Methylmercury in Fish

This sheet is about exposure to methylmercury in pregnancy and while breastfeeding. This information is based on published research studies. It should not take the place of medical care and advice from your healthcare providers.

What is methylmercury?

Methylmercury is an organic form of mercury. Methylmercury is found in water, soil, plants, and animals. Methylmercury is different from elemental mercury, which is found in thermometers and some dental amalgams (tooth fillings). It is also different from inorganic mercury, which can be found in some factory and workplace settings.

Where does methylmercury come from?

Methylmercury comes from mercury. Mercury gets into the air from natural sources, like volcanic eruptions and forest fires, and human activities, like coal-burning power plants. When mercury from the air falls into water (oceans, lakes, rivers, streams), the mercury changes into methylmercury. Fish that live in the water can absorb methylmercury through their gills (organs that allow them to breathe underwater) and from the food they eat.

How are people exposed to methylmercury?

Most people are exposed to methylmercury from eating fish, shellfish, and marine animals. Almost all fish have some methylmercury. Exposure to small amounts of methylmercury is not likely to cause harm. However, very high exposure can cause poisoning and serious health problems. Methylmercury crosses the placenta and can be found in the fetal blood at levels higher than those in the woman who is pregnant.

What are the benefits of eating fish during pregnancy?

Fish is an important part of a healthy diet and is a good food choice for pregnancy. Fish have protein, long chain polyunsaturated fatty acids (such as omega-3 fatty acids), iodine, selenium, and vitamin D. These are all good for your health and the growth and development of a fetus. Some studies have found that women who eat fish during pregnancy have better pregnancy outcomes than those who do not eat fish. A study found that children born to women who ate fish during pregnancy had higher IQ levels. You can get the benefits of fish by choosing fish with low mercury levels.

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

The U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) advise women who could become pregnant, women already pregnant, women who are nursing, and children to avoid eating fish with high levels of methylmercury.

Fish that are more likely to have high levels of methylmercury are large fish, fish that live for a long time, and fish that eat other fish. The list below has the highest levels of methylmercury and should be avoided during pregnancy and breastfeeding:

- bigeye tuna,
- king mackerel
- marlin
- shark
- swordfish
- tilefish from the Gulf of Mexico

- orange roughy
- whale meat and whale blubber (fat)

If I am planning a pregnancy or am already pregnant, what kind of fish can I eat, and how much?

Women who are pregnant or could become pregnant should follow the FDA and EPA advice for eating fish. The FDA and EPA have created a chart that divides fish into three groups: “Best Choices,” “Good Choices,” and “Choices to Avoid”. You can see the chart here: https://www.fda.gov/food/consumers/advice-about-eating-fish.

A typical adult serving of fish is 4 ounces, weighed before cooking. The FDA and EPA suggest eating up to 12 ounces (340 grams) of fish a week for women who could become pregnant or who are currently pregnant. This would equal 2 to 3 servings per week from the “Best Choices” list or 1 serving per week from the “Good Choices” list.

There are different types (species) of tuna. Different types of tuna are listed under each group. For example, canned light tuna (including skipjack) is listed under “Best Choices.” Albacore (white) tuna and yellowfin tuna can have higher mercury levels and are under “Good Choices.” Bigeye tuna is listed as a “Choice to Avoid”.

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

Fish caught from local freshwater lakes, rivers, or streams could have high levels of methylmercury or other local pollutants and might not be safe to eat. The EPA and state and local health departments monitor local freshwater. If you eat fish caught by family or friends, check your local agency at https://fishadvisoryonline.epa.gov/Contacts.aspx. If there is no advice listed, eat only 1 serving and no other fish that week.

Are there concerns about eating raw fish during pregnancy?

Women who are pregnant should not eat raw fish, such as that found in sushi and sashimi. This is because raw fish can contain bacteria or parasites that could cause serious illness. Please see our fact sheet on eating meats and seafood at https://mothertobaby.org/fact-sheets/eating-raw-undercooked-or-cold-meats-and-seafood/ for more information. Cooking fish can reduce the risk of illness from bacteria and pathogens, but cooking fish does not reduce the levels of methylmercury in the fish.

