is used to clean places like temple, school, hospital, hotel, office and roads. Such use of water is called community use.

## **Industrial use**

We also need water to run different industries. Paper, carpet, cloth, beverage, sugar mills require even much water.

## **Agricultural use**

We also require water for agricultural use. Water is required for irrigation fisheries and for farm use. In addition to these, construction, fire brigade and hydro power also require water.

## **Sources of water and causes of contamination**

We can get water from different sources. Among them some sources have potable water and some do not. We get water from rain, snow, lake, river, sea, well, spring, tube-well and so on. We get water supply from the sources to our homes. The water from these sources may be contaminated in the following ways:

1. If we defecate, wash clothes, graze cattle and throw waste around the water reservoirs the water will get contaminated.
2. If wells are kept open or the utensil, we use to collect water is dirty, water may be contaminated.
3. If we mix waste or dirty water, drain into the water source, water may be contaminated.
4. Water may be contaminated if we use dirty hands and dirty utensils to fill water.

5. Unhygienic behavior of the user also causes water contamination.
6. The use of contaminated water causes cholera, infestation of worms, typhoid, and diarrhea. Similarly, contaminated water especially the chemical contained water may harm plants, too. Therefore, we should use safe and clean water. If the water is not clean we have to purify it. Boiling is the best method of purifying water. Besides this, filtration, mixing of chlorine, bleaching powder, and SODIS are the additional methods of water purification.

### **Practical exercise**

Let the students observe the sources of water like well and tap to see the condition of cleanliness and ask them to write a report about how water can be made safe.

### **Solid waste**

Kitchen waste, industrial waste and waste from farm are called solid waste. Waste for one person may be useful to another one. These wastes can be used as raw materials too. For example, we throw plain paper, metals that we know be sold for remarkable price. Similarly the waste from vegetables can be used to make compost manure.

#### **Types of waste**

##### **1. Organic waste**

Organic wastes such as get rotten plants, dried leaves, soil, dead animals, cereals, foods etc. can be piled up in a place to make compost manure. In other words, these organic wastes can finally be converted into soil.

##### **2. Inorganic waste**

Inorganic wastes do not rot. Most of the inorganic wastes can be reused. Bottles and tins can be used for domestic purpose. Old and torn clothes can be used to make mats and mattress. Once used polythene bags can be used for several times. But some inorganic wastes cannot be used repeatedly. Torn polythene bags, broken bottles, damaged tins, broken steel pots, solid

plastics and laminated papers cannot be reused. Among them paper, clothes, iron pieces, glass, plastic and polythene can be recycled in the factories.

If we understand the importance of refuses, the complication of solid waste problems can be reduced.

### **Sources of waste**

#### **Kitchen waste**

There are so many kitchen wastes produced in our homes. Remains of the vegetables, rotten and stale foods, ashes, straw, packing paper and plastics, bags, dusts, etc . are the kitchen wastes. If we throw them randomly, they turn into waste.

#### **Other household wastes**

In addition to kitchen waste, there are so many other wastes which are produced from our house. Torn clothes, paper waste from pencil sharpeners, paper boxes, bottles, spider's web, soil, dust, etc. are household wastes.

#### **Wastes from outside**

Plants, dry leaves, solid, pieces of bricks and stones, sand, dust, dead bodies of animals, waste from street, market etc are waste produced from outside.

#### **School waste**

Pieces of papers, pencils, wrappers of biscuits, bread, noodles etc are produced from schools. Remains of tiffin, plastics and chalk dusts are also considered as the school waste. If these refuses are thrown randomly, piles of wastes will be accumulated.

#### **Harms of wastes**

1. If we throw waste randomly around, our environment will look dirty and become smelly.
2. The pathogens which may be present in the piles of waste may be transmitted through flies.

3. There is a possibility of water pollution if we mix these wastes in water.
4. In the past, people used to incinerate the waste, but now people realize the harmful effects of incineration as it increases the amount of carbon in the atmosphere.

### **Methods of waste management**

Following measures can be followed to solve the problem of waste.

1. Reduce the amount of waste as far as possible. We should take our own bag or container while going for shopping. It will prevent the collection of packing papers, polythene bags which are given by the shopkeeper.
2. Some materials can be reused. Once used polythene bag can be cleaned and reused for several times, used copies can be used to make small packets to pack materials in the shop. These are the examples of reuse. Similarly, the bottles such as that of Horlicks can be used to put ghee, oil, pulses and spices and so on. Some tins can be used as pen stands. Organic waste can be used to make compost manure.
3. Paper, plastic, glass, iron, aluminium can be recycled in the factories. Such waste can be sold for remarkable price.
4. Wastes from close settlement should not be thrown randomly. They must be put in the container.

The above mentioned measures can reduce solid waste in our environment. It will make our environment clean and green. It also develops our healthy habits.

### **Practical exercise**

Collect wastes from school premises. Demonstrate the students how waste is managed. Classify them into organic or inorganic. Let the students practice the same.

### **Proper management of excreta**

People living in developing countries like Nepal are affected by many

diseases. Diseases caused by ignorance are diarrhea, cholera, infestation of worms, etc. These are gastro-intestinal diseases and caused due to the lack of proper management of excreta. Open defecation spread various diseases through food, water, flies. Haphazard defecation pollutes environment and causes different gastro-intestinal diseases. Open defecation looks very odd. Use of latrine for defecation is a proper management of excreta. Therefore, latrines should be used for excreta disposal.

Latrine is the place where excreta can be safely disposed. Latrine should be cleaned. We should always use latrine to defecate. The following measures will keep the latrine clean and safe.

1. Water should be arranged prior to defecation. A little water should be poured on to the sitting pan so that the excreta will not get stuck on it.
2. Excreta should properly be flushed.
3. If latrine is made up of service type, excreta should not be left exposed. It should be covered with soil.
4. The pan should be flushed even after urination so as to prevent odour smell.
5. Sitting pan should be regularly cleaned with brush.
6. Hands should be properly cleaned with soap water after using the toilet.

### **Practical exercise**

Teach students how hands are cleaned after defecation and let them practice the same

### **Summary**

Hygienic condition of organic and inorganic materials in our surrounding is called environment health

Water is contaminated when it gets mixed with chemicals, waste, pathogens and dust.

Water reservoir, well, etc should be kept clean to make water safe. Water pots should also be cleaned.

Proper management of waste is to reduce it. Organic waste can be made compost manure. Inorganic waste can be sold or deposited in a specific place.

We should not defecate in open places. We must learn to defecate in latrine. Latrines should be kept clean.

### **Exercise**

**1. Tick the right answer.**

**a. Which of the following is the organic waste?**

- i. Kitchen waste such as paper and plastics
- ii. Kitchen wastes which can rot
- iii. Kitchen waste which cannot be rotten
- iv. Pieces of glasses and iron

**b. Which of the following measures is the best one to purify water ?**

- i. Filtration              ii. Filter clothes
- iii. Boiling                iv. Clean the utensil

**c. Which of the following diseases is not caused by drinking contaminated water?**

- i. Diarrhea                ii. Cholera
- iii. Worm infection       iv. Pneumonia

**d. Which of the following methods is the best to manage household waste ?**

- i. To burn them
- ii. To bury them
- iii. To reduce the production of waste
- iv. To manage the waste according to their nature

- e. Why should we flush sitting pan?**
- i. To prevent foul smelling
  - ii. To prevent house flies
  - iii. To prevent diseases like diarrhea
  - iv. To clean latrine

**2. Write very short answers to the following question :**

- a. Which diseases are caused due to contaminated water? Write the names of the diseases.
- b. What is the best measure to purify water?
- c. What is organic waste?
- d. Write down the measure that is the best to manage waste?
- e. What are the disadvantages of burning plastics? Write.

**3. Write short answers to the following questions**

- a. What are the effects of environment on our health?
- b. For what purpose do we use water?
- c. Write the causes of water contamination
- d. What are the measures to keep water safe at homes?
- e. List any ten wastes from the kitchen.
- f. How is organic waste managed? Write.
- g. Write the disadvantages of incineration.
- h. Write any five examples of reusing waste.
- i. What things are to be considered while cleaning the latrines?

## Introduction



Road accident



Artificial respiration

Different methods and aids adopted to prevent accidents are termed as safety. If we do not walk properly on streets, we might have road accidents. Likewise, we might get electrocuted, we might catch on fire, we might slip off the railings, stairs and cliff, and we might get snake bites and other various accidents in playgrounds and other places. If we are cautious and careful, those accidents can be reduced. Being careful and cautious at home, road, school, and playground is known as safety and prevention.

### Safety methods to be carried out at home

1. Knife, matchsticks, lighter, etc . should be kept away from the children.
2. We should be careful while cutting vegetables, cooking, taking bath and doing other household chores.
3. The bathroom, toilet and tap area should not be made slippery. These should be regularly cleaned.
4. Railings and grills should be placed in the stairs and the windows.
5. The poisons and medicines should be kept away from children.
6. Electricity lines should be properly connected. Switches should be protective enough and kept in the places where children can't access to it.

7. If there are ponds and uneven surfaces nearby house, these should be fenced.
8. While preparing food for domestic animals, it should be done carefully and it should be kept covered.

### **Safety methods on road**

1. While walking on the road, you should walk from the footpath.
2. You should maintain a safe distance between you and vehicles.
3. While crossing the road you must use subways or overhead bridge. And at the places where you don't find these, you have to use zebra crossing.
4. You should not hang on buses while travelling. Neither should you use the roof of the bus. You should discourage children from travelling on a motorbike.
5. While travelling in the hilly areas, forest areas and crossing rivers you should be more careful.

### **Safety methods in school**

1. You should not run, play and jump carelessly in the classroom, playground and other places.
2. You should not jump and walk on the desk, benches and tables.
3. The uneven surfaces near school areas should be filled up, and stones and plastics should be cleaned.
4. You must strictly follow the rules and regulations of the game while playing.
5. You should walk in queue and have to be carefull while walking on stairs.
6. If there are streams, ponds, well, canals or any other places like this; you should discourage your friends to go there.

### **First aid**

You meet with an accident while playing, working or crossing the roads. When any sort of accident occurs treatment is given to the

injured person on the spot before taking him/her to the health posts or hospitals. This treatment is called first aid. These types of on the spot treatment helps the injured person to gain sympathy and it also prevents the injured person from further serious consequences. In many cases, the life of an injured person can be saved with the help of the first aid.

