

Effects of High Intensity Interval vs. Low Intensity Continuous Training on LXR β , ABCG5 and ABCG8 Genes Expression in Male Wistar Rats

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Abstract : Liver X receptors (LXR) have an essential role in the regulation of cholesterol metabolism, and their activation increase ABCG5 and ABCG8 genes expression for the improvement of cholesterol excretion from the body during reverse cholesterol transport (RCT). The aim of this study was to investigate the effects of high-intensity interval (HIT) and low intensity continuous (LIT) trainings on gene expression of these substances after a high-fat diet in Wistar rats. Materials and Methods: Fifteen male Wistar rats were divided into 3 groups: control group (n = 5), HIT exercise group (n = 5) and LIT exercise group (n = 5). All groups used a high-fat diet for 13 weeks, and the HIT and LIT groups performed the specific training program. The expression of LXR β , ABCG5, and ABCG8 genes was measured after the training period. Findings: Data analysis showed significantly higher levels of LXR β , ABCG5, and ABCG8 gene expression in HIT and LIT groups compared to the control group ($P \leq 0.05$). Conclusion: HIT and LIT trainings after a high-fat diet have beneficial effects on RCT that prevent heart attack. Also, HIT training may have a greater effect on cholesterol excretion during the reverse cholesterol transport mechanism than LIT.

Keywords : liver X receptor, atherosclerosis, interval training, endurance training

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