



216en07

7

HEALTH

How did you feel the last time your sister fell sick? You must have observed that everyone in the family was worried and showed concern about her well-being. Your parents took her to the doctor. Your mother was concerned about her medicines and diet. Due to ill health she became irritable and didn't like to eat. She became very weak and was unable to perform her daily activities. Don't you agree that all the family members were affected due to her ill health? Do you realize how important health is for all of us?

Good health of an individual is important in order to ensure happiness and our ability to work. There are many factors which affect our health. Some of these factors like balanced diet, clean water and clean environment have a positive impact on health while others such as disease causing organisms and unhygienic conditions have a negative effect on our health.

In this lesson you will learn that good health implies both physical and mental well being and requires consistent efforts to maintain it at both personal and community levels. You will also realise that just as good personal health is a necessity, community health is of great importance too. In addition, after reading this lesson you will be able to appreciate how individual and community health reinforce each other.

This lesson aims at guiding you to live a healthy life.



OBJECTIVES

After studying this lesson you will be able to :

- understand health and its aspects;
- appreciate the importance of health;
- identify the indices of good health to assess health status;

- understand immunity and its importance in maintaining family and community health and
- motivate the community to follow the immunization schedule.

7.1 HEALTH

Health is of prime concern for all. You must be familiar with the famous saying “health is wealth”. When you are healthy, you enjoy your work and life to the fullest. It is the solid foundation on which your happiness rests. To attain good health we need to make efforts and develop certain habits.

Health is a very commonly used term and can be interpreted in different ways by different people. What is your idea? Is it mere physical fitness or just absence of disease? Before proceeding further, Let us know your definition of health. Write it down.

Health is _____

Definition of health: According to World Health Organization (WHO), health is a “**state of complete physical, mental and social well being and not merely the absence of disease.**” It means proper functioning of both, the body and the mind.



World Health
Organization

Fig.7.1

People enjoying good health are more cheerful, energetic, full of life, more efficient at work and therefore more productive.



ACTIVITY 7.1

List any two points of similarities and differences between your definition of health and that given by WHO.

- Points that are similar a) _____
- b) _____
- Points that are different a) _____
- b) _____

Notes





Notes

Try to recollect the last time you were sick or suffered from a major illness. Were you not irritable? An unwell person may lose temper for no reason and does not feel like working because his/her body becomes weak.

In contrast, when you are healthy and with your friends, you feel happy and enthusiastic and are likely to enjoy doing the work assigned to you.

How do you feel during exams? Stress may cause rise in blood pressure or may lead to sleeplessness. However, some amount of stress also helps you to perform well. Overall health is achieved through a combination of physical, mental and social well being. The three different dimensions of health together are commonly referred to as **health triangle** as shown in figure 7.2.



Fig.7.2: Health triangle showing three dimension of health

7.1.1 Signs of good health:

Given below are some of the signs of good physical, mental and social health of a person. They help in assessing our state of health.

A. Signs of good physical health

When you are in good physical health you

- are energetic and alert;
- have normal weight for your age and height;
- have bright and shiny eyes;
- have clean and clear skin;
- have normally growing hair of natural colour and texture;
- have odourless breath;
- have good appetite and
- have sound sleep.



Fig.7.3

Such people are active, responsive and happy, can work hard and perform well.

B. Sign of good mental health

If you have good mental health, you shall have

- control over your emotions;
- balanced feelings, desires, ambitions and ideas;

- ability to accept the realities of life and face them;
- confidence in your abilities;
- ability to cope with day to day stress of life;
- helpful attitude towards others, and
- the ability to seek help when needed.

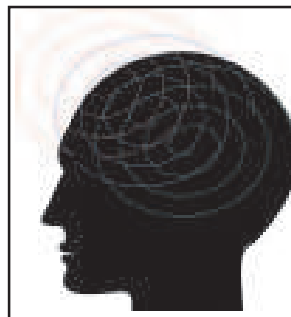


Fig.7.4

Such persons can work productively and can make a contribution to the society.

