

Consumption of green tea favorably affects oxidative stress markers in weight-trained men.

OBJECTIVE: This study investigated the effects of the consumption of green tea (GT) for 7 d on biomarkers of oxidative stress in young men undergoing resistance exercise.

METHODS: Fourteen subjects performed a bench press exercise (four sets, 10 to 4 repetitions) after undergoing a period without (control group) or with the intake of GT (GT group; 2 g of leaves in 200 mL of water, three times per day). Blood samples were obtained before and after exercise and analyzed for total antioxidant capacity (ferric reducing ability of plasma [FRAP]), total polyphenols, reduced glutathione (GSH), lipid hydroperoxide (LH) and thiobarbituric acid-reactive substances, creatine kinase (CK), aspartate aminotransferase (AST), xanthine oxidase (XO), hypoxanthine, and uric acid (UA).

RESULTS: In the control group, exercise did not affect the values of LH, thiobarbituric acid-reactive substances, and FRAP, although it did reduce the levels of GSH ($P < 0.05$). In addition, exercise increased CK, AST, and XO activities, although it did not change the values for hypoxanthine or UA. Green tea reduced the postexercise concentration of LH and increased the values of total polyphenols, GSH, and FRAP. GT also inhibited a significant rise in CK and XO activities induced by exercise. Furthermore, GT decreased the AST activity and hypoxanthine and UA concentrations before and after exercise. The assessment of food consumption revealed that the participants had an unbalanced diet, particularly in relation to vitamin E and carotenoids.

CONCLUSION: Consumption of GT, a beverage rich in polyphenols, may offer protection against the oxidative damage caused by exercise, and dietary guidance for sports participants should be emphasized.

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