Pitching Mechanics

(how to throw with velocity)

Velocity is not created with arm strength. Velocity is created through the transfer of **Elastic Energy** from the legs up through the torso and then out through the shoulder and arm. It begins with the stride. The stride is what transfers the latent energy stored in the form of body weight in a ***sideways*** direction, moving from the non-glove-side foot to the glove-side foot. The stride needs to be of sufficient distance so that the moment the glove-side foot lands, the non- glove-side leg is fully extended, not bent. If the drive is done properly, it forces the hips around the ***pitcher's axis*** with a high level of torque. If the torso is properly balanced, with the head perfectly at the top of the ***pitchers triangle,*** (the triangle formed with the feet and head) when the hips have rotated around the pitcher's axis, ***elastic energy*** is created, also know as the "*rubber-band stretch*." Timing is crucial throughout the delivery. The rotation of the hips will stretch the inner and outer oblique muscles, which will in turn stretch the torso, which will then in turn stretch the shoulder muscles, which will in turn stretch the arm muscles. The critical key here is that all of this occurs ***simultaneously***. It is the simultaneous stretching of ***all*** these muscle groups, followed immediately by the ***simultaneous release*** of this stored ***Elastic Energy*** that creates the velocity that is so coveted by pitchers and coaches. This energy release through the shoulder and elbow joints acting as a double pendulum is the secret. It is **Kiesiology**, the study of motion with human muscles and joints. It is <u>not</u> beneficial to try to break down the pitcher's delivery into drills featuring delivery components because the delivery of a pitch is actually one compound movement involving many muscles groups and joints. Muscle memory is associated with a specific motion. Regardless of how many times drills of delivery components are practiced, the moment a delivery of a pitch is attempted, the muscle memory associated with pitching is what will be followed by the pitcher. A delivery utilizing proper mechanics will look smooth, and the velocity will be surprising.

Torque-is equal and opposite force upon an object, inducing a rotational movement.