

### What is anthrax?

Anthrax is an infectious disease caused by the spore-forming bacteria *Bacillus anthracis*. Anthrax most commonly occurs in warm-blooded animals, but can also infect humans.

### How is anthrax spread?

Anthrax infection can occur in three forms: cutaneous (skin), inhalation, and gastrointestinal. *B. anthracis* spores can live in the soil for many years and humans can become infected with anthrax by handling animal products from infected animals or by inhaling anthrax spores from contaminated animal products. Anthrax can also be spread by eating undercooked meat from infected animals.

Direct person-to-person spread of anthrax is unlikely.

### Can anthrax be used as a biological weapon?

Biological agents are germs that can sicken or kill people, livestock, or crops.

An anthrax attack could take many forms. For example, it could be placed in letters and mailed, as was done in 2001, or it could be put into food or water. Anthrax also could be released into the air from a truck, building, or plane.

If anthrax spores were released into the air, people could breathe them in and get sick with anthrax.

### What are the signs and symptoms of anthrax?

*Cutaneous (skin)*: Most anthrax infections occur when the bacteria enters a cut or abrasion on the skin. Skin infection begins as a raised itchy bump that resembles an insect bite but within 1-2 days develops into a vesicle and then a painless ulcer, usually 1-3 cm in diameter, with a characteristic black necrotic (dying) area in the center. Lymph glands in the adjacent area may swell. About 20% of untreated cases of cutaneous anthrax will result in death, although deaths are rare with appropriate antimicrobial therapy.

*Inhalation*: About one week after exposure, symptoms may resemble a cold. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax usually results in death in 1-2 days after onset of the symptoms.

*Gastrointestinal*: The gastrointestinal form of anthrax is usually associated with the consumption of contaminated meat. Initial signs of nausea, loss of appetite, vomiting, and/or fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25% to 60% of cases.

### How long after infection do symptoms appear?

Symptoms of disease vary depending on how the disease was contracted, but symptoms usually occur within seven days.

## Who is most at risk?

Although anthrax among humans is extremely rare in the United States, anyone can get anthrax if they are exposed to contaminated wool, hides, leather or hair products (especially goat hair) of infected animals, or if they eat undercooked meat from infected animals. Workers who are exposed to dead animals and animal products from countries where anthrax is more common are at the highest risk.

People with certain jobs may be at an increased risk of coming in contact with anthrax spores. These include:

- Veterinarians
- Laboratory professionals
- Livestock producers
- People who handle animal products
- Mail handlers, military personnel, and response workers who may be exposed during a bioterror event involving anthrax spores.

Anthrax is more common in South and Central America, Central and South America, Sub-Saharan Africa, Central and Southwestern Asia, Southern and Eastern Europe and the Caribbean.

## What type of health problems are caused by anthrax?

If left untreated, the disease can be fatal, whether cutaneous, inhaled or intestinal.

## How is anthrax diagnosed?

Anthrax is diagnosed by getting samples from the blood, skin lesions, or respiratory secretions.

## How is anthrax treated?

Doctors can prescribe antibiotics for anthrax. Usually penicillin is preferred, but erythromycin, tetracycline, or chloramphenicol can also be used. To be effective, treatment should be started early.

## How can anthrax be prevented?

Most people in the United States are at minimal risk for coming into contact with anthrax. There is a vaccine for anthrax. The Advisory Committee for Immunization Practices (ACIP) currently recommends the vaccine for individuals who come in contact in the workplace with imported animal hides, furs, bone meal, wool, animal hair (especially goat hair), and bristles; and for individuals engaged in diagnostic or investigational activities which may bring them into contact with anthrax spores. Vaccination is routinely used in some members of the United States military personnel.

## Where can I get more information?

- Your personal healthcare provider
- Utah Department of Health, Bureau of Epidemiology, 801-538-6191
- [Centers for Disease Control & Prevention](https://www.cdc.gov)

