

# Clinical Update

## **Omega-3 DHA may boost male fertility: For mice at least**

Supplements of the omega-3 fatty acid DHA (docosahexaenoic acid) may reverse abnormalities in sperm associated with infertility, suggests a new study with mice.

*(Journal of Lipid Research, February 2010)*

*(Clinical Nutrition, February 2010)*

Mice engineered to lack a gene that codes for an enzyme that helps them produce DHA were found to have fewer sperm and more abnormalities in what little sperm they did have, but such effects were reversed in mice fed DHA, researchers from the University of Illinois report in the *Journal of Lipid Research*.

If additional research backs up the animal data, it may see fertility added to the long list of potential benefits of omega-3 fatty acids, including improved heart health, cognitive function, mood and behaviour, eyes, joint health, and potentially reducing the risk of some kinds of cancer.

This is not the first time omega-3 fatty acids have been linked to sperm quality and fertility: An Iranian study reported earlier this year that infertile men have lower levels of omega-3 fatty acids in their sperm than fertile men. The study included 150 men and was published in the peer-reviewed journal *Clinical Nutrition* (February 2010, Vol. 29, pp. 100-105).

The findings are biologically plausible, noted the Iranian researchers, with DHA, for example, known to be present in the membranes of spermatozoa.

### **New data**

For the mouse study, Nakamura and his co-workers engineered mice to lack a gene which codes for the delta-6-desaturase enzyme, which is involved in the transformation of the plant-source omega-3 alpha-linolenic acid (ALA). Without the enzyme the mice are unable to synthesise DHA.

*"In the absence of DHA, male mice are basically infertile, producing few if any misshaped sperm that can't get where they need to go,"* said Nakamura. When mice were fed a diet supplements with 0.2 per cent DHA, however, the researchers noted that the fatty acid was *"capable of restoring all observed impairment in male reproduction"*.

The researchers confirmed that they would continue to investigate how omega-3s effect fertility. It may be some time before fish oils are recommended to help boost male fertility.

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