

# Botulism Fact Sheet



## What is botulism?

Botulism is a rare but serious illness caused by a toxin (poison) that attacks the nervous system and causes paralysis. This toxin, called botulinum toxin, is produced by bacteria called *Clostridium botulinum* (*C. botulinum*). *C. botulinum* bacteria are found naturally in the environment, including soil and dust, but usually do not make people sick. Under certain conditions, *C. botulinum* can grow and produce the toxin, which can then cause botulism. Symptoms of botulism usually start with weakness of the muscles of the face, resulting in double vision, and can spread to the neck, arms, cause difficulty breathing, and eventually result in complete paralysis.

## Botulism can be deadly and is a serious medical and public health emergency.

If you or someone you know has symptoms of botulism, go to the emergency room immediately, or call 911.

## How can a person get botulism?

A person can get botulism in different ways, but botulism is not contagious and cannot spread from person to person. The different types of botulism are determined by the way a person is exposed to the botulinum toxin:

1. **Foodborne Botulism:** Caused by eating foods that are contaminated by botulinum toxin. A person can get foodborne botulism by eating or drinking something that is not properly cooked, processed, preserved, or stored. The *C. botulinum* bacteria produce the toxin in food under certain conditions, especially in unrefrigerated, low-oxygen, low-acid, and low-sugar environments. The bacteria can also produce the toxin in some commercially produced food and drink that aren't properly refrigerated.

Examples of foods that have caused botulism:

- Homemade foods that have not been properly canned, preserved, fermented, or stored, including home-canned asparagus, green beans, pesto, herbs in oil, corn, and baked potatoes in foil stored at room temperature.
  - Rarely, store-bought foods that have not been properly refrigerated, including vegetable soups and carrot juice.
2. **Wound Botulism:** Caused by a wound infected with *C. botulinum* bacteria that then produces the toxin. People who inject street drugs such as black tar heroin are at a much higher risk of botulism.
    - Heroin can be contaminated with the bacteria, and even small wounds (like injection sites) that do not look infected can grow bacteria and be a source of toxin.
    - Rarely, wound botulism can occur after a traumatic injury like an open fracture, especially if dirt or soil gets into the wound.

3. **Infant Botulism:** Occurs when a baby swallows *C. botulinum* bacteria, which then produce the botulinum toxin in the baby's intestine. *C. botulinum* bacteria can be in dirt and dust and can be easily swallowed, although usually without making anyone sick. But some babies under 15 months old can get infant botulism when *C. botulinum* starts to produce the botulinum toxin in the baby's intestine. Honey can contain *C. botulinum* bacteria and is not safe for babies under 15 months old to eat. Visit this site for [more information on infant botulism](http://www.infantbotulism.org/) (www.infantbotulism.org/).
4. **Adult Intestinal Toxemia** (also known as adult intestinal colonization): Occurs when an adult swallows *C. botulinum* bacteria, which then produce the botulinum toxin in the intestine. This is similar to infant botulism (above) but occurs in people over 15 months old. This condition is thought to be very rare. People with severe gut illnesses or previous intestinal surgery are more at risk for this type of botulism.
5. **Iatrogenic Botulism:** Caused by the injection of too much botulinum toxin for cosmetic or medical reasons. Although rare, a person who gets botulinum toxin injections for cosmetic or medical reasons (example: for wrinkle treatment or headaches) may get iatrogenic botulism if they are injected with too much of the toxin.

### What are the symptoms of botulism?

The most common symptoms of botulism include:

- droopy eyelids
- double or blurred vision
- difficulty swallowing
- dry mouth
- thick feeling tongue
- loss of facial expression or muscle weakness in the face
- inability of the neck muscles to support the head
- slurred speech

If not treated quickly, paralysis can continue down both sides of the body causing:

- paralysis of the arms, legs, and trunk
- breathing problems
- death

Botulism can paralyze the muscles that control breathing, and the patient can require the use of a breathing machine (ventilator) to breathe. About 1 in 20 people who get botulism die from respiratory failure or the result of long-term paralysis.

Babies with **infant botulism** appear tired, show little facial expression, have a weak cry, poor head control, constipation, and appear “floppy” because they cannot control their muscles.

People with **foodborne botulism** typically experience symptoms 18 to 36 hours after eating contaminated food or drink, but symptoms can occur as early as 6 hours or as late as 10 days after.

People with **wound botulism** may not experience symptoms until several days after the wound is infected with the bacteria or after injecting drugs contaminated with bacteria. People with wound botulism caused by injecting drugs may not always have a visible wound.

### How common is botulism?

Botulism is rare in the United States and California. Most cases reported in the U.S. are infant botulism. Foodborne botulism is especially rare in California, with only 0 to 6 cases reported most years from 2008 to 2019. In 2017, there were 15 foodborne cases, including 10 from an outbreak caused by contaminated nacho cheese sauce. Contaminated foods that have been associated with foodborne botulism have included canned chili, pesto sauce, and carrot juice. Wound botulism is more common in California than in any other state, with 10 to 50 cases reported each year from 2008 to 2019.

Although botulism is rare, **all forms of botulism can cause death and are considered medical emergencies.**

### How is botulism diagnosed?

Botulism is diagnosed 1) by a doctor who determines a patient could have botulism based on their symptoms and history, **and** 2) by special laboratory tests at a public health laboratory.

