

WHY DO WE FALL ILL?

Health and **disease** in human communities are very complex issues with many interconnected causes.

Health

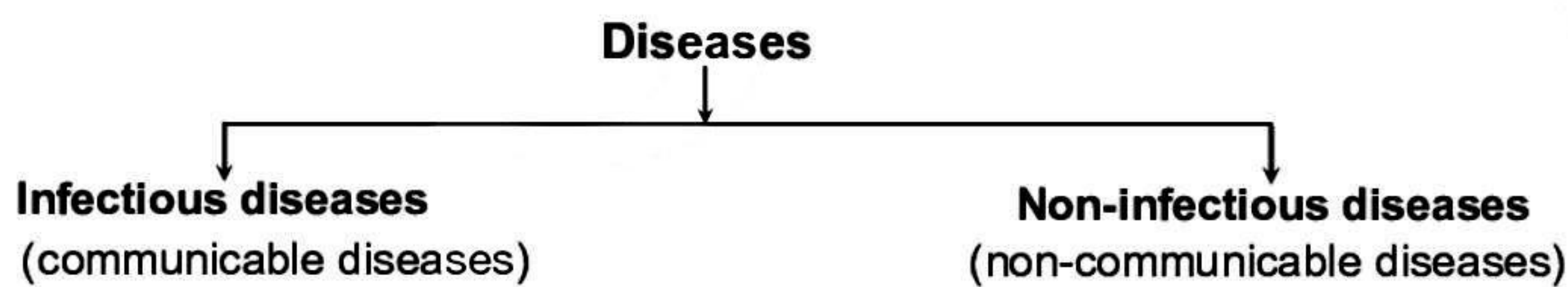
The term health always implies the idea of being well. It is generally used in the context of an individual being healthy or not. However, it is applied in other contexts too.

Disease

The term **disease** literally means '*without ease*' or *being uncomfortable*. It is just the opposite of health. Normally, *any physical or functional change from the normal state that causes discomfort, or disability, or impairs the health of a living organism is called a disease*. According to other definition, *malfunctioning of the body or some part with specific symptoms is termed a disease*.

Types of Diseases

Depending upon the duration for which a disease persists, diseases are grouped as **acute diseases** and **chronic diseases**.



Difference between Infectious and non-infectious diseases

Infectious diseases	Non-infectious diseases
1. Diseases that can be spread from diseased person to healthy person.	1. Diseases that cannot be spread from diseased person to healthy person. These diseases remain confined to the person only.
2. These diseases can be transmitted from one person to another by means of air, water, food, contact and insects.	2. These diseases do not get transmitted through air, water, food and contact.
3. These diseases are caused by infectious agents, mostly microorganisms like bacteria, viruses, protozoans and fungi.	3. These diseases are due to many causes, but they are not external causes like microbes. Instead, these are mostly internal, non-infectious causes like malfunctioning of body organs, allergies, cancer or nutritional disorders.
Examples : Viral diseases like influenza, hepatitis etc. Bacterial diseases like tuberculosis, cholera etc.	Examples : High blood pressure, anaemia, cancer, scurvy etc.

Some common diseases caused by these infectious agents are given below in the table :

Infectious Agents	Diseases
I. Virus	1. Common cold 2. Influenza 3. Dengue fever 4. Poliomyelitis 5. Hepatitis-B 6. AIDS (Acquired Immuno Deficiency Syndrome) 7. Chicken pox 8. Measles 9. Mumps
II. Bacteria	1. Typhoid fever 2. Cholera 3. Tuberculosis 4. Anthrax 5. Tetanus 6. Food poisoning
III. Fungi	1. Many common skin infections
IV. Protozoan	1. Malaria 2. Kala-azar 3. Amoebic dysentery 4. Sleeping sickness
V. Worm	1. Intestinal worm infections 2. Elephantiasis

