

Science Class 9 Notes – Why Do We Fall Ill

1. The significance of health: The word health gives us an idea of “being well”. Health is a state of physical, mental and social well being.

2. Distinction between “Healthy” and “Disease-free” condition : The word disease literally means being uncomfortable due to a particular cause. Poor health does not always mean that we are suffering from a particular disease. Our health is affected by our physical, mental and social condition. But every disease has a particular cause.

There are various organ systems in our body which is made of organs that carry out specific functions. In case of any disease, the functioning or appearance of one or more systems of the body changes which give, rise to symptoms of the disease.

(i) Acute diseases: Disease that last for only very short period of time is called acute disease, e.g. Common cold.

(ii) Chronic diseases: The diseases which last for a long time as much as lifetime are chronic disease, e.g. Elephantiasis.

3. All diseases have immediate and contributory causes.

Immediate causes of disease are of two types:

(i) Infectious causes: These include microbes or micro-organisms. Diseases where microbes are immediate causes are called infectious diseases,

(ii) Non infectious causes: The immediate causes of disease is not external (microbes). The causes are internal and non-infectious. Such diseases are called non-infectious diseases, e.g. Cancer is caused due to genetic abnormalities.

The method of treatment is different for infectious and non-infectious diseases.

4. Infectious diseases and agents: Disease causing organisms include viruses, bacteria, fungi, protozoans, worms etc.

5. Means of spread : Infectious diseases are also called communicable diseases. Disease causing microbes could spread through air, water, sexual contact, casual physical contact (like handshakes, hugs, wrestling etc), blood-to-blood contact, and from infected mother to her baby.

6. The term antibiotics was coined by Waksman. The first antibiotic penicillin was extracted from fungi *Penicillium notatum* by Alexander Flemming 1944.

7. Principles of prevention: Prevention of diseases is better than their cure. Two ways of prevention are general, and specific ways of prevention.

(i) General ways: General ways involve preventing exposure. For air-borne microbes we can prevent exposure by avoiding overcrowded places. For water-borne microbes we can prevent exposure by providing safe drinking water. For vector-borne infections we can provide clean environment. Our immune system also plays an important role in killing off microbes. So, proper nourishment is necessary for better functioning of our immune system. This is also a kind of prevention.

(ii) Specific ways: Suffering from a disease once is a means of preventing subsequent attacks by the same pathogen. In case of any infection for the first time our immune system responds against it specifically. Next time when the same microbe enters our body the immune system responds with greater vigour which eliminates the infection more quickly than the first time. So, immunisation is done to prevent diseases.

Vaccines to prevent many diseases are now available for a whole range of diseases of the public health programme of childhood immunisation for preventing infectious diseases is run by government. Children are vaccinated against tetanus, diphtheria, whooping cough, measles, polio etc.