

**SUBJECT- SCIENCE**

**CLASS - IX**

**CHAPTER -13**

**WHY DO WE FALL ILL ?**

**MODULE 1/3**



# HEALTH

- Health and disease in human communities are very complex issues, with many interconnected causes.
- The World Health Organization has defined health as a state of complete physical, mental and social well-being.
- Community health can be defined as "All the personal health along with the environmental services for the importance of health of community".



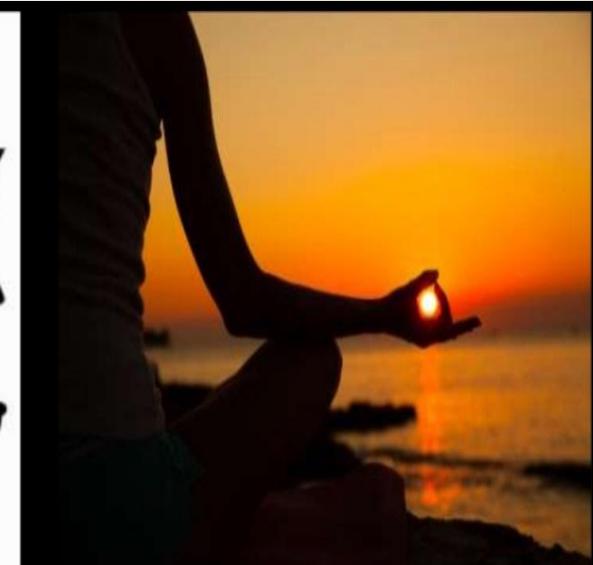
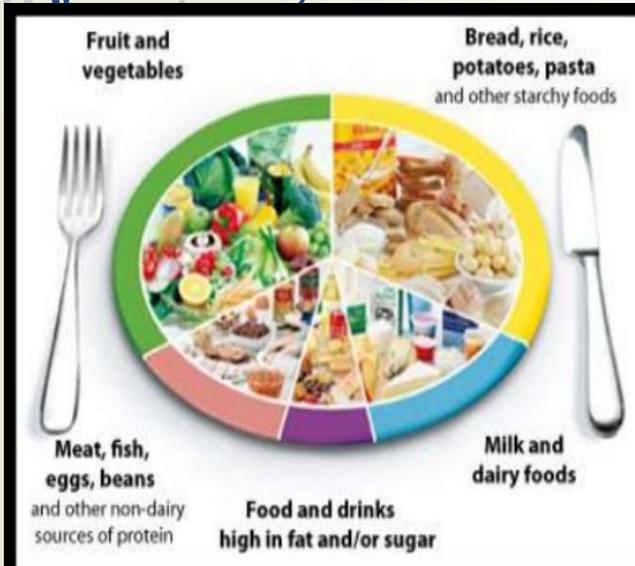
## **Some of the health services are given below:**

- **(i) Establishment of health care services like primary health centers, district hospitals, community health centers, medical colleges, all Indian institutes, regional hospitals etc.**
- **(ii) Provision of safe drinking water and proper disposal of garbage.**
- **(iii) Prevention of harmful insect breeding sites.**
- **(iv) Management of different types of environmental pollution by Central and State Pollution Control Boards.**
- **(v) Preventive vaccinations against number of diseases like tuberculosis, diphtheria, whooping cough, tetanus, measles, hepatitis, etc.**
- **(vi) Provision of family planning advices and services.**
- **(vii) Provision of medical care to school going children.**
- **(viii) Prevention of food adulteration.**
- **(ix) Health education.**

# CONDITIONS ESSENTIAL FOR GOOD HEALTH

There are several conditions which have to be fulfilled for good health. The important ones are

- (i) Nutrition,
- (ii) Proper habits, and
- (iii) Exercise and relaxation.



## **PERSONAL AND COMMUNITY ISSUES BOTH MATTER FOR HEALTH**

Health is a state of physical, mental and social well being. The conditions necessary for good health are

➤ **i) Good physical and social environment.**

Good physical and social environment includes clean surroundings, good sanitation, proper garbage disposal and clean drinking water.

