

Opinion of the Scientific Panel on Contaminants in the Food Chain on a request from the Commission related to mercury and methylmercury in food

(Request N° EFSA-Q-2003-030)

(adopted on 24 February 2004)

SUMMARY

The Panel has been asked to assess the possible risks to human health from the consumption of foods contaminated with mercury and methylmercury, based on intake estimates for Europe and the provisional tolerable weekly intake (PTWI) established recently by the Joint FAO/WHO Expert Committee on Food Additives (JECFA). Mercury is an environmental contaminant that is present in fish and seafood products largely as methylmercury. Food sources other than fish and seafood products may contain mercury, but mostly in the form of inorganic mercury. Based on the available data the contribution to methylmercury exposure from these foods is considered to be insignificant. Inorganic mercury in food is considerably less toxic than methylmercury. Methylmercury is highly toxic particularly to the nervous system, and the developing brain is thought to be the most sensitive target organ for methylmercury toxicity. The JECFA established a Provisional Tolerable Weekly Intake (PTWI) of 1.6 µg/kg body weight based on two epidemiological studies that investigated the relationship between maternal exposure to mercury and impaired neurodevelopment in their children. A previous evaluation by the (U.S.) National Research Council (NRC) established an intake limit of 0.7 µg/kg body weight per week. The estimated intakes of mercury in Europe varied by country, depending on the amount and the type of fish consumed. The mean intakes were in most cases below the JECFA PTWI but the average intake in some countries exceeded the U.S.-NRC limit. High intakes may also exceed the JECFA PTWI. A probabilistic analysis of the French data indicated that children are more likely to exceed the PTWI than adults. Intake data from a recent large survey in Norway indicate that the intakes derived from the analysis of the SCOOP data (*scientific co-operation on questions relating to food*) may overestimate the true intakes of methylmercury for some countries, when the type of fish consumed consists of species with a relatively low concentration of methylmercury. There may be population-groups in Europe with a frequent consumption of large predatory fish, which are at the top of the food chain (for instance swordfish and tuna) which often have a higher concentration of methylmercury. These population-groups may therefore have higher dietary intakes than those found in populations with a high intake of fish containing low levels of methylmercury. Because the intake estimates for high consumers are close to the PTWI established by the JECFA, and exceed the limit established by the U.S.-NRC, reliable intake data should be established from studies focused on women of childbearing age. Methylmercury toxicity has been demonstrated at low exposure levels, and exposure to this compound should therefore be minimized, while recognising that fish constitutes an important part of a balanced diet.