



## What is anthrax?

Anthrax is caused by the spore-forming bacterium, *Bacillus anthracis*. Anthrax is found naturally in soil and commonly affects animals. Although it is rare, it can also infect humans when they are exposed to infected animals or tissue from infected animals.

## How is anthrax spread?

Anthrax is not spread person-to-person. People can get anthrax by having contact with the bacteria in one of four ways:

- **Contact with Skin**—Most anthrax infections (95%) occur when people touch contaminated animal products like wool, bones, hair, or hides. The infection occurs when the bacteria enters a cut or scratch on the skin. This type of infection is called cutaneous anthrax.
- **Inhalation (Breathing)** - Some anthrax infections occur when people breathe in the spores of the bacteria. However, a person has to breathe in a large number of spores (8,000-10,000) to be infected this way. This type of infection is called inhalation anthrax. Inhalation anthrax is a rare condition.
- **Ingestion (Eating)** - Some people may get anthrax by eating infected meat that has not been properly cooked. This type of infection is called gastrointestinal anthrax. Gastrointestinal anthrax is an extremely rare condition.
- **Injection**— This is a rare form of anthrax seen only in injection drug users who use drugs that have been contaminated with anthrax spores. This type of infection is called injection anthrax.

## What are the symptoms of anthrax?

Symptoms of disease depend on the type of infection caused by *Bacillus anthracis*.

- **Cutaneous anthrax:** The first symptom is a small sore that develops into a blister. The blister then develops into a skin ulcer with a black area in the center. The sore, blister, and ulcer do not hurt. If left untreated, serious complications may occur. Death occurs in 5% to 20% of untreated cases.
- **Inhalation anthrax:** Symptoms usually start like those of the cold or the flu and include a sore throat, cough, mild fever, and muscle aches. However, three to five days later, the symptoms progress to a high fever, chest discomfort, shortness of breath, rapid breathing, lips and skin turning blue, decreased blood pressure, organ failure, and death.
- **Gastrointestinal anthrax:** The first symptoms are nausea, loss of appetite, bloody diarrhea, and fever, followed by bad stomach pain. Over the next few days, symptoms progress to a high fever, chills, changes in mental state, decreased blood pressure, organ failure, and death. Death occurs in 25% to 60% of cases.
- **Injection anthrax:** The first symptom is a small a sore or blister that develops at the injection site accompanied by swelling and redness. The blister then develops into a skin ulcer with a black area in the center. An abscess deep under the skin or in the muscle can develop where the contaminated substance was injected. While symptoms are similar to cutaneous anthrax, injection anthrax can spread throughout the body much faster causing a systemic infection. Serious complications will occur if left untreated.

**How soon after exposure do symptoms appear?**

Symptoms usually appear within seven days of exposure, but can be up to 60 days for all forms of anthrax.

**Where is anthrax usually found?**

Although anthrax can be found anywhere in the world, it is most common in farming areas where it occurs in wild and domestic animals, including, cattle, sheep, goats, camels, antelopes, and other herbivores. Areas of the world currently listed as high risk are South and Central America, Southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East. Anthrax infections are extremely rare in the United States.

**Is there a treatment for anthrax?**

Antibiotics are used all forms of anthrax. Antitoxins may also be used when treating anthrax. If you develop symptoms of anthrax, contact your healthcare provider immediately. If left untreated, the disease can be fatal. Since anthrax is not spread person-to-person, there is no need to treat the contacts of a person with anthrax.

**Is there a vaccine available for anthrax?**

A vaccine is available, but it is not recommended for the general public or health care providers. It is only used for military personnel deployed to areas of the world with a high risk for exposure. Anthrax vaccines intended for animals are not safe for use in humans.

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

Anthrax spores can be used as a bioterrorist weapon, as was the case in 2001, when *Bacillus anthracis* spores had been intentionally distributed through the postal system. However, it is believed that the manufacture of weaponized anthrax spores is quite complicated requiring advanced biotechnology. In the event of an emergency, local and state health departments will inform the public of actions they need to take.