

*epi*TRENDS

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Botulism

Recognized for several centuries, botulism remains a rare but often severe condition. New risk exposures have recently been identified.

The Disease

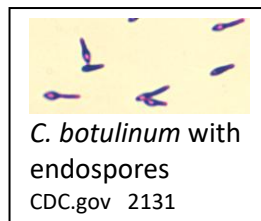
Botulism is caused by botulinum toxin, a neurotoxin. *Clostridium botulinum* is the usual source of toxin, rarely other species.

Classic symptoms are a descending paralysis with early impact on facial (cranial) nerves. Infants may have a change in cry or decreased feeding. Depending on the level of toxin, paralysis can compromise the respiratory muscles. Botulism immune globulin for infants and botulinum antitoxin for older children and adults block the toxin, preventing disease progression but not reversing symptoms. Supportive treatment may include ventilation.

Botulism from food was recognized in the 18th century, linked with blood sausages; the disease is named after Latin for sausage: *botulus*. Other forms of botulism were later recognized, wound botulism in 1951 and infant botulism in 1976. Recently, iatrogenic cases were connected to botulinum toxin given therapeutically.

Sources of Botulism

Clostridia producing botulinum toxin are strict anaerobes, requiring absence of oxygen to reproduce. Clostridial spores occur widely in the environment including in dust and on produce. A wide variety of under-processed home-canned vegetables have been implicated. In some regions, fermented marine products are risk foods. Since the spores are heat-tolerant, hot water bath canning does not eliminate the spores and pressure canning is needed for risk foods. Sufficient acid (pickling), salt (brining), sugar (syruping), or drying will also prevent growth and have been traditional means of food preservation. Rarely, oil-immersed foods (e.g., herbs, garlic) have caused illnesses as has illicitly brewed alcohol (often called “pruno”) in correctional settings.



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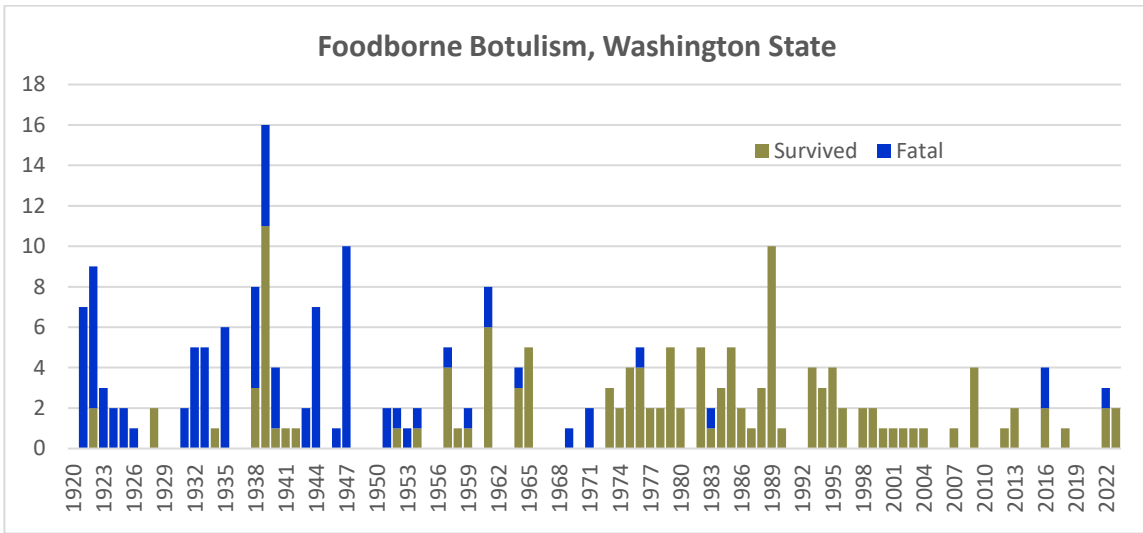
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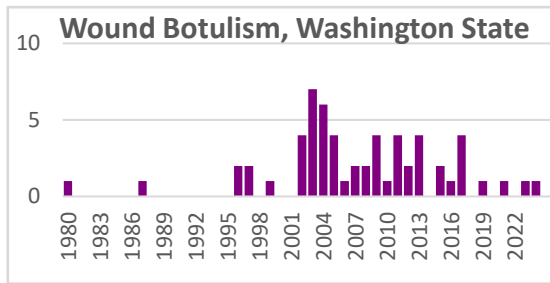
Commercial foods are hardly ever associated with botulism. Canned hot dog chili sauce, canned cheese sauce, and frozen chili (mishandled in the secondary market) have caused outbreaks. An unusual outbreak in a restaurant resulted from dips thickened with mashed potatoes that were baked in foil and held at room temperature for several days before being used.

Surveillance for Botulism

Washington surveillance data for foodborne botulism cases tracking started in 1920. Until the availability of intensive care and antitoxin, most cases were fatal.

