

Points To Study :

- 8.1 General diseases
- 8.2 Factors of diseases: worms
- 8.3 Some specific diseases.

From the ancient times man wishes to be long living and healthy. "A healthy mind resides in a healthy body". Our body regularly carry out functions like digestion, excretion, respiration etc. A person gets diseased, if there is irregularity in these functions.

Activity1

Visit the government hospital of your locality. Observe the admitted patients carefully without disturbing them. Do not touch anything over there. Collect the knowledge of the diseases of different patients with the help of doctor and nurse. Note down all the information in your diary.

You might have seen different cells made for the patients of different diseases where you cannot enter.

- Can you answer why this is so?
- Why do you have to cover your mouth with a handkerchief while sneezing and coughing?
- You might have read in the newspaper that cholera has been spread in the flood affected areas in Gujarat ? Why was this happened?

Diseases are of two types:

- **Infectious disease:** those diseases which spread due to contact with one another. Example: Cholera, typhoid, tuberculosis, cold etc. these spread due to contact with air, water and food and insects.
- **Non-infectious diseases:** those diseases which not spread from one person to another. Example: Cancer, joint pain etc.

Teachers should discuss the reports of all the students in the following table on the black board.

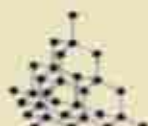


Table 8.1 General diseases of human being, their factors, symptoms, prevention and treatment

Sr. No.	Disease	Disease causing Microbes	Symptoms	Preventive measures	Treatment
1.	Tuberculosis (T.B.)	Bacteria- <i>Mycobacterium</i> Transmission by wind	Loss of appetite, loss of weight, weakness, continuous cold and cough, fever at low temperature, Blood in the spit, chest pain, breathing problem after long walk, swelling in the lymph nodes, effect on alimentary canal, bones, lungs.	Isolation of TB patient, keeping his things separate, , vaccination at proper time, preventing spitting at anywhere, covering mouth during coughing,	Sputum test, chest X-Ray, use of M.D.T. as the doctor suggests, be under the control of DOTS
2.	Cholera	Bacteria- <i>Vibrio cholerie</i> Transmission- By contaminated water and food	Vomiting, loose motion (diarrhoea) dehydration, fever, thirst, drying of tongue, muscular cramp, sukening of eyes infection in stomach and intestine.	Personal hygiene and good habitseating properly cooked food, drinking boiled water, vaccination, proper methods of discharge faeces and rotten things, maintain distance with the patient	Use of ORS solution and proper medicines
3.	Typhoid	Bacteria- <i>Salmonella typhii</i> Transmission By water	Infection in small intestine, daily occurrence fever and headache, higher fever in the second weak, less fever in third and fourth weak, body pain,constipation, low heart beat, red spots on the upper surface of tongue,	Keeping food and water clean, discharge of faeces and other contaminated things at proper place, protecting the food from the flies, (vaccine A and B should be applied)	Full rest to the patient on fever, treatment with antibiotics, taking medicines under the doctor's supervision

4.	Polio	Virus- Polio virus Transmission - By air/ water	Effect on spinal cord, brain, legs, fever, contraction of muscles development of affected limbs are slow, headache, vomiting, pain in the neck, affected limb doesn't work due to damage of nervous system. Children of 6 months to 3 years may be affected by polio	By giving polio drops.	Operation as directed by the doctors, use of Jaipur foot, physiotherapy.
5.	Rabies (Hydrophobia)	Virus Transmission - Infected Dog, monkey, fox, jackal, whose saliva contains rabies virus	High fever, headache, restlessness, blockage of throat, hydrophobia	Control of stray dogs and cats, vaccination of pet and stray animals	Keep distance from infected animals. Washing the injured area with soap and water, use of anti-rabies injections under the guidance of doctor
6.	Chicken pox	Virus- <i>Varicella zoster</i> Transmission - By air/ direct contact	Light/ medium fever, backache, apprehension skin lesions on the whole body, first on neck, then on face and on the legs in the last, healing of lesions after 4-7 days.	Separating the patient from others, keeping his things isolated	Applying special ointment/ coconut oil on the lesions, using appropriate medicines
7.	Measles	Virus Transmission - By air	Red rashes on the body, itching, burning sensations.	Isolating the patient, keeping the things of the patient separately, vaccination	Applying antiseptic cream, using medicines under the guidance of the doctor.

