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Smaller Waistlines, Sharper Minds, Stronger Bones and Healthier Hearts?

New Findings Released at 5th International Scientific Symposium on Tea & Human Health

WASHINGTON, DC, September 19, 2012: Leading nutrition scientists from around the world convened at the United States Department of Agriculture today to present the latest research supporting the role of tea in promoting good health. Tea is the second most consumed beverage in the world, next to water. Interest in its potential health benefits has grown exponentially; in just the past five years there have been more than 5,600 scientific studies on tea, forming a substantial body of research on this ubiquitous beverage.

Among the findings is research suggesting that green tea and caffeine may trigger energy expenditure that may promote weight loss. Another study illustrates how tea may help counter the adverse effects of high-fat foods on blood vessels, which could possibly reduce the risk of atherosclerosis, the most common cause of death in the U.S.

“There is now an overwhelming body of research from around the world indicating that drinking tea can enhance human health,” said meeting chair, Jeffrey Blumberg, PhD, Professor, Friedman School of Nutrition Science and Policy and Director, Antioxidants Research Laboratory, Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, Boston. “The many bioactive compounds in tea appear to impact virtually every cell in the body to help improve health outcomes, which is why the consensus emerging from this symposium is that drinking at least a cup of green, black, white or oolong tea a day can contribute significantly to the promotion of public health.”

The symposium was sponsored by American Cancer Society, American Institute for Cancer Research, American Society for Nutrition, American College of Nutrition, The Linus Pauling Institute, American Medical Women’s Association, Food and Agriculture Organization of the United Nations and the Tea Council of the USA.

Tea and Heart Health

Numerous studies suggest tea supports heart health and healthy blood pressure, and appears to be associated with a reduced risk of cardiovascular disease, including stroke and heart attack. New research presented by Claudio Ferri, MD, University L'Aquila, Italy, found in 19 normotensive and 19 hypertensive individuals that black tea was able to reduce blood pressure. In the hypertensive patients, black tea appeared to counteract the negative effects of a high-fat meal on blood pressure and arterial blood flow. Hypertensive subjects were instructed to drink a cup of tea after a meal that contained .45 grams fat/lb. body weight. The results suggest that tea prevented the reduction in flow mediated dilation (FMD), the arterial ability to increase blood flow that occurs after a high-fat meal. In a previous study conducted by Ferri, tea improved FMD from 7.8 to 10.3%, and reduced both systolic and diastolic blood pressure by -2.6 and -2.2 mmHg, respectively, in study participants.

“Our studies build on previous work to clearly show that drinking as little as one cup of tea per day supports healthy arterial function and blood pressure. These results suggest that on a population scale, drinking tea could help reduce significantly the incidence of stroke, heart attack and other cardiovascular diseases,” concluded Dr. Ferri.

Tea and Body Weight

Obesity is the largest public health concern in the United States and there are few strategies that provide long-term success. New research on tea catechins suggests that they may provide a benefit in maintaining body weight or promoting weight loss. In a comprehensive review of the published data on this topic, researchers from Maastricht University, Maastricht, The Netherlands, found that 24-hour energy expenditure and fat oxidation increased when subjects consumed green tea and caffeine. The results of a meta-analysis suggest that the increase in caloric expenditure is equal to about 100 calories over a 24-hour period, or 0.13 calories per mg catechins. In addition, green tea and caffeine also appear to boost fat oxidation over 24 hours by an average of 16% or 0.02 grams per mg catechins. In a related review, researchers concluded that subjects consuming green tea and caffeine lost an average of 2.9 pounds within 12 weeks, while adhering to their regular diet.

Beverages now account for 20% of total calories in the typical American diet. “As tea is calorie-free, it’s an ideal choice to help consumers meet fluid requirements without adding calories to their diet,

and the modest increase in energy expenditure and fat oxidation can also add to the role of tea as part of a healthy, calorie-controlled diet that promotes weight loss or maintenance,” explains researcher Rick Hursel, PhD, of Maastricht University, The Netherlands.

Tea and Bone and Muscle Strength

Osteoporosis is a major public health concern for many older women and men as the disease is responsible for two million fractures a year and 300,000 hip fractures in 2005. The disease leads to loss of mobility, independence and reduces quality of life for many older Americans.

