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Youth Baseball Pitching Mechanics

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A new study published in August (click here for the link - Email me if you'd like the full study)

Davis JT. **The Effect of Pitching Biomechanics on the Upper Extremity in Youth and Adolescent Baseball Pitchers**.
Am J Sports Med 2009; 37:1484-1491

Looked at 5 aspects of pitching kids age 9-12 and 14-18:

(1) Leading with the hips
Leading with the hips (left) was rated 'correct'

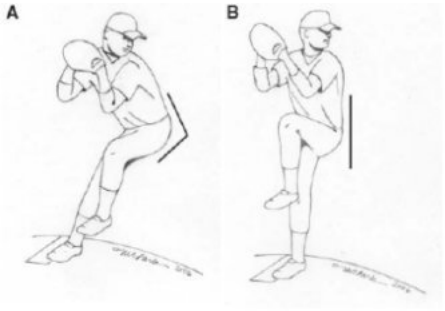

Figure 1. A, leading toward home plate with the hips—defined as the pelvis leading the trunk toward home plate during the early cocking phase; B, any pitcher who remained vertical in the early cocking phase did not lead with the pelvis. The authors thank Maxwell C. Park, MD, for the illustrations.

(2) Back Elbow Position at Foot Strike
Elbow at shoulder level at Foot Strike (left) was rated 'correct'

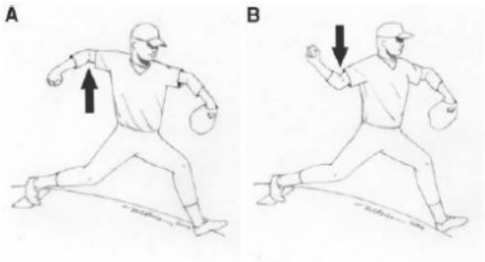

Figure 3. A, arm in throwing position—defined as the elbow reaching its maximum height (glenohumeral abduction) by stride foot contact; B, any pitcher whose elbow was not at its highest point by stride foot contact did not have the arm in throwing position. The authors thank Maxwell C. Park, MD, for the illustrations.

(3) Back Hand at Foot Strike
Having hand on top of the ball rated 'correct'
(Notice how it mirrors back elbow position)

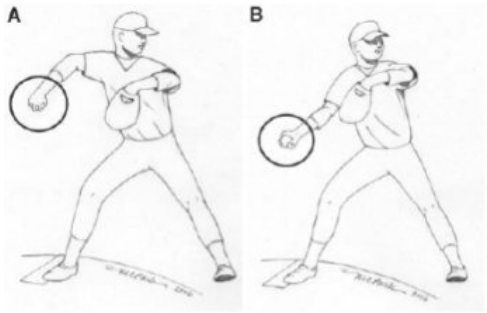

Figure 2. A, hand-on-top position—defined as the throwing hand being on top of the ball (forearm in pronation) as it comes out of the glove during early cocking; B, hand under the ball (forearm in supination). The authors thank Maxwell C. Park, MD, for the illustrations.

(4) Front Elbow and (5) Front Foot at Foot Strike
Keeping the front side closed and landing straight to the plate

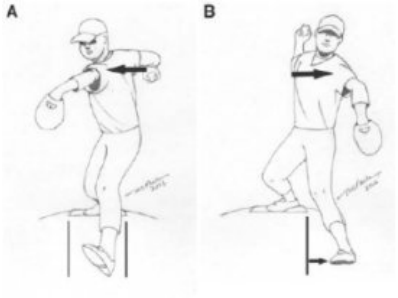

Figure 4. *Parameter 4:* A, closed-shoulder position—defined as the lead shoulder being in a closed position and pointing toward home plate at stride foot contact; B, open position. *Parameter 5:* A, stride foot toward home plate—defined as the stride foot being pointed toward home plate at stride foot contact; B, foot not pointed toward home plate. The authors thank Maxwell C. Park, MD, for the illustrations.

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What Was Seen In the Younger Pitchers?

- **What they did best:** Aspect #1 (leading with the hips - 97% correct) and Aspect #3 (stride to home plate - 86% correct)
    - The young pitchers naturally lead with their hips - teaching them a balance point is RUINING their mechanics
        - See right picture below
- **What they had trouble with:** Aspect #4 (front shoulder closed - 23% done correctly) and Aspect #2 (back elbow position - 6% done correctly)
    - Both of these can be fixed by focusing on the front elbow ('Sharpshooter') at Foot Strike - if you fix the glove arm, the throwing arm will self-correct
        - See left picture below
- 64% of young pitchers performed 3 or more aspects correctly

What Was Seen In the Older Pitchers?

- **What they did best:** Aspect #1 (leading with the hips - 93% correct) and Aspect #3 (Hand on top- 92% correct)
- **What they had trouble with:** Aspect #2 (back elbow position - 6% done correctly) and Aspect #4 (closed shoulder - 37% done correctly)
    - Just like in the young pitchers, focus on controlling glove elbow and the throwing elbow (keeping the glove chest-high) will self-correct
- 81% in the older group did 3 or more aspects correctly

So...No matter how old your pitcher, focus on getting them moving with their hips and controlling their front elbow

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What Did The Researchers Conclude?

- The researchers regarded these 5 aspects as

"developmental milestones for the youth pitchers as they improve their mechanics over years of learning to pitch."

- MOST IMPORTANTLY, they stated:

"It is not clear whether these parameters develop as a function of coaching and instruction or whether athletes more easily perform them as neuromuscular function improves with age."

"Most of the pitching parameters analyzed in our study require proper timing and the coordination of upper extremity, trunk, and lower extremity movements."

- These young pitchers are all developing athletes and they just need to practice, practice, practice
- It takes only 1.3-1.5 seconds from leg kick to Ball Release so timing is very important
- As they continue to grow, develop, and become coordinated (JUMP ROPE!!), the mechanics will also come along.

Hope this helps. Talk to you all soon.

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