## **Wound**

The cut or bruise hole in the skin or flesh due to any attended reason is called wound. It is not possible to go to hospital for every little wound, and if the small wound is not properly cared complex situation may arise. Hence to avoid infection the first aid is required. The following things need to be done for the first aid treatment of the wound.

1. The hands of the first aider should be cleaned with soap water and the injured person should be placed in a comfort position.
2. While cleaning the wound, clean cloth or cottons has to be used. The cloth or cotton has to be dipped in the boiled water or the antiseptic, and the wounded area is cleaned in outward direction. The cloth or cotton should be of small pieces.
3. The wounded area should be made dry and the bandage should be put over it in order to prevent from flies and foreign materials.
4. This process can be continued everyday. If the wound still does not recover, a doctor needs to be consulted.

## **Bleeding**

Bleeding is caused due to the injuries in the blood vessels. If a large amount of blood is wasted from the human body, a person becomes weak and this can result in death as well. That is why the following steps have to be carried out to prevent the injured from bleeding.

1. The injured person should be kept at a comfortable place.
2. If the wound is small and is bleeding, press the wounded area with palm or thumb for 5 to 10 minutes. If the bleeding does not stop bandage the area with a clean piece of cloth.

3. If the bleeding does not stop without removing the first bandage, add another bandage over it.
4. If the wound is big and the bleeding does not stop, the injured person should be immediately taken to hospital.

### **Nasal bleeding**

Nasal bleeding is caused due to injury or dryness in the nose or due to high blood pressure. The bleeding in most of the cases stops itself. But if it doesn't, then it may be dangerous. The first aid treatment for nasal bleeding are:

1. The injured person should be placed at a comfortable place.
2. The injured person should be made to bend his head in the front and nose should be covered with thumb and index fingers for around 10 minutes and the respiration should be done from the mouth.
3. The injured person should not bend his head backwards. Bending in backward direction may cause clotting of blood in lungs.
4. If the bleeding does not stop in 10 minutes, then the injured person should be taken to hospital.

### **Injury due to knife and thorn**

While doing household chores, working in the garden, etc. there is a chance of getting injured. The injury might be caused with knife or a thorn and may get into the skin.

1. If a thorn gets into the skin, it has to be taken out with care.
2. If the part of body is cut with a knife or any sharp objects, bleeding has to be stopped.
3. If a knife gets deep into the flesh then it should not be taken out carelessly. In this case, the bleeding should be stopped as soon as possible, and the injured person should be taken to hospital

### **Dog bite**

Sometimes we might get bitten by dogs or wolves. If the animals that

bite us are a victim of rabies, then we might get rabies. The immediate treatment is needed in these cases. The following first aid methods can be used:

1. Clean the injured area with soap water.
2. Bandage the area.
3. If the dog shows the symptoms of rabies the anti-rabies vaccination should be taken.
4. If the dog is not a rabies victim, but a pet dog that has taken the anti rabies injection then it is not necessary to take vaccine.

## **Drowning**

A person who cannot swim gets drowned in the deep water such as well, river, lake, etc . When a person gets drowned, the person inhales water through respiratory pipe. This might cause the death of the person. In these case following treatments can be done.

1. First of all, the drowned person should be taken out of the water.
2. If the victim had swallowed a lot of water, s/he should be laid with the head in downward position, facing the ground on an inclined surface. s/he should be kept warm.
3. If the condition worsens, the victim should be immediately taken to hospital.

## **Practical exercise**

Demonstrate the first aid treatment for on drowned person and let the students do the same.

## **Summary**

- To avoid accidents, knife, matchsticks and drugs should be kept in the places where children cannot reach them. Tap, toilet should be cleaned and electricity switches should be placed in safe places. Likewise, going alone around the pond, riverside, etc should be avoided. We should be careful while walking and we shouldn't run in classrooms.
- If accidents happen, then we should rush the patient to hospital after first aid treatment.

## **Practice**

### **1. Fill in the blanks.**

- a. The uneven surfaces of the playground should be .....
- b. In order to save children from falling off the window and stairs, ..... should be made.
- c. The help and service given ..... before taking the injured person to the hospital is called first aid.
- d. If an infected dog bites you, you should take the ..... vaccine.
- e. The head of the patient with nasal bleeding should be bent ..... for first aid treatment.

### **2. Give very short answers to the following questions.**

- a. What precautions should we take to avoid accidents in kitchen?
- b. If the wound due to knife cut doesn't stop bleeding even after bandaging, what should you do?
- c. What do you mean by first aid?
- d. What is the danger in bending the head backward of a nasal bleeding person
- e. If the knife has got into the flesh of the patient, what first aid treatment should be done?

### **3. Give short answers to the following questions.**

- a. List down three safety majors to apply at home.
- b. How should you cross the road?
- c. How to first aid a patient with a bleeding wound in hand?
- d. How is the first aid provided for nasal bleeding?
- e. What has to be done to save the drowned person?

## **Family health**

A group of people staying in the same house eating in the same kitchen and having a blood relation is called a family. Good health, healthy relationship, good behavior, cleanliness, education, etc . is termed as family health. There may be an infant, school going children, pregnant women, elderly people and physically disabled person in the family. Every one should be concerned about achieving better health. Clean environment of home, nutritious food, family planning, avoiding alcohol and tobacco consumption, healthy relationship, love and care are some of the important factors for having a good family health.

## **Cleanliness**

All the family members should emphasize on personal hygiene to make a healthy family. It is essential for every member to take regular bath, to clean and cut nails and hair, to clean eyes, teeth, skin and reproductive organs. Clean surroundings of the home, kitchen, tap, toilet, etc help in maintaining good hygiene. In other words cleanliness is the mark of a good family.

## **Nutritious food**

The availability of nutritious food is one of the factors for a good family health. For the growth and development of a body, to give our body the power, to prevent from diseases, we have to take nutritious food ourselves. Rice, bread, Dhindo, lentils, beans, green vegetables, meat, milk, seasonal fruits and vegetables should be eaten. We should maintain healthy balance in our food. We should not eat only one kind of food. Likewise unhygienic foods, junk foods, etc should be avoided. We have to give priority to the locally available foods and the food we consume should always be hygienic and nutritious.

We see that some people consume alcohol and tobacco. Tobacco use can cause cancer. Taking illegal drugs has far dangerous effect than this. This can harm our health and can cause death as well.

## **Stay safe from accidents**

We meet with accident while working and doing different things. We can be caught on fire, electrocuted, slip off the floor, drown, bitten by animals, unconsciousness etc. Accidents might cause a loss of both lives and money. We have to be careful to avoid the accidents and stay safe.

## **Family planning**

The overall health of a family also depends on the number of family members. If the family is bigger and the income of the family is less, then the nutrition, health and education of the family members is badly affected. Therefore, every couple should plan children according to their budget and financial condition.

## **Vaccine**

Vaccination is especially carried out for infants and children and pregnant women as they are very much prone to different communicable diseases. The head of the family or other member who has its knowledge should manage an environment for vaccination of infants and pregnant woman.

## **Love, care and healthy behavior**

If there is no healthy relationship between family members and they quarrel, it affects the health of each member. Hence, to achieve good health within a family, it is required to maintain healthy balance in all relationships, A good behavior and respect, love, care, etc within a family helps to have a good health.

## **Community health**

A group of families living in a fixed village, tole, etc . is termed as community. All the factors that affect the health of a community are called community health. Healthy environment, cleanliness, availability of health care centers and safe drinking water, availability of waste management, helpfulness, etc . come under the factor. The development of these things helps in achieving a good health status.

## **Importance of community health**

The unmanaged waste pollution, lack of cleanliness, tobacco use, alcohol consumption, use of illegal drugs, superstition, lack of toilets, etc , badly affect the health of a community. These unhealthy behaviors result in different communicable diseases and epidemic. Only one persons contribution cannot change the whole community. Hence, all the people from the community should work for healthy environment, cleanliness, waste management, etc. in order to achieve a good community health.

## **Problems in community health and its solutions**

Relying on dhami-jhakri for the treatment of diseases, believing in bokshi, dowry system, showing off nature of high and lack of awareness affect the community health. In the far western community of Nepal, the girls in their menstrual periods are not allowed to enter home but have to stay in an animal shed. These kinds of superstitions that still exist affect the health of a family. Hence these superstitions should be eradicated to achieve good health of a family.

## **Tobacco use, alcohol consumption and drug addiction**

Smoking cigarette and chewing tobacco results in cancer. Smoke from cigarette also affects the non smokers. Alcohol consumption harms liver and it also brings problem between family members which in turn affects whole community. Drug addiction is the most dangerous among all. It is an addiction that harms the whole society and the social relationships. It also results in social disorder. Hence a community should be safe from all these.

## **Pure drinking water**

The lack of pure drinking water causes the water borne diseases like typhoid, dysentery, worm, diarrhea, cholera, etc. Hence pure drinking water is necessary.

## **Cleanliness and management of waste**

If the waste in the community is not managed, the community and its surroundings become dirty, smelly and more prone to diseases. Hence it is important to manage wastes. The community surrounding water sources should always be kept clean.

## **Sports club**

Sports and games are very important for the overall development of a person. Sport and games help in the individual and family development and in whole country's development. Games and sports help to keep person healthy and fit, and it also helps people to avoid illegal drugs. It is a way of entertainment as well. Hence a community should establish a sports club and should manage for different sports activities.

## **Practice exercise**

Let the students arrange cleaning program in their own community and make the community participate in the program.

## **Summary**

- The inter-relationships between family members, good behavior, nutritious food, family planning, cleanliness, free from diseases and condition of being healthy is family health.
- In a community, a fresh environment, community cleanliness, waste management, excretory management, availability of safe drinking water, school, library and sports, etc . give an identity of community health. Factors like superstition, lack of awareness, tobacco use, alcohol consumption, drug consumption, lack of waste management, etc . make the community unhealthy. Hence, the community health should be given a priority.

## **Practice**

### **1. Fill in the blanks.**

- a. Tobacco use results ..... diseases.
- b. The measures used to avoid accidents are called .....
- c. The unsafe drinking water results ..... disease.
- d. Drug addiction ends up .....

### **2. Give very short answers to the following questions.**

- a. What diseases are caused by tobacco use?
- b. Name the diseases caused by unsafe drinking water.
- c. List two bad impacts of alcohol consumption.
- d. Which types of food found in the market harms our health?

### **3. Give short answers to the following questions.**

- a. What is family health?
- b. List any five important components of family health.
- c. What is community health?
- d. List the important components of community health.
- e. What is the importance of community health?