C. Signs of good social health

If you have good social health you shall

- have a positive attitude towards life;
- get along well with others;
- have a pleasant personality;
- fulfil responsibilities and duties towards others;
- have healthy interpersonal relationships and
- be able to accept disagreement positively.



Fig.7.5



ACTIVITY 7.2

Based on the WHO definition of health, complete the table given below. Provide three reasons for your conclusion. Two cases are done for you.

Name	Characteristics of the person	Do you consider the person healthy? Answer in 'Yes' or 'No'.
1 Reshma	cheerful, takes interest in work, helpful to others.	Yes
2 Kabir	lethargic, physically weak and does not want to go for work or play.	No
3 _____ (yourself)		
4 _____ (any friend or family member)		

Notes





Notes

7.1.2 Factors affecting personal health

Care of oneself to remain healthy and free from diseases constitutes personal health. Different aspects of personal health are given below:

A. Balanced Diet

As you have already studied, a balanced diet is one containing carbohydrates, proteins, fats, vitamins, minerals and fibers in correct proportion to meet the nutritional requirements of a person at a certain age. The energy requirement for an adolescent (teenage) boy is about 2400 to 2600 calories whereas for an adolescent girl, it is 2050 calories. The food pyramid depicts the different categories of food and the quantities that we need to include in our diet (refer to the food pyramid explained in Chapter 5 -Food Groups).

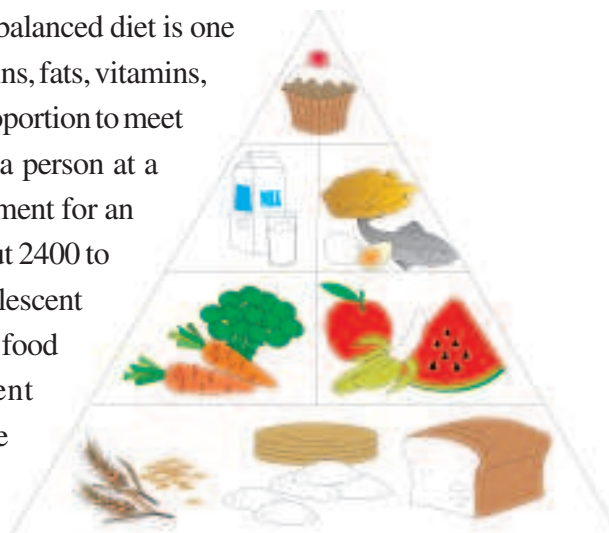


Fig.7.6 Food Pyramid

B. Personal Hygiene

Health and hygiene go together. To keep yourself free from diseases and to have good health you need to practise hygiene constantly. The various practices that help in maintaining health constitute hygiene. The word hygiene comes from a Greek word *hygieia* that means goddess of health. Adoption of hygienic practices prevents many diseases such as diarrhea, cholera, typhoid, worm infections, jaundice, skin diseases, tuberculosis and many more.

Maintaining good health is a desirable goal. It is important to know how we could possibly achieve good health. Elders in the family and community often advise you to remain healthy.



ACTIVITY 7.3

In the table below, some of the 'healthy habits' commonly advised by adults have been listed. Write your ideas about healthy habits and list them according to your preference.

Common practices to remain healthy

Suggestions by adults	Your idea of healthy habits
<ol style="list-style-type: none"> 1. Brush your teeth, cut your nails. 2. Take bath daily, wear clean clothes. 3. Eat nutritious food. 4. Have regular eating habits. 5. Exercise regularly. 	



Notes

There are some simple activities in our day to day life that prevent infectious diseases. These activities are:

- **Regular toilet habits:** Regular bowel movement keeps you physically fit and healthy.
- **Washing hands before eating:** Hands may carry many disease causing germs and therefore must be washed before eating anything and after using the toilet. Washing hands with soap makes them germ free. Ash may be used for washing hands where soap is not available.
- **Bathing regularly and wearing clean clothes:** Dirt is a congenial place for germs to grow. Bathing regularly keeps your body free of dirt, body lice and germs.
- **Cleaning the teeth:** After having food, some food particles may remain stuck to our teeth which become a medium for the germs to grow. The germs harm our gums and teeth, and cause bad breath. Brushing teeth every day prevents germs to grow between the teeth. Brushing teeth before going to bed is a very good habit.
- **Washing hair, cleaning eyes, ears and nails:** Regular washing and combing of hair helps to prevent accumulation of dirt and dust and keeps germs away. Keep nails short and clean. Nail biting is unhygienic and must be avoided. Washing eyes with clean water keeps them free from dust and germs.



