

# Clostridium botulinum SGD

35 year female presented with symptoms of diplopia, dysphagia and flaccid paralysis with history of consuming canned beans on regular basis.

## Source of trouble

Low-acid foods that were improperly canned

## Trouble signs

- Clear liquids turned milky
- Cracked jars
- Loose or distorted lids
- Swollen or dented cans
- An "off" odor



Home-canned foods

## Prevention

- Examine all canned foods before cooking
- Cook and reheat foods thoroughly
- Keep cooked foods hot (above 140 degrees) or cold (below 40 degrees)

## Symptoms after eating

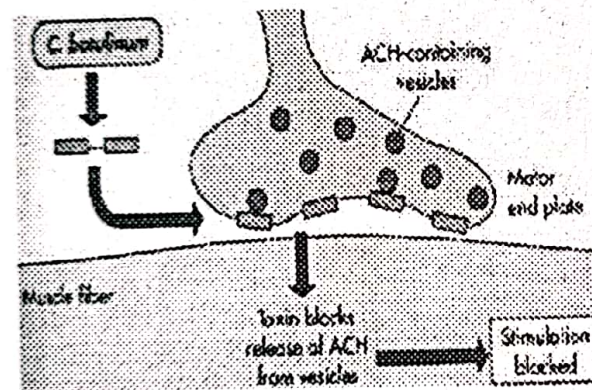
- Double vision
- Droopy eyelids
- Trouble speaking, swallowing or breathing
- Untreated botulism can be fatal

1. What is the causative agent and the disease?
2. How is this disease acquired and what are the types of this disease?
3. What is the pathogenesis of this disease?
4. What are the uses of toxin produced by this organism?

KEY:

1. Clostridium botulinum and botulism
2. **Oral route:** Spores, widespread in soil, contaminate vegetables & meats. When foods are canned or vacuum-packed without adequate sterilization, spores survive & germinate in anaerobic environment. Toxin produced within canned food & ingested preformed.  
**Wound botulism:** associated with drug abuse.  
**Infant botulism:** Ingestion of honey containing organisms
3. Botulinum toxin absorbed from gut & carried via blood to peripheral nerve synapses, blocking release of acetylcholine. (stimulatory neurotransmitter).  
It is a protease that cleaves proteins involved in acetylcholine release.

Mechanism of Action of Botulinum Toxin



4. **Botox:** Commercial preparation of exotoxin A used to remove wrinkles on face. Minute amounts of toxin effective in treatment of certain spasmodic muscle disorders such as torticollis, "writer's cramp," and blepharospasm.