

عنوان مقاله:

The Effects of Six Weeks Endurance Training on Soleus and Extensor Digitorum Longus Myonuclear Number in Diabetic Male Wistar Rats

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خلاصه مقاله:

Objective: The importance of skeletal muscle as the largest metabolic tissue in diabetes remains more unknown than other metabolic tissues of the body. The purpose of this study was to evaluate the effects of six weeks endurance training on the soleus and extensor digitorum longus (EDL) myonuclear number in diabetic male wistar rats. **Materials and Methods:** In this study, 40 male wistar rats about 10 weeks old and weighing 200-250 grams allocated randomly in four groups of diabetic training (DT), diabetic control (DC), healthy training (HT) and healthy control (HC). For induction of diabetes, DT and DC groups were intraperitoneally injected by streptozotocin (STZ), and the training groups performed incremental endurance training on the treadmill for six weeks. Forty eight hours after the last training session, all rats were killed and tissue samples of soleus and EDL muscles were removed and fixed in 10% buffered formalin. The sections were prepared with six μ m thickness and stained with hematoxylin-eosin. The myonuclear numbers were counted in prepared plates by randomly style at the ten field microscopy. Data analysis was done with One-way and two-way ANOVA and Tukey's post hoc test. **Results:** Our findings showed that myonuclear number in diabetic groups was lower in both soleus and EDL muscles (P-value: 0.0001). furthermore in DT and HT groups, the number of nuclei increased significantly (P-value: 0.0001). **Conclusion:** Endurance physical activities as a non-medicinal strategy can play an important role in maintenance of the structure and the function of skeletal muscles and thereby improving the quality of life in diabetes.

کلمات کلیدی:

Diabetes mellitus, Endurance training, Soleus, Extensor digitorum longus

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