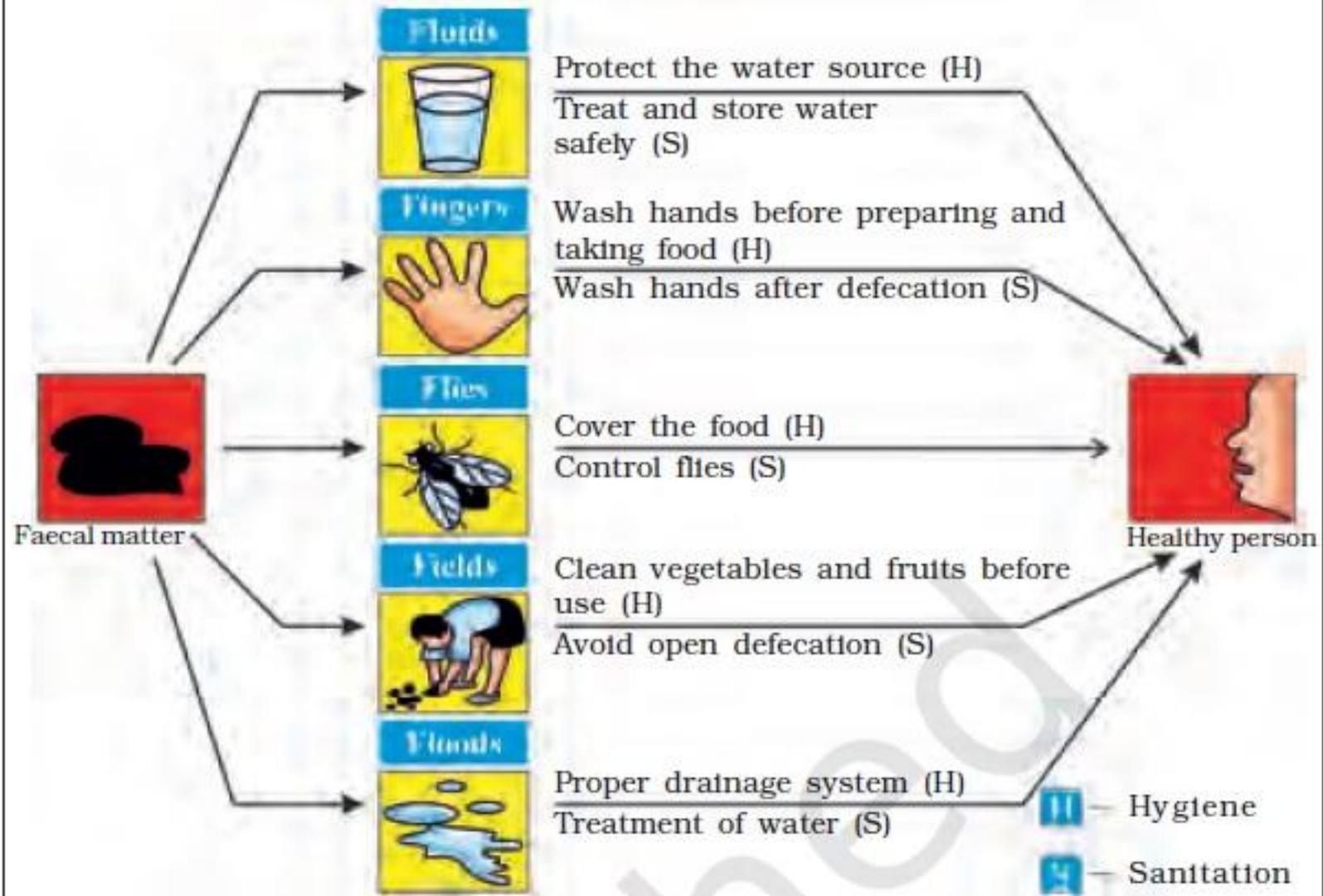
➤ **ii) Good economic conditions.**

Good economic conditions includes job opportunities for all for earning to have nutritious food and to lead a healthy life.

➤ **iii) Social equality and harmony.**

Social equality and harmony are necessary for a healthy and peaceful life

## The Five 'F's — What is to be done?



**Prevention of Transmission of Diseases by Maintaining Sanitation and Hygiene**

## **DISTINCTIONS BETWEEN 'HEALTHY' AND 'DISEASE-FREE'**

<b>Healthy</b>	<b>Disease free</b>
<b>It is a state of physical, mental and social well being.</b>	<b>It is a state of absence from diseases.</b>
<b>It refers to the individual, physical and social environment.</b>	<b>It refers only to the individual.</b>
<b>The individual has good health.</b>	<b>The individual may have good health or poor health.</b>

## Causes of diseases :

- It will be obvious that all diseases will have **immediate causes and contributory causes**. Also, most diseases will have many causes, rather than one single cause.
- Diseases are caused by :-
  - i) Pathogens like virus, bacteria, fungi, protozoans or worms.
  - ii) Poor health and under nourishment.
  - iii) Malfunctioning of body parts.
  - iv) Environmental pollution.
  - v) Genetic disorders.



