

# Energy Balance, Lean Body Mass, Resting Metabolic Rate and Menstrual Function in Female Collegiate Runners

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## Introduction

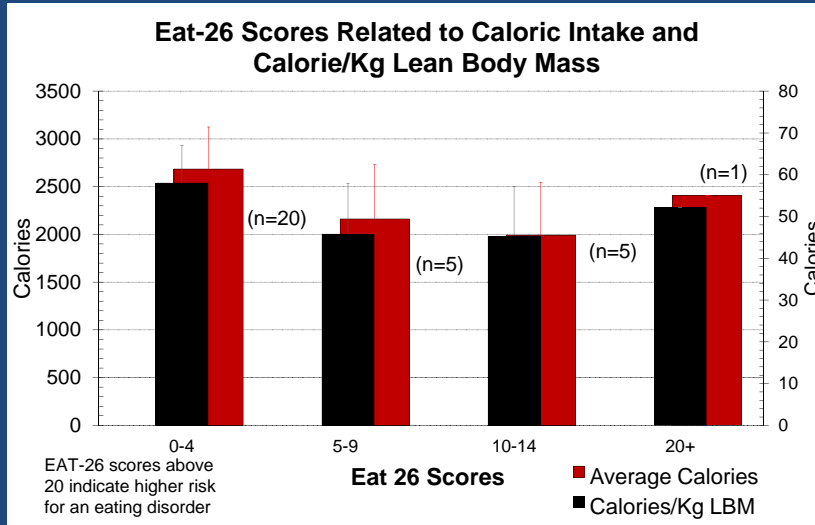
- Female athlete triad is 2-3 times more prevalent in weight dependent sports, such as distance running
- Female athlete triad is the combination of menstrual disturbances, decreased bone density and low energy availability
- Energy availability is the primary cause of female athlete triad
- Higher Eat-26 scores are higher in runners compared to non-runners (1)
- 19% of female distance runners report experiencing an eating disorder (2)

## Purpose

- Determine energy availability and compare RMR and LBM in female runners from pre-season, peak season and post-season
- Evaluate Eating Attitudes Test (EAT-26) scores

## Materials and Methods

- IRB approval was received and 31 cross-country runners participated an 11 week study
- Before Study:** Completed EAT-26 and bone health history survey
- Three test points (pre-season, peak season and post-season):** Measured height, weight, LBM, RMR and collected 3-Day Diet Logs
- Diets were analyzed using SuperTracker (choosemyplate.gov)
- Whole season:** Recorded exercise log and menstrual cycle



## Conclusion

- The team averaged 53 cal/kg lean body mass over the entire season, well above the critical point of 30 cal/kg lean body mass
- Only 1 out of 31 participants (3%) is at risk for an eating disorder based on EAT-26 scores
- Runners met caloric needs reflected by maintenance of RMR and lean body and satisfactory EAT-26 scores

## Results

- There were no significant changes between pre-, peak and post-season in lean body mass (100.6, 101.3, 100.6 kg) and energy intake (2469, 2556, 2420 calories)
- EAT-26 scores were significantly negatively correlated with pre-season calorie intake
- RMR increased from pre-season to post-season



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## References

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