

Health Benefits of Tea

Tea has a history dating back to 2700 BC and is the second most consumed beverage in the world after water. Tea, which was used as a medicine in the past, later became a beverage of nobility. And today, as scientific publications on the health benefits of tea increase all over the world, its consumption continues to increase in parallel.

In addition, when a cost/ benefit analysis is made, tea in general clearly is a beverage where the highest benefit is purchased at the cheapest price.

About 67% of the 6.29 million tonne world tea production is black tea (1). This is followed by green tea, oolong tea and white teas. All types of tea, whether black, green, oolong or white, are produced from the plant called *Camellia sinensis*. Although the components of this miraculous plant undergo more or less changes during processing, its benefits to human health have been studied by scientists for many years.

In the light of these studies, we can summarize the effects of tea on human health as follows:



Antiviral Effect

There are dozens of scientific studies on the antiviral effect of green tea catechins. The most recent of these was published in 2022, and it has been revealed that green tea catechins, especially EGCG, help inhibition of SARS-CoV-2 . In other words, green tea catechins, especially EGCG, can inhibit the virus that caused the Covid19 pandemic and may prevent its proliferation (2).

Another article published in 2021 reviewed most scientific studies on the antiviral effect of green tea catechins, (particularly EGCG), and theaflavins (black tea polyphenols). In this publication, it was stated that EGCG has an antiviral effect against many viruses, including widely known viruses such as Hepatitis C, ZIKA virus, Ebola, HIV-1, West Nile Virus, Influenza A and B. In the same publication, it has been reported that theaflavins inhibit many viruses, including well-known viruses such as Influenza A and B, Rotavirus, Coronavirus and HIV-1 virus (3,4).

Let's not forget in the light of the most up-to-date information that one of our preventive measures during the current pandemic period is to consume tea.

Anticariogenic Effect

Tea may have a beneficial effect on dental caries due to the natural fluoride it contains. It has been determined by many studies that the consumption of all green, black and oolong tea can prevent the formation of plaque on the teeth and has a bactericidal effect against oral bacteria such as *Escherichia coli*, *Streptococcus salivarius*, and especially *Streptococcus mutans* that cause tooth decay (5,6,7).

