



LITERATURE REVIEW

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02/27/2007

Increased intake of omega-3 fatty acids may cut the risk of colorectal cancer in men by a whopping 66% but only in men *not* taking aspirin, suggests new research.

Omega-3 has been 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 and may help protect the heart against cardiovascular disease.

But one area in which the evidence is controversial is the fatty acid's role in reducing the risk of cancer. It has been proposed that omega-3 fatty acids may inhibit the omega-6 arachidonic acid (AA) cascade that has been linked to cancer formation and cell proliferation.

Metabolism of fatty acids produces compounds called prostaglandins, which can be either pro or anti-inflammatory. The prostaglandins derived from omega-3 fatty acids are said to be anti-inflammatory and may protect against the development of cancer, while prostaglandins derived from omega-6 fatty acids, like AA, are proposed to be pro-inflammatory.

Writing in the journal *Cancer Epidemiology Biomarkers & Prevention*, lead author Megan Hall from Harvard School of Public Health states that aspirin has also been linked to a reduction in colorectal cancer via a similar mechanism.

The new research investigated the link between the fatty acid concentrations in the blood of 178 men with colorectal cancer (cases) and 282 healthy controls free from cancer. The controls were matched by age and smoking habits. Dietary assessment was obtained by using food frequency questionnaires.

After adjusting the results for potential confounding

Source: *Cancer Epidemiology Biomarkers & Prevention* February 2007, Volume 16, Pages 314-321, doi: 10.1158/1055-9965.EPI-06-0346
"Blood Levels of Long-Chain Polyunsaturated Fatty Acids, Aspirin, and the Risk of Colorectal Cancer"
Authors: M.N. Hall, H. Campos, H. Li, H.D. Sesso, M.J. Stampfer, W.C. Willett and J. Ma

factors, Hall and her co-workers from Harvard Medical School and Brigham and Women's Hospital, report that amongst the entire population the highest versus lowest blood levels for total long-chain omega-3 fatty acids were associated with a 40 per cent reduced colorectal cancer risk. However, this was not statistically significant, said the researchers.

When they examined a subset of men who were not taking aspirin, men with the highest blood levels of omega-3 fatty acids were associated with a significant 66 per cent reduced risk of colorectal cancer than those with the lowest blood levels.

"Blood levels of long-chain omega-3 fatty acids were associated with decreased risk of colorectal cancer among men not using aspirin," concluded the researchers.

Interestingly, higher blood levels of omega-6 fatty acids were also associated with a reduction in colorectal cancer risk (36 per cent risk reduction), although this was again not statistically significant.

The study adds to a growing body of science linking omega-3 and fatty fish consumption to a reduced risk of colorectal cancer, although more research is necessary, particularly randomized controlled trials.

Colorectal cancer accounts for nine per cent of new cancer cases every year worldwide. The highest incidence rates are in the developed world, while Asia and Africa have the lowest incidence rates.

Colorectal cancer remains one of the most curable cancers if diagnosis is made early.

"Chance Favors the Prepared Mind"

- Louis Pasteur