

Green, Black Tea May Help Prevent Diabetes, Prostate Cancer

Editorial Staff

After water, tea is the most frequently consumed beverage in the world. Reportedly discovered by a Chinese emperor more than 4,000 years ago, tea has become an integral component of traditional Chinese medicine. Over time, different varieties of tea (such as green, black and oolong) have been prescribed by herbalists and doctors of Oriental medicine to help treat a myriad of conditions, ranging from indigestion and high cholesterol levels to dental plaque and weight gain.

Each month, more research documenting the effectiveness of tea in the promotion of health and wellness is being published in the general health literature. Two recent studies of note - one in the *Journal of Agricultural and Food Chemistry (JAFC)*,¹ the other presented at the American Association for Cancer Research's (AACR) annual meeting in April² - have shown that certain ingredients in tea may reduce the incidence of diabetes and help prevent the development of prostate cancer in men, respectively.

Green Tea and Prostate Cancer

At the AACR meeting, Dr. Saverio Bettuzzi of the University of Parma in Italy, along with a research team from the University of Modena and Reggio Emilia, presented the results of a study conducted on men at increased risk of developing prostate cancer. The study showed that substances in tea known as green tea catechins, or GTCs, were more than 90 percent successful in preventing the development of prostate cancer for a minimum of one year.[PB]

"Numerous earlier studies, including ours, have demonstrated that green tea catechins, or pure EGCG (epigallocatechin gallate), inhibited cancer cell growth in laboratory models," explained Dr. Bettuzzi in an interview at the AACR meeting. "We wanted to conduct a clinical trial to find out whether catechins could prevent cancer in men. The answer clearly is, yes."³

The study involved 62 men ages 45 to 75, all of whom had been diagnosed with high-grade prostatic intraepithelial neoplasia, a type of lesion that often develops into prostate cancer within one year. Men who were vegetarians, who already consumed green tea, or who were taking antioxidant supplements or hormone therapy, were excluded from the study group.

The men were divided into two groups. A treatment group of 32 men consumed a pill containing 200 milligrams of GTCs three times per day for one year. The remaining men were given a placebo. Biopsies of the men were administered six months after the study began, and again at one year, to determine whether the lesions had metastasized into cancer.

According to the scientists, "After a follow-up period of one year, only one prostate cancer was diagnosed among the 32 men that received a daily treatment of three tablets ... of GTCs, with an incidence of 3 percent, while nine cancers were found among the 30 men treated with placebo, accounting for an incidence of 30 percent." No adverse events or side-effects associated with the

GTC supplements was noted.

"To our knowledge, this is the first study showing that GTCs are safe and have a potent in vivo chemoprevention activity for human prostate cancer," the authors wrote. "Thus, administration of GTCs could be an effective therapy for treating pre-malignant lesions that takes advantage of an important window of opportunity for treatment before prostate cancer develops." They added that they will continue monitoring the patients in the trial for up to five years, but that larger studies are needed to confirm their results.[PB]

Green and Black Tea May Fight Cataracts Caused by Diabetes

In the *JAF*C study, meanwhile, researchers from the University of Scranton in Pennsylvania monitored the effects of green tea and black tea in four groups of rats: a normal (non-diabetic) group, a diabetic control group, a group of diabetic rats given green tea, and a diabetic group given black tea. The teas were included in the rats' drinking water at a solution of 1.25 percent, which was equivalent to a human drinking 4.6 eight-ounce cups of tea per day.

The teas were fed to the rats every day for three months, at which time they were killed. The chemical composition of the rats' blood and eye lenses was then analyzed to determine whether the teas lowered blood glucose levels and reduced the incidence of cataracts, a common side-effect associated with diabetes.

According to the scientists, the teas "significantly decreased glucose, and ... also inhibited the pathological pathways of diabetes in lens, plasma, and red blood cells." On average, plasma glucose levels in the diabetic rats drinking tea were reduced between 28 percent and 32 percent, which corresponded favorably to a 2003 study of oolong tea in people with type 2 diabetes.⁴ In addition, tea consumption appeared to reduce the severity of cataracts. Rats in the diabetic control group had an average cataract rating of 3.02 (out of four). In diabetic rats given green tea, the average cataract rating was 2.61; in diabetic rats taking black tea, the average rating was 2.24.

"This paper is the first study to examine three mechanisms of diabetic pathology and show a relationship to a diabetic complication, cataracts," the authors wrote in their conclusion. "Both green and black teas appear to be of equal efficacy for improving the diabetic state by means of a hypoglycemic effect, which in turn inhibits the biochemical indicators of diabetic pathology." [PB]

"Black and green tea represent a potential inexpensive, nontoxic, and, in fact, pleasurable hypoglycemic agent," they added. They also suggested that further studies be conducted to determine the role of teas in the prevention or treatment of diabetes in humans.

As these and other studies show, the health benefits that can be derived from regular consumption of tea are almost without limit. Whether consumed as a beverage or in supplement form, research suggests that the ingredients in tea can have a positive effect on a multitude of conditions and disorders, and can play an indispensable role in maintaining optimal health and wellness.

References

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