

Pecan-enriched meal inhibits postprandial LDL oxidation in healthy subjects

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Objective: Pecans (*Carya illinoensis*) are a source of tocopherols and phenolics which may confer health benefits. The objective of this study was to test the effect of pecans on postprandial concentrations of circulating phenolic components and oxidized-LDL (ox-LDL) responses.

Methods: Plasma levels of ox-LDL and polyphenols were measured in 16 healthy subjects after consumption of test meals with either 100g of whole pecans, 100g of ground pecans or an energy-equivalent amount of refined olive oil as control in a randomized cross-over design at 1-week intervals. Phenolic concentrations were determined by the Folin-Ciocalteu reagent and oxidized-LDL by ELISA (Alpco Diagnostics, Salem, NH).

Results: The change in log(ox-LDL) over 24 hours was examined using a mixed model statistical approach with repeated measures over time. A significant decrease in log ox-LDL was found at 2 hours (-29.6%, $p=0.04$) and 3 hours (-33.3%, $p<0.02$); however, levels at 1, 5, 8 or 24 hours were not different from baseline. A 21% increase ($p<0.05$) in phenolic 5-hour AUC was observed after the ground pecan compared to control meal (LSM_{fp}SE 8.25_{fp}0.9 vs 6.91_{fp}0.9 mmol-h/L gallic equivalents, respectively).

Conclusion: Pecan consumption may increase postprandial circulating phenolic compounds and protect LDL cholesterol from oxidation.

Funding: National Pecan Shellers Association