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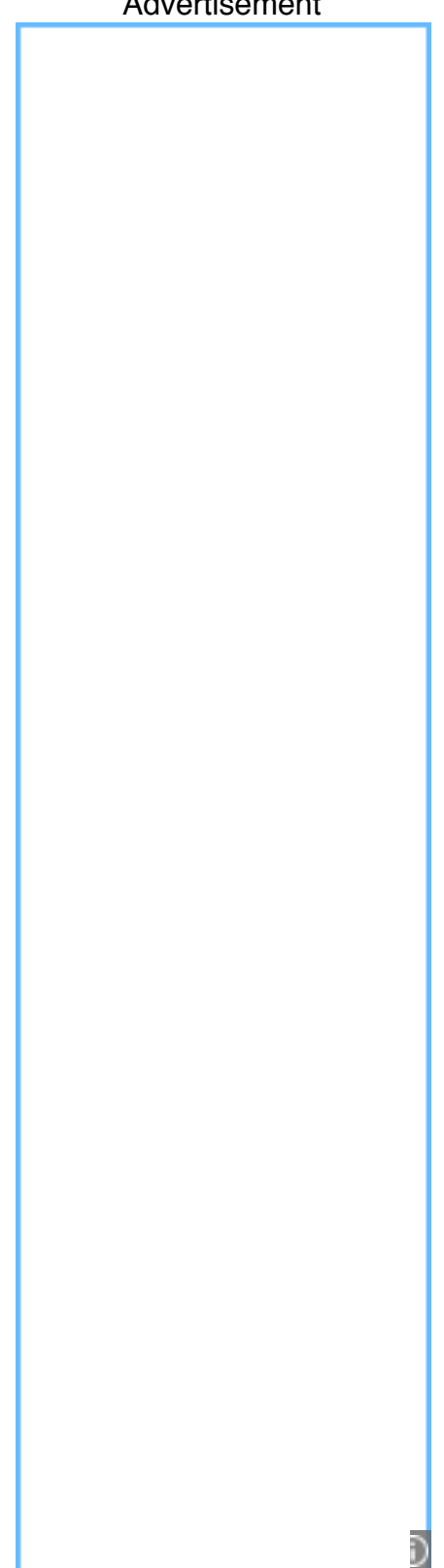


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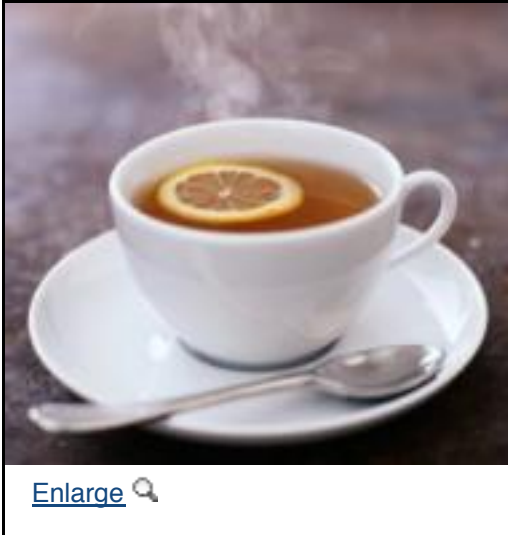
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TEA YIELDS PROSTATE BENEFITS

By [Janet Raloff](#)
[Web edition](#)

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Tea drinking appears to seed the body with compounds that retard the growth of prostate cancer, a new study finds. Although the men taking part in the new study all had advanced prostate cancer, the data suggest that it might be possible to slow the early development of this cancer, and perhaps others, with regular consumption of what is already one of the world's most popular drinks.



[Enlarge](#)

Suzanne Henning of the University of California, Los Angeles Center for Human Nutrition and her colleagues reported their findings last week in Washington, D.C., at the Experimental Biology 2004 meeting, a large conference that served as the annual national meeting for 32 scientific societies. The tea data were presented as part of the national meeting of the American Society of Nutritional Sciences.

Builds on earlier findings

Several diet and health surveys had suggested that men who drink lots of tea face a diminished risk of prostate cancer. The suspicion, Henning says, was that polyphenols in the brews—antioxidant molecules from tea leaves—might underlie any anticancer benefits. To investigate that association, her team decided to feed 5 cups of strongly steeped tea daily to men in the 5 days before each was slated for surgery to remove a cancerous prostate.

