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## HEALTHY BENEFITS OF GREEN TEA – A REVIEW

V. Rashika<sup>\*1</sup>

<sup>\*1</sup>Saveetha Dental College and Hospitals, 162, Ponnamalle High Road, Vellapanchavadi, Chennai-77, India.

### ABSTRACT

Tea is an aromatic beverage commonly prepared by pouring hot or boiling water over cured leaves of the tea plant, *Camellia sinensis*. It is the most widely consumed beverage in the world. It has a cooling, slightly bitter, and astringent flavour that people may enjoy. Tea can generally be divided into categories based on how they processed. Different types of tea are green, black, white, yellow which is the most commonly found on the market. In general green tea has considered superior to black tea in health benefits. The major components of interest are the polyphenols which are responsible for antioxidants and other health benefits of green tea. Much research is available depicting the health benefits of green tea for a wide variety of implications, including different types of cancer, heart diseases etc. There is also a wide range of uses of green tea in diabetes, skin disorder, weight loss, dental health such as dental caries, gingivitis and periodontitis and dental caries. This paper review is the major health benefits of green tea.

### KEY WORDS

Catechins, Anti oxidant and Polyphenols.

### Author for correspondence:

V. Rashika,  
Saveetha Dental College and Hospitals, 162,  
Ponnamalle High Road, Vellapanchavadi,  
Chennai-77, India.

**Email:** rashikavenkatesan@gmail.com.

### INTRODUCTION

Green tea is made up from leaf *Camellia sinensis*, it is originated in China, but it has become associated with many cultures throughout Asia<sup>1</sup>. It has been considered as a healthy beverage since ancient times. The traditional Chinese medicine has recommended this plant for headaches, body aches, general pain, digestion, depression, as an energizer, and in general to prolong life<sup>2</sup>. Green tea has many oral health benefits. It has cognitive function and positive impact on bone density, caries, periodontal diseases and diabetes<sup>3</sup>.

It contain large amount of catechin which are potent free radical scavengers and therefore has an antioxidant effect<sup>4</sup> Green tea consumption may be associated with a reduction in blood cholesterol levels<sup>5, 6</sup> cardiovascular disease and cancers<sup>7, 8, 9</sup>. The economic and social interest of tea is clear and its consumption is part of many people daily routine, as an everyday drink and as a therapeutic aid in many illnesses. Over the last years, numerous epidemiological and clinical studies have revealed and several physiological responses to green tea which may be relevant to the promotion of health and the prevention or treatment of some chronic diseases. However, the results from epidemiological and clinical studies of the relationship between green tea consumption and human health are mixed<sup>10</sup>.

## HEALTH BENEFIT

### Prevention of Cancer

Green tea is the richest dietary source of epigallocatechin-3-gallate, which comprises of its total antioxidant powder. Antioxidant in green tea may lower the risk of various type of cancer, which appears to,

**Breast Cancer:** The analysis of observational studies revealed that, who drank the most green tea had a 22 % lower risk of developing breast cancer, the most common cancer in women.

**Prostate Cancer:** Man drinking green tea had a 48 % lower risk of developing prostate cancer, which is the most common cancer in men.

**Colorectal Cancer:** A study found that green tea drinkers had a 57 % lower risk of colorectal cancer.

**Esophageal Cancer:** It can reduce the risk of esophageal cancer.

**Pancreatic Cancer:** Green tea drinkers who drank the most tea were less likely to develop pancreatic cancer, particularly women.

Positive impacts of green tea on bladder, ovarian, lung, skin and stomach cancer, but it is also widely thought to kill cancer cell in general without damaging the healthy tissue around them. Many studies revealed that green tea drinkers have a lower risk of various type of cancer. It is important that, it is a bad idea to put milk in your tea, because it can

reduce the antioxidant value. Researcher believe that high level of polyphenols in tea that help in kill cancerous cell but the exact mechanism by which the tea interacts with cancerous cell is unknown but catechin found in tea prevent cell mutation , deactivate certain carcinogens , and reduce the formation and growth of tumors .

### Cardiovascular Diseases

Consumption of green tea is associated with lower risk of heart disease and stroke. Research published by Harvard demonstrates that people who drink at least one cup of tea daily have a 44 percent lower risk of heart attack. Green tea also dramatically increases the antioxidant capability of blood, which protects the LDL cholesterol particles from oxidation, which is one part of pathway towards heart disease. Women who consumed five or more cups per day had 31 % lower risk of dying from cardiovascular disease and stroke<sup>11</sup>.