Fig.7.7 Brushing teeth twice a day is important to maintain good hygiene.



Notes

C. Domestic Hygiene

We dust and mop our house to keep it clean and free from dirt, flies and germs. Disposal of garbage in bins ensures that our immediate surrounding remains clean and do not become a breeding ground for disease causing organisms. Used sanitary napkins need to be wrapped in an old paper and put only in a dust-bin and not any where else as they too provide ground for germs to grow.



Fig.7.8 Materials you need to maintain a healthy environment at home

D. Food Hygiene

- Fruits and vegetables should be washed in clean water to make them free from germs and pesticides (chemicals sprayed on plants to keep them insect free) before cooking and consumption.
- Water used for drinking, cooking, washing utensils should be from a clean source such as tap, hand pump set up by the municipal corporation or panchayats and covered well.
- Food should be prepared in a clean kitchen and in a clean manner.
- While cooking food, it is important to heat it at high temperature to kill germs present in it.
- Cooked food should be eaten fresh or covered and stored in cool, dry and insect proof place.
- Milk should be stored either in the refrigerator or if kept outside, it should be boiled again before use to make it germ free.

E. Exercise

Regular walking and physical exercise have good effect on health. Outdoor games and sports keep the heart and circulatory system in good condition. Walking keeps the joints and bones healthy.

F. Regular sleep and relaxation

After the day's hard work you become tired. Your mind and body need rest. A little nap, regular sleep and relaxation for some time will make your body and mind fresh again. You are filled with energy again. These play an important role in maintaining good health. This also helps in the repair of body tissues.

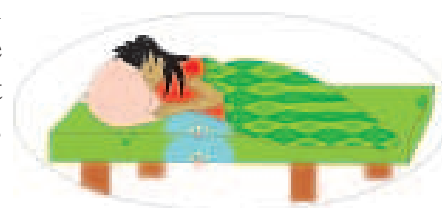


Fig.7.9

G. Avoid smoking, alcohol and drugs

To keep healthy, one should avoid smoking, chewing of betel nut, gutka and tobacco and drinking alcohol. Intake of these substances may lead to health problems such as liver damage, kidney failure, heart failure and cause damage to teeth, gums, and other tissues of the mouth. You may have noticed, spitting is quite common among people who chew betel nut, gutka and tobacco. Spitting in public places not only disfigures them, it creates an unhygienic conditions also. You must stay away from such habits and try to convince others also.



Say No to SMOKING

Say NO to DRINKING
ALCOHOLSay NO to chewing of
BETELNUT, GUTKA
and TOBACCO**Fig.7.10****ACTIVITY 7.4**

Check list for your personal health status.

Given below are some characteristics commonly observed in healthy individuals. Read them carefully and mention whether these characteristics are present in you. Respond by putting a tick mark (✓) against each feature in the space provided.

A. Characteristics of personal health	Yes	No
Are you energetic and alert?		
Do you play, work and study regularly?		
Do you have normal weight for your age? (refer to table 7.1)		
Do you bathe regularly and wear clean clothes?		
Do you have shiny, good textured hair?		
Do you have a clean skin without rashes?		
Do you have good appetite and eat well?		
Do you have regular toilet habits?		
Do you have a clean breath?		
Do you get sound sleep?		





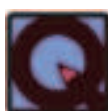
Notes

B. Characteristics of social health	Yes	No
Whenever there is an argument with your friends or elders you listen to them and pay attention to their views.		
Irrespective of the time you go to bed, you are able to get up in the morning without feeling lazy and attend to your jobs or duties well.		
When facing a different situation or challenge that you are unable to meet, you feel bad and keep to yourself rather than seeking help from others as it would lower your self-esteem.		

