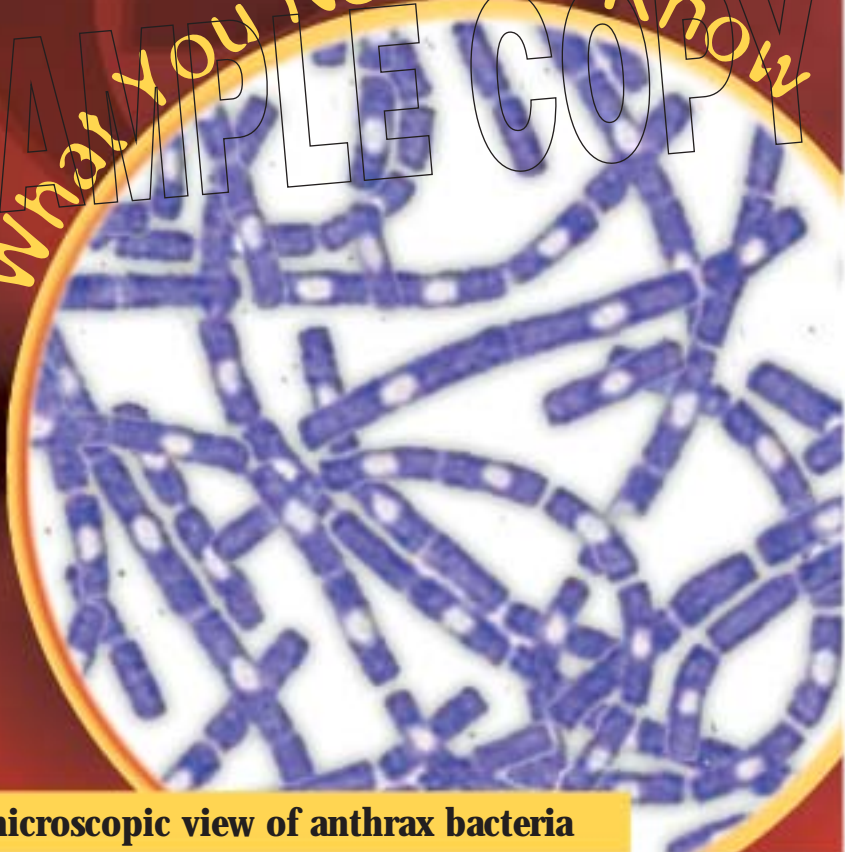


# Biothreat: Anthrax

What You Need to Know

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**A microscopic view of anthrax bacteria**

# Diseases as Weapons

Many diseases could be used as weapons, but most are hard to obtain, preserve, and spread. Terrorists first have to buy or steal a sample of the disease. This alone can be difficult and expensive.

Terrorists must protect themselves from the disease which can require complex, expensive equipment.

Changing a test tube sample of a disease into a form that can be spread easily is hard to do. Terrorists need large amounts of the disease to hurt many people.

A laboratory version of a disease is usually fragile. Outside of a test tube, it would die quickly. For a disease to be spread, it has to be “weaponized,” which is a complicated scientific task.

## Why Anthrax?

Anthrax is easier to obtain than some diseases. It can even be found in nature. Terrorists may be able to buy weaponized anthrax.

Anthrax is hardy. The bacteria are protected by spores. A spore is like a seedpod guarding the bacterium from damage.

Spores allow anthrax to live in a dry powder form until they can grow in a living human or animal body.

Anthrax is easier to spread than some diseases. With the right technology, terrorists could infect a large group at once. An anthrax release would be invisible, odorless, and tasteless.

It is possible to diagnose anthrax, and it is curable with antibiotics.



**Anthrax bacteria  
magnified 1,250 times**

# The Disease in Nature

Anthrax is caused by the bacteria *Bacillus anthracis*. When animals like deer or sheep eat plants growing in contaminated soil, they eat anthrax spores also.



**Anthrax was once called Woolsorter's Disease.**

In nature, a person would get anthrax by eating undercooked infected meat, getting infected animal blood inside a cut in the skin, or inhaling anthrax by stirring up spore-filled soil.