# Physical Exercise

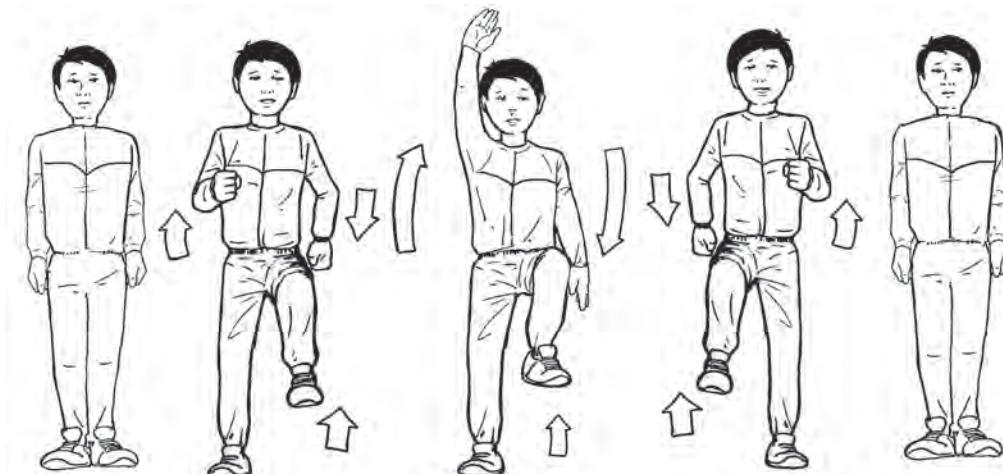
## Introduction

The activities performed to make the body strong, active and fit is called physical exercise. Exercise makes the organs of the body active. For this, regular exercise is necessary. We should be careful to do any exercise during tiredness. It harms the body. It is not necessary to go outside in the playground and the street for doing exercise. Body can be made active and fit by doing non-locomotor exercises in the open room too.

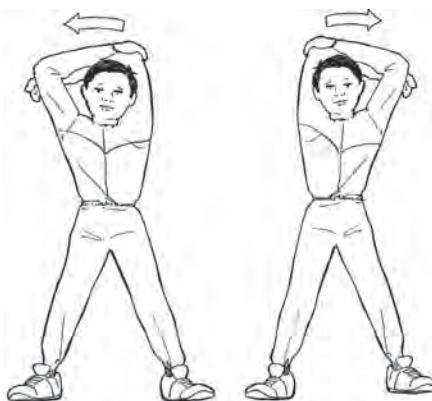
Physical exercise can be done at any time. Exercises done in the morning bring in better result. It gives fresh energy to the body for the whole day. Exercise is used to warm up the body before playing major games. In this unit, you will learn about some useful and simple exercises. The method of practicing these exercises are as follows.

### Exercise of hands and Jogging

#### Method of doing jogging



- a. Wear light clothes and stand straight.
- b. Keeping balance jump gently with alternate motions of the hands and the legs .
- c. Make the body light and look straight.
- d. Count each jump with one, two up to sixteen.
- e. Raise the hand above the head from counting seventeen.
- f. After counting up to thirty-two, come to a normal position jumping lightly and bringing hands down for cooling off.

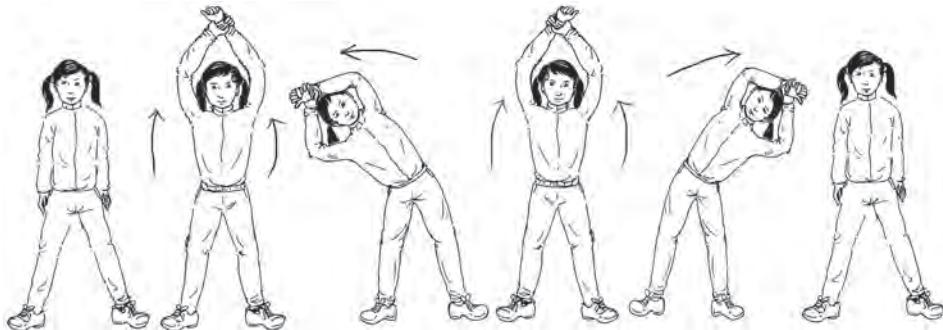


### **Method of doing arm's exercise**

- a. Stand comfortably keeping both legs apart with nearly 2 feet distance.
- b. Bring the left hand up above the head from left side.
- c. Pull the left arm slowly catching it with right hand and start counting from one to fifteen.
- d. Likewise on counting sixteen, change to right hand.
- e. Pull the right arm slowly catching it with the left hand.
- f. On counting 15 to 16, bring the body straight to the attention position.
- g. Do not forget to keep head straight while bending the arm right to left or vice versa

### **Method of doing waist exercise**

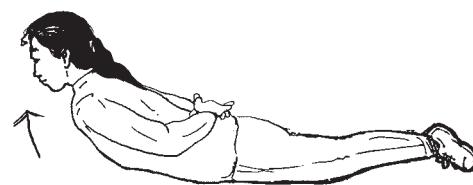
- a. Stand comfortably keeping both legs apart with nearly 2 ft. distance.



- b. As shown in the figure, bend the body towards right side by raising the left hand up from the left side and count up to fifteen. Now the wrist of the raising hand should be held with a left hand.
- c. While bending the body, both legs should be kept straight and only body should be bent.
- d. Upon counting 16th, keep the body straight and the hands by the side of the body.
- e. Bend towards left and start counting from 17 to 31 raising the right hand from the right side holding the wrist.
- f. At count 32, stand straight with hands aside.

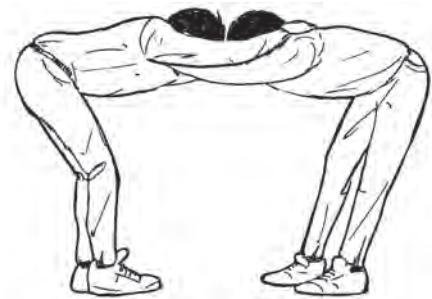
#### **Method of doing chest and trunk exercise.**

- a. Lie on the stomach on a clean and soft place keeping the body straight.
- b. As shown the figure, keep the hands behind the body with cross palms lightly facing above.
- c. Now gradually raise the head with the above parts from the chest like a cobra snake.
- d. Count till 15 keeping the head in an upward position and stopping breathe.



- e. On counting 16, breathe gently placing the head slowly on the floor.
- f. Repeat this activity for at least 10 times.

### **Method of doing pair exercise keeping hands on shoulder to bend**



- a. Stand nearly at a distance of 2 feet facing each other in pair.
- b. As shown in the figure, bend down keeping the hands on one another shoulders.
- c. Stretch the trunk without relaxing while bending the body.
- d. Continue this exercise once for at least 30 seconds.
- e. Stand straight as before with the hands by the side.

### **Conclusion**

The activities performed to make the body strong, active and fitness is called exercise.

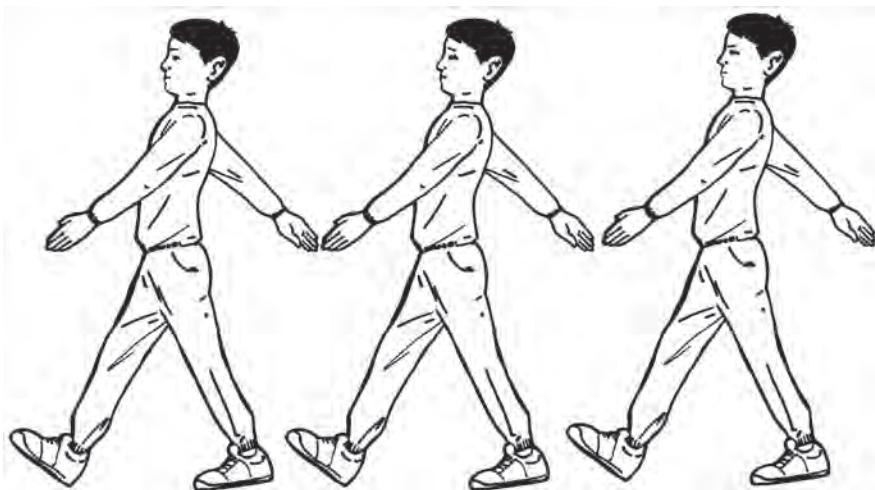
Exercise makes the internal and external condition of the body strong and also helps to develop the mind.

Physical exercise done in the morning gives fresh energy to the body for physical and mental activity.

### **Exercise**

#### **Write short answer of the following questions:**

- a. Write any four advantages of physical exercise.
- b. Why and when is warm up and cooling down activity necessary?  
Write.

**Introduction**

Drill is considered as the activity related to military and police. Now a days, it is a part of a public life. Drill can be understood as a physical activity performed in a team maintaining discipline. The main objective of it is to develop the skill of ability and team work in a disciplinary way. It develops the habit of doing task uniformly among the friends and the team work.

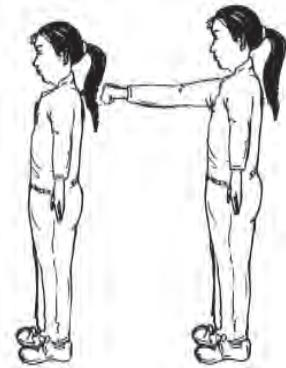
Drill is performed after the commander's command and direction. It is an interesting task. Because it is performed in a group, it makes the participants performs look balance and active. Participants should follow 3 steps to drill. They are instruction, command and action.

Out of three steps, instruction is given for action in the first step and command is given to postures the task in the second step. For example, group will turn right..... right..... turn. Here "group will turn" is an instruction. "Right turn" is command. In drill, the command and direction is carried out by the commander and the action is done by the participants. Various kinds of commands and directions are ordered in the drill, but here only the following commands are introduced and explained.

- |                  |                  |                |               |
|------------------|------------------|----------------|---------------|
| 1. Cover up      | 2. Stand at ease | 3. Attention   | 4. Right turn |
| 5. Left turn     | 6. About turn    | 7. Mark time   | 8. Halt       |
| 9. march forward | 10. Eyes right   | 11. Eyes front |               |

### **1. Cover up**

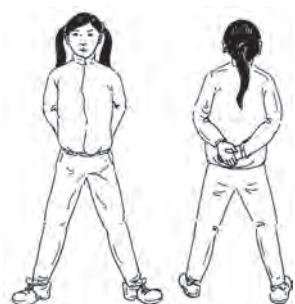
At first participants should be made to stand according to their heights or vice versa. The activity demonstrated by the participants looks attractive and eye catching. The command is "cover up" to arrange the participants in a line or to correct their position. In this command, the position of the students' posture should be as follows.



