

## High-Dose Fish Oil Called Safe During Pregnancy

PERTH, Australia, Dec. 21 -- High-dose fish oil supplements given during pregnancy appear to be safe for the baby and even improve later hand-eye coordination.

So found Susan L. Prescott, M.D., Ph.D., of the University of Western Australia here, and colleagues, on the basis of a study of 83 pregnant women with allergies, and their children. The women had been part of a larger study to test whether fish oil would protect the children from allergies.

Fish oil provides an extra dose of long-chain fatty acids essential for normal neuronal and visual development, but no studies had been done to evaluate whether high doses are safe for the fetus, the Perth group reported online Dec. 20 in the *Archives of Disease in Childhood* (Fetal and Neonatal Edition).

It was not known whether selective supplementation of 3 long-chain polyunsaturated fatty acid (n-3 LC PUFA) would displace other essential fatty acids, they added.

To test this, the researchers analyzed developmental data from the larger randomized controlled trial looking at the risk of allergic disease. Women were randomized four 1-g fish oil capsules daily (about the equivalent of one fatty fish meal a day), or four 1-g olive oil capsules daily as a control, from 20 weeks' gestation until birth. Capsules for both groups also contained 3 to 4 mg/g of antioxidant vitamin E.

When the babies were assessed at age 2.5 years, the researchers found no difference in physical growth between the fish oil and olive oil group. The respective findings were:

For height, 93.8 versus 93.3 cm ( $P=0.642$ ),

For weight, 14.5 versus 14.1 kg ( $P=0.456$ ), and

For head circumference, 49.4 versus 49.8 cm ( $P=0.304$ ).

However, the children of women in the fish oil group had significantly higher hand-eye coordination scores on the Griffiths Mental Development Scale than those of the control group (114.0 versus 108.0,  $P=0.021$ ). Despite adjustment for maternal age, maternal education and duration of breast feeding, supplementation remained a significant independent factor ( $P=0.008$ ).

Better hand-eye coordination scores were significantly correlated with higher levels of two kinds of n-3 fatty acids--eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)-- in cord blood erythrocytes ( $P=0.007$  and  $P=0.009$ , respectively). Adjusting for maternal age and education and breast feeding duration did not alter the associations.

"These preliminary data indicate that supplementation with a relatively high-dose fish oil during the last 20 weeks of pregnancy is not only safe but also seems to have potential beneficial effects that need to be explored further," the researchers wrote.

Other developmental scores tended to be higher for the fish oil group compared to control as well

though the differences were not significant. The findings, respectively, were:

For the Griffiths Mental Development Scale mean general quotient scores, 114.2 versus 110.5 ( $P=0.130$ ),

For language comprehension scores on the Peabody Picture Vocabulary Test, 101.3 versus 97.4 ( $P=0.110$ ),

For the Child Behavior Checklist subscale scores, internalizing 44 versus 45 ( $P=0.576$ ), externalizing 49 versus 48 ( $P=0.706$ ), and total problem behavior 35 versus 36 ( $P=0.548$ ), and

For the language development survey, phrase length scores 73.2 versus 67.8 ( $P=0.300$ ) and vocabulary scores 57.6 versus 55.3 ( $P=0.650$ ).

All the participating mothers were Caucasian, had allergic disease, and were recruited before 20 weeks of pregnancy. Women were excluded if they smoked, had medical problems, a complicated pregnancy, seafood allergy, or if their normal dietary intake exceeded two meals of fish per week. Children were excluded from the study if they were born before 36 weeks' gestation.

Although mothers in the fish oil group were a little younger than those in the olive oil group (30.9 versus 32.6,  $P=0.047$ ), there were no other baseline differences.

The researchers said that although the study was limited by its small size, it is reassuring that no adverse effects on development were seen with high-dose fish oil supplementation during pregnancy. However, they said further study will be needed to confirm the findings.

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