

Hibbeln JR, Davis JM, Steer C; Emmett P; et al. Maternal seafood consumption in pregnancy and neurodevelopmental outcomes in childhood (ALSPAC Study): an observational cohort study. *The Lancet*; Feb 17-Feb 23, 2007;369,9561: 578.

Background

Seafood is the predominant source of omega-3 fatty acids, which are essential for optimum neural development. However, in the USA, women are advised to limit their seafood intake during pregnancy to 340 g per week. We used the Avon Longitudinal Study of Parents and Children (ALSPAC) to assess the possible benefits and hazards to a child's development of different levels of maternal seafood intake during pregnancy.

Methods

11 875 pregnant women completed a food frequency questionnaire assessing seafood consumption at 32 weeks' gestation. Multivariable logistic regression models including 28 potential confounders assessing social disadvantage, perinatal, and dietary items were used to compare developmental, behavioural, and cognitive outcomes of the children from age 6 months to 8 years in women consuming none, some (1–340 g per week), and >340 g per week.

Findings

After adjustment, maternal seafood intake during pregnancy of less than 340 g per week was associated with increased risk of their children being in the lowest quartile for verbal intelligence quotient (IQ) (no seafood consumption, odds ratio [OR] 1.48, 95% CI 1.16–1.90; some, 1.09, 0.92–1.29; overall trend, $p=0.004$), compared with mothers who consumed more than 340 g per week. Low maternal seafood intake was also associated with increased risk of suboptimum outcomes for prosocial behaviour, fine motor, communication, and social development scores. For each outcome measure, the lower the intake of seafood during pregnancy, the higher the risk of suboptimum developmental outcome.

Interpretation

Maternal seafood consumption of less than 340 g per week in pregnancy did not protect children from adverse outcomes; rather, we recorded beneficial effects on child development with maternal seafood intakes of more than 340 g per week, suggesting that advice to limit seafood consumption could actually be detrimental. These results show that risks from the loss of nutrients were greater than the risks of harm from exposure to trace contaminants in 340 g seafood eaten weekly.