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# Effect of Garcinia cambogia supplement on obesity indices: A systematic review and dose-response meta-analysis

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## Abstract

**Objective:** Several trials have examined the effect of Garcinia cambogia supplement on the weight and body composition, but their results are conflicting. This systematic review and dose-response meta-analysis was designed to determine the effect of Garcinia cambogia supplement on the obesity indices in human randomized controlled trials (RCTs).

**Methods:** PubMed/Medline, Scopus, Cochrane library, and Web of Science databases were searched up to 1<sup>st</sup> January, 2020, to screen relevant trials. The mean changes in the weight, body mass index (BMI), percentage of fat mass (PFM), and waist circumference (WC) from the baseline were used to conduct the present dose response meta-analysis.

**Results:** In the current study, eight trials (including 530 subjects) were included. Garcinia cambogia supplement significantly reduced the weight by -1.34 kg (95% CI: -2.62 to -0.07, P = 0.03), BMI by -0.99 kg/m<sup>2</sup> (95% CI: -1.48 to -0.49, P < 0.001), PFM by -0.42% (95% CI: -0.77 to -0.06, P = 0.02), and WC by -4.16 cm (95% CI: -7.83 to -0.49, P = 0.02) compared with the placebo group. Dose-response analysis revealed that there is a nonlinear association between Garcinia cambogia dosage and changes in the body weight ( $P_{\text{nonlinearity}} = 0.04$ ) and BMI ( $P_{\text{nonlinearity}} < 0.001$ ) not PFM ( $P_{\text{nonlinearity}} = 0.68$ ). There was no publication bias among the studies.

**Conclusion:** Our results suggested that Garcinia cambogia supplement had a significant effect on the body weight, BMI, PFA, and WC as compared with the placebo.

**Keywords:** BMI; Fat mass; Garcinia cambogia; Waist circumference; Weight.

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