Omega-3 LCPUFA are they really brain foods?

Role of LCPUFA during windows of opportunity throughout life on cognition and behavior

Early ‘programming’ of brain function by perinatal LCPUFA availability?

- Various ‘brain’ outcomes at 7-8 years of age are positively related to prenatal exposure to DHA.
- None of these outcomes correlated significantly with DHA status at follow-up.
- Maternal supplementation during pregnancy with DHA or fish oil hardly benefits later child brain function (Helland, 2008; Makrides, 2010; Smithers, 2011).
- Since supplementation usually started around mid-pregnancy, this may have been too late to initiate a successful programming response.

Are there other windows of opportunity for LCPUFA irt brain function?

- Brain development continues until after age 20 (Gogtay, 2004; Paus, 2005; Toga, 2006)
- In this period development of higher order cognitive functions takes place.
- DHA increases prefrontal cortex activation (Mc Namara, 2010).
- Higher fish consumption at age 15 associated with better cognition at age 18 (Aberg, 2009).
- High fish consumption is associated with better vocabulary and trend for academic achievement, however more than the advised norm of 450 mg EPA/DHA/day is associated with lower scores (De Groot, 2012).

We offer:

The Maastricht Essential Fatty Acid Birth (MEFAB) cohort

- About 1100 newborns and their mothers
- ePUFA status at wk 14, 22, 36 of pregnancy, and at delivery
- Cognition and behavior at age 7-8
- And many, many other variables……

AND

- New data collection at adolescent age
- Cognition and behavior at age 18-20
- School performance at age 12
- Fatty acid status at age 18-20

AND

- New studies

Interdisciplinary research group

Experts:

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1 Neurosciences, 2 Educational sciences, 3 Nutrition, 4 Cognitive sciences, 5 Genetics

Proved methodologies

- Objective cognitive test batteries
- Experience with distance cognitive testing
- Well-validated behavioral questionnaires
- Eye tracking
- Fatty acid analyses
- Genetics

Contact?

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