What are the symptoms of ciguatera poisoning?

Nausea, vomiting, abdominal pain, diarrhoea, headaches and fever are some of the symptoms you may experience if you are unlucky enough to be poisoned. Other symptoms include numbness, tingling and itching in the lips and skin, pain in the muscles and joints, and a reversed sense of temperature; hot water feels cold, and cold water feels hot. The treatment of ciguatera poisoning generally involves the administration of mannitol, which is more effective when administered in the early stages of poisoning.

In recent years there has been an increase in the number of people treated for fish poisoning. In 1996 this figure peaked to about 300 persons. Below is a graph showing the number of reported cases in the Cook Islands; it is expected that the true number of cases is higher than this.

Ciguatera in the Cook Islands 2000
Ciguatera is a type of food poisoning that affects humans and other animals after they have eaten fish that contain high levels of a poison called ciguatoxin. This poison is thought to be produced by microscopic tropical marine plants (Gambierdiscus toxicus, as shown on cover, and other species), which occur in shallow coral reef areas. The algae, known as ciguatera dinoflagellates, live on other seaweed in small densities. Incidences of fish poisoning tend to coincide with outbreaks of the ciguatera dinoflagellate.

The fish are only poisonous to eat when they themselves have accumulated high levels of the ciguatera toxin. Because herbivorous fish (such as maito) graze on plants, they are typically the first to consume the algae and therefore accumulate the toxin. Predatory fish (such as patuki roi and titiara) can accumulate higher levels of the toxin by eating many of the herbivorous fish containing the poison. The fish seldom show visible signs that they are toxic.

The production and accumulation of ciguatera toxin are limited to the reef ecosystem. Therefore, oceanic fish such as tuna (a’ai) or flying fish (maroro) are not prone to ciguatera. Some reef fish that are reported to cause fish poisoning include:

- Maito (surgeonfish);
- A’a pata (moray eel);
- Patuki roi, tonu, oka (groupers and cods);
- Anga mea, tangau, kiriva (snappers);
- Maratea (maori wrasse);
- Kanae (mullet);
- Ono (barracuda);
- Iroa (emperors);
- Vete (goatfish);
- Paru (jobfish);
- Titiara, urua (trevallies).

Some factors that can trigger a ciguatera outbreak include:

- Natural large-scale reef destruction such as from a cyclone;
- Construction of piers or wharves and blasting of reef passages;
- Increases in water temperature;
- Sediment runoff from land activities;
- Increased nutrients in the water (e.g. from treated or untreated sewage, and fertilisers); and
- Rubbish dumping and other activities that damage the reef.

Because fish are mobile, ciguatera poisoning is not confined to the immediate area of an outbreak.

It is very difficult to test fish tissue for the presence of ciguatoxin and traditional methods and “old wives’ tales” for detecting poisonous fish are not reliable.

The Ministry of Marine Resources routinely assesses the Rarotonga lagoon for outbreaks of ciguatera algae so that the public can be alerted to the possible danger areas.

Ciguatera outbreaks also occur in the outer Islands.
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