

Algal Toxins and Human Health



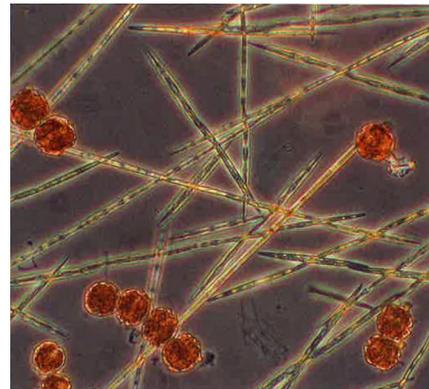
Since 1980, at least 183 cases of Harmful Algal Toxin caused illness and three deaths have been reported on the West Coast. Many cases were in Alaska but some were reported in Washington, Oregon, and California. In August 2000, five people were hospitalized in Washington after eating contaminated mussels.

Eating shellfish (mussels, clams) is one of the most common ways for algal toxins to affect human health. In the U.S., each state is responsible from testing toxin levels in shellfish and closing the shellfish beds to harvest if the levels rise above dangerous limits. Shellfish from the market are generally considered to be safe, but in spite of these precautions, people occasionally get sick.

Possible Illnesses on the West Coast

Domoic Acid Poisoning, also called amnesic shellfish poisoning (ASP), is caused when humans eat shellfish that have eaten a species of a phytoplankton called *Pseudo-nitzschia*, which produce the toxin domoic acid. We do not harvest shellfish when the domoic acid level is 20 parts per million in shellfish.

The symptoms of ASP range from nausea, vomiting, diarrhea to tired muscles, confusion, and memory loss. They usually occur between 30 minutes to 6 hours after shellfish are eaten. If the poisoning is not severe, the symptoms disappear within a few days. In extreme cases, ASP can be lethal.



Pseudo-Nitzschia (long diatom) and *Alexandrium* (round dinoflagellate)

Paralytic shellfish poisoning (PSP) is caused when humans eat shellfish or crabs that have accumulated toxins by feeding on toxic algae. The toxin is produced by a species of phytoplankton called *Alexandrium*, a dinoflagellate. Beaches are closed to harvest when toxin measurements in shellfish or crab are at or above 80 micrograms per 100 grams of meat.

Symptoms of PSP include numbness and tingling of the lips, tongue, face and extremities, difficulty talking, breathing and swallowing, and lack of muscle coordination. There are no medicines to treat PSP.