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## Toxicology

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# Comparison of the antioxidant content of fruits, vegetables and teas measured as vitamin C equivalents

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## Abstract

Most of the health benefits of black, green and oolong teas made from *Camellia sinensis* are attributed to their antioxidant content. Many plants and spices have been used to make infusions that are erroneously referred to as "teas". The term "rich in antioxidants" is often used to describe such infusions, often without scientific support. We have used the DPPH method to quantify the total radical scavenging capacity (RSC) of a wide range of "teas", fruits and vegetables. The results are presented as vitamin C equivalents. These results are compared to the RSC of the recommended portions of fruits and vegetables in the food guide pyramid for a healthy and balanced diet. The EC<sub>50</sub> results show that there are no statistically significant differences in the RSC of black, green and oolong teas. However, the RSC of "teas" made from other species of plants are significantly lower. Our results show

that one or two cups of tea would provide a similar amount of RSC as five portions of fruits and vegetables or 400 mg vitamin C equivalents. This would be comparable to two capsules (200 mg) of vitamin C. Caution is advised in extrapolating these in vitro results to humans due to bioavailability.



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## Keywords

Food-guide pyramid; Fruits and vegetables; Tea; Antioxidants; Radical-scavenging capacity; 2,2-diphenyl-1-picrylhydrazyl; Epigallocatechin gallate

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