Results of mercury study – Fish in the Gippsland Lakes are safe to eat

Frequently asked questions 2017

The Gippsland Lakes field study

In May 2015, the Victorian Government commenced a field study into levels of mercury in fish from the Gippsland Lakes. The study aimed to address community concerns about mercury levels in fish, and if appropriate to provide reassurance to the community that fish sourced from the Lakes are safe to eat. It aimed to provide up-to-date information regarding the mercury concentrations in recreationally (and commercially) important fish species from the region.

Results of mercury concentrations in fish were made available to the community in September 2015 and indicated that fish in the Gippsland Lakes continue to have low levels of mercury, and are safe to eat in accordance with nationally set dietary advice about the number of serves of fish and seafood people should eat each week.

The technical report detailing the study methodology and its findings is now available on the department's website and the findings are summarised below.

What did the study find?

The study found that levels of mercury in fish from the Gippsland Lakes are below health guideline values established by Food Standards Australia New Zealand, and fish remain safe to eat.

What were the levels of mercury in fish?

Of the 90 black bream that were collected, the average mercury level of fish fillets was 0.15 mg/kg and the highest level was 0.36 mg/kg. Of the 20 dusky flathead that were collected, the average mercury level of fish fillets was 0.17 mg/kg and the highest was 0.55 mg/kg. These levels are below the health guideline values established by Food Standards Australia New Zealand. The Food Standards Code requires that the average mercury level of these fish should be below 0.5 mg/kg and the highest level should be below 1.5 mg/kg when 10 or more fish samples are collected.

Mercury concentrations in black bream and dusky flathead caught from the Gippsland Lakes for the current field study, and health guideline values

	Average level of mercury in fish tissues (mg/kg fresh weight)	**Maximum level of mercury in fish tissues (mg/kg fresh weight)**
Black bream	0.15	0.36
Dusky flathead	0.17	0.55
Health guideline values for mercury levels in fish tissues	*0.5*	*1.5*

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Are the fish safe to eat?

Yes, the fish are safe to eat. When eating fish, people should observe the dietary advice issued by Food Standards Australian New Zealand regarding the number of serves of fish and seafood that young children, the general public, pregnant women and women planning pregnancy should eat each week.

Who was involved in the study?

A Victorian Government interagency group consisting of the Department of Health and Human Services, Environment Protection Authority Victoria, Department of Environment, Land, Water and Planning, Department of Economic Development, Jobs, Transport and Resources, and PrimeSafe worked together to conduct the study.

What did the study consider?

Fish were collected from multiple locations across the Gippsland Lakes and tested for total mercury. We targeted black bream, the fish most commonly caught by recreational anglers, and also dusky flathead, that may have the potential to accumulate higher levels of mercury. The study also compared current mercury concentrations against those reported in previous studies.

Where were the fish caught?

The study considered 10 locations across the Gippsland Lakes, including Lake Wellington, Lake Victoria, Lake King, and Lakes Entrance. Fish were caught from nine of these sites. No black bream or dusky flathead were available in Lake Wellington.

How many fish were tested?

The study aimed to collect up to 200 fish from 10 sites across the Gippsland Lakes – 10 black bream and where available, 10 dusky flathead from each site.

A total of 110 fish were caught and tested for total mercury concentration. These included 10 black bream from each of nine sampling sites across the Gippsland Lakes, and 10 dusky flathead from each of two sampling sites (in total, 90 black bream and 20 dusky flathead). Seasonal changes in abundance of dusky flathead restricted the number of fish collected.

How were the fish tested?

The fish were sent to a National Association of Testing Authorities Australia accredited laboratory for testing of total mercury concentration in fish fillets. Results were assessed against food safety guidelines established by Food Standards Australia New Zealand in the Food Standards Code, and used to conduct a health risk assessment to determine the number of serves of fish that could be safely consumed each week. The fish were tested for total mercury because Food Standards Australia New Zealand health guideline values and human health risk assessment methodology conservatively assume that all mercury present in fish is in the form of methyl mercury, which is the form of mercury that is most significant for health impacts on consumers.

What about types of fish that were not collected?

The fish considered in this study provide a good indication of the mercury levels in fish from the Gippsland Lakes and any potential risk to consumers. No further testing is recommended.

Did you collect enough fish to be confident of the results?

Yes, the study has considered the mercury concentration in more than 100 fish from across the Gippsland Lakes. The results of this study also build on those of previous studies published in 1980, 1999 and 2012, which all consistently found that mercury levels in fish from the Gippsland Lakes are below health guideline values, and that fish are safe to eat.

Mercury in fish

Fish are high in protein and other essential nutrients, low in saturated fat and contain omega-3 fatty acids. As part of a healthy diet, everyone is encouraged to eat two to three serves of fish per week.

People take in small amounts of mercury in their diet from eating fish. In most fish, the levels are very low and the benefits of fish consumption outweigh any potential health effects. However, some varieties of fish may contain elevated levels of mercury due to their feeding habits or surrounding environment.

