

## Re: Omega-3 is NOT a Cancer or Heart-Disease Preventive

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- *From:* Taka <taka0038@xxxxxxxx>
  - *Date:* Fri, 8 Feb 2008 22:23:20 -0800 (PST)
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On Feb 9, 12:36 pm, ironjustice <teamtan...@xxxxxxxx> wrote:

On Feb 8, 7:07 pm, Taka <taka0...@xxxxxxxx> wrote: Do you remember those studies showing ALA is associated with more invasive prostate cancers while fish oil "prevents" it? <<

No actually .. I .. don't ..

J Nutr. 2004 Apr;134(4):919-22.

Dietary alpha-linolenic acid is associated with reduced risk of fatal coronary heart disease, but increased prostate cancer risk: a meta-analysis.

Brouwer IA, Katan MB, Zock PL.

Wageningen Centre for Food Sciences, Wageningen, the Netherlands.

The objective of this meta-analysis was to estimate quantitatively the associations between intake of alpha-linolenic acid [ALA, the (n-3) fatty acid in vegetable oils], mortality from heart disease, and the occurrence of prostate cancer in observational studies. We identified 5 prospective cohort studies that reported intake of ALA and mortality from heart disease. We also reviewed data from 3 clinical trials on ALA intake and heart disease. In addition, we identified 9 cohort and case-control studies that reported on the association between ALA intake or blood levels and incidence or prevalence of prostate cancer. We combined risk estimates across studies using a random-effects model. High ALA intake was associated with reduced risk of fatal heart disease in prospective cohort studies (combined relative risk 0.79, 95% CI 0.60-1.04). Three open-label trials also indicated that ALA may protect against heart disease. However, epidemiologic studies also showed an increased risk of prostate cancer in men with a high intake or blood level of ALA (combined relative risk 1.70; 95% CI 1.12-2.58). This meta-analysis shows that consumption of ALA might reduce heart disease mortality. However, the association between high intake of ALA and prostate cancer is of concern and warrants further study.

PMID: 15051847

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Int J Cancer. 2007 Oct 1;121(7):1571-8.

Risk factors for prostate cancer incidence and progression in the health professionals follow-up study.

Giovannucci E, Liu Y, Platz EA, Stampfer MJ, Willett WC.  
Channing Laboratory, Department of Medicine, Harvard Medical School and Brigham and Women's Hospital, Boston, MA 02115, USA. edward.

Risk factors for prostate cancer could differ for various sub-groups, such as for "aggressive" and "non-aggressive" cancers or by grade or stage. Determinants of mortality could differ from those for incidence. Using data from the Health Professionals Follow-Up Study, we re-examined 10 factors (cigarette smoking history, physical activity, BMI, family history of prostate cancer, race, height, total energy consumption, and intakes of calcium, tomato sauce and alpha-linolenic acid) using multivariable Cox regression in relation to multiple subcategories for prostate cancer risk. These were factors that we previously found to be predictors of prostate cancer incidence or advanced prostate cancer in this cohort, and that have some support in the literature. In this analysis, only 4 factors had a clear statistically significant association with overall incident prostate cancer: African-American race, positive family history, higher tomato sauce intake (inversely) and alpha-linolenic acid intake. In contrast, for fatal prostate cancer, recent smoking history, taller height, higher BMI, family history, and high intakes of total energy, calcium and \*\*\*\*\* alpha-linolenic acid \*\*\*\*\* were associated with a statistically significant increased risk. Higher vigorous physical activity level was associated with lower risk. In relation to these risk factors, advanced stage at diagnosis was a good surrogate for fatal prostate cancer, but high-grade (Gleason  $\geq 7$  or Gleason  $\geq 8$ ) was not. Only for high calcium intake was there a close correspondence for associations among high-grade cancer, advanced and fatal prostate cancer. Tomato sauce (inversely) and alpha-linolenic acid (positively) intakes were strong predictors of advanced cancer among those with low-grade cancers at diagnosis. Although the proportion of advanced stage cancers was much lower after PSA screening began, risk factors for advanced stage prostate cancers were similar in the pre-PSA and PSA era. The complexity of the clinical and pathologic manifestations of prostate cancer must be considered in the design and interpretation of studies.

