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## Muscular Fitness, Flexibility, Body Composition, and Physical Activity on the Prevalence of Low Back Pain

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**PURPOSE:** To evaluate the impact of core strength, endurance, flexibility, body composition, and physical activity (PA) on the reported prevalence of low back pain (LBP) in college-aged individuals. **METHODS:** Twenty-six subjects (11 males; 15 females; mean age=22.1±1.5 years) completed an orientation and exercise session. At orientation, subjects completed questionnaires including the Roland-Morris Disability Questionnaire (RMDQ) and the Revised Oswestry Disability Index (RODI) to gauge LBP prevalence. Subjects were then categorized into Little/No LBP and Moderate LBP. A past year Modifiable Activity Questionnaire (MAQ) and the Sedentary Behavior Questionnaire (SBQ) assessed physical and sedentary activity. Physiological measurements were recorded at both sessions and included core strength, endurance, flexibility (F), resting heart rate (RHR) and blood pressure (BP), body composition (BF), and body mass index (BMI). Muscular strength (MS) was evaluated by a partial curl up test and back extension. Muscular endurance (ME) was evaluated by the McGill's Torso Muscular Endurance Test Battery. Exertion level and pain were measured by the OMNI Ratings of Perceived Exertion scale and pain perception scale. F was measured by the sit and reach test. **RESULTS:** T-tests indicated a significant difference in BF between females who reported Little/No LBP and females with Moderate LBP (4.2 vs. 2.5,  $t = 2.46$ ,  $p = 0.03$ ). Pearson correlations showed a significant inverse association between BF and MS ( $r = -0.47$ ,  $p = 0.016$ ) and BF and ME ( $r = -0.60$ ,  $p = 0.001$ ). A significant positive association was noted between MS and ME ( $r = 0.70$ ,  $p < 0.001$ ) and MS and F ( $r = 0.55$ ,  $p = 0.004$ ). Concurrent validity was shown ( $r = .62$ ,  $p = 0.001$ ) between the RMDQ and RODI. **CONCLUSION:** Increased BF was found to be related to decreased MS and decreased ME. Among college-aged females, increased BF was related to higher prevalence of reported LBP. As LBP continues to have a significant impact on younger populations, focusing efforts on improving body composition and strengthen core is warranted.