new roots herbal®

Natural FACTS

APRIL 22 TO MAY 31 2006

PREVENT

Each capsule equals 44 cups of Green Tea

- Annually 149,000 new cases of cancer will occur
- 70, 000 deaths will occur in Canada in 2006
- Protects against diseases
- Protects against ingested carcinogens
- Strongest green tea available, 70% EGCG

The Latest in Cancer Prevention:

PREVENT, The Ultimate Green Tea Supplement

The chemical composition of green tea varies with climate, season, horticultural practices, and age of the leaf (position of the leaf on the harvested shoot). The major components of interest are the polyphenols. The term polyphenol denotes the presence of multiple phenolic rings (A phenolic ring is a 6-carbon benzene ring with an attached hydroxyl (OH) group --also referred to as the hydroxyl functional group).

The major polyphenols in green tea are flavonoids (e.g., catechin, epicatechin, epicatechin gallate, epigallocatechin gallate (EGCG), and proanthocyanidins). Epigallocatechin gallate is viewed as the most significant active component. The leaf bud and first leaves are richest in epigallocatechin gallate. The usual concentration of total polyphenols in dried green tea leaves is around 8 to 12 percent.

Most of the studies on green tea have focused on the cancer protective aspects. Green tea polyphenols are potent antioxidant compounds that have demonstrated greater antioxidant protection than vitamins C and E in experimental studies. In addition to exerting antioxidant activity on its own, green tea may increase the activity of antioxidant enzymes. In one interesting study from the journal Cancer Research, mice were fed green tea polyphenols via their drinking water for 30 days. Researchers discovered a significant increase in the activity of antioxidant and detoxifying enzymes (glutathione peroxidation, glutathione reductase and glutathione S transferase, catalase and quinine reductase) in the small intestine, liver, and lungs.

Clinical Applications

Atherosclerosis population-based and clinical studies indicate that the antioxidant properties of green tea may help prevent atherosclerosis, particularly coronary artery disease. (Population-based studies refers to studies that follow large groups of people over time and/or studies that are comparing groups of people living in different cultures or with different dietary habits, etc.)

Heart Disease

In clinical practice 70% EGCG is a potent nutritional arsenal not only as an antioxidant, but to address arterial inflammation. Highly sensitive C-reactive protein (hs-CRP) is a marker of arterial inflammation. Inflammation is also believed to play a role in heart disease; EGCG is a potent anti-inflammatory.

According to Japanese research, green tea reduces the levels of LDL or 'bad' blood cholesterol, thereby reducing the risk of coronary heart disease. European studies have found that regular consumption of tea protects against heart disease, with one study documenting that the risk was 36 percent lower for tea drinkers. It is believed that the polyphenols in tea help prevent arthrosclerosis.

EGCG has been reported to inhibit lipid peroxidation, an oxidative process implicated in several pathologic conditions, including atherosclerosis (Pietta et al.,1996). Keep in mind that the oxidation of LDL-cholesterol might be associated with an increased risk of heart disease.
In a cross-cultural correlation study of sixteen cohorts, known as the Seven Countries Study, the average flavanol intake was inversely correlated with mortality rates of coronary heart disease after 25 years of follow-up (Hertog et al., 1995; Hollman et al.,1999).

Cancer

The cancer-protective effects of green tea have been reported in several population-based studies. For example, cancer rates tend to be low in

countries such as Japan where green tea is regularly consumed. However, it is not possible to determine from these population-based studies whether green tea actually prevents cancer in people. Emerging animal and clinical studies are beginning to suggest that EGCG may play an important role in the prevention of cancer.

It has been suggested that EGCG and other tea catechins suppress tumor promotion by inhibiting the release of tumor necrosis factor-alpha, which is believed to stimulate tumor promotion and progression of initiated cells as well as premalignant cells (Fujiki et al., 2000).

Cancer rates tend to be low in countries where green tea is regularly consumed

Furthermore, EGCG was shown to reduce specific binding of both the 12-Otetradecanoylphorbol-13-acetate (TPA)-type and the okadaic acid-type tumor promoters (the two major classes of tumor-promoting agents) to their receptors. This "sealing" effect of EGCG is achieved by its interaction with the phospholipid bilayer of the cell membrane (Fujiki et al., 1999). This is one reason why doctors will typically administer EGCG with glycophospholipids such as NT factor or phosphatidyl choline.

When non-Hodgkin's lymphoma cells were transplanted into mice, green tea prevented 50% of the tumors from taking hold and significantly inhibited growth of the tumors (Leukemia 2000 Aug;14(8):1477-82).

