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Medicine Ball Training for Rotational Power and Bat Speed

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Baseball, when looked at from a Time Motion Analysis and Physiological Demands perspective, can be considered to be a start and stop sport, characterized by short bursts of anaerobic power (an exception can be made for the positions of Pitcher and Backcatcher who exhibit higher correlations to aerobic movement patterns and mitochondrial profiles). However, further review of the mechanics of Baseball skills and Baseball specific-plays, indicate a high frequency of rotational movements through the torso. This is none more evident than in the Batters swing.

It is well known in both biomechanic labs and on the field that the forces that generate linear and horizontal acceleration, running speed, and powerful movements, originates from, and is dependent upon the transfer of muscular force through the body. This transfer of force and power generation is the product of what is referred to as the 'Kinetic Chain', which refers to the linked nature of the limbs and various muscle groups of the body. Designing and integrating exercises that consider the linked nature of the body, and how the body generates and transfers force and power is of principle importance when developing any type of sport-specific training program.

The purpose of this article is to draw attention to the effectiveness of Medicine Ball based exercises and their application to assisting in the development of torso rotational power, and increased Bat speed. A simple biomechanical or kinematic analysis of a ball players batting swing will among a myriad of other things, illustrate i) that the baseball swing is a reactionary and stationary movement that is sequential in nature ii) it begins with an initial loading phase, where body weight is transferred to the athlete's back leg through eccentric loading of the gluteal and hamstring muscle groups, iii) a cocking of the bat, typically involving the elevation of the elbow and hands, and iii) a coordinated step forward and torso release, where the eccentrically loaded back leg, forcibly contracts concentrically creating an explosive release of stored energy. This energy is transferred up and through the leg, and through the rotating torso into the arms and into the accelerating bat. Obviously, a trained eye, or Dartfish style video analysis, of which Performance Training Systems offers, will see many more particularities in one's swing, however this general representation was given as a means to reference the sport-specific nature of various medicine ball exercises to the batters swing.

Rotational exercises that mimic the full, or sequences of the batting swing performed with a medicine ball allow for the greater specificity in explosively training the complex movement patterns that comprise the baseball swing. Proper attention should be given to the plane of movement so that rotation occurs through the transverse plane as this is consistent with the baseball swing. Further, body positioning mechanics of the swinging movements, as well as the speed of movement and the amount of countermovement should all be watched to mimic the demands of the baseball swing; for example, a stable base or pivoting footwork should be included.

Angular velocity, the mass of the Medicine Ball, and the distance held or thrown from the body all influence the forces generated through the torso. Effort should be given to incorporate variances into a

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training program so that the neuromuscular firing patterns of the muscle groups involved are well developed, and accustomed to, generating high contractility rates and reactionary explosive power.

When these factors are taken into account and implemented as part of a progressive resistance training program, a ball player will be better equipped to generate faster bat speeds, and jack more balls out of the park.

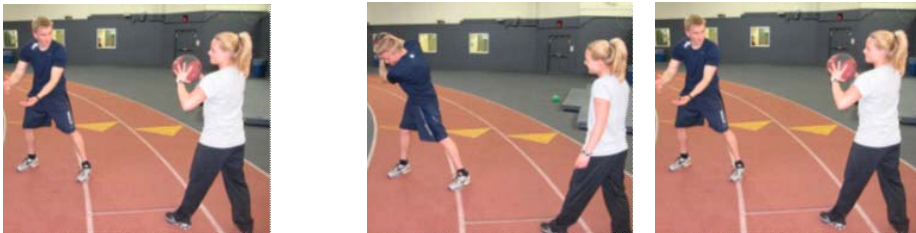
Medicine Ball Baseball Throw



Rapid Lateral Medicine Ball Bounces



Lateral Power Throw



More Baseball, and Baseball specific exercises can be found at the home of PTS Baseball at PTS_Baseball&Softball.php