Some were prescribed green tea; others, the black tea more popular among Westerners. The particular teas were selected because they contain comparable amounts of the polyphenol epigallocatechin gallate (EGCG). The best known of tea's polyphenols, this compound has been linked by a host of human and animal studies to antitumor effects at various sites of the body (SN: 7/23/94, p. 61).

The men were instructed to steep each bag of their prescribed tea for 5 minutes in 8 ounces of water. This was to maximize its release of polyphenols. However, both green and black tea also contain substantial amounts of caffeine and related stimulants. To account for these compounds and establish whether they're responsible for any anticancer effect, Henning's group enrolled five more prostate-surgery candidates to drink regular or diet colas containing amounts of such stimulants comparable to what the tea delivered but no polyphenols. Altogether, 20 men took part.

Prior to the study, biopsied tissue from each man's prostate was measured for polyamines. Henning describes these as natural substances that spur cell growth. Polyamine concentration tends to be high in rapidly dividing tissue, such as a cancerous prostate. "We chose to look for this particular marker," Henning says, because other investigators had shown that the enzyme regulating it is inhibited in mice and rats after tea consumption.

After the men underwent surgery, Henning's group analyzed another tissue sample from each volunteers' prostate. The researchers quantified the amounts of the tea polyphenol and the marker of cell growth in each tissue sample.

Prior to the prescribed tea and cola drinking, none of the tea polyphenol was present in the prostate sample and there was no difference in the polyamines' concentrations between groups. However, by the time of surgery, the polyphenol was present in the tissue of the tea drinkers. "And where the polyphenols from tea were high, the polyamines were low," Henning told *Science News Online*. "It was a significant correlation for both the green and black teas," she added.

Probing polyphenols further

Urine collected from the men on their tea- and cola-drinking days showed that those drinking tea excreted EGCG and several other antioxidant polyphenols characteristic of the brews: epigallocatechin (EGC), epicatechin (EC), and epicatechin gallate (ECG). Surprisingly, Henning says, urine from two cola drinkers also occasionally carried EC and EGC. Further probing suggested these compounds traced to the cola drinkers' "consumption of rather large quantities of chocolate," another source of these plant-derived antioxidants.

To further investigate the value of tea against prostate cancer, the researchers collected blood from the men immediately before their surgery. The team used this blood for test-tube studies on prostate cancer cells—not ones from the men in this study—specially prepared to grow in a laboratory culture. Ordinarily, researchers grow the malignant prostate cells in fetal cow serum. Here, the men's blood served that purpose.

Henning notes that because polyphenols are water soluble, they move out of the blood fairly quickly—certainly during the presurgery fast that each man had undergone. Still, blood from men who had been drinking tea dramatically retarded the growth of the test-tube cultures of prostate-cancer cells—some 10 percent if the blood came from a man drinking green tea and 30 percent if from a man who had downed black tea—compared with blood from these men before they started drinking tea or cola. Blood from the cola drinkers had no impact on cell growth. Henning says that some polyphenol-breakdown products must have remained in the tea drinkers' blood to offer this effect.

Follow-up studies planned

In future trials, Henning's group plans to administer tea—or perhaps capsules containing just its polyphenols—to men for a month or two before prostate cancer surgery. The object will be to see whether this enriches the volunteers' tissues with even higher concentrations of EGCG than in the original study. Henning also says she'll recommend that these studies include measurement of tumor size before the men start drinking tea. The results will indicate the rate of cell growth during the trials. A slowdown "would be a real indicator of tumor growth change," says Henning.

Finally, she says she'd like to give the tea chemicals to mice for several weeks and then withdraw the doses and see what happens. Is there a persistent change in the tumor cells?

Oh, and guys, should you need further convincing to try a cup of tea, consider the following: Studies have linked the EGCG in teas to cutting one's risk of heart disease, gum disease, and diabetes. As an added benefit, this compound can even rev up fat oxidation—the chemical conversion of body flab to heat.

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- For further information on tea polyphenols, go to [\[Go to\]](#) (Division of Cancer Prevention, National Cancer Institute).

Citations & References:

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