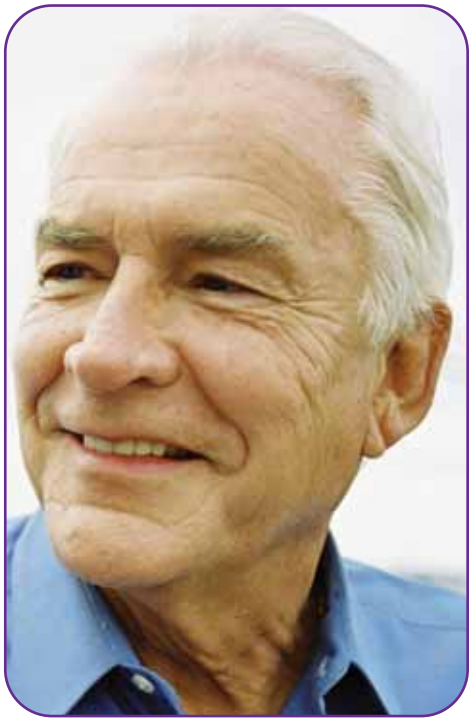
Breast Cancer

Studies suggest that EGCG inhibits the growth of breast cancer cells, both in live animals and test tubes.

A Japanese study comparing 472 women with breast cancer who drank differing amounts of green tea indicates that EGCG may decrease both the severity of the initial diagnosis and the likelihood of recurrence. The researchers found that the women with Stage I, II and III breast cancers that drank five or more cups of green tea per day were less likely to have cancer that spread to the nymph nodes. In addition, the greater consumption of green tea by women with Stage I or II breast cancer was associated with lower incidence of recurrence. No correlation was shown with women who had Stage III cancers. Another Japanese study showed less overall incidence of cancer among 8,000 people who drank ten or more cups of green tea a day.

Prostate Cancer

EGCG is now recognized as an important component of green tea for prostate cancer. The first evidence of its



ability to induce prostate cancer apoptosis (programmed cell death) was published in Cancer Letters back in 1998. (130(1-2):1-7 1998 Aug14) Its pharmacologic activity extends beyond its action as an anti-oxidant. EGCG acts against urokinase, an enzyme often found in large amounts in human cancers, inhibits ornithine decarboxylase (a rate-limiting enzyme closely associated with tumor promotion), and blocks type 1 5-alpha reductase (5AR). Inhibitors of 5AR may be effective in the treatment of 5 alpha dihydrotestosterone-dependent abnormalities, such as benign prostate

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hyperplasia, prostate cancer, and certain skin diseases.

Urokinase breaks down the basement membrane of cell junctions which may be a key step in the process of tumor cell metastasis as well as tumor growth. EGCG attaches to urokinase and prevents these actions.

EGCG was shown to inhibit growth and induce regression of human prostate and

breast cancers in athymic mice. (Liao S, Umekita Y, Guo J et al. Growth inhibition and regression of human prostate and breast tumors in athymic mice by tea epigallocatechin gallate (Cancer Letters 96:239-243, 1995).

Antioxidant Properties

Researchers at the University of Kansas state that EGCG is at least 100 times more effective than vitamin C and 25 times better than vitamin E at protecting cells and their genetic material, DNA, from damage believed to be linked to cancer, heart disease and other potentially life-threatening illnesses. EGCG, carries twice the antioxidant punch of resveratrol, found in red wine.

Studies suggest that EGCG may boost metabolism and help burn fat.

The early evidence of antioxidant properties of EGCG came from the experimental data that showed EGCG-induced inhibition of soybean lipoxygenase. (Ho et al., 1992). Later, it was reported that EGCG inhibited TPA-induced oxidative DNA base modification in HeLa cells, inhibited Cu2+-mediated oxidation of low density lipoprotein (LDL), reduced tert-butyl hydroperoxide-induced lipid peroxidation, and blocked the production of reactive oxygen species derived from NADPH-cytochrome P450-mediated oxidation of the cooked meat carcinogen, 2-amino-3methylimid

zo[4,5f]quinoline (Surh, 1999).

Green tea, which is water soluble, has another advantage over vitamin E. Excessive amounts of antioxidants found in green tea are excreted by the body. The body absorbs and retains fat-based vitamins such as vitamin E, even at potentially harmful levels.

Weight Loss

Studies suggest that EGCG may boost metabolism and help burn fat. In a French study, resting metabolic rate increased by 4% after 90mg of EGCG was consumed three times per day. Scientists at the University of Chicago's Tang Center for Herbal Medicine Research have found that EGCG caused rats to lose up to 21 percent of their body weight. Rats injected with EGCG derived from green tea leaves lost their appetites and consumed up to 60 percent less food after seven days of daily injections. EGCG seems to desensitize leptin receptors (leptin may play a role in appetite) in the study animals. (Endocrinology, March 2003) researchers suspect that EGCG may work through other hormonal systems that control appetite and body weight that we don't yet understand.

