



NEW YORK CITY DEPARTMENT OF HEALTH AND MENTAL HYGIENE

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Drum-making: Guidelines for Handling Animal Hides

Disease due to naturally occurring anthrax is very rare in people in the United States, but it has occurred in the past in people who work with contaminated animal hides.

What is anthrax?

Anthrax is a disease caused by exposure to the spore-forming bacterium *Bacillus anthracis*. Anthrax bacteria can change into a different form, a spore. A spore is a dormant (asleep) form of the bacteria that can persist in the soil and reawaken (start to grow) when it enters the lungs, a break in the skin or the gastrointestinal tract of a person or animal. Spores are microscopic and not visible to the naked eye. They can survive for years in soil in much of the world, causing infection primarily in herbivorous (grass eating) mammals (e.g., cattle, sheep, goats, antelope) when they ingest (eat) anthrax spores from soil. It is rare, however, to find infected animals in the United States. Spores can also contaminate the fur or hair of an animal without making the animal sick. Anthrax spores can be altered from their natural state so that they can be used as a bioterrorist weapon. This was the case in 2001, when weaponized anthrax spores were intentionally distributed through the postal system, causing 22 cases of anthrax, including 5 deaths. Weaponized spores are much more infectious than the naturally occurring anthrax spores that may be found on some animal hides.

How is anthrax transmitted?

Anthrax is a rare disease in people. People can become infected with anthrax by handling infected animals or contaminated animal products (e.g., animal hides), by inhaling anthrax spores, or by eating contaminated food (e.g., meat from infected animals) that has been uncooked or undercooked.

There are four types of anthrax disease in humans:

- Cutaneous (skin) anthrax: This is a treatable skin infection that can occur when anthrax spores enter the skin through a cut, sore, or scratch. Most of the anthrax cases in the United States are cutaneous. Although rare, this is the only form of anthrax that could potentially spread from person to person.
- Inhalation (lung) anthrax: This occurs if people breathe in spores. This form of anthrax causes very severe breathing problems and can spread to other important areas in the body (for example, the brain). Inhalation anthrax almost always results in very serious illness, including death.
- Gastrointestinal anthrax: This can occur if a person eats uncooked or undercooked food contaminated with anthrax and may cause severe illness of the throat or abdomen, and possibly death. This form of anthrax has never been reported in the United States.
- Meningeal (brain) anthrax: If anthrax bacteria enter the bloodstream following cutaneous, inhalation or intestinal anthrax infection they may spread to the brain. Symptoms include sudden headache, nausea, vomiting, muscle aches, chills and dizziness. Treatment is often unsuccessful.

What is the risk of getting anthrax from making animal hide drums?

Animal hides pose a low risk of cutaneous, inhalation and meningeal anthrax. Animal hides imported from other countries where anthrax is more common (for example, Africa) may be riskier to use than hides that came from animals in the U.S. Human anthrax rarely occurs in the United States and in the

past, has been linked to working with animal hair or hides in a factory or other industrial setting in which there was poor or no ventilation. Among the 236 cases of anthrax reported to CDC from 1955 to 1999, 153 (65%) were associated with industrial handling of animal hide or hair. However, only 9 of the 153 cases (6%) associated with industrial handling of hair or hide were inhalation anthrax. The others were cutaneous anthrax. The incidence of inhalation anthrax in American factories was reduced following improvements in industrial hygiene (e.g., personal protection), improved ventilation and decreased use of imported animal material.

In February 2006, a single case of inhalation anthrax was diagnosed in a New York City resident who made traditional African drums by using hard-dried imported animal hides. In this case, the drum maker probably inhaled anthrax spores while he shaved the animal hair from a contaminated hide, which caused the spores to become airborne. The workspace was small and poorly ventilated contributing to the risk for inhaling spores.

In July 2006, a person in Scotland was diagnosed with inhalation anthrax after attending a drumming class. Investigators determined that the infection resulted from exposure to anthrax spores during the drumming class. More recently, in September 2007, two cases of cutaneous anthrax were diagnosed in a family from Connecticut. One of the cases made African drums in a barn outside their home.

