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ANTHRAX

What Is It?

Anthrax is an infection of the skin, gastrointestinal tract or lungs caused by the bacteria *Bacillus anthracis*. This is a common infection of hoofed animals and historically posed a risk to farm workers, veterinarians, tannery and wool workers. Anthrax may also be used as a biological weapon.

How can you get it?

There are three types of anthrax with different modes of transmission:

- Cutaneous anthrax
 - Occurs after anthrax spores touch a cut or scrape on the skin
 - The most common type of anthrax infection in animal workers
- Inhalation anthrax
 - Occurs when anthrax spores are inhaled
 - The inhaled spores grow and release toxic substances causing disease
 - This form of the disease occurred in 2001 as a result of anthrax being mailed as a weapon
- Gastrointestinal anthrax
 - Eating undercooked meat contaminated with anthrax

Anthrax in humans is generally not considered contagious. Cutaneous anthrax is rarely spread by contact with an ulcer by another person.

What are the symptoms?

The symptoms of anthrax will vary depending upon which type of the disease is present:

- Cutaneous anthrax
 - Symptoms begin in 1 to 7 days and healing takes 2 to 4 weeks

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- Initially an itchy but painless sore develops on the skin
 - Sore forms a blister and eventually a black ulcer
- Complications: 20% may die without treatment since <http://emergency.cdc.gov/agent/anthrax/anthrax-images/cutaneous.asp> the infection can spread to the blood. The death rate is < 1% with treatment



- Inhalation anthrax
 - Symptoms begin in in 1 to 7 days but may take up to a month
 - Fever
 - Malaise
 - Headache
 - Cough
 - Shortness of breath and chest pain
 - Shock
 - Complications: death occurs in 75% even with treatment
- Gastrointestinal anthrax
 - Symptoms begin 1-7 days after exposure
 - Fever
 - Abdominal pain
 - Diarrhea (sometimes bloody)
 - Sores in the mouth
 - Nausea and/or vomiting
 - Complications: Death occurs in > 50% of those who do not receive antibiotic treatment but is < 40% with treatment.

How do you prevent it?

Anthrax may be prevented through several methods:

- Anthrax vaccine
 - Available to military personnel and those at increased risk of contracting anthrax

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- Post-exposure preventive antibiotics
 - These may be given to exposed individuals who have not yet developed symptoms
 - Antibiotics are effective against the bacteria but not against the toxins which cause the complications of the infection.
- Use Universal Precautions
 - Nitrile or vinyl gloves will protect workers from cutaneous anthrax exposure
 - OSHA does not recommend respirators for the vast majority of workers. However, when effective protection from anthrax spores [is needed], the CDC recommends the use of NIOSH-approved respirators that are at least as protective as an N95 respirator
- Emergency Responders response to a bio-attack incident
<http://www.osha.gov/dep/anthrax/matrix/index.html>
 - Workplace Risk Pyramid
 - Red Zone = Authorities confirm or suspect presence of anthrax spores
 - PPE used should be proportional to the risk anticipated for the task workers will do
 - Use modified Level C protection for clean-up of a known anthrax release where the agent was dispersed from a letter or package
 - Use Level B protection where anthrax spores may have been dispersed with an aerosol-generating device
 - Use Level A protection for a release via an unknown dispersal method or an ongoing aerosol-generating device
 - Yellow Zone = Contamination with anthrax spores is possible
 - Voluntary use of PPE including impermeable gloves (nitrile or vinyl) and N95 or greater respiratory filter
 - Green Zone = Contamination with anthrax spores is unlikely
 - Prudent work practices

What should you do if you are exposed to the disease or get the disease?

You should contact your infection control officer and seek medical attention if you have been exposed or suspect exposure to anthrax or if you develop symptoms of anthrax. Anthrax can be treated with various antibiotics, including penicillin, doxycycline and ciprofloxacin.

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For More Information and Frequently Asked Questions (FAQs), Check Out:

- Occupational Safety & Health Administration (OSHA): <http://www.osha.gov/SLTC/etools/anthrax/index.html>
- Centers for Disease Control and Prevention (CDC): <http://emergency.cdc.gov/agent/anthrax/index.asp>
- Canadian Centre for Occupational Health and Safety (CCOHS): <http://www.ccohs.ca/oshanswers/diseases/anthrax.html>
- Public Health Agency of Canada (PHAC): <http://www.phac-aspc.gc.ca/ep-mu/anthrax-eng.php>