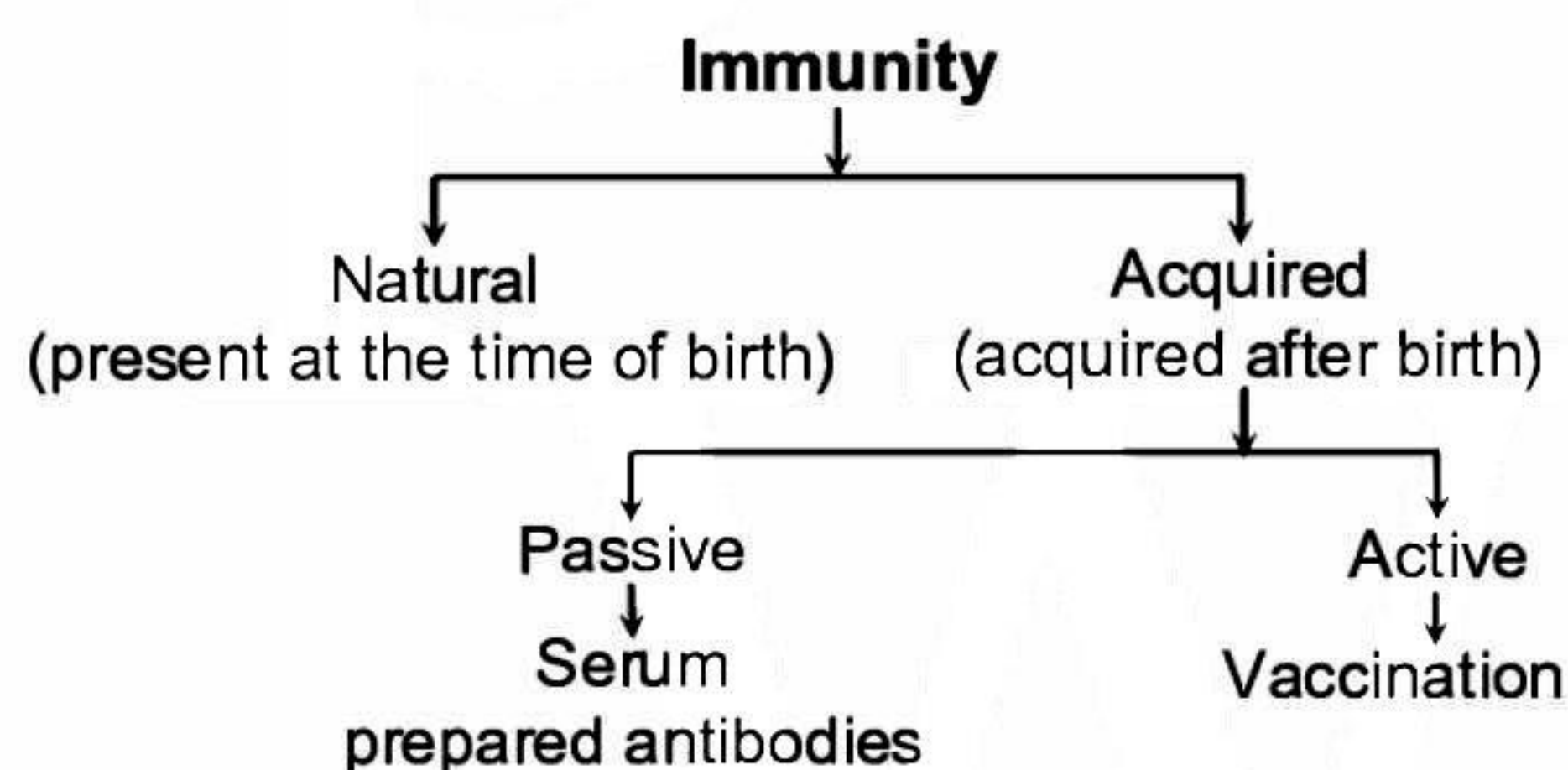
Signs and Symptoms

The signs and symptoms of a disease generally depend on the tissue or organ targeted by the disease-causing microbes.

Severity of the disease manifestations depends on the number of microbes present in the body.

Point of entry of microbe in the body	Organ the microbe infects	Examples of disease caused
1. Through nose from air	• Likely to go to lungs	• Bacteria causing tuberculosis enter through nose by the droplet infection.
2. Through mouth (by food or water)	• Likely to go to alimentary canal or gut	• Bacteria causing typhoid infect the gut-lining

3. Through contact	sexual	- Some can go to liver also - Likely to go to sexual organs	- Jaundice is a water-borne disease, caused by a virus that infects the liver. - AIDS is caused by HIV that comes into the body through sexual contact. It then spreads to lymph nodes of the body and weakens the body immunity.
4. Through bite (from skin to blood)	mosquito	Reaches blood directly	- Malaria is caused by malarial parasite <i>Plasmodium</i> that enters the blood through mosquito bite (female Anopheles mosquito). From there, it enters the red blood cells and liver cells and infects them. - Japanese encephalitis or brain fever is caused by a virus that also enters through the mosquito bite. It then goes on to infect the brain cells.



Some common diseases, their causative organisms, Symptoms and ways of Prevention are tabulated below :

Name of the disease	Name of causative organism	Symptoms	Prevention
1. Typhoid	Bacteria : <i>Salmonella typhi</i>	Headache, fever abdominal pain weakness.	Community sanitation, use of boiled water, properly cooked food.
2. Diarrhoea	Bacteria : <i>Staphylococcus, clostridium, Escherichia coli</i> etc.	Frequent discharge of semi-solid/liquid faecal matter, abdominal cramps nausea, vomiting, dehydration	Proper covering of eatables, use of boiled water, underground sewers for disposal of human excreta.
3. Malaria	Protozoa : <i>Plasmodium</i>	Tiredness, headache, muscular pain,	Use of insect repellents to prevent mosquito bite,

	(transmitted by female <i>Anopheles</i> mosquito)	paroxysms of chills, fever and sweating, enlarged liver and spleen.	periodic spray of insecticides.
4. Hepatitis	Virus : Hepatitis virus	Fever, loss of appetite, nausea, vomiting jaundice.	Eating hygienic food, drinking disinfected water, using disposable syringes.
5. Rabies (Hydrophobia)	Virus : Rabies virus (<i>Lyssavirus</i>)	Severe headache, high fever, painful contraction of muscles of throat and chest, restlessness, inability to swallow even liquids.	Pet dogs and cats should be vaccinated. If the dog who has bitten someone develops rabies, then person should be given anti-rabies vaccine.
6. Tuberculosis (T.B.)	Bacteria : <i>Mycobacterium tuberculosis</i>	Fever, cough, blood stained sputum, pain in chest, weight-loss	Sanitary surroundings, immunization with BCG vaccine, pasteurization of milk.
7. Poliomyelitis or Polio	Virus : Polio virus	Headache and fever, stiffness of neck, paralysis of limbs.	Immunization with oral polio vaccine provides immunity against polio.