

## **More Benefits of Green Tea Established**

### **Research Shows Substances May Promote Weight Loss and Treat Prostatitis**

By Michael Devitt

Green tea has been used for thousands of years in Asia as both a beverage and herbal medicine. Over the past few years, dozens of studies have been conducted on its antioxidative and chemopreventive effects. Research has shown the beverage to be effective against a number of conditions, ranging from lowering cholesterol and capturing free radicals to reducing the risks of certain types of cancers.<sup>1-4</sup>

Scientists in the United States and Switzerland may have found two more uses for green tea. Studies published in the December 1999 issues of the *American Journal of Clinical Nutrition*<sup>5</sup> and *Urology*<sup>6</sup> show that substances which are abundant in green tea extracts may promote weight loss and treat prostatitis, a painful urinary condition.

Dr. Abdul Dulloo led the research into weight loss, which was conducted at the University of Geneva. Dulloo's team studied the effects of green tea on ten healthy young men (average age: 25) who ranged in body type from "lean" to "mildly overweight."

The study's participants were put on a "typical Western diet" of about 13% protein, 40% fat and 47% carbohydrates. For six weeks, the men took two capsules consisting of either green tea extract plus 50 milligrams of caffeine; 50 milligrams of caffeine alone; or a placebo with each meal.

Three times during the study, researchers measured the men's energy expenditure (EE - the number of calories used in a 24-hour period) in a respiratory chamber. They also gauged the men's respiration quotient, or RQ. (RQ is a measurement of how well the body utilizes carbohydrates, proteins and fats. A lower RQ means that more fats are being metabolized by the body for energy.)

Results showed that those men taking the green tea extract experienced "a significant increase in 24-h EE" and "a significant decrease in 24-h RQ" over those taking only caffeine or the placebo. Men taking the green tea extract also used more fat calories than those using the placebo.

There was no difference between caffeine users and placebo users in terms of fat calorie burning or overall calorie burning. The scientists surmised that substances known as catechin polyphenols in the green tea extract may alter the body's use of norepinephrine, a chemical transmitter in the nervous system, to increase the rate of calorie burning.

In their conclusion, the scientists stated, "Green tea has thermogenic properties and promotes fat oxidation beyond that explained by its caffeine content per se. The green tea extract may play a role in the control of body composition via sympathetic activation of thermogenesis, fat oxidation, or both."

Perhaps most importantly, the scientists noted that use of green tea extract was "not accompanied by an increase in heart rate. This leaves open the possibility of using green tea as an alternative to stimulant-based diet drugs, which may cause adverse effects on obese individuals and patients with hypertension and other cardiovascular conditions.

While Dulloo's team studied the effects of catechin polyphenols, researchers in the U.S. looked at the possible benefits of another substance found in green tea - a bioflavonoid known as quercetin - to combat nonbacterial chronic prostatitis.

Also known as pelvic pain syndrome, prostatitis is an inflammation of the prostate gland that affects approximately 30 million men in the U.S. The condition causes severe urogenital pain, and the standard treatment regimen of antibiotics offers little to no success.

A team of scientists at the Institute for Male Urology in Encino, California headed by Dr. Daniel Shoskes conducted a double-blind, placebo-controlled trial by first dividing 30 men with chronic prostatitis into two groups. One group received 500 mg of quercetin twice daily for one month, while the other group received a placebo.

A National Institutes of Health scoring system was used to grade the subjects' symptoms and quality-of-life impact at the beginning and conclusion of the study. Sixty-seven percent of patients who received quercetin had an improvement of symptoms of at least 25%, compared to only 20% of the placebo group. In addition, symptom scores of those taking quercetin improved an average of nearly eight points, while those in the

placebo group improved by just 1.4 points.

In an unblinded followup study, 17 additional men received a supplement containing quercetin, as well as a mixture of bromelain and papain to enhance bioflavanoid absorption. Eighty-two percent of patients receiving the quercetin-bromelain-papain combination had at least a 25% improvement in their symptom scores.

While consuming mass quantities of green tea may not cure prostatitis, the scientists did conclude that "therapy with the bioflavonoid quercetin is well tolerated and provides significant symptomatic improvement in most men with chronic pelvic pain syndrome." Dr. Shoskes added that the study's findings "offer hope to the millions of men who suffer from this poorly understood and painful condition, as it provides a new option for doctors who've been frustrated by limited treatment choices."

#### *References*

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