

## Effects of walnut oil on lipid profiles in hyperlipidemic type 2 diabetic patients: A randomized, double-blind, placebo-controlled trial

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**Background:** The role herbal medicine is now well documented in preventing and controlling diabetes mellitus. The main aim of this study was to evaluate effects of walnut oil consumption on lipid profiles of hyperlipidemic patients with type 2 diabetes.

**Methods:** In a randomized, double blind, placebo-controlled clinical trial, 100 hyperlipidemic type 2 diabetic patients aged 35-75 years were assigned to receive 15cc Persian walnut oil or placebo, per day, for 90 days. The primary outcomes were the lipid profiles. Secondary outcome were hemoglobin A1c, fasting plasma glucose, body mass index, and blood pressure.

**Results:** In the walnut oil group, lipid profiles resulted in a significant decrease in total cholesterol levels from  $234.1 \pm 33$  to  $207.7 \pm 49.7$  mg/dl ( $P < 0.001$ ) and there was a significant decrease for total cholesterol to HDL cholesterol ratio ( $P < 0.001$ ). The mean plasma triglyceride level decreased significantly from  $194.5 \pm 28.2$  to  $173.1 \pm 31.4$  mg/dl after 3 months ( $p < 0.001$ ). LDL cholesterol levels fell from  $144.1 \pm 22$  to  $117.4 \pm 31.8$  mg/dl ( $P < 0.001$ ). Moreover, the mean of HbA1c decreased significantly from  $7 \pm 1.1$  to  $6.7 \pm 1.2$  percent ( $P = 0.001$ ) in walnut oil group. By contrast, there were not any significant changes in the primary and secondary outcomes of the control group after 3 month.

**Conclusions:** The findings of the current study indicated that, by improving lipid profiles, frequent consumption of walnut oil in the daily diet was associated with a coronary artery disease risk factor modulation. Finally, it can be concluded that walnut oil is a good natural remedy in hyperlipidemic patients with type 2 diabetes.

**Keywords:** walnut oil, hyperlipidemia, lipid profiles, type 2 diabetes.