SEASONAL BODY COMPOSITION CHANGES IN MALE NCAA D1 BASKETBALL ATHLETES: IMPACT ON PERFORMANCE

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BACKGROUND: Tracking body composition changes throughout a rigorous 5-month athletic season can be useful to understand the impact on performance outcomes, training, and injury prevention. The relationship between body composition and performance can provide insight for nutrition and training strategies to optimize player health. **PURPOSE:** To examine the impact of a 5-month basketball season on body mass, lean mass (LM), and fat mass (FM), and examine the relationship with performance statistics among elite male basketball athletes. **METHODS:** Body composition was measured in male NCAA D1 basketball players (n=12; Mean ± Standard Deviation (SD), Age: 20.7± 1.2 years, Height: 195.5 ±7.2 cm, Weight: 93.3±10.4 kg) at four points throughout their season (September, January, March, April). The four measurements were taken from a standing multi-frequency bioelectrical impedance analyzer following a minimum of a 2 hr fast, with no exercise 24 hrs prior. Performance was recorded at each game for the following statistics: percentage of field goals (eFG%), turnovers (TOV%), and free throws (FT%). Game statistics were averaged for each month correlating with the body composition measurement dates. Paired samples t-tests were used to evaluate the change in body composition across each time point; partial correlations, accounting for playing time, were used to evaluate the relationship between body composition and performance. **RESULTS:**
There were no significant changes in total body mass (-2.6 ± 7.0 lbs; p=0.252), FM (-1.5 ±3.9 lbs; p=0.244), or LM (-1.1± 4.4 lbs; p=0.439) across the entire season from Sept to Apr. There was a significant impact in the final month of the season, with a decrease in LM from Mar-April (Δ-2.1 ± 2.6 lbs, p=0.05) among the first-string players. Body mass followed a similar downward trend during that month (Δ-2.0 ± 2.5 lbs; p=0.162). Average eFG% resulted in a significant decrease only from March to April (-8.0 ± 14.7%; p=0.042), with the largest deviation coming from maximum eFG%, decreasing from 60.5% (± 39%) in March to 27.2% (± 29.8%) in April (p=0.006). Average TOV% also decreased significantly (p=0.021) from Jan (2.4% ± 1.5%) to Mar (1.6%±1.2%). There were no other significant changes in performance. **CONCLUSION:** Fluctuation of lean mass during a season appears to influence performance outcomes, particularly in the latter half of the season. Understanding individual changes in body mass and lean mass, while optimizing nutrition and training, may be advantageous for maintaining peak performance at the end of the season.