Food Standards Australia New Zealand provides advice on the number of serves of commercially sold fish that people should eat. In those locations in Victoria where recreationally caught fish are known to contain elevated levels of mercury, the Department of Health and Human Services currently provides location-specific advice.

In the absence of tailored advice for recreationally caught fish for a particular location, the Department of Health and Human Services recommends that Victorians follow the Food Standards Australia New Zealand advice and eat fish from a wide range of sources.

Limiting intake of fish containing high levels of mercury

The brain and in particular the developing brain is sensitive to the effects of mercury exposure. It is therefore important that pregnant women, women planning pregnancy and young children (up to six years of age) limit their weekly intake of fish varieties known to contain elevated levels of mercury.

Food Standards Australia New Zealand advises that people can safely eat 2 – 3 serves a week of most types of fish. Because of the presence of higher levels of mercury in some fish, there are a few species of fish that people should limit in their diet. They include shark (flake), billfish (broadbill, marlin and swordfish), orange roughy (deep sea perch) and catfish.

Food Standards Australia New Zealand recommends that young children, pregnant women and women planning pregnancy should eat shark (flake) and billfish (broadbill, marlin and swordfish) no more than once a fortnight and should not eat any other fish during that fortnight. Orange roughy (deep sea perch) and catfish should be eaten no more than once a week, and no other fish eaten that week. The general population should also only eat shark (flake), broadbill, marlin and swordfish once per week and no other fish that week.

Food Standards Australia New Zealand advice on the number of serves of different types of fish you can safely eat

Pregnant women and women planning pregnancy **1 serve equals 150 grams[#]**	**Children (up to 6 years)** **1 serve equals 75 grams[#]**	**Rest of the population** **1 serve equals 150 grams[#]**
2 – 3 serves per week of any fish or seafood not listed below		2 – 3 serves per week of any fish or seafood not listed below
OR		OR
1 serve per week of orange roughy (sea perch) or catfish and no other fish that week		1 serve per week of shark (flake) or billfish (swordfish / broadbill and marlin) and no other fish that week
OR		
1 serve per fortnight of shark (flake) or billfish (swordfish / broadbill and marlin) and no other fish that fortnight		

*1 serve = 150 g for an adults, and 75 g for children

 # A 150 gram serve for adults and older children is equivalent to approximately two frozen crumbed fish portions and a 75 gram serve for children is approximately three fish fingers.

Food Standards Australia New Zealand advice is available at:
http://www.foodstandards.gov.au/consumer/chemicals/mercury/pages/default.aspx

Eating fish from the Gippsland Lakes

It is entirely normal to find trace amounts of mercury in fish caught in any body of water or the ocean, including the Gippsland Lakes.

The Gippsland Lakes have been subject to a number of studies since 1980 that have detected low levels of mercury in fish. Findings to date indicate that levels of mercury in fish sourced from the Gippsland Lakes continue to remain low and are below health guideline values. As such, fish are safe to eat in accordance with Food Standards Australia New Zealand dietary advice, which is issued nationally for commercially available fish and seafood.

If you are eating fish sourced from the Gippsland Lakes, follow the advice provided by Food Standards Australia New Zealand and eat no more than 2 – 3 serves of fish or seafood per week.

Those species that are known to accumulate elevated levels of mercury such as shark (flake), billfish (swordfish, broadbill and marlin), orange roughy (sea perch) and catfish are not present in the Gippsland Lakes.

The technical report

What new information is available in the technical report?

The technical report details the field study methodology and findings regarding fish caught in 2015. This includes detailed information about fish size, age and mercury concentration from each sampling location across the Gippsland Lakes.

It also compares results from the current field study against those of previous studies published in 1980, 1999 and 2012 to assess whether there have been any changes in the level of mercury in fish over time.

In doing this, the technical report details the relationship between fish size, and age, and mercury concentration to ensure that these relationships are appropriately accounted for when comparing results across studies.

The technical report demonstrates that the levels of mercury in fish have remained relatively stable over the past 35 years from 1980 to 2015.

While some variation is observed in the levels of mercury in fish between the studies, this variation appears to be due to differences in the size and age of fish collected between each study, rather than a result of increasing levels of mercury in fish from the Gippsland Lakes.

The levels of mercury in fish from the Gippsland Lakes have remained consistently below the health guideline levels for the past 35 years and continue to be safe to eat.

Where can I get a copy of the technical report?

For a copy of the technical report visit:

https://www2.health.vic.gov.au/public-health/environmental-health/environmental-health-in-the-community/mercury-in-fish

More information

For a copy of the technical report visit: https://www2.health.vic.gov.au/public-health/environmental-health/environmental-health-in-the-community/mercury-in-fish

For information on mercury and fish visit: https://www.betterhealth.vic.gov.au/health/healthyliving/mercury-in-fish

For information on Food Standards Australia New Zealand dietary guidelines for fish visit: http://www.foodstandards.gov.au/consumer/chemicals/mercury/Pages/default.aspx

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