

What is botulism?

Botulism is an uncommon but serious illness caused by a toxin that is produced by the bacterium *Clostridium botulinum*. There are three main types of botulism: foodborne, infant, and wound. Foodborne botulism occurs when a person ingests preformed toxin that leads to illness. Infant botulism occurs in a smaller number of susceptible infants each year who harbor *C. botulinum* in their intestinal tract. Wound botulism occurs when wounds are infected with *C. botulinum* that secretes the toxin. In the United States, an average of 136 cases of botulism are reported each year. Of these, approximately 25% are foodborne, 72% are infant botulism, and the rest are wound botulism. Foodborne botulism can be especially dangerous because the contaminated food may still be available for other persons to consume. Foodborne botulism is an uncommon disease in Oklahoma; only two cases have been reported since 1994.

How is botulism spread?

Most foodborne botulism cases are the result of improperly home-canned foods, especially foods with a low acid content, such as asparagus, green beans, beets, and corn. Outbreaks of botulism involving two or more persons have also occurred from improperly preserved food sources such as chopped garlic in oil, chili peppers, tomatoes, and improperly handled baked potatoes wrapped in aluminum foil. Wound botulism often results from contamination of wounds from soil or gravel or from improperly treated open fractures. Infant botulism occurs from ingestion of spores that germinate in the colon, rather than through ingestion of preformed toxin. Botulism is not spread from person-to-person.

What are the symptoms of botulism?

Symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness. If untreated, these symptoms can progress causing paralysis of the arms, legs, trunk, and respiratory muscles. If the illness is severe, breathing muscles are involved, leading to respiratory failure and death unless assistance with breathing (mechanical ventilation) is provided. Infants with botulism appear lethargic, feed poorly, have a weak cry, neck weakness and poor muscle tone ("floppy baby" syndrome), and are usually constipated.

Can botulism be used as a biological weapon?

Several nations are believed to have biological weapons programs. The potential use of botulism toxin is of great concern due to its ease of mass production, ability to affect a large number of people, and the need for prolonged care. A bioterrorist event involving botulism could be caused by the deliberate contamination of a food or beverage. Experts believe that the development of botulism toxin is beyond the capability of individuals or groups without access to advanced biotechnology.

Is there a treatment for botulism?

The respiratory failure and paralysis that occur with botulism may require a patient to be on a breathing machine (mechanical ventilation) for several weeks to several months along with intensive medical and nursing care. If diagnosed early, botulism antitoxin can be administered to the patient to help prevent symptoms from worsening, but recovery still takes many weeks.

What can be done to prevent botulism?

1. Persons who do home canning should follow strict hygiene procedures to reduce contamination of foods.
2. For information on safe home canning procedures, instructions are available from county extension offices or from the Extension Service of the US Department of Agriculture at http://www.uga.edu/nchfp/publications_usda.html.

3. Because high temperatures can destroy the botulism toxin, persons who eat home-canned foods should boil the food for at least ten minutes before eating to ensure safety.
4. *C. botulinum* may cause container lids to bulge and the contents to have “off-odors.” Commercial cans and home-canned products that are bulging or rusted around the rim or seam should not be eaten.
5. Oils that are infused with garlic or herbs should be refrigerated.
6. To reduce the risk for botulism when pickling, food items should be washed and cooked adequately, and utensils, containers, and other surfaces in contact with food, including cutting boards and hands, should be cleaned thoroughly with soap and warm water.
7. Because honey can contain spores of *Clostridium botulinum* and this has been a source of infection for infants, children less than 12 months of age should not be fed honey. Honey is safe for individuals one year of age and older.

