conversation corner with Neal Spruce

Making Green Tea Better

February 2008

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All the benefits (and more) without the caffeine boost

What better way to follow up last month's newsletter about caffeine than with green tea? Tea is one of caffeine's most common delivery systems, with green tea potentially becoming one of the most popular forms. Based on epidemiologic evidence (study of health related states, trends and events in populations) it appears that regular tea consumption may have a positive impact on long-term health. And since modern science has been hot on the trail of the active ingredients in teas that may lead to potential benefits, there is now a convenient and virtually caffeine-free method in which we can acquire these health associated compounds. Taking it one step further, we've added a few health supporting herbs to the formula and "one-upped" the tea itself. Keep reading.

Quick history

Since I did it for coffee, I had to throw in a quick history of tea: As the legend goes, tea was first discovered around 2737 BC, supposedly by accident by the Chinese Emperor and inventor of Chinese medicine, Shennong. He would generally boil his water to purify it before drinking, and one day while outdoors a dead tea leaf blew into his boiling water. Not noticing the discoloration, he drank from his bowl and found the new broth to be uniquely flavored and very refreshing (he was probably tired, as he was traveling, and the caffeine hit him fast). Cha (tea) was born. The legend goes on to say the Emperor was known for testing the medicinal properties of different herbs on himself, some of which were poisonous, and found tea to be an effective antidote. Beyond its early Chinese medicinal uses, tea became a common beverage consumed for pleasure in solitude or in social settings by the time of the Tang Dynasty (729-804).

Different teas, different components, different outcomes

Black, green, white and red tea are all made from the leaves of the same plant species, *Camellia sinensis*, but it's the way the leaves are processed after harvest that determine what type of tea it will become. Depending on harvest time, soil content and depth of processing, teas contain various ranges of polyphenols, notably flavanoids, which are considered to be the constituents of tea that give the drink its purported disease-preventing effects. One of the flavanoids contained in tea that's thought to be responsible for most of its potential health benefits is *catechin epigallocatechin gallate* (EGCG).

Although all teas may have something to contribute to a healthy diet and contain similar amounts of flavanoids, green and white teas are minimally processed and therefore yield the greatest amount EGCG, but each has their own unique polyphenol/catechin profile. Because of its unique catechin profile, green tea has received the most research and media attention. EGCG makes up anywhere from 10-50% of the total catechins contained in green tea. Among other positive biological activities, EGCG functions as a powerful antioxidant, with antioxidant activity up to 100 times greater that vitamins C & E. In fact, one cup of green tea may supply 10-40 mgs of polyphenols and has greater antioxidant activity than a serving of broccoli, spinach, carrots or strawberries.

EGCG & Scientific Research

As with most plant-based foods that we believe help people live longer, healthier lives, it's often not easy to isolate which of the plant or herb's constituents deliver what value. In fact, it's generally believed that populations consuming large quantities of these healthy substances (e.g. fruits, vegetables, soy-based foods, tea drinkers, etc.) throughout life, may be gaining the noted health benefits found in epidemiological studies because of the way ALL the constituents of the foods work together. Or it may be that these types of people do other things that help maintain health such as take daily multivitamins (the greatest percentage of people who regularly ingest a multivitamin are those with higher education and who eat best).

But as the polyphenols of green tea (GTP), particularly EGCG, spend more time under the "scientific microscope", they are quickly emerging as the major health influencer found in green tea. Below are noted potential benefits of specific amounts of GTP containing about 270 mg (equivalent to 4 cups of green tea depending on brewing time, harvest, etc.).

General health

It appears that GTP/EGCG has the ability to inhibit angiogenesis and to impair cell cycle progression (both actions may help ward off cancer growth). GTP/EGCG has been shown to induce glutathione S-transferase and to decrease the production of reactive oxygen species (or free radicals). This demonstrates the compound's antioxidant qualities and possible reasons for its purported cardioprotective qualities, including lower LDL cholesterol in regular tea drinkers. Additionally, EGCG, at least in animal

studies, has been shown to significantly decrease blood glucose, suggesting a potential role as an anti-diabetic agent.

