Fish, shellfish and mercury

Basic information about fish and shellfish
Fish and shellfish are important as part of a healthy diet. Fish and shellfish contain high quality protein and other essential nutrients, are low in saturated fat, and are also a great source of essential omega-3 fatty acids. A balanced diet should contain a variety of fish and shellfish which are particularly beneficial for heart health and children’s growth and development.

However, almost all fish and shellfish contain trace amounts of mercury. Most people enjoy diets including fish and shellfish that contain negligible levels of mercury. However, some fish and shellfish contain relatively high levels of mercury, and excessive consumption can cause harm to the unborn baby and/or children’s developing neurological systems. The risk to health from ingested mercury depends on the quantity of fish consumed and the amount of mercury it contains. Therefore the Ministry for Primary Industries (MPI) and the Ministry of Health (MoH) suggest women who may become pregnant, pregnant women and children, limit the intake of certain types of fish or consume seafood that is low in mercury.

What is mercury
Mercury exists naturally in the environment, or is released into the atmosphere as a result of industrial pollution. Mercury can accumulate in streams and oceans where it is transformed into methyl-mercury in water. This is the type of mercury that can be harmful to the unborn baby and young children. Fish take up methyl-mercury as they feed in contaminated waters and this form of mercury concentrates in fish flesh. Methyl-mercury reaches higher levels in some types of fish and shellfish than others, and this is dependent on what fish eat and their longevity. Large, long-lived, predatory fish like shark, swordfish and tuna will accumulate more mercury than fish lower in the food chain. Cooking does not substantially lower mercury levels.

New Zealand fish consumption recommendation for pregnant women and children
The table below provides the MPI fish serving recommendations for pregnant women. Auckland Regional Public Health Service also recommends that children ado not exceed these servings.

<table>
<thead>
<tr>
<th>No restriction necessary: &lt;0.18mg/kg Mercury</th>
<th>3-4 servings per week acceptable: 0.18-0.50mg/kg Mercury</th>
<th>1 serving per 1-2 weeks acceptable: &gt;0.50mg/kg mercury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchovy</td>
<td>Albacore tuna</td>
<td>Cardinal fish</td>
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<tr>
<td>Arrow squid</td>
<td>Alfonsino</td>
<td>Dogfish (excluding rig)</td>
</tr>
<tr>
<td>Barracouta</td>
<td>Bass</td>
<td>Lake Rotomahana trout</td>
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<tr>
<td>Blue cod</td>
<td>Bluenose</td>
<td>Lake trout from geothermal regions</td>
</tr>
<tr>
<td>Brill/Turbot</td>
<td>Gemfish</td>
<td>School shark (Greyboy, Tope)</td>
</tr>
<tr>
<td>Brown trout from Lake Ellesmere</td>
<td>Ghost sharks</td>
<td>Marlin (striped)</td>
</tr>
<tr>
<td>Cockles</td>
<td>Hake</td>
<td>Southern bluefin tuna</td>
</tr>
<tr>
<td>Eel, long or short finned</td>
<td>Hapuka (Groper)</td>
<td>Swordfish</td>
</tr>
<tr>
<td>Elephant fish</td>
<td>Javelin Fish</td>
<td></td>
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<tr>
<td>Flounders</td>
<td>Kahawai</td>
<td></td>
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<tr>
<td>Gurnard</td>
<td>Kingfish</td>
<td></td>
</tr>
<tr>
<td>Hoki</td>
<td>Lake Taupo trout</td>
<td></td>
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<tr>
<td>John Dory</td>
<td>Leatherjacket</td>
<td></td>
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<tr>
<td>Monkfish or stargazer</td>
<td>Lemon sole</td>
<td></td>
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<tr>
<td>Mussels (green and blue)</td>
<td>Ling</td>
<td></td>
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<tr>
<td>Orange perch</td>
<td>Mackerel (blue and jack)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orange roughy</td>
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</tbody>
</table>
Eating shellfish in pregnancy

Because Queen scallops and Bluff oysters have high levels of cadmium, pregnant women are also advised to restrict their consumption of these shellfish. It is also important to remember that shellfish should never be eaten raw in pregnancy because of the risk from Listeria poisoning and resultant harm to the unborn child.

FAQ

What should I do if I exceed the recommended intake for fish and shellfish in a week?
The level of mercury in the body does not change much as a result of one week’s fish consumption. If you eat too much fish in any given week, cut back consumption in the next week or two. Just make sure that you average the recommended amount per week over two to four weeks.

Is there any limitation on fish intake recommended for lactating women?
No. Studies have shown that breast milk is not a major source of mercury, and the benefit of breast milk far exceeds any effects from the trace amounts of mercury that may exist in breast milk.

What is the mercury content for fried fish and canned tuna?
Fried fish is normally made from fish low in mercury. Canned tuna is also generally low in mercury because the tuna used in canning are smaller species that are caught when less than one year old. Food Standards Australia New Zealand (FSANZ) have calculated that it is safe for all population groups to consume a snack can of tuna (95g) every day assuming no other fish has been eaten.

Should I worry about mercury in fish oil supplements?
Fish oil supplement is only a very minor source of dietary mercury, therefore there is no limitation on consumption.

Please note

If you have questions or think you’ve been exposed to large amounts of methyl-mercury, see your doctor or health care provider.

References

1. United States Environmental Protection Agency  http://www.epa.gov/hg/advisories.htm