

Can tomatoes stop pre-cancerous prostate changes?

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Northwestern University is seeking to discover whether lycopene - an antioxidant commonly found in tomatoes and tomato-based products and commonly perceived to reduce the risk of developing prostate cancer - can reverse pre-cancerous prostate changes.

The researchers want to determine whether natural tomato oil with a high concentration of lycopene may reverse or delay the progression of high-grade prostatic intraepithelial neoplasia (HGPIN), a condition in which abnormal cells form within the prostate, and which is the strongest risk factor yet identified for the development of prostate cancer.

The study will be headed by Peter Gann, professor of preventive medicine at the Northwestern University Feinberg School of Medicine.

Lycopene has been found to have anti-tumor activity in a number of laboratory studies and has been used in several cancer studies in humans that demonstrated a lower cancer rate in people with a high dietary intake of lycopene.

The university noted that research has shown that men who ate more cooked tomato products had a more than 20 percent reduced risk of developing prostate cancer. Additional studies showed that cooking tomatoes and eating them with oil substantially increases the bioavailability of lycopene, the researchers added.

The study at Northwestern will use tomato oil from non-genetically modified tomatoes raised in Israel and specially grown to be high in lycopene content.

Results of the study will be useful for clarifying the mechanisms of action of lycopene in the prostate, for designing phase III clinical studies and, more generally, for determining the chemopreventive potential of this relatively non-toxic dietary compound.

Prostate cancer is the most commonly diagnosed cancer among men in the United States, amounting to an expected 230,100 new cases and 29,900 deaths in 2004, according to the American Cancer Society.

"Prostate cancer is a rational target for chemoprevention because of its high public health burden and relatively slow growth rate," said Gann. "Although early surgical treatment of prostate cancer might be effective, it involves substantial discomfort. This, plus the wide variability in the biological behavior of prostate cancer, makes overtreatment a persistent and serious concern."

The lycopene market is expanding significantly, with growth rates forecast at over 100 percent in a recent report on the carotenoids market from Frost & Sullivan. The report values the ingredient at \$34 million in 2003, and with growing demand, new sources of the nutrient will attempt to lift this figure further.

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