

QAs on Methylmercury in Fish

Q.1	How can methylmercury affect health?
A.1	<p>Methylmercury is more toxic than inorganic mercury. It can be accumulated in the body. For foetuses, infants, and children, the primary health effect of methylmercury is impaired neurological development. Methylmercury exposure in the womb, which can result from a mother's consumption of fish and shellfish that contain methylmercury, can adversely affect a baby's growing brain and nervous system. Impacts on cognitive thinking, memory, attention, language, and fine motor and visual spatial skills have been seen in children exposed to methylmercury in the womb.</p>
Q.2	What types of fish were found to contain high in methylmercury?
A.2	<p>In the Total Diet Study (TDS), tuna was relatively high in methylmercury (mean conc.=330 µg/kg) but the levels of all tuna samples were within the codex standard (1000 µg/kg for large predatory fish and 500 µg/kg or all other fish). Also, our risk assessment study on “Mercury in Fish and Food Safety” in 2008 showed that alfonsino (a type of predatory fish) was high in methylmercury (509-1010 µg/kg).</p> <p>In addition, according to literature, shark, swordfish, marlin, orange roughy, pike, tilefish, and king mackerel were found to contain high levels of methylmercury.</p>
Q.3	What types of tuna, fresh or canned, were tested in the TDS?
A.3	<p>There are a total of 4 composite samples of tuna tested in the TDS. Each composite sample contained one sample fresh tuna (sashimi) and two samples of canned tuna. This combination was made according to the consumption pattern of tuna of the HK people.</p>

Q.4	Is canned tuna safe to eat by pregnant women and children?
A.4	<p>According to WHO and our RA study in 2008, mercury levels in canned tuna were lower than in fresh tuna, largely due to the species or because smaller-sized fish are used. Skipjack tuna (mean conc.=142 µg/kg MeHg, 2008 RA study) is often canned and this variety tends to contain lower levels of mercury. However, species with higher levels may also be canned, such as albacore tuna, known as canned ‘white’ tuna in the US, (205 µg/kg MeHg, 2008 RA study).</p> <p>The PTWI of a pregnant woman, may be exceed only if she eat four to five can (~140g) of Skipjack tuna a week. However, for albacore tuna, three cans per week will lead to the PTWI being reached. Since the species tuna used in canned foods and their methylmercury levels varied from products to products. Therefore, it is prudent for pregnant women, women planning pregnancy, and young children to avoid eating too much canned tuna.</p>
Q.5	What types of fish are low in methylmercury?
A.5	<p>In general, smaller sized (i.e. less that on catty) fish, farmed fish and freshwater fish have lower levels methylmercury. Among the 13 types of fish covered in the TDS study, 7 of were found to contain relatively low levels (less than 100 µg/kg) of methylmercury, i.e. Big head, Pomfret, Dace, mince , Salmon, Grey mullet, Sole fillet and Grass carp.</p>
Q.6	How about methylmercury levels of other seafood such as shellfishes?
A.6	<p>Shellfishes including prawns, lobsters, crabs, oysters and squids generally contain lower levels of mercury than finfish. Also, shellfishes tend not to be consumed as frequently, so they are not a significant source of mercury for average consumers. However, if you consume large amounts of these foods on a regular basis, they may contribute significantly to your mercury</p>

	exposure.
Q.7	What if I eat a lot of fish in a week?
A.7	One week's consumption of fish does not significantly change the level of mercury in the body at all. If you eat a lot of fish one week, you can cut back for the next week or two. The key is to maintain a balanced diet and avoid overindulgence in particular food items.
Q.8	Does processing or cooking reduce the content of mercury (or methylmercury) of fish?
A.8	No. The mercury (or methylmercury) content of fish will not be reduced by processing techniques such as canning or freezing or by cooking.
Q.9	I'm a woman who could have children but I'm not pregnant - so why should I be concerned about methylmercury?
A.9	If you regularly eat types of fish that are high in methylmercury, it can accumulate in your blood stream over time. Methylmercury is removed from the body naturally, but it may take over a year for the levels to drop significantly. Thus, it may be present in a woman even before she becomes pregnant. This is the reason why women who are trying to become pregnant should also avoid eating certain types of fish.
Q.10	Is it safe to eat fish or drink fish soups if a woman is breastfeeding her baby?
A.10	Yes. Lactating women should continue to eat fish or drink fish soup as part of a balanced diet. According to literature, breast milk does not contain high levels of methylmercury and breast-feeding has many benefits for the growth and development of infants. The benefits of breastfeeding far outweigh any risk posed by the small amount of mercury that may be present in breast milk.

Q.11	How is the situation in overseas countries?
A.11	<p>Mercury contamination in fish is a global problem due to industrial pollution. In view of this, some overseas health authorities had given some advice on fish consumption to the most susceptible groups, i.e. pregnant women, women planning pregnancy and children. However, the amount of fish should be eaten and the type of fish to be avoided or restricted are dependent on the dietary habits of people and the mercury/methylmercury levels in fish of different countries. In general, overseas health authorities advised the susceptible groups to eat around 2 to 3 meals (350 to 450 g) (equivalent to 9-12 taels) fish a week and restrict or avoid consumption predatory fish such as swordfish, turn, shark, etc.</p>
Q.12	How much fish did HK women in child bearing age eat per week?
A.12	<p>According to our Food Consumption Survey, the average weight of women of child bearing age, i.e. women aged 20-49 is 55 kg. The average consumer ate about 340 g (~9 taels) of fish per week which is comparable to the amount advised by overseas authorities. On the other hand, the high consumer (95th percentile) ate about 1100 g (~29 taels /almost 2 catties) of fish per week.</p> <p>* 1 tael=roughly equals to the size of a table tennis ball.</p>
Q.13	Should the high consumers of women of child bearing age eat less fish?
A.13	<p>The amount of fish can be safely eaten depends on the methylmercury levels of the fish. Based on the fact that 11% of women of child bearing age had dietary exposure to methylmercury exceeded the PTWI, the high consumers (who eat about 1100 g of fish per week) may consider reduce their fish</p>

	consumption or choose fish with lower level of methylmercury only. In general, smaller sized fish, farmed fish and freshwater fish have lower levels methylmercury.
Q.14	Why should pregnant women and children eat fish as they contain methylmercury?
A.14	The levels of methylmercury in most fish are low. Fish contain many essential nutrients, such as omega-3 fatty acids and high quality proteins. A well-balanced diet that includes a variety of fish benefits to the heart as well as to the developing brains of children. Women and young children in particular should include fish in their diets.