

Botulism and Bioterrorism

What is botulism?

Botulism is a serious muscle-paralyzing disease caused by a nerve toxin made by the bacterium *Clostridium botulinum*. These bacteria are in soil throughout the world and produce spores that can survive in a dormant state until favorable conditions allow them to grow.

The three main types of botulism are:

- Foodborne – caused by eating botulism toxin in food. Many types of food have been connected with the illness, with the common factor being that the tainted food items were not heated or were not completely heated.
- Intestinal – most commonly seen in infants who have the bacteria in their intestinal tract.
- Wound – caused when wounds are infected with spores that produce the toxin.

Can botulism be used as a bioterrorism threat?

Several terrorist groups and some nations are believed to have or are experimenting with biological weapons programs. Botulinum toxin has been a concern as a potential biological warfare agent since World War II. The extreme toxicity of botulinum toxins and the ease of production, transport and delivery make this a potential bioterrorism agent. In a bioterrorism attack, the toxin may be used as an

aerosol for people to breathe in or may be put into food supplies.

What are the symptoms of botulism?

Symptoms include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth and muscle weakness. Infants with botulism appear lethargic, eat poorly, are constipated and have a weak cry and poor muscle tone. These are all symptoms of the muscle paralysis caused by the toxin. If untreated, symptoms may progress to paralysis of the arms, legs, trunk and respiratory muscles. In foodborne botulism, symptoms begin 18 to 36 hours after eating tainted food but can occur as early as six hours or as late as 10 days. Anyone with these symptoms should contact a health care provider right away.

How is it spread?

Botulism is not spread from person to person. Foodborne botulism can happen to people of all ages. If you eat foods containing the toxin, it is likely that you will become ill.

How is botulism diagnosed?

A diagnosis is made by showing evidence of the toxin in blood, stool or the suspected food item. Infant botulism also can be diagnosed by growing the bacteria from an infant's stool. These tests can be done at some state health department laboratories and at the Centers for Disease Control and Prevention.

How is botulism treated?

Receiving care in a hospital is almost always necessary. A patient may be on a breathing machine for weeks. Antitoxin given early during the course of the disease is effective in reducing the severity of symptoms and can be lifesaving. The antitoxin is not used to treat infant botulism. Most patients eventually recover after weeks to months of supportive care. Untreated botulism may result in death due to respiratory failure. There is no approved vaccine for preventing botulism.

Would enough medication be available in the event of a bioterrorism attack?

Public health officials have large supplies of drugs needed in the event of a bioterrorism attack. These supplies can be sent anywhere in the United States within 12 hours.

Can botulism be prevented?

Botulism can be prevented. Most cases in the United States are due to home-canned fruits and vegetables. Be sure all canned and preserved foods are properly processed and prepared. Bulging containers should not be opened and foods with off-odors should not

be eaten or even tasted. Commercial cans with bulging lids should be returned unopened to the store. A recognized source of infant botulism is honey and it should not be fed to infants; however most cases of infant botulism cannot be traced to a specific food item.

What is the public health system doing about the possibility of an outbreak?

Local, state and federal public health agencies are actively working with local health care providers, hospitals, emergency response teams, laboratories, veterinarians and others to prepare for large outbreaks and biological disasters of all types, including botulism. If bioterrorism is suspected, the Department of State Health Services notifies the CDC, FBI and other appropriate authorities.

Where can I get more information?

Contact your local health department. Botulism information can be found on the Department of State Health Services Web site at www.dshs.state.tx.us/ideas/botulism/factsheet/ and the CDC Web site at www.bt.cdc.gov/agent/botulism/.