

Facts:

from the Colorado Department of Public Health and Environment



Botulism: questions and answers

What is botulism?

Botulism is a rare but serious paralytic illness caused by a nerve toxin that is produced by the bacterium *Clostridium botulinum*.

There are three main kinds of botulism.

- Foodborne botulism is caused by eating foods that contain the botulism toxin. Foodborne botulism can be especially dangerous because many people can be poisoned by eating a contaminated food.
- Wound botulism is caused by toxin produced from a wound infected with *Clostridium botulinum*.
- Infant botulism is caused by consuming the spores of the botulinum bacteria, which then grow in the intestines and release toxin.

All forms of botulism can be fatal and are considered medical emergencies.

What kind of germ is *Clostridium botulinum*?

- *Clostridium botulinum* is the name of a group of bacteria commonly found in soil.
- The rod-shaped organisms grow best in low oxygen conditions.
- The bacteria form spores, which allow them to survive in a dormant state until exposed to conditions that can support their growth.
- There are seven types of botulism toxin designated by the letters A through G; only types A, B, E and F cause illness in humans.

How common is botulism?

- An average of 110 cases of botulism are reported each year in the U.S.
- Of these, approximately 25% are foodborne, 72% are infant botulism, and the rest are wound botulism.
- Outbreaks of foodborne botulism involving two or more persons occur most years, usually caused by eating contaminated, home-canned foods.
- The number of cases of foodborne and infant botulism has changed little in recent years.
- Wound botulism has increased because of the use of black-tar heroin, especially in California.

What are the symptoms of botulism?

- The classic symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, and muscle weakness.
- Infants with botulism appear lethargic, feed poorly, are constipated, and have a weak cry and poor muscle tone.
- These are all symptoms of the muscle paralysis caused by the bacterial toxin.
- If untreated, these symptoms may progress to cause paralysis of the arms, legs, trunk, and respiratory muscles.
- In foodborne botulism, symptoms generally begin 18 to 36 hours after eating a contaminated food,

but they can occur as early as six hours or as late as 10 days.

How is botulism diagnosed?

- Physicians may need the patient's history and a physical examination to make a diagnosis.
- These clues are usually not enough to allow a diagnosis of botulism. Other diseases such as Guillain-Barré syndrome, stroke, and myasthenia gravis can appear similar to botulism.
- Special tests may be needed to exclude these other conditions.
- The most direct way to confirm the diagnosis is to inject the patient's serum or stool into mice and look for signs of botulism.
- The bacteria can be isolated from the stool of persons with foodborne and infant botulism. These tests can be performed at some state health department laboratories and at CDC.

How can botulism be treated?

- The respiratory failure and paralysis that occur with severe botulism may require a patient to be on a breathing machine (ventilator) for weeks, with intensive medical and nursing care. After several weeks, the paralysis slowly improves.
- If diagnosed early, foodborne and wound botulism can be treated with an antitoxin which blocks the action of toxin circulating in the blood.
- Physicians may try to remove contaminated food by inducing vomiting or by using enemas.

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- Surgery on wounds may help to remove the source of the toxin-producing bacteria.
- Antitoxin is not given routinely for treatment of infant botulism.

Are there complications from botulism?

- Botulism can result in death due to respiratory failure. However, in the past 50 years the proportion of patients with botulism who die has fallen from about 50 percent to eight percent.
- A patient with severe botulism may require a breathing machine as well as intensive medical and nursing care for several months.
- Patients who survive an episode of botulism poisoning may have fatigue and shortness of breath for years. Long-term therapy may be needed to aid recovery.

How can botulism be prevented?

- Follow strict hygienic procedures during home canning to reduce food contamination. Instructions on safe home canning can be obtained from county extension services or from the U.S. Department of Agriculture.
- Home-canned foods with low acid content, such as asparagus, green beans, beets, and corn should be processed especially carefully.
- Oils infused with garlic or herbs should be refrigerated.
- Potatoes which have been baked while wrapped in aluminum foil should be kept hot until served or refrigerated.
- People who eat home-canned foods should consider boiling the food for 10 minutes before eating it because the botulism toxin is destroyed by high temperatures.
- Children less than 12 months old should not be fed honey. Honey can contain spores of *Clostridium botulinum*. Honey is safe for children one year of age and older.
- Wound botulism can be prevented by promptly seeking medical care for infected wounds and by not using injectable street drugs.

Reliable sources of information

Colorado HELP hotline

www.cohelp.us
1-877-462-2911 (toll-free)
M-F 7 a.m. – 11 p.m.; S-S 9:30 a.m. – 8 p.m.

Centers for Disease Control and Prevention (CDC)

www.cdc.gov
1-800-311-3435 (toll-free)

Colorado Department of Public Health and Environment

www.cdphe.state.co.us
303-692-2700
1-800-866-7689 (toll-free)



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