

Effect of green tea and wheat bran on professional drivers with metabolic syndrome: A controlled clinical trial

Mina Shayestefar^{1,*} (Ph.D.C), Mohammad Reza Behboudi² (B.Sc.), Mohammad Hossein Ebrahimi³ (Ph.D.), Majid Mirmohammadkhani^{4,5} (Ph.D.), Mohammad Mohammad Amin Pour² (B.Sc.)

1 Sorkheh School of Allied Medical Sciences, Semnan University of Medical Sciences, Semnan, Iran

2 Student Research Committee, Semnan University of Medical Sciences, Semnan, Iran

3 Environmental and Occupational Health Research Center, Shahroud University of Medical Sciences, Shahroud, Iran

4 Social Determinants of Health Research Center, Semnan University of Medical Sciences, Semnan, Iran

5 Clinical Research Development Unit, Kowsar Educational, Research and Therapeutic Hospital, Semnan University of Medical Sciences, Semnan, Iran

Abstract

Background and aim: Metabolic Syndrome (MetS) is a multifactorial metabolic disorder characterized by hypertension, insulin resistance, dyslipidemia, and impaired glucose homeostasis. The present study aims to investigate the effect of green tea (GT) and wheat bran (WB) on MetS in drivers.

Methods: A controlled clinical trial was conducted with two intervention groups (GT and WB) and a control group on ninety drivers with MetS (thirty participants in each group). Random allocation was done using permuted block randomization. Before the intervention, parametric measurements (height, weight, systolic and diastolic blood pressure, and abdominal circumference) and blood tests (fasting blood sugar (FBS), triglycerides (TG), high-density lipoprotein (HDL)) were checked. The GT group consumed three cups of GT bags (1gr) daily, and the WB group received 3.5 gr of WB powder daily. After two months, measurements and tests were repeated.

Results: There were no significant differences in blood pressure among the groups ($p>0.05$). The GT group showed a decrease in weight, FBS, and TG and an increase in HDL. The WB group also exhibited a decline in FBS and TG and an increase in HDL. A significant increase was found in the HDL level in the GT group before and after the intervention ($p<0.05$).

Conclusion: Green tea consumption has been effective in reducing the number of patients with metabolic syndrome, and green tea and wheat bran can positively increase HDL. Also, green tea can be effective in reducing weight, FBS, and TG in male drivers suffering from metabolic syndrome.

Keywords: Metabolic syndrome; Clinical trial; Wheat bran; Green tea