

INTERNATIONAL OBESITY, BARIATRIC AND METABOLIC SURGERY SUMMIT AND EXPO

August 23-24, 2017 | Toronto, Canada

Flaxseed consumption could improve adiponectin level and reduce central obesity in overweight or obese women: A randomized controlled clinical trial

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Background: Overweight and obesity are strongly associated with the development of several chronic diseases in human including diabetes, cardiovascular disease and high blood pressure. Flax seed is known as an effective compound for treatment of obesity due to high content of alpha-linolenic acid, fiber and lignans.

Objective: We aim to evaluate the effects of flaxseed consumption on serum adiponectin, leptin, and weight loss in overweight or obese women.

Methods: A randomized controlled clinical trial was conducted on 60 patients with overweight or obesity. Participants were randomly allocated to two groups; a) weight loss diet plus 25 g/day brown milled Flaxseed and b) weight loss diet plus 25 g/day raw powder rice, for 12 weeks. Anthropometric indices and serum leptin and adiponectin were measured at baseline and at the end of the intervention.

Findings: After 12 weeks of intervention, weight, body mass index (BMI) and waist to hip ratio (WHR) decreased significantly in flaxseed group but not the controls. Reduction of waist circumference (WC) ($P=0.001$) and WHR ($P=0.003$) were significantly more in flaxseed group compared to control group. There was a significant reduction in serum leptin and an increase in serum adiponectin of flaxseed group after intervention ($P<0.001$ for both). Increase of adiponectin level was significantly more in flaxseed group compared to the controls ($P=0.002$).

Conclusion: Flaxseed consumption could reduce WC and WHR in a low energy diet. Also it may improve adiponectin level as an important adipocytokine in regulation of body composition and weight. So, flax seeds can be used as a supplement to attenuate central obesity.

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