

**For discussion on
25 November 2003**

LegCo Panel on Food Safety and Environmental Hygiene

Mercury Level in Seafood

PURPOSE

This paper briefs Members on our monitoring of mercury level in seafood and provides relevant advice on the consumption of seafood.

BACKGROUND

2. Heavy metals are contaminants that exist naturally in the environment, and can be released into the air and water from both natural and industrial sources. Acute toxicity resulting from ingesting food contaminated with heavy metals is uncommon, but chronic exposure to these metals may result in undesirable toxic effects. Dietary exposure to these contaminants is determined by their concentration in foods and the amounts of foods eaten. Mercury is a kind of heavy metal which can cause adverse effect on the nervous system of humans, especially the developing brains. Hence, unborn foetuses of pregnant women, infants and children are more sensitive to such toxic effects. Mercury can accumulate in fish and binds tightly to proteins. As mercury accumulates along the food chain, large predatory fish would have greater tendency to accumulate the chemical.

FOOD SURVEILLANCE

3. The level of mercury in food is regulated by the Food Adulteration (Metallic Contamination) Regulations (Cap. 132 V), which stipulate that the maximum permitted concentration of mercury in food is 0.5ppm (parts per million). Under the regular food surveillance

programme conducted by the Food and Environmental Hygiene Department (FEHD), food including seafood is sampled on a risk basis for the monitoring of mercury level. Of the 744 seafood samples taken for the testing of mercury in 2000-2002, only five samples involving mainly predatory fish such as tuna and swordfish, were found to have mercury level exceeding the legal limit. The overall satisfactory rate was 99.3%. In the first half of 2003, a total of 61 seafood samples were taken for the testing of mercury, and all of them were satisfactory.

DIETARY EXPOSURE STUDY

4. In 2001-2002, FEHD conducted a study on the dietary exposure of local secondary school students to heavy metals (including mercury) in order to identify the major dietary sources of these contaminants and to evaluate the risk posed to the students. Findings of the study were presented to Members at the Panel meeting of 22 October 2002. Full report of the study has been uploaded onto the website of FEHD (<http://www.fehd.gov.hk/safefood/report/heavymetal/index.html>) and copies are also available at major public libraries.

5. The results of the study revealed that the estimated dietary exposure of an average secondary school student to mercury was $2.98\mu\text{g}/\text{kg}$ body weight(bw)/week, which was below the Provisional Tolerable Weekly Intake (PTWI) of $5\mu\text{g}/\text{kg}$ bw/week as recommended by the Joint Food and Agriculture Organization/ World Health Organisation Expert Committee on Food Additives (JECFA). PTWI is an estimate of the amount of a chemical that can be ingested per week over a lifetime without appreciable risk. The above result implied that an average secondary school student would not experience major toxicological effects arising from dietary exposure to mercury. Predatory fish was found to have the highest content of mercury in our study. For the high consumers, their estimated dietary exposure to mercury was $6.41\mu\text{g}/\text{kg}$ bw/week, which was higher than the PTWI. However, it should be noted that an intake above the PTWI does not automatically mean that health is at risk because the emphasis of PTWI is on lifetime exposure. Transient excursions above the PTWI would have no health consequences provided that the averaged intake over long period is not exceeded.

CONCLUSION

6. As part of our ongoing efforts to protect public health, we shall continue to monitor the level of mercury in seafood under our food surveillance programme. The mercury content of the great majority of seafood available in Hong Kong is within the safety limit set, and are safe for consumption. However, the public is advised to maintain a well-balanced diet in order to avoid excessive exposure to certain undesirable contaminants that may be concentrated within a small range of food items. As fish is an excellent source of high quality protein and low in saturated fat, moderate consumption is recommended. Vulnerable groups such as children and pregnant women should be particularly careful in the selection of foods. They are advised not to consume excessive amount of predatory fish such as shark, tuna and swordfish, which may contain higher concentrations of mercury.

Food and Environmental Hygiene Department
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