

Preseason Training: A Catalyst for Body Composition Changes in NCAA DII Women's Basketball Players

JARED WARD, MAYA CAON, & ZACHARIAS PAPADAKIS

Human Performance Laboratory; Department of Health Promotion and Clinical Practice; Barry University; Miami Shores, FL

Category: Undergraduate

Advisor / Mentor: Papadakis, Zacharias (zpapadakis@barry.edu)

ABSTRACT

Preseason training is essential for preparing NCAA Division II women's collegiate basketball players for the demands of their season. Given the limited time and strict regulations imposed by NCAA Division II rules, teams must optimize their workouts. While strength and conditioning are prioritized, the impact on body composition during this short period remains uncertain. **PURPOSE:** This study evaluated the effectiveness of a four-week preseason training program in improving body composition among student athletes. **METHODS:** The impact of a structured training regimen on body composition in 16 female athletes ($M=20.6$ years, $SD=1.79$) was evaluated by a comprehensive assessment of lean body mass, bone mass, and body fat percentage using bioelectrical impedance analysis. The training protocol consisted of 180 minutes of strength training, 120 minutes of conditioning, and 180 minutes of skill-specific training per week. Paired samples t-tests were conducted to identify significant changes in lean body mass (LBM), bone mass (BM), and body fat percentage (BF%), with effect sizes calculated using Cohen's d . All statistical analyses were performed using Jamovi (version 2.6.2) at $p<0.05$. **RESULTS:** On average, LBM increased significantly from 52.86 kg to 54.34 kg ($t_{15}=6.52$, $p<.001$, $d=1.63$); BM also increased from 2.81 kg to 2.88 kg ($t_{15}= 2.24$, $p<.05$, $d=0.56$); and BF% decreased significantly from 25.26% to 23.99% ($t_{15}=-2.20$, $p<.05$, $d=0.55$). **CONCLUSION:** A four-week preseason training program, adhering to NCAA Division II regulations, can significantly improve body composition in women's basketball players. These findings support the effectiveness of this program in preparing athletes for the competitive season and potentially enhancing performance.