

Hepatitis A is transmitted via seawater contaminated by human fecal waste. It is especially common in shellfish grown in coastal waters contaminated from sewage laden runoff. Shellfish are often filter-feeders. They filter large volumes of water while feeding on plankton present in that water. Unfortunately, any viruses or other contaminants such as heavy metals can be concentrated in the flesh of the animal, where it often has no discernible effect on the animal. It is not until the shellfish is on the dinner table that the problem will occur⁷ The incubation period for Hepatitis A is 15-45 days after which a flu-like illness with malaise, low grade fever, lack of appetite, nausea, vomiting and perhaps jaundice (yellowing of the skin and whites of the eyes) may occur. There is no specific treatment for the disorder, but it is usually a benign illness. Prevention can be achieved by boiling the shellfish in water for more than 60 seconds.

The Norwalk Virus is another viral shellfish contaminant, causing acute nausea, vomiting, cramps and diarrhea. Its incubation period is shorter, 24-48 hours and the duration of illness is only 1-2 days. Protection from this agent can be had by steaming the shellfish for 6 minutes.

Vibrio are a type of bacteria that can cause shellfish poisoning, as well as Cholera. The bacteria produces a toxin that causes vomiting and a profuse diarrhea with massive fluid and electrolyte losses. These infections are most common during the summer months in seafood from the Gulf coast. An incubation period of 6-48 hours is followed by 2-7 days of illness although tetracycline during the first 48 hours may shorten the course.

Vibrio parahemolyticus causes a very similar illness with a duration of only 24-48 hours. There is some speculation that the US Summer Olympic team of 1980 was poisoned by this agent, possibly as an act of sabotage. The worse of the vibrio family is V. vulnificus. Vulnificus is usually acquired by eating contaminated raw oysters, although it can also get into the body through open wounds if the water is sufficiently contaminated with the organism. Mortality can be as high as 50%, especially among victims with underlying liver disease, vomiting, diarrhea, fever, low blood pressure and a distinctive pattern of large blood blisters characterize this rare disease. Luckily, the organism is sensitive to most antibiotics, but intensive care is usually needed for survival.

Parasitic infestations of fish can be passed on to humans as well, usually from eating raw fish. Helminths such as the fish tapeworm can cause megaloblastic anemias. Anisakiasis is a roundworm that affects salmon and herring. It is usually asymptomatic, but occasionally a sick victim will vomit one of the fishes worms.

Seafood can also cause illness due to toxins produced by the fish themselves, or acquired by the fish as it eats its prey.

Ciguatera is a type of poisoning that affected the crews of Captains Bligh and Christopher Columbus. It is caused by a unicellular plankton that is ingested by reef fish. The larger fish usually have the highest concentration of this toxin in their tissues. The toxin does not harm the host fish, but man does suffer from it. This toxin is stable in heat and acid, it is odorless, tasteless, and not inactivated by freezing. It is common among predatory reef fish such as snapper, grouper, mackerel, sea bass and tuna. It causes the most problems during the spring and summer months. Incubation ranges from 2-24 hours, symptoms are noted in both the GI and neurologic areas. Nausea, vomiting, watery diarrhea and cramps are later followed by numbness and occasional burning around the mouth and throat. There is a classic "sensory reversal dysesthesia" in which cold objects are perceived as being warm. There is no specific therapy, although some reports show that intravenous mannitol can be helpful, as can calcium gluconate. Drinking alcohol can exacerbate the symptoms for several months.

Scromboid poisoning is a great mimic of an allergic reaction. The patient has usually eaten a fish of the scombridae family such as tuna or mackerel, although other dark-fleshed fish such as dolphin and blue fish can also cause this toxicity. There is a histamine-like substance on the skin of the fish that forms when the fish are not kept ice-cold with improper refrigeration. The toxin is stable when heated. Patients suffering from this look just like they are having an allergic reaction. They are red, hot, itchy, dizzy, with headache and a burning mouth and throat. They may also have palpitations. Treatment is supportive, as if they are having an allergic reaction with H₁ & H₂ antihistamines and perhaps steroids. They are not actually allergic to the seafood, although many clinicians and patients alike are fooled into thinking that this is the case.

Paralytic shellfish poisoning and neurotoxic shellfish poisoning are types of poisoning of the nervous system after eating mussels, clams or oysters that have been contaminated by plankton from red tide blooms. There will usually be a sense of diffuse numbness, incoordination, headache and dizzy spells, paralysis is very rare.

Tetrodotoxin is the worst of the nerve toxins, it is rare in the United States. Tetrodotoxin is most commonly found in the skin and viscera of the puffer fish (a Japanese delicacy). This fish must be prepared by specially licensed sushi chefs. Even if the fish is cooked, the toxin is not neutralized. Within 3 hours of ingestion, a sensation of floating, lethargy, numbness and incoordination can be present. Paralysis can occur much more frequently than with Paralytic shellfish poisoning. Obviously, once paralyzed a patient cannot breathe and will suffocate. Getting the patient into a hospital for mechanical ventilation can be life-saving.

These are the most common problems to afflict those of us unlucky enough to eat the wrong shellfish or fish. Please see your doctor if you think you may be suffering from any of these afflictions. For the most part though, please remember that seafood can be very healthy, is common along our coast, and best of all, can be delicious!