

Complete BIOLOGY

NEET · CBSE eBOOKS CLASS 11&12th

Learning Inquiry 8929 803 804

CLASS 12th

Human Health and Disease



01. Health

The term health is very frequently used by every body. Health does not simply mean 'absence of disease' or '*physical fitness*'.

It could be defined as a state of complete **physical**, **mental** and **social well** being. Of course, health is affected by

- (i) **Genetic disorders** : Deficiencies with which a child is born and deficiencies/defects which the child inherits from parents from birth.
- (ii) Infections and
- (iii) Life style including food and water we take, rest and exercise we give to our bodies, habits that we have or lack etc.

Disease

When the functioning of one or more organs or systems of the body is adversely affected, characterised by various signs and symptoms, we say, that we are not healthy, i.e., we have a **disease**. Disease can be broadly classified into two categories:

- (i) **Congenital Diseases** : These diseases occur since birth and may result from metabolic disorder or defect in development.
- (ii) Acquired diseases : These diseases develop after birth and can be divided into two main categories :
 - (a) **Infectious diseases/Communicable diseases** : Diseases which are easily transmitted from one person to another are called as infectious diseases. Infectious diseases are very common and some of the infectious diseases like AIDS are fatal.
 - (b) Non-infectious diseases/Non-communicable diseases : These diseases are not spread to other persons. Among non-infectious diseases, cancer is the major cause of death. Drug and alcohol abuse also affect our health adversely.

02. Pathogen

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A wide range of organisms could diseases in man. Such disease causing organisms are called **pathogens** e.g., bacteria, viruses, fungi, protozoans, helminths etc.

Most parasites are therefore pathogens as they cause harm to the host body by living in or on them. The pathogens can enter our body by various means, multiply and interfere with normal vital activities, resulting in morphological and functional damage. Pathogens have to adapt to life within the environment of the host. For example, the pathogens that enter the gut must know a way of surviving in the stomach at low pH and resisting the various digestive anzymes.

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Human Health and Disease

| Common human diseases : | | | | | | |
|-------------------------|----------------------|---------------------------------------|--|--|--|--|
| Disease (s) | Pathogens | Symptoms | | | | |
| (A) Bacterial diseases | | | | | | |
| | | Chronic cough, fever, weakness, | | | | |
| | Mycobacterium | bloody sputum, breathlessness | | | | |
| (i) Tuberculosis | tuberculosis Mode of | treatment - | | | | |
| (I) I uberculosis | injection – Droplet | DOTS (Direct observation treatment | | | | |
| | injection | short course) Investigation - Mantoux | | | | |
| | | test | | | | |



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| (I) Diphtheria | | Corynebacterium diphtheriae | | HIgh grade fever, difficulty in breathing (Investigation – Schick test) | | |
|----------------|---|--|---|---|--|--|
| (i) | Whooping cough (Pertussis) (100 days cough) | | Bordetella pertussis | | Presistent large bouts of cough | |
| (ii) | • | | Vibrio cholerae | | Diarrhoea, dehydration, vomiting | |
| (iii) | i) Pneumonia | | Streptococcus pneumoniae (Earlier Diplococcus pneumoniae) | | Infection in lungs, difficulty in breathing, high fever | |
| (iv) | v) Tetanus (Lock jaw) | | Clostridium tetani | | Sustained contraction of body muscles, spasm, lock jaw, unconsciousness, opisthotonus, Risus Sardonicus – Streching of facial muscles | |
| (v) | Leprosy or Hanson's disease | | Mycobacterium leprae | | Patches on skin, ulcer and nodules formation in skin and nerves, deformities, ulceration and wasting of fingers and toes | |
| (vi) |) Typhoid fever | | Salmonella typhi | | High Fever, loss of appetite, intestinal ulcers, bradycardia and perforation Detect by widal test | |
| (vii) | ii) Plague (Black death) | | Yersinia pestis (Earlier name-Pasteurella pestis) | | High fever, headache, enlargement of axillary lymph nodes, unconsciousness | |
| (B) ' | Viral diseases | | I | | | |
| (i) | Polio or poliomyelitis | | Polio virus (Group-Picoma virus) | | Fever, headache, paralysis | |
| (ii) | Influenza | Orthomyxovirus | | Sudden fever after headache, nasal discharge | | |
| (iii) | Measles | Paramyxovirus | | High grade fever, white-brown patches on body and blisters | | |
| (iv) | Chicken pox | Pox virus (Varicella-herpes virus) | | Rashes on body with fever (Dew drop like appearance of vesicle) | | |
| (v) | Mumps | | Para myxovirus | | Painful swelling in parotid glad | |
| (vi) | Dengue fever or Break bone fever | (Arbovirus (Flavi)) Vector-Aedes agypti | | Fever, pain in muscles and joints haemorrhagic condition in body (Torniquet test) | | |
| (vii) | Chikun gunya | Togay | Togavirus (Flavi) | | Fever, joint pain, arthritis | |
| (viii) | Rabies (hydrophobia) | Rabdo virus or street virus (Vector-Rabbit, dog, cat and wild animals) | | Affect $\frac{\hbar}{L}$ – Madness, hydrophobia due to laryngeal spasm and 100% death after symptoms. For prevention – Human diploid cell culture vaccine. | | |



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