

Morning versus Afternoon Body Mass in Free- Living or Controlled Euhydration

¹MADISON M. POMROY, ¹MARCOS S. KEEFE, ²NIGEL C. JIWAN, ¹JAN-JOSEPH S. ROLLOQUE, ²CASEY R. APPELL, ³COURTENEY L. BENJAMIN, ²HUI-YING LUK, ¹YASUKI SEKIGUCHI

¹Sports Performance Laboratory, Department of Kinesiology and Sport Management, Texas Tech University, Lubbock, Texas;

²Applied Physiology Laboratory, Department of Kinesiology and Sport Management, Texas Tech University, Lubbock, Texas;

³Department of Kinesiology, Samford University, Birmingham, AL

Category: Undergraduate

Advisor / Mentor: Sekiguchi, Yasuki (yasuki.sekiguchi@ttu.edu)

ABSTRACT

The standard protocol to assess hydration status is by measuring body mass in the early morning without controlling fluid intake. However, obtaining first-morning body mass is not necessarily feasible for many situations, for example, most physical activities take place in the afternoon. Thus, first-morning body mass might not be practical to assess hydration status. **PURPOSE:** To investigate first-morning body mass versus afternoon body mass in free- living and controlled euhydration. **METHODS:** 9 males (age: 21 ± 2 ; mass: 79.7 ± 17.8 kg) and 5 females (age: 22 ± 2 ; mass: 60.5 ± 13.6 kg) visited the laboratory in the morning (7:00-9:00am) and afternoon (2:00-4:00pm) for six days to measure their nude body mass and urine specific gravity (USG). Participants were in the free-living (FL) condition for the first three consecutive days, and then in a euhydrated (EUH) state ($USG < 1.020$) for the last three consecutive days, with a 1-day break in the middle. Repeated measures ANOVAs were performed to examine the differences. **RESULTS:** There were no interactions between FL and EUH with morning and afternoon in USG (Morning-FL, 1.017 ± 0.005 ; Afternoon-FL, 1.012 ± 0.006 ; Morning-EUH, 1.011 ± 0.004 ; Afternoon-EUH, 1.007 ± 0.004 ; $p = 0.390$). No statistically significant differences were found between morning and afternoon in both FL and EUH controlled (Morning-FL, 72.7 ± 18.3 kg; Afternoon-FL, 72.0 ± 18.1 kg; Morning-EUH, 72.9 ± 18.1 kg; Afternoon-EUH, 73.1 ± 18.1 kg, $p = 0.661$). **CONCLUSION:** There is no difference between morning and afternoon body mass, regardless of the hydration status. This means that first morning body mass is no more, or less, accurate than afternoon.