

Botulism

Frequently Asked Questions

What is botulism?

Botulism is a rare but serious 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.
- Wound botulism is caused by toxin produced from a wound infected with *Clostridium botulinum*.
- Infant botulism occurs when babies eat foods containing spores of botulinum bacteria, which then grow in the intestines and release toxin.

All forms of botulism can be fatal and are considered medical emergencies. Foodborne botulism can be especially worrisome because many people can be poisoned by eating contaminated food.

How common is botulism?

In the United States an average of 110 cases of botulism are reported each year. 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 and are usually caused by eating contaminated home-canned foods. The number of cases of foodborne and infant botulism has changed little in recent years, but wound botulism has increased.

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 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. These tests may include a brain scan, spinal fluid examination, nerve conduction test (electromyography, or EMG), and a tensilon test for myasthenia gravis.

The most direct way to confirm the diagnosis is to demonstrate the botulinum toxin in the patient's serum or stool by injecting serum or stool into mice and looking for signs of botulism. The bacteria can also be isolated from the stool of persons with foodborne and infant botulism. These tests can be performed at the New Jersey Public Health and Environmental Laboratories and at federal Centers for Disease Control and Prevention (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, plus 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.

This can prevent patients from worsening, but recovery still takes many weeks. Physicians may try to remove contaminated food still in the digestive tract by inducing vomiting or by using enemas. Wounds should be treated, usually surgically, to remove the source of the toxin-producing bacteria. Appropriate supportive care in a hospital is the mainstay of therapy for all forms of botulism. Currently, antitoxin is not routinely given 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 decreased from about 50 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 and long-term therapy may be needed to aid recovery.

People with symptoms of botulism should seek medical attention immediately. Early diagnosis and antitoxin are critical for patient recovery.

How can botulism be prevented?

Botulism can be prevented. Foodborne botulism has often resulted from eating improperly home-canned foods.

Persons who do home canning should follow strict hygienic procedures to reduce contamination of foods. 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 botulism 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.

Instructions on safe home canning can be obtained from county extension services or from the U.S. Department of Agriculture.

Honey can contain spores of *C. botulinum*. This has been a source of infection for infants. Never feed honey to infants under the age of one year.

Wound botulism can be prevented by promptly seeking medical care for infected wounds.

What are public health agencies doing to prevent or control botulism?

Public education about botulism prevention is an ongoing activity. Information about safe canning is widely available for consumers. State health departments and the CDC have persons knowledgeable about botulism available to consult with physicians 24 hours a day. If antitoxin is needed to treat a patient, it can be quickly delivered to a physician anywhere in the country. Suspected outbreaks of botulism are quickly investigated, and if they involve a commercial product, the appropriate control measures are coordinated among public health and regulatory agencies. Physicians should report suspected cases of botulism to the New Jersey Department of Health immediately.

How dangerous is botulism?

The CDC classifies agents with recognized bioterrorism potential into three categories: A, B and C. Botulism is a Category A agent.

Category A agents

- Pose the greatest possible threat to the public's health
- May spread across a large area
- Require advance planning to protect the public's health.

What is the public health system in New Jersey doing to prepare for a possible biological attack?

New Jersey and the CDC are working together to prepare for all potential health hazards, including bioterrorism.

Activities include:

- Developing plans and procedures to respond to biological attacks
- Training and equipping emergency response teams, gathering samples and performing tests to help state and local governments control infection
- Educating healthcare providers, the media and the general public about what to do in the event of an attack
- Working closely with local health departments, veterinarians and laboratorians to monitor for suspected cases of bioterrorism
- Working with hospitals, laboratories, emergency response teams and healthcare providers to make sure they have the supplies they need in the event of an attack.

Where can I get more information?

- Your health care provider
- Your local department of health
- The New Jersey Department of Health www.nj.gov/health
- Centers for Disease Control and Prevention www.cdc.gov/botulism

This information is intended for educational purposes only and is not intended to replace consultation with a healthcare professional.

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