



MotherToBaby

Medications & More During Pregnancy & Breastfeeding
Ask The Experts

Fact Sheet

by the **Organization of Teratology Information Specialists (OTIS)**

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Methylmercury in Fish

In every pregnancy, a woman starts out with a 3-5% chance of having a baby with a birth defect. This is called her background risk. This sheet talks about whether exposure to methylmercury may increase the risk for birth defects over that background risk. This information should not take the place of medical care and advice from your health care provider.

What is methylmercury?

Methylmercury is an organic form of mercury. Methylmercury is found mostly in water, soil, plants and animals. Methylmercury is different from elemental mercury (thermometers, dental amalgams).

Where does methylmercury come from?

Mercury is found in the air and comes from natural and man-made sources. When mercury enters water such as lakes, rivers and streams, it is changed into methylmercury.

How can I be exposed to methylmercury?

You can be exposed to methylmercury by eating fish, shellfish, and marine animals. These animals absorb methylmercury through the water in their gills and from their food. Almost all fish contain some methylmercury. Methylmercury in small amounts is not likely to be harmful, but large amounts have been found to be toxic to humans.

Do some fish have more methylmercury than others? Are there fish that I should avoid eating?

Yes. In general, fish that are large, fish that have long life spans, and fish that eat other fish are more likely to contain higher amounts of methylmercury than smaller fish.

Eating fish is an important part of a healthy diet and is beneficial for a pregnancy. However, the U.S. Food and Drug Administration (FDA) and the US Environmental Protection Agency (EPA) advise women who could become pregnant, pregnant women, nursing mothers, and children under the age of 6 years to avoid fish that contain high levels of methylmercury.

The following large fish have the highest levels of methylmercury, and should be avoided during pregnancy and breastfeeding: shark, swordfish, mackerel, marlin, orange roughy, and bigeye tuna. It is also recommended to avoid tilefish from the Gulf of Mexico. However, tilefish from the Atlantic Ocean have lower average levels of methylmercury. Also, eating whale meat and/or blubber (fat), should be avoided as whales generally have higher levels of mercury than fish.

I am pregnant. What kind of fish can I eat, and how much?

A typical serving of fish is 4 ounces, weighed before cooking. For women who could become pregnant or who are currently pregnant, the FDA & EPA suggest eating up to 12 ounces (340 grams) of fish a week, or two to three average meals from their list of fish that fall under their 'best choices' category. If choosing a fish from the "Good Choices", you should only have one serving per week of those fish.

With the January 2017 guidelines, they have provided a chart of fish that categorize fish as BEST choices, GOOD choices, and fish to AVOID, which can be found here:

<https://www.fda.gov/downloads/Food/ResourcesForYou/Consumers/UCM536321.pdf>.

There are many choices for fish from the best category, such as most types of cooked fish including store bought small ocean fish (salmon, pollock, catfish), shellfish (crab, shrimp), or canned fish (including light tuna). Fish sticks and fast-food fish are likely made from fish with lower levels of methylmercury, often pollock.

There are different types (species) of tuna. So you will find different varieties of tuna listed for each category of choices. Canned light tuna (including skipjack) is listed under the best choices. Albacore (white) tuna and yellowfin tuna typically have higher mercury levels and are under the “good choices column”.

Can I eat fish caught by family and friends from local waters?

Freshwater fish caught from local waters may contain high levels of methylmercury or other local pollutants and may not be safe to eat. The EPA and state and local health departments monitor freshwater lakes and streams. Check with your local agency to see if the fish is safe to eat.

To be safe, shouldn't I just stop eating fish completely during pregnancy?

No. Fish can provide beneficial protein, long chain polyunsaturated fatty acids (such as omega-3 fatty acids), iodine, selenium and vitamin D, which are all important for your health and the growth and development of your baby. Some studies have found that women who eat fish during pregnancy have better pregnancy outcomes than women who do not eat fish. You can maximize the benefits of fish by choosing fish with low mercury levels. During pregnancy, it is best to cook fish before eating it.

What if I ate more than the recommended amount of fish in a week during my pregnancy?

One week's consumption of fish probably would not greatly change the level of methylmercury in your body. If you eat a lot of fish during one week, you can limit your fish consumption for the next week or two.

Can methylmercury affect my developing baby?

Yes, at high levels. Methylmercury crosses the placenta and can be found in the baby's blood at levels higher than those in the mother. The baby's brain is the most sensitive organ to the effects of methylmercury exposure. The brain continues to develop throughout the entire pregnancy, so high exposure at any time in the pregnancy can be of concern.

The effects of methylmercury on human pregnancy have been documented by several events that occurred many years ago in Japan and Iraq. Children were born with birth defects following the contamination of their mothers' food supply by methylmercury. These were extreme situations where a number of adults also became sick and died from the contamination, although some of the mothers had mild or no symptoms. The birth defects seen were small head size, brain damage, developmental delay, intellectual disability, blindness, muscle weakness, and seizures.

Women in the U.S., who generally do not depend upon fish for their protein intake, are unlikely to consume enough fish to cause harmful effects in a pregnancy. However, all women who are pregnant or may become pregnant are advised to follow the FDA guidelines for fish consumption to help reduce the chances for exposure to harmful levels of methylmercury.

Can I be tested to find out if I have high levels of methylmercury in my body?

Yes. Blood and hair can be tested to determine exposure to methylmercury. Blood tests are good for detecting methylmercury immediately following exposures. Hair may be able to detect ongoing (chronic) mercury exposure. However, these tests can be hard to interpret. A urine test is not helpful in testing for methylmercury. You should discuss your exposure with your health care provider to determine if testing would be appropriate. There is no standard recommendation to screen women for methylmercury levels prior to or during pregnancy.

Is it dangerous to eat fish and breastfeed my baby? What if blood tests showed that I have high levels of methylmercury?

A woman who is breastfeeding should follow the same FDA guidelines described above for eating fish. The level of methylmercury within dietary guidelines will not be harmful to breastfed children. Very few studies have been done to evaluate breastfed infants whose mothers had high levels of methylmercury.

If tests during pregnancy or after delivery show high levels of methylmercury in your system, then you should discuss the safety of breastfeeding with your health care provider. Be sure to talk to your health care provider about all your breastfeeding questions.

Is it a problem if the father of the baby is exposed to methylmercury?

Studies in experimental animals have shown that mercury can change the shape and movement of sperm. In humans, the research data are not clear. Some studies have suggested that high levels of mercury may cause infertility while other studies have not. There is no information suggesting that a father's exposure to methylmercury can cause

birth defects or mental retardation in his children.

In general, exposures that fathers have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures and Pregnancy at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/>.

References Available By Request

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