- The students at the front should stand in the attention position keeping their hands at their sides.
- The students of back should stand in attention position with right hands nearly touching the front student's shoulder.
- The small students should stand in the front and the big ones behind them.

### **2. Stand at ease**

On the command of stand at ease, participants should raise the left foot about 15 to 20 cm high and keep it apart about 28 to 30 cm left. The physical position of the body should be arranged in the following order:



- As soon as receiving the command, left leg should be kept apart and both hands should be kept behind the body.
- The weight of the body should be balanced on both legs.

- c. The hands should be arranged putting right hand on the left palm and also pressing the thumb with each other.
- d. The body should be straight and strong while taking the pose of stand at ease.
- e. Arm should be kept tightened on the body so that air could not pass through the holes of armpit and arm.

### **3. Attention**

Generally every action is started with the attention position. The physical position of the participants in the attention position is given as follows:

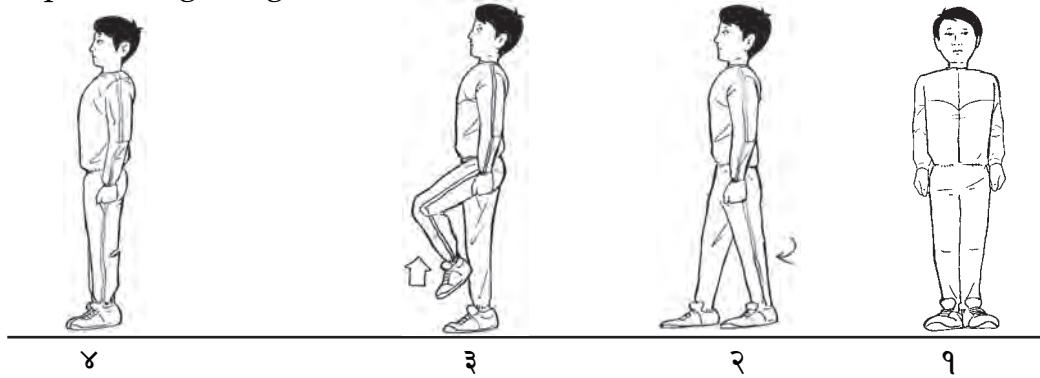


- a. Body is kept stand straight in the attention position.
- b. Both feet are kept together at an angle of 30 degree with v shape.
- c. Chest and feet should be stretched and both hands should be kept straight tightened at the body with loosen fists at sides.
- d. Eyes should be straight at the front at own height level and neck should be straight.
- e. Chest should be expanded, abdomen should be compressed and mouth should be closed.
- f. The weight of the body should be equally laid on both legs and balanced.

### **4. Right turn**

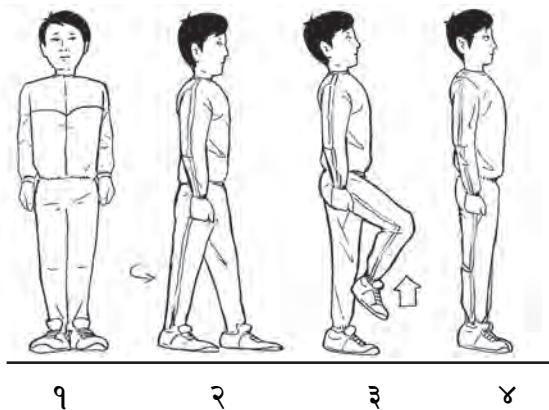
On the command of "Right turn", the body and the foot should be turned towards right at a time from the attention position. An action of complete process of right turn is only finished when the left leg from the back is brought to keep together with right foot. The process of turning right while performing right turn should be done with an angle of 90 degrees on support of the heel of right foot and the toes of the left foot on counting one. At the same time, the left foot kept back should be raised for 15 cm up on fast counting two and three. At the end, the left foot should

be kept together with the heel of right foot by stamping left leg on counting 4. In this process, the weight of the body should be put on right leg.



### 5. Left turn

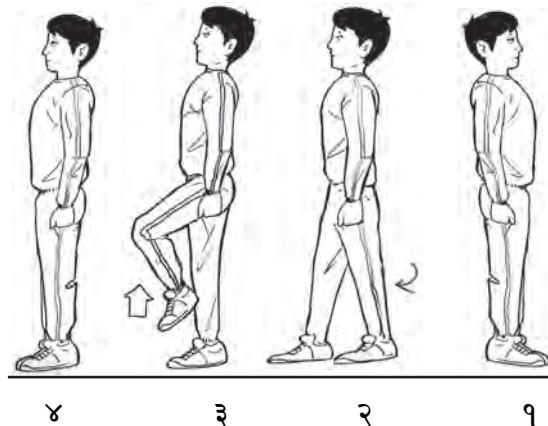
On the command of "left turn", the participants from the attention position should turn to left making round the angle of 90 degrees. The whole process should be completed in two steps as in the right turn. On counting one, one should turn towards left by stepping on the heel of the left leg. On fast counting two and three, the right foot should be lifted, it should be raised 15 cm up and put together with the heel of the left foot on counting four.



### 6. About turn

After getting the command of about turn from the leader, one should turn just opposite from the right side making an angle of 180 degrees from the attention position. As for example, one who stands facing east should turn to west. To perform about turn, one

should round full from right on the heel of the right foot and toes of the left foot on counting one and the left foot raising 15 cm up on fast counting two and three should be kept with the right heel together on counting four.



## 7. Mark time

Every new command is given in the attention position. On the command of mark time, left and right foot should be moved doing up and down respectively. On counting one, one has to stamp the left leg on the ground raising about 6 inch up. Similarly, on counting two, right foot should also be raised up to step on the ground. During the mark time, one should raise their legs on the level of knees keeping the body in the attention position. During this, one should check the uniformity of legs stepping on the ground through the command of rhythm of 1, 2, 1 by the words "step by left". While doing mark time, it is better to keep the toes of both feet pointing little inside.

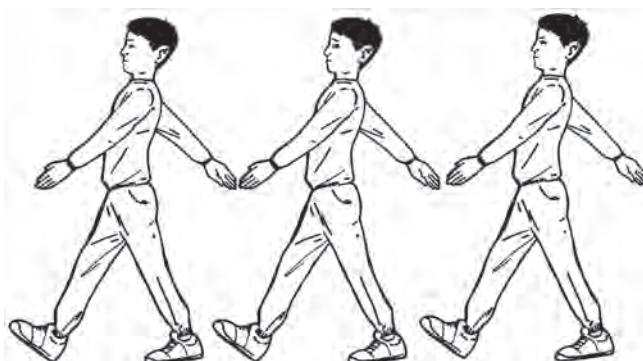


## **8. Halt**

The command of "halt" should be given at the time of raising left leg during the mark time. Then after, students should step on right foot for check and come to the standing position with attention by stepping left and right counting 1 and 2 respectively.

## **9. March forward**

The command of forward march is given to the participants to move few steps forward. On the command of forward march, participants should move forward with stepping left foot first.



There must be the sequence between hands and legs while marching forward. When left leg is moved forward, right hand should be moved forward. Quickly after it, right foot and left hand should be moved forward. This process can also be performed with the counting of 1, 2. After getting the order of halt, group should stop their march on right step quickly after saying check, one, two.

## **10. Eyes right**

During the demonstration of drill, this activity is performed to honor the guests and chief guest while doing forward march. Generally, the group will march at left side keeping the guest at right side. When commander reaches near the marked line, he/she gives the commands of eyes right. After getting the order of this command, the position of the participants and the leader

should be as given below:

- a. Marching should be continued with turning their necks right keeping it parallel to the shoulder. This should be continued until getting the order of eyes front.
- b. The flag should be lowered down to the right side from the straight position and carry it horizontally at chest level. The left arm should be fixed to keep attach to the body.
- c. Other participants should forward the march with eyes right. They should go ahead keeping the trunk straight and neck stretched without tension. The marching including the position mentioned above is continued until getting the order of eyes front.



## 11. Eyes Front

Eyes front is the order of the commander when the participants march with eyes right. This order is given to the group when the leader has crossed the marked line kept at the front of the guests. Receiving this command, the lowered flag should also be raised straight up towards front. In this way, the other participants also keep the march continue with the eyes straight ahead keeping the neck straight and they follow the forward march to reach the destination.

## Introduction

Physical training is the translation of "Sharirik byayam". In short, it is known as PT. It means the exercise of all organs of the body. In other words, physical training is those physical activities that help to keep healthy and fit body. In the past, PT was considered to be the exercise of the military and the police only. but today it is done by all the people. It has been made as the regular activities of school. Physical training is the best activity for maintaining fitness and health of the whole body. Physical training can be performed in single, double and in groups too. But one should select it on the basis of need and condition of the individual. There are many forms and ways of physical training. Here the PT prescribed by the Curriculum Development Center and the National Center for Education Development (NCED) is presented with diagrams.

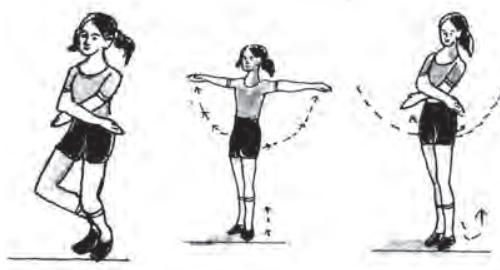
### PT no. 1 PT of stretching body

Stand in the attention position joining ankle of the feet.