### Weight Loss

As mentioned before, Green tea has a natural anti-oxidant present in it, known as in catechin and polyphenols. EGCG in green tea increases the metabolism rate of human body, which means that it intensifies levels of fat oxidation and the rate at which your body turns food into calories, which in turn aids weight loss. Green tea reduces blood fat. Enabled with diuretic properties, it also eliminates excess water and thereby reduces excess weight. In a study that combined four weeks of daily green tea consumption with weightlifting, results showed significant increase in resting metabolic rate and decrease in body fat and triglycerides<sup>12</sup>, some studies also show that green tea leads to increased weight loss. It is particularly effective at reducing the dangerous abdominal fat.

### Diabetes

Green tea seems to help keep blood sugar stable in people with diabetes. Because catechin lower cholesterol and blood pressure. Type II diabetes is a disease that has reached epidemic proportions in the past few decades and now afflicts about 300 million people worldwide. Studies show that green tea can improve insulin sensitivity and reduces blood sugar levels. One study in Japanese individuals found that

those who drank the most green tea had a 42 % lower risk of developing type II diabetes. According to a review of 7 studies with a total of 286,701 individuals, green tea and 18 % lower risk of becoming diabetes.

#### **Alzheimer's and Parkinson's - Neurological Disease**

Green tea not only improves brain function in short term, it may also protect your brain in older age. Alzheimer's disease is the most common neurodegenerative disease in humans and a leading cause of dementia. Parkinson's disease is the second most common neurodegenerative disease and involves the death of dopamine producing neurons in the brain. Multiple studies show that the catechin compound in green tea can have various protective effects on neurons in test tube and potentially lowering the risk of Alzheimer's and Parkinson's. Studies carried out on mice showed that green tea protect brain cell from dying and restored damaged brain cells.

#### **Reduces Cholesterol**

Green tea contains tannins that are known to lower cholesterol naturally in the body. Tannins help in reducing the level of LDL cholesterol in the body. LDL is known as the "bad cholesterol" as they cause plaque build-up in the arteries, thus causing blockages. This is another one of the advantage of green tea.

#### **Pregnancy**

As we discussed green tea has a lot of health benefits which makes it really popular among pregnant women. The high anti oxidant level helps the body from recover from cell damage, regulates blood sugar and insulin levels, and also help in controlling hypertension. Gestation hypertension and diabetes are common problem faced in later stages of pregnancy. The high oxidant level reduces this issue as they help in boosting the immune system of pregnant women drinking green tea during pregnancy has its benefits.

### **DENTAL HEALTH**

#### **Dental caries**

The catechin in green tea has other biological effect as well. Streptococcus mutans is the primary harmful

bacteria in the mouth. It causes plaque formation and is leading contributor to cavities and tooth decay. Studies show that catechin in green tea can inhibit the growth of streptococcus mutans. Green tea consumption is associated with improved dental health and a lower risk of caries. Another awesome benefit of green tea is, it can reduce bad breath<sup>13,14</sup>.

#### **Gingivitis and periodontitis**

Gingivitis and periodontitis are major forms of inflammatory disease of mouth. Green tea catechin has a preventive effect against the development of oxidative stress and the effect has been related to the anti oxidative mechanism of catechin. Oxidative stress plays an important role in the pathogenesis of periodontal disease, as well as many other disorders and it is believed that antioxidants can defend against inflammatory diseases. Therefore, similar mechanism might be involved in effects of the intake of green tea.

An epidemiologic study showed that there is an inverse association between the daily intake of green tea and periodontal disease and suggested that drinking green tea at meals and breaks is a relatively easy habit to maintain a healthy periodontium several in vitro studies have suggested that green tea catechin, such as EGCG, inhibit the growth of Porphyromonas gingivalis, Prevotella intermedia, and Prevotella nigrescens. These bacteria have been strongly implicated in destruction of periodontal tissues and their reduction can lead to improvement of periodontitis.

Green tea extract can be used as mouth wash for treating oral and periodontal diseases and also has therapeutic drug from this extract.

### **CONCLUSION**

As we discussed above, green tea has the antioxidant, catechin, polyphenols and other content, it has many healthy benefits. Green tea is consumed since ancient time. It lowers the risk of diabetes, cardiovascular problems, obese and dental caries etc.

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