

# Men may benefit from omega-3 EPA more than women: Study

By Stephen Daniells, 08-Dec-2011

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## **Daily supplements of the omega-3 fatty acid EPA may benefit men more than women in terms of their stroke or heart attack risk linked to blood clots, suggests new data from Australia.**

The build-up or aggregation of platelets in the blood leads to blood clots, which can then lead to stroke, heart attack and other serious events. Supplementation with both EPA and DHA reduced this aggregation by about 12.5%, according to a placebo-controlled study in 30 healthy men and women.

On the other hand, only EPA supplementation produced a significant (20%) decrease in the activity of microparticles, particularly in men. Such microparticles are reported to be a reliable marker of so-called platelet hyperactivity that are linked to the risk of cardiovascular and thrombotic diseases.

*"This study demonstrates for the first time that a single dose of EPA-rich oil significantly inhibits platelet microparticle activity in parallel with a reduction in platelet aggregation, while supplementation with DHA-rich oils reduces platelet aggregation independent of microparticle activity,"* wrote the researchers in *The Journal of Nutritional Biochemistry*.

### **Heart health**

The study adds to an ever-growing body of science supporting the potential cardiovascular and brain health benefits of omega-3 fatty acids.

The heart health benefits of fish oil, and the omega-3 fatty acids it contains, are well-documented, being first reported in the early 1970s by Dr Jorn Dyerberg and his co-workers in *The Lancet* and *The American Journal of Clinical Nutrition*.

To date, the polyunsaturated fatty acids (PUFAs) have been linked to improvements in blood lipid levels, a reduced tendency of thrombosis, blood pressure and heart rate improvements, and improved vascular function.

The new study, led by Manohar Lal Garg from the University of Newcastle in Australia, indicates that the potential anti-thrombotic benefits of omega-3 fatty acids may be related to gender.

### **Study details**

Professor Garg and his co-workers recruited 15 healthy men and 15 healthy women with an average age of 44 and randomly assigned them to receive a single dose of sunflower oil (placebo), or 1 gram of EPA (EPAX 5510 TG/N, EPA:DHA 5:1), or 1 gram of DHA (EPAX 1050 TG/N, EPA:DHA 1:5).

Results showed both the EPA and DHA groups reported decreased platelet aggregation 24 hours after the dose, with reduction relative to placebo of 13.3% and -11.9%, respectively.

Reductions in microparticles and platelet aggregation both decreased only in the EPA group, said the researchers, and this was only observed in men (20% reduction in microparticles). Women in the EPA group only displayed reduced platelet aggregation.

### **What's happening?**

Prof Garg and his co-workers said that the mechanism by which the omega-3 fatty acids affect platelet aggregation and microparticles is not clear.

*"Though the precise mechanism involved in the protection against thrombotic disease risk cannot be elucidated, our study findings clearly indicate that both EPA and DHA reduce platelet aggregation in males and females differentially,"* they wrote.

*"The novel finding that EPA inhibits microparticle activity in male subjects further strengthens our previous findings of the gender-specific platelet aggregation response of EPA vs. DHA."*

*"Hence, our study suggests that supplementation with EPA but not DHA inhibits platelet microparticle activity in parallel with a reduction in platelet aggregation in a gender-specific manner. Our finding that EPA-rich oils inhibit procoagulant microparticle activity is important given that thrombosis remains one of the leading causes of mortality in developed countries and platelet microparticles are now recognized as pathogenic markers of thrombotic disease."*

Source: *The Journal of Nutritional Biochemistry*

Published online ahead of print, doi: 10.1016/j.jnutbio.2011.06.006

*"Acute supplementation with eicosapentaenoic acid reduces platelet microparticle activity in healthy subjects"*

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