Am I at risk for getting anthrax from playing a drum?

Only one case of cutaneous anthrax has been documented in the United States in the past 50 years from playing a drum. The drum in question still had hair on it and was obtained from Haiti. There has never been a case of inhalation anthrax in the United States that resulted from playing drums. The practice of drumming has many cultural and personal benefits that can enhance your life and that may outweigh the low risk of anthrax.

How can I reduce my exposure to anthrax spores if I work with animal hides?

Taking simple precautions such as *working in well ventilated workspaces, washing hands, wearing gloves and using treated animal hides* will help to reduce any potential for being infected with anthrax spores.

The Most Important Steps to Take Include:

1. **Work Outside or in a Well-Ventilated Space** – Shaving or scraping the hides may cause anthrax spores to become airborne. A workspace with good air flow will reduce the potential for inhaling airborne spores.
2. **Wear Disposable Gloves** – Gloves protect your skin from exposure and should be thrown out after use.
3. **Wash Your Hands** – Carefully clean hands and any exposed skin with soap and water after touching animal hides.
4. **Handle Hides with Care** – When possible, avoid activities such as vigorously shaking, beating, or scraping animal hides. These actions can release spores into the air and increase the risk of exposure. Avoid blowing on the animal hide to remove hair and debris while cleaning. Instead, gently wipe the hide dry.
5. **Clean Work Environment** – Regular cleaning of the work area will help prevent an accumulation of dust from the drum-making process. Clean work surfaces with wet mops or rags.
6. **Dispose of Waste Promptly** – After soaking animal hides, immediately dispose of water down the drain. Hair that is removed from the hide should be collected and placed in a plastic bag, secured tightly with a tie and disposed of in the trash. Wet the hair and other waste materials (such as dirty rags) with water or a mist of water prior to collecting it to keep dust levels down.
7. **Remove and Wash Your Work Cloths** – After working with an animal hide, change and launder work clothing and shower prior to engaging in other activities. Care should be taken not to track dust on work shoes into living spaces.

While the following additional precautions may not be possible or practical for all persons working with animal hides, they may also help to further reduce your risk.

- **Work in a Non-Home Setting** – Do not work on untreated animal hides in living spaces or where young children might play due to the low but potential risk to others in the home.
- **Use a HEPA-filtered Vacuum** (High efficiency particulate air filters) – This vacuum is specially designed to trap extremely small dust particles, such as anthrax spores. Use the HEPA-filter vacuum to remove dust on hides and during general cleaning of the work area.
- **Use a Disposable Respirator** – Inexpensive disposable respirators, marked N95 or N100, can be purchased at most hardware stores. They have not been proven to reduce exposure to anthrax spores but will reduce the amount of dust inhaled. They should be thrown out after use.
- **Use Treated Hides** – Purchase animal hides that have been treated by a professional to reduce the number of spores. Several methods such as professionally drying, boiling, or chemically treating the hides will reduce the risk of anthrax. These methods, however, may reduce the quality of the skin for making drums.
- **Use Domestic Hides** – Since anthrax is more common in other parts of the world, animal hides imported from other countries may pose a higher risk of exposure than domestic (U.S.-origin) hides.
- **Use Skins that have had Hair Removed** – Most of the anthrax spores are trapped in the hair, so using hides that have already had the hair removed will reduce the risk of anthrax.

For more information on rules governing the importation of hides into the US, visit the USDA National Center for Import and Export (NCIE) on line at <http://www.aphis.usda.gov/vs/ncie/> or call them by phone at (301) 734-3277.

For more detailed information about anthrax, see the following websites:

New York City Department of Health and Mental Hygiene
<http://www.nyc.gov/html/doh/html/cd/cd-anthrax.shtml>

Centers for Disease Control and Prevention websites:
<http://www.bt.cdc.gov/agent/anthrax/faq/>