European Food Safety Authority

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PRESS RELEASE

EFSA provides risk assessment on mercury in fish: Precautionary advice given to vulnerable groups

The European Food Safety Authority's (EFSA) Scientific Panel on Contaminants in the Food Chain (CONTAM) published today an opinion regarding the possible risks to human health associated with the consumption of foods contaminated with mercury. Mercury is present as an environmental contaminant in foods, notably in fish and seafood principally in the form of methylmercury. While exposure to methylmercury varies by country, intake estimates for European consumers are close to internationally established safe intake limits. The Panel advises that further dietary studies be conducted among vulnerable population groups, including children and women of childbearing age, where specific intake data are lacking. Taking into account the important nutritional contribution that fish makes to the diet, EFSA recommends that vulnerable groups in particular select fish from a wide range of species without giving undue preference to large predatory fish likely to contain higher levels of methylmercury, such as swordfish and tuna. Additional guidance regarding the types of fish most suited to consumers' diets is provided by national food safety authorities in Member States.

Following a request from the European Commission, EFSA's Scientific Panel on Contaminants in the Food Chain (CONTAM) has evaluated the possible risks to human health from the consumption of foods contaminated with mercury, in particular methylmercury, based on intake estimates for Europe. In carrying out its risk assessment, the Panel focused on methylmercury, which is considerably more toxic than inorganic mercury in food. In doing so, the Panel considered the provisional tolerable weekly intake (PTWI) established recently for methylmercury by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) as well as the intake limits established by the U.S. National Research Council (US-NRC).

The main source of human exposure to methylmercury from food is fish and seafood products. Given that the average intake estimates of methylmercury for European consumers are below but at times rather close to the PTWI established by the JECFA (1.6 µg/kg body weight) and some intake estimates exceed the limit established by the US –NRC (0.7 µg/kg body weight per week), the CONTAM Panel recommends that a more complete evaluation of exposures be carried out in Europe.

Commenting on these conclusions, the Chair of the EFSA Panel, Dr. Josef Schlatter explained: "Above safe levels of intake, methylmercury is particularly toxic to the nervous system and developing brain. Exposure during pregnancy and early infancy is therefore of particular concern, and this is precisely where appropriate intake data are lacking. Consequently, the Panel advises that specific dietary intake studies be conducted among those more vulnerable population groups including children and women of childbearing age." Following on from this recommendation, EFSA has initiated and will pursue collection of data from Member States through the networks of its Advisory Forum.

In light of the conclusions of the CONTAM Panel, EFSA endorses the precautionary advice concerning fish consumption given by national food safety authorities in Member States in order to protect against the risks for the most susceptible life stages: the unborn child, breast-fed babies and young children. Taking into account the important nutritional contribution that fish makes to the diet, EFSA recommends that women of childbearing age (in particular, those intending to become pregnant), pregnant and breastfeeding women as well as young children select fish from a wide range of species, without giving undue preference to large predatory fish such as swordfish and tuna. Due to their place in the food chain, these fish are likely to contain higher levels of methylmercury than other fish species.

Fish is an important part of a healthy diet as it provides important nutrients. EFSA supports dietary advice given to consumers regarding the benefits of fish consumption. Indeed many national and international authorities advise that people should eat at least two portions of fish a week. Additional guidance regarding the types of fish most suited to consumers' diets is provided by national food safety authorities in Member States.

For additional information on the CONTAM Panel's risk assessment related to mercury and methylmercury in food, see the background note attached.

The opinion is available on the EFSA web site at:
http://www.efsa.eu.int//science/contam_panel/contam_opinions/catindex_en.html

For media enquiries, please contact the EFSA Communications Department:

Carola Sondermann, Senior Press Officer
Tel: + 32 2 337 22 94 - Fax: + 32 2 337 23 94
e-mail: Carola.sondermann@efsa.eu.int

Or Anne-Laure Gassin, EFSA Communications Director,
Tel: + 32 2 337 22 48 - Fax: + 32 2 337 23 48
e-mail: Anne-laure.gassin@efsa.eu.int

For more background information about the European Food Safety Authority,
go to: http://www.efsa.eu.int

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Background note on EFSA risk assessment related to mercury and methylmercury in food (Request N° EFSA – Q- 2003-030)

1. Mercury and Health

Mercury is an environmental contaminant that exists in different chemical forms. Inorganic mercury in food is considerably less toxic than methylmercury which is mainly present in fish and seafood products. Due to the accumulation of mercury in the food chain, large predatory fish (such as swordfish and tuna) contain higher levels of methylmercury than other species of fish and represent significant sources of human exposure. Methylmercury is particularly toxic to the nervous system and developing brain; therefore, exposure during pregnancy is considered the most critical period for methylmercury toxicity. Population groups particularly concerned by exposure to mercury include: women of childbearing age and especially those intending to become pregnant; pregnant and breastfeeding women; and young children.

2. Exposure assessment

The exposure assessment carried out by EFSA's CONTAM Panel is based primarily on the scientific co-operation (SCOOP) task 3.2.11 report related to heavy metals (EC, 2003). Analysis of this data indicated that the average intake of mercury from fish and seafood products varied by country, depending on the amount and type of fish consumed. Although in most cases, the mean intakes were below the tolerable weekly intakes established by JECFA, occasionally the mean intakes were close to this level (1.6 µg/kg body weight). Moreover, when compared to the tolerable exposure levels of 0.7 µg/kg body weight per week established by the U.S.-NRC, some average intakes may exceed this limit. The Panel could not evaluate intake levels among pregnant women, as such specific intake data are not available.

3. Hazard characterisation

The hazard characterisation of methylmercury and in particular the assessment of tolerable methylmercury intake levels was based on epidemiological studies conducted in defined populations living in the Faroe Islands in the Atlantic and the Seychelles Islands in the Indian Ocean, populations with a high consumption of fishery products. In these studies, the differences in performance of children in specific tests were related to the mercury levels of their mothers (as determined by maternal hair concentration). Uncertainties such as the extrapolation of mercury levels found in hair to dietary intake estimations are subject to a number of conversions and assumptions, and consequently may result in slightly different tolerable intake levels.