

Editorial: Prenatal DHA supplements

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Long-chain PUFA (LC-PUFA) such as DHA are essential constituents of the central nervous system and are incorporated into the brain mainly during the last trimester of pregnancy and the first year of postnatal life. An inadequate supply of (n-3) LC-PUFA during fetal life has been associated with poorer performance on tests designed to measure cognitive and behavioral ability in animal studies. Benefits of LC-PUFA supply for visual and neurologic development in both term and preterm infants have been reported but not confirmed in all studies. A major part of the human brain growth spurt and the related DHA incorporation into brain tissue occurs during the last trimester of pregnancy.

Observational studies suggest that high prenatal DHA status also might have subtle positive effects on neurodevelopmental outcome beyond early infancy. In the last few years, research has centered on increasing the LC-PUFA supply to the fetus by supplementing maternal diets with (n-3) LC-PUFA. Randomized controlled trials have reported higher DHA levels in cord blood at birth of children born to supplemented women compared with those whose mothers did not receive DHA supplements during pregnancy, but the potential beneficial effects of maternal DHA supply on neurologic outcome of their children remains controversial. Whereas some studies report better performance on different neurological examinations by children whose mothers received supplements during pregnancy, others did not show such effects. Information on the long-term effects of supplementation is scarce. One trial examined neurologic development of children exposed to cod liver oil supplementation in early life after the age of 4 y.

Docosahexaenoic acid (DHA) is a type of omega-3 fatty acid that is important for good health. Taking DHA in supplement form during pregnancy may help support healthy fetal growth.

This article explores prenatal DHA supplements, the health benefits of DHA during pregnancy, its potential side effects and recommended dosages, how to choose a quality supplement, other ways to receive DHA, and when to speak with a doctor.

Prenatal DHA is a pure and fresh source of the omega-3s that your growing baby needs for brain and nervous system development.

At birth, a trained physician performed a physical examination of the child and obtained information about the infants in standardized case report forms. Women were encouraged to breastfeed their infants. Infants who required supplements or substitution for breastfeeding were given infant formulas (Blemil Plus NF, Ordesa Laboratories) with a composition following European legislative standards until the infant was 6 mo of age. There were 2 formulas, both identical with the exception of the

fatty acid composition. Children born to mothers in the FO and FO+5-MTHF groups received a formula containing 0.5% of total fatty acids as DHA and 0.4% as arachidonic acid (AA), whereas children in the placebo or 5-MTHF groups received a formula virtually free of DHA and AA. These 2 formulas were coded in the same way as the supplements for the mothers

Fatty acid analyses

Blood was centrifuged at $3500 \times g$ for 10 min at room temperature within 2 h. Plasma was removed and the remaining erythrocyte mass was washed in isotonic sodium chloride solution and hemolyzed in distilled water. Plasma and erythrocytes were stored at -80°C until further analysis.

Essential fatty acids are lipids that cannot be synthesized within the body and must be ingested through the diet or from supplements. Two families of essential fatty acids, omega-3 and omega-6, are required for physiologic functions including oxygen transport, energy storage, cell membrane function, and regulation of inflammation and cell proliferation. Humans can synthesize many other fatty acids, such as saturated and monounsaturated fatty acids, but are incapable of making fats with the first double bond at the omega-3 and omega-6 position. These polyunsaturated fatty acids are required for normal growth and maturation of many organ systems, most importantly the brain and eye.