## Exposure Versus Infection

Someone can come into contact with anthrax spores (“exposure”) without getting sick with anthrax (“infection”). A person could get anthrax spores on the skin and wash them off before they entered the body through a cut. Another person could breathe in spores and they could get stuck in the nose hairs and never cause infection by reaching the lungs.

When there is a known exposure, people receive antibiotic treatment to make sure that no infection occurs.

# Three Types of Anthrax

In people, there are three forms of anthrax infection, cutaneous (skin) infection, gastrointestinal (from eating spores), and inhalation (from breathing the spores into the lungs).

You cannot get anthrax from contact with another person.

## Cutaneous Anthrax

Cutaneous anthrax is the most common type. Anthrax spores enter the body through a cut or break in the skin.

The first sign of cutaneous anthrax is a small bump on the skin. It may look like an insect bite. In a day or two, this

bump changes into a painless sore with a black center. Some patients may have fever, headache, and swollen lymph nodes.

About one out of five people with untreated cutaneous anthrax will die. With antibiotic treatment, about 1 in 100 people with this form of the disease may die.



Typical cutaneous anthrax sore

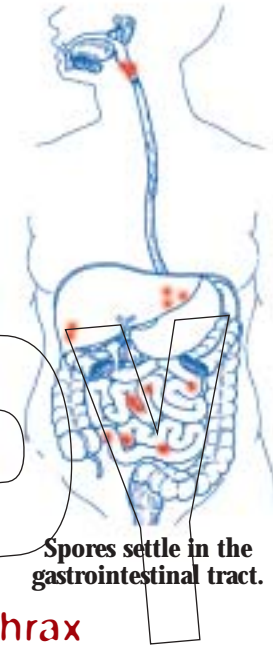
**Anthrax, if caught early,  
is treatable with antibiotics.**

## Gastrointestinal Anthrax

Gastrointestinal anthrax is a rare form of the disease. It occurs when a person eats the undercooked meat of an infected animal.

Spores grow in the throat, stomach, or bowels. Signs include sores in the throat and mouth, fever, pain, lost appetite, swelling, nausea, and vomiting. Later, vomiting of blood and severe, bloody diarrhea may follow.

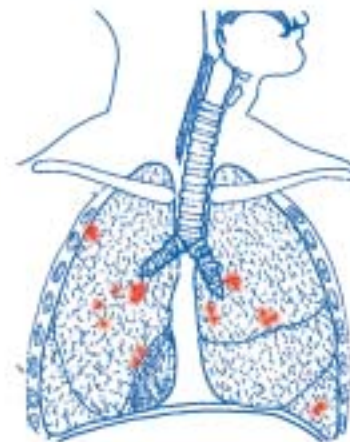
If a gastrointestinal anthrax exposure is suspected, antibiotic treatment begins immediately. Without early treatment, gastrointestinal anthrax is fatal in up to 6 out of 10 cases.



Spores settle in the gastrointestinal tract.

## Inhalation Anthrax

Inhalation anthrax infection occurs when a person breathes in spores. Symptoms appear when the bacteria begin to grow in the lungs.



Anthrax spores lodge in lung tissue.

Early symptoms are similar to the flu, including fever, body aches, chest pain, heavy sweating, and cough. Later, the patient has difficulty breathing, increased fever, and possible meningitis (infection of the brain and/or spinal cord).

Without very early treatment, inhalation anthrax kills up to 9 out of 10 people. If treatment begins before symptoms appear, it may improve chances of survival.

# Avoiding Anthrax Exposure

Sending powdered anthrax in an envelope is not likely to kill large numbers of people. An aerosol (mist) release of anthrax would be invisible, odorless, and deadly. However, aerosol release would be very difficult and expensive.

## Suspect Letters and Packages

It is a good idea to keep an eye out for suspicious envelopes and packages. Don't handle a suspicious letter or package.

Wash your hands with soap and warm water after handling any mail.