Weight control

The primary reason we use EGCG in our Fat Burn 3 formula is because of its ability to increase 24-hour energy expenditure and fat oxidation beyond what caffeine alone can do, while potentially destroying fat cells (inducing apoptosis). Recent research has confirmed that green tea can cause weight loss via multiple pathways. In addition to being a potent appetite suppressant, green tea compounds alone have been shown to increase thermogenesis, preferentially burning fat over protein in a similar manner to many other thermogenics (e.g. caffeine, synephrine, etc.). Green tea has been demonstrated to be as or more effective than some prescription weight loss medications. What's more, green tea is one of the few weight loss medications that has not been associated with negative effects on the cardiovascular system (such as increased heart rate and blood pressure) or CNS side effects (such as over stimulation and irritability).

All these potential benefits make green tea one of the hottest topics in the media and the scientific community. Although the latter group does not believe it's a magic bullet for reducing fat or for anti-aging, in proper doses EGCG may have greater overall health potential benefits than most other isolated natural compounds.

Green Tea Plus++++++

Along with the green tea polyphenols, there are other herbs emerging in science that may also help support the health of those whose lifestyles are or have been typical of modern society. This includes those who are overweight, have less than perfect eating habits including frequent restaurant meals, live in high polluted areas, partake in regular alcohol and/or soda consumption, smoking, and/or are basically inactive.

We believe the following additional ingredients of the Apex Green Tea Plus may work synergistically to potentially amplify the benefits of the supplement:

Cocoa extract (as found in chocolate) contains numerous constituents including methylxanthines, biogenic amines, minerals, etc., thought to produce a unique range of potential effects. This includes increased energy, appetite suppression, increased lipolysis (fat burning), improved mood, improved concentration, increased alertness, improved physical performance, aphrodisiac properties, and health benefits. And not everyone can eat enough chocolate to get these benefits without gaining weight or having to replace other foods with the large amounts of chocolate.

Cissus quadrangularis (CQ) has been added to this formula for its synergistic health properties (antioxidant activity). Increasing fat deposits in tissues induces systemic oxidative stress and may contribute to the development of metabolic syndrome (high blood fats, elevated blood pressure, high cholesterol, etc.) caused by typical American lifestyles. Because EGCG and CQ reduce oxidative stress through different mechanisms, the overall contribution to the antioxidant status of the body may be increased when both compounds are present. And CQ's additive weight control benefit may be related to its ability to inhibit pancreatic lipase and other enzymes involved in fat absorption.

Cinnamon Water Extract Bark: this naturally occurring spice has recently shown potential in reducing risk factors associated with diabetes and cardiovascular disease, including a reduction in fasting blood glucose and systolic blood pressure. Cinnamon appears to have its positive effect on glycemic control through its ability to improve insulin signaling and glucose regulation. Properly functioning insulin and its receptors are important for weight control.

Vitamin C was added to this formula to ensure adequate body stores of ascorbic acid (especially for those not getting vitamin C from other sources). Recently it has been discovered that low vitamin C status is associated with reduced fat oxidation during exercise. Furthermore, there's an inverse relationship between vitamin C status and body fat and body mass index (BMI).

Am I a candidate for Green Tea Plus?

If you are victim of today's typical modern lifestyle and environment as described above, or are just beginning to reverse your not-so-healthy habits, adding the Apex GTP is probably a good idea.

Potential daily users

1. Those seeking the health benefits of green tea: by using Apex Green Tea Plus, consumers receive the additional benefit of the product's potential to enhance the fat loss process, including supporting the health of tissues affected by weight gain.
2. The reverse of #1 above: someone seeking fat loss without the stimulating effects of most thermogenic formulas would also receive the noted additional potential health benefits. When pursuing fat loss, Green Tea Plus can be a virtually caffeine-free substitute for Apex Fat Burn 3, and can be used in conjunction with Apex Fat Burn 1 or 2. One serving of Green Tea Plus contains 1.14 mg of caffeine—less than decaffeinated coffee.

Summary

The encapsulated herb extracts & other ingredients contained in the Apex Green Tea Plus product provide a convenient way to acquire these potentially beneficial compounds, especially for those unable to consume large amounts of teas or certain foods. One dose (2 capsules) of Green Tea Plus has the GTP/EGCG content of 4-6 cups of green tea. But don't forget, Apex Green Tea Plus has a lot more potential as a modern day lifestyle aid than green tea alone. Go ahead, have your cup or 2 or 3 of tea along with your daily multivitamin/mineral no matter who you are, but if you're like me and you need a little extra support to make up for slightly misbehaving, try adding a serving of the Apex Green Tea Plus to your day.

You'll find the product label on the next page.

Here's to making the best of what nature has to offer.
-NEAL

Available at www.myapex.com mid-February.