

Paralytic Shellfish Poisoning



What is Paralytic Shellfish Poison?

Paralytic Shellfish Poison (PSP) is a naturally occurring marine biotoxin that is produced by some species of microscopic algae. Shellfish eat these algae and can retain the toxin. People can become ill from eating shellfish contaminated with PSP. This biotoxin affects the nervous system and paralyzes muscles, thus the term "paralytic" shellfish poison. High levels of PSP can cause severe illness and death.

How do shellfish become contaminated with Paralytic Shellfish Poison?

Shellfish are filter feeders. They pump water through their systems, filtering out and eating algae and other food particles. When shellfish eat biotoxin producing algae, the biotoxin can accumulate in their tissue.

What types of shellfish are affected?

Bivalve molluscan shellfish such as clams, mussels, oysters, geoduck, and scallops can accumulate PSP. So can moon snails and other gastropods. Other marine species, such as sea cucumbers, might be affected. Crab, because they feed on shellfish, can also become toxic. Even if the crab meat is safe, toxins tend to accumulate in crab gut and butter (the white-yellow fat inside the back of the shell). Clean crab thoroughly and avoid eating the crab butter and guts.

What causes unsafe levels of Paralytic Shellfish Poison?

It's normal for biotoxin producing algae to be present in marine water. They are usually in low numbers that cause no problems. But when the algae "blooms," the amount of biotoxin-producing algae can increase. The increased algae becomes a greater food source for shellfish. The more algae the shellfish eat, the more biotoxin they accumulate. Biotoxins don't harm shellfish, so the level in their tissue will rise until the bloom subsides. When the number of toxin producing algal cells returns to normal low levels, the shellfish eventually flush the toxin from their bodies. It can be several days to several months or longer before they're safe to eat again.

What causes Paralytic Shellfish Poison blooms?

When water conditions are favorable, the algae "blooms" and reproduces. Continuing research has pointed to certain cause and effect situations, but the exact combination of conditions that cause blooms is not yet known. Learn more by searching "harmful algae" at www.nwfsc.noaa.gov.

If the water looks dirty or red, does that mean the shellfish are contaminated?

Not necessarily. PSP is rarely associated with a red tinge to the water.

Isn't "Red Tide" the same as Paralytic Shellfish Poison?

The term "red tide" is commonly used to describe toxic blooms. This isn't quite accurate. Some algal blooms turn water different colors, including red, but many of these blooms are not harmful.

If the water isn't red, does that mean the shellfish are safe to eat?

Not necessarily. PSP can be present in large amounts even if the water looks clear. Also, the toxin can remain in shellfish long after the algae bloom is over.

Can I tell if shellfish are toxic by how they look?

No. Shellfish containing toxic levels of PSP don't look or taste any different from shellfish that are safe to eat. Laboratory testing of shellfish meat is the only known method of detecting PSP.

Does cooking the shellfish make it safe to eat?

No. PSP isn't destroyed by cooking or freezing.

What are the symptoms of Paralytic Shellfish Poisoning?

Early symptoms include tingling of the lips and tongue, which may begin within minutes of eating toxic shellfish or may take an hour or two to develop. Symptoms may progress to tingling of fingers and toes and then loss of control of arms and legs, followed by difficulty in breathing. Some people feel nauseous or experience a sense of floating. If a person consumes enough toxin, muscles of the chest and abdomen become paralyzed, including muscles used for breathing, and the victim can suffocate. Death from PSP has occurred in less than 30 minutes.

Who is most at risk?

Anyone who eats PSP contaminated shellfish is at risk for illness or death.

What should I do if I think I have Paralytic Shellfish Poisoning?

If symptoms are mild, call your health care provider and your local public health agency. If symptoms are severe, call 911 or have someone take you to the emergency room immediately.

What is the treatment?

There is no antidote for PSP. The only treatment for severe cases is the use of life support systems such as a mechanical respirator and oxygen until the toxin passes from the victim's system. Survivors can have a full recovery.

How can I protect myself from Paralytic Shellfish Poisoning?

- Check the Shellfish Safety Map at www.doh.wa.gov/shellfishsafety for beach closures and advisories on the day you plan to harvest shellfish.
- Recorded Hotline for Biotxin Closures: 1-800-562-5632
- Questions? Call us at 360-236-3330 or the local county health department (www.doh.wa.gov/localhealth) during weekday business hours.



We regularly test shellfish for biotoxins and close areas when unsafe levels are detected. Beaches are sometimes posted with warning signs. Don't assume a beach is safe if there are no signs – beach closure signs sometimes "disappear."

Are there any other illnesses associated with shellfish?

Yes. Other types of biotoxins found in the northwest can cause amnesic shellfish poisoning and diarrhetic shellfish poisoning. Harmful bacteria can cause vibriosis. Raw sewage contamination can cause norovirus illness. Some people can have an allergic reaction to shellfish.

What about shellfish offered by restaurants, stores, and farmers' markets?

Shellfish harvested commercially and sold to the public come from licensed, certified growers. Commercial harvest operations must meet stringent state and federal health standards, and the shellfish they harvest are regularly tested for biotoxins.

More Resources

www.doh.wa.gov/shellfish – Learn more about shellfish-related illnesses and how to prevent them.

www.doh.wa.gov/shellfishsafety – Check for beach closures and advisories using our interactive map.

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).