Check your answers given in the “Answer to Intext Questions”

Table 7.1 Age wise weight and height (according to National Center for Health Statistics, NCHS)

Age	Boys		Girls	
	Weight (kg)	Height (cm)	Weight (kg)	Height (cm)
14 years	47.0	160.0	48.0	155.0
15 years	52.6	166.0	51.5	161.0
16 years	58.0	171.0	53.0	162.0
17 years	62.7	175.0	54.0	163.0
18 years	65.0	177.0	54.4	164.0



INTEXT QUESTIONS 7.1

1. Why do we need to be healthy? List three reasons.
2. In the table below, characteristics of a person are listed. Write the dimension of health (physical/mental/social) for each.



Notes

Characteristics of a person	Dimensions of health
has good appetite	
has ability to cope with stress	
has a pleasant personality	
has sound sleep	
has control over his emotions.	
has normal weight and height for his age	
has healthy interpersonal relationships	
is confident	
has a positive attitude towards life	

3. List two hygienic habits followed by you for each of the following:

Personal hygiene		
Domestic hygiene		
Food hygiene		

4. Identify one healthy habit. How will you motivate your younger brother to practise this habit?
5. Your mother has prepared lunch in the morning at 7 a.m. and it will be served at 2.00 p.m. List any two precautions you will take to store it to keep it healthy.
6. Which one of the following children is healthy and why?



I



II



III



Notes

7.1.3 Community Health

In the previous section you studied some of the ways that will help you to remain healthy. However can you remain healthy just based on your own efforts?

Consider the following situations:

1. In the absence of potable water your mother collects water from a hand pump or a covered well in the neighborhood.
2. Garbage is not collected for many days, bad odour emanates and mosquitoes and flies breed.
3. There is an outbreak of an infectious disease like dengue or malaria.
4. A natural calamity like Tsunami strikes certain part of your country.

How is the health of the population in such areas affected? Does it have both short term and long term effect? Try to find answers.

Community health is the practice of preventing disease and promoting health of a population through the organized efforts of society, public and private organizations, communities and individuals. It aims to improve the health of the entire population and focuses on preventing diseases rather than their treatment.

There are various activities and **programmes** undertaken by the government and or local organizations to maintain good health of the people and keep them free from diseases.

Some of these activities and programmes are listed below:

- Maintain cleanliness of the villages, towns and cities so that disease causing agents do not multiply. This helps in checking spread of diseases.
It includes garbage disposal, supply of clean drinking water, waste collection etc. from the localities, thereby checking the spread of disease causing vectors (mosquitoes and flies).
- Ensure that standards in food stores, meat and milk outlets are strictly followed.
- Organize outreach services for health promotion and prevention of diseases, including.
 - a) Immunization programmes for infants and children.
 - b) Various awareness programmes against the spread of diseases like malaria, AIDS, polio, leprosy and hepatitis B.



Fig.7.11



Notes

- Organize mid day meals in schools to provide adequate nourishment to growing children.
- Undertake various health programmes such as:
 - a) The National Malaria Eradication programme
 - b) The Tuberculosis (T.B) Eradication programme
 - c) National Immunization programme
 - d) National Pulse polio programme.
- Set up hospitals and dispensaries to provide medical facilities to the general public. The government hospitals and health centres provide services either free of cost or at highly economical rates.

You can also contribute to keep your environment clean. For this you need to:

1. keep your house clean- a house should not only be swept and cleaned every day, it should also be whitewashed and fumigated at regular intervals to keep the insects and other disease causing agents away.
2. keep your neighborhood clean- managing the garbage and its proper disposal is also an important task. Garbage thrown anywhere other than the garbage bins makes the surroundings unclean and becomes a breeding ground for mosquitoes, flies and other insects besides allowing germs to grow. This is because the organic waste decomposes with the help of bacteria. Garbage bins should be covered and also be cleaned after emptying.



