

BOTULISM

Also: Clostridium Botulinum, Intestinal Botulism, Wound Botulism, and Infant Botulism

What is Botulism?



Botulism is a rare but serious paralytic illness caused by a nerve toxin that is produced by the bacterium *Clostridium botulinum* and sometimes by strains of *Clostridium butyricum* and *Clostridium baratii*. There are five main kinds of botulism.

1. **Foodborne Botulism:** is caused by eating foods that contain the botulinum toxin.
2. **Wound Botulism:** is caused by toxin produced from a wound infected with *Clostridium botulinum*.
3. **Infant Botulism:** is caused by consuming the spores of the botulinum bacteria, which then grow in the intestines and release toxin.
4. **Adult Intestinal Toxemia (adult intestinal colonization) Botulism:** is a very rare kind of botulism that occurs among adults by the same route as infant botulism.
5. **Iatrogenic Botulism:** can occur from accidental overdose of botulinum toxin.

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

Signs and Symptoms

The classic symptoms of botulism include:

- double vision
- blurred vision
- drooping Eyelids
- slurred speech
- difficulty swallowing
- dry mouth
- 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 respiratory muscles, arms, legs, and trunk. In foodborne botulism, symptoms generally begin 18 to 36 hours after eating a contaminated food, but they can occur as early as 6 hours or as late as 10 days.

Diagnosis

Physicians may consider the diagnosis if the patient's history and physical examination suggest botulism. However, 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, and special tests may be needed to exclude these other conditions.

Treatment

The respiratory failure and paralysis that occur with severe botulism may require a patient to be on a breathing machine (ventilator) for weeks or months, plus intensive medical and nursing care. The paralysis

slowly improves. Botulism can be treated with an antitoxin which blocks the action of toxin circulating in the blood. If given before paralysis is complete, antitoxin can prevent worsening and shorten recovery time. Physicians may try to remove contaminated food still in the gut by inducing vomiting or by using enemas. Wounds should be treated, usually surgically, to remove the source of the toxin-producing bacteria followed by administration of appropriate antibiotics.

Prevention

Many cases of botulism are preventable. Foodborne botulism has often been from home-canned foods with low acid content, such as asparagus, green beans, beets and corn and is caused by failure to follow proper canning methods. However, seemingly unlikely or unusual sources are found every decade, with the common problem of improper handling during manufacture, at retail, or by consumers; some examples are:

- chopped garlic in oil
- canned cheese sauce
- chili peppers
- tomatoes
- carrot juice
- baked potatoes wrapped in foil

Foodborne Botulism is a public health emergency because many people can be poisoned by eating the contaminated food from a mass produced source.

Persons who do home canning should follow strict hygienic procedures to reduce contamination of foods, and carefully follow instructions on safe home canning including the proper use of pressure canners/cookers. 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. Because the botulinum toxin is destroyed by high temperatures, persons who eat home-canned foods should consider boiling the food for 10 minutes before eating it to ensure safety.

Wound botulism can be prevented by promptly seeking medical care for infected wounds and by not using injectable street drugs.

Most infant botulism cases cannot be prevented because the bacteria that causes this disease is in soil and dust. The bacteria can be found inside homes on floors, carpet, and countertops even after cleaning. Honey can contain the bacteria that causes infant botulism so, children less than 12 months old should not be fed honey. Honey is safe for persons 1 year of age and older.



For more sources of information on this topic visit:

ST. CLAIR COUNTY HEALTH DEPARTMENT www.scchealth.co
CENTERS FOR DISEASE CONTROL AND PREVENTION www.cdc.gov

For information on proper canning procedures visit:

THE NATIONAL CENTER FOR HOME FOOD
PRESERVATION http://nchfp.uga.edu/publications/publications_usda.html