FACT SHEET – TEA

National Cancer Institute FACT SHEET: Tea and Cancer Prevention
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Key Points

The antioxidants found in tea--called catechins--may selectively inhibit the growth of cancer (see Question 1).

In laboratory studies using animals, catechins scavenged oxidants before cell damage occurred, reduced the number and size of tumors, and inhibited the growth of cancer cells (see Question 3).

NCI researchers continue to investigate the therapeutic and preventive use of tea catechins against a variety of cancers.

Tea drinking is an ancient tradition dating back 5,000 years in China and India. Long regarded in those cultures as an aid to good health, researchers now are studying tea for possible use in the prevention and treatment of a variety of cancers. Investigators are especially interested in the antioxidants-called catechins-found in tea. Despite promising early research in the laboratory, however, studies involving humans so far have been inconclusive.

1. What are antioxidants?

The human body constantly produces unstable molecules called oxidants, also commonly referred to as free radicals. To become stable, oxidants steal electrons from other molecules and, in the process, damage cell proteins and genetic material. This damage may leave the cell vulnerable to cancer. Antioxidants are substances that allow the human body to scavenge and seize oxidants. Like other antioxidants, the catechins found in tea selectively inhibit specific enzyme activities that lead to cancer. They may also target and repair DNA aberrations caused by oxidants (1).

2. What is the level of antioxidants found in tea?

All varieties of tea come from the leaves of a single evergreen plant, Camellia sinensis. All tea leaves are picked, rolled, dried, and heated. With the additional process of allowing the leaves to ferment and oxidize, black tea is produced. Possibly because it is less processed, green tea contains higher levels of antioxidants than black tea.

Although tea is consumed in a variety of ways and varies in its chemical makeup, one study showed steeping either green or black tea for about five minutes released over 80 percent of its catechins. Instant iced tea, on the other hand, contains negligible amounts of catechins (1).

3. What are the laboratory findings?

In the laboratory, studies have shown tea catechins act as powerful inhibitors of cancer growth in several ways: They scavenge oxidants before cell injuries occur, reduce the incidence and size of chemically induced tumors, and inhibit the growth of tumor cells. In studies of liver, skin and stomach cancer, chemically induced tumors were shown to decrease in size in mice that were fed green and black tea (1, 2).