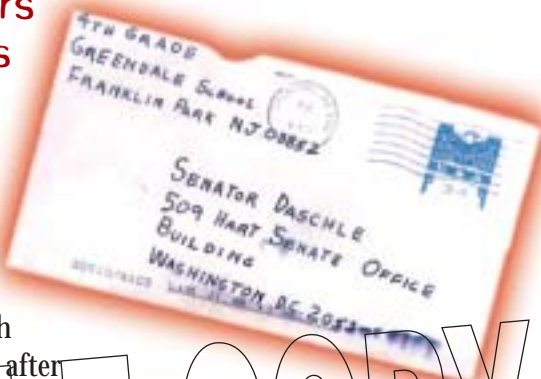
Look out for:

- Unexpected packages
- Extra or uncanceled postage
- Outdated, incorrect, or handwritten address
- Missing or false return address
- Lopsided, lumpy, or stiff areas
- Visible wires, odors, or stains
- Sealed with excessive amounts of tape or string
- Markings like "Confidential" or "Rush"

If you open an item containing anything unusual, cover it, leave it in place, keep others away from it, and call the police.

If any of the package's contents spills or spreads around the area, cover the spill carefully before closing up the room.

Wash hands with soap and water right away. As soon as possible, change clothes and take a shower. Place the clothing you were wearing in a plastic bag for authorities.



Actual terrorist letter sent to Senator Tom Daschle

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# If You Have Symptoms

Be alert for signs of anthrax:

- An unexplained sore, especially on hands, arms, face, neck, or in the mouth
- Any sore with a black center
- Sudden sore throat, nausea, or swollen glands
- Fever, body aches, headache, cough, and/or other flu-like symptoms

If you have any of these symptoms, you should see a doctor. It could just be the flu. It's a good idea to get a flu shot each year.

## Treatment

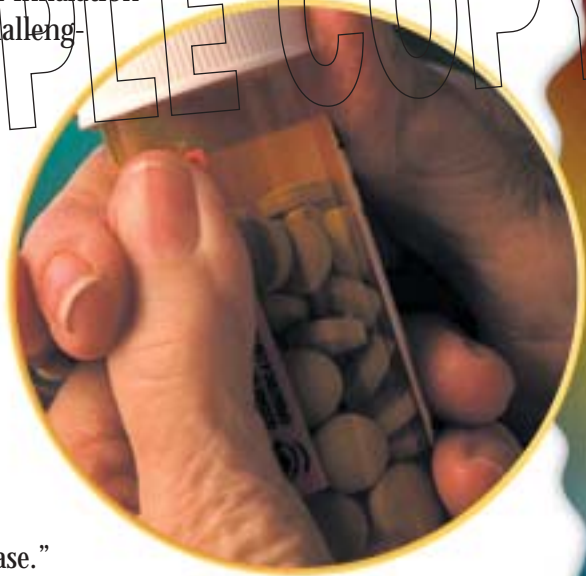
Anthrax can be treated with antibiotics. Cutaneous anthrax responds very well to treatment.

Gastrointestinal and inhalation anthrax are more challenging to treat.

Someone who is exposed to anthrax should get antibiotic treatment right away. A variety of antibiotics are available to treat anthrax.

It is a bad idea to stock up on any antibiotic "just in case."

Needed antibiotics may not be available for those who are really sick. Antibiotics lose their strength over time. It is possible they wouldn't even work when and if you needed them.



## Keep in Mind

A mass exposure of anthrax would be hard to make happen, even for a wealthy, powerful country. Anthrax is often curable. Being alert to suspicious packages and strange behavior can keep you safe. Any severe, flu-like symptoms or unexplained sores should be examined by a doctor.

### **For More Information:**

#### **Online Terrorism Resource Site**

[www.syndistar.com/terrorism](http://www.syndistar.com/terrorism)

#### **Centers for Disease Control and Prevention (CDC)**

[www.cdc.gov](http://www.cdc.gov)

1-800-311-3435

#### **U.S. Department of Health and Human Services (DHHS)**

[www.os.dhhs.gov](http://www.os.dhhs.gov)

1-877-696-6775

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