Ultrastructural Muscle Damage In Young Versus Older Men After High-Volume, Heavy Resistance Strength Training.

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OBJECTIVES:
The purpose of this study was to compare the effects of heavy resistance strength training on ultrastructural muscle damage in young and older men. Fifteen healthy untrained men, 7 young (20-30yr) and 10 older (65-75yr) completed a 9 week unilateral leg extension, heavy resistance strength training program, consisting of 5 sets of 5-20 repetitions 3 days a week. Biopsies of leg muscle were taken before and after the training program to determine muscle damage.

RESULTS:
Both the young and older men increased strength significantly, 26 and 25% respectively. The older men also showed a significant increase in muscle strength (13%) in the untrained leg (attributed to cross-education of the limb). Biopsies after the 9 weeks of HRST revealed that muscle damage was significant in both training groups, however no significant differences existed between groups.

SUMMARY:
Past research has indicated that older skeletal muscle may be more susceptible to muscle damage than young muscle. This is the first study to show that high-volume HRST leads to similar increases in muscle damage in both young and older men. The data reveals heavy resistance strength training results in significant strength gains for young and older men with no significant difference in risk of muscle damage.

KEISER PIECES USED:
Leg extension machine.

Published in the Journal of Applied Physiology, 1999 Jun;86(6):1833-40