Fig.7.12

**ACTIVITY 7.5**

Have you heard of garbage bins with labels such as “Biodegradable wastes” and “Non degradable waste”. Have you ever noticed the colour of those bins? Yes, they are blue and green. What do the colours blue and green signify? What kind of garbage would you throw in either of these bins? Some of the common garbage items generated in our homes are: waste paper, plastic carry bags, vegetable peels, used batteries, stale food items, used pens, old clothes and broken glass. Identify the garbage items you will put in each of these dust-bins. You may also refer to lesson no. 12 ‘Housing’ about waste disposal.

Compare your answers with the correct answer given in the section “answers to intexts questions 7.2”



Notes

Biodegradable waste products typically originate from plant or animal sources and can be broken down by other living organisms. These include, green waste, food waste, human waste, sewage and others. These waste products are less polluting. In contrast, non-biodegradable waste products cannot be broken down by living organisms; for example, non-biodegradable plastic products. These waste products accumulate and are more damaging to our environment. In the interest of a cleaner environment, each one of us should decrease the use of items that lead to non-biodegradable waste. For example, decrease use of plastics, by carrying clothes or jute bags for shopping.

It is the government's responsibility to provide civic amenities like water, electricity, roads and garbage disposal facilities. However, every individual who uses these facilities has a responsibility of maintaining them. Taking this idea forward, the Government of Delhi has launched a unique scheme named "Bhagidari" which aims at involving people's participation, the Government Departments and citizens groups like Resident Welfare Associations (RWAs) and Market and Traders Associations (MTAs) in order to work out solutions for common civic problems.



INTEXT QUESTIONS 7.2

1. List some of the activities that are organised by the government in your locality to maintain public health.

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2. Samina's family members are expert house keepers. Their bathrooms are as clean as the bedrooms and the kitchen. But when Samina steps out of her house, foul odour irritates her nostrils; her feet sink in garbage piles and pot holes. Neither the local government authorities nor anyone in Samina's neighborhood seems to care. She is very sad and wants to do something to change this situation.



Fig.7.13

Taking cue from the 'Bhagidari' initiative launched by the Government of Delhi, please make four suggestions for Samina's community to make their surroundings clean.

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Notes

7.1.4 Immunization: Protection against Certain Communicable Diseases

You are exposed to a large number of disease causing agents every day. Your body is able to ward off most of these foreign agents. This overall ability of the body to protect itself against the foreign agents including the disease causing organisms is called **immunity**. It is of two types:

- Natural immunity
 - Acquired immunity
- a) **Natural immunity** - It is present from the time of birth and provides a general protection against the entry of any foreign agents into our body. Even if pathogens (refer to lesson No. 32 – Health and Hygiene of Science and Technology at Secondary level) gain entry into the body, they are destroyed. Some of the components of natural immunity are the various types of barriers such as the skin and the mucous membranes that prevent entry of foreign agents into the body. Hydrochloric acid in the stomach kills the germs entering our body along with food. If a foreign agent enters the blood stream, special type of white blood cells (WBC) known as phagocytes destroy it. Phagocytes engulf the foreign particles and digest or destroy them.

