

ANTHRAX

WHAT IS ANTHRAX?

Anthrax is a bacterial disease caused by infection with *Bacillus anthracis*. The same bacteria can lead to three forms of disease:

- cutaneous anthrax
- intestinal anthrax
- inhalational (or pulmonary) anthrax.

Anthrax occurs among grazing animals in many parts of the world, including livestock in parts of New South Wales. Anthrax is a very rare disease in humans. In NSW only two cases of human anthrax have been reported since 1982.

The bacteria may remain in the soil for many years in the form of spores which can survive being dried out. These spores are usually the cause of infections in grazing animals. However, human infection from the source of spores is considered unlikely, as quite a large concentration of spores is needed for infection to occur. Anthrax is not known to be transmitted from person to person.

HOW DO YOU CATCH ANTHRAX?

In about 95 per cent of cases of anthrax, the bacteria gain entrance through broken skin or wounds (which can cause cutaneous anthrax) from a source such as the carcass of an infected animal. Anthrax bacteria can also be ingested in poorly prepared meat from infected animals (which can cause intestinal anthrax) or breathed in (which can cause inhalational or pulmonary anthrax). Intestinal and inhalational anthrax in humans have not been recorded in Australia.

WHAT ARE THE SYMPTOMS?

People who contract **cutaneous** anthrax develop dark-coloured, painless lesions within one or two weeks of exposure. These lesions can be associated with swelling of the surrounding tissue. Even without treatment, four out of five people with cutaneous anthrax survive. With appropriate treatment most people with cutaneous anthrax recover fully.

People who contract **intestinal** anthrax develop abdominal pain and fever, and typically death follows soon after.

People who contract anthrax by **inhalation** may initially complain of flu-like symptoms. However, over several days the disease can progress into severe breathing difficulties and circulatory shock. Inhalational anthrax has a fatality

rate of between 6–9 of every 10 people who show symptoms. The incubation period for inhalational anthrax is most frequently between 1–6 days but may be as long as 60 days.

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.

HOW IS ANTHRAX DIAGNOSED?

Diagnosis of anthrax requires the isolation of anthrax bacteria from the blood, the skin lesions or respiratory secretions of patients, or from measuring the concentration of anthrax-specific antibodies in the blood.

WHAT IS THE TREATMENT FOR ANTHRAX?

Several antibiotics including penicillin, doxycycline, and ciprofloxacin are used to treat anthrax infections.

IS THERE ANY PREVENTIVE TREATMENT AVAILABLE?

Doctors can prescribe antibiotics to people who have been confirmed as having had significant exposure to anthrax spores. This treatment is more effective when it is provided soon after infection and before symptoms develop. A vaccine is available to people who have an ongoing risk of exposure. However, immunisation is not recommended for the general population due to the extremely low risk of infection.

WHAT IF I NEED TO DEAL WITH ANIMALS THAT HAVE ANTHRAX?

Each year in NSW several cases of anthrax in livestock are reported. The handling of infected animals and their carcasses represents a risk to people. Gloves, overalls, and rubber boots should be worn if you need to deal with animals infected with anthrax. These need to be carefully cleaned after use. Thorough hand washing with soap is also a very important protection against infection.

Suspected cases among livestock and humans must be reported to the Department of Agriculture. Veterinary procedures to prevent the spread of anthrax among animals include the correct disposal of infected carcasses, the quarantining of affected farms, and the use of an anthrax vaccine to prevent the infection of healthy animals—including those on neighbouring properties.

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