

DISEASES

Teacher: (Holding up the newspaper) Good morning, class! Today, we'll discuss something important about communicable diseases. Look at this newspaper article.

The city is experiencing a sharp rise in influenza cases, with local hospitals reporting a 30% increase in patients over the past two weeks. Health officials warn that the outbreak may continue if preventive measures are not followed. Dr. Ananya Rao, Chief Medical Officer, stated, "The flu spreads easily through coughing, sneezing, and contact with contaminated surfaces. We urge citizens to wear masks, wash hands frequently, and stay home if they feel unwell." Symptoms of the flu include fever, cough, sore throat, body aches, and fatigue. While most cases are mild, the elderly and young children are at higher risk.

Health authorities are setting up free vaccination camps at public health centers. Residents are encouraged to get vaccinated to reduce the severity of the illness.

- Akshay : It talks about an increase in flu cases in the city. That means the flu is a communicable disease, isn't it?
- Mrs Kumar : That's right!
- Ruhani : How does it spread?
- Mrs Kumar : A person coughing and sneezing without covering her/his mouth. Or, by touching surfaces that have the virus on them! Now, do you know what symptoms the flu causes?
- Yuvan : Fever, cough, and sore throat.
- Saira : And body aches!
- Mrs Kumar : Right! But why are young children and the elderly more at risk?
- Masood : Because their immune systems are weaker?
- Mrs Kumar : Yes! That's why it's important to take preventive measures. What does the article say we should do?
- Yuvika : Get vaccinated!
- Rohan : Wash hands often!

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Satvik : Stay home if we're sick!

Mrs Kumar : Wonderful! Today, we've learned that infectious diseases can spread quickly, but we can prevent them with good hygiene and vaccines. Let's all do our part to stay healthy!



Learning Outcomes

The learner-

- explains the communicable and non communicable diseases, its causes and preventions.
- differentiates between communicable and non-communicable diseases;
- lists the communicable and non-communicable diseases.

7.1 DISEASE

Good health is the prime asset for all living things on the earth. Promoting good health includes helping people to increase control over, and to improve, their physical, mental and social well-being. A healthy individual works to capacity, without spending resources on medical care. Good health is, therefore, not merely the prime objective for an individual, but also a complete concept which takes care of the proper use of personal and social resources and ensures the optimum utilisation of physical capabilities.

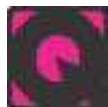
Disease is a state of discomfort in which the normal functioning of the body is affected. Disease causes an individual's health to deteriorate, and, in extreme cases, even leading to death. In simple terms, an individual is said to be suffering from a disease when his/her body is incapable of dealing with day-to-day routine work or assignments. As a result, he/she may find himself/herself in a situation where he/she is unable to perform his/her daily tasks according to his/her own free will. Diseases may be caused by an attack of foreign harmful bacteria/virus inside the body that has attacked the body's immune or defence system, or they may be a result of faulty eating and living habits.

Thus, we can say that health can be endangered by the attack of various diseases such as common cold, sneezing, coughing or any chronic illnesses. Among these diseases, some are infectious in nature which can easily spread from one individual to another while some take time. On the other hand, there are some diseases that are not infectious and are not spread from one person to another. That's why, it is



important to understand the different types of diseases which can affect the health of the people. Broadly, diseases can be divided into two categories viz communicable and non-communicable diseases.

We can understand the type and nature of diseases through their symptoms. In this chapter, we will discuss about the different diseases in detail with their broader classification and their causes, prevention, symptoms and effects.



Intext Questions 7.1

1. Mark the following statements as true or false:

1. Disease can be caused by both harmful microorganisms and faulty living habits.
2. Non-communicable diseases can easily spread from one person to another.
3. Health only refers to the absence of disease.

