Botulism

(12/26/2016)

Botulism is a rare but serious condition caused by toxins from bacteria called Clostridium botulinum.

Three common forms of botulism are:

- **Foodborne botulism.** The harmful bacteria thrive and produce the toxin in environments with little oxygen, such as in canned food.
- **Wound botulism.** If these bacteria get into a cut, they can cause a dangerous infection that produces the toxin.
- **Infant botulism.** This most common form of botulism begins after Clostridium botulinum bacterial spores grow in a baby's intestinal tract. It typically occurs between the ages of 2 months and 8 months.

Botulism can be fatal and requires emergency medical care. It can occur in infants, be spread in food, or infect a wound.

Symptoms include difficulty swallowing or speaking, facial weakness, and paralysis.

Treatments are an antitoxin injection and breathing assistance

Symptoms of illness

The symptoms of botulism depend upon the age of the person exposed. In adults this may include difficulty in swallowing, speech, and breathing, and double vision. The onset of botulism is usually 18 to 36 hours after eating the contaminated food, although it can be as soon as four hours and as long as eight days. In infants, signs of botulism include constipation,

muscle weakness, and loss of head control, also called "the floppy baby."

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,

- have a weak cry, and
- have 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.

Canned foods

Normal thorough **cooking** (pasteurisation: 70°C 2min or equivalent) will **kill** Cl.**botulinum** bacteria but not its spores. To **kill** the spores of Cl.**botulinum** a sterilisation process equivalent to 121°C for 3 min is required. The **botulinum toxin** itself is inactivated (denatured) rapidly at temperatures greater than 80°C .

Pressure canners should be used for all **foods** that are naturally low in acid. The **botulism** spores can only be **killed** by the high heat that can be obtained in a pressure canner. In addition, home-**canned foods** should be boiled for 20 minutes before tasting or **eating**.Nov 30, 2011

Food Safety of Frozen Canned Food

Frozen canned foods stored in unheated storage area may cause concern. If canned foods have frozen, they may still be safe to eat. Safety will depend on the condition of the can or jar. To evaluate, consider the following:

Metal Cans

- If the seams are still intact, the food is safe to use. Thaw gradually and store at room temperature.
- If the seam has broken and the food has thawed out, it should be discarded.
- If the seam has broken and food is still cold (below 41F), it may be safely transfer to a container. Store in the refrigerator or refreeze for future use.
- For an extra margin of safety, all low acid foods (meats, fish, poultry and vegetables) must be discarded.

Glass Jars

If jars have cracked or broken during freezing, discard

- If the seal is still intact, the food is safe to use. Thaw gradually and store at room temperature. Recheck seal once thawed.
- If the seal is broken and food is thawed, discard

- If the seal is broken and food is below 41F, it may be safely transferred to a container. Store in the refrigerator or refreeze for future use.
- All food that is frozen in glass jars should be examined for spoilage before use. All low acid foods (meats, poultry, fish, and vegetables) must be discarded.

General

- Discard any product with an off color or odor. DO NOT TASTE food that looks or smells suspicious. When in Doubt, Throw it Out.

What it looks like:

Are home-canned foods the only concern?

Infant botulism is a concern for children under one year of age. It is possible for bees to pick up the botulism spores from flowers or soil. These spores are not destroyed during the processing for honey. The botulism spores grow in the baby's intestinal tract and then produce the toxin. This is less likely to occur after the age of one year when the baby's digestive tract matures.

Flavored oils also can be a concern if not prepared correctly. When herbs, garlic, or tomatoes are placed in oils, the botulism spores on the plant material can start to produce the toxin in this anaerobic mixture. To be safe, keep these flavored oils refrigerated and make only the amount of herbal oils and butters that will be used in a few days. Using dried herbs and vegetables will also reduce the risk.

Baked potatoes wrapped in foil and kept at room temperature occasionally form the anaerobic conditions the botulism spores need to produce their toxin. For this reason, leftover potatoes should be refrigerated. Potato salad made from leftover baked potatoes that have been improperly refrigerated has been implicated in botulism poisoning.

How can I control the pathogen in my home?

- Boil all home-canned, low-acid foods 20 minutes before eating. Low-acid foods are most vegetables, some tomatoes, and meat or poultry.
- Discard all raw or canned food that shows any sign of being spoiled.
- Discard all bulging or swollen cans of food and food from glass jars with bulging lids.
- DO NOT TASTE food from swollen containers or food that is foamy or has a bad odor.
- Process low-acid foods at temperatures above boiling (which can only occur using a pressure canner) and for the recommended time for the size of can or jar you are using.
- Can low-acid foods in a pressure canner. Do not can low-acid foods in the oven, in a water-bath canner, open kettle, or vegetable cooker.
- If you suspect that home-canned food has spoiled, heat the food to boiling to destroy possible toxin, then discard the food. Do not eat this food. Clean all surfaces with chlorine/water solution (one tablespoon of bleach per gallon of water) that leaky containers may have contaminated. Then boil any sponges or cloths used for clean-up to destroy the toxin. Then, discard the sponges or clean-up cloths.
- Do not give honey or foods with honey to infants under one year of age.

There are a number of organisms that can make people sick. It is not possible to determine which pathogen is causing the problem based on symptoms alone. Individuals suffering from serious illness should seek appropriate medical advice.