

Update: Facts about anthrax testing and on-going investigations in Florida, Nevada, New York, and Washington, D.C.

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Anthrax Disease

For people with suspected anthrax **disease**, laboratory testing is *essential* to diagnosis.

Tests may include:

- Cultures of blood and spinal fluid (should be done before antibiotic treatment has been initiated)
- Cultures of tissue or fluids from affected areas
- Microscopic examination of tissue
- PCR (polymerase chain reaction) test that amplifies trace amounts of DNA to document that the anthrax bacteria is present.

Exposure to Anthrax Bacteria (*Bacillus anthracis*)

Persons with an **exposure** or contact with an item or environment known, or suspected to be contaminated with *Bacillus anthracis* — regardless of laboratory tests results — should be considered for antibiotic (prophylaxis) treatment. *Exposure or contact, not lab test results, is the basis for initiating such treatment.*

Tests that might be conducted during an anthrax exposure investigation

- Culture of nasal swabs are used to detect anthrax spores that may be resting in the nose. Nasal swabs can occasionally document exposure, but **can not** rule-out exposure to anthrax. In other words, *a negative nasal swab test does not mean that exposure has not occurred.* Nasal swabs are used during investigations of known or suspected anthrax exposures because they may provide clues to help investigators assess the exposure circumstances.
- Antibody tests can be used to measure reactions in the blood of persons with anthrax infection and others who have received anthrax vaccine. Antibody testing also helps investigators make estimates of the number of exposures in a population affected by the investigation, but is not validated as a diagnostic tool for anthrax disease. For this reason, antibody tests are not available in most laboratories.

Two sequential tests are usually necessary to interpret the antibody test information. Therefore, persons who are tested as part of an investigation of anthrax exposure may be asked to return for a second test. This second test is compared with the first test to measure any changes in the antibody level over time. Results from the second antibody test can help investigators to interpret the significance of the initial test, and help assess the exposure (e.g., location in a building or number of persons exposed).

Testing work environments and suspicious letters or packages

Law enforcement officials and public health officials work together to investigate envelopes and packages suspected of containing anthrax or other biological agents. Powder and other specimens collected from these sources usually are analyzed through the Public Health Laboratory Network, which includes the Laboratory Response Network (LRN).

Powders

Lab testing of powders or other materials suspected of harboring the anthrax bacteria is often an important component of an investigation. Tests may include:

- Cultures of suspected materials.
- Microscopic examination of a sample of a suspect material.

- Evaluation of the characteristics of the suspect agent's growth properties.
- PCR (polymerase chain reaction) test that amplifies trace amounts of DNA to document that the bacteria is present.
- DFA (direct fluorescent assay) to detect key bacterial proteins.
- Other specialized tests to confirm the identification of the bacteria.

Environment (where exposure may have occurred)

During the course of an investigation important information may be obtained from sampling the environment where the exposure may have occurred. Testing of the environment is useful for detecting trace amounts of anthrax spores. Specimens obtained may include:

- Samples of the air
- Swabs of material on various surfaces

These samples are processed in the laboratory to promote growth of any spores, if present. If suspicious bacteria grow, additional testing — like that conducted on suspect powders (see "Powders") — also may be performed.

Where are specimens sent?

The specimens are sent to various laboratories. Local clinical laboratory testing is confirmed at state and large metropolitan public health laboratories. The LRN is a collaborative partnership and multilevel system linking state and local public health laboratories with advanced capacity laboratories—including clinical, military, veterinary, agricultural, water, and food-testing laboratories—to rapidly identify threat agents, including anthrax. The Centers for Disease Control and Prevention (CDC) conducts highly specialized testing for anthrax as well.

Clean-up of contaminated areas

The U.S. Environmental Protection Agency (EPA) www.epa.gov, with help from 16 federal agencies and departments, including CDC, is responsible for environmental and cleanup issues. Federal agencies, in conjunction with local and state agencies, will determine the best approach to the cleanup.

Update: On-going anthrax investigations

NEVADA

Test results sent to CDC on the initial samples from Nevada are negative. However, additional samples have been sent and will be tested.

FLORIDA

The Palm Beach County Control and Prevention have confirmed that the 73-year-old male employee of American Media Inc., hospitalized since the beginning of October, has been diagnosed as a *probable* case of anthrax disease. The diagnosis cannot be *confirmed* according to the strictest diagnostic criteria (requires isolation of the bacteria from a clinical specimen such as blood, lung samples, or spinal fluid). However, the overall picture of clinical symptoms combined with positive results on laboratory tests suggest to the Health Department, Florida Department of Health, and the Centers for Disease health officials that this individual has anthrax disease.

Also, a minuscule amount of anthrax spores has been found in a small, non-public mail processing area of the Boca Raton Main post office. There is no indication that these spores pose a health risk to workers or visitors. As an extraordinary precaution, health officials are asking employees to leave this small portion of the building. The affected area will be cleaned tonight — *after* the post office closes. The post office will be open again for business in the morning.

In Florida, there are 2 cases of anthrax and 1 exposure.

For more information on this investigation, contact the Palm Beach County Health Department, (561) 712-6488/6400

NEW YORK

Preliminary tests indicate cutaneous (skin) anthrax disease in an infant. The child's mother, an ABC employee, took the child with her to the ABC building on West 66th Street in Manhattan on September 28. While it is not certain that the child came into contact with anthrax bacteria at the ABC building, it is currently the focus of the investigation. The child was started on a course of antibiotics and is doing well. The New York City Health Department is not aware of any other individuals with symptoms of cutaneous anthrax who work in, or visited, the ABC building. The infant's doctor notified the Health Department on October 12 that the symptoms might be suggestive of a cutaneous anthrax infection. On October 13, a skin biopsy was CDC for testing and the Health Department received the results on October 15.

In New York, there are 2 cases of anthrax and 3 exposures.

For more information on this investigation, contact the New York City Health Department, (212) 295-5335 or online at: www.ci.nyc.ny.us/html/doh/home.html

WASHINGTON

CDC and health officials in the District of Columbia are conducting a public health investigation related to possible anthrax exposure on Capitol Hill. CDC has sent a team of investigators to assist with the investigation.

NATIONALLY

There are numerous reports of potential anthrax cases throughout the United States. The initial assessment of these incidents is made at the state level. CDC is providing technical assistance to the states on "How to handle anthrax and other biological agent threats."
www.bt.cdc.gov/DocumentsApp/Anthrax/10122001Handle/10122001Handle.asp

For the latest update on CDC activities and on-going anthrax investigations visit

www.bt.cdc.gov/ or www.cdc.gov/od/oc/media/