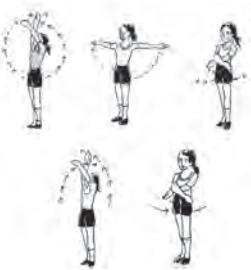
### PT no. 2 PT of hand and foot

Initial stage	Process	Final stage
<p>Stand in the attention position joining ankle of the feet.</p> 	<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>  	<p>Stand with crossing both wrists gently on abdomen at the front.</p> 

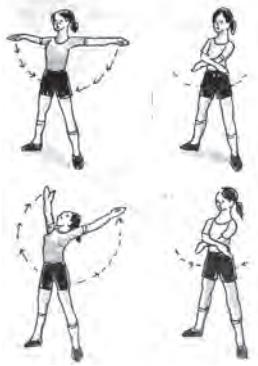
### PT no. 3 PT of arm

Initial stage	Process	Final stage
<p>Stand crossing both the wrists gently on the 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 the hands bringing from right and left on crossing stage and then step on the heel first then toe at the end.</li> <li>Continue the PT and stop at counting 16.</li> </ul> 	<p>Stand with crossing both wrists gently on the abdomen at the front.</p> 

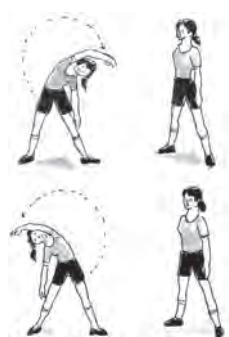
### PT no. 4 PT of chest

Initial stage	Process	Final stage
<p>Stand crossing both the wrists gently on the abdomen at the front.</p> 	<ul style="list-style-type: none"> <li>On counting 1 and 2, bring both the 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 and keep them crossed on the abdomen and again spread them to the side and put them crossed at front.</li> <li>Continue the PT and stop at counting 16.</li> </ul> 	<p>Stand crossing both wrists gently on the abdomen at the front.</p> 

## PT no. 5 PT of waist

Initial stage	Process	Final stage
<p>Stand crossing both wrists gently on abdomen at the front.</p> 	<ul style="list-style-type: none"> <li>On counting 1, spread both hands to 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 keeping hands at the 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 the sides of the body</p> 	<ul style="list-style-type: none"> <li>On counting 1, bend the body towards left raising the right hand from the right side.</li> <li>On counting 2, reverse the same hand to bring it to original position.</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 the sides of the body.</p> 

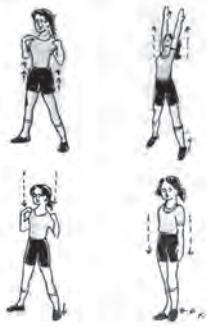
## PT no. 7 PT of chest and waist

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 and 3, try to touch the floor with fingers bending the body at front.</li> <li>On counting 4, stand straight.</li> <li>On counting 5, 6 and 7, body is bent towards back supporting behind on the waist with both hands.</li> <li>On counting 8, stand straight.</li> <li>Continue the PT up to the counting 16.</li> </ul> 	<p>Stand straight with 20 cm legs apart keeping hands at the sides of the body.</p> 

## PT no. 8 PT of shoulder and neck

Initial stage	Process	Final stage
<p>Stand straight with 20 cm legs apart keeping hands at the 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 the same process again but at counting 5, both hands should be raised towards left side. On counting 6 bring the hands back to the left but at counting 7, hands should reach at the left side again. 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> 

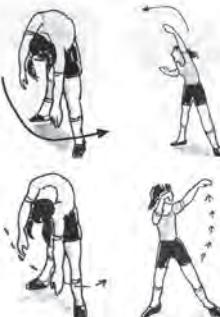
## PT no. 9 PT of chest

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

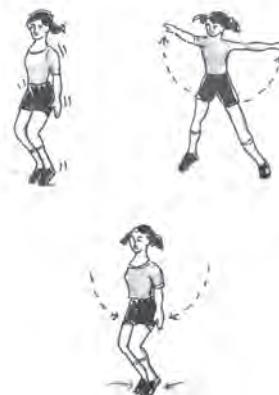
## PT no. 10 PT of moving round the body

Initial stage	Process	Final stage
<p>Stand in the 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 with 20 cm leg apart keeping both hands spreading to the right.</p> 

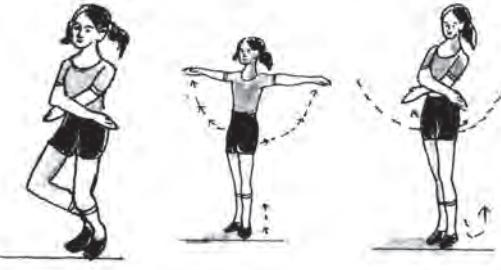
## PT no. 11 PT of jumping by both legs

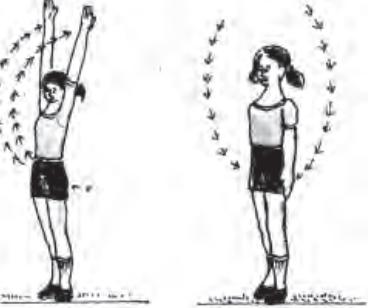
Initial stage	Process	Final stage
<p>Stand with 20 cm leg apart keeping both hands spread towards right.</p> 	<ul style="list-style-type: none"> <li>On counting 1, 2, 3 and 4, both hands pointing right side should be moved round towards left at the front making whole body stay at the same side.</li> <li>On counting 5, 6, 7 and 8, the action is repeated reversely and both the hands are kept pointing to the right.</li> <li>Continue the PT up to the counting 16.</li> </ul> 	<p>Come to the attention position keeping left leg together with the right.</p> 

## PT no. 12 PT of cool down no. a

Initial stage	Process	Final stage
<p>Stand in the attention position.</p> 	<ul style="list-style-type: none"> <li>Jump gently for four times counting 1, 2, 3 and 4 keeping hands at sides.</li> <li>On regular counting 5, 6, 7 and 8, the hands and legs are opened up and closed during jump.</li> <li>Continue the PT up to the counting 16.</li> </ul> 	<p>Stand straight with both hands crossed on the abdomen at the front.</p> 

### PT no. 13 PT of cool down no. b

Initial stage	Process	Final stage
<p>Stand straight with both hands crossed on the abdomen at the front.</p> 	<ul style="list-style-type: none"> <li>On counting 1 and 2, lower down the body with knee bent as well as hands open and stand up on toes.</li> <li>On counting 2, the opened hands at right and left should be crossed, and stand on the heel.</li> <li>Continue the PT up to counting 16.</li> </ul> 	<p>Stand straight with both hands kept at sides.</p> 

Initial stage	Process	Final stage
<p>Stand in the attention position.</p> 	<ul style="list-style-type: none"> <li>On counting 1 and 2, bring both hands up through the front with long breathing in.</li> <li>On counting 3 and 4, bring both the hands down to keep at the sides from right and left breathing out.</li> </ul> 	<p>Stand in the attention position.</p> 

The simple meaning of yoga is to join. Yoga connects body and mind. Yoga helps in the physical development and mental development of a person. Warm up exercises should be performed before doing yogasan. Generally, the exercise of moving hand legs and stretching joints are called warm up exercise. Warm up exercise prepares a person for various physical activities. Given below are the various postures, methods of doing Yoga ashans, and their advantages.

### **Padmasan (Lotus Pose)**

Padmasan is also known as kamalasan. This posture is especially used for meditation and concentrations. A regular practice of it will help in good digestion, well appetite, not having constipation and getting rid of the heart and skin diseases.

While performing Padmasan, following points should be considered:

- a. At the beginning, sit on the ground keeping the body straight.
- b. Then after keep right feet over the left thigh and left feet over the right thigh.
- c. Place both the palms on both the knees facing them uperhands.



### **Advantages of padmasans**

- a. It develops the habit of concentration through meditation.
- b. It helps the skin to be soft and smooth by storing liquid as necessary to the body.
- c. It removes laziness and tiredness.
- d. It activates the blood circulation by making muscles of the legs strong.

- e. It makes the female reproductive organs healthy and strong.
- f. It solves the problem relate to stomach and makes digestive system strong.
- g. It helps in bringing peace of mind and prosperity.

### **Bajrasan (Diamond Pose)**

- a. Bajrasan is also done like padmasan. This position is beneficial in the treatment of conditions like rheumatism at the legs and digestive problems. To perform this posture, following process should be followed:
- b. Fold both legs back.
- c. Sit on both feet.
- d. Keep knees together with back straight and place hands over the knees.

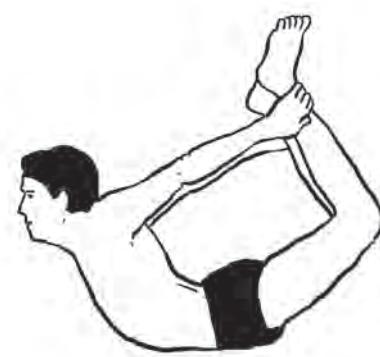


### **Advantages of bajrasan (Diamond Pose)**

- a. It helps to concentrate on meditation.
- b. It helps to store necessary liquid for the development and growth.
- c. It helps to cure different stomach ailments by making the internal parts strong.
- d. It cares various problems related to female reproductive organs.
- e. It maintains balance and good posture.

### **Dhanurasan(Bow pose)**

Dhanurasan is also called danusasan. In this pose, the body is shaped like a bow. This pose helps to exercise the stomach, waist, trunk, arm and thigh. While performing this pose, following process should be followed:



- a. Lie down with the stomach facing the ground.
- b. Raise both feet from the back and hold them at the ankle with both hands.
- c. Then after, lift the head and the chest slowly.

### **Mandukasan**

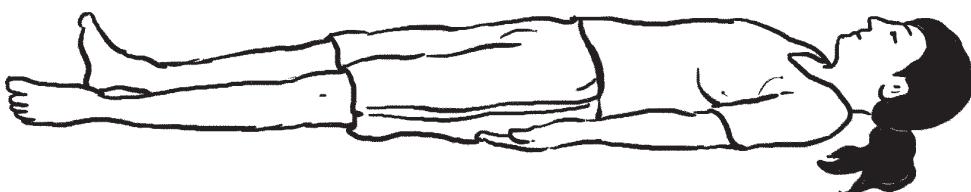
Mandukasan is also called frog pose. In this pose, the body is kept like a frog. Practicing this pose will help to clean the stomach, make body light, cure the knee pain. But this pose should not be done by person having high blood pressure, trunk pain, waist pain or heart disease. Such person should do yogic practice only on consent of a doctor.

While performing this pose, the following process should be followed:

- a. Fold both the legs back as in the bajrasan.
- b. Seat on both the legs.
- c. Place the palms one on another at the naval.
- d. Bend the part of body above the waist forward.
- e. Try to touch the thigh slowly with the chest.



### **Sawasan**



Sawasan is lying like a dead body. It's like lying the way we sleep. This pose should be done especially for rest. This pose helps to reduce physical tiredness as well as mental tiredness. The following process should be followed to perform this pose:

- a. At first, lie on the ground facing upward.
- b. Keep both hands apart near the waist.
- c. Face the palms upwards.
- d. Separate both the legs a bit.
- e. Then after close the eyes and rest for some minutes in the same pose.

### **Advantages of Sawasan**

- a. Body becomes lighter, and one would feel free from tension and tiredness.
- b. Body becomes active, and it also cures mental and heart diseases.
- c. This ashan helps in bringing sound sleep.

### **Conclusion**

- a. Yoga is a practical exercise that helps to strengthen both body and mind.
- b. The muscles of the body is relaxed while performing meditation in padmasan.
- c. Yoga is considered very important in matters of health and religion.

