

Weighted Ball Programs And Medial Elbow Injury In Youth Baseball Pitchers

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Introduction: Weighted ball programs have been proven to increase pitching velocity, however a combination of poor musculature and body mechanics with increased elbow valgus can heighten the incidence of medial elbow overuse injuries in the youth population. **Clinical Question:** Can youth baseball pitchers who use weighted ball programs increase their pitching velocity without causing an increased risk of medial elbow injury? **Methods:** The literature was explored to discover studies that investigated medial elbow injuries using weighted ball programs in youth baseball pitchers. Articles included weighted ball programs as an intervention, kinetics/injury mechanics, youth elbow injuries, and prevention of overuse injuries. Studies were excluded if athletes were over 18 years old, collegiate or professional athletes, or other treatment methods were used. Five key studies were ultimately selected in this critical appraisal. **Results:** In Reinold et al, the experimental group underwent a 6-week weighted ball program and displayed a statistically significant 1 m/s increase in the training group representing a 3.3% increase in ball speed. There were 4 elbow injuries in this group (24%) that required medical intervention. In Okoroha et al, medial elbow torque increased by 0.92 Nm, arm speed decreased 8.52 rpm, and pitch velocity decreased 2.0 mph per 1oz increase in ball weight. Moore et al illustrated when throwing the 3oz baseball, the pitchers decreased their elbow varus torque compared to the 5oz baseball. Mahure et al indicated that the incidence of UCL reconstruction surgeries is expected to increase remarkably for those between 15-19 years old through 2025. **Translation to Practice:** Research supports the use of weighted ball programs to increase pitch velocity, but more evidence is needed to detect how this influences injury rate. Weighted ball programs should be approached with caution and utilize proper coaching to decrease incidence of medial elbow injuries in youth athletes.