7.1.1 Communicable Diseases



Communicable diseases are caused by very tiny organisms called bacteria, fungus, virus or any other parasites that may attack our bodies. These germs are present everywhere- in air, water, soil, etc. On entering a healthy body, germs multiply and upset the normal functioning of the body. The body, then, gets diseased. These diseases are spread through direct contact, or from one person to another. If a healthy individual comes in close contact with a person who is suffering from the



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disease, by shaking hands or sitting close to a person suffering from a disease, the healthy person may also get the disease. Communicable diseases may also spread through indirect contact, which may be through using anything that an individual suffering from an infectious disease may have used or touched. These micro-organisms can be transmitted from the infected person to healthy person through water, biting of insects, blood transfusion, unprotected coughing or sneezing or even by sexual contact.

Some common communicable diseases include:

1. Malaria
2. HIV/AIDS
3. COVID-19
4. Common cold
5. Flu (Influenza)
6. Hepatitis
7. Tuberculosis
9. Chickenpox
10. Poliomyelitis (Polio)

7.1.2 Prevention

An old proverb says that prevention is better than cure. It is of utmost importance that every individual should be aware of the methods of prevention of disease for their personal health and have the clear understanding of taking necessary precautions when he/she comes in close contact with an infected person. The different means for prevention are:

1. Proper Sanitization

The space or place where we work or spend our leisure time should be cleaned properly and sanitized. Sanitization may be done by sprinkling of natural pesticides and cleaning by using disinfectants. .

2. Practicing Hygiene

Every Individual should have the habit of taking a bath on a regular basis, cutting their nails, washing hands before and after eating, wearing clean and washed clothes, and avoiding eating street food and stale food etc.



**Note****3. Personal Protection**

It refers to the individual's attention and care towards his/her body. If you are going to a public place then you should wear a mask. Wearing of gloves and use of the sanitizer is also helpful in ensuring adequate personal protection.

4. Vaccination

In view of the quick spread of various diseases, health industries are focusing more on the prevention of disease through vaccination which provides the body immunity for a certain period to fight the bacteria/virus of a particular disease. Timely vaccination is helpful in combating disease.

Example Covid-19 was quickly controlled in our country because of the effective vaccination of the public by the government.

5. Regular Health Check-ups

Regular health checkups help the individual to detect the disease at an early stage and help control it before it becomes serious. Checking of fever is one of the ways of assessing your health. Also regular cough for more seven days could be the indicator of tuberculosis.

6. Developing Strong Immunity

It has been seen that same surroundings and environment may affect different individuals to a different extent. A person with weak immunity gets infected quickly as compared to a person with strong immunity. Various exercises and good food habits helps in improving immunity.

7. Regular Physical Activity

This is one of the strongest preventive techniques to get rid of many probable diseases. A person involved in regular physical activity is less likely to fall ill less as compared to a lethargic person. Physical activity boosts the immunity and also activates all the physical and physiological systems of the body.

8. Avoiding Close Contact with Diseased Person

Communicable diseases are spread from an infected person to a healthy person. If you maintain proper distance from an infected person and do not come in close contact with him, then automatically the chances of getting infected is are reduced.



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DO YOU KNOW?

Safe distance from the person suffering from communicable disease approximately 2 meters



Activity 7.1

- Identify the communicable diseases that occur due to bacteria and virus.
Make an activity chart of your hygiene practices

7.1.3 Non-communicable Disease (NCD)

Non-Communicable diseases are caused due to various factors like unhealthy lifestyle, heredity, environmental factors etc. These diseases take time to develop and cannot be spread from one infected person to another. The person suffering from the disease takes a long time to get cured. Early detection of the disease will help in effective treatment.

To understand lifestyle diseases, first let us understand what we mean by 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. These conditions cause dysfunction in the body and impair the quality of life. They may also lead to death. These diseases usually develop relatively slowly 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.

Some common non-communicable diseases include:

1. Cancer
2. Diabetes
3. Chronic heart disease (CHD)
4. Lungs disease
5. Alzheimer's disease
6. High BP (Hypertension)
7. Asthma

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8. Obesity
9. Mental health disease
10. Arthritis
11. Depression
12. Epilepsy
13. Insomnia
14. Psoriasis

7.1.4 Prevention

Non Communicable Disease can be prevented much more easily as compared to communicable disease. However, hereditary diseases are difficult to prevent but can be controlled to the maximum. The effective preventive measures are:



DO YOU KNOW?

