

عنوان مقاله:

Effect of Eight Weeks High-Intensity Interval Training on PLIN δ and UCP 3 Genes in Skeletal Muscle of Obese Rats

محل انتشار:

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نویسندگان:

Fatemeh Peykar - *Department of sport Physiology, Faculty of Physical Education and Sport Sciences, Shahid Bahonar University, Kerman, Iran*

Mohsen Aminaei - *Department of sport Physiology, Faculty of Physical Education and Sport Sciences, Shahid Bahonar University, Kerman, Iran*

Soheil Aminizadeh - *Department of sport Physiology, Faculty of Physical Education and Sport Sciences, Shahid Bahonar University, Kerman, Iran*

خلاصه مقاله:

Background: Prescription of sports activity is an effective strategy for treating metabolic disorders, including obesity. The study aimed to determine the effect of 8 weeks of high-intensity interval training (HIIT) on PLIN δ and UCP 3 gene expressions in skeletal muscle of obese rats. Methods: Fifty male Wistar rats were randomly divided into two groups of control receiving standard diet (CSD=20) and those with high-fat diet (HFD=30) for obesity induction (10 weeks). Ten rats from each group were selected to evaluate obesity (target weight: 350 \pm 20 g and serum triglyceride). The rest of high-fat diet group were randomly divided into 2 subgroups of obese control (OC=10) and HIIT high-fat diet (HIITHFD=10) and 10 in control standard diet rats were applied as the control standard diet in exercise phase. The HIIT protocol on the treadmill included 8 weeks, 5 sessions per week (10-degree incline) with 20 bouts (2 minutes maximum speed), and 1-minute active recovery. PLIN δ and UCP 3 gene expressions in the gastrocnemius muscle were measured by real time-PCR and plasma triglycerides by ELISA. Results: The triglyceride (TG) level was higher in CSD compared to the HFD group. The weight, TG level and PLIN δ , and UCP 3 gene expressions significantly reduced in the experimental group compared to the CSD and OC groups. Conclusion: The values of energy intake, body weight, and PLIN δ and UCP 3 gene expressions denoted to activated thermogenesis and fatty oxidation. Physical activity resulted in weight loss, and decreased gene expression to deal with this trend.

کلمات کلیدی:

High-Intensity Interval Training, PLIN δ , UCP 3 , Skeletal muscle, Obese

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