

Morphometry and stereology of the triceps brachialis muscle in young and aged rats submitted to strenght exercise training

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The strength program can result in meaningful increases in the muscular mass, in the hypertrophy of muscular fibers and in the performance related to strength. Throughout time many studies with animal models have been trying to simulate a response to the physical training in human beings; however it is very difficult to accomplish an ideal muscular strength training that stimulates the muscular skeletal adaptation. These difficulties are associated with the strength training program for rat model. Therefore the objective of this study was to test the efficiency of a protocol using different loads applied to elderly rats and analyze the possible quantitative and qualitative alterations that may occur in the brachial triceps muscle. 15 male Wister rats were used which were divided into 3 groups: Initial Control (CI), sacrificed at 13 months, Final Control (CF), sacrificed at 16 months and Trained (T) sacrificed at 16 months. The trainings took place 5 times a week, 6 times a day for 16 weeks. The overload imposed to the animals was established according to an overload table for elderly proposed by HEYWARD (1998). The animals presented a progressive performance level during the whole training protocol, by the end of week 16; the animals were carrying 570-750 g of overload, about 161% to 201% of the initial training load. In comparison of the area size of the brachial triceps muscle myocytes from groups CI and CF there weren't meaningful differences. In comparison of the groups CF and T was verified a meaningful increase in the myocytes area size, the increase was 45% compared to group CF. he meaningful gains in the myocytes area depend on the training program that must contain progressive and intense loads. Light and moderate loads possibly aren't enough to minimize the muscular mass loss caused by aging. Nevertheless, more studies are required to make the safe usage of the animal data in human beings practical.