

## **Effect of Almond Supplementation on Glycemia and Cardiovascular Risk Factors in Asian Indians in North India with Type 2 Diabetes Mellitus: A 24-Week Study.**

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*Metabolic Syndrome And Related Disorders*

15(2):98-105.

### **Abstract:**

Type 2 diabetes (T2D) statistics have reached menacing proportions in India. Appropriate dietary intervention, as part of healthy lifestyle, is imperative to curb further spread of this disease.

This pre–post intervention study was conducted in New Delhi, India, to investigate the effects of daily consumption of almonds for 24 weeks in T2D subjects, specifically on measures of glycemia and cardiovascular disease (CVD) risk factors.

In this study, the 24-week intervention period was preceded by a control diet and exercise run-in period of 3 weeks. Raw almonds (20% of energy intake) were provided to the patients for consumption along with diet and physical activity counseling. Patients were assessed for anthropometry, blood pressure, measures of glycemia (fasting blood glucose, glycosylated hemoglobin), lipids [total cholesterol (TC), triglycerides, high-density lipoprotein-cholesterol, low-density lipoprotein-cholesterol, lipoprotein(a)], surrogate marker of atherosclerosis (Pulse wave velocity), and marker of inflammation (high sensitivity C-reactive protein [hs-CRP]) at baseline and after the intervention period. Statistically significant improvement in mean values for various parameters post intervention was as follows: waist circumference ( $P < 0.03$ ), waist-to-height ratio ( $P < 0.005$ ), TC ( $P < 0.002$ ), serum triglycerides ( $P < 0.004$ ), low-density lipoprotein cholesterol ( $P < 0.01$ ), glycosylated hemoglobin ( $P < 0.04$ ), and hs-CRP ( $P < 0.01$ ). A trend toward improvement in pulse wave velocity ( $P < 0.06$ ) was also observed.

The study findings illustrate that incorporation of almonds in a well-balanced healthy diet leads to multiple beneficial effects on glycemic and CVDs risk factors in Asian Indian patients with T2D.