

Pilot study gives sign of fish oil for insulin sensitivity

6/18/2008- **A pilot study investigating the effects of fish oil supplements has hinted that there may be some benefits for insulin resistance which, if substantiated in bigger trials, could open up a new area of benefits for the healthy ingredient in the future.**

Fish-derived omega-3 fatty acids DHA (docosahexaenoic acid) and EPA (eicosapentaenoic acid) have been thoroughly researched for their role in cardiovascular health and are generally understood to reduce risk of cardiovascular disease.

However, researchers from the University of Surrey noted that fish oil's effect on insulin sensitivity are less well known. Insulin resistance, whereby insufficient insulin is released to produce a normal glucose response from fat, muscle and liver cells, increases risk of type 2 diabetes.

One of the major contributing factors to insulin resistance is obesity, which is also strongly linked to cardiovascular disease risk.

The single-blind pilot intervention study included five subjects, who had a body mass index of 25 or more, a waist circumference of 37 inches (94 cm) for the men and 31 inches (78.7 cm) for the women, and who reported eating two portions of oily fish per week but taking no fish oil supplements.

The supplements they were given contained 440mg of DHA and 660mg of EPA.

The researchers measured fasting plasma insulin and glucose levels and glucose response over time using an oral glucose tolerance test. They saw evidence of increased insulin sensitivity through a reduction in the plasma glucose response, and a mean reduction in serum triglycerides and total cholesterol.

Crucially, however, these results were not statistically significant, meaning that at this stage there is not enough evidence to make firm conclusions about fish oil for insulin sensitivity.

What was significant, however, was the reduction in diastolic blood pressure. Clinically significant reductions in all other biomarkers associated with coronary heart disease risk and mortality.

The conclusions that were afforded by the findings were that *"intake of high dose fish oil supplements over 60 days can help to reduce risk of coronary heart disease and mortality in overweight individuals"*.

The researchers were very aware of the limitations of their work, which reduced the strength of their findings. These limitations include the small sample size, screening method, original glucose tolerance, insulin sensitivity of the subjects, and lack of a control group.

They said: *"Future, high dose, long-term, double-blind intervention studies controlling these limitations would therefore be recommended"*.

The researchers did not respond prior to publication of this article with an indication of ongoing work in this area.

The initial findings were presented at the British Dietetic Association's Dietitian's New to Research Symposium last November, and the abstract appears in this month's *Journal of Human Nutrition and Dietetics*.