S01-06 Maternal fish intake during pregnancy, blood mercury, and child cognition at age 3 years in a US cohort

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The balance of contaminant risk and nutritional benefit from maternal prenatal fish consumption for child cognitive development is not known. Using data from a prospective cohort study of 341 mother-child pairs, authors studied associations of maternal 2nd trimester fish intake and erythrocyte mercury levels with child age 3 year scores on the Peabody Picture Vocabulary Test (PPVT) and Wide-Range Assessment of Visual Motor Abilities (WRAVMA). Mean maternal total fish intake was 1.5 (SD 1.4) servings/month, and 40 (12%) of mothers consumed > 2 weekly fish servings. Mean (SD) maternal mercury was 3.8 (3.8) ng/g. After adjustment using multivariable linear regression, higher fish intake was associated with better child cognitive test performance, and higher mercury levels with poorer test scores. Associations strengthened with inclusion of both fish and mercury: effect estimates (95% CI) for fish intake > 2 servings/week vs. never were 2.2 (-2.6, 7.0) for PPVT and 6.4 (2.0, 10.8) for WRAVMA; and for mercury in the top decile, -4.5 (-8.5, -0.4) for PPVT and -4.6 (-8.3, -0.9) for WRAVMA. Fish consumption <= 2 weekly servings was not associated with a benefit. Dietary recommendations for pregnant women should incorporate the nutritional benefits as well as the risks of fish intake.

Keywords: Pregnancy; Fishes; Mercury; Child development; n-3 fatty acids