The Same Health Benefits doesn't Offer by Sweetened Tea

Unsweetened tea consumption significantly lowers the risk of all-cause mortality, cancer, and cardiovascular diseases (CVD) compared to sugar-sweetened and artificially sweetened tea. A recent study examined whether the consumption of unsweetened, sugar-sweetened, and artificially sweetened tea influences all-cause mortality and cause-specific mortality.

Study

To investigate the associations between unsweetened, sugar-sweetened, and artificially sweetened tea consumption and all-cause and cause-specific mortality, researchers analyzed data from 195,361 participants in large-scale prospective cohort studies of the UK Biobank.

The UK Biobank cohort contains more than 500,000 participants, recruited between 2006 and 2010 from multiple dedicated centers in England, Wales, and Scotland. All participants were between 37 and 73 years of age and provided their health-related information.

Participants who completed an online 24-hour recall questionnaire at least once between April 2009 and June 2012 were considered. Participants who were pregnant, lost follow-up, had incomplete data, or had extreme energy intake were excluded.

The selected individuals provided information about their tea consumption, including the type of tea, the number of cups, and the use of added sugar or artificial sweeteners, through a touchscreen questionnaire. Based on tea consumption habits, participants were categorized into four groups: non-consumers, unsweetened tea consumers, sugar-sweetened tea consumers, and artificially sweetened tea consumers. Tea consumers drank tea at least once, as reflected in the five 24-hour dietary assessments. Participants who drank different types of tea, such as unsweetened, sugar-sweetened, or artificially sweetened tea, were classified as overlapping consumers and were excluded. Participants' demographic and health-related factors were obtained.

A 'standard drink' was defined as approximately 250 mL (about 8.5 ounces); most of the tea consumed in the cohort was black tea.

Results

A total of 195,361 participants were considered to analyze all-cause mortality, 186,934 for CVD mortality, and 178,057 for cancer mortality. Approximately 82% of the entire study cohort were tea consumers. Most participants consumed unsweetened tea (81.6%), followed by sugar-sweetened tea (12.2%) and artificially sweetened tea (6.2%).

On average, 1.4 teaspoons of artificial sweeteners and 1.1 teaspoons of sugar were estimated to be added per tea drink. Interestingly, participants in the "non-consumer" group had a higher body mass index (BMI) than tea consumers. Unsweetened tea consumers were more likely to have a lower BMI, higher educational attainment, lower basal metabolic rate, and exhibit healthier lifestyle behaviors.

Sugar-sweetened tea consumers were primarily male, had higher total energy intake, and lower fruit consumption. Typically, older participants with higher BMI and those who were current or former smokers were more inclined to drink artificially sweetened tea. These participants were more frequently overweight and had hypertension, CVD, diabetes, and long-standing illness.

After adjusting for multiple covariates, Cox proportional hazards analysis revealed a significant, inverse, dose-dependent association between tea consumption and all-cause mortality. This relationship followed a U-shaped curve with the strongest effects observed at 3.5 to 4.5 cups daily. The current study observed no significant alteration in the association between unsweetened tea and all-cause mortality by caffeine metabolism genotype.

Compared to non-consumers, individuals who consumed 3.5 to 4.5 drinks per day of unsweetened tea had a 20% lower risk of all-cause mortality. A similar level of unsweetened tea consumption was also associated with a 14% and 27% lower risk of cancer and CVD mortality, respectively. Sugar-sweetened and artificially sweetened tea consumption were not significantly associated with all-cause, CVD, or cancer mortality.

An inverse association between unsweetened tea consumption and all-cause mortality was observed across most subgroups, except participants with low physical activity, non-White ethnicity, and those with diabetes. Sensitivity analysis indicated that the observed associations were robust under various scenarios, including exclusion of early death, adjusting for diet quality, and caffeine metabolism genetics.

Conclusion

Consumption of unsweetened tea at a moderate level, i.e., 3.5 to 4.5 drinks/day, where one drink contained approximately 250ml of tea, was significantly associated with a lower risk of all-cause mortality. In contrast, no significant associations were observed between sugar-sweetened and artificially sweetened tea and mortality outcomes.

This suggests that adding sugar or artificial sweeteners may alter, but not necessarily reverse, tea's health benefits.

Since black tea was the predominant type consumed in the study, the observed benefits are likely driven by black tea specifically. Similar research must include a diverse population from different geographic regions and ethnicities in the future, and the impact of tea consumption on the health of individuals with overlapping drinking behaviors must be assessed. Future studies should also assess whether similar associations are seen with green or herbal teas.

Source: