

### INTRODUCTION

- Hydration state and body mass loss through sweating are important to consider when developing training programs, particularly in lower division female track and field (T&F) where resources might be limited and the population is less studied.
- Hydration state can be determined by urine specific gravity (USG).
- Percent body mass (%BM) loss indicates sweat loss, and can be calculated as the difference between body mass before and after exercise.
- Purpose:** to investigate differences in pre-exercise USG and %BM loss after exercise in female Division II collegiate track and field athletes.

### METHODS

- 25 female T&F athletes ( $21 \pm 2.7$  y,  $165.9 \pm 8.9$  cm,  $62.4 \pm 16.0$  kg) were divided into three groups:
  - distance runners (n = 11)
  - power athletes (n = 9)
  - throwers (n = 5)
- Urine samples were collected, and USG was determined with a refractometer.
- Nude body mass was measured before and after exercise and %BM change calculated as:

$$\%BM \text{ change} = \left( \frac{\text{Post-Mass} - \text{Pre-Mass}}{\text{Pre-Mass}} \right) \times 100$$

# DIFFERENCES IN PRE-EXERCISE HYDRATION LEVELS AND BODY MASS LOSS DURING EXERCISE AMONG FEMALE DIVISION II TRACK AND FIELD ATHLETES

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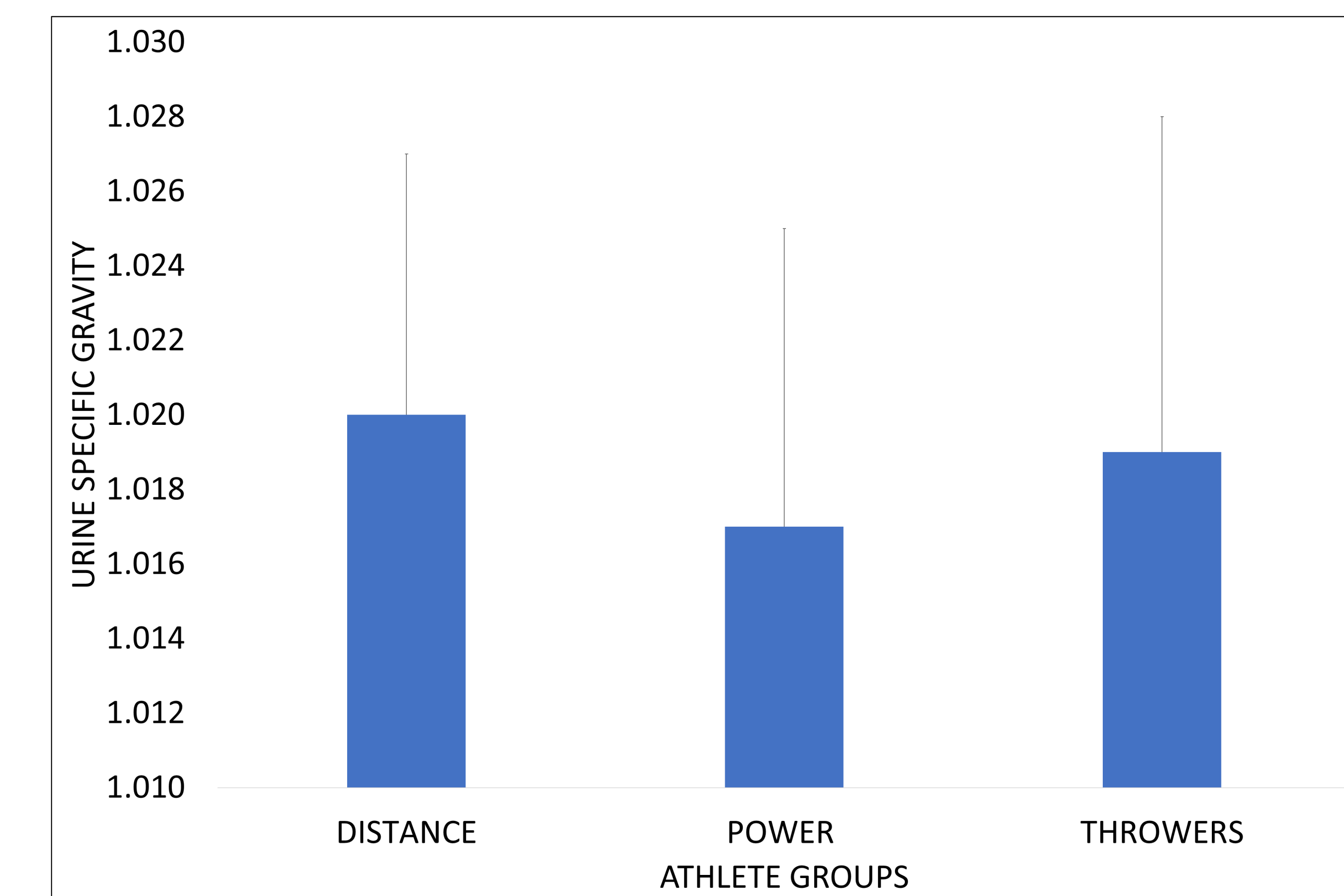
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Compared to throwers and power athletes, distance runners experienced the greatest decrease in % body mass loss potentially due to a combination of greater sweating and lack of fluid availability during training.

