

## ***ANTHRAX (Bacillus anthracis)***

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### **What is anthrax?**

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

### **Who gets anthrax?**

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.

Although anthrax can be found globally, it is more common in South and Central America, Southern and Eastern Europe, Asia, Africa, the Caribbean and the Middle East. Anthrax in animals rarely occurs in the United States with most reports of animal infection coming from Texas, Louisiana, Mississippi, Oklahoma and South Dakota.

### **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.

### **What are the symptoms of anthrax?**

*Cutaneous:* 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:* Initial 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 acute symptoms.

*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, 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 soon after exposure do symptoms appear?**

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

### **How is anthrax diagnosed?**

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

### **What is the treatment for anthrax?**

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. If left untreated, the disease can be fatal.

### **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, bonemeal, 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. Because anthrax is also considered to be a potential agent for use in biological warfare, the Department of Defense announced in 1998 that it will begin systematic vaccination of all United States military personnel.

### **Where can I get more information?**

- Your personal doctor.
- Your local health department listed in your telephone directory.
- The Utah Department of Health, Office of Epidemiology (801) 538-6191.
- The Department of Defense recommends servicemen and women contact their chain of command on questions about anthrax vaccine and its distribution.