### **Exercise**

#### **Write short answer to the following questions:**

- a) Give a short introduction to Yoga.
- b) What are the benefits of padmasan?
- c) Mention the importance of bajrasan and sawasan.

Games give us entertainment and keeps our body active and healthy. We should play games after learning the different skills following the rules and maintaining discipline. Games cannot be performed effectively without the cooperation and coordination between friends. Even if we lose the game, we need to commit ourselves for doing better in the next match. The next thing to be considered while playing is that we should accept both the win and the loss happily. Students can develop both physically and mentally if they practice and play the games following their rules .

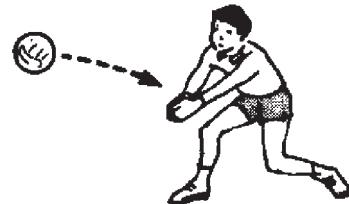
### **(a) Volleyball**

Volleyball is a team game played with 6 players at a side. In this game, a net is hung between the poles at the center of the court. Ball is sent across the net to the opponent team. One should practice different skills to perform well in the volleyball.

#### **Digging**

Digging is used when the ball comes under the waist. To perform digging well, the following points must be considered.

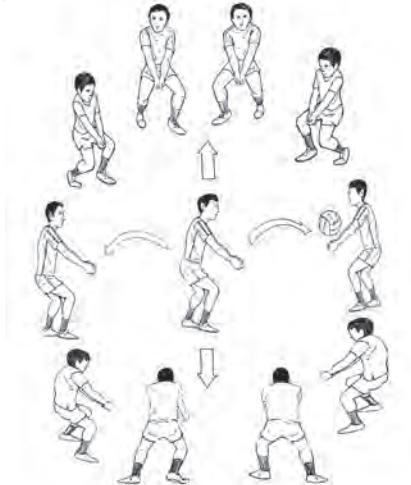
- a. Watch the direction of the ball coming towards you.
- b. Bend the knee gradually and keep the legs apart at front and back.
- c. Keep wrist together with arm bent.
- d. Raise the knee gradually while contacting the ball.
- e. Place the ball on wrist of hand without bending.



#### **Method No. 1**

To learn digging well, we practice it as given in the following figure. Players do practice this skill in the circle. The center player passes

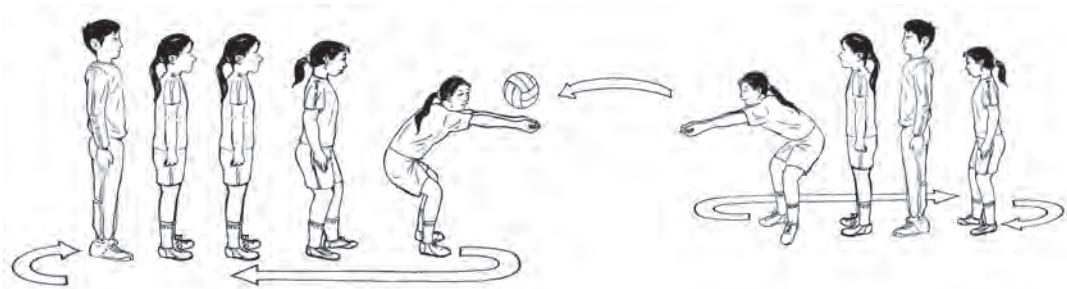
the ball to each player respectively. Thus, one should move round the circle after performing each turn and should take his/her own place. The adding task helps him/her not to waste much time and it keeps the body warm.



*Method No. 1*

### **Method No. 2**

In this method, students take their positions facing each other in two rows and digging is practiced by passing the ball to each other. When the front players perform the digging practice, She should stand behind their respective file for the next turn. Thus, they learn the skills of digging keep body warm and entertain from turn by turn practice.



## **Volleying**

If the ball comes above the chest in the volleyball game, volleying is used. The following methods should be applied while volleying:

- a. As shown in the figure, keep one foot at front and the next at back.
- b. Keep spread fingers over the forehead.
- c. Hit the ball with the tip of the fingers.

The practice of volleying like in the digging should also be done in the circle, file and line.

## **Playing of digging and volleying**

After learning the skills of digging and volleying, the game of volleyball can be played. The game is played in a team of 6 players if there is a court of volleyball in the school. But the game can be played with the team of 3 or 4 players if the volleyball court is not available. In such type of play, the game begins with a service from the back side of the court. Then after both the team try to send the ball to the opponent's court using digging or volleying. The game can be played giving opportunity to all.

## **(b) Football**

One should learn various types of skills to perform a football game. These can be learned gradually. Here, we practice kicking and trapping.



### **Kicking**

The ball can be kicked in different styles in football game. With the help of kicking and passing the ball to mates, a goal can be scored. Here we will practice instep and inside kicking.

#### **Instep kicking**

In it, ball should be kicked from the upper part of the feet as shown in the figure. While kicking, the following points should be remembered:

- a. One foot should be kept beside the ball, and the next foot should be kept behind with knee bending.

- b. As in the figure, the ball should be kicked with the middle upper part of the foot from the back leg.
- c. One or two steps should be taken to balance the body after kicking the ball.



### Inside kicking

Ball is kicked with the inside of the foot part from ankle to toe. Attention should be given to the following points while using inside kicking:



- a. One foot should be kept beside the ball where as other foot should be kept behind the ball.
- b. Then after the ball should be stroke with the inside part.
- c. To kick the ball with force, the practice of kicking from running behind should be performed.

### Trapping

Trapping is stopping the ball to control it. Here we will learn the rolling trapping. The following tips should be considered for using this technique:



- a. Lift the foot paw little high to trap the ball when the ball roll towards on own side.
- b. Trap the ball when it comes under the foot.

### Practice

Kicking and trapping is good to practice simultaneously. These skills are practiced very effectively in the circle and in the line. Everybody can observe when kicking and trapping are practiced in those positions. 6 to 7 players can make a group for practice in the circle or in the line if there are number of balls available.

## **Five men football**

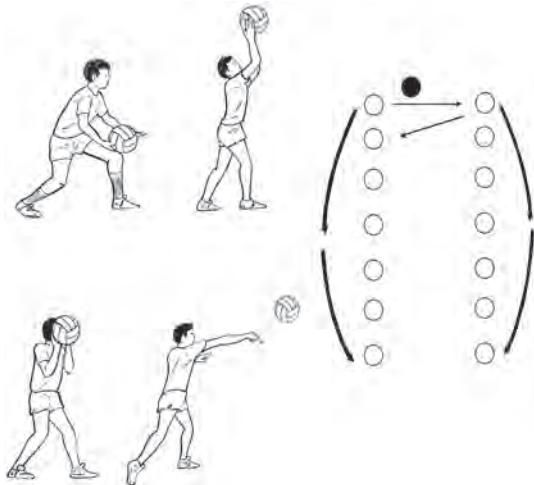
Five men football can be played after learning the general skills like kicking and trapping of football. Goal keeper is not necessary in this game and ground should not be big. There should be at least two teams to play the games. Goal post of nearly 60 cm distance keeping brick, bag or shoes should be made at the centre of the each ending line of the ground. Both teams try to kick the ball by passing quickly to their mates after beginning the game. One should not kick the ball with very force. During the play, both teams try to score a goal and the team that scores the highest number of goals is declared the winner. During the play, players should follow the general rules and regulations of game.

Rules:

- a. Do not push.
- b. Do not catch.
- c. Do not hold the ball with hands.

## **(C) Basketball**

Basketball is an interesting game. The game is played between two teams. Players of both teams try to score in the basket. Various skills should be practiced to perform this game well. Here we will practice end ball and dodge ball.



### **End ball**

There are 7 to 9 players in this game. Goal area is marked 2 m. ahead from both end line of the court as shown in the figure.

The game is played in the following ways:

- a. Jump ball is made in the presence of one player of both teams at the center.

- b. Both teams try to reach the ball at the goal area through passing and dribbling.
- c. One score is declared when the ball can be passed to the mate staying inside the goal area.
- d. Players staying inside the goal area cannot come out but can move right and left inside the area.
- e. Ball is passed to the mates when the ball is out from the side line or goal line.

### **Chest pass**

Chest pass is used to pass the ball very fast and for short pass. While using chest pass, ball should be held by both hands in front of chest as shown in the figure. Fingers should be spread over the ball and both thumbs should be kept closer and at the backside. While passing, both hands should be used to throw the ball forward forcefully. Ball should be passed by the forceful push of the palms.

### **Practice**



While performing the exercise of chest pass, we can play as game in various ways like in circle or in two lines as shown in the figure.

### **Dribbling**

Dribbling is done to carry the ball forward or to dodge the opponents. While doing so, the ball should be bounced with one hand.

## **Practice**

### **Method no. 1**

While performing the exercise of dribbling in the circle, players should stand by turns. After that, dribbling should be done by bending a bit.

### **Method no. 2**

In order to perform the exercise of dribbling in the file, all players should stand in file according to the number of balls as shown in the figure. After that one player should stand at the back of his/her front line by passing the ball to the first friend standing in the line. In this way, the exercise of the dribbling is performed in turns between the files.



### **Practice of chest pass and dribbling**

While performing the exercise of dribbling, students should stand in the files by making some groups. After that the first friend of all the groups dribbles the ball ahead and stands at the back of file by doing chest pass to the second friend when he/she reaches a particular place . Likewise the second friend also performs chest pass to the third friend after dribbling. In the same way, it should be started again, till the turn of all is over.

### **Dribbling relay**

Dribbling relay can also be played after getting good exercise of dribbling. For this, it is necessary that all players stand in equal number in their respective group, and there should be a separate ball for all the groups. In the field, initial line and a mark to go round should be determined for each group, as soon as one gives the signal of starting the game, the front friend passes the ball to the second friend from the initial line after dribbling and revolving the mark and

stand at the end of his/her own line. The second friend also passés the ball to the third friend as the first friend does. Similarly the last friend from all the groups who moves a round the mark and crosses the initial line wins the game.

#### **(d) Dodge ball**

Dodge ball is a supplementary game played between two teams by hitting and dodging the ball in the court. In this game there should be 7 to 13 players in each group. One team should stand inside its own court and outside the opponent court and another team should also be there in a court.

