

# Diseases caused by Microorganisms

**Table 7.1. Bacterial diseases in human beings**

S. No	Diseases	Causative agent	Site of infection	Mode of transmission	Symptoms
1	Shigellosis (Bacillary dysentery)	<i>Shigella sp.</i>	Intestine	Food and water contaminated by faeces / faecal oral route	Abdominal pain, dehydration, blood and mucus in the stools
2	Bubonic plague ( Black death)	<i>Yersinia pestis</i>	Lymph nodes	Rat flea vector- <i>Xenopsylla cheopis</i>	Fever, headache, and swollen lymph nodes
3	Diphtheria	<i>Corynebacterium diphtheriae</i>	Larynx, skin, nasal and genital passage	Droplet infection	Fever, sore throat, hoarseness and difficulty in breathing
4	Cholera	<i>Vibrio cholerae</i>	Intestine	Contaminated food and water/ faecal oral route	Severe diarrhoea and dehydration
5	Tetanus ( Lock jaw)	<i>Clostridium tetani</i>	Spasm of muscles	Through wound infection	Rigidity of jaw muscle, increased heart beat rate and spasm of the muscles of the jaw and face
6	Typhoid ( Enteric fever)	<i>Salmonella typhi</i>	Intestine	Through contaminated food and water	Headache, abdominal discomfort, fever and diarrhoea
7	Pneumonia	<i>Streptococcus pneumoniae</i>	Lungs	Droplet infection	Fever, cough, painful breathing and brown sputum
8	Tuberculosis	<i>Mycobacterium tuberculosis</i>	Lungs	Droplet infection	Thick mucopurulant nasal discharge

**Table: 7.2 Viral diseases in human beings**

S. No	Diseases	Causative agent	Site of infection	Mode of transmission	Symptoms
1	Common cold	<i>Rhino viruses</i>	Respiratory tract	Droplet infection	Nasal congestion and discharge, sore throat, cough and headache
2	Mumps	<i>Mumps virus (RNA virus)</i> <i>Paramyxo virus</i>	Salivary glands	Saliva and droplet infection	Enlargement of the parotid glands
3	Measles	<i>Rubella virus (RNA virus)</i> , <i>Paramyxo virus</i>	Skin and respiratory tract	Droplet infection	Sore throat, running nose, cough and fever. reddish rashes on the skin, neck and ears.
4	Viral hepatitis	<i>Hepatitis - B virus</i>	Liver	Parenteral route, blood transfusion	Liver damage, jaundice, nausea, yellowish eyes, fever and pain in the abdomen
5	Chicken pox	<i>Varicella -Zoster virus (DNA Virus )</i>	Respiratory tract, skin and nervous system	Droplet infection and direct contact	Mild fever with itchy skin, rash and blisters
6	Poliomyelitis	<i>Polio virus (RNA virus)</i>	Intestine, brain, spinal cord	Droplet infection through faecal oral route	Fever, muscular stiffness and weakness, paralysis and respiratory failure
7	Dengue fever (Break bone fever)	<i>Dengue virus or Flavi virus (DENV 1-4 virus)</i>	Skin and blood	Mosquito vector <i>Aedes aegypti</i>	Severe flu like illness with a sudden onset of fever and painful headache, muscle and joint pain.
8	Chikungunya	<i>Alpha virus (Toga virus)</i>	Nervous system	Mosquito vector <i>Aedes aegypti</i>	Fever and joint pain, headache and joint swelling

**HIV- Retrovirus  
Covid19-Coronavirus**

# Disease caused by protozoa to human beings

Disease	Casual agents	Organs affected	vector
1. Amoebiasis	Entamoeba histolytica	Intestine, Liver	Water
2. African Sleeping Sickness	Trypanosoma brucei	Blood, Brain	Tsetse fly (Glossina)
3. Leishmaniasis (Kala - azar)	Leishmania donovani	White Blood Cells, Skin, Intestine	Sand fly (Phlebotomus)
4. Malaria	Plasmodium spp.	Liver, Red Blood Cells	Mosquito (anopheles)
5. Babesiosis	Babesia microti	Red Blood Cells	Tick (Ixode)

**TABLE 28-2 Summary of Human Fungal Diseases**

Disease	Symptoms	Fungus	Route of transmission
Athlete's foot	fluid-filled blisters, scaly skin, itching	<i>Trichophyton</i> species (Ascomycete) or <i>Epidermophyton</i> species	contact with skin lesions or contaminated floors
Ringworm	ring-shaped skin lesions	<i>Microsporum</i> , <i>Trichophyton</i> (Ascomycetes)	contact with skin lesions, contaminated floors, or contaminated objects
Tinea cruris (jock itch)	intense itching, ring-shaped lesions	<i>Microsporum</i> , <i>Trichophyton</i> (Ascomycetes)	contact with skin lesions, contaminated floors, or contaminated objects
Histoplasmosis	fever, chills, headache, body aches, chest pains, nonproductive cough	<i>Histoplasma capsulatum</i> (Ascomycete)	inhalation of airborne conidia

**Table 1.8: Plant diseases caused by Bacteria**

S.No.	Name of the Host	Name of the disease	Name of the pathogen
1	Rice	Bacterial blight	<i>Xanthomonas oryzae</i>
2	Apple	Fire blight	<i>Erwinia amylovora</i>
3	Carrot	Soft rot	<i>Erwinia caratovora</i>
4	Citrus	Citrus canker	<i>Xanthomonas citri</i>
5	Cotton	Angular leaf spot	<i>Xanthomonas malvacearum</i>
6	Potato	Ring rot	<i>Clavibacter michiganensis</i> subsp. <i>sepedonicus</i>
7	Potato	Scab	<i>Streptomyces scabies</i>

Fungal pathogens	Disease	Crops
<i>Alternaria triticina</i>	Leaf blight	Wheat
<i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i>	Fusarium wilt	Tomato
<i>Rhizoctonia solani</i>	Sheath blight	Rice
<i>Sclerotium rolfsii</i>	Wilt	Potato
<i>Pythium aphanidermatum</i>	Damping off	Tomato
<i>Sclerotinia sclerotiorum</i>	Head rot	Sunflower
<i>Alternaria solani</i>	Early blight	tomato, potato
<i>Alternaria alternate</i> f. sp. <i>lycopersici</i>	Early blight	Tomato
<i>Ceratocystis paradoxa</i>	Pine apple disease	Sugarcane
<i>Phytophthora infestans</i>	Late blight	Potato

# Viral diseases in Plants

- 1      *Tobacco mosaic virus (TMV)*
- 2      *Tomato spotted wilt virus (TSWV)*
- 3      *Tomato yellow leaf curl virus (TYLCV)*
- 4      *Cucumber mosaic virus (CMV)*
- 5      *Potato virus Y (PVY)*
- 6      *Cauliflower mosaic virus (CaMV)*
- 7      *African cassava mosaic virus (ACMV)*
- 8      *Plum pox virus (PPV)*
- 9      *Brome mosaic virus (BMV)*
- 10     *Potato virus X (PVX)*