

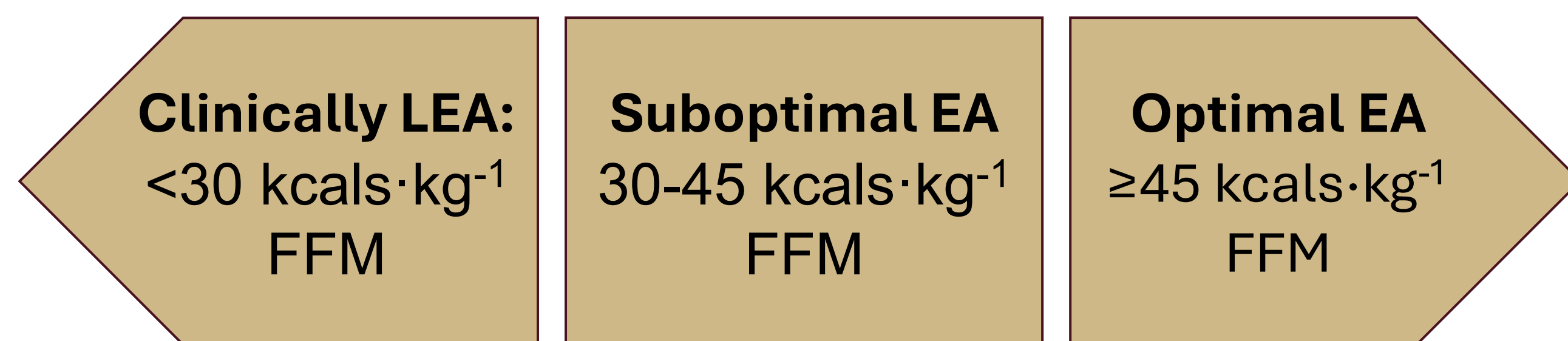
# Energy Availability, Physical Fitness, and Macronutrient Intake in Air Force Reserve Officer Training Corps Cadets

Courtney T. Lesser<sup>1</sup>, Hannah K. Eberhardt<sup>1</sup>, Raphael Schilling<sup>1,2</sup>, Kyle A. Smith<sup>1</sup>, Robert C. Hickner<sup>1,4</sup>, Patrick G. Saracino<sup>3</sup>, Michael J. Ormsbee<sup>1,4</sup>

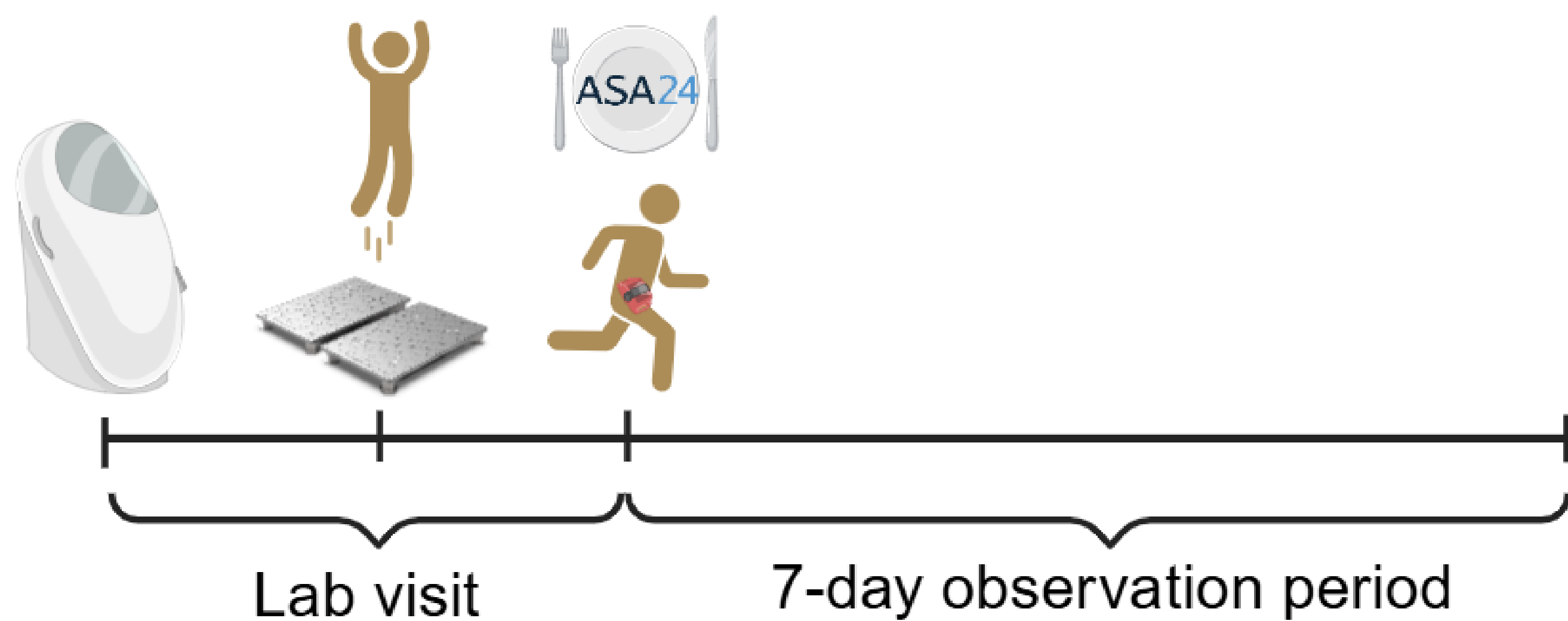
**FSU** | **FLORIDA STATE UNIVERSITY** <sup>1</sup>Institute of Sports Sciences and Medicine, Florida State University, Tallahassee, FL; <sup>2</sup>Institute of Sports and Sports Science, Karlsruhe Institute of Technology, Karlsruhe, Germany; <sup>3</sup>Department of Human Performance and Health, University of South Carolina Upstate, Spartanburg, SC; <sup>4</sup>Department of Biokinetics, Exercise and Leisure Sciences, University of KwaZulu-Natal, Durban 4000, South Africa

## INTRODUCTION

- Low Energy Availability (LEA), an imbalance between energy intake and exercise energy expenditure, has been associated with decrements in physical fitness.<sup>1</sup>
- Reserve Officer Training Corps (ROTC) cadets have been shown to under-consume protein (PRO) and carbohydrates (CHO) compared to the military dietary reference intakes (MDRIs).<sup>2,3</sup>
- This study aimed to examine correlations between EA, dietary habits, and performance in Air Force Reserve Officer Training Corps (ROTC) cadets.

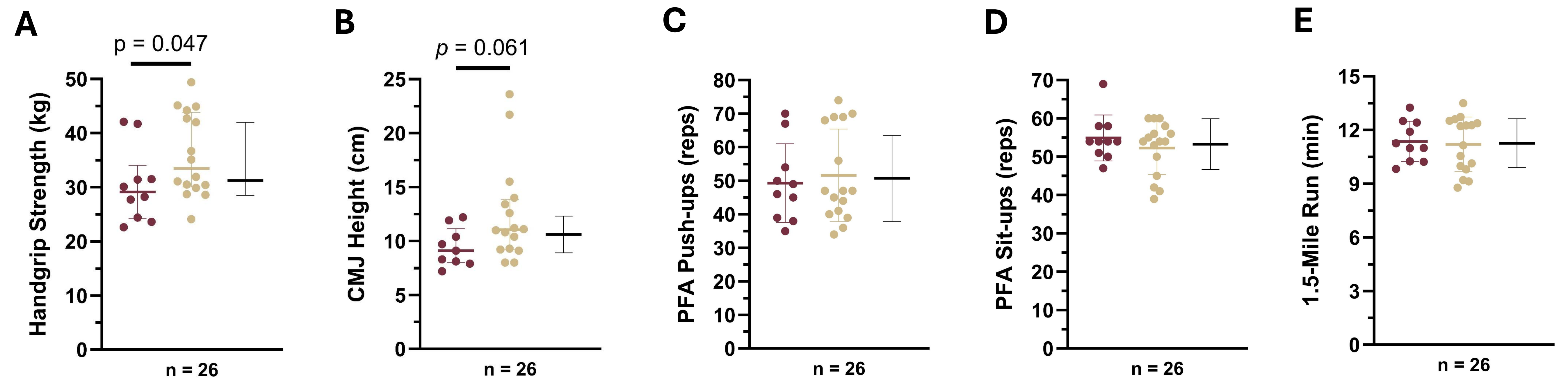


## METHODS



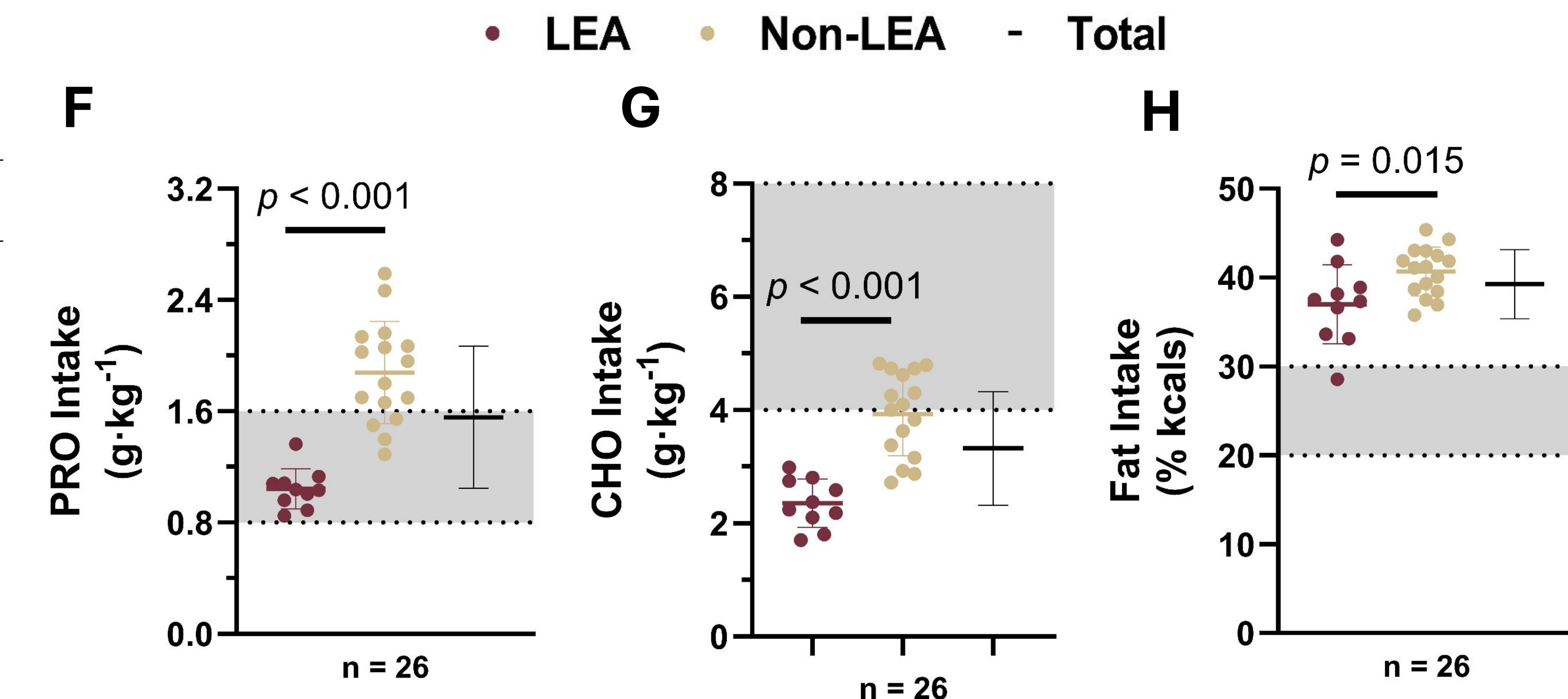
- Body composition assessed using a Bod Pod.
- Fitness Test battery: handgrip strength, countermovement jump (CMJ), and the Air Force Physical Fitness Test (PFA): max push-ups, max sit-ups, and 1.5-mile run.
- EA averaged over 7-days:
  - EI and macronutrient intake assessed via digital food record
  - EEE assessed via accelerometer

