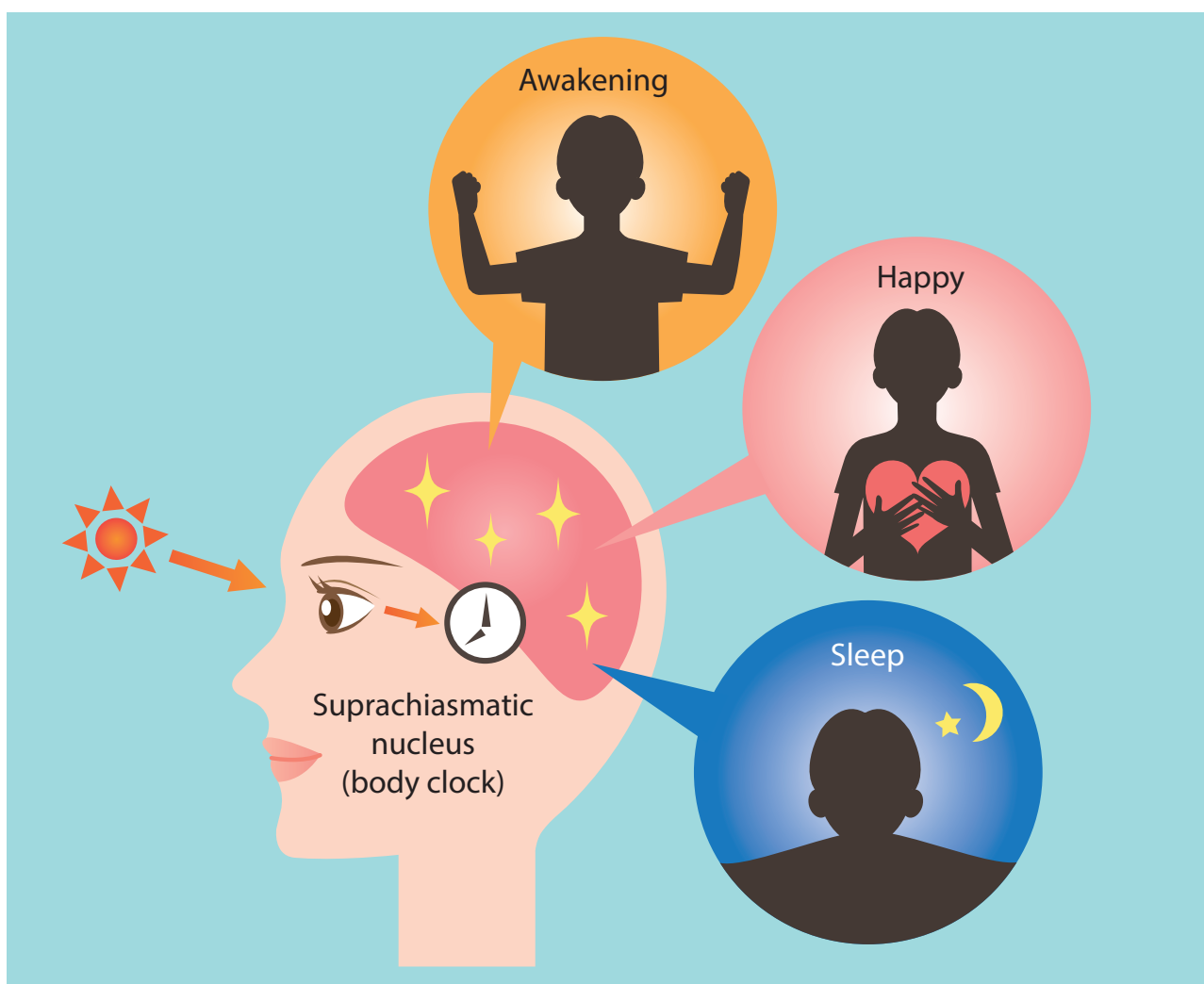


Unit 6

Health and Hygiene



Learning Objectives

After studying this unit, students will be able to:

- ❖ describe ways to take care of the body.
- ❖ know how to take care of the teeth, eye, hair and follow the hygienic habits.
- ❖ understand the communicable and non-communicable diseases.
- ❖ know and understand some common ailments and the remedies for them.
- ❖ know first aid and safety measures.



Introduction

Have you ever taken leave from the school due to sickness? What happens exactly when we become sick? Sometimes, we feel good even without taking any medicines and sometimes we need to consult a doctor and take regular medicines to be healed. Why is it so?

To prevent and treat sickness successfully, it is necessary to have complete understanding of the common sicknesses in the area and the combination of things that caused them. This lesson may help you to understand the various causes of sickness. In this lesson we are going to study about health and hygiene, care of the body, diseases, health problems of children and safety.

6.1 Hygiene

Health is the best wealth. If you have good health, you will have a sound mind and you will gain good knowledge and wealth also. Health refers to a state of a sound mind and body free from any sickness or ailment, stress and problems. In simple words, health refers to the physical, emotional and psychological well-being of a person. To maintain good health, you should follow good hygiene, eat nutritious food, do exercise, take rest and have a sound sleep.