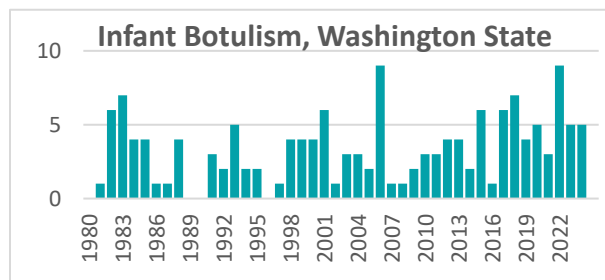


Cases of wound botulism occur when the bacteria grow in tissue and release toxin. The source can be a contaminated injury, such as during gardening, or following injection of black tar heroin into skin or muscle tissue.



Black tar heroin is sold on the West Coast and in some Midwest states. Forms of heroin in other states and in Canada have not been connected to wound botulism. Heroin-associated cases are usually single, but small outbreaks occur (see Resources). Heroin-related wound botulism cases were more frequent in the early 2000s but recently declined. This recent decrease may not be sustained but could reflect a transition from heroin to other street drugs such as fentanyl, which does not carry the risk of botulism and has seen increased use in this country over the past decade.

Botulism can occur in infants (and a very few adults who had major intestinal surgery) when spores germinate in the intestine and produce botulinum toxin. Affected infants are under a year of age, usually six months or younger. Botulinum spores are ubiquitous in soil, and could be tracked into a house on shoes or brought in with produce such as vegetables. After warnings were issued about honey containing botulinum spores, most parents avoided feeding honey to infants. Currently few infant botulism cases have had any identified risk (see 2025 outbreak below).



Iatrogenic botulism is the most recent form recognized. Licensed dilute botulinum toxin products relax muscles to treat spasms, migraine headaches, and other conditions. There is also cosmetic use to reduce facial wrinkles and creases. When the product is injected into face or neck muscles, diffusion of the toxin can happen related to dosage, concentration, volume, administration technique, or variation among brands. There can be local muscle paralysis causing asymmetric smile, eyelid drooping, or vision change. More serious complications include trouble swallowing, altered speech, or even respiratory paralysis requiring antitoxin treatment and ventilatory support.

Recently, iatrogenic botulism cases have been reported due to products purchased online by individuals not licensed to inject such medication. These are counterfeit items with credible packaging that mimics valid products, but with different toxin concentrations. Cosmetic products approved by the US Food and Drug Administrations are to be given by a licensed medical professional; such products are not sold online (see Resources).

CDPH Alerts Consumers and Healthcare Providers of Serious Health Risks Related to Counterfeit Botox

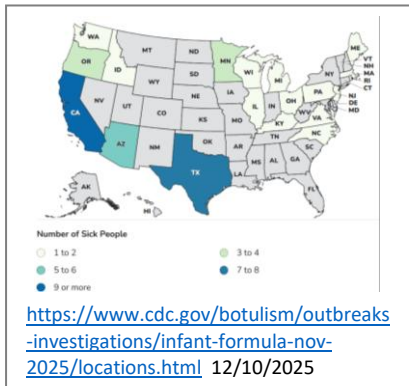
May 8, 2024
NR24-013
Contact: media@cdph.ca.gov

What You Need To Know: Counterfeit versions of Botox have been found in multiple states, including California, and are causing hospitalizations and other serious reactions among people who received injections in non-medical, unlicensed settings. Consumers should only get injections of FDA-approved Botox from licensed and trained professionals in healthcare settings.

<https://www.cdph.ca.gov/Programs/OPA/Pages/NR24-013.aspx>

Infant Botulism 2025 Outbreak

In November 2025, an unusual multistate outbreak of infant botulism was linked to a specific commercial infant formula. As of publication, there are 39 cases identified in 18 states including two in Washington. No cases died. Tests of various implicated products, including a sealed container, were positive for *C. botulinum*. The outbreak led to an infant formula product recall of all lot numbers and all sizes of containers (see Resources). Caregivers were advised to record product lot number and best-by date, store the formulas safely for one month, and discard, as well as to wash and sanitize potentially contaminated items and surfaces. An investigation into the source of contamination is ongoing.



All forms of botulism are rare. Local health jurisdictions with reports of cases can immediately contact the Office of Communicable Disease Epidemiology for assistance with an investigation. With older children and adults, public health connects the provider with the Centers for Disease Control and Prevention for treatment. With infant botulism, the provider directly contacts the Infant Botulism Treatment and Prevention Program. Testing is done at a public health laboratory.

Resources

Infant formula outbreak:

- <https://www.cdc.gov/botulism/outbreaks-investigations/infant-formula-nov-2025/index.html>
- <https://www.fda.gov/food/outbreaks-foodborne-illness/outbreak-investigation-infant-botulism-infant-formula-november-2025>

Infant Botulism Treatment and Prevention Program: <https://infantbotulism.org/>

Iatrogenic botulism:

https://www.cdc.gov/mmwr/volumes/74/wr/mm7438a1.htm?s_cid=OS_mm7438a1_w

Wound botulism cluster: <https://www.cdc.gov/mmwr/volumes/71/wr/mm7115a3.htm>