

Protein Metabolism In Rheumatoid Arthritis and Aging: Effects on Muscle Strength Training and Tumor Necrosis Factor a

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OBJECTIVES:

To determine the effects of rheumatoid arthritis on whole-body protein metabolism, the researchers examined 4 separate groups which included both men and women: Group 1= 8 untrained subjects, aged 25-65 years with rheumatoid arthritis, Group 2= 8 untrained healthy young subjects, aged 22-30 years, and Group 3= 14 untrained healthy older subjects, aged 65-80. Subjects in groups 1 and 2 underwent 12 weeks of strength training. Group 3 subjects were randomly assigned to either a 12 week strength training group (Group 3A) or a non-strength training control group (Group 3B). Two times per week, all subjects warmed up by performing stretching exercises in the pool and by swimming or water walking for 10 minutes. Groups 1, 2 and 3A then proceeded to strength training.

RESULTS:

Subjects with rheumatoid arthritis had higher rates of protein breakdown than did young or elderly healthy subjects. This increased protein breakdown contributes to cachexia (wasting away). In addition various substances within the body (such as tumor necrosis factor a) closely correlate with protein metabolism and these relationships are profoundly disturbed in patients with rheumatoid arthritis. There were no changes in protein metabolism or hormone levels as a result of strength training among any of the groups of subjects. However, all groups participating in the strength training improved strength and functional status.

SUMMARY:

These results suggest that strength training does not change the processes responsible for higher rates of protein breakdown in individuals with rheumatoid arthritis. However, these processes do not prevent the successful use of strength training to reverse muscle weakness. Strength training can be used to improve strength and functional status in those with rheumatoid arthritis.

KEISER PIECES USED:

Leg extension, chest press, lat pull down, upper back, abdominal.