



Hawaii State Department of Health

Disease Investigation Branch

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What is anthrax?

Anthrax is a serious infectious disease caused by the spore-forming bacterium *Bacillus anthracis*. This bacterium occurs naturally in some environments and can cause sudden death in animals and severe disease in people. Anthrax is of concern as a possible bioterrorist weapon. In 2001 anthrax was spread through the postal system and caused illness in 22 people and 5 deaths.

Anthrax infection can occur in three forms:

- **Cutaneous:** Caused by the bacterium entering a cut or scrape on the skin.
- **Inhalation:** Caused by breathing in anthrax bacteria or spores. The spores are too small to be seen by the naked eye and have no special color, smell or taste.
- **Gastrointestinal:** Caused by eating or drinking anthrax contaminated food or water.

How do you get it?

Anthrax cannot be spread from person to person. Plant eating animals, both livestock and wildlife, can carry the disease. Humans can become infected with anthrax by handling products from infected animals such as animal skins, by breathing in anthrax spores from contaminated animal products or by eating undercooked meat from infected animals. Anthrax spores can also be used as a bioterrorist weapon.

Persons at highest risk of getting the disease are workers who handle animal products, agricultural and wildlife workers, and veterinarians who handle infected animals. The bacteria are resistant to drying and disinfection, and can remain infectious in contaminated soil for years after the death of the animal.

What are the symptoms of anthrax?

Cutaneous anthrax begins as a raised itchy bump that looks like an insect bite but within 1–2 days becomes a painless sore, usually 1–3 cm in diameter, with a typical black area in the center. Lymph glands near the infected area may swell. Deaths from cutaneous anthrax are rare because the illness can be treated with appropriate antibiotics. About 20% of untreated cases can result in death.

At first, inhalation anthrax looks like a common cold. Symptoms can begin within 7 days of infection and may include: fever accompanied by chills or night sweats; flu-like symptoms; sore throat, followed by difficulty

swallowing and breathing, enlarged lymph glands, headache, nausea, loss of appetite, abdominal pain, vomiting, or diarrhea.

After several days, the symptoms may worsen to severe breathing problems and shock. Inhalation anthrax is usually fatal if left untreated.

Gastrointestinal anthrax is characterized by an acute inflammation of the intestinal tract. Initial signs of nausea, loss of appetite, vomiting, and fever are followed by abdominal pain, vomiting of blood, and severe diarrhea.

When do symptoms start?

Symptoms usually develop within 48 hours following exposure to the bacteria, but the onset can range from 2 to 7 days. In the case of inhalation anthrax, infection has occurred as late as 42 days after exposure.

What is the treatment for anthrax?

In persons exposed to anthrax, infection can be prevented with doctor prescribed antibiotic treatment for 60 days. For symptomatic anthrax infection, a 5-7 day course of antibiotics will be prescribed. For symptomatic gastrointestinal anthrax and inhalation anthrax, immediate intravenous (IV) antibiotics are needed. Early antibiotic treatment of anthrax is essential—any delay lessens chances for survival.

How can you keep from getting it?

- Immunize persons who have jobs that may expose them to the anthrax bacteria.
- Use extreme caution when handling dead animals that may be infected with anthrax (sudden death, bleeding from body openings)...
- Have good air circulation when working with animal hides, fur, hair, or wool.
- Inform your physician if you work with animals or animal materials and develop clinical signs of anthrax
- Vaccinate animals that may be at risk. In Hawaii animals are not routinely vaccinated for anthrax.

For more information:

Centers for Disease Control and Prevention:

<http://www.bt.cdc.gov/agent/anthrax/index.asp>

Iowa State University Center for Food Security and Public Health:

Fact Sheets

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<http://www.cfsph.iastate.edu/Factsheets/pdfs/anthrax.pdf>
<http://www.cfsph.iastate.edu/DiseaseInfo/factsheets.htm>