

## What is anthrax?

Anthrax is an acute infectious disease caused by the spore-forming bacterium *Bacillus anthracis*. Anthrax most commonly occurs in warm-blooded animals, but 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 generally develop symptoms of anthrax by having contact with *Bacillus anthracis* in one of three 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 be exposed to a large number of spores (8,000-10,000) to be infected in this manner. This type of infection is called inhalation anthrax.
- **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.

## What are the symptoms of anthrax?

Symptoms of disease vary depending on type of exposure to and the type of infection caused by *Bacillus anthracis*. The symptoms of the three types of anthrax infections are listed below:

1. **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 five percent to 20% of untreated cases.
2. **Inhalation anthrax:** The first symptoms of inhalation anthrax are generally mild like those of the cold or the flu including 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. Inhalation anthrax is a rare condition.
3. **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. Gastrointestinal anthrax is an extremely rare condition.

## How soon after exposure do symptoms appear?

Symptoms can appear within seven days of coming in contact with the bacterium for all three types of anthrax, although it is possible to appear up to 60 days. For inhalation anthrax, symptoms can appear within a week or can take up to 42 days to appear.

## Where is anthrax usually found?

Although anthrax can be found anywhere in the world, it is most common in agricultural regions 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.

**How common is anthrax?**

Anthrax infections are extremely rare in the United States. The last human case of anthrax reported in Oklahoma was during the 1950's.

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

It is rare to find infected animals in the United States. 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, causing 22 cases of anthrax, including five deaths. Several nations are believed to have offensive biological weapons programs. However, it is believed that the manufacture of weaponized anthrax spores is quite complicated requiring advanced biotechnology.

**Is there a treatment for anthrax?**

Doctors can prescribe effective antibiotics. Early antibiotic use is essential for the treatment of inhalation anthrax because of the rapid course of the disease. If left untreated, the disease can be fatal. If there were an attack using anthrax against the civilian population, antibiotics would be used to prevent deaths from anthrax. It is not recommended that doctors prescribe antibiotics for anthrax at this time. Currently, the United States has enough antibiotics to prevent the disease in two million persons exposed to anthrax. These antibiotics would be rapidly distributed to those who may have been exposed. There is no need to treat the contacts of a person with anthrax.

**Is anthrax vaccine available?**

The anthrax vaccine 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. There is no need to immunize or treat patient contacts (e.g., household contacts, friends, coworkers), unless they were also exposed to anthrax aerosol at the time of an attack. Anthrax vaccines intended for animals are not safe for use in humans.

**Should the public buy gas masks?**

We do not recommend individuals buy gas masks or hoard medicines in preparation for a possible bioterrorist attack. In the event of an emergency, local and state health departments will inform the public of actions they need to take.

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