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Absorption of polyphenols and the effect on serum antioxidant activity after consumption of coriander (*Coriandrum sativum*), seed extract

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Coriander is commonly used for mild fever and cold in Sri Lanka. Increased formation of reactive oxygen species and/or decreased antioxidant defense leads to many diseases and the intake of beverages prepared with plant materials and have higher antioxidant activity may contribute to the prevention of most of these diseases. Endogenous substances present in plants provide a greater contribution towards antioxidant activity. Secondary metabolites including plant polyphenols posseses protective effects against cancer and other chronic diseases.

A water extract of coriander was prepared according to the instructions of a registered aurvedic physician. After 8 hour fasting period, 250 ml of coriander seed extract was provided orally to four healthy human volunteers. Blood samples were collected immediately before administration of the coriander extract and at 0. 15, 45, 60, 90 and 120 mins. Serum was separated and antioxidant activity and polyphenolic content were determined. The results were compared with the serum levels of phenolic content before the administration of the coriander extract. Thiobarbituric acid reactive substances (TBARS) assay was performed to measure the antioxidant capacity of the serum in treated volunteers. A solution of 2.5 mmol l^{-1} uric acid was used as the standard. The total polyphenol content in serum was determined by the Folin-Ciocalteu method. Biphasic distributions with parallel curves were observed for phenolic content and the antioxidant activity with time in the serum. However, no significant correlation (r^2=0.67) was shown between the phenolic content and antioxidant activity. These results indicate that the phenolic substances may have an indirect effect on antioxidant activity.