



COMMUNICABLE AND LIFE STYLE DISEASES

You have learnt about the role of nutrition and environmental sanitization for maintaining goods. We all know that for happy living, it is necessary to remain healthy and free from diseases. However, you must have seen people suffering from diseases. A disease makes a person weak and vulnerable to more suffering. Do you know that a disease, if prolonged, may also result in disability or death? Diseases may be the result of infection in the body such as jaundice or diarrhea. They may be a result of faulty eating and living habits (life style) like diabetes and hypertension. Many of these diseases such as hypertension, heart disease and diabetes can only be controlled but not cured. In this lesson, you will study about diseases which occur because of infections and faulty life style. You would also learn about their prevention, cure and control in order to lead a productive life.



OBJECTIVES

After reading this lesson you will be able to

- explain the terms communicable and lifestyle diseases;
- identify the causes of communicable and lifestyle diseases;
- recognize the signs and symptoms of communicable diseases;
- suggest measures to protect yourself communicable and lifestyle diseases;
- list the factors causing life style diseases and
- adopt healthy practices to maintain good health.

8.1 WHAT IS A DISEASE?

Disease is a state of discomfort in which the normal functioning of the body is affected. The state of disease is the opposite to the state of health. Do you remember



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how health has been defined? Go back and read Lesson 7. You must have noticed that when a person has a disease there are certain signs and symptoms. Each disease has associated signs and symptoms which are particular to that disease only. Try to recollect how you felt when you were suffering from common cold? You had a sore throat, a blocked nose, body ache and fever. However, when your grandmother had hypertension she was restless, disoriented, and fatigued. She was advised rest and asked to avoid physical and mental stress. You have seen that in both the cases the patient was uncomfortable. In this lesson we will discuss two types of diseases:

- Communicable diseases and
- Life style diseases

8.2 IMMUNITY

Sometimes it happens that your family members or friends may have viral fever but you do not catch it? Why do you think this happens? This happens because your body's defense system protects you from germs. In other words you had **immunity** to viral fever. Do you know how our defense system functions? Our body's defense system consists of white blood cells which act as soldiers to fight germs. The white blood cells produce a substance called **antibodies** to fight germs. In the fight between the antibodies and germs, if the antibodies are able to resist and destroy the germs then the infection is prevented and the person is said to be having immunity. However, if the germs manage to overpower the antibodies, the symptoms of disease appear. In other words, the person does not have immunity to the disease. **Immunity is the ability of the body to resist a particular disease.** You have learnt about immunity and immunization at length in Lesson 7.

8.3 COMMUNICABLE DISEASES

The diseases that spread from one person to the other are called **Communicable Diseases** or infectious diseases. These diseases are caused by infection which spreads or is communicated through the medium of touch, sharing towel, handkerchief etc. of the patient, air, food or water or through sexual contact with an infected person. Influenza, polio, typhoid, measles, mumps, chickenpox, tuberculosis (T.B.), sexually transmitted infections and AIDS (Acquired Immuno Deficiency Syndrome) are some of the communicable diseases.

8.3.1 What Causes Communicable Diseases?

Communicable diseases are caused by very tiny organisms called germs and parasites. These germs are present everywhere- in air, water, soil, etc. When germs enter a healthy body, they multiply and upset the normal functioning of the body. This produces symptoms of a disease. If a person consumes infected food or water the



symptoms of disease may not develop immediately. The germs take some time to grow in sufficient numbers to produce the symptoms of the disease in body. This gap of time between the entry of germs into our body and appearance of symptoms of the disease is called the **incubation period**.

A person suffering from typhoid, must have consumed food infected with typhoid germs about 2-3 weeks earlier, but the symptoms appear some time afterwards. Incubation period is different for different diseases. During this period, the person may remain perfectly healthy but is a carrier of the disease.

8.3.2 How Do Communicable Diseases Spread?

You know that germs are present everywhere around us and they can spread through four modes:

- (i) Food and water
- (ii) Air
- (iii) Contact
- (iv) Insects

Let us now study these in detail.

(i) Food and Water

You must have often being told to keep food and water covered. Can you say why you are told to do so? Yes, you are right. Uncovered food and water are likely to get contaminated with germs and spread diseases. Do you know how else food and water can get contaminated? It can get contaminated through:

- i) unhygienic conditions of preparation, serving and storing
- ii) dirty hands and utensils and
- iii) houseflies which transfer germs from rubbish and garbage to food.

