

# Tea flavonoids (phytochemistry) essay sample

[Science](#), [Chemistry](#)



Due to the high cost of health care services, many natural products have been discovered and undergone clinical trials. These are called phytochemicals. These chemicals were often used and offered to those who prefer conventional and alternative medicine until potential health benefits were offered worldwide.

Green tea has the highest amount of flavonoids (polyphenols). Flavonoids can be obtained in the ordinary dietary food like celery, olive, parsley, etc. Likewise, flavonoids in tea such as black and green tea which originate from the same plant (*Camelia sinensis*), demonstrate an antioxidant property (Langley-Evans 2000 and Erba et al 2005). Antioxidants are chemicals that help inhibit the action of free radicals in the oxidation reaction thereby preventing and delaying cellular and tissue damage. Studies showed the effectivity of tea flavonoids against cardiovascular diseases, cancer and even for oral health. Checkoway (2002) showed the neuroprotective activity of tea flavonoids in patients with neurodegenerative disease such as Parkinson's disease.

Riemersma and colleagues (2001) conducted a study which revealed the chemical analysis and correlation of flavonoids (figure above) and cardiovascular disease. Based on their study, tea does not reduce blood pressure or plasma lipids. In contrast with other studies on green and black tea, they showed that plasma oxidant potentially increase after drinking green tea but not black tea. However, like other many studies, they proved that tea consumption tend to reduce the development of aortic atherosclerosis in animal models.

nlwashina (2004) indicated in his study the chemical composition of flavonoids; being based on the C<sub>6</sub>-C<sub>3</sub>-C<sub>6</sub> skeleton and are divided into several classes such as anthocyanins, flavones, flavonols, flavanones,

dihydroflavonols, chalcones, aurones, flavan and proanthocyanidins, isoflavonoids, biflavonoids, etc. Tea flavonoids whether from green or black tea contain catechins which are proven to have a strong antioxidant property (Sarkar et al 2001).

Tea is one of the most consumed beverages in the world. Its popularity is attributed to its potential health benefits that have been proven in many studies. It is considered to help reduce cardiovascular disease risks and some forms of cancer. Tea flavonoids contribute in antihypertension and body weight control. Functional properties also include antibacterial and antiviral activity, increase bone mineral density, and helps in neuroprotection (Cabrera, Artacho and Giménez 2006).

The Tea Council (2006) released studies that proved the efficacy of tea in the diet. In one study in UK, concluded that intake of 3 cups of tea a day would give approximately same antioxidant effect as consuming six apples a day. The reduction of cancer incidence specifically breast cancer in Japan is attributed to the daily intake of 10 cups of tea a day. The antioxidant property of tea flavonoids has been proven to help prevent arthritis. A study in America proved its effects as antiarthritis by reducing the development of arthritis by using animal model. There were also surveys reported that regular intake of tea reduced tooth decay.

Strand (2005) reported that scientists have studied the other effects of flavonoids in the body. Based on his report, flavonoids have antihistamine, antimicrobial and memory and mood enhancing property. They have proven that the antioxidant property of tea flavonoids protect against and even reverse cognitive declines in aging such as Alzheimers disease.

According to Cook (2006), the common belief that drinking tea leads to water loss and potential

dehydration has been clarified by the researchers. According to the studies conducted drinking tea for about four cups a day has beneficial and certainly better than drinking plain water. This is because tea not just rehydrates individuals but also protects against many illnesses.

Based on the review of Health Research (2005), there are several evidences that revealed that beneficial effects of tea flavonoid. According to them intake of tea may reduce Low Density Lipoprotein or bad cholesterol by 10% and may contribute to cardiovascular disease prevention. They also indicated that tea reduces DNA damage in smokers. Its consumption correlates the decrease in rectal cancer among women.

The MashTee Gholee CyberTeaHouse (2006) released a recent study that revealed the effectivity of tea flavonoids against flu virus. In the study, they collected individuals who gargled with a black tea extract twice a day and showed higher immunity to flu virus compared to those who did not gargle with black tea.

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