

Omega-3 may protect prostates from cancer: Study

25-Mar-2009—Increased intake of omega-3 fatty acids may protect against advanced prostate cancer, according to new research from the University of California San Francisco.

According to findings published in the journal *Clinical Cancer Research*, the fatty acids may work by modifying a specific variant of the COX-2 gene, a known inflammatory gene.

The variant known as rs4647310 is linked to a five-fold increased risk of advanced prostate cancer, report the researchers, but high intakes of omega-3 may have a reduced risk, even if they carried the COX-2 variant.

"Previous research has shown protection against prostate cancer, but this is one of the first studies to show protection against advanced prostate cancer and interaction with COX-2," said lead researcher Professor John Witte.

The study adds to a small but growing body of evidence linking fish consumption and omega-3 to potential cancer benefits. Indeed, results in the journal *Cancer Epidemiology, Biomarkers & Prevention* reported that higher intake of the omega-3 fatty acids DHA (docosahexaenoic acid) and EPA (eicosapentaenoic acid) may cut the risk of developing prostate cancer by 40 per cent. On the other hand, the new study reports no relationship between fish intake and the risk of prostate cancer.

Over half a million news cases of prostate cancer are diagnosed every year world wide, and the cancer is the direct cause of over 200,000 deaths. More worryingly, the incidence of the disease is increasing with a rise of 1.7 per cent over 15 years.

Study details

Prof Witte and his co-workers performed a case-control analysis of 466 men with aggressive prostate cancer and 478 healthy men. The researchers used food frequency questionnaires to assess the diet of the individuals, and they also genotyped nine COX-2 single nucleotide polymorphisms.

The highest average intakes of omega-3 fatty acids were associated with a 63 percent reduction in the risk of aggressive prostate cancer, compared to men with the lowest amount of long chain omega-3 fatty acids, said the researchers.

"Our findings support the hypothesis that long chain omega-3 fatty acids may impact prostate inflammation and carcinogenesis through the COX-2 enzymatic pathway," wrote the researchers.

When the analysis was focused on the rs4647310 variant, they found that, despite an increase in the risk of prostate cancer in men with this variant, high intakes of omega-3 substantially reduced the risk.

"The COX-2 increased risk of disease was essentially reversed by increasing omega-3 fatty acid intake by a half a gram per day," said Witte. *"If you want to think of the overall inverse association in terms of fish, where omega-3 fatty acids are commonly derived, the strongest effect was seen from eating dark fish such as salmon one or more times per week."*