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Letter to the Editor

n-3 Fatty acids and prostate cancer risk

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The recent systematic review of epidemiological studies of the associations between long-chain (LC) *n*-3 PUFA and the risk of several cancers highlights the need for additional prospective studies that use valid and unbiased measures of dietary intake[1]. Specifically, it was noted that additional prospective studies using blood biomarker-based assessments of LC *n*-3 PUFA exposure would minimise the measurement error inherent in all measures based upon dietary recall. We agree with this. The conclusions of the review of the associations between LC *n*-3 PUFA and prostate cancer risk are based on two case–control and four prospective studies; five out of six of these studies used retrospective dietary assessment using FFQ. Missing from the review, however, are findings from several prospective biomarker studies[2–4] including the two largest blood biomarker studies published to date on the topic[2,3]. In a small (n_{cases} 376) case–control study nested within the Multiethnic Cohort, no association was reported between LC *n*-3 PUFA and prostate cancer risk[4]. However, in a much larger case–control study (n_{cases} 962) nested within the European Prospective Investigation into Cancer and Nutrition, a 31 % (relative risk (RR) 1·31, 95 % CI 0·96, 1·81) and 39 % (RR 1·39, 95 % CI 1·02, 1·90) increase in prostate cancer risk in the highest compared with the lowest quintile of plasma phospholipid EPA and DHA was seen, respectively[2]. There was a 100 % increased risk (RR 2·00, 95 % CI 1·07, 3·76) of high-grade cancer contrasting the highest to lowest quintiles of EPA[2]. In a case–control study nested within the Prostate Cancer Prevention Trial (n_{cases} 1658), which was a unique study because the presence or absence of prostate cancer was determined by biopsy for all participants, a 150 and 99 % increased risk of high-grade prostate cancer in the highest *v.* the lowest quartile of serum phospholipid DHA (OR 2·50, 95 % CI 1·34, 4·65) or EPA + DHA (OR 1·99, 95 % CI 1·08, 3·68), respectively, was found, although there was no association for EPA alone[3]. Although the findings from the Prostate Cancer Prevention Trial were based on screen-detected cancers, which identifies cases that might never have become clinically relevant, the strength of the associations for high-grade cancer suggests that the findings are indeed clinically relevant.

The addition of these prospective and biomarker-based studies to the studies reviewed recently[1] would certainly modify the conclusion on whether or not LC *n*-3 PUFA could reduce the risk of prostate cancer. Indeed, the findings from these biomarker-based studies challenge the generally accepted notion that increasing consumption of foods high in LC *n*-3 PUFA uniformly reduces chronic disease risk[5].

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