Drinking water should be taken from a safe source. Water which you get from the municipal taps is safe to drink. Can you tell why? This is because tap water is cleaned and treated by certain methods that kill germs before it is sent to our homes but water from wells, ponds, streams and even hand pumps is generally unsafe and may contain disease-causing germs. Diseases such as diarrhea, hepatitis, cholera and typhoid are spread in this way.

(ii) Air

Suppose a person suffering from influenza, conjunctivitis or mumps, coughs or speaks loudly or sneezes- what do you think can happen? Yes, you are right. The patient throws germs of that disease into the air which enter our body when we breathe in. So we are likely to catch the disease. The air in crowded places, poorly ventilated houses

and cinema halls is more likely to contain disease-causing germs. That is the reason why we should avoid visiting crowded places when we are suffering from communicable diseases.

(iii) Contact

A communicable disease may also spread through contact, which may be:

- Direct contact
- Indirect contact

Direct contact means you actually touch a person who has a disease or have sexual contact with him/her. Diseases like common cold, diphtheria, cholera, tuberculosis, pneumonia, measles and meningitis are caused through direct contact with the patient. Diseases like hepatitis B, genital warts, herpes, syphilis, gonorrhoea and HIV/AIDS are caused by sexual contact with an infected person.

You are set to have indirect contact with a patient when you use anything that he/she may have used like a comb, towel, cup, etc. For example, suppose your brother is suffering from influenza. He covers his mouth with his hand when he coughs and then shakes hands with his friend. The disease germs are passed through direct contact from your brother to his friend. However, if he gives you a glass of water without washing his hands, then the germs are passed from his hand to the glass and from the glass to you. This is indirect contact. You may also contact diseases indirectly by touching objects in public place like hospital, cinema halls and buses. Can you think of more examples to explain direct and indirect contact as a mode of spread of disease?

(iv) Insects

Many diseases are spread through insects. Flies and cockroaches carry germs from rubbish and garbage on their bodies and infect the food on which they sit. This causes diseases like cholera. Mosquito bite causes malaria, dengue and Japanese encephalitis.

8.3.3 Preventive Measures

Now that you have studied how communicable diseases spread, can you think of some ways in which they can be prevented? Let us list some precautions that should generally be observed.

- (1) The personal belongings of the person suffering from any communicable disease, that is, clothes, utensils, should be kept separately.



Fig 8.1



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- (2) Keep water at home in clean, covered containers. Drinking water should be boiled for 10 minutes to ensure that it becomes free of germs. Boil milk before using it.
- (3) All food, even left-over scraps, vegetables, fruits, sweets, milk etc. should be kept covered.
- (4) Avoid eating and buying cut fruits and vegetables from the market, especially if kept uncovered.
- (5) Wash all utensils before using them for storing food, milk or water.
- (6) Wash your hands thoroughly before cooking food, before eating food and after using the toilet.
- (7) Keep the house and place of work well-ventilated in order to allow adequate amount of sunlight and air to come in.
- (8) Avoid crowded places such as cinema houses, especially during an epidemic.
- (9) Maintain personal hygiene by having regular bath, keeping nails clean and cut short. Wash your hair regularly.
- (10) Keep your house and surroundings clean. Do not let garbage accumulate. See that drains are clean and covered. See that all doors and windows have a wire mesh to prevent entry of flies and mosquitoes. Do not defecate in open, use a sanitary latrine.
- (11) Do not spit anywhere and everywhere. If you must cough, use a handkerchief to cover your nose and mouth.
- (12) All children should be given complete vaccination after birth in order to protect them from many diseases. Immunity and immunization schedule has been already discussed in lesson 7. Read them again.



Fig 8.2: Some Preventive measures

8.4 LIFE STYLE DISEASES OR NON-COMMUNICABLE DISEASES

Some diseases do not get spread from one person to another through touch, air, food, water or sexual contacts. These diseases may develop in a person due to faulty eating and living habits e.g., obesity, diabetes and hypertension. These diseases are called **life style diseases**.



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Rohit's mother is a 50 years old diabetic woman. She is quite fat and fond of fried foods and sweets. She depends on her maid for all household work. She does not like to exercise. One day, she felt pain in the chest for which she was immediately taken to the hospital. The doctors diagnosed her with heart problem. Her condition was complicated. She had to be hospitalized for one month for proper treatment and care. It was a large economic burden for the family and also left the family members emotionally and mentally drained.

