Editorial

Primary prevention of cancer is a global priority and identifying modifiable lifestyle factors remains one of our key research objectives. Approximately 20% of the world's tea is consumed as green tea, and there is ample evidence that green tea has cancer preventive properties in in vitro and animal models. However, the question remains whether these chemopreventive properties are observed in humans. Specifically, do green tea drinkers have lower risks of specific cancers? If so, at what levels of intake are needed to observe this lower risk?

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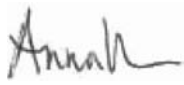
In addition to presenting an updated review on several selected topics, contributors to this issue on Green Tea and Cancer also described areas of inconsistencies between human and non-human data and provided insights as to how future research may bridge the knowledge gap.

The first article represents a thorough overview of mechanistic issues concerning cancer prevention by tea catechins, providing an excellent coverage of the molecular underpinnings of how green tea and its active components act at the cellular level to provide anti-cancer effects. More in-depth discussions of green tea's effects on receptor tyrosine kinases, its anti-oxidative and pro-oxidant properties, as well as effects on reperfusion injury are covered in reviews 2–4. Two topics that are often neglected are covered in the next two contributions. In review 5, the pharmacokinetic data of polyphenols from green tea and phenolic acids from coffee is reviewed. In review 6, the potential deleterious effects of concentrated green tea extract/capsules is examined. The last four articles provide a review of the overall evidence from epidemiologic studies on green tea and risk of developing specific cancer sites including esophagus and lung, prostate, breast, and gynecological cancers. Supportive evidence from cell-based or animal models is also discussed. Although there are promising results from observational epidemiologic studies, most are case–control studies and the results from prospective cohort studies are sparse and less consistent. Additional well-conducted epidemiologic studies with information on lifetime green tea intake as well as studies with pre-diagnostic circulating tea polyphenol levels are needed to improve our understanding of the relationship of dose, duration, and other temporal-related factors of green tea intake and cancer risk. Results from randomized controlled trials of green tea and promising pre-malignant targets will also help to complement results from observational epidemiologic studies. Finally, information on green tea intake and outcome of cancer is largely absent and deserves consideration.

In summary, while we do not currently have enough experimental and observational evidence to recommend green tea intake for the prevention of specific cancers, we have made important strides toward addressing this question, which is of immense public health interest.



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