

ANTHRAX FREQUENTLY ASKED QUESTIONS

This document contains two sets of frequently asked questions on anthrax (click on the headings below to view the questions)

- [Anthrax in Humans](#)
- [Anthrax, Animal Hides and Drums](#)

Further information on Anthrax can be found on the HPS website:

- <http://www.hps.scot.nhs.uk/giz/anthrax.aspx>

Anthrax in Humans – Frequently Asked Questions

What is anthrax?

Anthrax is a bacterial infection caused by the organism *Bacillus anthracis*. The disease occurs most often in wild and domestic animals in Asia, Africa and parts of Europe; humans are rarely infected. The organism can exist as spores that allow survival in the environment, e.g. in soil, for many years.

How does anthrax affect humans?

There are three forms of human disease depending on how infection is acquired: cutaneous (skin), inhalation and ingestion. In over 95% of cases the infection is cutaneous, generally caught by direct contact with the skins or tissues of infected animals. Inhalation anthrax is rare and is caught by breathing in anthrax spores. Intestinal anthrax is very rare, and occurs from ingestion of contaminated meat.

How common is anthrax?

The disease was also known as ‘wool-sorters disease’ and was a recognised occupational hazard for some workers, including woollen mill workers, abattoir workers, tanners, and those who process hides, hair, bone and bone products. However, anthrax is now uncommon in humans in the UK, only a handful of cutaneous cases have been notified over the last decade. No cases of pulmonary anthrax have occurred since 1975 and this was related to unsterilized bonemeal. Human infections are more frequent in countries where the disease is common in animals, including countries in South and Central America, southern and eastern Europe, Asia and Africa.

Are animal hides a risk for contracting anthrax?

Anthrax infections associated with the handling of untanned animal hides are extremely rare.

In countries where anthrax is endemic (for example in Africa and Asia), hides may occasionally be contaminated. Anthrax is a very rare disease amongst livestock in the UK; no produce is allowed from any animal known to have died of anthrax. The risk of anthrax from locally produced hides is therefore be considered to be very very low.

Importations of animal hides are required to undergo a veterinary inspection and must be accompanied by the relevant health certification. However these import requirements are not aimed at detecting the presence of anthrax. Further information on the import requirements for animal hides and skins can be found on the Defra website at <http://www.defra.gov.uk/animalh/int-trde/imports/iins/hide/index.htm>

Although the risk is extremely low, personal imports of untreated hides may pose a risk for infection. A single case of inhalation anthrax occurred in 2006 in America in a man who made drums from dried (but otherwise untreated) animal hides brought in from Africa.

How long can you have the infection before developing symptoms?

This is dependent on the dose and route of exposure and may vary from one day to eight weeks. However, symptoms usually develop within 48 hours with inhalation anthrax and 1-7 days with cutaneous anthrax.

What are the symptoms?

Early identification of anthrax can be difficult as the initial symptoms are similar to other illnesses.

Cutaneous anthrax – Local skin involvement after direct contact.

- Commonly seen on hands, forearms, head and neck.
- 1-7 days after exposure a raised, itchy, inflamed pimple appears followed by a papule that turns vesicular (into a blister). Extensive oedema or swelling accompanies the lesion – the swelling tends to be much greater than would normally be expected for the size of the lesion and this is usually PAINLESS.
- The blister then ulcerates and then 2-6 days later the classical black eschar develops.
- If left untreated the infection can spread to cause blood poisoning

Inhalation anthrax – symptoms begin with a flu-like illness (fever, headache, muscle aches and non-productive cough) followed by severe respiratory difficulties and shock 2-6 days later. Untreated disease is usually fatal, and treatment must be given as soon as possible to reduce mortality.

Intestinal anthrax is contracted by the ingestion of contaminated carcasses and results in severe disease which can be fatal. This is found in some parts of the world where the value of an animal dying unexpectedly outweighs any fears of contracting the disease.

Can anthrax be treated?

Cutaneous anthrax can be readily treated and cured with antibiotics. Mortality is often high with inhalation and gastrointestinal anthrax, since successful treatment depends on early recognition of the disease.

