

Baseball Bat Training to Help Prevent Elbow Injury

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One of the biggest contributors to throwing elbow injury is improper mechanics:

However, improper pitching mechanics through iterative movement patterns predisposes the elbow to increased valgus stress that may exceed the tensile strength of the UCL, causing either chronic microscopic tears or acute rupture. Therefore, the mechanical

with shoulder and elbow strength being just as important.

While [using a weighted jump rope](#) is my #1 recommendation to help prevent arm injury, [a new study](#):

Injury Prevention for Throwing Athletes Part I: Baseball Bat Training to Enhance Medial Elbow Dynamic Stability

has introduced a baseball bat program to increase elbow strength.

The goal of the training is to target 2 specific muscles:

throwing are the flexor carpi ulnaris and flexor digitorum superficialis. Between 5 and 135° of elbow flexion, both assist the UCL in stabilizing valgus stress at the medial elbow, with the flexor carpi ulnaris the significant contributor

With 3 of the exercises I recommend most here:

(email me (PitchingDoc@msn.com) if you'd like the rest of the exercises)



Figure 3. (a) Overhead supination with baseball bat. (b) Overhead pronation with baseball bat.

- **Overhead pronation-supination:** Holding the baseball bat with the elbow flexed about 30° , and the hand is positioned at a height approximating where the ball is released. In this position, both the triceps and biceps coactivate, which mediates elbow compression, and simultaneous forearm rotation is enacted by the pronator teres and supinator muscle groups (Figure 3).



Figure 6. Radial deviations with baseball bat.

- **Radial bat deviations:** Hold the baseball bat with the head of the bat oriented vertically (radial direction), the elbow in 90° flexion, and wrist in neutral orientation. Move the bat head forward and backward similar to a hammering maneuver. When using the half grip, cover the elbow using the nonactive hand to shield it from coming in contact with the knob of the bat (Figure 6).



Figure 7. Ulnar deviations with baseball bat.

- **Ulnar bat deviations:** With the elbow flexed 90° and the wrist in neutral position, hold the bat so that the bat head is downward (ulnar direction). Move the bat head anteriorly and posteriorly in a manner similar to radial bat deviations. Cover the elbow using the nonactive hand as described earlier (Figure 7).

to be done in these amounts:

Table Pitcher's Baseball Bat Program			
Exercise		Resistance	Volume
1	Overhead pronation-supination	6- to 14-year-olds: 1/2 bat	6- to 14-year-olds: 2 sets of 15
4	Radial bat deviations	15+ year olds: 1/2-3/4 bat	15+ year olds: 3 sets of 20
		6- to 14-year-olds: 1/2 bat	6- to 14-year-olds: 2 sets of 15
5	Ulnar bat deviations	15+ year olds: 1/2-3/4 bat	15+ year olds: 2 sets of 25
		6- to 14-year-olds: 1/2 bat	6- to 14-year-olds: 2 sets of 15
		15+ year olds: 1/2-3/4 bat	15+ year olds: 2 sets of 25

during these days:

and are to be completed post pitching
and during the athlete's off days.

IMPORTANT!

The researchers give 2 important notes about the training:

During the first 3 weeks of the program, athletes begin by gripping half the bat length. Once familiarity and

especially for young players:

Anyone younger than 15 years should not advance beyond half the length of the baseball bat. Emphasis here is on

Have A Question About This Newsletter?

Email (PitchingDoc@msn.com) or call (631-352-7654) Dr. Arnold!