

Anthrax

What is anthrax?

Anthrax is an infection caused by spores of the bacterium *Bacillus anthracis*. These spores can survive in the environment for a long time. Anthrax can infect grazing animals (mainly sheep, goats, cows and pigs), and has been reported in livestock in New South Wales, Queensland, Victoria, and to a lesser extent, Western Australia.

Anthrax is a very rare but serious and life-threatening disease in humans. The same bacteria can cause three main types of anthrax disease, depending on the exposure:

- cutaneous – which occurs after spores penetrate the skin through wounds or sores,
- inhalational or pulmonary – which occurs after breathing spores in to the lungs, and
- gastrointestinal (digestive) – which occurs after ingesting anthrax spores (usually in meat from infected animals).

What are the symptoms of anthrax?

Cutaneous anthrax

Skin sores develop within one to three days of exposure. These begin as small red swellings, which may be painless, which later develop into black depressions. After two to three days, the pimples ulcerate and form a dry black scab. There can be swelling around the sores. Treatment is recommended for a full recovery, however even without treatment most people recover. In severe cases, an overwhelming septicaemia (blood poisoning) or meningitis (inflammation of the membranes around the brain) can occur and result in death.

Inhalational anthrax

Initially, symptoms may be similar to a viral respiratory infection (like those caused by colds or influenza), which can include fever, cough and mild chest pain. Over 3-4 days, the symptoms progress to severe breathing difficulties and shock. Inhalational anthrax is often severe and results in death.

Gastrointestinal anthrax

Early symptoms include abdominal pain, nausea and vomiting, followed by fever and signs of septicaemia.

How is anthrax spread?

In most cases, anthrax bacteria gain entry to the body through broken skin or wounds (to cause cutaneous anthrax). This is usually through contact with infected livestock or animal carcasses, products such as hides, wool, hair and bone from infected animals, and feed and fertilisers prepared from infected animals.

Rarely, anthrax spores may be inhaled while handling contaminated animal products such as hides (causing inhalational anthrax). Anthrax can also result from eating undercooked meat from infected animals (causing intestinal anthrax). Inhalational and intestinal anthrax have not been recorded in Australia.

In late 2001, several people in the USA contracted anthrax from spores that were maliciously distributed through the mail. Both cutaneous and inhalational anthrax were reported in that outbreak.

Anthrax is not known to spread from one person to another.

Who is at risk?

Anthrax is primarily an occupational hazard for abattoir workers, farmers, veterinarians and handlers of animal hides, goat hair, bone products, and wool.

How is anthrax diagnosed?

Blood tests or swabs may be used to confirm the infection in people who have symptoms.

How is anthrax treated?

Suspected human cases of anthrax are treated with antibiotics.

How is anthrax prevented?

Anyone who handles material potentially contaminated with anthrax should wear gloves, overalls, and rubber boots and should ensure that skin breaks are protected with sealed waterproof dressings. Thorough hand washing and showering with soap after removing personal protective equipment are also very important protections against infection. All potentially contaminated items and clothing should be stored in labelled double plastic bags until anthrax is excluded.

In some cases where a person has had significant exposure to anthrax spores, antibiotics may be needed to prevent infection.

There is no human vaccine against anthrax that is registered for civilian use in Australia.

How is it controlled?

Public Health Officers will investigate confirmed and suspected anthrax cases and give advice or further management.

There are emergency response plans to protect the public in case there is a deliberate release of anthrax.

Need more information?

For more information about anthrax, contact your doctor or call the Health Protection Service, Communicable Disease Control Information Line during business hours on **(02) 5124 9213**.

Communicable Disease Control Section at Health Protection Service is responsible for the investigation and surveillance of notifiable or infectious conditions in the ACT in order to control or prevent their spread in the community. This includes the promotion of immunisation, education and other strategies that help to limit the spread of diseases.

Anthrax is a notifiable disease. Cases notified to ACT Health are investigated by Public Health Officers.

Acknowledgements

Heymann DL, 2014, Control of Communicable Diseases Manual. 20th edition. Washington: American Public Health Association, USA; 2014.

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