

Does dietary DHA improve neural function in children? Observations in phenylketonuria.

Koletzko B, iBeblo S, Demmelmair H, Muller-Felber W, Hanebutt F. L.

Division of Metabolic Diseases and Nutritional Medicine, Dr. von Hauner Children's Hospital, University of Munich Medical Centre, Lindwurmstr. 4, 80337 Munich, Germany.

Prostaglandins, Leukotrienes and Essential Fatty Acids. 2009 Aug-Sep; 81(2-3):159-64.

Children with phenylketonuria (PKU) have a restricted protein intake and thus low dietary intakes of long-chain polyunsaturated fatty acids (LC-PUFA), which may cause subtle neurological deficits. We measured plasma phospholipid fatty acids and visual evoked potential (VEP) in 36 children with well- controlled PKU before and after 3 months of supplementing fish oil capsules providing 15 mg docosahexaenoic acid (DHA) / kg daily. The motometric Rostock-Oseretzky Scale (ROS) was performed before and after supplementation in the 24 PKU children aged 4-14 years. VEP latencies and ROS were also assessed in omnivorous, age-matched controls without fish oil supply at baseline and after 3 months. Fish oil supply increased plasma phospholipid eicosapentaenoic acid (EPA) and DHA, but decreased arachidonic acid (AA). Plasma phenylalanine was unchanged. VEP latencies and ROS results significantly improved after fish oil in PKU children, but remained unchanged in controls.

Address correspondence to:

Bertold Koletzko office.koletzko@med.uni-muenchen.de