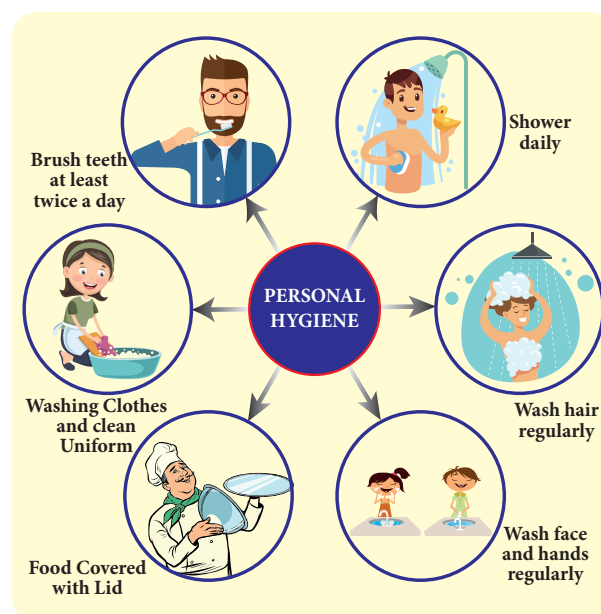
Hygiene refers to the good habits and their practices which are followed to prevent diseases, maintain good health, especially through cleanliness, consumption of safe drinking water and proper disposal of sewage. It refers to all those activities that are done for improving and maintaining good health and sound mind.

Maintenance of personal and environmental hygiene is called cleanliness. In simple words, it refers to the state of being clean

which is essential for good health. To protect us from diseases it is essential to maintain good health by taking regular bath, cleaning the clothes and surroundings and also avoiding unhygienic food consumption.

6.1.1 Personal hygiene

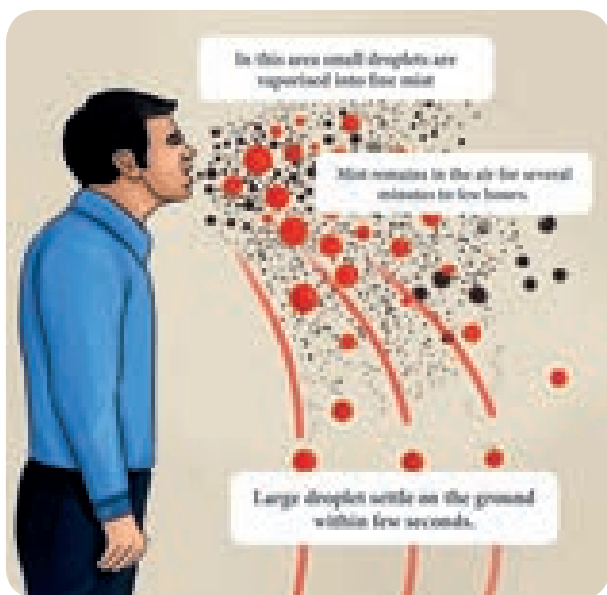
Personal hygiene is defined as the branch of health which is concerned with the individual's adjustment to the physiological needs of the body and mind for the attainment of the maximum level of health. It also refers to the cleaning and grooming of the body.



Cold and flu are some of the common communicable diseases. They are caused not only by bacteria but also by virus. When you have cold and flu, you may also have running nose, cough, sore throat, and sometimes fever or pain in the joints. For some, this condition may also lead to mild diarrhoea.

What will happen, if cold affected friend/classmate of you, sneezes or cough in front of you? When he sneezes some secretions may come out of his nose. Secretions oozing out

from the nose may contain the bacteria or virus. When the patient touches some other object or someone else after touching the nose, the virus is transferred. When the patient sneezes or coughs the virus comes out with the droplets and become airborne. Hence, it is a good practice for the patient with cold and flu to use a hand kerchief to blow the noses and also wash the hands often to ensure that they do not accidentally spread the virus to others.



ACTIVITY 1

List out your daily activities in the given table.

Activities	Number of times in a day
Brush teeth	
Take shower	
Wash hair	
Wash hands and feet	
Wearing Clean clothes / Uniforms	

Do you follow personal hygiene properly?
How these activities will keep you physically fit?

6.1.2 Community Hygiene

A community is formed by a group of people living together in a particular area. If the people in a community wish to lead a healthy life, they should maintain basic community hygiene. It can be done by adopting the following measures.

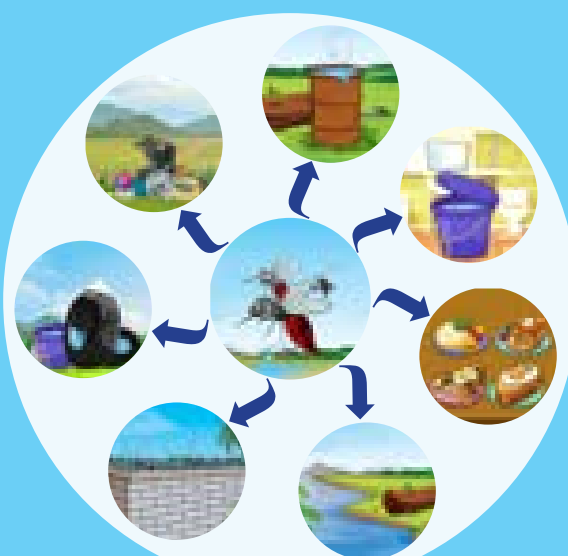
- The surroundings should be kept clean.
- Drains should be covered properly.
- Used water from houses should not be let out into open drains or open areas.



Dengue is spread by mosquitoes of *Aedes aegypti* caused by DEN-1, 2 virus belonging to the type - flavivirus. It decreases the counting of the blood platelets of human blood and it has a maximum flight range of 50–100 metres in and around the places.



ACTIVITY 2



Observe the picture and write remedial measures

- The domestic wastes should be segregated and properly disposed off safely in separate dust bins provided by the government (Green and Blue).