8.	Cold	Virus- Rhinovirus Transmission – By Air	Infection in the mucous membrane of respiratory tubule, nose and throat, watery discharge from the eyes and nose.	Cover mouth while sneezing or coughing, use of clean handkerchief	Doctor's advice, increase in intake of vitamin C, taking steam
9.	Diarrhoea and dysentery	Bacteria- <i>E. coli</i> Transmission- By Toxic food / water	Secretion of a sticky substance with the faeces, vomiting, recurrent infection in intestine, frequent diarrhoea, dehydration, stomach ache, headache, weakness, intense thirst.	Keep the toilets clean, keep the eatables covered, maintain hygiene, use boiled and filtered drinking water, wash the fruits with hot water before use, don't let patient's faeces or vomit open.	ORS solution, electoral, medicines at doctor's advice.
10.	Malaria	Protozoa- Plasmodium Transmission- Female <i>Anopheles</i> mosquito	Fever with shivering, fever at regular intervals, body ache, intense thirst, redness on face, swelling in liver and spleen, weakness etc.	Don't allow water to stand near houses, killing of mosquitoes, fogging, use of mosquito net	Blood test and taking medicines on doctor's advice.



Fig 8.1 Patient suffering from Malaria and its treatment

8.2 Pathogenic worms

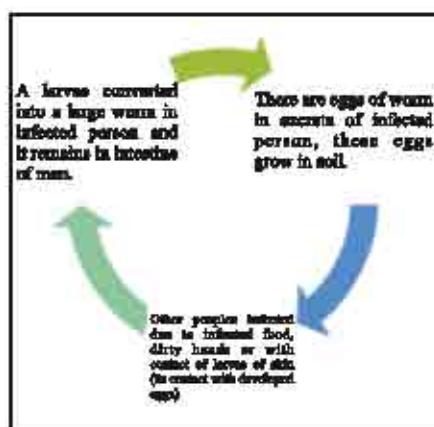


Fig 8.2 : Worm infection cycle

Harmful effects of worm on health of children:

- Tiredness and restlessness
- Loss of appetite
- Stomach ache, vomiting and diarrhoea
- Blood with stool
- Anemia
- Malnutrition
- Swelling in the stomach
- Continuous cough
- Loss of weight

Methods of prevention from worm infection:

- Wash hands with soap before meals and after toilet.
- Wash fruits and vegetables properly before use.
- Drink clean or boiled water.
- Wear shoes.
- Keep nails trimmed and clean.
- Open sanitation should be avoided. Use toilets.



Fig. 8.3 Method to prevent worm infection

- Keep the area near toilets clean.
- Make the children understand about benefits of worm control.

Benefits of worm control

- Children can go to school or AaganBadi daily.
- They remain active and their immunity increases.
- Their growth is rapid.

8.3 Some specific diseases:

Have a look at these also:

(1) Naru/ Bala - (Guinea worm)

It is caused by white thread like round worms which are 30 cm to 125 cm in length.

Transmission : By water

Microbe : By micro-organisms Cyclops which enter into the body through water.

Causes of disease: 1. Drinking uncleaned water.
2. Drinking impure water from wells, ponds or bavdi.
3. Drinking unfiltered water.

Symptoms : 1. Boils on skin of legs and hands.
2. Female worms grows in the muscles.
3. Severe pain at the site of boils.
4. Fever
5. If the worm is not taken out timely then it dies and releases a poisonous substance which causes nodes.

Prevention: 1. Drink filtered water.
2. Drink boiled water.

(2) Leprosy: By bacteria

Cause : Due to continuous contact with the patient.

Symptoms : 1. Rashes on the skin.
2. These rashes are senseless.
3. There is no feeling of injury, pain or burn on it.
4. If in excess, these organs do not work.
5. Deformity in the digits.

Prevention	<ol style="list-style-type: none">1. Keep the patient isolated.2. Keep their belongings also isolated.3. Wash their clothes with Dettol etc.
Treatment	<ol style="list-style-type: none">1. Surgery.2. Vaccination3. Use of artificial organ if the whole organ gets damaged.

(3) Acquired Immuno Deficiency Syndrome- AIDS

It is a deadly disease in which the immunity system of the patient is damaged due to which the capability of fighting against diseases is lost in the person.