Is a person with anthrax a risk to others?

It is extremely rare for anthrax to be spread from person-to-person. Airborne transmission from one person to another does not occur; there have been one or two reports of spread from skin anthrax but this is very, very rare.

Is there a vaccine?

There is a vaccine available for workers who are exposed to a substantial risk of contracting anthrax; it should be considered as an addition to and not a substitute for other precautions. It is not normally recommended for those at slight or occasional risk and is of no value in the short term.

For information about anthrax in animals, please click on to the following website:

<http://www.defra.gov.uk/animalh/diseases/notifiable/disease/anthrax.htm>

Anthrax, Animal Hides and Drums – Frequently Asked Questions

What is anthrax?

Anthrax is an acute, and potentially fatal, disease caused by the spore-forming organism *Bacillus anthracis*. The spores can survive in the environment, e.g. in soil, for many years. Human beings and many species of animals, particularly livestock, can contract the disease. In the past in the UK, cattle were most often affected although outbreaks in pigs also occurred. However, it is now rare to find infected animals in the United Kingdom; only 4 cases have been reported in the past 10 years.

Anthrax can occur in humans following exposure to infected animals, their hides or other by-products. The disease used to be known as ‘wool-sorters disease’ and was a recognised occupational hazard for some workers, including those in wool mills, abattoirs, tanners, and those who process hides, hair, bone and bone products. However, it is now extremely uncommon in humans in the UK.

What are the symptoms of anthrax?

There are three forms of human disease depending on how infection is acquired. They are:

- Cutaneous – through the skin
- Inhalational – breathing in spores
- Ingestion – by mouth

Cutaneous anthrax usually occurs on the hands or forearms. The lesion develops from an inflamed pimple into an ulcer with a black centre and extensive swelling. The infection usually responds well to early treatment with appropriate antibiotics.

Inhalation anthrax is rare. Symptoms begin with a ‘flu-like illness followed by severe breathing difficulties and blood poisoning after 2-6 days.

Ingestion anthrax is a very rare form of severe food poisoning which follows eating undercooked meat from an infected animal.

All forms of anthrax are serious and can be fatal. However they can be treated effectively with antibiotics if identified early enough. For more detailed information about anthrax, see:

http://www.hpa.org.uk/infections/topics_az/anthrax/human_infection_QA.htm

<http://www.documents.hps.scot.nhs.uk/giz/faqs/anthrax-humans.pdf> (Anthrax in Humans – Frequently Asked Questions)

Am I at risk of anthrax from animal hides or hair, or by making a drum from these products?

Anthrax infections associated with the handling of untanned animal hides are now extremely rare in the UK. Imported animal hides from countries where anthrax is endemic in animals (for example in Africa and Asia) may pose a higher risk for exposure than domestic (UK origin) hides. Historically, the industrial processing of hides or hair, often in enclosed or poorly ventilated settings, has been associated with increased risk of anthrax: most cases of anthrax which followed such an exposure were the cutaneous (less serious) form.

The risk of contracting *Bacillus anthracis* from simply handling individual hides imported from endemic areas is very low. There is however a small risk of anthrax in people who manipulate (for example, scraping fur/hair off the hide with a razor) untanned animal hides. A case of inhalation anthrax occurred in 2006 in America in a man who made drums from dried (but otherwise untreated) animal hides brought in from West Africa. Other cases where using hides for drum making have been implicated as a source have also been reported.

Am I at risk of anthrax from my animal hide drum?

The risk of acquiring anthrax from an animal hide drum is very low. A single case of cutaneous (skin) anthrax associated with a goat hide bongo drum purchased in Haiti occurred in 1974. This patient's infection occurred as a result of his making drums from untanned animal hides; it was not associated with playing finished drums. His exposure was therefore similar to that experienced during industrial handling of hides. There may also, however, be a small risk of acquiring pulmonary anthrax from playing a drum with a drum head made from a contaminated skin. This possibility cannot be ruled out completely unless the hide is known to have been treated to eliminate anthrax spores.