6.2 Care of the body

Human body is a massive miracle. It consists of organs and systems, which function continuously. Our body is compared to a machine. Human body works well with proper maintenance and guidance. For smooth functioning, all the parts of the body should work in unison. The digestive system, circulatory system and muscular system are the core systems that should be in synchronization and function well. We need to keep them well by proper care.

6.2.1 Dental Care

Dental care or broadly speaking oral hygiene is an important aspect of the personal health of an individual. Good oral hygiene implies sound teeth and healthy gums with healthy surrounding tissues. The physical act of chewing food promotes saliva and gastric secretions which help digestion. The act of chewing and tasting is called 'mastication'. It gives pleasure and emotional satisfaction of eating food. Teeth is essential for good appearance and clear speech also.



- Brushing two times a day, will prevent the formation of tartar and plaque on your teeth and gums.
- When you floss, it will remove food particles, plaque and bacteria which build up between your teeth (When you start flossing, your gums may bleed a little bit, but after few days that will be stopped. It should be started only with proper medical guidance).

Diseases affecting the teeth

Failure to have oral hygiene results in diseases affecting the teeth. Some of the diseases affecting the teeth and gums, their causative agents and remedial measure are given below in the table.

6.2.2 Eye Care

Eyes are an important organ of our body. They are considered as windows to the world. Eyesight is the most important sense. 80% of what we perceive comes through the sense of sight. Protecting the eyes, can

Table 6.1 Diseases affecting teeth

Sl. No.	Name of the Diseases	Causative Agents	Impacts / Consequences	Remedial measures
1	Bleeding gums	Vitamin C deficiency	Bleeding of the gums	Eating citrus fruits
2	Tooth decay	Bacteria in teeth	Bacteria produce acids	Brushing and flossing the teeth can prevent decay.
3	Periodontitis	Tobacco chewing	Severe form of gum disease ruin the bones, gums, and other tissues	Chewing type of tobacco should be avoided. Eat a well-balanced diet.

reduce the odds of blindness and vision loss. We should protect our eye from the diseases, surroundings and climate condition.

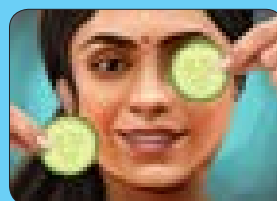
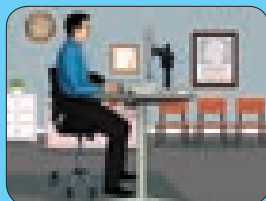
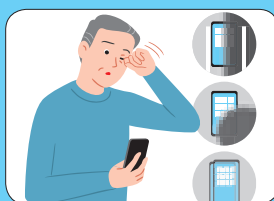
Diseases affecting Eye

Diseases affecting the eyes and the remedial measures are given below.

Table 6.2 Diseases affecting eye

S.No.	Name of the Disease	Causative Agents	Impacts/Consequences	Remedial measures
1.	Night Blindness	Lack of vitamin A. Disorder of the cells in your retina	Makes it hard to see well at night or in poor light.	Eat foods rich in vitamins like carrots, papaya.
2.	Conjunctivitis (Pink eye)	Caused by a virus and bacteria	One or both eyes can be affected. Highly contagious; can be spread by contamination and sneezing.	Antibiotic eye drops or ointments, home remedy
3.	Colour blindness	Genetic condition	<ul style="list-style-type: none"> Difficulty in distinguishing between colours. Inability to see shades or tones of the same colour. 	There is no known cure for colour blindness. Contact lenses and glasses with filters.

ACTIVITY 3



Observe the pictures and tick do's and don'ts in the given tables

Sl. No.	Practices	I Do	I Don't do
1.	Do you rub the eyes?		
2.	Do you watch TV/work on computer for a long time?		
3.	Do you use cold water for cleaning your eyes?		
4.	Do you like eating carrot?		
5.	Do you regularly eat fruits like orange, sweet lemon and lemon?		

In the above checklist what do you understand?

6.2.3 Hair Care

The condition of the hair reflects to some extent the nutritional status and general health of the body. Thin, sparse hair and the loss of hair indicates a poor nutritional status. The deficiencies in diet, physical and mental illness of various kinds may also lead to premature greying of hair.

The hair follicles from which the hair grows produce oil which keeps the hair smooth. The sweat and the dead skin cells come off the scalp. The oil, sweat and dead cells all add together and can make the hair greasy and look dirty unless it is washed regularly.

Keeping hair clean and healthy

- Regular hair wash and massage of the scalp will remove the dead skin cells, excess oil and dust.
- Rinsing the hair well with clear water and using good toothed comb for hair dressing is highly essential for the maintenance of hair.

6.3 Diseases

A disease is the functional or physical change from a normal state that affects the health of a person by causing disability or discomfort. The following are the conditions that could lead to the development of disease in an individual.

- Infection caused by disease-causing microbes.
- Lack of balanced diet.
- Poor lifestyle and unhealthy habits.
- Malfunctioning of one or more body parts or organs.

The prevention and treatment of diseases can be considered in two groups for their better

understanding. They are communicable and non-communicable disease.

6.3.1 Communicable Diseases

Communicable diseases are those diseases that spread from one person to another. Healthy persons must be protected from people with communicable diseases. Diseases spread through contaminated air, water, food or vectors (insects and other animals).

a. Diseases caused by Bacteria

Communicable diseases like tuberculosis, cholera and typhoid, are caused by bacteria. These diseases spread through air, water and some other organisms.

