



Coast Notes



A Virgin Islands Marine Advisory Service Publication

VIMAS is a cooperative program between

the University of Puerto Rico Sea Grant College Program & the University of the Virgin Islands' Center for Marine and Environmental Studies.

Ciguatera Seafood Poisoning

Seafood in the Islands

Whether you're just visiting the Caribbean or born and raised in the islands, you'll likely have the opportunity to eat fresh fish while here. Fish is low in fat and cholesterol and high in protein and Omega-3 fatty acids. A diet rich in fish has been shown to reduce both cholesterol and triglyceride levels in your blood. Recently however, there has been concern over contracting ciguatera poisoning from eating fresh fish in the tropics.

Ciguatoxins are found in microscopic organisms in some tropical and subtropical fish species. Though rarely fatal, eating fish infected with these toxins can cause painful reactions and severe discomfort.

Moving up the food chain

Ciguatoxins grow on algae and underwater surfaces where fish eat. Plant-eating fish ingest the tainted algae, and then they are consumed by bigger fish. The toxins accumulate up the food chain yet do not affect the afflicted fish. It is only when the fish is caught and eaten by humans that the toxins cause problems. The toxins remain unaffected by freezing, cooking in the oven or microwave, smoking, salting or any other method of storing or preparing the fish.

There are many traditional methods to avoid eating ciguatera-poisoned fish, such as avoiding certain sizes or species of fish, or feeding it to your mother-in-law, but none should be accepted as anything other than island lore. There are laboratory tests that can identify the toxins, but they are costly and time consuming. Recently, Dr. Yoshitsugi Hokama of the University of Hawai'i developed **Cigua-Check**, a

relatively low-cost alternative that has met some success in lab tests. Yet, there remains no fool-proof way to tell if a fish has ciguatera.



Symptoms and Treatment

The symptoms of ciguatera poisoning can appear from 15 minutes to 30 hours of ingesting the toxin, but generally occur within the first 6 hours. There are over 175 symptoms associated with ciguatera poisoning, including:

- Nausea, abdominal pain, vomiting and/or diarrhea;
- Joint pain, tingling or numbness around palms, soles of feet and/or mouth;
- Reversal of temperature (hot feels cold, cold feels hot);
- Accelerated heartbeat, decreased heartbeat, irregular heartbeat.

Other symptoms may include general weakness, dizziness, muscle pain, headaches, depression, anxiety, painful urination, skin rash and the sensation that teeth are loose. There is also evidence that the toxins can be transmitted during sexual intercourse and transferred from a nursing mother's breast milk to her baby.

Duration of the symptoms varies by individual, but most victims recover from the worst of it within a week. However, in some cases, recovery may take months or even years. Additionally, victims have experienced recurrence of symptoms after consuming seafood (even non-ciguatera seafood), nuts, coconuts, chocolate and alcoholic beverages. It is recommended that these items be avoided for six months after ciguatera poisoning. There is no antidote for ciguatera poisoning, although symptoms can be treated and discomfort lessened.

Diagnosis

Ciguatera intoxication is similar in many ways to other illnesses and seafood poisonings. If you think you may have eaten fish tainted with ciguatoxins, you should seek immediate medical attention. The sooner the diagnosis, the quicker the symptoms can be treated. Keep in mind to:

- Tell the physician what type and amount of fish was eaten, what other, if any, seafood has been eaten within the past 24 hours.
- Bring any uneaten portions of the fish.
- Try to save a little piece when preparing fish by placing it in the freezer marked with the species and date prepared. This will help in differentiating ciguatera from other seafood related illnesses, should the need arise.

- Note specifically if you feel temperature reversal, as this is a hallmark of ciguatera poisoning alone.

Prevention

While there is no easy way to tell if a fish is infected with ciguatoxins, there are things you can do to avoid ciguatera poisoning:

- Avoid eating large fish that have been implicated in ciguatera poisonings. There have been over 400 species suspected in cases of ciguatera poisoning, especially: barracuda, moray eels, amberjack and other jacks, and some grouper and triggerfish species. Ciguatoxins accumulate as they move up the food chain, so eating larger fish increase the likelihood of poisoning.
- Avoid eating fish caught in areas associated with ciguatera poisoning.
- When preparing fish, always clean and discard its head, internal organs and roe (eggs), regions in which the toxins accumulate.
- Only buy seafood from reputable vendors. Make certain that you know what species of fish you've purchased and where it was caught.

Do not be discouraged from enjoying the bounties of the sea, but use your judgment and learn what you can about local seafood. Armed with this information you can lessen the chances of contracting not only ciguatera, but other food-borne illnesses.

For information about Cigua-Check, please see <http://www.cigua.com/>

For further information on Ciguatera, please see the following websites

University of Puerto Rico Sea Grant College Program "What is it? Is it Ciguatera?"
<http://seagrant.uprm.edu/mop/sea-food-safety/ciguateraenglish.pdf>

The U.S. Food & Drug Administration "Bad Bug Book"
<http://www.cfsan.fda.gov/~mow/chap36.html>

Centers for Disease Control "Ciguatera Fish Poisoning"
<http://www.cdc.gov/nceh/ciguatera/default.htm>

For more information, call or write: Virgin Islands Marine Advisory Services (VIMAS), University of the Virgin Islands Center for Marine and Environmental Studies, No. 2 John Brewer's Bay St. Thomas USVI 00802 (340) 693-1380 or RR#1 Box 10,000 Kingshill, St. Croix USVI 00850 (340) 692-4046