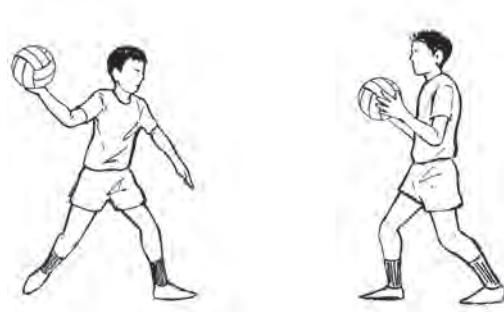
#### **Game begins as follows**

- a. Game begins by tossing. Ball should be given to the team that wins the toss.
- b. When there is signal of starting the game, the team which gets the ball passes among the friends or tries to secure the points by hitting the opponents by the ball.
- c. One should not cross the specified line while passing the ball or catching the ball or hitting the ball.
- d. While passing or hitting, if the ball moves out from it own area, the ball goes to the other group and they also try to hit the opponents by passing it among the friends.
- e. If a team is able to hit a person by the ball, it secures one point and the player who is hit by the ball stands back of the opponents and one player from the standing players enters to his/her respective court.
- f. After changing the place by the players, the game begins again and the ball may be there with one team out of two.
- g. Thus, the team which secures more points becomes the winner of this game that lasts for 10 minutes.

To play the above game in a proper way, we should practice various skills. Now we will practice the skill of throw and catch.

## Throw and catch

In dodge ball, the players of both the teams use the skill of throwing and catching to pass among the friends and to hit the opponents. It can be practised in various methods. In the begining, there should be short pass and the practice of throwing forcefully up to the long distance should be done after completing the pass to the specified place.

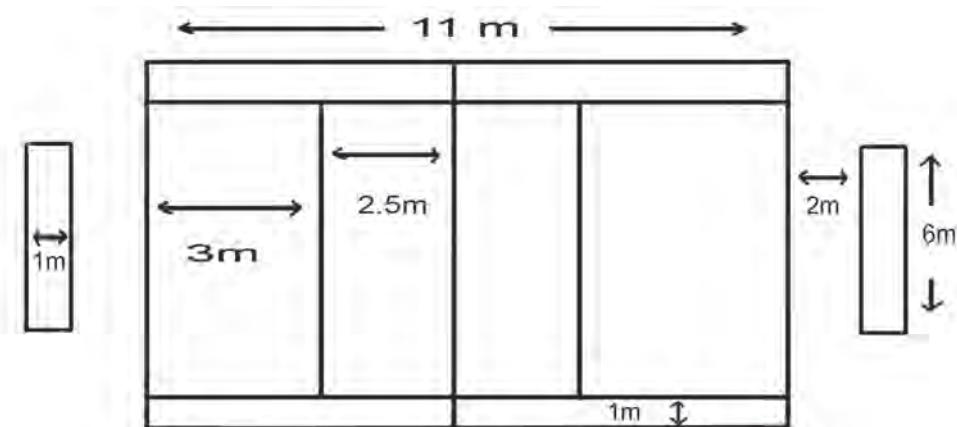


### Method no. 1

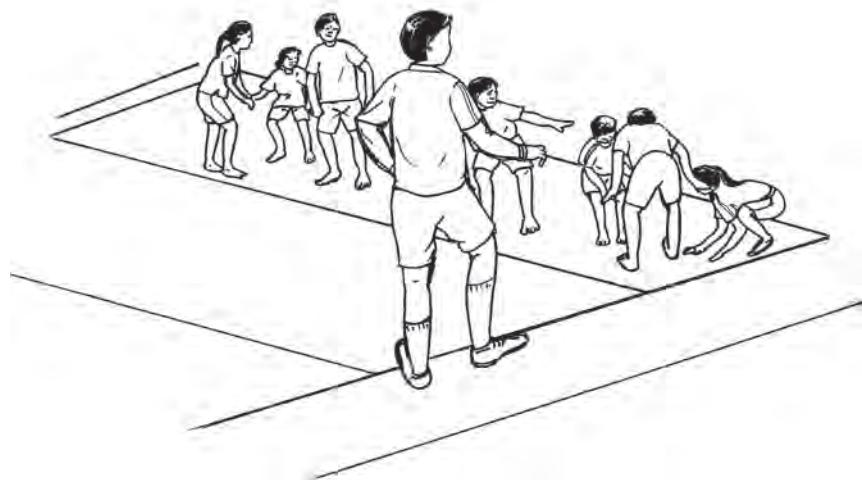
In order to perform the practice of throw and catch, two groups should stand in two lines facing each other. Now in turns each person from the group throws the ball to another person facing him/her. The person facing catches the ball and then throws ball to another person of the other group.

In this way, the process of throwing and catching continues. This practice can also be done in a circle or in a row.

### (D) Kabaddi



Kabaddi is a game played in a court. There are seven players in each team. In this game, players of both teams act like a raider and an anti raider in their respective turn. A player from raider team starts the chant from the middle line. The chant has to go on in a single breath. He/she tries to touch the opponents. The raider should come back to the own court without breaking the chant. The raider team gets total scores on the basis of the total numbers of players that get out from



the field. A player who gets out should stay in the sitting block kept behind the field according to the outing arrangement. The anti raider team also gets the score when the raider is caught or the raider breaks the chant. At the end of the two halves of 15 minutes game, one which gets high scores wins the game. There is 5 minutes interval after one half of 15 minutes. Then after, second half game starts. Various skills should be practised to perform well. The following skills will be practised in grade six.

### Raiding

While raiding, a raider should run calling out "kabaddi kabaddi" before crossing the center line. In order to be a good raider, the following facts should be considered:

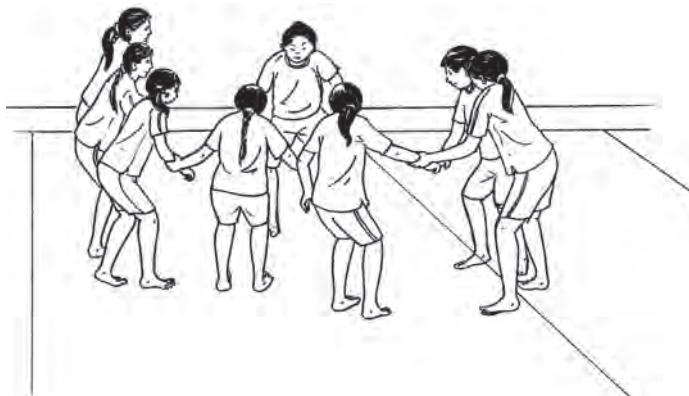
- a. While raiding, the raider has to return by crossing the baulk line properly or by touching the opponent.

- b. While raiding, the raider should look the side line properly. If he/she steps on it or uses lobby, it is considered as fault, but he is allowed lobby after struggle.
- c. The raider must be aware of the opponents. Otherwise there is possibility of getting caught from the other side.
- d. He/she should say "kabaddi kabaddi" while returning too.
- e. Only one raider should go at a time.

### **Trapping**

The process of catching the raider by the anti raider is called trapping. It is easier to catch by forming a chain. While making chains, out of seven persons, two chains each with two persons on the two sides and a chain with three persons at the middle get formed. The players at the center and the players opposite to the corners to which the raider attacks, try to trap the raider. For this those who play by making chain should be careful enough and should practice a lot.

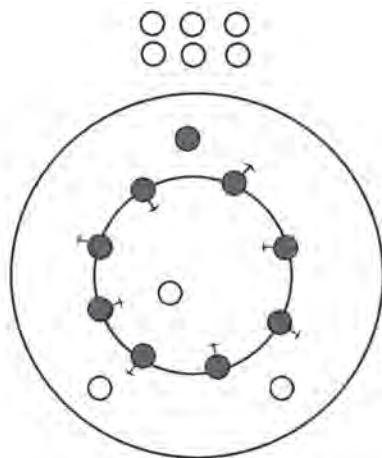
It is better to play the game by making kabaddi field for the practice of skills.



### **(f) Kho-Kho in circle**

Kho kho is a chasing game played between two teams. There should be 9 players in each side to play this game. Out of two teams, one team is the chaser and another is the runner. Out of 9 players 8 players of the chasing team sit in the circle one after another facing the opposite direction and an active chaser stands

by the side of the circle. Similarly, runners also make a group of three players. The first group enters in the circle to begin the game. After getting the start signal, the game chaser (active) tries to touch the runner but he/she is not allowed to go inside the circle. Thus, the active chaser touches the back of the sitting chaser facing inside and says "Kho"



In this way after getting the *kho*, this person becomes an active chaser and starts to chase and the former active chaser sits inside in the place of the latter's active chaser. Since the new active chaser sits facing inside, he is not allowed to go outside and starts to give *kho* to one who is facing outside. In this way, giving *kho* or chasing is done to dodge and touch the runners. If the chaser is successful in touching the runner, the touched runner is out and the chaser scores one point. The runners are free to move anywhere inside and outside the circle but they are not allowed to go outside of the big circle. If so done, it is considered out (disqualified) and one point is provided to the chaser. Those runners who are sent out go to sit at the back of the group of runners with 3 persons. As the chaser makes 'out' to the first three runners, the second three persons should enter the circle immediately and the game continues. Thus, within 5 minutes, a chaser secures the points on the basis of the runners he sends out. After that, runners come to sit in the circle within 2 minutes. The former chaser starts the game becoming a runner. Thus, the team which secures more points in two round of game of 5 minutes wins the game. In order to play this game in proper way, the practice of giving *kho* and chasing should be done properly.

### **Giving kho**

While giving *kho*, shouting *kho* and touching the back of a friend

should be done simultaneously. While practicing this, one should do exercise of touching by stretching the hands and taking long steps. Besides these, the active chaser may not give kho but pretends to do so and he/she may pretend not to give kho but may give kho. While doing so, the runner gets confused and it becomes easier to make them out.

## **Chasing**

The process of giving kho and chasing are quite related. If one gets kho, he/she must quickly start chasing and must touch another friend.

While practicing, the following points should be considered:

- a. The chaser facing inside is allowed to chase inside only and the chaser facing outside is allowed to chase outside only.
- b. Since the chasing is a team work, the chaser should decide the right person to whom the given kho results runner out.
- c. The kho should be given quickly to the other person close by if the chaser cannot touch the runner.
- d. The sitting chasers are not allowed to stand till they get the kho.

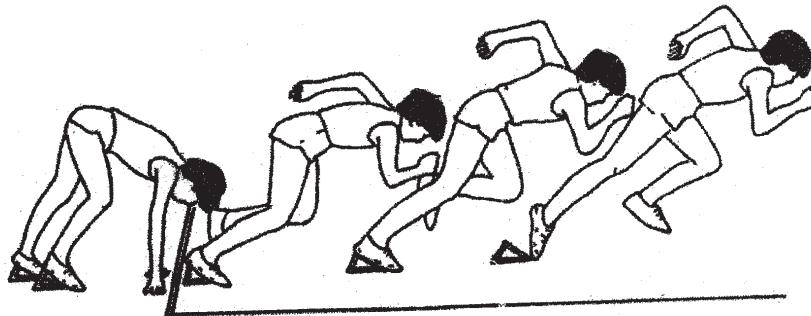
**Athletics**

Athletics is the combined form of walking, running, jumping and throwing. We practice sprint, long jump and ball throw in grade six.

