

# Anthrax

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

- cutaneous (skin) anthrax
- intestinal (digestive tract) anthrax
- inhalational (or pulmonary) anthrax.

These bacteria can form spores, which allows the bacteria to survive in the environment for a long time. Anthrax is now very rare in Australia. Since 2001 there have only been three human cases of anthrax in Australia, in 2006, 2007 and 2010. All of these cases had skin infections caused by exposure to anthrax spores.

Anthrax occurs among grazing animals in many parts of the world, in Australia this is mainly in western New South Wales. Prior to 2017, the last reported Queensland outbreak in cattle was in 2001/02.

## Signs and Symptoms:

People who contract:

- **cutaneous anthrax** develop dark coloured, painless sores within one to 12 days (usually between two - six days) after exposure. These sores can be associated with swelling of the surrounding tissue. Even without treatment, four out of five people with cutaneous anthrax survive. With treatment patients generally make a full recovery.
- **intestinal anthrax** develop abdominal pain and fever between one to six days after exposure, and typically death follows soon after.
- **anthrax by inhalation** may first have flu-like symptoms. Over several days the disease can progress, with severe breathing difficulties and shock. Inhalational anthrax has a 60-90% fatality rate. The **incubation period** for inhalational anthrax is most frequently between one to five days but may be as long as 60 days.

## Treatment:

Various different types of antibiotics can be used to treat anthrax infections.

## Control

If anthrax is detected in Queensland, people who have been exposed will be informed by the local public health unit and given advice on further management.

Control of anthrax in livestock is important for preventing its spread to people. Animals dying from anthrax usually die suddenly, with only a brief illness preceding death. A farmer who suspects anthrax in an animal must notify a government veterinary officer immediately. If anthrax is suspected, the farm will be isolated and herds vaccinated, and the dead animal disposed of appropriately so that contamination of the soil is minimised. See the [Biosecurity Queensland](https://www.daff.qld.gov.au/animal-industries/animal-health-and-diseases/a-z-list/anthrax) (<https://www.daff.qld.gov.au/animal-industries/animal-health-and-diseases/a-z-list/anthrax>) website for further information.

Emergency response plans are in place to protect the public in the unlikely event of a deliberate release of anthrax.

## Transmission:

In about 95 per cent of cases, anthrax bacteria gain entrance through broken skin or wounds (and cause **cutaneous anthrax**).

Anthrax bacteria can also be ingested in poorly prepared meat from infected animals (and cause **intestinal anthrax**) or breathed in (and cause **inhalational anthrax**). Intestinal and inhalational anthrax in humans 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 bacteria may remain in the soil for many years in the form of spores. These spores are usually the cause of infections in grazing animals. However, **human infection** from the source of spores is unlikely, as a large concentration of spores is needed for infection to occur.

Anthrax is not known to be transmitted from person to person.

## Who is at risk?

The handling of infected animals and their carcasses represents a risk to people.

## Prevention:

URL: <http://conditions.health.qld.gov.au/HealthCondition/condition/14/33/8/anthrax>

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Anyone who handles material potentially contaminated with anthrax should wear appropriate personal protective equipment including gloves, overalls and rubber boots and should ensure that broken skin is protected with sealed waterproof dressings.

Biosecurity Queensland provides guidance regarding procedures for decontamination and disinfection of equipment and clothing. See the Biosecurity Queensland website - [Anthrax: Guidelines for vets](https://www.daf.qld.gov.au/business-priorities/biosecurity/animal-biosecurity-welfare/animal-health-pests-diseases/a-z-list-of-significant-animal-pests-and-diseases/anthrax/anthrax-guidelines-for-vets) (<https://www.daf.qld.gov.au/business-priorities/biosecurity/animal-biosecurity-welfare/animal-health-pests-diseases/a-z-list-of-significant-animal-pests-and-diseases/anthrax/anthrax-guidelines-for-vets>) for further information.

Anthrax vaccines exist for use in livestock in Australia. A human vaccine against anthrax is not licensed for civilian use in Australia. Anthrax vaccines are sometimes recommended in military or laboratory settings but are not useful in preventing anthrax after exposure.

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

### Other resources:

[Biosecurity Queensland](https://www.daff.qld.gov.au/animal-industries/animal-health-and-diseases/a-z-list/anthrax) (<https://www.daff.qld.gov.au/animal-industries/animal-health-and-diseases/a-z-list/anthrax>) website

### Related Content

[Anthrax - information for general practitioners](http://conditions.health.qld.gov.au/HealthCondition/condition/14/33/7/Anthrax-information-for-general-practitioners)

(<http://conditions.health.qld.gov.au/HealthCondition/condition/14/33/7/Anthrax-information-for-general-practitioners>), Queensland Health.

### Footnotes

[Anthrax: Guidelines for preparedness, response and management following deliberate release of \*Bacillus anthracis\*](http://www.health.gov.au/internet/publications/publishing.nsf/Content/CA2578620005D57ACA257ACA0080D46B/$File/anthrax-edition-2-oct-12.pdf)

([http://www.health.gov.au/internet/publications/publishing.nsf/Content/CA2578620005D57ACA257ACA0080D46B/\\$File/anthrax-edition-2-oct-12.pdf](http://www.health.gov.au/internet/publications/publishing.nsf/Content/CA2578620005D57ACA257ACA0080D46B/$File/anthrax-edition-2-oct-12.pdf))

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Heymann, D., ed. 2015. *Control of Communicable Diseases Manual*, (20th Ed). Washington, DC: American Public Health Association.

National Notifiable Diseases Surveillance System Annual Report Writing Group, Australia's Notifiable Disease Status, 2014: Annual report of the National Notifiable Diseases Surveillance System. *CDI* 2016; 40 (1): 1-145

World Health Organisation. *Anthrax in Humans and Animals*, 4th edition World Health Organisation, 2008.

### Help and assistance:

For further information, please contact your local doctor, community health centre or nearest [public health unit](https://www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units). (<https://www.health.qld.gov.au/system-governance/contact-us/contact/public-health-units>)