Introduction to Omega-3

There has been a dramatic surge in interest recently, amongst the public and health professionals alike, of the health effects of omega-3 fatty acids derived from fish/fish oils - consisting of docosahexaenoic acid (DHA) plus eicosapentaenoic acid (EPA). DHA is required in high levels in the brain and retina as a physiologically-essential nutrient to provide for optimal neuronal functioning (learning ability, mental development) and visual acuity, in young and old alike. DHA plus EPA are both considered to have beneficial effects in the prevention and management of cardiovascular disease plus associated risk factors as well as other chronic disorders. Whereas considerable amounts of the plant-derived omega-3 fatty acid known as a-linolenic acid (ALA) is consumed daily in North America (approximately 2 g/day), the physiologically-essential nutrient, DHA, is consumed at much smaller levels (approximately 80 mg/day) while EPA is consumed at the level of approximately 50 mg/day in a typical North American diet.

DHA plus EPA are absent from plant food sources rich in ALA (such as flax, canola oil, and walnuts). Since the metabolic conversion of ALA to DHA/EPA (combined) by metabolism is very limited in humans, the most direct way of providing DHA plus EPA for the body is via their direct consumption. Current intakes of DHA are approximately 20% of the target (300 mg/day) suggested by an expert scientific group during pregnancy and lactation. The extremely low intake of DHA in young children (e.g., approximately 19 mg DHA/day on average for 3-yr. olds in North America ) is also of particular concern. Current intakes of DHA/EPA (combined) of 130 mg/day are approximately 15% of the target (900 mg/day) officially recommended by the American Heart Association for those with coronary heart disease and 20% of the 650 mg/day advised by an expert scientific group for healthy individuals. In view of the widespread reluctance of the public to consume sufficient amounts of fish, functional foods containing DHA plus EPA will become increasingly important sources of these important nutrients in the coming years to support optimal brain/visual performance, for cardio care, and other health conditions for young and old alike.