

INHIBITION OF POSTPRANDIAL LDL OXIDATION FOLLOWING A PECAN MEAL

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Rational & Objective: Bioactive components in pecans (*Carya illinoensis*) may provide antioxidant protection. The purpose of this study was to determine postprandial concentrations of thiobarbituric acid reactive (TBARS) substances and oxidized-LDL (ox-LDL) in response to pecan enriched meals.

Material & Methods: A randomized cross-over design separated by 1-week intervals was used to test postprandial concentrations of TBARS and ox-LDL in 16 healthy subjects after a breakfast containing whole pecans, ground pecans or an energy-equivalent amount of refined olive oil as control. Plasma was sampled at baseline before the meal and at intervals up to 24 hours after consumption of test meals. TBARS were determined by HPLC and oxidized-LDL by ELISA. A mixed model statistical approach with repeated measures over time was applied.

Results & Findings: There were no significant changes in TBARS from baseline for any of the diets except for an increase at 24 hours for ground pecans (+20.8%, $p < 0.01$). However, there was an ~30% ($p < 0.05$) decrease in the ox-LDL:cholesterol ratio at 2, 3 and 8 hours after the pecan meal not observed following the control meal.

Conclusion: Pecan containing meals may protect against postprandial LDL oxidation.

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