

## The Effect of Four-Week Resistance Exercise along with Milk Consumption on NT-proBNP and Plasma Troponin I

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**Abstract :** The aim of this study is to investigate four-week resistance exercise and milk supplement on NT-proBNP and plasma troponin I of male students. Concerning the methodology of the study, 21 senior high school students of Ardebil city were selected. The selected subjects were randomly shared in three groups of control, exercise- water and exercise- milk. The exercise program includes resistance exercise for a big muscle group. The subjects of control group rested during the study and did not participate in any training. The subjects of exercise- water experimental group immediately received 400 cc water after exercise and exercise- milk group immediately received 400 cc low fat milk. Control-water groups consumed the same amount of water. 48 hours before and after the last exercise session, the blood sample of the subjects were taken for measuring the variables. NT-proBNP and Troponin I concentrations were measured by ELISA. For data analysis, one-way variance analysis test, correlated t-test and Bonferroni post hoc test were used. The significant difference of  $p \leq 0.05$  was accepted. Resistance training along with milk consumption leads to increase of plasma NT-proBNP, however; this increase has not reached the significant level. Furthermore, meaningful increase was observed in plasma NT-proBNP in exercise group between pretest and posttest values. Furthermore, no meaningful difference was observed between groups in terms of Troponin I after milk consumption. It seems that endurance exercises lead to change in the structure of heart muscle and is along with an increase of NT-proBNP. Furthermore, there is the possibility that milk consumption can lead to release of heart troponin I. The mechanism through which protein supplements have been put on heart troponin I is unknown and requires more research.

**Keywords :** resistance exercise, milk, NT-proBNP, Troponin I

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