

FDA finds no strong link between tomatoes and reduced cancer risk

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A U.S. Food and Drug Administration (FDA) review has found only limited evidence for an association between eating tomatoes and a decreased risk of certain cancers, according to an article published online July 10 in the *Journal of the National Cancer Institute*.

Several studies have reported an association between the consumption of tomatoes or lycopene, an antioxidant that gives tomatoes their red hue, and a decreased risk of some cancers, particularly prostate cancer. In order for foods and dietary supplements to be labeled with such health claims, the FDA must review and approve these claims based on the available scientific evidence.

In a review article, Claudine Kavanaugh, Ph.D., of the FDA in College Park, Md., and colleagues describe the agency's November 2005 evaluation of the scientific evidence linking tomatoes or tomato-based foods, lycopene, and reduced cancer risk.

Their review found no evidence that tomatoes reduced the risk of lung, colorectal, breast, cervical, or endometrial cancer. However, there was very limited evidence for associations between tomato consumption and reduced risk of prostate, ovarian, gastric, and pancreatic cancers. Based on this assessment, the FDA decided to allow qualified health claims for a very limited association between tomatoes and these four cancers. Their analysis found no credible evidence that lycopene, either in food or in a dietary supplement, was associated with reduced risk of any of the cancers evaluated.

For prostate cancer, for example, the FDA issued this statement: “Very limited and preliminary scientific research suggests that eating one-half to one cup of tomatoes and/or tomato sauce a week may reduce the risk of prostate cancer. [The] FDA concludes that there is little scientific evidence supporting this claim.”

In one of the accompanying editorials, Paul Coates, Ph.D., of the National Institutes of Health in Bethesda, Md., discusses some of the issues the FDA had to contend with in conducting their review, such as the limited number of available clinical trials and the challenge of communicating to the public the subtleties of the FDA’s decision.

“Neither of these concerns, however, diminishes the importance of using evidence-based review principles to evaluate important diet-health relationships. In fact, it may be argued that evaluating a diet-health relationship is precisely the circumstance in which systematic review techniques can be most appropriate and effective because they are transparent and objective, and the search and review strategies could be exactly reproduced by others,” Coates writes.

In the second editorial, Edward Giovannucci, M.D., Sc.D., of the Harvard School of Public Health in Boston suggests that the widespread use of PSA (prostate-specific antigen) screening may influence the data on the association between tomato and lycopene consumption and prostate cancer risk.

“Given the complexities of studying the relationship between tomato or lycopene intake and prostate cancer risk, both in terms of the exposures and the outcome, one should not be too surprised that no firm conclusion of benefit would be made in the FDA review... Although it may be premature to espouse increased consumption of tomato sauce or lycopene for prostate cancer prevention, this area of research remains promising,” Giovannucci writes.

Source: Journal of the National Cancer Institute

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