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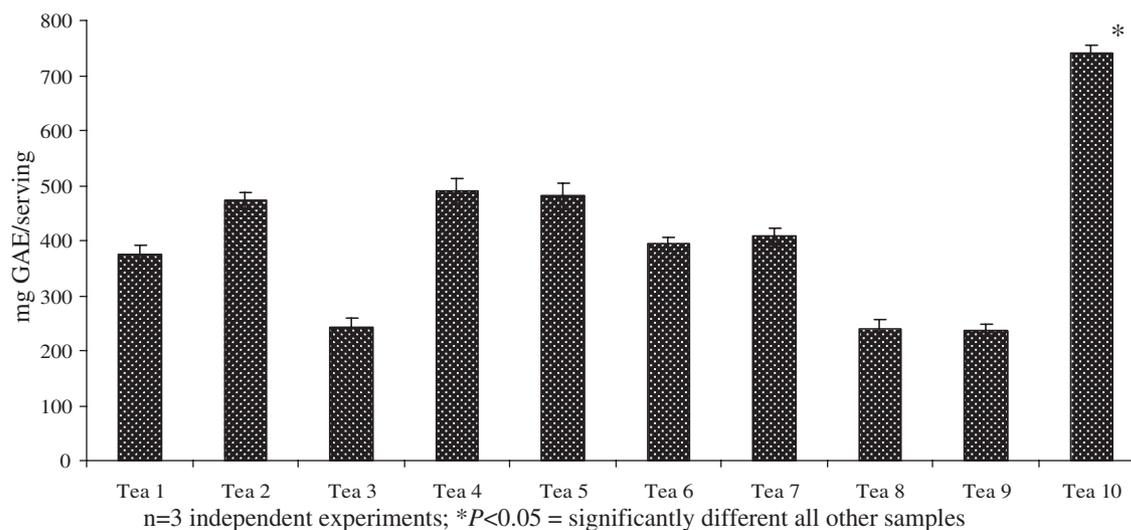
## Determination of the total antioxidant capacity and total polyphenol content of commercially available green tea

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Epidemiological evidence has shown that populations consuming diets rich in polyphenols have lower incidence of CHD, stroke, chronic inflammation and cancer. Tea (*Camellia sinensis*), one of the most commonly consumed beverages in the world, is a rich source of polyphenolic compounds. The main manufactured teas include green, oolong and black varieties. Black tea is more commonly consumed in the UK; however, research suggests that the typical method of black tea consumption, with the addition of milk, may reduce the available antioxidants<sup>(1)</sup>. In recent years there has been a proliferation in the number of commercially available green teas. These teas are potentially a rich source of polyphenols and other antioxidant compounds. The objective of the present study was to analyse and compare the total antioxidant capacity and polyphenol content of different varieties of commercially available green tea.

Ten brands of tea were selected. In all experiments tea preparations were made according to the manufacturer's instructions. Each tea was infused in 200 ml of boiling water (90°C). The total antioxidant capacity of the tea samples was determined via the FRAP assay<sup>(2)</sup>. Total polyphenols (TP) were assessed via the Folin Ciocalteu<sup>(3)</sup> method and expressed in mg of gallic acid equivalents (GAE) per serving (200 ml).



Each of the teas analysed was a significant source of antioxidants (4413–7549  $\mu\text{mol/l}$  FRAP). There was a considerable variation in the polyphenol content of the different teas. Tea 10 had a significantly greater ( $P<0.05$ ) TP content than all of the other teas analysed. Tea bag structure and infusion time both greatly influenced the polyphenol content of the teas. In conclusion commercially available green tea is a valuable source of antioxidants and polyphenols.

1. Ryan L & Petit S (2010) *Nutr Res* **30**, 14–20.
2. Benzie IFF & Szeto YT (1999) *J Agric Food Chem* **47**, 633–636.
3. Sharma P & Gujral HS (2010) *Food Chem* **120**, 673–678.