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## Mercury and Risk Assessment from Consumption of Crustaceans, Cephalopods and Fish from West Peninsular Malaysia

Zurahaman Fasha Anual<sup>1,2\*</sup>, William Maher<sup>2</sup>, Frank Krikowa<sup>2</sup>, Lokman Hakim<sup>3</sup>, Nurul Izzah Ahmad<sup>1</sup>, Simon Foster<sup>2</sup>

<sup>1</sup>Environmental Health Research Centre, Institute for Medical Research, Jalan Pahang, 50588 Kuala Lumpur, Malaysia; zurahaman@imr.gov.my, nurul@imr.gov.my

<sup>2</sup>Ecochemistry Laboratory, Institute for Applied Ecology, University of Canberra, ACT 2601, Australia; bill.maher@canberra.edu.au, frank.krikowa@canberra.edu.au, simon.foster@canberra.edu.au

<sup>3</sup>School of Medicine, International Medical University, No. 126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur, Malaysia ; LokmanHakim@imu.edu.my

**Abstract:** Mercury (Hg) is a toxic element and has no known biological functions in humans. This study aims to assess total Hg and methyl mercury (MeHg) concentrations in commonly consumed fish and seafood as well as to estimate the risk of Hg contamination through seafood consumption by Malaysians. The concentrations of total Hg and MeHg in 8 species of crustaceans (n=15), 5 species of cephalopods (n=12), and 29 species of fish (n=78) from West Peninsular Malaysia are reported. Total mercury concentrations in crustaceans, cephalopods and fish were  $0.033 \pm 0.033$   $\mu\text{g/g}$ ,  $0.040 \pm 0.025$   $\mu\text{g/g}$  and  $0.106 \pm 0.128$   $\mu\text{g/g}$  wet weight respectively. The proportion of methyl mercury in fish was 81-99% with a mean of  $93 \pm 5\%$  (n = 15). Significantly higher mercury concentrations were observed in demersal fish, fish on higher trophic level and fish with body length of more than 20 cm. All fish and seafood were within the Malaysian Food Regulation of 0.5  $\mu\text{g/g}$  mercury for fish and fishery products and 1.0  $\mu\text{g/g}$  mercury for predatory fish. However, the consumption of fish from certain seafood species should be taken into consideration to ensure that the Provisional Tolerable Weekly Intake (PTWI) of MeHg does not exceed 1.6  $\mu\text{g/kg}$  body weight/week.

**Keyword:** methyl mercury; fish consumption; health risk; HPLC-ICPMS

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