How did the Scottish Borders resident get anthrax?

The intensive investigation into the Borders case ruled out contamination in the cases home and the workshop where he made drums and other musical instruments. It was concluded that he did not acquire anthrax via handling of skins while making African type drums.

The investigation identified that there was contamination on other drums used at drumming classes attended by the case. The same strain was found on drums and at locations where those drums were stored and used. The investigation concluded that*:

1. "The result of the investigation was that on the balance of probabilities the case became infected as a result of using or handling one or more West African style drums contaminated with viable anthrax spores, at drumming classes or workshops. This is supported by the finding of spores, which were, on balance of probabilities, the same strain of *Bacillus anthracis* that was isolated from a blood culture taken from the case, on drums; on animal skin; and in three properties where the drums had been stored or used."

2. “It is not possible to be more precise as to which particular exposure episode was the one which resulted in his fatal illness. However, it was known that he attended drumming sessions on two separate occasions, days before becoming ill. It is possible although not certain, that the case’s previous medical condition did make him more susceptible to inhalation anthrax infection. What is clear is that no other cases of infection occurred at the same period despite the probability that other individuals attending the drumming sessions had also been exposed to viable anthrax spores.”
3. “While there have been cases of anthrax elsewhere in the world associated with contact with West African sourced drums, there have been no cases associated with contact with West African drums in the UK before this case or since. It would therefore be reasonable to conclude that while a risk of infection clearly does exist, the level of risk would have to be considered as relatively low.”

**Quotes taken from Final Incident Report*

What should I do with my animal hide drum?

Contamination has only rarely been found on drums and it is likely to be at a very low level in finished drums if present. This is unlikely to present a significant risk to human health in normal use, for those in good health.

How can I further protect myself if I work with hides that may be potentially contaminated with anthrax spores?

Persons engaged in making drums should only use animal hides that have been processed to reduce the chance of infectious disease transmission. Anyone with ongoing exposure to untreated animal hides should consider adopting the following measures:

- Conduct work in well-ventilated areas that do not exhaust to other work or living areas
- Use disposable gloves when handling hides and cover all cuts, abrasions or broken skin with waterproof dressing. Avoid hand to mouth/eye contact
- Avoid where possible shaking, beating or scraping hides vigorously
- Wear a disposable face mask of FFP3 standard. Such a mask must be fitted properly to the face in order to provide the desired protection (instructions as per manufacturer’s guidance)
- Wash hands thoroughly with soap and water when gloves are removed, before eating, and when replacing torn or worn gloves. Soap and water will wash away most spores that may have contacted the skin. Disinfectant solutions are not needed

- Carefully bag and dispose of any waste, and use a vacuum cleaner with HEPA (high efficiency particulate air) standard filters (as for allergy sufferers). When emptying the vacuum cleaner or changing the filters, wear a disposable FFP3 face mask and gloves.

Is there a way to treat cattle or goat hides to make them safe to produce drums?

Certain processing methods may reduce the risk of disease from handling animal hides. Further details – <http://www.bt.cdc.gov/agent/anthrax/faq/pelt.asp>

What if I worked with hides and I am concerned about exposure to anthrax?

If you are concerned that you may have handled an animal hide contaminated with anthrax spores you should not worry as the risk is extremely low. However if you develop any unexplained feverish illness or skin lesions, report these immediately to your GP. The history of contact with untreated or untanned animal hides should be explained.

May I import animal hides?

Importations of animal hides are required to undergo a veterinary inspection and must be accompanied by the relevant health certification. However these import requirements are not aimed at detecting the presence of anthrax.

Cattle or goat hides that have been tanned, hard-dried, pickled (soaked in a salt solution), or treated with lime are considered to pose less of a risk for infectious diseases and may be imported under certain conditions.

Further information on the import requirements for animal hides and skins can be found on the Department for Environment Food and Rural Affairs (DEFRA) website at <http://www.defra.gov.uk/animalh/int-trde/imports/iins/hide/index.htm>