1. Tuberculosis

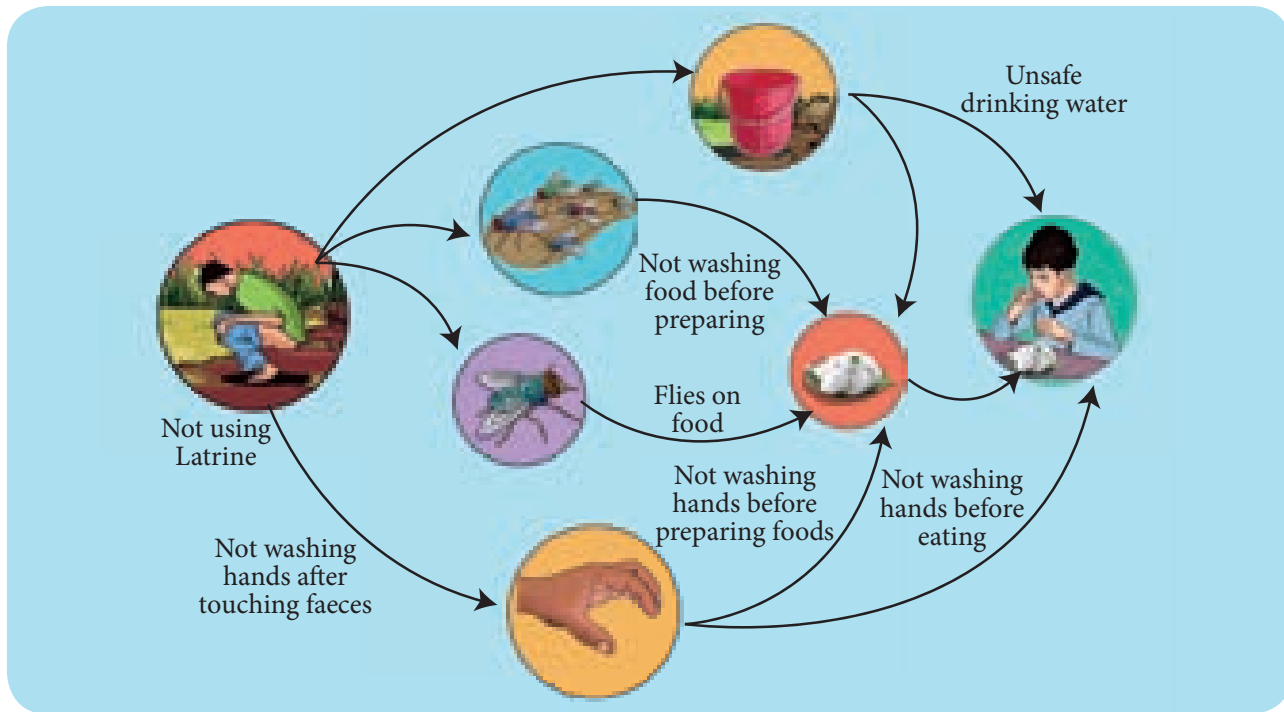
Tuberculosis (TB) is caused by *Mycobacterium tuberculae* and spreads from one person to another person through air, spitting, prolonged contact and sharing materials of the patient. The symptoms are fever, weight loss, chronic cough, bloody spitting and difficulty in breathing.



Mycobacterium tuberculae

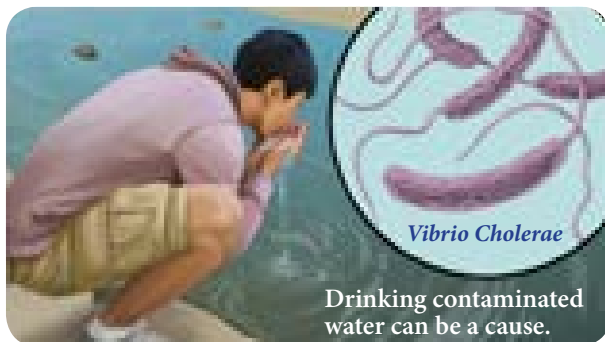
Prevention and treatment

- BCG vaccination.
- Giving special attention to the patient.
- Regular medication like DOT.



2. Cholera

Cholera is caused by *Vibrio cholerae* and spread through the consumption of contaminated food or water. The symptoms of cholera is vomiting, severe diarrhoea and cramps in legs.



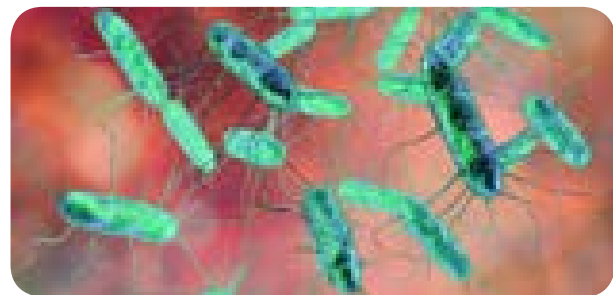
Vibrio cholerae

Prevention and treatment

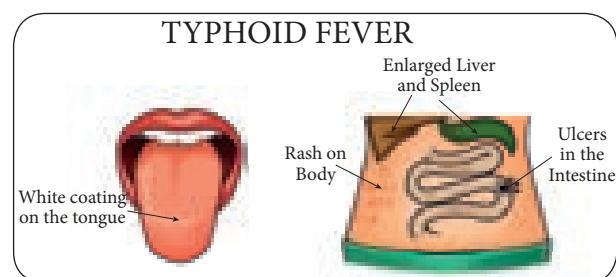
- Good hygienic practices like washing hands before eating.
- Avoid eating uncovered food from street vendors.
- Drinking boiled water.
- Getting vaccination against cholera

3. Typhoid

Typhoid is caused by *Salmonella typhi* and spreads by contaminated food and water. The symptoms are anorexia, headache, rashes on abdomen, dysentery and high fever up to 104°F.