Non-Communicable Diseases kill 41 million people every year which is equivalent to 74% of all the deaths occurring globally.

1. Knowledge of Non-Communicable Diseases

It is important to spread the knowledge of Non-Communicable Diseases to the people at large. Spreading awareness among the members of the community regarding the causes and symptoms of Non-Communicable Diseases should be encouraged. This will help the people become aware about the ill effects of these diseases and help them adopt a healthier lifestyle.

2. Screening of Non-Communicable Diseases

Healthcare professional and the civil authorities should take care of the process of screening persons at risk of falling victim to Non-Communicable Diseases. Such screening centres should be made accessible to the common man and made available at public places.

3. Detection of Non-Communicable Diseases

It is important to detect Non-Communicable Diseases and their type on the basis of screening drives undertaken by the health centres and the government.



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Once the disease is detected, it is easy to diagnose and remediate the diseased person because sometimes, the diseased person himself/ herself is unaware about suffering from such a disease.

4. Medical Treatment

Non-Communicable Diseases can be treated by expert medical professionals. It is important to provide the requisite medical facilities to the person suffering from a disease to help him out recover. Early medical intervention will help in minimizing the bad effects on the health of the victim. Also, timely and requisite medical treatment will help in reducing the death rate from such diseases.

5. Healthy Lifestyle

These days almost everyone has a knowledge about healthy lifestyle, but a very few people make it a practice in their daily life. Once, a person falls victim to a disease, he/she realizes the importance of a healthy lifestyle. But by then, it may be late. It is necessary, therefore, that people should adopt a healthy life style without looking upon it as a burden. Actually, the availability of luxuries and technology in the life of the common man has made his/her choosing a healthy lifestyle quite difficult.

6. Physical Activity

Research has proved that the people engaged in regular physical activity are less prone to the impact of unfavourable lifestyle conditions and remain healthier as compared to the people leading a sedentary life.

7. Say No to Tobacco and Alcohol

The use of tobacco and alcohol have a detrimental effect on our health. Especially, our lungs get weakened and diseased because of smoking and liver gets affected badly due to alcohol. Tobacco causes lung cancer and other respiratory problems. On the other hand, alcohol ruins the liver and causes diseases like cirrhosis.

8. Stay Away from Pollution

Pollution is also one of the chief causes for increase in the incidence of Non-Communicable Diseases. Air pollution due to industrial smoke, vehicular fumes, improper disposal of waste, burning of leaves or garbage etc has been increasing at a very rapid speed. This causes asthma and other respiratory diseases. Other forms of pollutions, like water pollution, causes intestinal problems, and even colon cancer etc. Noise pollution may give rise to mental problems like depression, anxiety etc.



9. Metabolic Syndrome Management

Metabolic syndrome is linked to heart disease and diabetes. In this disease, there is a rise in blood pressure (130/85 mmHg) and lowering of HDL (<40mg/dL in Men and <50mg/dL in women), Triglycerides (150mg/dL or High). Increase in waist size (40' in Men and 35' in Women) results, which makes the person more susceptible to various Non-Communicable Diseases. Hence, medical intervention at an early stage is important to help the person remain healthy and fit.

10. Balanced Diet

Every individual should take a balanced diet on a regular basis. Normally, a healthy adult requires between 2000-2500 calories daily. But, occupation and nature of activities and engagement decides the actual individual calorie requirement. Also, the diet should contain all nutrients, vitamins, minerals along with roughage (fibre). There should be a balanced proportion of carbohydrates, protein, fats in the form of cereals, pulses, fruit, vegetables etc.



DO YOU KNOW?

Maximum deaths occur due to non-communicable disease between 32 to 69 yrs.

