

## **Anthrax (*Bacillus anthracis*)**

### **F act Sheet**

#### **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.

#### **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 America, Southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East. When anthrax affects humans, it is usually due to occupational exposure to infected animals or their products.

Workers who are exposed to dead animals and animal products (industrial anthrax) from other countries where anthrax is more common may become infected with *B. anthracis*. Anthrax in animals rarely occurs in the United States.

#### **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 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.

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

Symptoms usually occur within seven days. Cutaneous: Most 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.

Inhalation: Initial symptoms may resemble a common 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 fever are followed by abdominal pain, vomiting of blood, and severe diarrhea. Intestinal anthrax results in death in 25% to 60% of cases.

#### **Is there an anthrax vaccine for humans?**

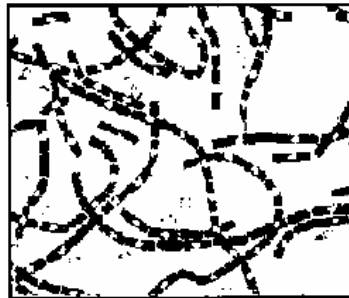
The anthrax vaccine for humans licensed for use in the United States is a cell-free filtrate vaccine, which means it uses dead bacteria as opposed to live bacteria.

Anthrax vaccine is indicated 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. The vaccine is reported to be 93% effective in protecting against cutaneous anthrax. Anthrax vaccines intended for use in animals should not be used in humans.

#### **Who should be vaccinated?**

Because anthrax is considered to be a potential agent for use in biologic warfare, the Department of Defense recently announced that it will begin systematic vaccination of U. S. military personnel. Among civilians, the Advisory Committee for Immunization Practices (ACIP), recommends anthrax vaccine be given to individuals engaged in diagnostic or investigational activities which may bring them into contact with anthrax spores.

Reference: Nebraska HHS Website



*Bacillus Anthracis*