Salmonella typhi



Prevention and treatment

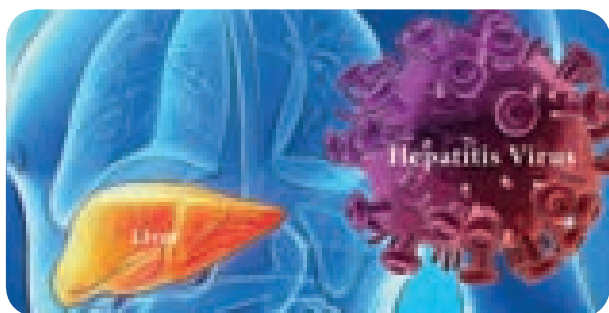
- Drinking boiled clean water
- Proper disposal of sewage
- Vaccination

b. Diseases caused by Virus

Viral diseases are extremely widespread infections caused by many type of viruses. Some diseases caused by viruses are hepatitis, chickenpox and rabies.

1. Hepatitis

Hepatitis is one of the most dangerous and fatal diseases caused by Hepatitis virus- A, B, C, D, E. Its mode of transmission is contaminated water, sharing of needles and blood transfusion. The symptoms of hepatitis is loss of appetite (anorexia), vomiting, eyes and urine turning to yellow colour.

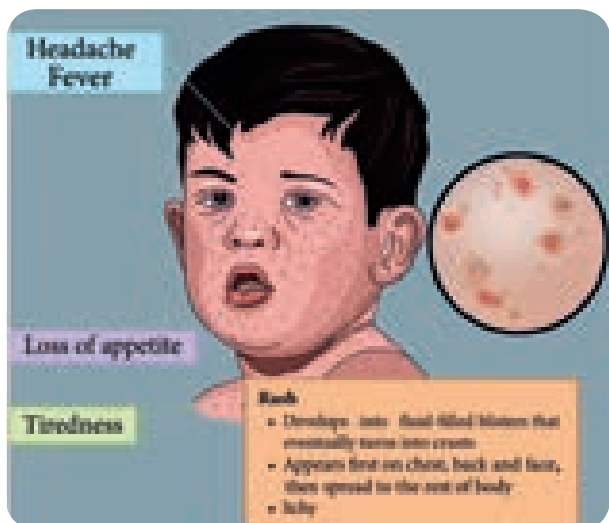


Prevention and treatment

- Drinking boiled water
- Proper cleaning of hands

2. Chickenpox

Chickenpox also known as varicella is a highly contagious infection caused by the varicella zoster virus. This disease spreads



through air and contact with an infected person. Its symptoms are appearance of rashes on the whole body, fever, headache and tiredness.

Prevention and treatment

- The chickenpox (varicella) vaccine is the best way to prevent chickenpox
- Special attention should be given to the infected persons.

c. Rabies

Rabies is a fatal disease which is transmitted by the bite of the infected dog, rabbit, monkey, cat etc. The virus present in the saliva of dog enters the brain via neurons. The symptoms of rabies are hydrophobia (extreme fear for water), fever for 2 – 12 weeks and exaggerations in behaviour.

Prevention and treatment

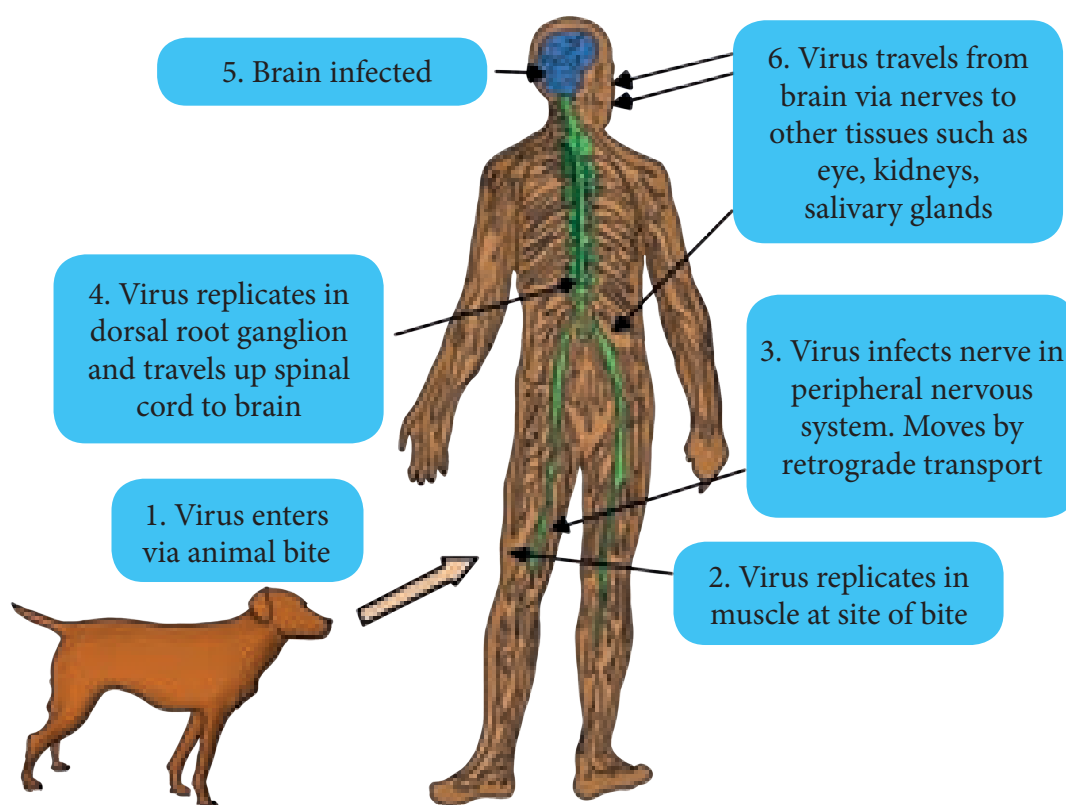
- In early stages rabies is very difficult to detect.
- After an animal is bitten it usually takes two to twelve weeks to show any symptoms and it may take as long as two years also.
- Fatality can be prevented by timely vaccination before the onset of symptoms.

