



Health benefits of green tea versus black tea

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Abstract

Tea is an aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves of the *Camellia Sinensis*, an evergreen shrub native to Asia.

As green tea and black tea are the most commonly used varieties of tea their advantages and side effects must be very well known.

- Green Tea is considered a dietary source of antioxidant nutrients as it is rich in polyphenols (catechins and gallic acid particularly) and phytochemical compounds. They may also function indirectly as antioxidants through :-
- Inhibition of redox sensitive transcription factors.
- Inhibition of 'pro-oxidant' enzymes, such as inducible nitric oxide synthase, lipoxygenases, cyclooxygenases and Xanthine oxidase.
- Induction of antioxidant enzymes such as glutathione transferases and superoxide dismutases.
- The oxidation of LDL cholesterol, associated with a risk of atherosclerosis and heart disease is inhibited by green tea due to EC (Epicatechin) and EGCG (Epigallocatechin) antioxidant activity. Side effects of green tea may result by its excessive intake. It may lead to thyroid disfunctioning, muscle tremors, contractions, insomnia and allergies like eczema and hives.

Black Tea contains polyphenols such as thearubigins and theaflavins which are very powerful.

- It hydrates the body and strengthens the immune system with bacteria-fighting antioxidants and promotes blood flow to brain.
- It improves focus and concentration.

High amounts of black tea can cause side effects due its caffeine. These can range from mild to serious and include headache, nervousness, sleep problems, vomiting, diarrhoea, convulsions and confusion. It can be concluded that in comparison of black tea, green tea has much more health benefits but only if consumed in limited amount.

Keywords: aromatic, polyphenols, compounds, antioxidants

Introduction

Tea is an aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves of the *Camellia sinensis*, an evergreen shrub native to Asia.

After water, it is the most widely consumed drink in the world. Tea originated in Southwest China, during the Shang Dynasty where it was used as a medicinal drink. Tea was first introduced to Portuguese priests and merchants in China during the 16th century. Later it turned into a beverage for daily drinking.

The most common types of tea used are black tea and green tea. Though green and black tea are obtained from the same plant, there are quite a few significant differences between them which effect nutrition to a great extent. NIN studies indicated that flavonoids in green and black tea have stronger antioxidant activity than standard antioxidant vitamins. A cup of tea supplies around 200mg of flavonoids. The antioxidant potency in a cup of tea is 400 percent greater than a cup of orange juice. Higher the flavonoid intake lower is the risk of death from coronary heart disease.

As green tea and black tea are the most commonly used ones their advantages and side effects must be very well known.

Green Tea

Green Tea is considered a dietary source of antioxidant

nutrients. Green Tea is rich in polyphenols (catechins and gallic acid particularly) and phytochemical compounds. These compounds could increase the GTP antioxidant potential (Green Tea Polyphenol). GTP can chelate metal ions like iron and copper. They may also function indirectly as antioxidants through:

- Inhibition of redox sensitive transcription factors.
- Inhibition of 'pro-oxidant' enzymes, such as inducible nitric oxide synthase, lipoxygenases, cyclooxygenases and xanthine oxidase.
- Induction of antioxidant enzymes such as glutathione transferases and super oxide dismutases.

A significant increase in plasma antioxidant capacity is noted in humans after consumption of moderate amounts of 1-6 cups of green tea per day.

The oxidation of LDL cholesterol, associated with a risk of atherosclerosis and heart disease is inhibited by green tea due to EC and EGCG antioxidant activity.

(EC= (-) – epicatechin) (EGCG = (-) – epigallo catechin – 3 gallate)

- Green Tea leaves aren't fermented and hence, don't go through the oxidation process making it extremely rich in the EGCG (epigallocatechin gallate), a popular

antioxidant known for fighting cancer, cardiovascular conditions and more. It supports weight loss program that include diet and exercise.

- It is less acidic and so, washes off acidic waste.
- Pure organic green tea creates a detoxifying effect, giving a glowing skin, boosted metabolism and stronger immunity.
- Green Tea also contains the amino acid L-theanine which can also improve brain function and reduce anxiety.
- Green Tea is great for oral health. The catechins present in green tea can kill bacteria in mouth and also help prevent from catching influenza.

Side effects of green tea

As we say no food is perfect hence there are some side effects of drinking excessive green tea -

- Studies have suggested that the catechins in green tea might affect the functioning of the thyroid gland as they can disrupt thyroid function and block the production of hormones.
- One study states that consuming green tea too often can lower fertility. In another study, the test group treated with green tea leaf extract showed a decrease in the serum testosterone levels.
- Green tea contains tannins that block the absorption of iron from food and food supplements.
- Excessive drinking may lead to headaches, dizziness and might-cause insomnia.
- The caffeine of green tea might cause tachycardia – irregular heartbeat.
- Excessive intake can cause muscle tremors, contractions and allergies like eczema and hives.

Black Tea

Black tea contains other polyphenols such as thearubigins and theaflavins which are very powerful. The EGCG in black tea is destroyed during the fermentation process. Black tea contains 1/3rd the amount of caffeine, coffee contains.

- It hydrates the body and strengthens the immune system with bacteria – fighting antioxidants and promotes blood flow to the brain.
- It improves focus and concentration.
- It acts as a morning ‘eye-opener’ for many human beings.
- According to Linus Pauling Institute drinking black tea improves blood vessel function in case of patients of coronary artery disease.

Disadvantages

- High amounts of black tea can cause side effects due to the caffeine in black tea. These side effects can range from mild to serious and include headache, nervousness, sleep problems, vomiting, diarrhoea, irritability, irregular heartbeat, tremor, heartburn, dizziness, convulsions and confusion.
- Drinking black tea may also inhibit or reduce iron absorption in the intestines which is specially serious for people with anemia. Iron is needed to form haemoglobin, which carries oxygen in the blood.
- Black tea may also have estrogen – like effects in the body, which has negative implications for hormone –

dependent tumors of the breasts or prostate gland.

- Oxalates in black tea can accumulate within the kidneys and contribute to the formation of kidney stones if too much consumption of black tea is done on a regular basis.
- Increased intake of aluminum, in the form of black tea, is one of the causes of Alzheimer’s disease. The disorder has the ability to affect the memory and imagination of people.
- Drinking large quantities of this tea can lead to osteofluorosis which increases the susceptibility of bone fracture.
- Regular consumption of black tea can actually slow the formation of blood clots upon an injury.

Conclusion

It can be very well concluded that going green is good but becoming greener might cause problems in terms of intake of green tea. The side effects of green tea are associated with its excessive intake. In comparison of black tea the health benefits of green tea are more so it is rather beneficial to take green tea as a beverage but that too in limited amount.

Reference

1. Asia Fathima. Ill effects of drinking black tea, Boldsky.com, 2014.
2. Srilakshmi B. Nutrition Science, New Age International Publishers, pp. 413.
3. Debarati S Sen. Times of India, Which is better Green Tea V/S Black Tea, 2017.
4. Jonathan Andrew. Black Tea Disadvantages, Healthy Eating SF Gate.com
5. LIV WAN. The Spruce, Black Tea or Green Tea which is healthier, 2017.
6. Ravi Teja Tadimalla, 24 side effects of Green Tea you should be Aware of Stylecraze.com, 2017.
7. Shruti Goenka. 5 Black Tea side effects you should be aware of, Stylecraze.com, 2017.
8. Sylvie Tremblay. Bigelow Green Tea Benefits Live strong.com, 2017.