PMID: 17450530

BJU Int. 2006 Feb;97(2):270-3.

Prostate tissue and leukocyte levels of n-3 polyunsaturated fatty acids in men with benign prostate hyperplasia or prostate cancer.

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Christensen JH, Fabrin K, Borup K, Barber N, Poulsen J.  
Department of Nephrology, Aalborg Hospital, Aarhus University  
Hospital, Aalborg, Denmark.

**OBJECTIVE:** To compare the levels of n-3 polyunsaturated fatty acids (PUFAs) in leukocytes and prostate tissue in men with prostate cancer or benign prostatic hyperplasia (BPH), as dietary intake of n-3 PUFAs has been linked to the risk of prostate cancer; the prostate-specific antigen (PSA) level was also compared to prostate tissue levels of n-3 PUFAs. **PATIENTS AND METHODS:** Prostate tissue was obtained and leukocytes isolated from 20 men with prostate cancer and 35 with BPH. The n-3 PUFAs alpha-linolenic acid (ALA), eicosapentanoic acid (EPA) and docosahexaenoic acid (DHA) were measured in prostate tissue and in peripheral blood leukocytes using gas chromatography. PSA levels were measured in all of the men. **RESULTS:** There was a strong positive correlation between EPA and DHA in leukocytes and in prostate tissue (EPA:  $r = 0.80$ , DHA:  $r = 0.53$ , both  $P < 0.001$ ) in all the men, whereas there was no association between the content of ALA in leukocytes and in prostate tissue ( $r = -0.15$ ). Men with BPH had similar levels of ALA in leukocytes and in prostate tissue, but men with prostate cancer had more ALA in prostate tissue than in leukocytes. The PSA level was significantly positively correlated with ALA level in prostate tissue ( $r = 0.42$ ,  $P < 0.01$ ) but there was no significant correlation between PSA level and EPA and DHA levels. There were no significant correlations between PSA level and n-3 PUFA levels in leukocytes. **CONCLUSION:** Dietary intake of the marine n-3 PUFAs reflected in EPA and DHA levels in leukocytes are also reflected in EPA and DHA levels in prostate tissue in men with and without prostate cancer. However, there is a discrepancy between the levels of ALA in leukocytes and in prostate tissue, with higher levels in men with prostate cancer. This is in accordance with the strong positive association between PSA and ALA levels in prostate tissue. This study therefore does not support the hypothesis that intake of marine n-3 PUFAs might protect against prostate cancer, but lends support to the \*\*\*\*\* deleterious role of ALA in the development of prostate cancer \*\*\*\*\*.

PMID: 16430627

Am J Clin Nutr. 2004 Jul;80(1):204-16.

Dietary intake of n-3 and n-6 fatty acids and the risk of prostate cancer.

Leitzmann MF, Stampfer MJ, Michaud DS, Augustsson K, Colditz GC, Willett WC, Giovannucci EL.  
Nutritional Epidemiology Branch, Division of Cancer Epidemiology and Genetics, National Cancer Institute, National Institutes of Health, Department of Health and Human Services, Bethesda, MD 20892, USA.