### How can botulism be treated?

Botulism is a very serious disease and can be deadly if not treated. Because the breathing muscles may be paralyzed, a patient with botulism may need to be on a breathing machine (ventilator) for weeks with intensive medical care. If caught early, botulism can be treated with botulinum antitoxin, which blocks the toxin from causing more harm in the body. But the antitoxin cannot undo or heal any muscle paralysis that has already happened, and so it can take time for a person to recover. Botulinum antitoxin for patients 15 months of age and older in California is available by working with the local public health department, CDPH, and the U.S. Centers for Disease Control and Prevention (CDC). If the diagnosis of botulism is suspected, healthcare providers can ask for the botulinum antitoxin through their local health department, which will work with CDPH and CDC to release the antitoxin.

For **infant botulism**, healthcare providers should directly contact the CDPH Infant Botulism Treatment and Prevention Program at 510-231-7600 (24/7/365) to obtain the licensed human botulinum antitoxin, BabyBIG® which is available only for infants (generally under 15 months old).

## How can I reduce my risk of getting botulism?

Many cases of botulism are preventable, and there are things you can do to reduce your chances of getting botulism.

To reduce your risk of **foodborne botulism**, it is important to properly prepare, store, and preserve food to help prevent botulism bacteria from growing and making the deadly toxin:

- Follow all cooking and storage instructions on food product labels (such as “keep refrigerated”). These instructions are provided for your safety.
- If you do home canning, it is important to follow strict instructions to safely preserve food and reduce contamination. For information about safe home canning, see the U.S. Department of Agriculture (USDA) [Complete Guide to Home Canning](#).
- If you eat home-canned foods, boil the canned food for at least 10 minutes before eating to be sure it is safe to eat. High temperatures from boiling destroy the botulinum toxin.
- Always refrigerate oils infused with garlic or herbs.
- Keep potatoes that have been baked using aluminum foil hot until served, or refrigerate the baked potatoes until ready to eat.
- Keep unpasteurized foods (such as juices) refrigerated.
- Inspect store-bought or home-canned, jarred, or fermented food for contamination:
  - THROW out if the container is:
    - leaking, bulging, or swollen
    - looks damaged or cracked
    - the container spurts liquid or foam when opened
  - THROW out if the food inside is moldy, discolored, or smells bad.
- DO NOT taste food to see if it is bad. Remember: *When in doubt, throw it out!*

To reduce the risk of **infant botulism**:

- Do not give babies younger than 15 months old honey because honey can contain the *C. botulinum* bacteria. Honey is safe for people 1 year of age and older.
- Learn more on the [CDPH Infant Botulism Treatment and Prevention Program Parents Corner webpage](#).

To reduce your risk of **wound botulism**:

- Do not inject street drugs like black tar heroin. If you currently use street drugs and are ready to quit using, call the national help line 24/7 at 1-800-662-HELP (1-800-662-4357). Learn more on the [CDC Injection Drug Use and Wound Botulism webpage](#).

To reduce your risk of **iatrogenic botulism** from cosmetic or medical injections:

- You should only get injections of commercial botulinum toxin (like “Botox”) from licensed practitioners or healthcare providers that have been trained to safely administer botulinum toxin.

If you or someone you know has symptoms of botulism, go to the emergency room immediately.

### **What is the California Department of Public Health (CDPH) doing to prevent and control botulism?**

CDPH carefully monitors and follows up on all cases of botulism that are reported in California. Healthcare providers are required to report all patients that are thought to have botulism immediately to their local public health department. CDPH works closely with local health departments to determine if the patient has suspected infant, wound, or foodborne botulism. Suspected foodborne botulism is considered to be a medical and public health emergency and requires a quick and detailed investigation to make sure that other people don't get sick from the same contaminated food. CDPH works with the CDC, local health departments, and regulatory agencies on all cases of foodborne botulism, and implements control measures, such as removal of food items that may be the source of illness.

CDPH collaborates with local public health departments to educate the public about botulism prevention. Healthcare providers suspecting **foodborne or wound botulism** should consult with a neurologist and contact their local health department (LHD) for consultation, and the LHD will contact CDPH for botulinum antitoxin and for botulinum toxin testing. For suspected **infant botulism** cases, healthcare providers may contact an infant botulism subject matter expert at CDPH's Infant Botulism Treatment and Prevention Program 24/7 at 510-231-7600. If antitoxin is needed to treat a patient with suspected botulism, it can be quickly provided to a hospital anywhere in the state.

### **Where can I get more information about botulism?**

You can get more information about botulism on the [CDC Botulism Information](http://www.cdc.gov/botulism/) (www.cdc.gov/botulism/) and [Home-Canned Foods](http://www.cdc.gov/botulism/consumer.html) (www.cdc.gov/botulism/consumer.html) webpages.

Additional information on infant botulism is available from the CDPH [Infant Botulism Treatment and Prevention Program](http://www.infantbotulism.org/) website (www.infantbotulism.org/) and [Infant Botulism Treatment and Prevention Program](http://www.cdph.ca.gov/Programs/CID/DCDC/Pages/InfantBotulism.aspx) webpage (www.cdph.ca.gov/Programs/CID/DCDC/Pages/InfantBotulism.aspx).

Additional information on safe home canning can be found at the U.S. Department of Agriculture's [Complete Guide to Home Canning](http://nchfp.uga.edu/publications/usda/INTRO_HomeCanrev0715.pdf) (http://nchfp.uga.edu/publications/usda/INTRO\_HomeCanrev0715.pdf).

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