Summary:

The Database of Raising Intelligence is a compilation of high quality randomized controlled trials which fulfill appropriate criteria in order to be entered for analyses. This database is intended to assess and objectively evaluate factors which can enhance intelligence at all ages. The present analyses (based on 4 ‘meta-analyses’ of numerous relevant trials) specifically examined those nutritional and other key interventions involving children from birth to kindergarten which were concluded to raise the intelligence of young children (up to 5 years of age).

The analyses yielded four key interventions. Firstly, among the various dietary/nutrient parameters that were evaluated, supplementing the diets of pregnant women and infants with long-chain omega-3 fatty acids with an emphasis on DHA (docosahexaenoic acid) emerged as a key factor for raising the children’s IQ in young childhood. The following three interventions (non-dietary) were also highlighted for raising the intelligence of young children: enrolling children in intense early childhood educational programs, reading to children in an interactive manner (was concluded to raise the IQ by over 3 points - the earlier the interactive reading takes place, the larger the benefits), and sending the young child to preschool.

Dr. Holub’s Comments:
While emphasizing the importance of adequate intakes of long-chain omega-3 fatty acids during infancy and childhood for raising the intelligence of children, the present review did not provide specific information on target intake levels of DHA/EPA omega-3 in mg/day. It should be mentioned that some national and international groups have advised an intake of at least 200 mg of DHA/day for pregnant and lactating mothers and 100 mg of DHA/day for infants and young children (6 to 24 months of age). It is noted that a recent clinical trial (from Dr. Carlson et al. as highlighted on www.dhaomega3.org) indicated that much higher intakes of DHA during pregnancy (ie, 600 mg/day) provided other health benefits to the newborn infants. Breast milk (or infant formula) containing approx. 0.32-0.35 % of milk fat as DHA would, in most cases, provide at least 100 mg DHA/day for term infants. Such DHA levels in breast milk can usually be attained with average intakes by the mother of DHA at 200 mg daily. Since the DHA in the breast milk of many Japanese mothers is 1.0 % of milk fat, their infants would be receiving approx. 300 mg DHA/day. Intakes of 250 mg DHA plus EPA daily have been advised from some sources for infants (older than 6 months) and for children and adolescents for multiple health effects. Our lab (J. Nutr., 139: 528-532(2009)) reported the average intakes of DHA/EPA combined in 4-8 year olds living in Canada to be only 92.5 mg/day (54.1 mg as DHA and 38.4 mg as EPA). The dietitians of North America have advised an intake of 500 mg DHA/EPA/day for overall health in adults. If one were to extrapolate such a recommendation to the lower energy intakes of our children as studied, this would become the equivalent of 350 mg of DHA/EPA daily as a target intake (with the suggested provision that at least half of this would be present as DHA). While very few young children in North America would meet such target intakes for DHA/EPA, many Japanese children would.