Causes of diseases	<ol style="list-style-type: none">1. It is spread due to HIV virus.2. Infection from a infected person.3. By sexual intercourse.4. By Needle at the time of blood transfusing or taking injection.5. From infected blade and other sharp objects used by the barber.6. From infected mother to the growing baby in the womb.
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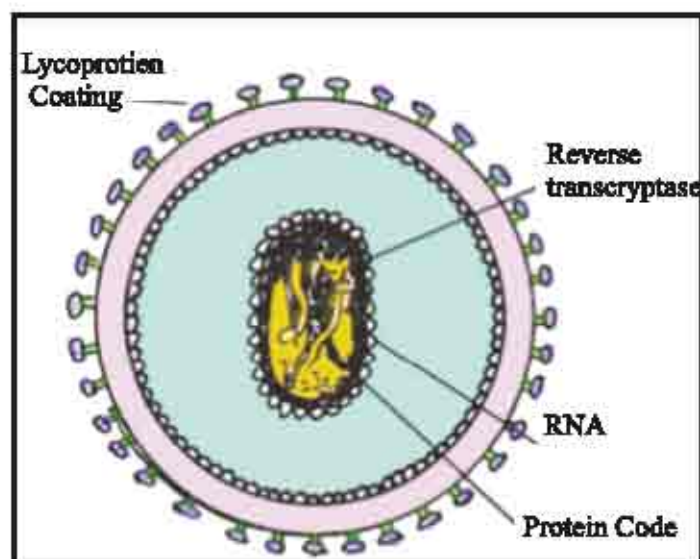


Fig 8.4 HIV virus

- Symptoms**
1. Swelling in the lymph glands.
 2. Decrease in the platelets count which results in fever and bleeding.
 3. Sweating at night.
 4. Weight loss.
 5. Loss of memory, difficulty in speaking and thinking ability.
 6. The risk of infection of other diseases increases due to weak immunity.
- Prevention:**
1. While shaving make it confirm that every time a new blade is used.
 2. HIV test before blood transfusion.
 3. Destroy the syringe after a single use.
 4. Living a controlled life style.
- Treatment:** Prevention is better cure of AIDS.

(4) Cancer

- Cause of disease:** It is a deadly disease.
1. Uncontrolled cell division.
 2. Rapid cell division.
- Symptoms:**
1. A tumour is formed at the site of uncontrolled cell division.
 2. The tumour is painless during initial stages.
 3. At later stages there is intolerable pain in the tumour.
 4. It could be in the tongue, throat, bone, blood, lungs, uterus etc.
- Prevention** If it is identified at earlier stages, then the life of patient could be saved by cobalt Radio Therapy and Chemotherapy or removing the cancerous organ if necessary.
- Treatment:** By surgery or chemotherapy of cobalt.

(5) Hepatitis A

- Cause of disease:** Virus
- Transmission By:** Water
- Symptoms:**
1. Weakening of liver.

- Prevention:
2. Water in the liver.
 3. Indigestion.
 1. Use boiled water.
 2. Vaccination.

Treatment: Treatment according to advise of doctor.

(6) Haemophilia

It is a genetic disease. Its genes are present on the sex chromosome X of males and are transmitted from one generation to another by females.

- Symptoms
1. Blood flows continuously even on a small injury.
 2. Blood doesn't clot.
 3. Results in death due to excessive blood loss.

Treatment: Blood transfusion on time.

(7) Food poisoning

Due to the microbial contaminated food.

Symptoms: Vomiting, nausea.

Causes: Microbes produces a poisonous substance in contaminated food, which makes the food poisonous

Prevention: Avoid contaminated food.

Treatment: Timely doctor's advice.

(8) Swine flu

- Causes of disease:
1. Coming in contact with the infected person.
 2. Untidy and infected hands.

- Symptoms:
1. Difficulty in throat (cough, sore throat)
 2. Cold
 3. Fever

- Prevention:
1. Wash your hands with soap again and again.
 2. Use handkerchief and tissue paper during sneezing and cough.
 3. Avoid going at the congested areas.
 4. Use mask.

Treatment: Temi flu tablets.



(9) Anemia

Causes of diseases: Due to deficiency of haemoglobin and blood.

Symptoms:

1. Whiteness of face.
2. Weakness.
3. Tiredness.
4. Vertigo/Giddiness.
5. White boils on the tongue.

Prevention Intake of nutritious food, sprouted grains, green vegetables, Anjeer, beet root, brinjal, sesame til etc. according to the body Requirement.

Treatment: Iron tablets.

Important:

Adolescent students are distributed iron tablets free of cost to prevent anemia. We should take these tablets as advised to avoid anemia.