Most green tea products on the market reach a maximum of 55% EGCG. New Roots Herbals green tea extract contains the highest quantity of EGCG available in supplement form. Each 500 mg capsule contains 70% EGCG.

When beginning PREVENT as a supplement, it would be wise to make sure you are also taking probiotics. We recommend Acidophilus Ultra one or two weeks prior to introducing EGCG.

Curcumin 95%

Antioxidant, anti-inflammatory and anti-carcinogenic properties of turmeric and curcumin are undergoing intense research. Tests in Germany, reported In July 2003, found that "All fractions of the turmeric extract preparation exhibited pronounced antioxidant activity...." Turmeric extract tested more potent than garlic, devil's claw, and salmon oil. J Pharm Pharmacol. 2003 Jul;55(7):981-6.

More studies indicate that curcumin slows the development and growth of a number of types of cancer cells. Researchers now define curcumin as a broad-spectrum anti-cancer agent where its detoxifying enzymes indicate its potential value as a protective agent against chemical carcinogenesis and other forms of electrophilic toxicity. The significance can be implicated in relation to cancer chemo preventive effects of curcumin against the induction of tumors in various target organs. Iqbal M, et al. Pharmacol Toxicol. 2003 Jan;92(1):33-8).

There is a recent study that states curcumin may inhibit some chemotherapy agents for breast cancer. Cancer Res. 2002 Jul 1;62(13):3868-75.PMID:12097302

Researchers now define curcumin as a broad-spectrum anti-cancer agent

WARNING: DO NOT USE PREVENT WHILE ON CHEMOTHERAPY, STOP TAKING PREVENT 2 DAYS BEFORE CHEMOTHERAPY. TAKE PREVENT ONLY 30 DAYS AFTER YOUR LAST CHEMOTHERAPHY TREATMENT HAS ENDED.

N-acetylcysteine

N-acetylcysteine supports glutathione to interact with the toxic byproducts promoting their excretion through the liver. These substances include carbon tetrachloride, chloroform, and carbon monoxide; alcohol; such heavy metals as mercury, chromium, and boron; and the microorganisms aflatoxin and Eschicheria coli. By helping to rid the body of environmental toxins and by fighting free radicals, NAC may play a role in preventing cancer. NAC might also slow the growth of cancerous tissues in these ways. Clinical trials are underway to explore this possibility. Interestingly, one study did find that NAC reduced nausea and vomiting caused by chemotherapy.

Resveratrol 50%
Resveratrol is a type of antioxidant polyphenol called a phytoalexin, a class of compounds produced as part of a plant's defense system against disease. It is produced in the plant in response to an invading fungus, stress, injury, infection or ultraviolet irradiation. Red wine contains high levels of resveratrol, as do grapes, raspberries, peanuts and other plants. Resveratrol has been shown to reduce tumor incidence in animals by affecting one or more stages of cancer development. It has been shown to inhibit growth of many types of cancer cells in culture. Evidence also exists that it can reduce inflammation. It also reduces activation of NF kappa B, a protein produced by the body's immune system when it is under attack. This protein affects cancer cell growth and metastasis. Resveratrol is also an antioxidant. (International Journal of Cancer)

Astaxanthin kills free radicals in your body, staving off age-related diseases

Lycopene 10%
A study released during the American Association for Cancer Research's (AACR) annual meeting reveals lycopene from tomatoes may activate special cancer-preventive enzymes called "phase II" detoxification enzymes. These effectively remove harmful carcinogens from the cells and from the body. The research suggests consumption of carotenoid-rich tomato products may exert their cancer-preventive effect by stimulating the body's "antioxidant response element."

Zeaxanthin 20%
Zeaxanthin is an antioxidant that destroys harmful free radicals generated by exposure to light, which initiates oxidative damage in the eyes and skin. These xanthophylls provide protection against free radicals that can damage cells and DNA, and thus cause cancer. Zeaxanthin may also improve the cytotoxic action of anti-cancer chemotherapy drugs. Krinsky NI. Possible biologic mechanisms for a protective role of xanthophylls. J Nutr. 2002 Mar;132(3):540S-2S. Molnar J, Gyemant N, Mucsi I, et al. Modulation of multidrug resistance and apoptosis of cancer cells by selected carotenoids. In Vivo. 2004 Mar-Apr;18(2):237-44.

Astaxanthin 1.5%

Astaxanthin kills free radicals in your body, staving off age-related diseases like macular degeneration by preventing these unstable molecules from damaging your cells. Astaxanthin also boosts the functioning of your immune system by increasing the number and activity of T cells and macrophages, two kinds of protective cells that fight infection and cancer.

Journal of Agricultural and Food Chemistry study in 2000.

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