Ciguatera fish poisoning

Ciguatera poisoning is a form of food poisoning. It is caused by eating warm water ocean finfish that carry ciguatera poison (a toxin). This poison is produced by a very tiny organism called a dinoflagellate, which attaches itself to algae growing in warm ocean water reef areas. Small plant-eating fish eat this toxic algae and in turn are eaten by larger predatory fish which are eaten by humans.

What types of finfish cause ciguatera poisoning?

There are no specific rules that can be followed to detect ciguatera-carrying fish. Fish that feed in warm ocean waters are potential carriers of ciguatera toxin. Chinamanfish, red bass and paddletail present a particularly high risk for transmission of ciguatera poisoning; these fish are no-take species. If accidentally caught, they should be immediately returned to the water. Many more fish species are capable of carrying ciguatera toxins, including coral trout, Spanish mackerel, red emperor, wrasse, coral cod, surgeonfish, trevally and yellowtail kingfish.

Who is affected?

Anyone can be affected by ciguatera poisoning. Cases are often members of an angler’s own family who eat the larger fish of the catch. These larger fish usually belong to a predatory species like coral trout or Spanish mackerel which feed on smaller ciguatera-carrying fish.

Ciguatera toxin does not affect the appearance, odour or taste of fish, no matter how much is present. Processes like cooking and freezing will not destroy it and there is no known culinary method that can remove it from a fish.

What are the symptoms?

Symptoms usually start one to 24 hours after eating a toxic fish. The time before onset of illness and the range of symptoms can depend on how much fish is eaten, how much toxin is in the fish and the individual susceptibility of the consumer.

Symptoms include:

- tingling and numbness in fingers, toes, around lips, tongue, mouth and throat
- burning sensation or skin pain on contact with cold water
- joint and muscle pains with muscular weakness
- nausea, vomiting, diarrhoea and/or abdominal cramps
- headache, fatigue and fainting
- extreme itchiness, often worsened by drinking alcohol
- difficulty breathing in severe cases.
Minimising the risk
To minimise the risk of ciguatera fish poisoning, pay attention to the following:

- be aware that ciguatera toxic fish can not be detected by appearance, odour, texture or taste
- be aware that ciguatera toxin will not be removed or destroyed by freezing, cooking or any other process
- avoid eating the head, roe, liver or other viscera of warm water ocean fish. Ciguatera toxin is concentrated in these parts
- vary the type of warm water fish eaten
- avoid eating large warm water fish. Limit whole weight to around 6kgs per fish, as ciguatera fish poisoning occurs more frequently when larger fish are eaten
- when first eating a warm water ocean fish, eat a small portion only – no more than 300 grams. If ciguatera-like symptoms develop, do not eat further portions of that fish and see your doctor
- avoid mixing together fillets taken from different species of large warm water ocean fish
- do not catch fish from known ciguatera areas
- do not eat any unidentified fish that you catch yourself.

Recovering from ciguatera fish poisoning
People recovering from ciguatera fish poisoning should avoid eating warm water ocean fish for at least six months. Alcohol should also be avoided for three months as this can cause ciguatera poisoning symptoms to recur.

Once recovered, eat only a small portion of fish, no more than 200 grams initially. If symptoms recur, seek medical advice and avoid eating warm water ocean fish for a few more months.

More information is needed about the distribution of ciguatera fish poisoning in Australia. It is important to know what type of fish was involved and where it was caught. People experiencing or having experienced what they believe to be ciguatera poisoning should contact their local Queensland Health Public Health Unit.

Treatment
Promptly seek medical attention at the onset of symptoms. There is anecdotal evidence that an intravenous infusion of Mannitol may give significant relief if commenced promptly, although this has not been verified by controlled studies. Some symptoms may last for several months. However, most symptoms will normally disappear within days to several weeks.

Scombroid (histamine) fish poisoning
Scombroid poisoning (or histamine poisoning) has similar symptoms to ciguatera poisoning and can also result from the consumption of fish. The common symptoms of scombroid poisoning are burning around the mouth, facial flushing and diarrhoea. In serious cases, scombroid poisoning can be treated with anti-histamines.

Scombroid poisoning can occur when fish such as tuna, mackerel, bonito, sardines, marlin and butterfly kingfish are not chilled and stored properly. The flesh of the fish starts to decompose by bacterial action soon after being caught. In this process, histidine in the flesh of the fish is converted into histamine. This can occur rapidly if fish is not chilled properly. Freezing or cooking the fish once it has been contaminated will not kill the toxin and prevent illness. Therefore, chilling the fish as soon as possible is important to prevent contamination by histamine.
Shellfish poisoning

Shellfish can also carry naturally occurring seafood toxins that can cause poisoning in humans. These include:

- **Paralytic shellfish poisoning** – a very serious, potentially fatal disease affecting the nervous system which can occur within half an hour to two hours after consuming the affected shellfish.
- **Amnesic shellfish poisoning** – another serious illness that can potentially cause coma or death. It affects the nervous system and the gut and symptoms usually appear within a day of eating the affected shellfish.
- **Neurotoxic shellfish poisoning** – has symptoms similar to ciguatera poisoning (see above) but less severe, usually only lasting a few days.
- **Diarrhetic shellfish poisoning** – gastro-intestinal symptoms can appear very quickly, within 30 minutes, after eating affected shellfish, although longer delays between consumption and illness are not uncommon. Recovery from diarrhoea and vomiting is usually complete after 3 days.

For further information

Queensland Health has a variety of fact sheets with detailed information on food safety. These fact sheets can be accessed from the Queensland Health website at [www.health.qld.gov.au/foodsafety](http://www.health.qld.gov.au/foodsafety).

Contact your local Queensland Health Public Health Unit (PHU) if you have any further questions (PHU contact details below).

**Queensland Health Public Health Units**

<table>
<thead>
<tr>
<th>Public Health Unit</th>
<th>Phone number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brisbane Northside</td>
<td>3624 1111</td>
</tr>
<tr>
<td>Brisbane Southside</td>
<td>3000 9148</td>
</tr>
<tr>
<td>Bundaberg/ Wide Bay</td>
<td>4150 2780</td>
</tr>
<tr>
<td>Cairns</td>
<td>4226 5555</td>
</tr>
<tr>
<td>Gold Coast</td>
<td>5668 3700</td>
</tr>
<tr>
<td>Ipswich/ West Moreton</td>
<td>3413 1200</td>
</tr>
<tr>
<td>Logan</td>
<td>3412 2989</td>
</tr>
<tr>
<td>Mackay</td>
<td>4911 0400</td>
</tr>
<tr>
<td>Redcliffe/ Moreton Bay</td>
<td>3142 1800</td>
</tr>
<tr>
<td>Rockhampton</td>
<td>4920 6989</td>
</tr>
<tr>
<td>Sunshine Coast</td>
<td>5409 6600</td>
</tr>
<tr>
<td>Toowoomba/ Darling Downs</td>
<td>4631 9888</td>
</tr>
<tr>
<td>Townsville</td>
<td>4753 9000</td>
</tr>
</tbody>
</table>

For further information on recreational fishing rules and regulations in Queensland, see the Department of Agriculture, Fisheries and Forestry website at [http://www.daff.qld.gov.au](http://www.daff.qld.gov.au).