Fish-oil supplementation enhances the effects of strength training in elderly women.

Rodacki CL, Rodacki AL, Pereira G, Naliwaiko K, Coelho I, Pequito D, Fernandes LC.

Paraná Federal University, Setor de Ciências Biológicas, Curitiba, Paraná, Brazil.

BACKGROUND: Muscle force and functional capacity generally decrease with aging in the older population, although this effect can be reversed, attenuated, or both through strength training. Fish oil (FO), which is rich in n-3 (omega-3) PUFAs, has been shown to play a role in the plasma membrane and cell function of muscles, which may enhance the benefits of training. The effect of strength training and FO supplementation on the neuromuscular system of the elderly has not been investigated.

OBJECTIVE: The objective was to investigate the chronic effect of FO supplementation and strength training on the neuromuscular system (muscle strength and functional capacity) of older women.

DESIGN: Forty-five women (aged 64 ± 1.4 y) were randomly assigned to 3 groups. One group performed strength training only (ST group) for 90 d, whereas the others performed the same strength-training program and received FO supplementation (2 g/d) for 90 d (ST90 group) or for 150 d (ST150 group; supplemented 60 d before training). Muscle strength and functional capacity were assessed before and after the training period.

RESULTS: No differences in the pretraining period were found between groups for any of the variables. The peak torque and rate of torque development for all muscles (knee flexor and extensor, plantar and dorsiflexor) increased from pre- to posttraining in all groups. However, the effect was greater in the ST90 and ST150 groups than in the ST group. The activation level and electromechanical delay of the muscles changed from pre- to posttraining only for the ST90 and ST150 groups. Chair-rising performance in the FO groups was higher than in the ST group.

CONCLUSIONS: Strength training increased muscle strength in elderly women. The inclusion of FO supplementation caused greater improvements in muscle strength and functional capacity.

PMID: 22218156