

Higher Intake of Omega-3 During Pregnancy Reduces Risk of Childhood Obesity

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Body weight is one of the most basic issues of human life. Self-esteem, acceptance among peers and perhaps lifelong success or failure are all tied to our physical appearance. Medically speaking, not all overweight people are obese. Obesity is defined as weight that exceeds 15 percent of normal weight for height and body type. "Morbid" obesity exceeds 20 percent of optimum weight. An obese or overweight person is at high risk for a number of serious health problems, including heart disease, high blood pressure, stroke, varicose veins, dementia, psychological stress, depression, osteoarthritis, high cholesterol, and diabetes.

Omega-3 refers to a group or "family" of unsaturated fatty acids. The first fatty acid in this group is named alpha linolenic acid or just linolenic acid, and sometimes it is just called omega-3. Linolenic acid cannot be made in the body and therefore, it is classified as an essential fatty acid and must be obtained from either the diet or in supplement form. The other two fatty acids in the omega-3 family are named eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). The body can manufacture EPA and DHA by conversions from linolenic acid. Flaxseed, chia, rapeseed, soybeans, alfalfa, and walnuts contain omega-3 fatty acids. Cold water fish and wild game also are sources of omega-3 fatty acids.

A study published in the American Journal of Clinical Nutrition examined how omega-3 and omega-6 intake during pregnancy may be linked to childhood obesity. The study included 1,649 mother-child pairs. Researchers assessed mid-pregnancy intake of omega-3 (DHA and EPA) and omega-6 fatty acids. They also evaluated maternal plasma fatty acid levels and umbilical cord levels of omega-3 and omega-6. The children involved in the study were then assessed at age 3 to determine body mass index (BMI) and skin fold measurements. It was found that around one fifth of expectant mothers consumed two or more fish meals per week at mid-pregnancy, but only half of those women achieved the recommended 200 mg of DHA per day. Researchers also found that only three percent of women consumed the recommended intake of DHA in the last month of pregnancy when large amounts of DHA are transferred from the mother to the child to support brain development. After the follow-up with the children, it was found that the odds of obesity in 3 year olds were between two and four times higher when cord blood had a high ratio of omega-6 to omega-3 fatty acids. The odds of childhood obesity were 32 percent lower when maternal intake of omega-3s was high or if the ratio of omega-3 to omega-6 was near the recommended levels. Although these findings need to be confirmed with future studies, it appears that increased omega-3 intake and reduced omega-6 intake during pregnancy may lower the risk of future obesity in children.¹

1 Donahue SM, Rifas-Shiman SL, Gold DR, et al. Prenatal fatty acid status and child adiposity at age 3 y: results from a US pregnancy cohort. *Am J Clin Nutr.* Apr2011;93(4):780-8.