

More support for omega-3 and weight management

21/12/2007- **As we head into the festive season, and the inevitable over-indulgence, researchers from Japan have reported that omega-3-rich fish oil could reduce body weight gain by boosting fat metabolism - in mice at least.**

Laboratory mice fed a high fat diet and supplemented with eight per cent fish oil gained less weight and metabolised more fat than their murine counterparts not receiving the supplement.

The research is published in this month's *Journal of Nutrition*.

The study adds to an ever-growing list of potential health benefits from the omega-3 polyunsaturated fatty acids, identified as one of the super-nutrients taking the food and supplements industry by storm.

Much of its healthy reputation that is seeping into consumer consciousness is based largely on evidence that it can aid cognitive function, may help protect the heart against cardiovascular disease, and could reduce the risk of certain cancers.

Co-workers from the Biological Science Laboratories, Kao Corporation, Tochigi, fed obesity-prone C57BL/6J mice the diet with 30 per cent of calories from fat for five months, with half the animals supplemented with fish oil (eight per cent).

At the end of the study, the researchers reported that the fish oil-supplemented group exhibited increased levels of lipid metabolism-related genes, including carnitine palmitoyltransferase 1a, cytochrome P450 4A10, and malic enzyme.

Moreover, fish oil ingestion boosted the activity of enzymes related to metabolism. Specifically, enzymes related to fatty acid beta-oxidation, omega-oxidation, and malic were 1.2-, 1.6-, and 1.7-fold higher in the fish oil-supplemented diet, compared to those only receiving the high fat diet.

"These findings suggest that an up-regulation of intestinal lipid metabolism is associated with the anti-obesity effect of FO," wrote the researchers.

Back in May, Australian researchers reported that a combination of fish oil supplements and exercise led to reductions in fat mass by about 1.5 kg, as well as improving heart health markers (*American Journal of Clinical Nutrition*, Vol. 85, pp. 1267-1274)

The researchers, from the University of South Australia in Adelaide, studied 75 overweight adults (age range 25-65). They reported that subjects who received daily fish oil supplements (260 mg docosahexaenoic acid (DHA) and 60 mg eicosapentaenoic acid (EPA)) exhibited decreased blood triacylglycerols levels (14 per cent) and increased plasma HDL cholesterol levels (10 per cent) relative to baseline amounts.

Moreover, researchers from the University of Georgia reported in November 2006 that the omega-3 fatty acid DHA could affect apoptosis (programmed cell death) and significantly decrease the accumulation of fat in the preadipocytes in a dose-dependent manner and the development (differentiation) of mature adipocytes in culture (*Journal of Nutrition*, Vol. 136, pp. 2965-2969).