

**Effect of a pecan meal on postprandial plasma concentrations of hydro- and lipophilic oxygen radical absorbance capacity (ORAC) in human volunteers**

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**Objective:** Pecans (*Carya illinoensis*) are rich in phenolic substances which may contribute to the body's antioxidant defenses. The objective of this study was to determine the effect of pecans on postprandial antioxidant responses.

**Methods:** Test meals containing 100g whole pecans, 100g ground pecans, or an energy-equivalent amount of refined olive oil as control were administered in a randomized crossover design to 16 healthy volunteers with a 1-week washout. Plasma was sampled at baseline and at intervals up to 24 hours after consumption of the test meal. Oxygen radical absorbance capacity (ORAC) assays were carried out using the procedure described by Prior et al. (2003). Mixed model analyses of data were performed using SAS version 9.2.

**Results:** Least square means±SE for the 5-hour area under the curve (AUC) after the whole pecan, ground pecan and control meals were 80.0±3, 77.2±3.0, 72.8±8 mmol·h/L trolox equivalents for hydrophilic; and 415±16, 412±16, 374±16 mmol·h/L trolox equivalents for lipophilic components, respectively. Both hydrophilic and lipophilic ORAC values increased about 10% ( $p<0.001$ ) following the whole pecan test meals.

**Conclusion:** Although modest, the increases in plasma antioxidant capacity following pecan consumption may be physiologically important and further study is needed.

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