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Green Tea : A Drink or a Medicine

Ankit N. Sathawane[1], Nitin B. Kohale[2], Suraj B. Rathod[3]
Student[1], Principal[2] and Assistant Professor[3]
Vardhaman College of Pharmacy, Karanja, Washim, Maharashtra, India

Abstract: *Green tea is a type of tea that is made from Camellia sinensis leaves and buds that have not undergone the same withering and oxidation process which is used to make oolong teas and black teas.[1] Green tea originated in China, and since then its production and manufacture has spread to other countries in East Asia*

Type -Tea
Country of origin - China
Region of origin -East Asia
Colour - Green
Ingredients - Tea leaves
Related products -Tea

Several varieties of green tea exist, which differ substantially based on the variety of C. sinensis used, growing conditions, horticultural methods, production processing, and time of harvest.The two main components unique to green tea are "catechins" and "theanine," and the health effects of these components are attracting a great deal of attention in Japan and abroad.[2]

Keywords: Green Tea

I. HISTORY

Tea consumption has its legendary origins in China during the reign of mythological Emperor Shennong. [4]
A book written by Lu Yu in 618–907 AD (Tang dynasty), The Classic of Tea (simplified Chinese: traditional Chinese: pinyin: chájīng), is considered important in green tea history. The Book of Tea, lit. Record [of] Drinking Tea [for] Nourishing Life), written by Zen priest Eisai in 1211, describes how drinking green tea may affect five vital organ the shapes of tea plants, flowers and leaves, and how to grow and process tea leaves.(The tea fields in the foothills of Gorreana, Azores Islands, Portugal: the only European region other than Georgia to support green tea production) (Four varieties of green tea prior to brewing)The colour of green tea brewed for 3 minutes at 90 °C (194 °F)Steeping, or brewing, is the process Streepin, brewing, is the process of making tea from leaves and hot water, generally using 2 grams (0.071 oz) of tea per 100 millilitres (3.5 imp floz; 3.4 US floz) of water (H2O) or about 1 teaspoon of green tea per 150 ml cup. Steeping temperatures range from 61 °C (142 °F) to 87 °C (189 °F) and steeping times from 30 seconds to three minutes. Generally, lower-quality green teas are steeped hotter and longer while higher-quality teas are steeped cooler and shorter, but usually multiple times (2–3 typically). Higher-quality teas like gyokuro use more tea leaves and are steeped multiple times for short durations. Steeping too hot or too long results in the release of excessive amounts of tannins, leading to a bitter, astringent brew, regardless of initial quality. The brew's taste is also affected by the steeping technique; two important techniques are to warm the steeping container beforehand to prevent the tea from immediately cooling down, and to leave the tea leaves in the pot and gradually add more hot water during consumption.

II. EXTRACTS

Polyphenols found in green tea include epigallocatechingallate (EGCG), epicatechingallate, epicatechins and flavanols,[1] which are under laboratory research for their potential effects in vivo.[5] Other components include three kinds of flavonoids, known as kaempferol, quercetin, and myricetin.[6] Although the mean content of flavonoids and catechins in a cup of green tea is higher than that in the same volume of other food and drink items that are traditionally considered to promote health,[7] flavonoids and catechins have no proven biological effect in humans.[8][9]Green tea leaves are initially processed by soaking in an alcohol solution, which may be further concentrated to various levels;

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byproducts of the process are also packaged and used.[citation needed] Extracts are sold over the counter in liquid, powder, capsule, and tablet forms,[5][10] and may contain up to 17.4% of their total weight in caffeine, [11] though decaffeinated versions are also available.[12]

Health effects

Main article: Health effects of teaBrewed, regular green teaNutritional value per 100 g (3.5 oz)

Energy - 4 kJ (0.96 kcal)
Carbohydrates- 0 g
Fat - 0 g
Protein - 0.2 g
Vitamins - Quantity%DV†
Thiamine (B1) - 1%0.007 mg
Riboflavin (B2)- 5%0.06 mg
Niacin (B3) -0%0.03 mg
Vitamin B6 - 0%0.005 mg
Vitamin C - 0%0.3 mg
Minerals - Quantity%DV†
Calcium - 0%0 mg
Iron - 0%0.02 mg
Magnesium - 0%1 mg
Manganese - 9%0.18 mg
Potassium - 0%8 mg
Sodium - 0%1 mg
Other constituents - Quantity
Water - 99.9 g
Caffeine -12 mg
Units
µg = micrograms • mg = milligrams
IU = International units
†Percentages are roughly approximated using US recommendations for adults.Regular green tea is 99.9% water, provides 1 kcal per 100 mL serving, is devoid of significant nutrient content (table), and contains phytochemicals such as polyphenols and caffeine.Numerous claims have been made for the health benefits of green tea, but human clinical research has not found good evidence of benefit.[13][8][14] In 2011, a panel of scientists published a report on the claims for health effects at the request of the European Commission: in general they found that the claims made for green tea were not supported by sufficient scientific evidence.[8] Although green tea may enhance mental alertness due to its caffeine content, there is only weak, inconclusive evidence that regular consumption of green tea affects the risk of cancer or cardiovascular diseases, and there is no evidence that it benefits weight loss.[13]A 2020 review by the Cochrane Collaboration listed some potential adverse effects of green tea extract including gastrointestinal disorders, higher levels of liver enzymes, and, more rarely, insomnia, raised blood pressure, and skin reactions.[15]