ACTIVITY 4

Visit a nearby Primary Health Centre and collect information about vaccination given to children of 0-15 years. Meet a doctor or a health worker in the hospital and enquire about the following.

- The types of vaccines available there.
- Can disease be prevented by their usage?
- The age at which it should be given.

Rabies



Vaccine

Vaccine is a biological preparation that provides active acquired immunity to a particular disease. Vaccines like (BCG, Polio, MMR) are given at early childhood to protect from other diseases.

6.3.2 Non-communicable diseases

Non-communicable diseases do not spread from person to person. They are caused by other factors. Therefore, it is important to know which diseases are communicable and which are not. They are never caused by germs, bacteria, or other living organisms that infect the body. Antibiotics or medicines that fight against germs do not help to cure non-communicable diseases. Some of the non-communicable diseases are explained below.

a. Wearing out of body parts

Rheumatism, heart attack, epileptic seizures, stroke, migraine headache, cataract and cancer.

b. External harmful agents entering the body

Allergies, asthma, poisons, snakebite, cough from smoking, stomach ulcer, alcoholism.

c. Lack of trace elements in the body

Anemia, pellagra, night blindness and xerophthalmia, goiter and hypothyroidism.

d Malnutrition

Nutritious food is needed for a person to grow well, work hard, and stay healthy. Many common sicknesses are caused by malnutrition.



Leucoderma is a non – communicable diseases caused by partial or total loss of pigmentation in the skin (**melanin pigment**). This condition affects people of any age, gender and ethnicity. There is no cure. It does not spread by touching, sharing food or sitting together.

6.4 Specific health problems of children

Anaemia

It is caused by eating food with less iron content and can also be caused due to feeding some other foods instead of breast milk. Severe anaemia in children may lead to hookworm infection, chronic diarrhoea and dysentery. In the recent days, school going children, especially girls are affected by anaemia. The Government of Tamil Nadu provides iron folic tablets to all the girls in the schools of all areas every week.

The signs of anaemia

- ❖ Pale or transparent skin, the inner surface of eye lids are pale, white fingernails, pale gums, weakness and fatigue.
- ❖ In severe cases, face and feet may be swollen, the heart beat is rapid and with shortness of breath.
- ❖ Children and women who eat mud are usually anaemic.

Treatment and prevention of anaemia

Anaemia can be preventing by takes proper food and diet.



As a general rule, iron supplements should be given orally, not to be injected, because it is dangerous.

Food

Moringa leaves, dates, liver (sheep and chicken), green, green leafy vegetables like beans, peas, lentils and greed banana.

Pills

Cod liver oil tablet, Ferrous sulphate.

6.5 Safety and First Aid

First aid is the immediate treatment given to the victim of trauma or sudden illness before medical help is made available. First aid is important for following reasons.



- ❖ It saves the life.
- ❖ It prevents further bleeding and determine the condition of the patient.
- ❖ It relieves the pain.
- ❖ It provides a medical care available at the earliest.



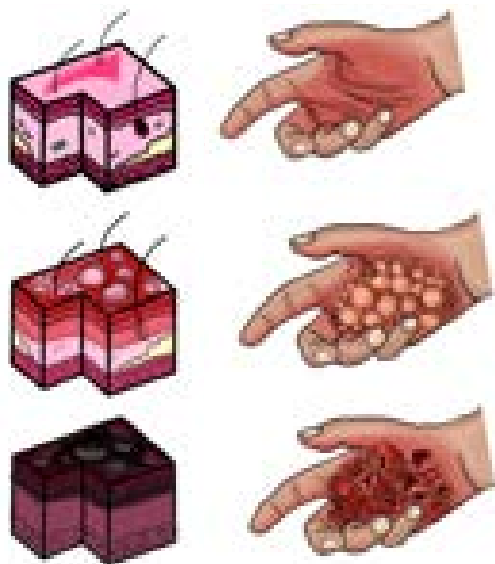
6.5.1 Burns

The tissue damage caused by heat, chemical, electricity, sunlight or nuclear radiation is known as burns. Mostly burns are caused by scalds, building fires, flammable liquid and gases. There are three types of burns, according to degree of burning.

- First-degree burns affect only the outer layer (called the epidermis) of the skin.



- Second-degree burns damage the epidermis and the layer beneath it (called the dermis).
- Third-degree burns involve damage or complete destruction of the skin to its full depth and damage to underlying tissues also. People who experience such burns often require skin grafting.