These days we hear less about infectious diseases like typhoid or cholera. On the other hand, very often we hear about diseases like diabetes, hypertension (high blood pressure), obesity and heart disease. Have you wondered what causes these diseases? There is no infection in the body, yet these diseases occur. This happens because of the defective lifestyle that we follow.

What is a lifestyle? A lifestyle is the pattern of living that we follow - how we work, what and when we eat, how and when we sleep, how much physical activity we do and whether we smoke or consume alcohol. Lifestyle or non-communicable diseases are chronic (long term) in nature and do not result from an acute (short term) infection nor do they spread from one person to the other. These conditions cause dysfunctioning in the body and impair the quality of life. They may also lead to death. These diseases usually develop relatively over long periods. In the beginning there may not be any symptoms but after the disease sets in there may be a long period of impaired health.

Lifestyle diseases are now seen in developing countries like India and in the younger or productive age group. This leads to reduction in productivity and development of the country. As these are chronic conditions they are a financial burden for lifetime. Therefore, there is an increasing concern these days about lifestyle diseases that can be easily prevented but not cured.

The lifestyle factors associated with these diseases can be of two types-

- i) Modifiable (those that can be changed) like food habits, physical activity level, addiction (smoking, drinking) and stress.
- ii) Non-modifiable (those that cannot be changed) like age and heredity.

You may have observed that

- i) More and more young people are seen smoking and drinking despite knowing the fact that these are harmful to health.
- ii) Our nutritious and balanced meals are giving way to fast food and junk food, fresh fruits and vegetables are being rejected in favour of processed and packed food and soft drinks are replacing milk.
- iii) We prefer to use a bus or car instead of walking even for short distances.



- iv) More and more machines are being developed each day to reduce physical labour associated with our work.

All the above practices have led to our becoming overweight and obese. Obesity is excess body-weight than normal or ideal weight for your height. Obesity is the main underlying causes for other lifestyle diseases like diabetes, hypertension, obesity, heart disease, etc.

8.4.1 Prevention of life style diseases

People need to change their habits in the direction of healthier living. You can do a lot to prevent the occurrence of lifestyle diseases. Some healthy tips are:-

- i) take up regular exercise like walking, yoga, dancing, aerobics and cycling.
- ii) use stair-case instead of lift or escalator.
- iii) take a balanced diet at proper meal times.
Do not over-eat.
- iv) avoid processed and packaged foods that are rich in sugar, fats, salt and calories and low in fiber, good quality protein, minerals (iron and calcium) and vitamins.
- v) eat whole grains like cereals (wheat, whole wheat flour), millets (jowar, bajra) and avoid refined foods like maida.
- vi) eat 400 - 500 gms of seasonal fruits and vegetables in a day.
- vii) drink plenty of water.
- viii) practice yoga or meditation to avoid stress in life.
- ix) keep away from smoking and drinking alcohol.
- x) spend less time in sitting and watching television and pursue outdoor games and activities like gardening, playing a sport like football, cricket and badminton.

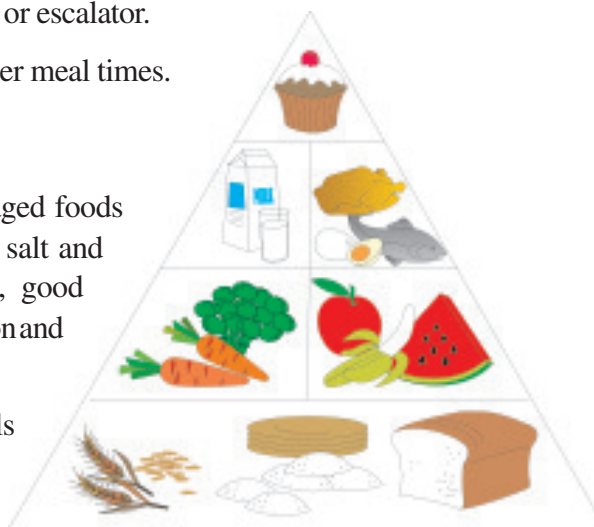


Fig 8.3: Food Pyramid

You can educate people around you regarding healthy lifestyle practices. It is possible to keep these diseases under control, if you make sensible alteration in your lifestyle.

**ACTIVITY 8.1**

In your neighbourhood and family, identify people suffering from lifestyle diseases; the age at which it occurred; underlying causes (modifiable and non-modifiable) and discuss with them the appropriate lifestyle modification for a healthy life.

