

Botulism

Botulism is a rare but potentially fatal condition that causes progressive weakness. It is caused by toxins produced by the *Clostridium botulinum* bacterium. Although found worldwide in soil and sediments, where it does not cause a problem, the bacterium can get into the body through cuts, or it can grow and produce potent nerve toxins in foods that are not properly cooked, preserved or canned.

Botulism is considered a medical emergency. If untreated, it may cause death.

Types of botulism

There are three types of botulism:

- **Intestinal botulism** – this is the most common form of botulism. Children under the age of 12 months are most susceptible, but adults who have certain gastrointestinal problems may also be at risk. The incubation period for intestinal botulism is not known. This form of botulism is caused by consuming food, particularly honey, or dust or soil that contains *Clostridium botulinum* spores, which then multiply inside the intestinal tract and produce toxins. While honey has been implicated as a source of intestinal botulism in the United States, no Australian honey surveyed has so far contained the bacterium. Healthy adults aren't usually affected, because they have natural defences in their gastrointestinal tracts.
- **Food-borne botulism** – while the intestinal form of this disease involves consuming the botulism organisms themselves, food-borne botulism involves eating toxins formed by the bacteria in the food. These toxins are absorbed from the intestine, and act on the nervous system of the patient. The symptoms are severe and the poisoning is often fatal. Symptoms generally occur between 12 and 36 hours after eating the contaminated food. Most human cases of botulism are caused by improperly cooked, preserved or canned foods where growth of the bacterium has produced the toxins.
- **Wound botulism** – this rare form of botulism is caused by contaminated soil or gravel invading a wound. Intravenous drug users are also susceptible. Symptoms occur after four days to two weeks.

Symptoms of botulism in adults

Symptoms include:

- Dry mouth
- Nausea
- Vomiting
- Swallowing difficulties
- Speaking difficulties
- Visual disturbances, such as double vision
- Increasing weakness and, ultimately, paralysis – progressing from the limbs to the body and finally to the breathing muscles including the diaphragm
- Breathing difficulties.

Symptoms of botulism in babies

Symptoms include:

- Constipation
- Poor sucking and feeding
- Choking and gagging

- Weak, feeble cry
- Reduced movements of the limbs
- Inability to control head movements
- Increasing weakness and floppiness
- Paralysis
- Breathing difficulties.

Treatment options for botulism

Botulism is a medical emergency.

- The most important treatment for botulism is supportive care, including assisted breathing using a ventilator for breathing difficulties and intravenous fluids if the patient can't swallow.
- Antitoxin against botulism should be administered early, if available, to reduce the severity of the symptoms.

Botulism and home-preserved foods

Be careful when preparing home-preserved foods.

Botulism has been associated with canned foods and, more recently, with vegetables in oil and some other foods. Throw out all raw or canned food that shows any sign of being spoiled.

When canning or preserving foods at home, pay particular attention to hygiene, cooking time, pressure, temperature, refrigeration and storage. Pressure cooking is the only recommended method for preserving foods such as meat, poultry, seafood and most vegetables.

Make sure you use the correct equipment, properly sterilise containers and always follow the manufacturer's instructions for your equipment. Use only recipes with tested proportions of ingredients and be sure to follow recommendations for time, pressure and safe preserving methods appropriate to the size of container, style of pack and kind of food being processed.

Don't taste food from swollen containers or food that is 'foamy' or has a bad odour. Don't rely on smells or 'blown' containers alone to signal food contamination – it is not always possible to detect *Clostridium botulinum* bacterium in this way. When in doubt, throw it out.

Preventing botulism infection in babies

Prevention strategies include:

- Avoid giving honey to babies under 12 months of age.
- Keep newborn babies away from soil until their umbilical stumps have dropped off and the navel has completely healed.
- Take care when preparing, handling and storing solid foods for babies.

Other precautions against botulism

Other ways to reduce the risk of botulism include:

- Wash any wound thoroughly with antibacterial soap and keep clean.
- Avoid injections of illicit drugs.

Where to get help

- Your doctor
- Always call an ambulance in an emergency. Dial triple zero (000)
- Department of Health Tel. 1300 651 160 – to report food-borne botulism (this should be done as soon as possible so that the source can be identified and contaminated food recalled)
- Food Science Australia Tel. (02) 9490 8333 – for information on safe home bottling.

Things to remember

- Botulism is a rare but potentially fatal condition that causes progressive weakness.
- It is caused by toxins made by the *Clostridium botulinum* bacterium.
- The bacterium is found in soil, sediments, raw foods (including seafoods) and honey.
- Foods that are not properly cooked, preserved or canned can be the vehicles for human botulism.
- Treatment options include purging techniques, antitoxin medication and supportive care.

This page has been produced in consultation with, and approved by:

Department of Health - Communicable Disease Prevention and Control Unit

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