

The Effect of Cashew Nut on Cardiovascular Risk Factors and Blood Pressure: A Systematic Review and Meta-analysis (P06-117-19)

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Objectives: Preventing cardiovascular disease (CVD) is the top priority in public health. Hyperlipidemia and hypertension are key contributors to CVD which can be easily modified with dietary and lifestyle interventions. The aim of our metaanalysis was to evaluate effects of cashew nut consumption on blood lipids and blood pressure.

Methods: A systematic search was conducted in medical databases. Randomized clinical trials evaluating effects of cashew nuts on either blood lipids, blood pressure or both were eligible for quantitative analysis. Review manager was used for pooling data and metaanalysis.

Results: The meta-analysis used data from five studies with 246 participants receiving cashew nut and 235 receiving placebo. Overall analysis showed a statistically significant reducing effect of cashew nut consumption on TG [WMD: -14.39 , 95% CI (-27.30 , -1.49), Heterogeneity: $\text{Tau}^2 = 153.11$; $\text{Chi}^2 = 22.70$, $\text{df} = 4$ ($P = 0.0001$);

$I^2 = 82\%$). Weighted mean difference with random effects model in both systolic and diastolic blood pressure were decreased significantly in intervention groups than the control groups by 4.06 mm/Hg and 1 mm/Hg in SBP [95% CI, (-5.12 , -3.01), Heterogeneity: $\text{Tau}^2 = 0.00$; $\text{Chi}^2 = 0.25$, $\text{df} = 2$ ($P = 0.88$); $I^2 = 0\%$] and DBP [95% CI, (-1.65 , -0.35), Heterogeneity: $\text{Tau}^2 = 0.00$; $\text{Chi}^2 = 1.30$, $\text{df} = 2$ ($P = 0.52$); $I^2 = 0\%$], respectively. However, no statistically significant changes of other cardiovascular risk markers including TC (WMD: -1.89 , 95% CI [-9.17 , 5.39], $P = 0.61$), LDL-C (WMD: -5.49 , 95% CI [-16.76 , 5.78], $P = 0.34$) and HDL-C. (WMD: -0.67 , 95% CI, [-2.54 , 1.19], $P = 0.48$) were observed after cashew nut consumption.

We investigated the publication bias of the meta-analysis by performing Egger and Begg's tests which did not indicate the presence of potential publication bias (intercept: -0.33 ; standard error: 2.36 ; 95% CI: -7.85 , 7.18 ; $t = 0.14$, $\text{df} = 3$; two-tailed $p = 0.89$).

Conclusions: In conclusion, this metaanalysis of clinical trials shows that incorporating cashews can improve TG levels as well as systolic and diastolic blood pressure with no significant effects on other cardiometabolic factors (i.e., TC, HDL-C, and LDL-C). Further studies are warranted with different calories and dietary compositions.

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