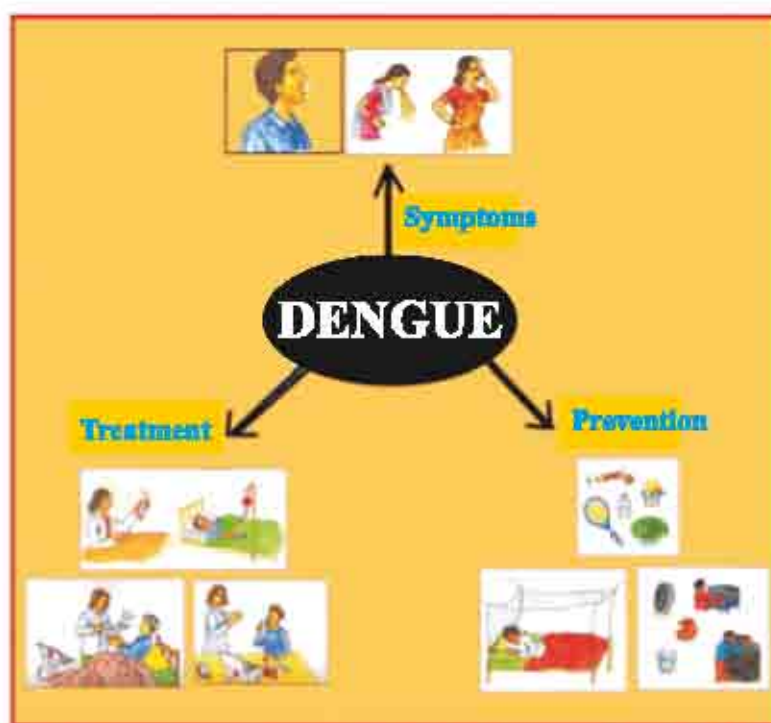
(10) Dengue

Fig 8.5 Symptoms, treatment and prevention of Dengue

What is Dengue fever?

It is a viral disease caused by one of the four types of dengue viruses.

Transmission:

It is transmitted through female *Aedes aegypti* mosquito from an infected person.

Causes:

1. Due to growth of mosquitoes in the dirty water.
2. Due to growth of insects.
3. Due to mosquito bite.
4. Due to decrease in blood count platelets.
5. Due to growth of mosquitoes in the cooler water.
6. Due to unhygienic conditions.
7. Due to deficiency of blood.

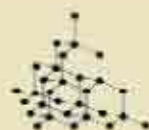
Symptoms :

After 3 to 14 days of infected mosquito bite, the symptoms Of Dengue fever appear. They are as follows:

1. Fever after shivering.
2. Headache.
3. Pain in the eyes.
4. Body ache or joint pain.
5. Loss of appetite.
6. Nausea, vomiting.
7. Diarrhoea.
8. Red rashes on the skin.
9. Bleeding from eyes and nose in severe conditions.

Prevention methods :

1. Do not allow water to stand in and surrounding your house.
2. If a container always has water, then wash it properly with soap and water so as to remove the mosquito eggs.
3. Spray insecticides in the house.
4. If not in use then drain out the cooler water and dry it completely.



5. Use net on the doors and windows.
6. Cover the body completely.
7. Use of mosquito net at night.
8. Use spray, cream etc.
9. Encourage others also to prevent mosquito spreading.
10. Keep your surroundings clean.
11. If anyone near you is found to be suffering from dengue, then provide this information to the medical department and Nagar Nigam so that they could immediately manage the mosquito control programmes.

Treatment:

1. Patient should take rest at the advice of doctor and should take medicine properly.
2. Patient should take sufficient food and water.
3. Regular check of platelets should be done.
4. Juice of leaves of papaya should be taken as it increases the platelets count.

Vaccination

Your mother must have vaccinated you in your childhood to keep you healthy. You might have seen Amitabh Bachchan propagating for pulse polio drops. Polio drops are a type of vaccine given to the children to prevent them from polio.

When we are ill, the pathogenic microbes enter into our body and antibodies produced in our body are not able to fight against them. This makes us ill. If these antibodies kill them then we do not become ill. Our body also remembers how to fight with a particular virus or bacteria.

Vaccine: If dead or inactive microbes are made to enter into our body, then the body cells produce antibodies to fight against them and destroys the microbes. These antibodies, from then always remain in the body and protects us from diseases. Vaccines function like this only. Many diseases like- cholera, T.B., small pox, hepatitis etc. can be prevented by vaccination.

Do you know-

Edward Jenner, in 1796, invented vaccine for small pox.