**BACKGROUND:** Laboratory studies have shown that n-3 fatty acids inhibit and n-6 fatty acids stimulate prostate tumor growth, but whether the

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dietary intake of these fatty acids affects prostate cancer risk in humans remains unclear. OBJECTIVE: We prospectively evaluated the association between intakes of alpha-linolenic (ALA; 18:3n-3), eicosapentaenoic (EPA; 20:5n-3), docosahexaenoic (DHA; 22:6n-3), linoleic (LA; 18:2n-6), and arachidonic (AA; 20:4n-6) acids and prostate cancer risk. DESIGN: A cohort of 47 866 US men aged 40-75 y with no cancer history in 1986 was followed for 14 y. RESULTS: During follow-up, 2965 new cases of total prostate cancer were ascertained, 448 of which were advanced prostate cancer. ALA intake was unrelated to the risk of total prostate cancer. In contrast, the multivariate relative risks (RRs) of advanced prostate cancer from comparisons of extreme quintiles of ALA from nonanimal sources and ALA from meat and dairy sources were 2.02 (95% CI: 1.35, 3.03) and 1.53 (0.88, 2.66), respectively. EPA and DHA intakes were related to lower prostate cancer risk. The multivariate RRs of total and advanced prostate cancer from comparisons of extreme quintiles of the combination of EPA and DHA were 0.89 (0.77, 1.04) and 0.74 (0.49, 1.08), respectively. LA and AA intakes were unrelated to the risk of prostate cancer. The multivariate RR of advanced prostate cancer from a comparison of extreme quintiles of the ratio of LA to ALA was 0.62 (0.45, 0.86). CONCLUSIONS: Increased dietary intakes of \*\*\*\*\* ALA may increase the risk of advanced prostate cancer \*\*\*\*\*. In contrast, EPA and DHA intakes may reduce the risk of total and advanced prostate cancer. PMID: 15213050

Anticancer Res. 1996 Mar-Apr;16(2):815-20.

The effects of omega-3 and omega-6 fatty acids on in vitro prostate cancer growth.

Pandalai PK, Pilat MJ, Yamazaki K, Naik H, Pienta KJ.  
Michigan Prostate Institute, University of Michigan Comprehensive Cancer Center, Ann Arbor 48109-0680, USA.

Dietary intake of essential fatty acids (EFA) may play a role in prostate cancer cell proliferation. Epidemiological studies have demonstrated that men whose dietary intake is high in omega-3 fatty acid (FA) composition have a lower incidence of clinical prostate cancer, suggesting that external factors such as diet may play an important role in development and growth of prostate cancer. Furthermore, in prostate cancer cell lines, omega-6 and omega-3 FAs have demonstrated promotional and inhibitory effects respectively. To investigate the effects of dietary fats on nontumorigenic prostate cell growth we conducted in vitro studies with human metastatic PC-3, LNCaP and TSU prostate cell lines, the rat metastatic Mat-Ly-Lu cell line and rat non-metastatic epithelial cell lines EPYP1, EPYP2 and EPYP3. Cell lines were treated with linoleic acid (LA), an omega-6 FA (n-6), as well as linolenic (LLA) and eicosapentaenoic (EPA) acids, which are both omega-3 FAs (n-3). All cell lines were treated with 10% and 0.5% serum supplemented media plus fatty acid for comparison. Our

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results demonstrate that linoleic acid(n-6) has promotional effects at doses of 1-100ng/ml in all cell lines with the exception of EPYP1. Experiments with \*\*\*\* linolenic acid (n-3) demonstrated consistent growth promotion \*\*\*\* in all cell lines examined with the exception of the EPYP2 cell line in which there was no significant effect. EPA had no effect in culture media supplemented with 10% serum, while in media containing 0.5% serum this FA demonstrated significant promotion in all human lines. Previous studies have indicated that EPA should inhibit human prostate cancer growth in vitro, however our results demonstrated promotion at low concentrations (1ng/ml). At higher concentrations, EPA did inhibit prostate cell growth. These data indicate low levels of dietary fat, regardless of composition, may play a role in prostate cancer proliferation and could be an avenue for therapeutic intervention.

PMID: 8687134

Do you see it now, Tom? It's the ALA in combination with IRON what is going to kill you ... If you were blessed with Mead acid in your cells you could stop worrying about the iron .. and start learning some basic biochemistry such as that about the eicosanoids LTB4 and PGE2 instead.

Taka

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