

Risk

- , Foodborne botulism can occur in all age groups.
- , Botulism is not spread person-to-person.
- , Botulism can result in death due to respiratory failure if appropriate medical care is not available. However, in the past 50 years the proportion of patients with botulism who die has fallen from about 25% to 6% because of improved medical care in intensive care units.

Treatment

- , CDC maintains the national botulism anti-toxin supply. A physician diagnosing a case of botulism and wishing to treat a patient with anti-toxin must contact the CDC through their state health department. Public health officials must be alerted immediately about potential cases of botulism.
- , If symptoms occur, individuals should seek treatment immediately. Botulism can be fatal and should be considered a medical emergency.
- , The paralysis and respiratory failure that occur with botulism may require a patient to be on a breathing machine (ventilator) for weeks, plus intensive medical and nursing care. The paralysis slowly improves, usually over several weeks. If diagnosed early, foodborne and wound botulism can be treated with an antitoxin from horse serum which blocks the action of toxin circulating in the blood. This can prevent patients from worsening, but recovery still may take many weeks.

Michigan Department of Community Health
Community Public Health Administration
3423 N. MLK Blvd.; P.O. Box 30195
Lansing, MI 48909

Bioterrorism Emergency Notification

Actual or Threatened Terrorist Event

Business Hours: (517) 335-8024

After Hours: (517) 335-9030

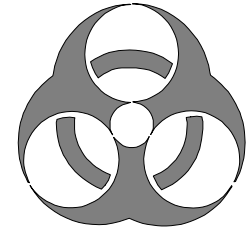
General Information

Communicable Disease/Immunization: (517) 335-8165

Laboratory: (517) 335-8063

Botulism

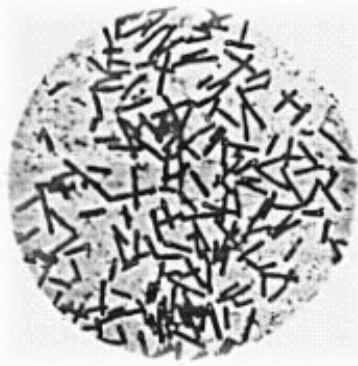
And Bioterrorism



Michigan Department of Community Health
Bureau of Epidemiology
Division of Communicable Disease and
Immunization

Biological Weapon

- , Botulism toxin is the most potent lethal substance known to man (lethal dose 1ng/kg). Botulism toxin is made by the bacterium *Clostridium botulinum*.
- , Botulinum toxin was developed as an aerosol weapon by several countries. No human data exist on the effects of inhaling botulinum toxin, but it may resemble a foodborne syndrome.
- , If people have intentionally been exposed, in a bioterrorist attack, breathing in the toxin or ingesting the toxin via contaminated food or water are the most likely routes of exposure that might lead to a serious illness (foodborne botulism).
- , Spores of *C. botulinum* are found in soil worldwide. Terrorists with the technical capacity to grow cultures of the bacterium, and harvest and purify the toxin could therefore use it as a bioterrorism agent. Contaminating food with botulism toxin could cause a devastating event.



Clostridium botulinum

The Disease

- , About 25 cases of foodborne botulism occur each year, usually due to improperly prepared or home-canned foods. Outbreaks from commercial products and foods prepared improperly in restaurants have also occurred.
- , Botulism is a muscle paralyzing disease caused by a nerve toxin. The toxin types most commonly associated with human disease are types A, B, and E.

There are three main kinds of botulism:

- , **Foodborne Botulism** occurs when a person ingests preformed toxin which leads to illness within a few hours to days. Foodborne botulism is a public health emergency because it could indicate that a food is still available to other persons (besides the patient).
- , **Infant botulism** is a condition that occurs in a small number of susceptible infants each year. For unknown reasons *Clostridium botulinum* is able to grow in their intestines. Infant botulism is not a public health emergency because the infants are not consuming food with toxin; rather they are consuming *C. botulinum* spores (which are everywhere in the environment), but for unknown reasons these few infants are susceptible to gut colonization.

The Disease (cont.)

- , **Wound botulism** is caused by the growth of living botulism bacteria in a wound, with ongoing secretion of toxin that causes the paralytic illness. In the United States, this syndrome is seen almost exclusively in injecting drug users.
- , Symptoms of botulism include double vision, blurred vision, drooping eyelids, slurred speech, difficulty swallowing, dry mouth, muscle weakness which always descends the body:
 - First shoulders, then upper arms, then lower arms, then thigh, calves, etc. Paralysis of breathing muscles can cause a person to stop breathing and die, unless he/she is assisted by a ventilator.
- , For foodborne botulism, symptoms begin from six hours up to two weeks after eating toxin-containing food; most commonly the delay is about 12-36 hours.
- , Infants with botulism appear lethargic, feed poorly, are constipated, and have a weak cry and lax muscle tone.