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
- 19% of female distance runners report experiencing an eating disorder

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

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

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 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

Acknowledgements
Special thanks to the College of St. Benedict cross-country team, Coach Robin Balder-Lanoue and athletic director Carol Howe-Veenstra for their cooperation. Thanks to Kristina Burk, Hannah Maxbauer, and Annie Milbert for their assistance with data collection. Thanks to Dr. Wielkiewicz assistance with statistical analysis.

References