Conclusions

In this guide

111. Mercury is a metal that is released into the environment from both natural and anthropogenic sources. Mercury bioaccumulates in fish as MeHg, especially in long-lived predatory species such as swordfish and tuna. Populations that consume large quantities of foods derived from fish are more vulnerable to mercury exposure. Food sources other than fish and seafood products may contain mercury, but mostly in the form of inorganic mercury.

112. After oral intake in humans, MeHg is more extensively and rapidly absorbed than inorganic mercury. Following ingestion MeHg can cross the placental, blood-brain and blood-cerebrospinal fluid barriers, allowing accumulation in the fetus and the brain, respectively. Inorganic mercury does not readily cross the same barriers and is therefore considerably less toxic than MeHg. MeHg can also enter the hair follicle following ingestion which is relevant for biomonitoring purposes.

113. The most sensitive adverse effect associated with MeHg exposure is toxicity to the central and peripheral nervous systems. Due to MeHg's ability to cross barriers, exposure during embryonic neurodevelopment and in young children is of high concern. Thus, pregnant and breastfeeding women are sensitive sub-populations.

114. The most recent HBGVs derived for mercury were calculated by EFSA in 2012 to determine whether the earlier JECFA-derived values were still appropriate. EFSA derived a lower TWI for MeHg of 1.3 µg/kg bw (the JECFA PTWI was 1.6 µg/kg bw) and a TWI for inorganic mercury of 4 µg/kg bw (identical to the JECFA PTWI).

115. Inorganic mercury could not be separated from MeHg in the exposure data. This was considered irrelevant for the risk assessment, however, because previous evaluations have highlighted the fact that most mercury exposure from the diet is MeHg. Furthermore, MeHg is considered more toxic than inorganic mercury. Regardless, the high individual and aggregate exposure assessments to mercury from food, water, soil and air all estimated exposures were below the EFSA TWIs for both MeHg and inorganic mercury. For the UK population, therefore, the risk to women of maternal age and their fetuses is low.

116. The current Government advice on foods to avoid in pregnancy should be maintained. Women of childbearing age should avoid eating more than more than 2 portions of oily fish a week and no more than 2 tuna steaks (about 140g cooked or 170g raw) (tuna is no longer classed as oily fish). Shark, swordfish, marlin, raw shellfish and uncooked, cold-smoked or cured fish should also be avoided by pregnant women and women trying to get pregnant. If pregnant women and women trying to get pregnant are following Government advice the exposure assessment is highly conservative as fish and seafood is the major source of MeHg exposure in the diet.

117. For future reference the COT recommend that study authors always estimate consumption/dose in mg/kg bodyweight/day whenever possible to allow

for comparison between human and animal dietary studies.

COT Statement

2025/03