

# Lorain County General Health District

## Anthrax



"For The Health of Us All"

**Recent terrorism in the United States has elevated the public concern about this bacterium. It is important that the facts are known and understood to help alleviate unnecessary anxiety and prepare us for any real incident or hoax that may occur.**

Anthrax is an acute infectious disease caused by the spore-forming bacterium *Bacillus anthracis*. Anthrax most commonly occurs in wild and domestic lower vertebrates (cattle, sheep, goats, camels, antelopes, and other herbivores), but it can also occur in humans when they are exposed to infected animals, tissue from infected animals or spores.

- **How common is anthrax and who can get it?**

Anthrax is most common in agricultural regions where it occurs in animals. These include South and Central American, Southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East. When anthrax affects humans, it is usually due to an occupational exposure to infected animals or their products. Workers who are exposed to dead animals and animal products from other countries where anthrax is more common may become infected with *B. anthracis* (industrial anthrax).

- **How is anthrax transmitted?**

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 products from infected animals or by inhaling anthrax spores. Anthrax can also be spread by eating undercooked meat from infected animals. It is rare to find infected animals in the United States.

- **What do anthrax spores look like?**

Under a microscope, anthrax spores look like tan-colored powder. The spores are protective capsules for the bacteria that cause the disease. To the naked eye, individual spores are invisible. They have no taste or odor.

- **Where is anthrax usually found?**

Anthrax can be found globally. It is more common in developing countries or countries without veterinary public health programs. Certain regions of the world (South and Central American, southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East) report more anthrax in animals than others.

- **If I open a letter, find a powdery substance, what should I do?**

Put the letter in a sealed plastic pouch (ziplock) or bag. Scrub your face and hands with warm soapy water. Call the police. Try to remember whether there was a puff of dust when you opened it or just a residue. Whom was the letter or package from? To who was it addressed? Do not panic. It is treatable.

## Diagnosis & Treatment

Anthrax is diagnosed by isolating *B. anthracis* from the blood skin lesion, or respiratory secretions or by measuring specific antibodies in the blood of persons with suspected cases.

In persons exposed to anthrax, infection can be prevented with antibiotic treatment. Early antibiotic treatment of anthrax is essential – delay lessens chances for survival. Anthrax usually is susceptible to penicillin, doxycycline, and fluoroquinolones. Vaccination against anthrax is not recommended for the general public.

## Prevention

In countries where anthrax is common and vaccination levels of animal herds are low, humans should avoid contact with livestock and animal products and avoid eating meat that has not been slaughtered and cooked. Also, an anthrax vaccine has been licensed for use in humans. The vaccine is reported to be 93% effective in protecting against anthrax.

## What are the Symptoms of Anthrax?

Symptoms of disease vary depending on how the disease was contracted, but symptoms usually occur within seven days. There are three forms of anthrax infection.

### **Inhalation-**

Initial symptoms may resemble a common cold. After several days, the symptoms may progress to severe breathing problems and shock. Inhalation anthrax is usually fatal unless treated with antibiotics. It is not easy to contract this type of anthrax. It takes between 2,500 and 55,000 spores to cause infection.

### **Cutaneous-**

Most (about 95%) anthrax infections occur when the bacterium enters a cut or abrasion on the skin, such as when handling contaminated wool, hides, leather or hair products (especially goat hair) of infected animals. 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. Deaths are rare with appropriate antimicrobial therapy.

### **Intestinal-**

The intestinal disease form of anthrax may follow the consumption of contaminated meat and is characterized by an acute inflammation of the intestinal tract. Initial signs of nausea, loss of appetite, vomiting, fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25% to 50% of cases.

Sources: U.S. Centers for Disease Control and Prevention