A healthy life style is the best preventive measure for non-communicable diseases



Activity 7.2

1. Perform 20 minutes physical activity on a daily basis, and write a report about the changes that you have observed in your body.
2. Make an awareness campaign poster for pollution control or Say No to Tobacco and Alcohol.



Intext Questions 7.2

1. Tick (✓) the correct option.
1. Which of the following symptoms is commonly seen in individuals with non-communicable diseases like diabetes?



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- a. Persistent fatigue and frequent urination
 - b. Shortness of breath and fever
 - c. Skin rash and nausea
 - d. Vomiting and headache
2. Which of the following is a non-communicable disease?
- a) Malaria b) Tuberculosis c) Diabetes d) Influenza
3. Which lifestyle modification is most effective in preventing non-communicable diseases like heart disease?
- a. Regular physical activity and a balanced diet
 - b. Increased sugar intake
 - c. Prolonged sitting
 - d. Avoiding sunlight exposure

7.2 DIFFERENCE BETWEEN COMMUNICABLE AND NON-COMMUNICABLE DISEASES

Communicable Diseases	Non-Communicable Diseases (NCD)
They spread from one person to another	Not
They spread very easily and are highly infectious and acute in nature	Not
They are caused by viruses or bacteria that spread from one person to another through contact with contaminated surfaces, bodily fluids, blood products, insect bites, or through water and air.	Not
Not	They can be caused due to any allergy, malnutrition, illness due to internal factors.
Not	They may occur due to changes in the surroundings or exposure to unwanted substances and unhealthy lifestyle.

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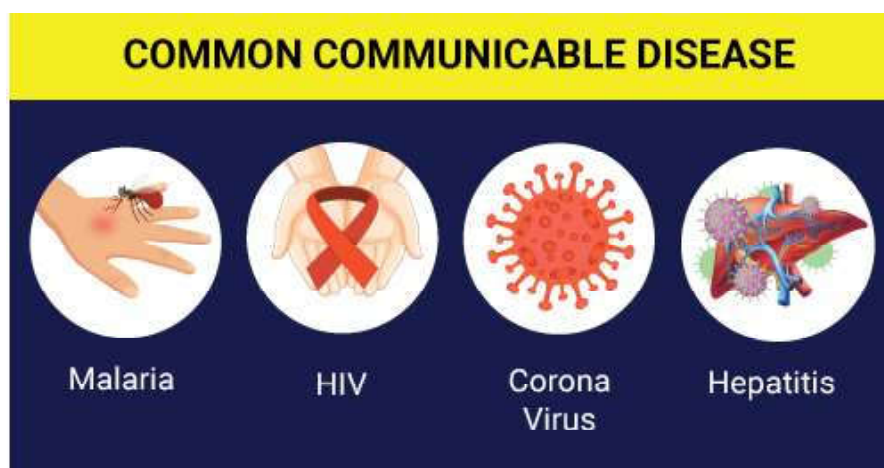




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Communicable Diseases	Non-Communicable Diseases (NCD)
Not	These diseases take time to develop hence they are chronic in nature
Not	These diseases can be transferred from one generation to another
Traditional therapy or drugs can help in treating the disease	Specialised treatment is required and surgery may be needed in worse cases
Vaccination will also be helpful in preventing the disease	Healthy lifestyle and early detection will be helpful

7.3 COMMON COMMUNICABLE DISEASE



Malaria

Disease	Transmission	Symptoms	Effects
Malaria - It is caused by a single celled parasite of plasmodium genus. This disease is caused by the bite of infected mosquitoes. It is common in tropical and subtropical regions.	1. Transmitted by bite of an infected mosquito 2. It can be transmitted from mother to unborn child 3. It can be transmitted through blood transfusion 4. It can be transmitted through sharing of common needle with infected person	1. High grade fever 2. Headache 3. Vomiting and nausea 4. Increased heart rate 5. Rapid breath 6. Cough 7. Muscle pain, joint pain and abdominal pain 8. Fatigue 9. Diarrhoea	1. Cerebral Malaria 2. Pulmonary oedema (difficulty in breathing) 3. Anaemia 4. Low blood sugar (hypoglycaemia) 5. Organ dysfunction- kidney, liver, spleen 6. Coma or death