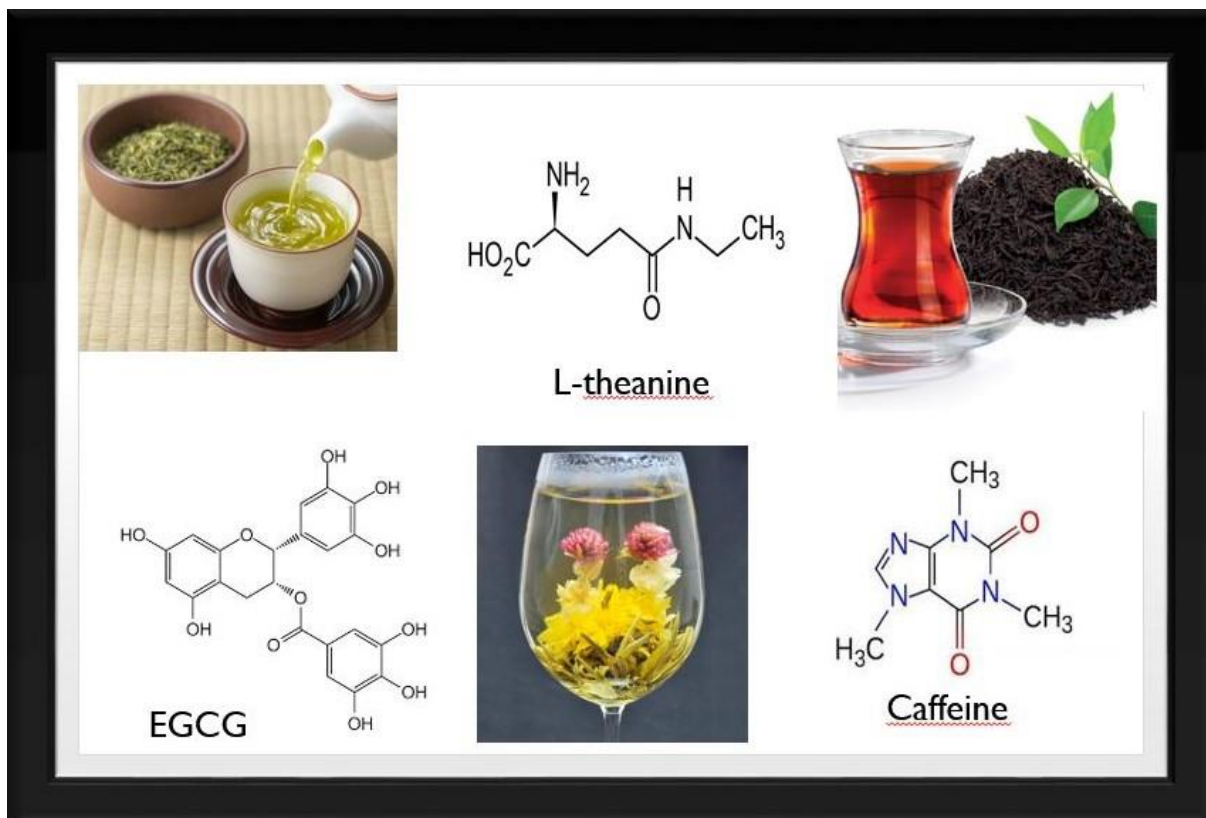
Antimutagenic Effect

Both green tea catechins, especially EGCG, and black tea polyphenols, especially TF, have antimutagenic and anticlastogenic effects. In other words, they can prevent mutations that may occur in DNA and inhibit damaging of chromosomes. Tea components, such as catechin, ascorbic acid, tocopherol, tannic acid, caffeic acid, chlorophyll, and gallic acid, were found to be effective against some mutagens. The level of these components in tea may vary with the variety, harvesting season, and processing method, which may explain the variable antimutagenic activity of various tea products (8,9).

Anticarcinogenic Effect

According to numerous research data, tea polyphenols are powerful antioxidants that induce phase-2 detoxification enzymes which in turn reduce the risk of cancer by reducing damage of DNA in the cell and activation of cancer leading to malignancy (8).

There are many scientific publications about the protective effect of tea polyphenols against lung, pancreatic, prostate, breast and esophageal cancer, colon, stomach, bladder and skin cancer. It has been observed that tea polyphenols, whether green, black, white or oolong tea, prevent the formation of cancer and that the age of getting cancer is higher and the incidence rate of cancer is lower in societies that drink tea regularly (10, 11, 12).



Antidiabetic Effect

Type 1 diabetes occurs when your pancreas does not make insulin or produces too little insulin. Without insulin, blood sugar cannot enter cells and accumulates in the bloodstream. Tea polyphenols lower serum glucose by reducing the activity of amylase, the enzyme that breaks down starch. Thus, starch is broken down more slowly and the sudden rise in glucose in the blood serum is minimized (10).

Both in vitro and in vivo tests have confirmed that green tea catechins, black tea theaflavins and polysaccharides and caffeine in both green tea and black tea showed antidiabetic effects on **Type 2 diabetes**. Most of the epidemiological studies showed daily consumption of green tea, black tea and oolong tea and dietary supplements of EGCG have beneficial effects on Type 2 diabetes mellitus (13).

Anti-aging Effect

In the light of this hypothesis, when we evaluate green tea catechins, especially EGCG, we see that these components with strong antioxidant properties have anti-aging effects. When green tea or green tea extract is taken into the body it reduces free radicals in the blood serum and delays aging by reducing oxidative stress (14).

Tea and Cardiovascular Disease

Consumption of freshly brewed green, black or oolong tea appears to be a reasonable dietary choice that should be considered as part of a lifestyle and dietary approach to prevent heart disease.

Tea and Cognitive Health

Epidemiological studies have shown that tea has a positive cognitive effect on the aging human brain. In these studies, an inverse relationship was observed between tea consumption and rates of dementia, Alzheimer's, and Parkinson's disease. That is, older people who included high-flavonoid products such as tea in their diets performed better on cognitive tests. It is thought that this positive effect is due to the catechins and L-theanine in the composition of the tea. Of course, more research is needed to come to a firm conclusion in this area (16).

Tea and Bone Health

Studies have shown higher bone mineral density in women aged 65 and older who regularly drink tea than in non-drinkers. In addition, it has been reported that the habit of drinking tea has a protective effect against the risk of hip fracture after the age of 50 in individuals who drink tea regularly (5).

Caveat

As with any beneficial food and beverage, including water, excessive consumption can do more harm than good. This rule also applies to tea. While healthy individuals can consume 4-10 cups of tea a day, adults and pregnant women with conditions such as iron deficiency anemia or caffeine intolerance should follow their doctor's recommendations.

Some scientific studies have shown that although tea consumption has no effect on heme iron taken from meat and meat products, it significantly reduces the bioavailability of non-heme iron from other foods. On the other hand, some in vivo studies have shown that citric acid and ascorbic acid (Vit-C) increase the absorption of non-heme iron taken into the body with food. As it is known, citrus fruits, especially lemons, are the main and natural sources of citric and ascorbic acids. For this reason and particularly for vegetarians, it may be prudent to avoid we recommend drinking tea at least 1 hour after meals, and adding 1 slice of lemon to those who want to drink it right after the meal (5, 18, 19).

