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REVIEW

A Critical Review of the Health Benefits Associated with Chia Seeds (*Salvia Hispanica* L.)

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Abstract

Chia seeds (*Salvia hispanica L.*) have attracted interest for their potential health benefits, yet their overall effectiveness remains uncertain due to limited high-quality evidence and heterogeneity across studies. This umbrella review critically synthesizes data from systematic reviews and meta-analyses of randomized controlled trials (RCTs) to evaluate the effects of chia supplementation on key health outcomes. A comprehensive literature search was conducted in PubMed, Scopus, and Web of Science. Eligible studies assessed outcomes including blood pressure, lipid profiles, inflammation, and anthropometric measures. Methodological quality was evaluated using AMSTAR-2, and certainty of evidence was graded using GRADE. Meta-analyses were performed using Comprehensive Meta-Analysis (CMA) software v3.7, with Hedges' *g* and 95% confidence intervals (CI); significance was set at $P<0.05$. Eight meta-analyses involving approximately 2,500 participants were included. Chia supplementation resulted in significant reductions in diastolic blood pressure (g = -0.550; 95% CI: -0.718 to -0.382), systolic blood pressure (g = -0.119; 95% CI: -0.228 to -0.010), total cholesterol (g = -0.300), LDL-C (g = -0.300), triglycerides (g = -0.200), waist circumference (g = -0.289), and C-reactive protein (g = -0.165). However, a small reduction in HDL-C was also observed (g = -0.093). Overall, chia supplementation may offer modest but statistically significant benefits for improving blood pressure, lipid profiles, inflammation, and central obesity. The certainty of evidence, based on GRADE assessments, ranged from moderate to low for most outcomes. .

Keywords Chia · *Salvia hispanica L.* · Health outcomes · Blood pressure

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