Letter to the Editor

n-3 Fatty acids and prostate cancer risk

(First published online 20 August 2012)

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 \((n_{cases} 576)\) 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 EPA and DHA was seen, respectively\(^3\). 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\(^5\).

Theodore M. Brasky
Division of Cancer Prevention and Control
College of Medicine
The Ohio State University
1590 North High Street
Columbus, OH 43201
USA
e-mail Theodore.Brasky@osumc.edu

Francesca L. Crowe
Cancer Epidemiology Unit
Nuffield Department of Clinical Medicine
University of Oxford
Oxford OX3 7LF
UK

Alan R. Kristal
Cancer Prevention Program
Fred Hutchinson Cancer Research Center
1100 Fairview Avenue North
Seattle, WA 98109
USA
doi:10.1017/S0007114512003431

References