

Why Throwing "Over the Top" May Hurt Your Arm

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A common pitching mechanic still taught is to throw "Over the Top", causing many kids to throw like this:



But this may be causing serious increased risk for elbow AND shoulder injury.

This [2000 study](#):

INFLUENCE OF LATERAL TRUNK TILT ON THROWING ARM KINETICS DURING BASEBALL PITCHING

found tilting the shoulders OVER 10 degrees significantly increased elbow stress:

80° to 100° of the lateral trunk tilt angle, no difference was observed. **Over 100° of the lateral trunk tilt, the maximum elbow medial force tended to increase** as the lateral trunk tilt angle

while shoulder stress significantly increased with more than 20 degrees of shoulder tilt:

Shoulder kinetics. Figure 4 shows the maximum shoulder shear force. **The shoulder shear force decreased as the lateral trunk tilt increased up to 110°.** Significant differences were

That research was followed up with [this 2006 study](#):

Influence of Shoulder Abduction and Lateral Trunk Tilt on Peak Elbow Varus Torque for College Baseball Pitchers During Simulated Pitching

where 10 degrees of shoulder tilt was "the best":

Andrews, 1998; Matsuo et al., 2000). The best angle combination for minimizing peak elbow varus torque was 100° of shoulder abduction with 10° of contralateral trunk tilt. The peak elbow varus

while 40 degrees of shoulder tilt DOUBLED elbow stress:

greatest value of peak varus torque of the elbow (125 ± 21 Nm) was found with the combination of 120° of shoulder abduction and 40° of contralateral trunk tilt, and was more than double the smallest value of

TURN, Don't Tilt, Your Shoulders

Our shoulders turn when we hit, they MUST turn when we throw:



Have Questions About This Newsletter?

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