

Amazing Benefits Of Green Tea & EGCG

"Green Tea's cumulative effects range from lower cardiovascular events and insulin resistance to its role with immune modulation in autoimmunity."

Since green tea has been one of my daily beverages, its health benefits in the literature never really excited me. But as you look at the cumulative effects ranging from lower cardiovascular events and insulin resistance to its role with immune modulation in autoimmunity, green tea can add a hefty punch to your anti-oxidant, anti-inflammatory strategy.

Green tea comes from the dried leaves of *Camellia sinensis* and contains a high percentage of the compound epigallocatechin gallate (EGCG). Green tea polyphenols are classified as catechins. EGCG is the most powerful. Just to give you an idea, as an antioxidant, some researchers estimate that green tea is about 25-100 times



more potent than vitamin C and vitamin E. Green tea has been shown to exhibit neuro-protective action probably due to its antioxidant properties. Another research group demonstrated that "green tea polyphenols can penetrate the blood-brain barrier and remain in the brain for more than 24 hours.

Green tea consumption is inversely associated

with risk for cardiovascular impediments and stroke, as well as lower cardiovascular and total mortality.

The intake of green tea has also been correlated with a reduction in the risk of insulin resistance. A recent meta-analysis also concluded that green tea has favorable effects on decreasing fasting blood sugar and hemoglobin A1c.

Additionally, it has also been demonstrated that the intake of green tea extract results in an enhanced capability of adipocytes to uptake glucose, and increases insulin binding, as well as the glucose transporter IV content in adipocytes.

Let's look at EGCG as an immune modulator. Regulatory T cells (Tregs) are critical in maintaining immune tolerance and suppressing autoimmunity. Undifferentiated T cells sometimes called Th0 cells are naturally converted to Tregs in the right environment. However, in the presence of hypovitaminosis with vitamins A and D or in the presence of a dysbiotic gut these undifferentiated Th0 cells are converted to Th17 cells which are associated with autoimmunity, inflammation, tissue injury, and the production of inflammatory cytokines. Green tea and especially EGCG appears to act as a modulatory agent to reduce Th17 cells by increasing regulatory T cells.

Dr. Saverio Bettuzzi from the University of Parma in Italy explains that compounds found in green tea may prevent the development of prostate cancer in men with a pre-cancerous condition called high-grade prostatic intraepithelial neoplasia (HGPIN). HGPIN progresses to invasive prostate cancer within a year in about 30% of men and no treatment is given to these men with high-grade PIN until prostate cancer is diagnosed. Dr. Bettuzzi and his colleagues administered 200 milligrams of green tea catechins 3 times per day, the equiv-

alent of 12-15 cups of green tea, to 32 men with high grade prostate intraepithelial neoplasia while 30 men with the condition received a placebo. Biopsies of the prostate were conducted at six and twelve months. Bettuzzi reported that, after a year, only 1 man among 32 in the catechins group developed prostate cancer, a rate of only 3%. In contrast, 9 out of 30 men treated with placebo developed prostate cancer, at the expected rate of 30 %.

The amount of EGCG present in green tea varies with different brands, the region it is grown, amount of brewing time, age of the leaves, etc. A cup of green tea may have as much as 20 mg of caffeine. Biotics new product "EGCG-200 mg" contains 400 mg of green tea extract supplying 200 mg of EGCG along with 10 mcg of SOD and Catalase, two very important antioxidant enzymes.

One of the unique qualities of this particular formula is the low levels of caffeine as well as the knowledge that the product will be free of adulterants and heavy metals. We'll want to watch for more information on green tea and more specifically EGCG, but for now, think of it as a mixture of natural plant based phytochemicals which can enhance our ability to maintain homeostasis and give our bodies what it needs to experience wellness.

Thanks for reading this week's edition. I'll see you next Tuesday.