**INTEXT QUESTIONS 8.3**

1. Why is there an increase in the occurrence of non-communicable or lifestyle diseases in countries like India? Who are the victims of these diseases?
2. Suggest three healthy eating practices that can prevent lifestyle diseases.

8.5 CARING FOR THE SICK AT HOME

You now know the measures you can take in order to prevent the spread of communicable diseases. But if someone in the family falls ill, what things are there that you will keep in mind so that the patient recovers as fast as possible. Some of the points you should consider are-

- (1) consult the doctor immediately instead of waiting for the intensity of the disease to increase.
- (2) follow the doctor's advice. Whatever medicines are prescribed should be given on time.
- (3) give the patient a proper and balanced diet as advised by the doctor.
- (4) see that the patient takes adequate rest.
- (5) keep the patient's room clean. The patient's clothes should be changed everyday and he may be given a sponge bath, if possible.

Some of the common communicable diseases that can be managed at home are explained in the table:



Notes

MODULE - 1

Home Science in Daily Life



Notes

Communicable and Life Style Diseases

Name of Disease	Mode of Spread	Symptoms	Incubation period	Management of the Patient
1. Cholera	Food and Water	<ul style="list-style-type: none">• Sudden onset of severe, watery diarrhea.• The faeces look like rice water• Vomiting• Cramps in the legs• Patient feels very thirsty	1-5 days	<ul style="list-style-type: none">• Dehydration can be dangerous, so give plenty of fluids.• Give Oral rehydration solution (ORS).• Give boiled water and fresh, easily digestible food.
2. Typhoid	Food and Water	<ul style="list-style-type: none">• Severe headache• Fever with low pulse• Dry white coated tongue	14-21 days	<ul style="list-style-type: none">• Blood culture and other tests should be done.• Give the prescribed medication to the patient.
3. Hepatitis (jaundice)	Food and Water	<ul style="list-style-type: none">• Fever• Dark yellow urine• Yellowish tinge in eyes• General paleness• Loss of appetite• Abdominal discomfort	20-35 days	<ul style="list-style-type: none">• Give a carbohydrate-rich diet.• Keep the patient in bed as long as there is fever and till appetite returns to normal.
4. Influenza (Flu)	Air	<ul style="list-style-type: none">• Fever• Cold, cough, sneezing• Headache and body ache• Nausea	1-3 days	<ul style="list-style-type: none">• Control the fever with medicines and cough with steam inhalation.• Treatment is likely to prolonged so constant monitoring by the doctor is essential.
5. Tuberculosis (T.B)	Air	<ul style="list-style-type: none">• Persistent cough• Loss of weight and appetite• Excessive weakness• Rapid pulse• Chest pain• Breath has peculiar odour	4-6 days	<ul style="list-style-type: none">• Maintain hygienic conditions• A balanced diet rich in calcium should be given• Treatment should be strictly regulated for one year



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6. Malaria	Mosquito bite	<ul style="list-style-type: none"> • Fever • Alternating chill and perspiration • Headache and body ache • Nausea • Vomiting days 	10-14	<ul style="list-style-type: none"> • Get the blood test done to confirm malaria. • Give prescribed medicines.
7. Tetanus	Wound exposed to dust or rusted item	<ul style="list-style-type: none"> • Restlessness • Headache • Fever • Stiff neck • Difficulty in chewing and swallowing • Spasm of muscles of jaw and face • Bending of back in shape of bow • Severe pain 	4 days to 2 weeks	<ul style="list-style-type: none"> • Put a ball of cotton between teeth to prevent biting of tongue. • Maintain hygiene. • All wounds should be thoroughly washed.
8. Pertussis (whooping cough)	Air	<ul style="list-style-type: none"> • Inflammation of mucus membrane • Severe bouts of cough accompanied by whoop like sound 	7-12 days	<ul style="list-style-type: none"> • Complete isolation of the patient for a week • Should be kept in well-ventilated room

Steps to prepare an Oral Rehydration Salts Drink (ORS)

- 1. Purchase ORS :** ORS packets are available in health centres or a chemist shop.
- 2. Put the contents of the ORS packet in a clean container**
- 3. Add water only.** Do not add ORS to milk, soup, fruit juice or any other liquid. **Do not add sugar**
- 4. Stir well.** In case of infants, feed the solution from a clean cup with the help of a spoon. Do not use a bottle.

