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Estrogen replacement and skeletal muscle: mechanisms and population health.

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Abstract

There is a growing body of information supporting the beneficial effects of estrogen and estrogen-based hormone therapy (HT) on maintenance and enhancement of muscle mass, strength, and connective tissue. **These effects are also evident in enhanced recovery from muscle atrophy or damage and have significant implications particularly for the muscular health of postmenopausal women. Evidence suggests that HT will also help maintain or increase muscle mass, improve postatrophy muscle recovery, and enhance muscle strength in aged females**. This is important because this population, in particular, is at risk for a rapid onset of frailty. The potential benefits of estrogen and HT relative to skeletal muscle function and composition combined with other health-related enhancements associated with reduced risk of cardiovascular events, overall mortality, and metabolic dysfunction, as well as enhanced cognition and bone health cumulate in a strong argument for more widespread and prolonged consideration of HT if started proximal to menopausal onset in most women. Earlier reports of increased health risks with HT use in postmenopausal women has led to a decline in HT use. However, **recent reevaluation regarding the health effects of HT indicates a general lack of risks and a number of significant health benefits of HT use when initiated at the onset of menopause**. Although further research is still needed to fully delineate its mechanisms of action, the general use of HT by postmenopausal women, to enhance muscle mass and strength, as well as overall health, with initiation soon after the onset of menopause should be considered.