

**Abstract Title:** Differences in Quadriceps Muscle Layer Thickness (QMLT) size by physical activity in low-risk institutionalized older adults: A cross-sectional study  
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**Introduction:** The diagnosis of sarcopenia is based on a new definition which includes low muscle mass and strength and low physical performance or any combination of these factors. Muscle mass can be assessed by examining quadriceps muscle layer thickness (QMLT) using ultrasound technology. However, currently, minimal research has been completed examining sarcopenia in low risk institutionalized older adults.

**Objective:** To determine if there was an association between physical activity and QMLT size.

**Methods:** This cross-sectional study is one part of a larger research project whereby evaluation of QMLT and physical activity in 34 institutionalized elderly individuals without significant morbidity was undertaken. QMLT was measured using FUJIFILM SonoSite M turbo ultrasound machine. Physical activity was classified using the MET score into inactive (none to light activity [n=15]) or active (light/moderate to moderate activity [n=19]).

**Statistical Analysis:** Descriptive analysis and Pearson Correlation Coefficients were used to examine variables and factorial ANOVA were used to determine significance.

**Results:** Mean age was  $83.6 \pm 9.5$  years and an overall group mean QMLT [cm] of  $2.58 \pm 0.82$  cm. Not surprising, age was negatively correlated with QMLT [ $r=-0.668$ , pactive females (n=16), QMLT:  $2.6 \pm 0.7$  cm and inactive females (n=8):  $2.4 \pm 1.1$  cm ( $p=0.3454$ ). Among men, **active** men (n=3), QMLT:  $2.8 \pm 0.6$  cm while inactive men (n=7) QMLT:  $2.8 \pm 0.9$  cm. Both protein (g/kg) and caloric intake (kcal/kg) were not influenced by activity level ( $p=0.3191$  and  $p=0.2835$  respectively). Gender also had no effect on either protein or energy intake.

**Conclusion:** QMLT was not associated with physical activity, protein or caloric intake, likely due to a low sample size. Future research is ongoing.