If you are unable to get an ORS, then,

- 1. Add 8 teaspoons of sugar and 1 teaspoon of salt to 1 liter of clean drinking water.**
2. Allow the sugar and salt to dissolve.
3. Stir well



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INTEXT QUESTIONS 8.1

1. What is a 'Disease'?

2. Fill in the blanks with appropriate word/words.
 - a. Diseases spread through infected food and water are..... and.....(typhoid and hepatitis/typhoid and dengue)
 - b. Malaria is spread through (fly/ mosquito bite/ insects)
 - c. If a patient suffers from dehydration he/she should be given plenty of..... (fruits/ vegetables/ fluid and ORS)
 - d. A person suffering from tuberculosis should while coughing or sneezing. (cover his/her mouth/isolate himself/herself)
3. Write two symptoms of the following diseases.
 - a. Influenza
 - b. Tetanus
 - c. Hepatitis
 - d. Cholera
4. Mohan had consumed infected food but is not showing any signs of the disease. Can he make his friend Abdul ill? How?

8.3 HIV/AIDS

Most of you must have heard of HIV. HIV stands for Human Immuno Deficiency Virus. It is caused by a virus that attacks the body's natural defense system. Do you remember what the body's defense system does? Yes, it defends the body against many infections. Can you guess what will happen if there is no defense system in the body? The germs will attack the body and the person's immunity is reduced. This makes him/her prone to catch many diseases. A person infected with HIV virus can transmit the disease to other people. When HIV virus has completely destroyed the person's defense system- AIDS sets in. AIDS stands for Acquired Immuno Deficiency Syndrome. HIV/AIDS is a highly communicable disease that is highly debilitating. It affects a person's productivity and has no cure. Therefore in order to protect ourselves we must know how this disease spreads.

The HIV/AIDS virus is spread by

- (i) sexual contact with an infected person.
- (ii) exchange of infected body fluids, e.g., blood transfusions.
- (iii) use of infected needles
- (iv) from infected mother to child during pregnancy or at birth.



Notes



Fig 8.4: Ways of transmission of HIV/AIDS

You must have seen roadside posters and banners and advertisements on television explaining how HIV/AIDS does not spread. Can you recall messages about how HIV/AIDS does not spread? HIV/AIDS cannot spread by:

- shaking hands
- kissing on the cheeks
- using the same toilet seat
- standing close to the infected person
- through the air, that is, sneezing, coughing, etc.
- through cups, glasses, plates
- Water or food

There is no cure for HIV/AIDS as yet, nor is there any vaccine to protect people. However, some preventive measures that can be taken are:

restrict the number of sex partners to one

- Use protection during sexual contact



Notes

- Always use only properly sterilized needles for injections
- Insist on getting properly tested blood from registered blood banks when in need of blood transfusion
- Seek medical advice for bearing a child if infected with HIV.

It is important to understand that HIV infection and AIDS are related terms but not the same. HIV infected person may not be suffering from AIDS i.e. an HIV infected person if takes nutritious diet and maintains healthy life style can deter the onset of AIDS and can lead a productive life for a number of years.



INTEXT QUESTIONS 8.2

1. The full form of AIDS is.....
2. Choose the correct alternative:
 - (i) AIDS is spread by
 - a) shaking hands
 - b) playing together
 - c) infected needles
 - d) water or food
 - (ii) AIDS cannot be spread by
 - a) Sneezing
 - b) Blood transfusion
 - c) Sexual contact
 - d) Infected needles



TERMINAL EXERCISE

1. Differentiate between communicable and non-communicable or life style diseases?
2. Shazia went to a fair and had food that was exposed to flies and dust. The next day she had vomiting, diarrhoea and cramps in her legs. What do these symptoms indicate? What steps will you take to manage the patient?
3. Life style diseases impose financial burden and slow down progress of the nation. Why?

4. Write a slogans for each of the following –
 - a. Importance of safe drinking water
 - b. Promotion of physical activity



ANSWER TO INTEXT QUESTIONS

8.1

2.
 - a. Typhoid, Hepatitis
 - b. mosquito
 - c. Plenty of fluids and oral rehydration solution
 - d. Cover his mouth
3.
 - a. Fever, headache and body ache
 - b. Fever and dry coated tongue
 - c. Yellow eyes and dark yellow urine
 - d. Watery diarrhea and cramps in the legs

8.2

1. Acquired Immuno Deficiency Syndrome
2.
 - i. c
 - ii a



Notes