



Paralytic Shellfish Poisoning Fact Sheet

What is paralytic shellfish poisoning?

Paralytic shellfish poisoning (PSP) is a serious illness caused by eating shellfish contaminated with dinoflagellate algae that produce harmful toxins. Some of these toxins are 1,000 times more potent than cyanide, and toxin levels contained in a single shellfish can be fatal to humans.

What are the symptoms of PSP?

Early symptoms of PSP 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 the loss of muscle control in the arms and legs, followed by difficulty in breathing. Some people have experienced a sense of floating or nausea. Muscles of the chest and abdomen may become paralyzed. With high toxin exposures, death can occur in as little as 2 hours from paralysis of the breathing muscles.

How do PSP toxins cause paralysis in humans?

PSP toxins cause paralysis in humans by blocking sodium channels in neurons, thereby preventing neurons from functioning normally.

What causes unsafe levels of PSP?

The amount of toxins increases when water conditions are favorable. However, the exact combination of conditions that cause “blooms” of toxin-producing algae is not known. *Colder months (or months with an “R”) are not free from PSP risk.*

Which seafoods pose a PSP risk to humans?

All bivalve molluscan shellfish including clams, mussels, oysters, geoducks, and scallops can contain PSP toxins. While crabmeat has not been found to contain PSP toxins, the guts/butter of crabs has been found to contain PSP toxins; therefore, consumers of noncommercially harvested crab should clean the meat thoroughly, discard the guts/butter before boiling, and avoid drinking the broth in which the crab was boiled. Predatory gastropods such as moon snails can also become toxic and thereby pose a risk to humans.

Is the shellfish safe to eat if I cook it?

No! Cooking shellfish doesn’t make them safe to eat because the *PSP toxins are not destroyed by heating or freezing.*

If someone else eats shellfish harvested from a certain beach and doesn’t get sick, does that mean the beach is safe?

No, never assume a beach is safe even if someone has eaten shellfish without getting sick. Toxins can be present in varying amounts in shellfish on the same beach.

Who is most at risk?

Anyone who eats noncommercially harvested shellfish is at risk for PSP.

If the water looks dirty or red, does that mean that shellfish will contain PSP toxins?

No, paralytic shellfish toxins are rarely associated with a red tinge to the water; reddish coloration of the water is more commonly caused by non-toxic organisms.

If the water is not red, does that mean that shellfish are not contaminated?

No, 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 it's safe to gather shellfish by how they look?

No, only laboratories can reliably test shellfish for PSP. Toxins can be present with no visible signs.

Can I safely harvest in colder months?

No, there have been cases of PSP in Alaska year-round. There may be some seasonality associated with the level of PSP risk, but it is never completely safe to consume noncommercially harvested shellfish.

How can I protect my family and myself from paralytic shellfish poisoning?

The only way to protect your family and yourself from PSP is by not eating noncommercial shellfish collected from beaches in Alaska. Commercial shellfish in Alaska are routinely tested and are considered safe to eat.

What should I do if I think that I have paralytic shellfish poisoning?

Seek medical care immediately. Call 911 or have someone take you to the emergency room.

What is the treatment?

Unfortunately, there is no antidote for PSP toxins; however, supportive medical care can be life saving. For example, persons whose breathing muscles become paralyzed can be put on a mechanical respirator and given oxygen to help them breath, and people who develop a cardiac arrhythmia (abnormal heart rhythm) can be given medications to stabilize their heart rhythm.

Are there any other illnesses associated with shellfish?

Yes, a person may have an allergic reaction to shellfish or become ill due to bacteria or viruses in shellfish.

What else can be done to prevent these diseases?

It is important to notify public health departments about even one person with PSP or any other illness caused by consumption of shellfish. Public health departments can then investigate to determine the source of the problem to help prevent additional illness. Any suspected cases of PSP should be reported to the State of Alaska Section of Epidemiology at 907-269-8000 or after hours at 1-800-478-0084.

What if I choose to eat noncommercially harvested shellfish despite these risks?

The Alaska Division of Public Health strongly recommends against eating noncommercial shellfish from Alaska waters. We know collecting and eating shellfish is a long held traditional practice, but encourage people to know their risks.