Letter to the Editor

Cancer Epidemiology, Biomarkers & Prevention

Calcium Intake and Prostate Cancer—Letter

Keith Fluegge

Willett and colleagues (1) published a study in 2006, titled "A prospective study of calcium intake and incident and fatal prostate cancer." The study sought to understand whether calcium is the link between milk consumption and prostate cancer and used data compiled from the Health Professionals Follow-Up Study. The prospective cohort study consisted of 47,750 male medical professionals whose dietary habits were assessed every 4 years from 1986 to 1998. The authors found that higher calcium intake (both dietary and supplemental) was independently associated with an elevated risk of advanced prostate cancer and of fatal prostate cancer (poorly differentiated cancers), suggesting that calcium is a critical link and is therefore less likely acting as a surrogate for some other dairy constituent. The authors have concluded that high intakes of calcium should be avoided.

However, there appears to be a glaring oversight in the work. First, the men in the study who reported higher intakes of dietary calcium reported more daily servings of dairy (2.5 times more), yet a reduction in the total daily fat consumed was reported. Although unconfirmed, this suggests that those males reporting higher levels of calcium intake were, in addition to reducing red meat consumption, consuming non-fat or low-fat dairy. It is therefore probable that these males were consuming much less conjugated linoleic acid (CLA) in the dairy or red meat. CLA consists of naturally occurring fatty acids found in ruminant meat and dairy products. CLA consists of many isomers, and the two most prominently studied isomers have been found to exert antiproliferative and antimetastatic effects on prostate cancer cells (2, 3). Furthermore, animal studies suggest CLA may enhance bone mass in male mice when taken with extra calcium (4).

This evidence suggests that CLA has an important role in perhaps mitigating the effect of excess calcium absorption. Yet, Willett and colleagues did not elaborate on CLA in their article, nor was it concerning for the authors that the men who reported the greatest calcium intake consumed less total fat from CLA-rich sources, such as high-fat dairy and red meat. The ultimate recommendation from the authors, as demonstrated in the Willett-led Healthy Eating Pyramid (5), is to consume less dairy (low-fat versions) and ruminant meats. Such a recommendation discards the potential benefit of CLA.

Disclosure of Potential Conflicts of Interest

No potential conflicts of interest were disclosed.

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References

1. Giovannucci E, Liu Y, Stampfer MJ, Willett WC. A prospective study of calcium intake and incident and fatal prostate cancer. Cancer Epidemiol Biomarkers Prev 2006;15:203–10.
2. Ochoa JJ, Farquharson AJ, Grant I, Moffat LE, Heys SD, Wahle KWJ. Conjugated linoleic acids (CLAs) decrease prostate cancer cell proliferation: different molecular mechanisms for cis-9, trans-11 and trans-10, cis-12 isomers. Carcinogenesis 2004;25:1185–91.
3. Cesano A, Visonneau S, Scimeca JA, Kritchevsky D, Santoli D. Opposite effects of linoleic acid and conjugated linoleic acid on human prostatic cancer in SCID mice. Anticancer Res 1998;18:1429–34.
4. Park Y, Pariza MW, Park Y. Cosupplementation of dietary calcium and conjugated linoleic acid (CLA) improves bone mass in mice. J Food Sci 2008;73:C556–60.
5. Harvard School of Public Health [database on the Internet].The nutrition source. [cited 2014 Jul 23]. Available from: http://www.hsph.harvard.edu/nutritionsource/pyramid-full-story/.

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