

Is there a relation between docosahexaenoic acid concentration in mothers' milk and visual development in term infants?

- [Jorgensen MH](#),
- [Hernell O](#),
- [Hughes E](#),
- [Michaelsen KF](#).

Research Department of Human Nutrition, The Royal Veterinary and Agricultural University Frederiksberg, Denmark.

BACKGROUND: Docosahexaenoic acid (DHA), present in high concentrations in the brain and retina, has a role in visual development. DHA is present in human milk, but not in most infant formulas. It is, however, under discussion whether DHA should be added to formulas intended for term infants. The concentration of DHA in human milk, which is influenced by maternal diet, varies considerably, but it is unknown whether this variation affects visual development in term infants.

METHODS: The authors investigated 39 4-month-old fully breast-fed term infants in a cross-sectional study. Visual acuity was measured by swept visual evoked potentials, milk DHA was determined by gas chromatography, and maternal fish intake was assessed by a frequency questionnaire.

RESULTS: Frequency of fish intake correlated positively to the DHA level in breast-milk ($P = 0.001$). Mothers who ate fish the day before sampling had a milk DHA level higher than expected from habitual fish intake ($P = 0.002$). If this was taken into account, 57% of the variation in milk DHA could be explained by fish intake. Multiple linear regression analysis revealed a significant association between visual acuity and milk DHA ($P = 0.02$, $R^2 = 0.09$).

CONCLUSION: This finding suggests a cause-and-effect relationship between infant milk DHA intake and visual acuity. If these data are confirmed, there is a need to consider the optimal intake of DHA for the lactating mother.