1) Cancer

It has been suggested that it may inhibit cancer development and growth by preventing "cell damage" based on its antioxidant and anti-inflammatory properties.[16]However, Green tea interferes with the chemotherapy drug bortezomib (Velcade) and other boronic acid-based proteasome inhibitors, and should be avoided by people taking these medications.[17]

2) Cardiovascular disease

A meta-analysis of observational studies reported an increase in one cup of green tea per day was correlated with slightly lower risk of death from cardiovascular causes.[18] Green tea consumption may be correlated with a reduced risk of stroke.[19][20] Meta-analyses of randomized controlled trials found that green tea consumption for 3–6 months

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may produce small reductions (about 2–3 mm Hg each) in systolic and diastolic blood pressures.[20][21][22][23] A separate systematic review and meta-analysis of randomized controlled trials found that consumption of 5-6 cups of green tea per day was associated with a small reduction in systolic blood pressure (2 mmHg), but did not lead to a significant difference in diastolic blood pressure.

3) Glycemic control

Green tea consumption lowers fasting blood sugar but in clinical studies the beverage's effect on haemoglobin A1c and fasting insulin levels was inconsistent.[25][26][27]

4) Hyperlipidemia

Drinking green tea or taking green tea supplements decreases the blood concentration of total cholesterol (about 3–7 mg/dL), LDL cholesterol (about 2 mg/dL), and does not affect the concentration of HDL cholesterol or triglycerides.[24][25][28] A 2013 Cochrane meta-analysis of longer-term randomized controlled trials (>3 months duration) concluded that green tea consumption lowers total and LDL cholesterol concentrations in the blood.[25]

5) Inflammation

A 2015 systematic review and meta-analysis of 11 randomized controlled trials found that green tea consumption was not significantly associated with lower plasma levels of C-reactive protein levels (a marker of inflammation).[29]

6) Weight loss

There is no good evidence that green tea aids in weight loss or weight maintenance.[13][30]

7) Potential for liver toxicity

Excessive consumption of green tea extract has been associated with hepatotoxicity and liver failure.[31][32][33] In 2018, a scientific panel for the European Food Safety Authority reviewed the safety of green tea consumption over a low-moderate range of daily EGCG intake from 90 to 300 mg per day, and with exposure from high green tea consumption estimated to supply up to 866 mg EGCG per day.[34] Dietary supplements containing EGCG may supply up to 1000 mg EGCG and other catechins per day.[34] The panel concluded that EGCG and other catechins from green tea in low-moderate daily amounts are generally regarded as safe, but in some cases of excessive consumption of green tea or use of high-EGCG supplements, liver toxicity may occur.

III. PRODUCTION

In 2013, global production of green tea was approximately 1.7 million tonnes, with a forecast to double in volume by 2023.[35] As of 2015, China provided 80% of the world's green tea market, leading to its green tea exports rising by 9% annually, while exporting 325,000 tonnes in 2015.[36] In 2015, the US was the largest importer of Chinese green tea (6,800 tonnes), an increase of 10% over 2014, and Britain imported 1,900 tonnes, 15% more than in 2014.[36]Growing, harvesting and processing

Green tea is processed and grown in a variety of ways, depending on the type of green tea desired. As a result of these methods, maximum amounts of polyphenols and volatile organic compounds are retained, affecting aroma and taste. The growing conditions can be broken down into two basic types − those grown in the sun and those grown under the shade. The green tea plants are grown in rows that are pruned to produce shoots in a regular manner, and in general are harvested three times per year. The first flush takes place in late April to early May. The second harvest usually takes place from June through July, and the third picking takes place in late July to early August. Sometimes, there will also be a fourth harvest. The first flush in the spring brings the best-quality leaves, with higher prices to match.Green tea is processed after picking using either artisanal or modern methods. Sun-drying, basket or charcoal firing, or pan-firing are common artisanal methods. Oven-drying, tumbling, or steaming are common modern methods.[37] Processed green teas, known as aracha, are stored under low humidity refrigeration in 30- or 60-kilogram paper bags at 0–5 °C (32–41 °F). This aracha has yet to be refined at this stage, with a final firing taking place before blending, selection and packaging take place. The leaves in this state will be re-fired throughout the year as they are needed, giving the green

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teas a longer shelf-life and better flavour. The first flush tea of May will readily store in this fashion until the next year's harvest. After this re-drying process, each crude tea will be sifted and graded according to size. Finally, each lot will be blended according to the blending order by the tasters and packed for sale.[38]

IV. IMPORT OF RADIOACTIVE JAPANESE TEA

On 17 June 2011, at Charles de Gaulle airport in Paris, France, radioactive caesium of 1,038 becquerels per kilogram was measured in tea leaves imported from Shizuoka Prefecture, Japan as a result of the Fukushima Daiichi nuclear disaster on 11 March, which was more than twice the restricted amount in the European Union of 500 becquerels per kilogram. The government of France announced that they rejected the leaves, which totalled 162 kilograms (357 lb.
Green tea across East Asia
China
Chinese name :- Longjingtea.jpg Longjing, a green tea from Zhejiang, China
Traditional Chinese
Simplified Chinese Hanyu Pinyinlǜchá

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