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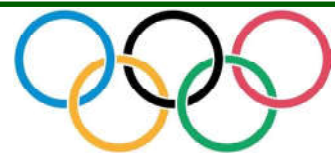
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HIV/AIDS

Disease	Transmission	Symptoms	Effects
HIV /AIDS - It is Acquired Immuno Deficiency Syndrome which can damage the immune system of the body. HIV is the virus (Human Immuno Deficiency virus) which reduces the ability of the body to fight disease and infection.	1. It can be transmitted through sexual contact 2. It can be transmitted through sharing of needle with diseased person 3. It can be transmitted from mother to unborn child during pregnancy 4. It may even be transmitted from mother to unborn child during birth 5. It can be transmitted from mother to child during breastfeeding 6. It can be transmitted through transfusion of blood of diseased person to healthy person	1. Fever 2. Swollen lymph nodes 3. Weight loss 4. Pneumonia 5. Fatigue 6. Herpes zoster (painful Rash) 7. Fungal infection of tongue and cheeks 8. Diarrhoea	1. Pneumocystis pneumonia -A fungal infection that leads to severe illness 2. Tuberculosis 3. Inflammation and thick white colour layer on tongue, mouth or vagina 4. The Herpes virus becomes active and causes damage to different organs like eye, lungs etc 5. Inflammation in brain and spinal cord 6. Cancer in neck or groin 7. Tumour in lungs or intestines 8. Cervical cancer 9. Kidney inflammation 10. Liver disease like Hepatitis B or C 11. Neurological disorders

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Corona Virus

Disease	Transmission	Symptoms	Effects
Corona Virus - This disease caused by the virus namely SARS-COV-2. It is also known as covid-19. People with old age or weak immune system are badly affected by it. Best way to prevent is to stay at least 2 m away from the diseased person	Main method of transmission is through the droplets of the infected person to the common person through 1. Cough 2. Sneeze 3. Speak 4. Sing 5. Breathe 6. Touch 7. Hug 8. Sex 9. Any other close contact	1. Cough and cold 2. Fever 3. Fatigue 4. Shortness of breath 5. Sore throat 6. Muscle pain 7. Chest pain 8. Vomiting and nausea 9. Conjunctivitis 10. Rashes on skin	1. Heart problems 2. Pneumonia 3. Breathing problem 4. Acute respiratory disorder 5. Kidney injury 6. Blood clots 7. Loss of taste 8. Loss of smell 9. Additional infections



DO YOU KNOW?

Covid-19 various names is – SARS – COV-2



Activity 7.3

Prepare a list of people in your vicinity suffering from Non-communicable Diseases especially obesity, diabetes, arthritis, insomnia.

Hepatitis

Disease	Causes/Transmission	Symptoms	Effects
Hepatitis - This disease occurs due to infection in liver tissues by a virus. There are different viruses -hepatitis A, B, C, D and E.	1. Infection through virus (Transmission of virus through saliva, sex and blood) 2. Excessive intake of alcohol 3. Use of drugs 4. Intake of toxic chemicals 5. Fatty liver	1. Vomiting and Nausea 2. Indigestion 3. Loss of appetite 4. Intense fatigue 5. Diarrhoea 6. Jaundice 7. Dark urine 8. Yellowish skin and eye	1. Skin problems 2. Blood Disorders 3. Weight loss 4. Thyroid problem 5. Damage to Liver tissues 6. Liver failure 7. Liver cancer 8. Cirrhosis 9. Death



