

## **Changes in muscle thickness over 12 months in older frail women nursing home residents**

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**Introduction:** The reduction of skeletal muscle mass that occurs with aging (sarcopenia) leads to disability in the elderly population. **Purpose:** To investigate the prevalence of sarcopenia among older frail nursing home residents and to examine the rate of change in muscle thickness (MT) over 12 months. **Methods:** B-scan ultrasound equipment with a 5MHz transducer was used to measure MT on 16 older frail women nursing home residents (age = 85.0 yr, height = 143.9 cm, mass 45.4kg) at six sites (triceps, biceps, subscapular, abdomen, quadriceps, and hamstrings). Sarcopenia was defined as 2 SD below the MT norm for Japanese young men and women (Abe and Fukunaga, 1995). **Results:** MT of quadriceps for all subjects was 2 SD below the normal MT of young adults at baseline. The prevalence of sarcopenia in triceps, biceps, abdomen, subscapular, and hamstrings was 25-93% at baseline. After 6 months of living in a nursing home, the prevalence of sarcopenia for the upper body and trunk increased ( $p < 0.05$ ). Biceps and triceps MT decreased by 37% and 32%, respectively, after 12 months. Abdomen and subscapular MT decreased by 29% and 52%, respectively. Quadriceps and hamstrings MT decreased by 18% and 24%, respectively. **Conclusion:** Residing in a nursing home and maintaining an inactive lifestyle is associated with a decrease of upper limb and trunk MT that parallels the loss of muscle mass in the lower limbs. Future research should address interventions that attenuate this muscle loss. **Keywords:** Muscle Thickness; Nursing Home; Inactive Lifestyle; Sarcopenia.