

## **COMMON COMMUNICABLE DISEASES**

A communicable disease is a disease that spreads from one person or animal to another. Pathogens such as viruses, bacteria, and fungi cause these diseases. Communicable diseases can transmit through contact with bodily fluids, insect bites, contaminated surfaces, water, and foods, or through the air.

A communicable disease is any disease that passes between people or animals. People sometimes refer to communicable diseases as “infectious” or “transmissible” diseases.

Pathogens, including bacteria, viruses, fungi, and protozoa, cause communicable diseases.

### **Symptoms**

Once a pathogen has entered a person’s body, it often will begin replicating. The individual may then begin to experience symptoms.

Symptoms will vary depending on the disease. Some people will not experience any symptoms. However, they can still transmit the pathogen.

Some symptoms are a direct result of the pathogen damaging the body’s cells. Others are due to the body’s immune response to the infection.

Some communicable diseases may be mild, and symptoms pass after a few days. However, some can be serious and potentially life threatening. Symptom severity may vary depending on a person’s overall health and immune function.

## Types and symptoms

Four main types of pathogens cause infection: Viruses, bacteria, fungi, and protozoa.

**Viruses:** Viruses are tiny pathogens that contain genetic material. Unlike other pathogens, they lack the complex structure of a cell. To replicate, they must enter the cells of other living beings. Once inside, they use the cell's machinery to make copies of themselves.

**Bacteria:** Bacteria are microscopic, single-celled organisms. They exist in almost every environment on earth, including inside the human body. Many bacteria are harmless, and some help the body to function. However, bacteria can also cause infections that damage the body.

**Fungi:** Fungi are a type of organism that includes yeasts, molds, and mushrooms. There are millions of different fungi. However, only around 300 cause harmful illnesses. Fungal infections can occur anywhere in the body. However, they commonly affect the skin and mucous membranes.

**Protozoa:** Protozoa are microscopic organisms that typically consist of a single cell. Some protozoa are parasitic, meaning they live on or inside another organism and use the organism's nutrients for their own survival. Parasitic protozoa can cause various diseases.

**Common communicable diseases:** Common viral, bacterial, fungal, and protozoa diseases include:

**Rhinoviruses:** Rhinoviruses are a group of viruses that are the most common because of the common cold. Symptoms of a cold may include:

- a stuffy or runny nose
- sore throat

- headache

A person can catch a rhinovirus by inhaling contaminated droplets from the cough or sneeze of another person. Similarly, rhinoviruses are spread by people touching their nose, eyes, or mouth after touching items or surfaces that have come into contact with the virus.

**Coronaviruses:** Coronaviruses are a large group of viruses that affect the respiratory system. This family includes the SARS-CoV-2 virus. Some coronaviruses can cause common cold and flu symptoms, while others can cause more severe outcomes.

**Influenza:** Influenza viruses are infections that attack the respiratory system. Some potential symptoms include:

- fever or chills
- stuffy or runny nose
- sore throat
- cough
- headaches
- muscle or body aches
- fatigue

A person can catch influenza viruses in the same way they may catch rhinoviruses.

**HIV:** HIV attacks the immune system of its host. This makes the person vulnerable to other infections and diseases. A person can contract HIV as a result of contact with blood or other body fluids containing the virus. The symptoms of HIV may develop gradually and in stages. They can include:

- fever
- chills
- rash

- mouth sores
- sore throat
- swollen lymph nodes
- night sweats
- muscle aches
- fatigue

The only way a person can be certain they have HIV is to have an HIV test. Although there is no cure for HIV, medications can help to keep the virus under control or make it undetectable. Without such treatment, HIV can develop into AIDS.

Other medications can help prevent a person from contracting HIV. People at high risk of HIV and those who believe they may have had exposure to it should speak with their primary healthcare professional about these options.

**Ringworm:** Ringworm is a common fungal infection of the skin. The characteristic symptom of ringworm is a ring-shaped rash. It may be dry, scaly, or itchy.

People may contract ringworm through:

- close contact with a person who has ringworm
- sharing towels, bedding, or other personal items with a person who has ringworm
- close contact with animals with ringworm, typically cats

Without treatment, ringworm may spread to other parts of the body.

**Athlete's foot:** Athlete's foot is a common fungal infection that affects the skin on the feet. It typically causes sore or itchy white patches between the toes.

People can contract an athlete's foot through direct contact with someone who has the fungus or surfaces that have been in contact with the fungus. For example, an individual might contract an athlete's foot after walking barefoot in locker rooms, showers, or swimming pools.

**Plasmodium:**The protozoa *Plasmodium genus* causes the tropical disease malaria. The parasite is primarily transmitted through mosquito bites.Malaria causes symptoms such as:

- fever and chills
- headaches
- vomiting
- diarrhea
- muscle pains

Without proper treatment, malaria can be life threatening. Vaccination programs are also effectively protecting people from malaria fatalities.

**Lyme disease:**Lyme disease is a potentially serious infection that black-legged ticks can pass to humans. It is the most common carrier-spread disease in the United States.The bacteria *Borrelia burgdorferi* causes the majority of Lyme disease cases. However, the bacteria *Borrelia mayonii* may also cause the disease.

Symptoms of Lyme disease include:

- headache
- fatigue
- fever
- skin rash

Lyme disease can spread to the joints, heart, and nervous system if a person does not treat it.

## **Causes**

A person may develop a communicable disease after becoming infected by the pathogen. This may happen through:

- direct contact with a person carrying the pathogen
- contact with bodily fluids containing pathogens
- inhaling pathogen-containing droplets from another person's cough or sneeze
- receiving a bite from an animal or insect carrying the pathogen
- consuming contaminated water or foods

## **Prevent transmission**

People can reduce their risk of contracting or transmitting disease-causing pathogens by following the steps below:

- washing their hands thoroughly and regularly
- disinfecting surfaces at home often, especially doorknobs and food areas
- disinfecting personal items such as phones
- cooking meats, eggs, and other foods thoroughly
- practicing good hygiene when preparing and handling food
- avoiding eating spoiled food
- avoiding touching wild animals
- receiving available vaccinations
- taking antimalarial medications when traveling where there is a malaria risk
- check for ticks and other parasites

## **Treatment for communicable diseases**

Some communicable diseases cause only mild symptoms that disappear without treatment. Others may cause severe symptoms or potentially life threatening complications. Patients require different treatment depending on disease process and clinical presentation.

**Viral infections:** Vaccines are a highly effective method for preventing specific viral infections. There are several different types of vaccines. When a person receives a vaccine, they are receiving a form of the virus. The immune system responds by producing antibodies capable of killing an active form of the virus in the future. If a person already has a virus, they may require antiviral medications to keep the virus under control.

**Bacterial infections:** Bacterial infections can range from mild to life threatening. A person who has a bacterial infection may require a course of antibiotics to help control the infection. These medications can help to kill bacteria or slow them down so the immune system can counteract them.

However, many bacteria are developing a resistance to antibiotics, which poses a major health risk. More than 2.8 million antibiotic-resistant infections occur in the U.S. every year. A person should only ever take antibiotics on a medical recommendation.

**Fungal infections:** A severe or chronic fungal infection may require prescription antifungal medications and, in rare cases, intravenous medication. However, people can treat many mild infections, such as ringworm and athlete's foot, with over-the-counter topical ointments.