

Omega-3 and 6 for premature babies

[Health](#)[1]

[Health](#)[1][Childrens health](#) [2][Preventive health](#) [3][Norway](#) [4][Forskning.no](#) [5]

Premature babies are at greater risk of abnormal cognitive development and also have a higher incidence of concentration problems. Extra supplement of omega-3 and omega-6 in breast milk may benefit their development.

Omega-3 fatty acid, docosahexaenoic acid (DHA), and omega-6 fatty acid, arachidonic acid (AA), are major lipid components of the brain. During the last trimester, relatively large quantities of fatty acids are transferred via the placenta to the foetus.

“Therefore, premature babies miss out completely or partly on this supply of essential fatty acids. Therefore, DHA and AA supplements may be especially important to these infants”, Ane Cecilie Westerberg says.

Westerberg recently defended her thesis on nutrition, growth and cognitive development among very low birth weight infants.

The impact of fatty acid supplements in breast milk

Westerberg’s findings on the possible benefits for the cognitive development of premature babies have been based on a study where 129 very premature babies with a birth weight below 1500 grams were given breast milk enriched with a supplement of oil containing DHA and AA. The results were compared with a control group who were given neutral oil.

“We wanted to study the impact of the supplement on the children’s cognitive function and we also observed the children’s nutrient intake during their time in hospital and their growth during the first year of life”, Westerberg explains.

The children who completed the study were invited to participate in a twenty month follow-up of cognitive function. The children’s growth in the first year of life was also studied. 92 of the 129 children took part in the twenty month follow-up.

Improved cognitive function

“When the children reached a chronological age of twenty months, we carried out two general tests. A Bayley Mental Development Index and a questionnaire to be filled out by the parents called the Ages and Stages Questionnaire. The tests have been based on age-appropriate tasks”, Westerberg says.

The findings from the general cognitive function test showed no difference between infants who have been fed enriched breast milk and those who had not been fed enriched breast milk. However, a positive correlation was found between the DHA level in the blood on discharge from hospital and the result of the general test at a chronological age of twenty months.

Westerberg explains:

“There may be reason to believe that a higher DHA level enhances mental development. Ideally, the result should be followed-up in one or more similar studies.”

Free play test gave surprising results

In addition to the general tests, a free play test was arranged, where Westerberg and her colleagues observed the same infants. Through observation they wanted to study attention and concentration-related functions.

The infants were filmed while they were given an unfamiliar set of toys to examine and play with. A psychology student then studied the video recording and scored each child according to the degree of focus and attention they gave to the toy.

“Our free play observation study gave interesting results. It may in fact indicate that the infants who were given a supplement of DHA and AA were more interested and better at maintaining concentration on the toy. However, more studies are also required here, before we can say anything for certain”, says Westerberg.

Supplement as standard treatment?

“Future studies should examine the need for giving premature babies a supplement of DHA and AA immediately after birth. If future studies can confirm the benefit of supplements to premature babies fed breast milk, it may be relevant to introduce supplements as standard treatment in hospital,” she says.

At present most milk formulas contain the same level of DHA and AA as normally found in natural breast milk. If it turns out that breast milk fed premature babies would benefit from higher levels of DHA and AA, it is conceivable that the level should also be raised in commercially produced milk formulas for premature babies.

[Read the article in Norwegian at forskning.no](#) [6]

 [Future studies should examine the need for giving premature babies a supplement of DHA and AA immediately after birth. \(Photo: Colourbox\)](#) [7]

 [COLOURBOX572075.jpg](#) [8]

[University of Oslo](#) [9]

[Understand the uterus and get fewer premature babies](#) [10] [Baby cries shorten our reaction time](#) [11]

[Westerberg m.fl.: Attention among very low birth weight infants following early supplementation with docosahexaenoic and arachidonic acid, Acta Paediatrica 2011, 100\(1\), s 47- 52. doi: 10.1111/j.1651-2227.2010.01946.x.\(Abstract\)](#) [12] [Westerberg m.fl.: First year growth among very low birth weight infants, Acta Paediatrica, 2010 Apr; 99\(4\), s 556- 562. doi: 10.1111/j.1651-2227.2009.01667.x.\(Abstract\)](#) [13]

[Ingeborg Ann Hjelle](#) [14]

February 12, 2012 - 04:29

This field is not in use. The footer is displayed in the mini panel called "Footer (mini panel)"

Source URL: <http://sciencenordic.com/omega-3-and-6-premature-babies>

Links:

- [1] <http://sciencenordic.com/category/section/health>
- [2] <http://sciencenordic.com/childrens-health>
- [3] <http://sciencenordic.com/preventive-health>
- [4] <http://sciencenordic.com/category/countries/norway>
- [5] <http://sciencenordic.com/category/publisher/forskningno>
- [6] <http://www.forskning.no/artikler/2012/januar/311084>
- [7] http://sciencenordic.com/sites/default/files/COLOURBOX572075_0.jpg
- [8] <http://sciencenordic.com/sites/default/files/COLOURBOX572075.jpg>
- [9] <http://sciencenordic.com/partner/university-oslo>
- [10] <http://sciencenordic.com/understand-uterus-and-get-fewer-premature-babies>
- [11] <http://sciencenordic.com/baby-cries-shorten-our-reaction-time>
- [12] <http://www.ncbi.nlm.nih.gov/pubmed/20624152>
- [13] <http://www.ncbi.nlm.nih.gov/pubmed/20096031>
- [14] <http://sciencenordic.com/content/ingeborg-ann-hjelle>