**(a) Short distance running**

Race having less than 400 meter distance is called sprint. To perform the sprint well, we practice starting technique and finishing method of race separately.

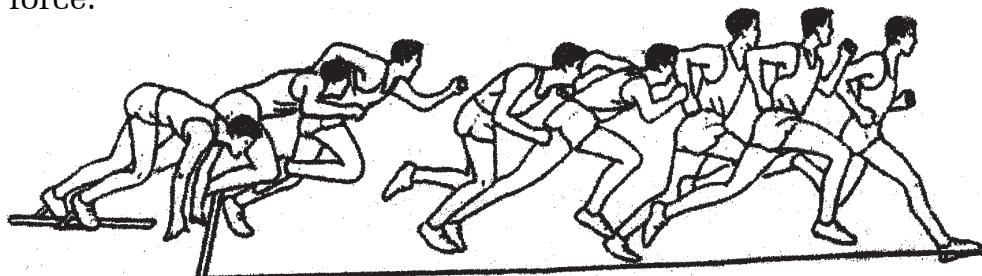
Crouch start is the beginning method of race. On your mark, get set, Go or pistol is used for starting the race. Sprint is performed well



when these three commands are followed strictly and practiced. While starting to run a race, one should run fast as soon as the hands leave the floor.

Practice should be done in the following ways:

- Hands and arms should be moved forward and backward with force.



- b. Stepping should be quick but short.
- c. Sight should be straight without raising the chin up.
- d. Race should not be stopped suddenly after completion. It should be continued for a while.

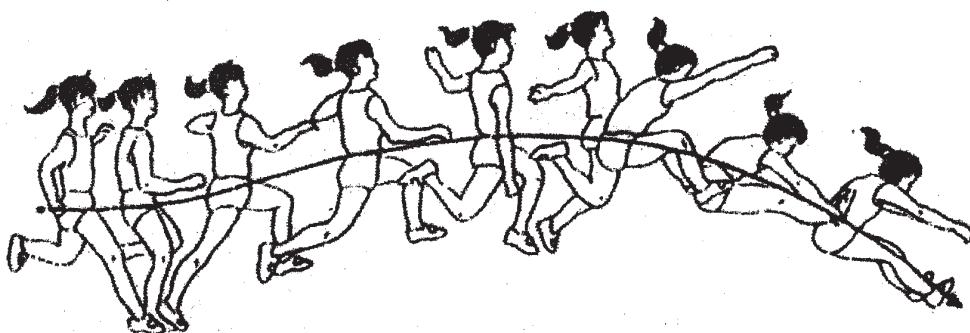
## Practice

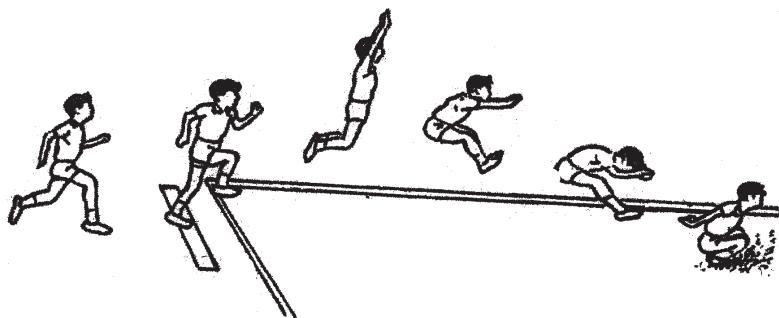
3 or 4 groups should be formed at file for the running practice. Anyone can give command of "on your mark, set and go". Others practise the running covering some distance and join back the file for their respective turn. Commander repeats again and again and others also practise turn by turn.

### (b) Long jump

Long jump is an attempt of long distance jump from the take off board through running. Long jump can be practiced with the help of two ropes keeping at 1.5 or 2 meter distance the ground. The distance should be gradually increased in each success. As in the figure, one can jump from height to learn the movement of the hands and legs in the air. Thus, one can stay for long time while jumping in the air.

Attempts of jumping should be measured. There should be marking of line at takeoff board. Landing area must be filled with pebble free sand.





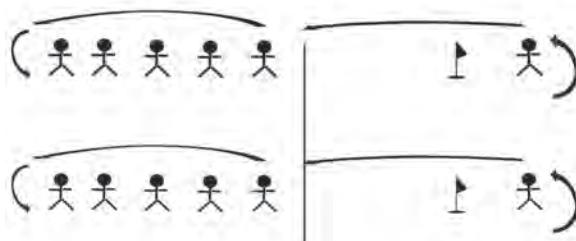
### (c) Ball throw

Any ball can be used in a ball throw. During the practice of ball throw, it should be thrown from a circle of 2 meter diameter. Few arcs should be drawn on the throwing place to know up to which distance it is to be thrown. If so done, it is known whether or not the throw has been farther than the previous one. While performing the practice, one should try to throw the ball as far as possible, at least a bit ahead of the previous throw.



### Relay games

Relay is the game played among the group by passing an object to each other. For this game, there should be an equal number of students in all the groups. Relay game can be played in various methods. Out of them, we will practice a few methods.



## **Hopping relay by one leg**

All the students of groups stand in their respective group. The front player of each team holds a short stick. A mark for turning is placed few, meters ahead from the initial line for each group. After getting the signal of a game, the front players of all the groups those who hold a short stick each come back to the initial line by moving round the mark to be reached hopping on one leg. They come back to sit at the back of the groups by passing the stick to the second friend of their own group. Likewise the second, third and all the players return by moving round the mark. At the end, one out of all the last players of the groups who crosses the front line by turning the mark, that group becomes the winner.

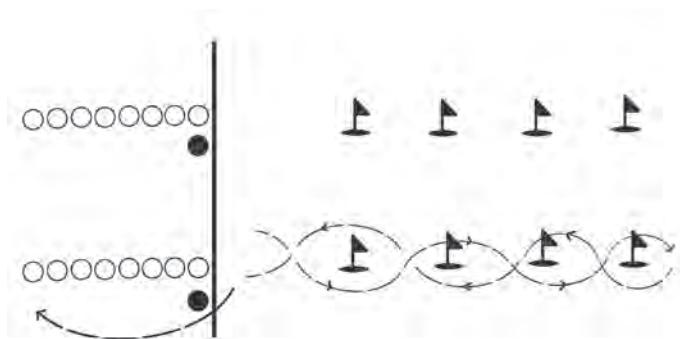
## **Backward relay**

This relay is played as above but one should run from backside, while running. If one runs from outside by raising knees bit up, there is a less chance of falling. Although students run up to the mark from the back side, they have to run from front side after moving round the mark.

## **Dribble relay**

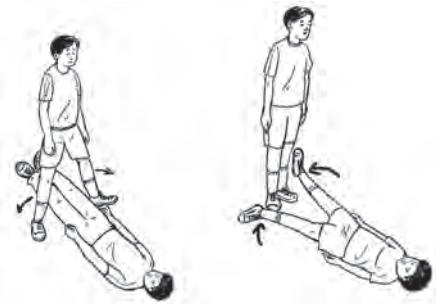
Dribble relay should also be played as the above method but it is played by dribbling the ball. It can also be played in different ways.

- a. Straight dribbling
- b. Dribbling by right hand while going and dribbling by left hand while returning.
- c. Zigzag dribbling relay.



## **Close, open and jump**

This exercise is done in pair. One closes and opens the legs while other stands keeping legs apart and jumps over the friend's legs to keep together when the partner opens the legs. Turn is changed after 15-20 attempts. This



exercise brings activeness in the body. In the beginning, this exercise should be learned slowly later it can be done faster after some practice. There may be possibilities of stepping on friend's legs if one is not careful.

### **Method no. 1**

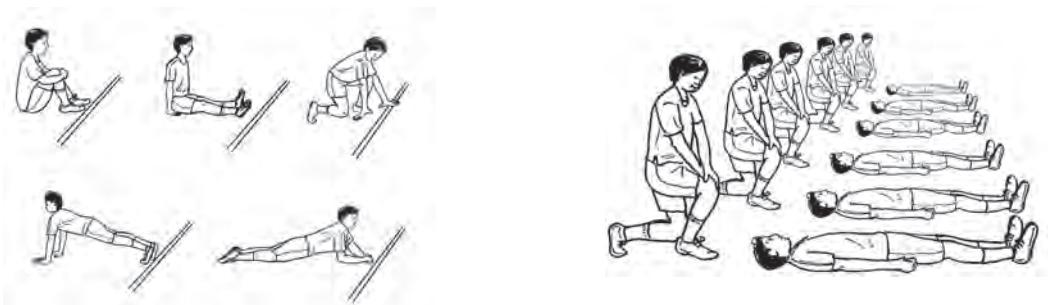
- a. Ready to do exercise in pair.



- b. Every pair starts close, open and jumps exercise after getting signal to start. Turn will be changed after 20 attempts. Pair who has finished completing the practice first is announced as a winner.

### **Dodge running**

Dodge running is a game of pairs. Through this game, agility can be developed. We can use it as an image race while practicing. One of the partners has to run ahead. S/he runs sometimes straight and sometimes left. To make dodge, other partners should follow the path of the partner. We can use this run by facing each other like mirror race but one has to run from front whereas the other should run from behind. Turn should be changed after completion of race so that partner could also get chance to run from the front.



### **Running starts from various positions**

We can develop activeness and agility when we start running from various positions. We lie the body sometimes on abdomen and sometimes on the back behind the starting line for the practice. When signal is given we should get stand fast and run at least 10 m. away. This method is used to practice the quickness of starting from various positions. Besides this we can also start the race on sitting or standing position.

### **Squat thrust**

Exercise of squat thrust is done for activeness. This exercise can help to develop strength and agility of organs especially below the waist of the body. When it is done in counting, it becomes an interesting. One complete action is finished in each for counting. This can be practised by counting the squat per minute after learning it well.

While doing this exercise, one should stand in attention position. On counting 1, we should sit touching the floor by palms. On counting 2, legs should be kicked back with the support of both palms on the floor. On counting 3, we should come back to counting 2 and take attention position on counting 4.