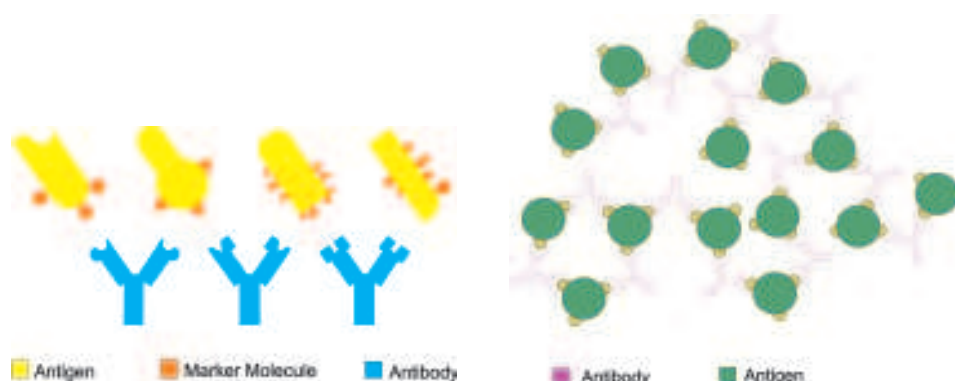


Fig.7.14



Notes

- b) **Acquired immunity**- It develops during one's life time and is therefore known as acquired immunity. It works on the simple principle of producing antibodies in response to antigens (refer to lesson No. 22 – Life Process of Science and Technology at Secondary level). Any foreign particle or microorganism against which an antibody is generated is called an antigen. Antibodies are protein molecules produced by special defense cells of the body called **lymphocytes**. As you may recall, they are a type of WBC.

We can acquire immunity :

- 1) Through exposure: Any previous infection or exposure to a disease gives immunity against the disease. This is the **natural** way to acquire immunity e.g. if a person suffers from a disease such as mumps or measles, he/she develops life long immunity against the disease.
- 2) By vaccination: Vaccines are inactivated or weakened pathogens or their products that function as antigens or foreign agents. When vaccines are introduced in the body, they activate the immune system against the specific pathogen so that if the pathogen actually infects in the future, the immune system is equipped to provide protection against the infection. Vaccines are sufficiently inactivated or diluted so that they do not cause disease in the body. The duration of protection provided by the vaccines varies across different vaccines. In order to reinforce the immunity provided by the immunization, booster (repeat) doses of certain vaccines are recommended. For example, the immunization against diphtheria, pertussis and tetanus (DPT) requires booster dose for providing protection against infections. This forms the basis of our national immunization programme that seeks to control certain vaccine preventable diseases.



Fig.7.15

Immunization Schedule

You may be aware of various immunization programmes that are run by the government for the general public especially for pregnant women, infants and children. Table.7.2 below, illustrates the primary immunization programme for a new born baby and the subsequent booster doses. Immunization is given free of cost, at all government dispensaries and hospitals. Ask your parents about the vaccines given to you and your siblings during childhood.



Notes

Table.7.2 Immunization schedule

Vaccine	Age				
	Birth	6 weeks	10 weeks	14 weeks	9-12 months
Primary vaccination					
BCG	✓				
Oral Polio		✓	✓	✓	
DPT		✓	✓	✓	✓
Hepatitis B		✓	✓	✓	
Measles					
Booster Doses					
DPT + Oral Polio	16-24 months				
DT	5 years				
Tetanus toxoid (TT)	At 10 years and again at 16 years				
Vitamin A	9, 18, 27, 30 and 36 months				
Pregnant Women					
Tetanus toxoid: 1 st dose	as early as possible during pregnancy				
2 nd dose	1 month after 1 st dose				
Booster	within 3 months				

Primary immunization is scheduled in the first year of life to provide optimal protection to the infant. Any delay in following the immunization schedule exposes the infant to the risk of these infections. Hence, the timing, sequence and frequency of the immunization should be followed as detailed in the chart above.

**ACTIVITY 7.6**

Find a child below the age of two years in your family or neighbourhood. Ask the parents of the child about the child's immunization status and compare it with the immunization schedule given in Table.7.2 and fill up the table below:

Name of the child:

Date of birth:

Age of the child record:



Notes

Vaccine	Age				
	Birth	1½ months (6 weeks)	2½ months (10 weeks)	3½ months (14 weeks)	9-12 months
BCG					
Polio					
DPT					
Hepatitis					
Measles					

Has the child received all the immunizations as per the schedule? Yes/ No (encircle the correct response)

If the child has received all the immunizations on time, congratulate the parents and find out from them at least two reasons for why they followed the schedule.

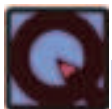


Fig.7.16. A child being given polio drops

S.No.	Reasons
1.	
2.	

If a child has incomplete or delayed immunization, give two important reasons to the child's parents to get their child immunized on time.

