Daily Macadamia Nut Intake and Its Effect on Macronutrient Intake and Nutrient Displacement in Overweight and Obese Adults

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Objectives: To determine the effect of daily intake of macadamia nuts on macronutrient intake and nutrient displacement in overweight and obese adults in a randomized crossover study.

Methods: This randomized cross-over study was comprised of two phases, each lasting eight weeks. Participants (n = 35) were randomly assigned first to either the intervention (15% of calorie needs from macadamia nuts) or control (habitual diet) phase, with a two-week washout followed by the other phase. A total of six 24-hour recalls, two at baseline and two during each phase were conducted. Period adjustment t-test was used to determine the differences in macronutrient intake between the two phases. The displacement of nutrients was done by subtracting the observed intake of a particular nutrient from its' expected intake.

Results: Compared to the control phase, there were marginal increases in the consumption of total energy (mean diff = 145 kcal), total fiber (mean diff = 2 g) and a significant increase in the consumption of total fat (mean diff = 35 g, $P < 0.001$). In addition, there was a significant increase in consumption of palmitoleic acid (mean diff = 5 g) and oleic acid (mean diff = 11 g, $P < 0.001$). However, the total saturated fat intake between the two phases was non-significant. There was a non-significant decrease in protein and carbohydrate intake. The displacement analysis revealed that participants had lower intakes of energy, protein and carbohydrates than predicted, with carbohydrates having the highest displacement of the nutrients.

Conclusions: The inclusion of macadamia nuts is associated with a marginal reduction of carbohydrate intake and an increase intake of monounsaturated fat which may have favorable health outcomes, but remains to be investigated.

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