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

Eating fish from the “Choices to Avoid” list 1 time or eating more than the recommended amount of fish for 1 week is not likely to increase the chance for health problems for you or pregnancy. If you eat more than the recommended amount of fish for 1 week, you can eat less fish for the next week or so.

Are there tests that can tell if I have high levels of methylmercury in my body?

Blood and hair tests can check methylmercury levels in the body. Blood tests work best right after an exposure. Hair tests might be able to detect ongoing (chronic) mercury exposure. However, these tests can be hard to understand. A urine test may not be helpful in testing for methylmercury. Talk with your healthcare provider about your exposure and whether testing is right for you. There is no standard recommendation to test for methylmercury levels before or during pregnancy.

I was exposed to methylmercury. Can it make it harder for me to get pregnant?

Some studies suggest that methylmercury exposure might make it harder to get pregnant. This may be more likely at higher levels.

Does exposure to methylmercury increase the chance of miscarriage?

Miscarriage is common and can occur in any pregnancy for many different reasons. It is not known if methylmercury can increase the chance of miscarriage.

Does exposure to methylmercury increase the chance of birth defects?

Birth defects can happen in any pregnancy for different reasons. Out of all babies born each year, about 3 out of 100 (3%) will have a birth defect. We look at research studies to try to understand if an exposure, like methylmercury, might increase the chance of birth defects in a pregnancy.

When a woman follows the FDA guidance for eating fish in pregnancy, an increased chance for birth defects is not expected.

High levels of methylmercury exposure during pregnancy can increase the chance of birth defects. In the past, large poisoning events happened in Japan and Iraq. In these events, food was heavily contaminated with methylmercury. Some adults became very sick or died. Babies born after very high exposures had a small head size (microcephaly), underdeveloped brain, and excess fluid in the brain (hydrocephalus), blindness, muscle weakness, and seizures. Some research also suggests that methylmercury exposure during pregnancy may increase the chance of neural tube defects (such as spina bifida) and heart defects.

Does exposure to methylmercury increase the chance of other pregnancy-related problems?

Some studies have suggested an increased chance for preterm delivery (birth before week 37) or low birth weight (weighing less than 5 pounds, 8 ounces (2500 grams) at birth) when a woman has high levels of methylmercury in her body. However, other studies did not find an increased chance for these outcomes. This means that it is not known if methylmercury can increase the chance of pregnancy-related problems.

Does exposure to methylmercury in pregnancy affect future behavior or learning for the child?

The developing brain is sensitive to methylmercury throughout pregnancy, so high exposure at any time can be concerning. Very high levels of methylmercury in the diet, as seen from past food contamination events, have been shown to increase the chance of having a baby with a small head size, brain damage, developmental delay, intellectual disability, blindness, muscle weakness, and seizures. These high levels of exposure are not typical.

Most people in the U.S. are not likely to eat enough fish to reach harmful levels of methylmercury. Studies from countries where people eat fish daily and have mercury levels in blood higher than those of people in the U.S. found no differences in children's development from methylmercury in fish, even in children followed to age 11 years. In fact, a study found that children born to women who ate fish during pregnancy had higher IQ levels. This included women who had somewhat increased levels of mercury; likely because nutrients in fish, such as omega-3 fatty acids, support brain development. When a woman follows FDA advice for eating fish during pregnancy, her child is not likely to have problems with learning or behavior from methylmercury exposure.

What if I breastfeed my baby?

Follow the same FDA and EPA guidelines described above to ensure you are not consuming too much methylmercury. Very few studies have been done to evaluate breastfed infants exposed to high levels of methylmercury in breast milk; and the results are not clear. 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 healthcare provider. Be sure to talk to your healthcare provider about all your breastfeeding questions.

If a man is exposed to methylmercury, can it affect his fertility or increase the chance of birth defects?

Some studies have suggested that high levels of mercury might affect male fertility (ability to make healthy sperm) while other studies have not. It is not known if a man's exposure to methylmercury can increase the chance of birth defects or learning difficulties in their children. In general, exposures that men have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures at https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/.

Please click here for references.

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at MotherToBaby.org.

Disclaimer: MotherToBaby Fact Sheets are meant for general information purposes and should not replace the advice of your health care provider. MotherToBaby is a service of the non-profit Organization of Teratology Information Specialists (OTIS). Copyright by OTIS, May 1, 2026.