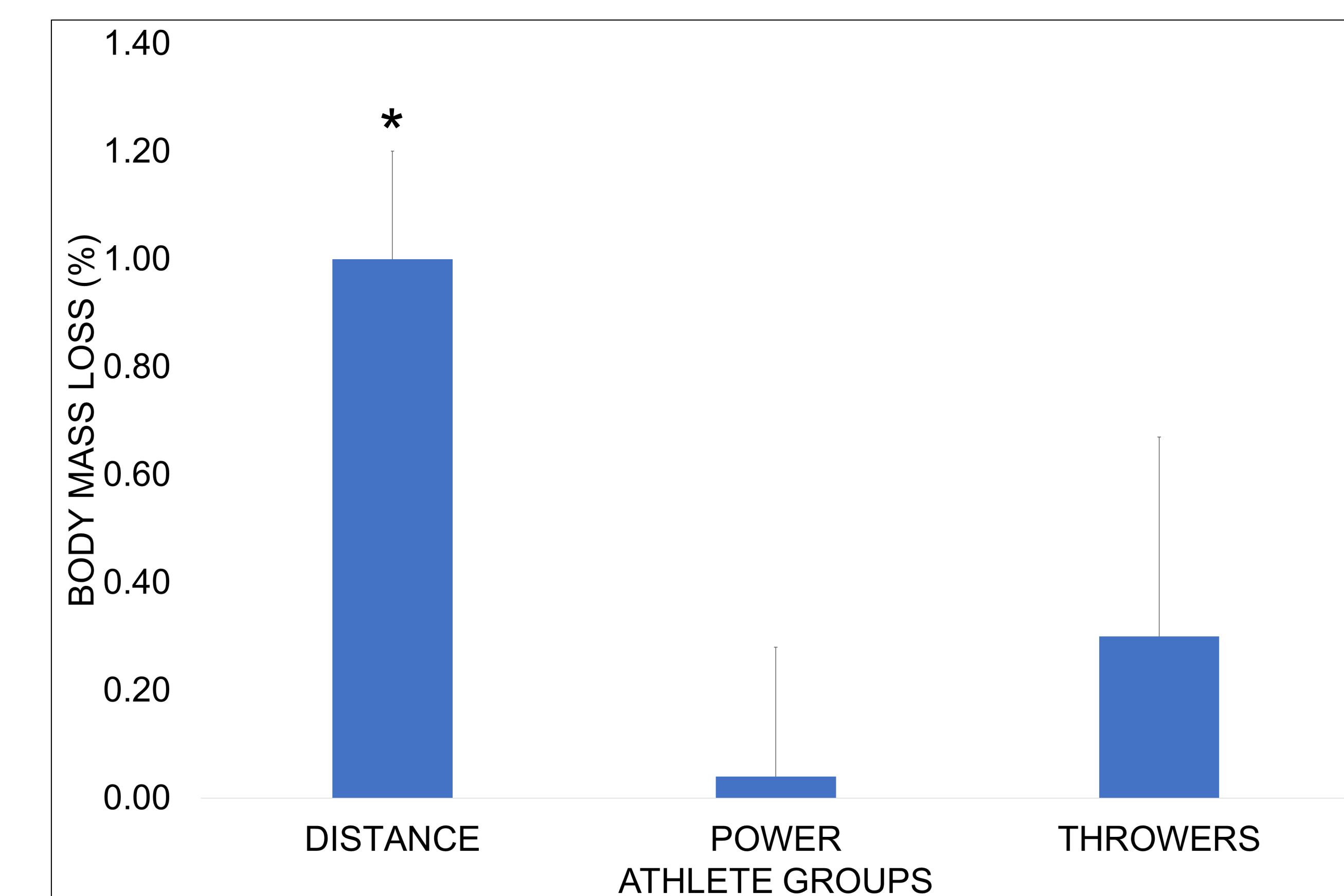


**Figure 1.** Experimental Design: Before exercise, a urine sample given by each participant followed by measurement of nude body mass. During exercise urine samples were examined with a refractometer to measure urine specific gravity. After exercise, participants' nude body mass was measured again to calculate % body mass loss.

### RESULTS



**Figure 2.** Data are presented as mean ± SD. Pre-exercise USG was not different among groups (distance runners:  $1.020 \pm 0.007$ ; power athletes:  $1.017 \pm 0.008$ ; throwers:  $1.019 \pm 0.009$ ;  $F(2, 22) = 0.43$ ,  $p = 0.658$ ).



**Figure 3.** Data are presented as mean ± SD. \*Distance runners exhibited significantly greater ( $F(2, 22) = 37.93$ ,  $p < 0.001$ ) body mass loss ( $-1.00 \pm 0.20\%$ ) than power athletes ( $-0.04 \pm 0.24\%$ ,  $p < 0.001$ ) and throwers ( $-0.30 \pm 0.37\%$ ,  $p < 0.001$ ).

### ACKNOWLEDGEMENTS

Thank you participants, peers, mentors/advisors, and everyone who helped with this research and presentation