**THIGH MUSCLE AND SUBCUTANEOUS TISSUE THICKNESS MEASURED USING**

**ULTRASOUND IMAGING IN OLDER FEMALES LIVING IN EXTENDED CARE: A**

**PRELIMINARY STUDY** *Age and Ageing*, Volume 47, Issue suppl\_2, 1 April 2018, Pages ii2–ii3, <https://doi.org/10.1093/ageing/afy042.04>

**Published:** 27 March 2018

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**Background:** Thigh tissue thickness has not been examined in older females living in extended

care in UK as an indicator of musculoskeletal health. The present study examined the feasibility of

using ultrasound imaging to measure the thickness of superficial (fat) and deep layers (muscle) of

the thigh in older females living in extending care.

**Methods:** In 10 older females in extended care (aged 80-98 years, mean 88±6.8; body mass:

56.5±12.6 kg) images of the anterior thigh (dominant) were taken in supine using B-mode

ultrasound imaging. Superficial and deep layers were measured and percentage thickness was

calculated. Independent t-tests compared data from those in extended care to 10 sedentary

females living independently (aged 80-90 years, mean 84±3.6; body mass: 61.6±10.0kg).

**Results:** Thickness of the superficial layers was not significantly different between the two groups

(CI -0.017-0.815, p=0.059). However, those living in extended care had greater (p<0.001)

muscle thickness (mean 2.75±0.48cm) than those living independently (mean 1.83±0.3cm),

which was similarly significant when normalised for body mass (extended care 0.51±0.16;

independent living 0.30±0.06).

**Conclusions:** These novel findings showed it is feasible to use ultrasound to measure muscles in

older females in extended care and that muscle thickness was larger than in those living

independently. Extended care facilities include regular meals, complying with regulated nutritional

standards and provision of social physical activities that may account for larger muscles in this

group. Those living independently may lack support to ensure basic nutritional and physical

activity requirements, which may put them at risk of sarcopenia and frailty.