

FISH, NUTRITION, MERCURY, AND CHILD DEVELOPMENT: EVIDENCE FROM THE SEYCHELLES

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The mercury (Hg) research team at the University of Rochester has been conducting studies on human toxicity since the Iraq poisoning in the 1970s. Data from Iraq suggested that the levels of methyl mercury (MeHg) exposure achieved by fish consumption might adversely affect children's development. We subsequently initiated the Seychelles Child Development Study (SCDS) to determine if that hypothesis was correct. Initial studies supported the hypothesis, but more rigorous investigations did not. Indeed, within the range of exposures studied (mean prenatal exposure measured in maternal hair as total Hg was 6.8 ppm) the children with higher exposure sometimes performed better. This surprise finding led to studies evaluating nutrients present in fish and important in brain development such as long chain polyunsaturated fatty acids (LCPUFA), iodine status, iron status, and others. We found psychomotor improvement as total n-3 LCPUFA increased. We also found an adverse effect of MeHg when maternal LCPUFA measures were included in the regression analysis. These findings demonstrate the complex biological interrelationships between nutrients and toxicants present in fish and their impact on child development.