

# Consuming omega-3 during pregnancy enhances fetal iron metabolism

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A research has proven, for the first time, that maternal supplementation with docosahexaenoic acid (DHA), an omega-3 essential polyunsaturated fatty acid, enhances fetal iron metabolism thanks to a greater expression of key genes regulating its transfer through the placenta. This research has been carried out by scientists from the University of Granada (UGR) and King's College London, in collaboration with the infant and maternity hospitals from Granada and Las Palmas de Gran Canaria along with the dairy company Lactalis Puleva.

This multidisciplinary work, published in the renowned *Journal of Functional Foods* magazine, has proven that, in addition to helping in an [early brain development](#), DHA supplementation is also related to iron metabolism in newborn babies. Moreover, it improves iron reserves before birth and helps preventing future postnatal deficiencies and the damage this could cause to the baby's [cognitive development](#).

In order to carry out their study, the researchers worked with a sample of 110 healthy, pregnant women who gave birth in the maternity hospitals of Granada and Las Palmas de Gran Canaria. They were the subjects of a controlled, randomized, double-blind nutritional assessment which started at the sixth month of gestation.

Two groups were established. One of the groups, made up of 54 women, carried out a balanced diet and consumption of fish, and drank 2 glasses of a control dairy drink per day. The other group, made up of 56 women, carried out a balanced diet and consumption of fish, too, but they

supplemented it with the consumption of 400 milligrams per day of a dairy product enhanced with fish oil (2 glasses per day).

The researchers took placenta samples after labor, which were processed for their gene and protein expression analysis.

## Beneficial effects

The results showed a beneficial effect of maternal DHA supplements on iron homeostasis through the syncytiotrophoblast, thus enhancing mother-fetus iron transfer and improving fetal [iron](#) reserves.

"Therefore, this DHA supplement is postulated as a nutritional strategy that not only helps in the cognitive and visual development of the baby, but also could help in preventing the risk of suffering anemia. In this regard, this maternal supplementation could prevent anemia-related perinatal complications such as low birth weight and late cognitive development", Javier Díaz Castro and Julio José Ochoa Herrera, researchers from the UGR department of Physiology and lead authors of this work, explain.

**More information:** Javier Diaz-Castro et al. DHA supplementation: A nutritional strategy to improve prenatal Fe homeostasis and prevent birth outcomes related with Fe-deficiency, *Journal of Functional Foods* (2015). [DOI: 10.1016/j.jff.2015.09.051](https://doi.org/10.1016/j.jff.2015.09.051)

Provided by University of Granada

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