Researchers at Texas Tech University Health Sciences Center conducted studies with 150 postmenopausal women with low bone mass to see if the addition of green tea flavanols , Tai Chi exercise or both green tea plus Tai Chi could help improve markers for bone health and muscle strength in study participants. At the end of the six-month clinical trial they found that 500 mg green tea extract (equivalent to 4-6 cups of green tea daily), alone or in combination with Tai Chi, improved markers for bone formation, reduced markers of inflammation and increased muscle strength in study participants.

“The results of our study are consistent with earlier work suggesting that green tea flavanols exert bone health benefits by reducing inflammation and providing antioxidant protection. Our work suggests that green tea and weight bearing exercise like Tai Chi may be an effective way to help improve muscular strength, reduce inflammation and improve bone biomarkers, which may help reduce the risk for osteoporosis and fractures among older Americans,” said Chwan-Li (Leslie) Shen, PhD, the lead researcher at Texas Tech University Health Sciences Center in Lubbock, TX.

Tea May Improve Mental Sharpness

Consuming black tea improved attention and self-reported alertness in a human study conducted by Unilever R&D, Vlaardingen, The Netherlands. In this placebo-controlled study, designed to measure attention, task performance and alertness, subjects drinking tea were more accurate on an attention task and also felt more alert than subjects drinking a placebo. This work supports earlier studies on the mental benefits of tea. In addition, two other studies provide a broader perspective on tea’s effects on psychological well-being, showing benefits for tiredness and self-reported work

performance, as well as mood and creative problem solving. These studies provide support for tea's benefits for mental sharpness, as measured by attention, mood and performance.

According to symposium presenter Suzanne Einöther, PhD, Unilever R&D, Vlaardingen, The Netherlands, "In our study with adult subjects, we found drinking tea improved attention and allowed individuals to be more focused on the task at hand. These effects were found for two to three cups of tea consumed within a time period of up to 90 minutes."

Bioactive Compounds in Tea

Tea is one of the most widely consumed beverages in the world, and it is one of the most thoroughly researched for its potential health benefits. The leaves of the *Camellia sinensis* plant contain thousands of bioactive compounds that have been identified, quantified and studied for their mechanisms of action. While many of these compounds act as antioxidant flavonoids, not all of tea's benefits are thought to be solely from antioxidant activity.

For example, new research presented by Alan Crozier, PhD, of the University of Glasgow, UK, revealed that while many tea flavonoids in green and black tea are digested and absorbed, others are more resistant to digestion and travel mostly intact to the lower gastrointestinal tract, where they provide a probiotic effect by enabling beneficial bacteria to thrive.

Tea Provides Profound Health Benefits

The latest data provide further evidence of tea's potential role in promoting good health, perhaps due to the fact that tea flavonoids are the major contributors of total flavonoid intake in the U.S. diet:

- Tea drinking may play a role in helping to prevent cells from becoming cancerous;
- Tea may play a role in enhancing the effect of chemotherapy drugs used for treating certain cancers; and
- Flavonoids in tea, among other compounds present in tea leaves, may help ward off inflammation and vascular damage linked to chronic conditions associated with aging.

"As the second most consumed beverage in the world next to water, tea accounts for a significant amount of the flavanol intake worldwide," states Joe Simrany, President, Tea Council of the USA, which has been spear-heading this International Tea & Human Health Symposium since 1991.

“This gathering of renowned global nutrition scientists is the world’s leading platform to release new research on tea, and acts as a catalyst for continuing research on tea in areas as diverse and novel as cognitive function, bone growth, weight management, cancer and vascular function.”

ABOUT THE TEA COUNCIL OF THE USA:

The Tea Council of the USA is a non-profit association that was formed in 1950 as a joint partnership between tea packers, importers and allied industries within the United States, and the major tea producing countries. It functions as the educational arm of the tea industry with a primary goal of increasing overall awareness of tea by providing information about its many positive attributes. One of the Council’s primary objectives is the dissemination of key scientific findings about tea to the public. The Tea Council does this in several ways including: funding scientific meetings to bring tea researchers from around the world together to share key information and identify next steps for future research projects; and working with health organizations and international scientists to disseminate information about potential positive health effects of tea consumption on a public level.

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