

# Dehydrated tomatoes show promise for preventing prostate cancer

May 29 2008

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New research suggests that the form of tomato product one eats could be the key to unlocking its prostate cancer-fighting potential, according to a report in the June 1 issue of *Cancer Research*, a journal of the American Association for Cancer Research.

“Processing of many edible plants through heating, grinding, mixing or drying dramatically increases their nutrition value, including their cancer prevention potential. It appears that the greatest protective effect from tomatoes comes by rehydrating tomato powder into tomato paste,” said Valeri V. Mossine, Ph.D., research assistant professor of biochemistry at the University of Missouri.

The protective effect of tomato products against prostate cancer has been suggested in many studies, but researchers remain uncertain about the exact mechanisms. Mossine and colleagues demonstrated that FruHis, an organic carbohydrate present in dehydrated tomato products, exerts a strong protective effect.

Researchers divided rats into groups of 20 and fed them a control diet or a diet that included tomato paste, tomato powder or tomato paste plus additional FruHis. All animals were then injected with prostate cancer-causing chemicals.

Animals fed the tomato paste plus FruHis diet had the longest survival from cancer at 51 weeks compared with 50 weeks in the tomato powder group, 45 weeks in the tomato paste alone group and 40 weeks in the

control group.

On post-mortem exam, prostate tumors were found in 10 percent of the rats that had been given a combination of tomato paste and FruHis, compared with 30 percent of animals in the tomato powder group, 25 percent in the tomato paste alone group and 60 percent in the control group.

Mossine said the protective effect of tomato-based products was restricted to prostate tumors, which is consistent with other research on tomatoes and cancer. Incidence of other tumors was too small to examine.

In vitro, Mossine and colleagues evaluated the anti-cancer properties of FruHis and 14 other D-fructose amino acids and found that FruHis in a concentrated form protected against DNA damage known to lead to prostate cancer. When combined with lycopene, FruHis stopped cancerous cell growth more than 98 percent of the time.

“Before this study, researchers attributed the protective effect of tomatoes to ascorbic acid, carotenoids, or phenolic compounds,” Mossine said. “FruHis may represent a novel type of potential dietary antioxidant. Experiments like these suggest that a combination of FruHis and lycopene should be investigated as a potential therapeutic anti-tumor agent, not just a prevention strategy.”

Although Mossine cautioned against drawing broad conclusions from this animal study, he said, “the result may introduce an additional intrigue into an ongoing dispute over the beneficial effects of dietary lycopene and tomato products in lowering the risk of prostate cancer. Human trials are certainly warranted.”

Source: American Association for Cancer Research

Citation: Dehydrated tomatoes show promise for preventing prostate cancer (2008, May 29)  
retrieved 18 April 2024 from

<https://medicalxpress.com/news/2008-05-dehydrated-tomatoes-prostate-cancer.html>

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