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A randomized trial of docosahexaenoic acid supplementation during the third trimester of pregnancy.

- **Smuts CM**,
- **Huang M**,
- **Mundy D**,
- **Plasse T**,
- **Major S**,
- **Carlson SE**.

Department of Dietetics and Nutrition, University of Kansas Medical Center, 3901 Rainbow Boulevard, Kansas City, KS 66160, USA.

OBJECTIVE: To hypothesize that higher intake of docosahexaenoic acid, an n-3 long chain polyunsaturated fatty acid, would increase duration of gestation and birth weight in US women.

METHODS: This was a randomized, double-blind, controlled, clinical trial. Subjects were enrolled in an ambulatory clinic where they received prenatal care. This was a population-based sample. Most subjects received government assistance for medical care and most were black (73%). Subjects were enrolled between the 24th and 28th week of pregnancy and consumed docosahexaenoic acid (33 or 133 mg) from eggs until parturition. Gestational age and birth weight were the main study outcomes. Infant length and head circumference, preterm birth, and low birth weight were secondary outcomes.

RESULTS: Eighty-three percent of subjects completed the study (291 of 350 enrolled). No subject was discontinued for an adverse event. After controlling for important predefined risk factors and confounding variables, gestation increased by 6.0 +/- 2.3 days (P =.009) in the higher docosahexaenoic acid group. Birth weight, length, and head circumference increased, but did not reach statistical significance (P =.06-.18), although the increases could be clinically important indications of enhanced intrauterine growth. No safety concerns were raised by the study.

CONCLUSION: Duration of gestation increased significantly when docosahexaenoic acid intake was increased during the last trimester of pregnancy. The increase in gestation was similar to that reported for interventions with much larger amounts of n-3 long chain polyunsaturated fatty acids.