# ACUTE AND CHRONIC DISEASES

When a person is affected by a disease either the normal functioning or the appearance of one or more systems of the body changes for the worse. These changes give rise to signs of the disease called **symptoms**.

On the basis of the symptoms the physicians look for the **signs** of a particular disease and conduct tests to confirm the disease.

➤ **Types of diseases :- Diseases are of different types.**

➤ **i) Acute diseases :- are diseases which last only for a short period of time and does not have long term effect on health.**

➤ **Eg:- cold, cough, typhoid, cholera etc.**

➤ **ii) Chronic disease :- are diseases which lasts for a long time and has long term drastic effect on health.**

➤ **Eg :- diabetes, tuberculosis, elephantiasis, arthritis, cancer etc.**

# INFECTIOUS AND NON-INFECTIOUS CAUSES

- ▶ Infectious diseases (Communicable diseases) :- are diseases which spread from an infected person to a healthy person through air, water, food, vectors, physical contact or sexual contact.

Eg :- common cold, chicken pox, mumps, measles, tuberculosis, AIDS etc.

- ▶ Non-infectious diseases (Non-communicable diseases) :- are diseases which are not spread from an infected person to a healthy person.

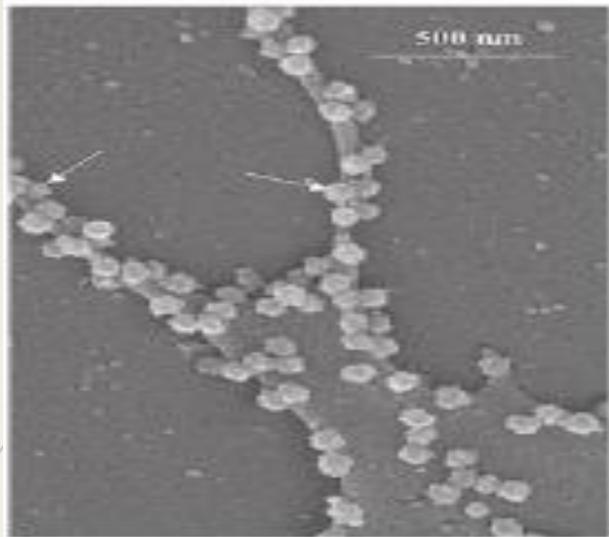
Eg :- Beri Beri, rickets, scurvy, night blindness, diabetes, cancer, high blood pressure etc.

# Infectious diseases :-

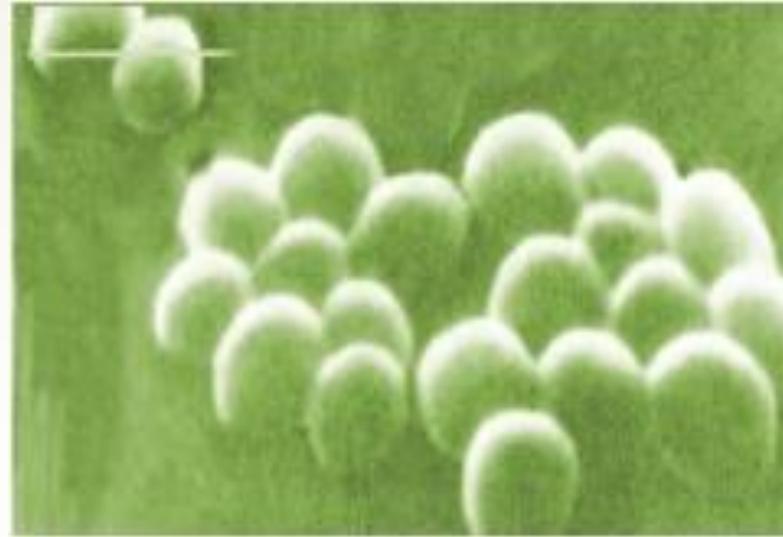
## ➤ Infectious agents :-

The agents which cause infectious diseases are called pathogens. These are Viruses, Bacteria, Fungi, Protozoans and worms.

