



BOTULINUM TOXIN

- Agent information:** A potent neurotoxin produced from *Clostridium botulinum*, an anaerobic, spore-forming bacterium. There are three forms of naturally occurring human botulism — foodborne, wound, and intestinal (infant and adult). A fourth non-natural form results from intentionally aerosolized botulinum toxin, which produces inhalation botulism.
- Transmission:** Botulism and botulinum toxin are not contagious and cannot be transmitted from person to person. Transmission occurs through:
- Ingestion of the pre-formed toxin (foodborne botulism)
 - Wound infection
 - Ingestion of bacterial spores (not toxin) that germinate and produce the toxin in the colon (intestinal)
 - Aerosolization of toxin (most likely intentional exposure).
- Signs and symptoms:** Characterized by symmetric, descending flaccid paralysis of motor and autonomic nerves, beginning with the cranial nerves. Symptoms include diplopia, blurred vision, ptosis, dysphasia, dysphagia, dry mouth, and muscle weakness. Recognized by its classic triad: (1) symmetric, descending flaccid paralysis with prominent bulbar palsies in (2) an afebrile patient with (3) a clear sensorium. Incubation periods for the different types of botulism are:
- Foodborne botulism: within 12 to 72 hours of toxin ingestion.
 - Wound botulism: four to 14 days.
 - Intestinal botulism: in infants, up to 30 days. In adults, unknown.
 - Inhalation: one to three days after exposure and is dose dependent.
- Protective measures:** Standard precautions. Decontamination is necessary if exposure is from aerosolization, and presentation is immediate.

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- Evaluation:** Clinical specimens: Serum: (10cc in red / black top tube); nasal swab; stool: 10 to 50 grams into a sterile container; enema fluid: 20cc of fluid purged with a minimal amount of sterile, non-bacteriostatic water to minimize dilution of toxin. Food sample: collect 10 to 50 grams submitted in original food container.
- Prophylaxis:**
- Using antitoxin for post-exposure prophylaxis is limited by its scarcity and its reactogenicity. Due to the risk of the equine antitoxin, it is less certain how to care for those exposed to the toxin but not yet ill.
 - **Foodborne** – Monitor persons who may have been exposed and treat promptly with antitoxin at first signs of illness.
 - **Intentional** – Asymptomatic persons who may have been exposed should return to their homes with information on signs and symptoms and seek medical treatment if symptoms develop.
- Treatment:** Intense supportive care and administration of equine antitoxin. Patients may require weeks to months of ventilatory support. *Administration of the antitoxin will minimize subsequent nerve damage and severity of disease but will not reverse existing paralysis.* Antitoxin, maintained by the Centers for Disease Control and Prevention (CDC), can be obtained through the Division of Public Health.
- Reporting:** Report suspect cases immediately to the Division of Public Health, Epidemiology Branch: 1-888-295-5156 (24/7 coverage).
- For more information:** Division of Public Health, Epidemiology Branch: 1-888-295-5156. For additional information, visit the CDC website: www.cdc.gov/botulism/.

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