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Intext Questions 7.3

1. Tick the correct option.

1. Which of the following situations can lead to the transmission of both HIV/ AIDS and Hepatitis?
 - a) Sharing food with an infected person
 - b) Hugging an infected person
 - c) Sharing needles during drug use
 - d) Touching infected person's clothes
2. A person suffering from Malaria develops severe breathing difficulties. Which of the following effects is most likely responsible for this condition?
 - a) Pulmonary oedema
 - b) Pneumonia
 - c) Cirrhosis
 - d) Blood clot
3. During the Covid-19 pandemic, a person maintained physical distance but still got infected. What could be the possible reason?
 - a) Touching contaminated surfaces and not sanitizing hands
 - b) Sharing a meal at a distance of 2 meters
 - c) Talking over the phone with an infected person
 - d) Drinking bottled water

7.3.1 Common Non Communicable Diseases (NCD)



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**Note****Cancer**

Disease	Causes	Symptoms	Effects
Cancer - It is a group of diseases which occur due to abnormal growth of cells in one or other part of the body. It can start in one part of the body and can travel to another part and develop in another area thereafter.	- Excessive use of tobacco - Excessive use of alcohol - Exposure to various radiation - Obesity - Insufficient intake of fruits and vegetable - Intake of very stale food - Chronic infection from hepatitis B and C virus or any other virus	- Fatigue - Excessive sweating in night or during sleep - Sudden weight loss - Bleeding during cough - Difficulty in swallowing food - Loss of appetite - Change in voice - Persistent cough - Change in shape and size of chest or breast including nipples - Change in skin colour - Vaginal bleeding or blood in urine	- Hair loss - Vomiting and nausea - Memory loss - Severe pain - Blood clotting - Loss of neutrophils (White blood cells) - Excessive swelling due to blocked lymph nodes - Mood change - Reduced sex drive - Frequent infection in the body

Heart Disease (CHD)

Disease	Causes	Symptoms	Effects
Heart Disease (CHD) - In this disease, wax type substance, known as plaque, builds up or gets deposited inside the coronary arteries. These arteries supply oxygenated blood to the heart muscles. Over a period of time, due to deposition of	- Age - Sex - Heredity - Race - Hypertension - Smoking - Obesity - Diabetes - Physical inactivity - Emotional imbalance	- Severe chest pain and constant pain in the upper body and limbs - Indigestion - Heartburn - Sweating - Nausea - Shortness of breath - Sense of vomiting	- Anxiety - Emotional distress - Behavioural disturbance - Depression - Weakening of heart muscles - Heart failure - Difficulty in breathing - Angina - Disruption in the functioning of heart valve



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Disease	Causes	Symptoms	Effects
plaque, the arteries become hard. This plaque forms tiny clots which cause a blockage in the supply of blood. This causes irregular of insufficient supply of blood through arteries which results in chest pain (angina) or heart attack.	11. Environmental factors 12. Unhealthy diet	8. Colourless face 9. Restlessness	10. Swelling in legs, feet or belly etc 11. Arrhythmia 12. Stiffness or thickening of heart muscle 13. Heart infection



DO YOU KNOW?

The waxy substance deposit in the arteries of heart that makes them hard is known as plaque

Diabetes

Disease	Causes	Symptoms	Effects
Diabetes - It is a metabolic disorder where the sugar level of the blood increases as the required insulin secreted by the pancreas is not sufficient. It is hereditary in nature but several other factors are also responsible for development of this disease in people.	1. Heredity 2. Age 3. Lack of physical activity 4. Smoking 5. Over stress or depression 6. Over sleeping 7. Insomnia 8. Medicinal effect of some other disease	1. Frequent urination 2. Feeling thirsty 3. Improper vision/ Blurry vision 4. Injuries or wound not heal in stipulated time 5. Numbness in feet and hands 6. Repetitive yeast infection 7. Irritable behaviour 8. Feeling of lethargy	1. Vision impairment 2. Wound bleeding for longer period 3. Repetitive infection with small breaks 4. Indigestion 5. Lack of sexual response 6. Delay in pregnancy 7. Develop CHD 8. Kidney failure 9. Fainting