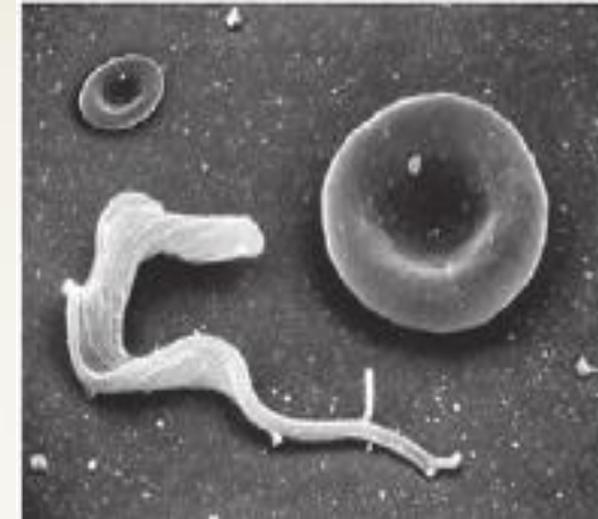
<b>Sl.No.</b>	<b>Infectious agents</b>	<b>Diseases</b>
1.	Viruses	Common cold, Influenza, Measles, Mumps, Chicken pox, AIDS, Hepatitis-B etc.
2.	Bacteria	Cholera, Typhoid, Tuberculosis, Tetanus, Anthrax, Food poisoning etc.
3.	Fungi	Skin infections.
4.	Protozoans	Malaria, Kala-azar, Amoebic dysentery, Sleeping sickness.
5.	Worms	Intestinal infections, Elephantiasis.



**(a)**



**(b)**



**(c)**

**(a):** Picture of SARS viruses coming out of the surface of an infected cell. The white scale line represents 500 nanometres, which is half a micrometre, which is one- thousandth of a millimetre. The scale line gives us an idea of how small the things we are looking at are.

**(b):** Picture of staphylococci, the bacteria which can cause acne. The scale of the image is indicated by the line at top left, which is 5 micrometres long.

**(c):** Picture of Trypanosoma, the protozoan organism responsible for sleeping sickness. The organism is lying next to a saucer-shaped red blood cell to give an idea of the scale.



(d)

**(d):** Picture of *Leishmania*, the protozoan organism that causes kala-azar. The organisms are oval-shaped, and each has one long whip-like structure. One organism (arrow) is dividing, while a cell of the immune system (lower right) has gripped on the two whips of the dividing organism and is sending cell processes up to eat up the organism. The immune cell is about ten micrometres in diameter



(e)

**(e):** Picture of an adult roundworm (*Ascaris lumbricoides*) from the small intestine. The ruler next to it shows four centimetres to give us an idea of the scale.

## PEPTIC ULCERS AND THE NOBEL PRIZE

For many years, everybody used to think that peptic ulcers, which cause acidity– related pain and bleeding in the stomach and duodenum, were because of lifestyle reasons. Everybody thought that a stressful life led to a lot of acid secretion in the stomach, and eventually caused peptic ulcers.

Then two Australians made a discovery that a bacterium, **Helicobacter pylori**, was responsible for peptic ulcers. Robin Warren (born 1937), a pathologist from Perth, Australia, saw these small curved bacteria in the lower part of the stomach in many patients. He noticed that signs of inflammation were always present around these bacteria. Barry Marshall (born 1951), a young clinical fellow, became interested in Warren's findings and succeeded in cultivating the bacteria from these sources.

In treatment studies, **Marshall and Warren** showed that patients could be cured of peptic ulcer only when the bacteria were killed off from the stomach. Thanks to his pioneering discovery by Marshall and Warren, peptic ulcer disease is no longer a chronic, frequently disabling condition, but a disease that can be cured by a short period of treatment with antibiotics. For this achievement, Marshall and Warren (seen in the picture) received the Nobel prize for physiology and medicine in 2005.



## **QUESTIONS -**

**1. Classify the following diseases as infectious or non-infectious.**

- (a) AIDS    (b) Tuberculosis    (c) Cholera    (d) High blood pressure  
(e) Heart disease    (f) Pneumonia    (g) Cancer**

**2. Fill in the blanks**

**(a) ——— disease continues for many days and causes——— on body.**

**(b) ———disease continues for a few days and causes no longer term effect on body.**

**(c) ——— is defined as physical, mental and social well-being and comfort.**

**(d) Common cold is——— disease.**

**(e) Many skin diseases are caused by———.**

**3. Differentiate between Acute Diseases and Chronic Diseases.**



**Thank  
You!!!**