

The Relationship Between Body Composition and Baseball Performance in Division II Baseball Players

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PURPOSE: This study was designed to investigate the relationship between body composition, specifically percent body fat (%BF) and percent lean body mass (%LBM), and both performance tests (Agility T-Test, Vertical Jump, Medicine Ball Toss, 30-yard Sprint, and 1-Mile Run) and in-game performance measures (Batting Average, On-Base Percentage, Slugging Percentage, and Total Bases) in collegiate baseball athletes. **METHODS:** Twelve male Division II collegiate baseball athletes (Age: 19.8 ± 1.32 years, Mass: 91.08 ± 16.29 kg, %BF: 15.87 ± 6.34 , %LBM: 84.13 ± 6.34) volunteered to participate in this study. Body composition measurements were collected pre- and post-season using air displacement plethysmography. Performance test data was collected during the post-season, while in-game performance measures were collected by researchers via the university's Sports Information Director. **RESULTS:** No significant change was found in body composition pre- to post-season ($F = 0.07$, $p = 0.794$). Of all the variables evaluated, only the time results of the Agility T-Test ($r = 0.667$, $p = 0.035$), 30-yard Sprint ($r = 0.669$, $p = 0.034$), and 1-Mile Run ($r = 0.697$, $p = 0.037$) demonstrated a significant positive correlation with post-season %BF. Simply stated, times for each of the variables increased as %BF increased. **CONCLUSION:** Findings from this study suggest the importance of addressing body composition within baseball training goals, since a more favorable body composition (higher %LBM, lower %BF) was associated with better performances on several tests commonly used to assess performance potential in collegiate baseball players.