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Activity 7.4

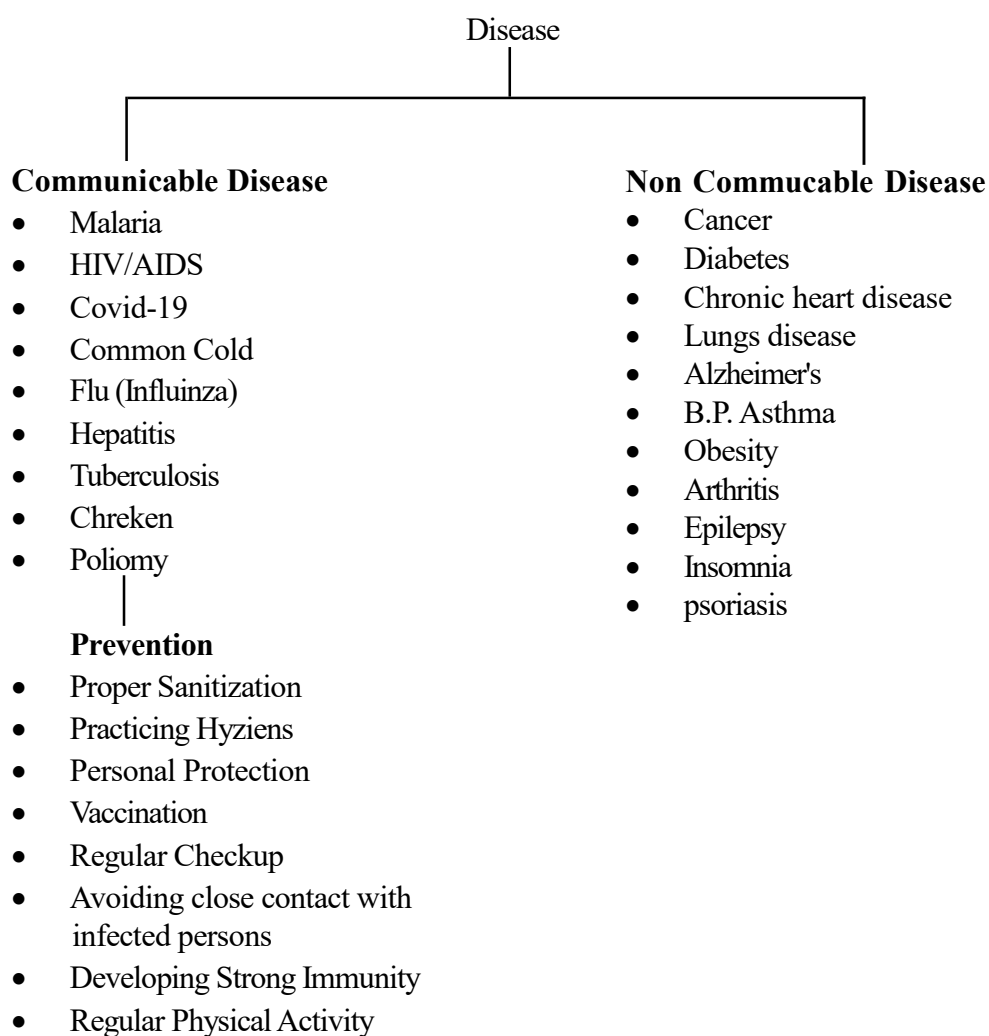
Organize a health check up camp in your society or group.



Terminal Exercise

- 1) Write down the difference between communicable and non-communicable diseases?
- 2) Explain about the measures used for prevention of NCD?
- 3) Write down the causes and symptoms of any two Communicable diseases?
- 4) Write in details about the effects of any two NCD on human body?

Concept Map



Note



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Answers to Intext Questions

7.1

- 1) True, 2) False, 3) False

7.2

- 1) a) Persistent fatigue and frequent urination
2) Diabetes
3) a) Regular physical activity and a balanced diet

7.3

- 1) c) Sharing needle during drug use
2) a) Pulmonary Oedema
3) a) Touching Contaminated Surfaces and not sanitizing hands.

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