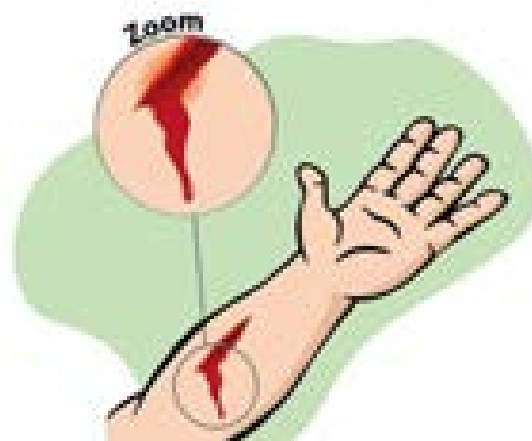


First aid for Burning

In case of minor burns, the affected area should be washed with cold water and an antiseptic cream should be applied. In case of severe burns, where deeper layers of tissues get destroyed and blisters appear, use of water should be avoided. The burnt area should be covered with a clean non-sticking cloth or bandages. Larger burns need immediate medical attention. It is very important to keep a fire extinguisher readily available.

6.5.2 Cut and Scratches

Cuts and scratches are the areas of damage on the surface of the skin. A cut is a line of damage that can go through the skin and into the muscle tissues below, whereas a scratch is surface damage that does not penetrate the lower tissues. Cuts and scratches may bleed or turn red, become infected and leave scars.



First aid for cuts

For minor cuts, the affected area should be washed with cold running water and cleaned with an antiseptic liquid. Then an antiseptic cream should be applied on the wound and sterilized bandage should be tied to prevent infection. If the cut is deep, a clean cotton pad should be placed on the cut and pressed, and the injured person should be taken to a doctor immediately.



6.6 Basic cleanliness and protection

The most important thing is to help anybody, but you must also protect yourself from HIV and other blood-borne diseases

when you help someone who is bleeding. You should wear gloves or a clean plastic bag on your hands. Be careful not to prick yourself with needles or other sharp objects around the person you are helping.

Points to Remember

- ❖ Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.
- ❖ Diseases that are caused by pathogens and can be transmitted from an infected person to a healthy person directly or indirectly are called communicable diseases.
- ❖ Diseases that are not caused by pathogens and cannot be passed on by a sick person to a healthy person are called non-communicable diseases.
- ❖ The immediate care given to a patient before a medical person arrives.



Evaluation



I. Choose the appropriate answer.

1. Ravi has sound mind and physically fit body. It refers to
 - a. hygiene
 - b. health
 - c. cleanliness
 - d. wealth
2. Sleep is not only good for our body, but it is also good for
 - a. enjoyment
 - b. relaxation
 - c. mind
 - d. environment
3. Our living place should be
 - a. open
 - b. closed
 - c. clean
 - d. unclean / untidy
4. Tobacco chewing causes
 - a. anemia
 - b. periodontitis
 - c. tuberculosis
 - d. pneumonia
5. The first aid is to
 - a. save money
 - b. prevent scars
 - c. prevent the medical care
 - d. relieve the pain

II. Fill in the blanks.

1. A group of people living together in a particular area is called _____

2. I am green colour box with garbage. I am _____.
3. Eyes are considered as _____ to the world.
4. The hair follicles produce _____ which keeps the hair smooth.
5. Tuberculosis is caused by the bacterium _____.

III. State true or false. If false, correct the statement.

1. All food should be covered.
2. Chicken pox is also known as leucoderma.
3. Stomach ulcer is a non-communicable disease.
4. Rabies is a fatal disease.
5. First – degree burns damage the whole skin.

IV. Match the following.

Rabies	Salmonella
Cholera	Yellow Urine
Tuberculosis	Cramps in legs
Hepatitis	Hydrophobia
Typhoid	Mycobacterium



V. Analogy.

1. First degree burn : Epidermis :: Second degree burn : _____
2. Typhoid : Bacteria :: Hepatitis : _____
3. Tuberculosis : Air :: Cholera : _____

VI. Consider the following statements and choose the correct option.

1. **Assertion:** Oral hygiene is good.

Reason: Sound teeth has healthy gums with healthy surrounding tissues.

2. **Assertion:** Chicken pox is a viral communicable disease.

Reason: It is characterized by rashes on the whole body, fever, head ache and tiredness.

- a) Both A and R are true
- b) Both A and R are false
- c) A is true but R is false.
- d) A is false but R is true.

VII. Answer very briefly.

1. What is hygiene?
2. Write about the right way of protecting the eyes.
3. How to keep your hair clean and healthy?
4. Sobi frequently plays with her mobile. Suggest your ideas to protect her eye from irritation?
5. Give any two communicable diseases, which spread in your locality during monsoon.
6. What first aid will you provide in the case of bruises?
7. Ravi said, Ganga had minor burn, so I washed it with water. Do you agree with his statement? Explain, why?

VIII. Answer briefly.

1. Why first aid is essential?
2. What steps you will follow to keep your teeth healthy?

3. What does this picture mean?



4. Distinguish communicable diseases and non-communicable diseases.
5. Name the mode of transmission of communicable diseases.
6. Your friend says that her hair is thin, spares and lost very often. Suggest your ideas to reduce this problem.

IX. Answer in detail.

1. Write about any three communicable diseases in detail.
2. List the situations in which first aid is given. What would you do if a person suffers from skin burns?
3. How the diseases are transmitted from one person to the other person?

X. Higher order thinking question.

A person is sleeping during day time. Why does this happen to some people that they feel sleepy during day time in office or in the classroom? Have you ever come across such situation? Explain.