## RESULTS



**Table 1. Participant Characteristics**

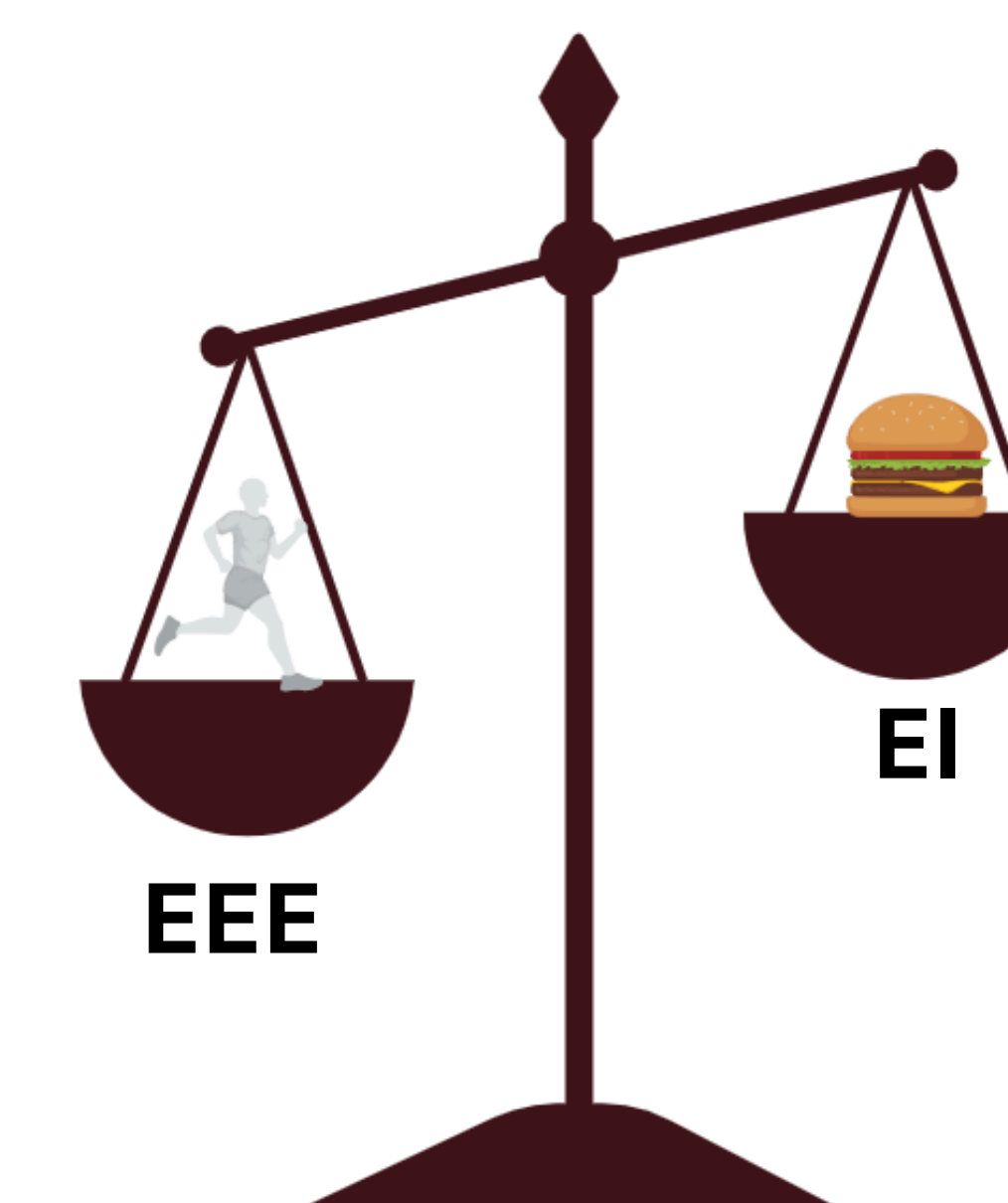
	LEA	No-LEA	p-value	Cohen's d
Age (yrs)	20 ± 1	19 ± 1	0.681	0.17
Height (cm)	169.1 ± 7.6	173.3 ± 9.7	0.257	0.47
Weight (kg)	65.0 ± 12.3	71.4 ± 8.7	0.116	0.66
Body Fat %	24.2 ± 5.3	20.2 ± 7.8	0.175	0.56
FFM (kg)	49.3 ± 9.9	57.3 ± 9.5	<b>0.049</b>	0.83
FM (kg)	15.8 ± 4.9	14.4 ± 5.8	0.540	0.25



Figures A-E represent physical performance markers. Figures F-H represent macronutrient intake. Shaded regions indicate MDRIs (PRO: 0.8-1.6 g·kg, CHO: 4-8 g·kg, fat: 20-30% kcals<sup>-1</sup>).

## CONCLUSIONS AND APPLICATION

- Most cadets presented with low or suboptimal EA, with many failing to meet MDRIs for CHO.
- LEA did not cause widespread performance decrements in those with LEA.
- This suggests short-term LEA in a free-living environment may not cause performance declines in ROTC cadets.
- Nutrition education should be emphasized in ROTC cadets as they transition into active-duty roles.



## REFERENCES

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