

## Potential Diurnal Variation in Dual X-ray Absorptiometry Collected Skeletal Muscle Mass Measures: A Pilot Study

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Category: Masters

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### ABSTRACT

Skeletal muscle mass (SKMM) is ~30 to ~40 % of total body weight. Measuring SKMM is an important assessment for both exercise and nutritional research. There is biological variation in dual X-ray absorptiometry (DXA) estimates related to subject presentation, changes in tissue hydration, as well as GI tract contents. The consumption of water alone may increase lean mass estimates. **PURPOSE:** The purpose of this study is to examine how normal daily activities (e.g. eating, sleeping, exercise) may influence SKMM measures using DXA. **METHODS:** (Mean  $\pm$  SEM; n = 8; ht: 170.2  $\pm$  8.1 cm; wt: 70.6  $\pm$  5.1 kg; body fat 22.7  $\pm$  3.0 %; appendicular lean soft tissue (ALST): 24.94  $\pm$  2.9 kg). Each participant underwent an AM (0600-0800 h) and PM (1800-2000 h) DXA (Lunar Prodigy; GE Healthcare, Madison, WI) and BIA (720; InBody, Cerritos, CA) scan, and completed a 3-day dietary recall using Myfitnesspal. **RESULTS:** No differences were found between AM and PM on lean body mass (LBM; kg), ASLT (kg), SKMM (kg), body fat (kg), total body water (kg), extracellular body water (kg), and intracellular body water (kg). However, carbohydrate (CHO) and Kcal intake were different (p = .04, respectively). **CONCLUSION:** Currently, it appears that in college aged participants, there is minimal change in SKMM from normal daily activities between the morning and evening DXA body composition measures, which may be due to an inconsistency in daily dietary CHO intake.