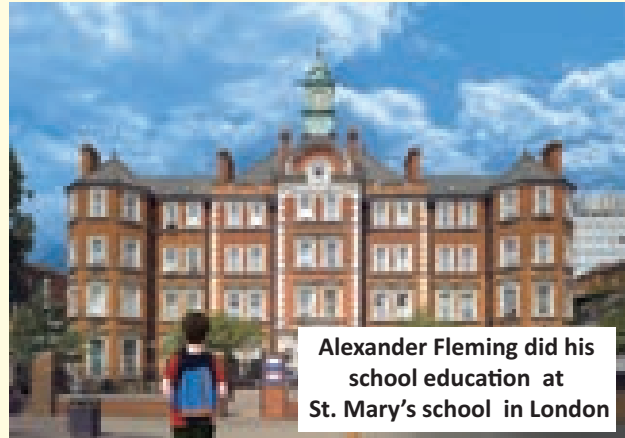
Queen of Medicines – Penicillin



Alexander Fleming



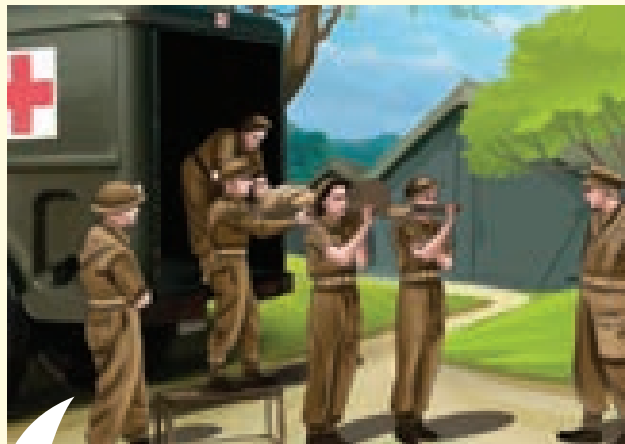
Alexander Fleming
(1881 - 1955)



Alexander Fleming did his
school education at
St. Mary's school in London



As he was very much interested in studying medicine
at the age of 20, he joined medical course at
St. Mary's Medical College and Hospital
with the help of his uncle



In the first world war, soldiers were
wounded heavily and hence many
were infected with contagious diseases



He was appointed the Chairman of the
Medical Board for military soldiers

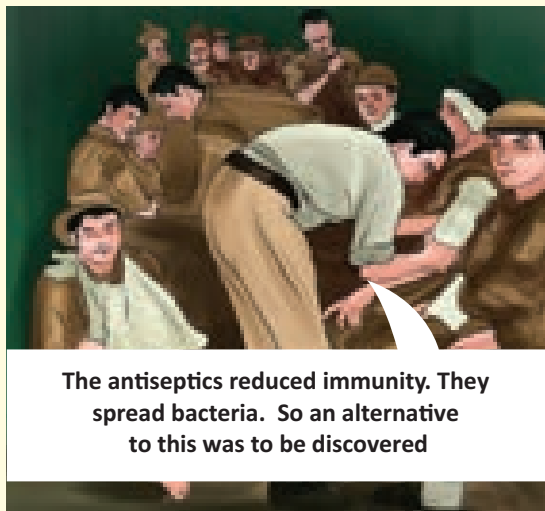




They were neither cured even after applying antiseptics nor their wounds healed



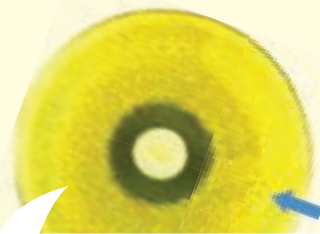
These germs have spread to others too!



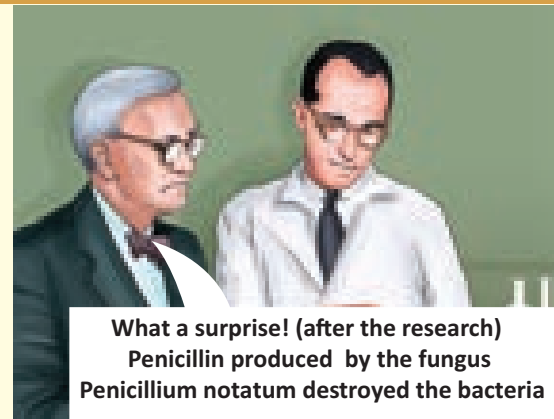
The antiseptics reduced immunity. They spread bacteria. So an alternative to this was to be discovered



I cultured staphylococci bacteria in these culture media



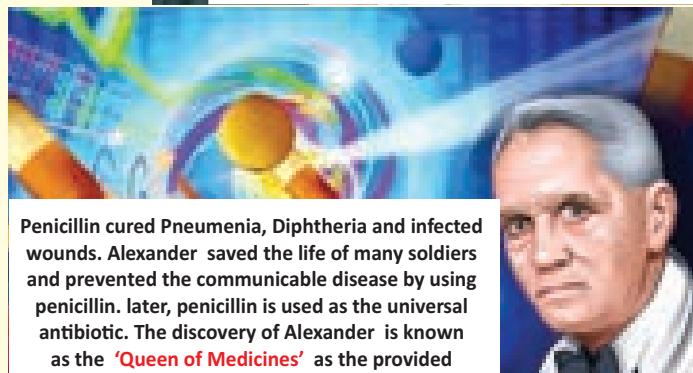
What? In this culture media, a mould is formed but I could not see staphylococci bacteria!



What a surprise! (after the research) Penicillin produced by the fungus *Penicillium notatum* destroyed the bacteria



The world's first antibiotic penicillin was discovered in 1928. "We are happier in curing millions of soldiers than getting the Nobel prize"



Penicillin cured Pneumonia, Diphtheria and infected wounds. Alexander saved the life of many soldiers and prevented the communicable disease by using penicillin. later, penicillin is used as the universal antibiotic. The discovery of Alexander is known as the '**Queen of Medicines**' as the provided great benefits in the field of medicine