You must have seen posters on "Pulse- Polio Abhiyan" from time to time. What are they about? The Government is trying to eradicate this deadly disease from the country. All the children under the age of five years should receive polio drops in these immunization drives so polio can be eradicated and no child is ever crippled by this disease. For the convenience of the public, Pulse Polio abhiyan is usually organized on Sundays.



INTEXT QUESTIONS 7.3

1. Complete the table:

S.No.	Preventive actions	Name of the diseases that are prevented
i.	Set of mosquitoes net	
ii.	Sanitary condition and proper disposal of human excreta	
iii.	BCG vaccine	

2. Select the killer diseases that are targeted in the primary immunization programme of the Government of India.

BCG, Polio, TT, Hepatitis B, DPT, Vitamin A, Measles

3. Fill in the correct option:

- Type of immunity provided to a newly born child by mother's milk _____ (natural immunity/ acquired immunity)
- Vaccine against TB _____ (BCG/ DPT/TT)
- Polio vaccine is first given at the age of _____ (10 weeks/ 6 weeks/ 1 year)
- Day of week chosen for Pulse Polio _____ (Wednesday/ Sunday/ Friday)



WHAT YOU HAVE LEARNT

- Health is not mere physical fitness or absence of diseases. It is a "state of complete physical, mental and social well being."
- A person with good physical health is energetic, alert and is able to perform his/her jobs well.
- Persons, who have good mental and social health have control over their emotions, do not worry unnecessarily and are confident. They take care of themselves and fulfil their duties towards others in the society.
- Hygiene deals with various practices, principles or habits that help in maintaining health. Hygiene deals both at personal as well as at community level.



Notes



Notes

- Balanced diet, personal hygiene, domestic hygiene, clean food, exercise, regular sleep habits and abstaining from drugs are some of the important prerequisites of personal health.
- Provision of clean environment, safe drinking water, health services and immunization against common infectious diseases is needed for a healthy community life.
- Vaccines are available against some seriously debilitating diseases such as TB, polio, tetanus, pertussis, diphtheria and hepatitis.
- The ability of the body to fight the disease causing organisms is known as immunity. It can be inborn or acquired during our life time.
- Acquired immunity develops either when we survive a disease or through vaccination. This is active immunity where we develop antibodies against a pathogen. In passive immunity, readymade antibodies are injected into the body.



TERMINAL EXERCISE

1. What role does vaccination play in control of diseases? Explain.
2. Define “health” according to WHO.
3. How is natural immunity different from acquired immunity?
4. List at least four steps essential to remain healthy.
5. How are personal health and community health related? Explain with the help of an example.
6. What precautions will you take while storing food to prevent it from becoming unhealthy?



ANSWERS TO INTEXT QUESTIONS

7.1

1. We need to be healthy because healthy persons are energetic, efficient, happy and productive.
2. Physical, mental, social, physical, mental, physical, social, mental, social

3. Personal hygiene	washing hands before eating	bathing regularly
Domestic hygiene	regular dusting & mopping of the house	proper disposal of garbage
Food hygiene	food should be prepared in clean kitchen	fruits & vegetables should be washed before consumed



Notes

4. Brushing teeth regularly. Brushing teeth removes the food particles that get stuck to our teeth. These food particles allow germs to multiply and harm our teeth and gums and lead to bad breath. Thus brushing teeth daily is very important.
5. Food should be covered, stored in cool and insect proof place.
6. III, is happy, energetic and alert.

7.2

1. Cleanliness of the locality by removal of garbage, supply of clean drinking water, fumigation, organizing immunization programmes, ensuring food standards in food stores and milk outlets.
2. Discussions with neighbours convincing them about the association between healthy population and clean environment and therefore the need to keep their neighborhood clean; forming peer groups and distribution of hand bills to educate people around, making posters depicting the ways of keeping the place clean, arranging for cleaners to collect the garbage/contact the municipality for providing garbage bins and garbage collection, and also for repair of the roads.

7.3

1. (i) malaria, dengue (ii) hepatitis (iii) tuberculosis
2. BCG, Polio, DPT, Hepatitis, Measles
3. (i) Acquired (ii) BCG (iii) 6 weeks (iv) Sunday