Come let us have a look:

National programmes for disease prevention:

- **National Malaria Eradication Program:** This program was started in 1953 at the national level. The main points of this program is fogging (spray of chemicals), identification of patients and distribution of medicines.
- **National Tuberculosis Eradication Program:** The main aim of this program is to establish T.B. centres at the national level, district centres and show centres . These centres are meant for vaccination of healthy person, identify the patients and provide proper treatment, advice and medical aid to them.
- **National Leprosy Eradication Program:** The main aim of this program is to identify initial stages of the disease in the patients and provide treatment to them. To manage rehabilitation, and livelihood for the patients.
- **National Pulse Polio Program:** The main aim of program is to make the country polio free. In this program children are regularly given polio drops.



Healthy children symbolise a prosperous nation



Smt. Savitri Bai Phule

Smt Savitri Bai Phule was born in the Nai village of Satara district of Maharashtra. She was married at the early stage of 9 years. At that time untouchability was prevailing in India. But still Savitri Phule managed to provide water to all from her well.

She strongly opposed the untouchability, casteism, etc. When plague was spread as an epidemic, Savitri Phule came forward to help and she organised various medical camps for four peoples.

She was one of the important female leaders of the modern India. She struggled for the rights of the women.

What have you learnt

- The diseases which are spread due to the contact with one another are called infectious diseases.
- The diseases which are not spread due to the contact with one another are called non-infectious diseases.
- Tuberculosis is caused by Myco-bacterium tuberculosis.
- Cholera is caused by Vibrio cholerae.
- Typhoid is caused by Salmonella typhii.
- Polio is caused by polio virus.
- Chicken pox is spread by Varicella zoster.
- Cold is spread by Rhinovirus.
- Malaria is spread by Plasmodium.
- The tablet of Albendazole is the treatment of worms.
- Nari disease is caused by white thread like round worms.
- AIDS is caused by Human Immuno Deficiency Virus.
- Haemophilia is a genetic disease. Its genes are present on the sex chromosome of males and are transmitted by females from one generation to another.
- Swine flu is an infectious disease, so the swine flu patient is kept isolated.
- Cancer is due to the uncontrolled cell division.
- An immediate medical help should be taken in case of food poisoning.
- There is deficiency of blood in anemia.
- Many diseases like: cholera, T.B., small pox, hepatitis etc. can be prevented by vaccination.

EXERCISES

Mark the correct option:

1. Leprosy is caused due to
 (a) Virus (b) Bacteria
 (b) Protozoa (d) Amoeba ()
2. An example of infectious disease is
 (a) Cholera (b) Anemia
 (b) Joint pain (d) Cancer ()
3. Virus that transmits chicken pox is
 (a) Varicella zoster (b) Rhinovirus
 (b) Plasmodium (d) E. Coli ()
4. In body anemia results in the deficiency of
 (a) Blood (b) Vitamin
 (b) Water (d) Mineral salts ()

Fill in the blanks

1. Polio is transmitted by----- and-----
2. -----Solution is used in diarrhoea and dysentery.
3. Cold is caused by-----
4. -----Tablet is helpful in treatment of round worm infection.

Match the following

- | Column I | Column II |
|-------------------|------------------|
| 1. Anemia | Albendazole |
| 2. Swine flu | Blood deficiency |
| 3. Worm infection | ORS solution |
| 4. Diarrhoea | Temiflu |

Short answer type questions

1. Draw the diagram of HIV .
2. What is the function of vaccine?
3. Write the symptoms of swine flu.
4. Write the methods of prevention of AIDS.
5. Write the symptoms of cancer.



Long answer type questions

1. Explain the cycle of worm infection. Write in detail the harmful effects of worm infection in children, methods of prevention and benefits of worm control in children.
2. Explain in detail the following
 - (1) Haemophilia
 - (2) Food poisoning
 - (2) Naru disease
 - (4) Anemia
 - (5) Leprosy

Activity work

1. List the infectious and specific diseases of your area. Prepare a chart of the causes of infectious and specific diseases, their symptoms and preventive measures. Paste the chart in your classroom.
2. List the efforts done in your area to make it free of diseases and also contribute in them
3. Observe the hospital of your area and list the instruments used over there along with their use.
4. With the help your teacher, make your area aware of vaccination programmes and also help in vaccination.
5. Visit your locality or village in groups and inform them about the methods of prevention of diseases that you studied.
6. Prepare a chart of elemental source and effect of food and also the diseases caused by their deficiency and excess. paste the chart in your class room.
7. Collect the information regarding the diseases published in the newspaper and magazines. Make a collage of it and paste in your school.
8. Participate actively in the awareness programme organised on World AIDS Day(1st December).
9. Conduct your duty in the AIDS awareness and prepare a note.

