

*Consumer Abstract*

Previous research has shown that many adolescent female runners have lower bone mineral density (BMD) than expected for their age, a somewhat surprising finding given that impact sports are often associated with stronger bones. Evidence suggests that female runners either intentionally restrict calories or unintentionally do not eat enough calories to account for the energy expended during training. As a result, they place themselves at risk for not building and strengthening their bones during the critical adolescent years when bone mineral accrual should be at its fastest rate. In order to better understand the cause of low bone mineral density in female runners, Dr. Nichols' research group plans to measure food intake, physical activity and caloric expenditure, calcium loss through the skin while sweating, BMD, and blood markers of bone formation and loss in female high school distance runners. It is anticipated that the results from this study will help researchers better understand the relationship between bone health, energy balance, and calcium intake/loss in adolescent female runners.