

## Omega-3 EPA linked to heart disease protection

4/2/2007 - **People with high cholesterol levels and taking statins reduced their frequency of major cardiac events by about 20 per cent when supplemented with the omega-3 of eicosapentaenoic acid (EPA), researchers have reported.**

The research, published in this week's issue of *The Lancet*, followed 18 645 Japanese patients with high cholesterol levels (hypercholesterolaemia) taking statins, and randomly assigned half to receive a daily [EPA](#) supplement (1.8 g).

After a following the subjects for about four and a half years, the researchers reported that EPA supplementation had additional significant effects on angina (24 per cent reduction) and non-fatal coronary events (19 per cent reduction).

*"Overall, this study shows that EPA, at a dose of 1800 mg per day, is a very promising regimen for prevention of major coronary events, especially since EPA seems to act through several biological mechanisms,"* wrote the researchers.

Omega-3 fatty acids have been linked to a wide-range of health benefits, including cardiovascular disease (CVD), good development of a baby during pregnancy, joint health, behaviour and mood, and certain cancers.

But some much publicised studies, and in particular a recent meta-analysis (*British Medical Journal*, doi: [bmj.38755.366331.2F](#)), have claimed that there was no evidence linking [omega-3](#) intake and improvements in heart health.

However, results from the Japan EPA Lipid Intervention Study (JELIS) suggest that regular supplementation with the omega-3 fatty acid may have significant benefits for cardiovascular, although the use of an exclusively Japanese subjects prevented the researchers generalising their results to other populations.

Subjects with total cholesterol levels of at least 6.5 mmol/L were recruited and randomly assigned to receive 1.8 g of EPA daily (Mochida Pharmaceuticals, Tokyo) with statin (10 mg of pravastatin or 5 mg of simvastatin) or statin only.

After an average follow-up of 4.6 years, the researchers detected the primary endpoint (major coronary event, such as sudden cardiac death, fatal and non-fatal heart attack, and other non-fatal events such as unstable angina) in 262 patients in the EPA group and 324 in controls. This was equivalent to a 19 per cent reduction in major coronary events for the EPA group.

No differences between the groups were observed for LDL-cholesterol levels (both groups recorded 25 per cent reductions in levels), while no difference was observed for sudden cardiac death and coronary death.

The mechanism behind the apparent benefits could be linked to effects of the omega-3 polyunsaturated fatty acids on reduced platelet aggregation, and increased plaque-stabilisation.

*"Atherosclerotic plaque is vulnerable to rupture because it has a thin fibrous cap that covers a large lipid core, and an increased number of inflammatory cells such as macrophages," explained the researchers.*

*"Thus, EPA and DHA reduce the numbers of macrophages in the atherosclerotic plaque. Thrombus formation in the ruptured plaque leads to acute cardiovascular events."*

*"We need to investigate whether EPA is effective for prevention of major coronary events in hypercholesterolaemic patients without or with coronary artery disease in other countries," concluded researchers.*

High cholesterol levels, hypercholesterolaemia, have a long association with many diseases, particularly cardiovascular disease (CVD), the cause of almost 50 per cent of deaths in Europe, and reported to cost the EU economy an estimated €169bn (\$202bn) per year.

In an accompanying editorial, researchers from Harvard Medical School and Harvard School of Public Health said that the JELIS investigators should be *"commended, and their efforts should inspire additional clinical trials of the effects of fish oil and other dietary factors and habits on cardiovascular health."*

Researchers said that it was notable that the observed benefits were in addition to the use of statins, and that the fish oil had a good safety profile with good tolerability.

*"Compared with drugs, invasive procedures, and devices, modest dietary changes are low risk, inexpensive, and widely available. We must curb our infatuation with downstream risk factors and treatments, and focus on the fundamental risk factors for cardiovascular disease: dietary habits, smoking, and physical activity.*

*"If the millions of heart attacks occurring each year were not a clarion call, the obesity epidemic certainly should be," said researchers.*