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Background – Despite fruit and vegetables constituting a major part of any healthy diet, there are currently no objective measures of intake. Individual antioxidants, such as β-carotene, have been linked with fruit and vegetable intake; however, the analysis is difficult and time consuming and may not account for a varied diet. Total antioxidant capacity is a measure of the cumulative reducing power of a given sample and has been previously studied in serum and plant matter and may be a potential objective measure for fruit and vegetable intake.

Objective – To determine the extent to which total antioxidant capacity is an indicator of fruit and vegetable intake.

Design – Cross-sectional study of 40 adults (30 male, 10 female), mean age 57.4±11.7y (±SD), mean BMI 28.8±3.3kg/m², servings of fruit and vegetables determined using a food frequency questionnaire and were correlated with serum total antioxidant capacity measured by the Ferric Reducing Antioxidant Power Assay.

Outcomes – The mean total antioxidant capacity was 528±119μmol/L (range: 255-735). Serum total antioxidant capacity was not found to have a statistically significant correlation with fruit (r=-0.08), vegetable (r=-0.25), fruit and vegetable (r=-0.24), β-carotene (r=-0.15) or ascorbic acid intake (r=-0.05).

Conclusions – Investigations into total antioxidant capacity need to pay particular attention to sample handling, as it has been suggested elsewhere that this can be a significant source of single antioxidant deterioration. Having a biomarker for fruit and vegetable intake could prove to be a useful tool in dietary assessment, research and contribute more understanding to the diet-disease relationship.