

Pitchers Should Always Be Moving Forward

by Coach Helke

Always moving forward is crucial to velocity, control, late movement and arm health. If you're not being taught this, you are leaving potential velocity on the table and opening yourself up to injury. Once you make the shift, the velocity and control will increase. Plus, you will lower the risk of injury to your elbow, arm and shoulder. Movement is called movement for a reason. Throwing is movement through all positions. You need to understand the proper movements in a throw in order to teach throwing correctly.

Have you ever been taught...?

- "Stop at the top?"
- "Stay back over the rubber?"
- "Find a balance point?"

The best pitchers in the game do none of these. The best of the best all are moving toward home plate once they start lifting their lead foot. They ARE NOT straight up at the top of their leg lift. They are using biomechanics (the science of how the body actually moves) and physics.

Just look at some of the BEST pitchers and what they ACTUALLY DO/ DID :

Diagram 1



These pitchers also had very few arm issues throughout their career.

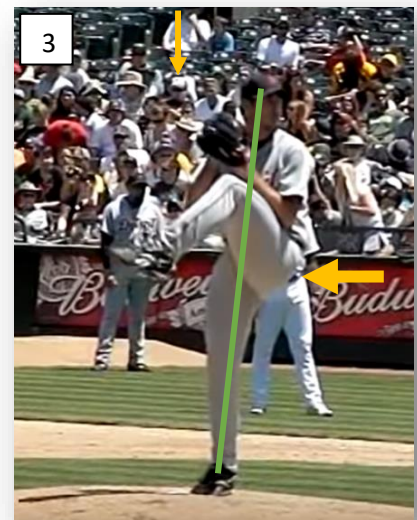
Now, we will look at Dontrelle Willis, Kerry Wood and Mark Pryor. They were supposed to be the next Hall of Famers. They were not. They also had a lot of arm issues.

Diagram 2



See the differences between diagram 1 and 2? In diagram 2 they are straight up at the top of their leg lift. In diagram 1 they are not. It's no wonder why these guys failed to reach their potential.

Quick look at Verlander from wind-up



In frame 1, he's just starting his movement from the wind-up. Note you can't see the fan in the stands that's behind Verlander's head (see top **yellow arrow**). Yet when he starts to raise his lead leg, he already starts his movement forward. In 2, when his leg is lifted $\frac{1}{2}$ way up, you can see the fan. Evidence Verlander has already begun to move forward. By 3, his leg is at the top as he's about to start his delivery. His body has moved forward a bit more. Also, see the 1st base coach **←** behind him, he almost disappears. Verlander *is not* straight over his back foot or rubber when he starts his delivery to the plate.

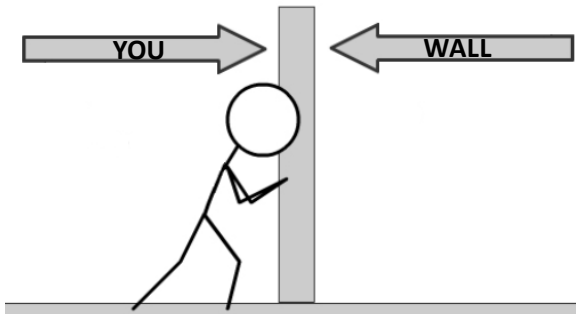
There is No:

- "Stopping at the top"
- "Stay back over the rubber"
- "Finding a balance point"

Here is Just One of The Scientific Facts Why – Newton’s 3rd Law of Motion

Newton's 3rd Law of motion tells us that for every action there is an equal and opposite reaction. What this means is that pushing on an object causes that object to push back against you with the same magnitude of force you are pushing - but in the opposite direction. This is called Ground Reaction Force (GRF).

Example:



**Forces always Come in Pairs:
You Push on a Wall
the Wall Pushes Back**

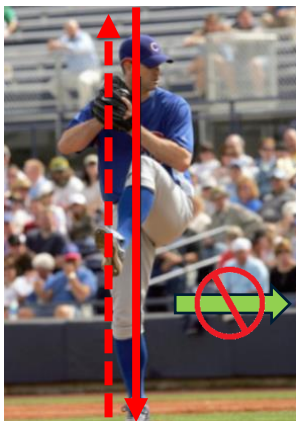
Now consider this:

If you were going to push a car. Would you (a) stand straight up to push OR (b) at an angle to push? Why?



In pitching, Ground Reaction Force (GRF) plays a crucial role in generating velocity and efficiency. A pitcher's ability to transfer energy from the ground, through the kinetic chain, and ultimately to the baseball is what determines the effectiveness of their mechanics and delivery.

Now let's apply this to real life pitching



Finding the Balance Point

If a pitcher finds his "balance point", the force he initially generates is going *straight down* and the opposite and equal reaction is *straight up* (dotted line).

But he wants to move forward. Can you see how this is counterproductive? He is already starting out going the wrong direction so his body now has to compensate for the change in direction among other things. This will start breaking down mechanics which causes accuracy issues and velocity issues. More importantly, it causes increased stress on the elbow and shoulder joints, tendons and ligaments.



Moving Forward

If a pitcher is moving forward toward the plate, the force he initially generates is going to be *forward* and the opposite and equal reaction is *backward* (dotted line).

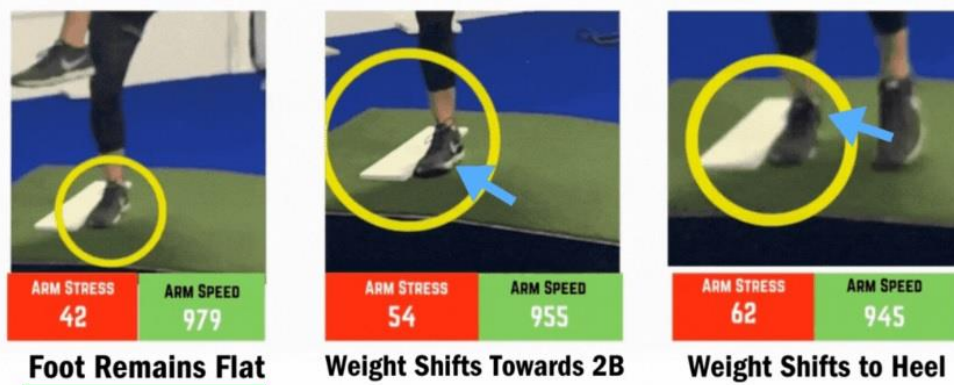
He is now starting out going the right direction so his body doesn't have to compensate for a change in direction. This is the first step for building better mechanics which increases accuracy and velocity. Many times, just this one timing adjustment will correct a mechanical "flaw" further up the pitching mechanics' chain. More importantly, it helps decrease the stress on the elbow and shoulder joints, tendons and ligaments.

The movement forward doesn't have to be much and it's smooth not rushed. ***In fact, you can think of it more as a "drift" forward.*** How much a pitcher should move/drift forward differs between pitchers. The funny thing is, once a pitcher gets comfortable with moving forward, his own body will adjust itself to the degree of movement forward. We will talk and learn more about this in training.

Two Quick Bonuses

Bonus One: Back foot remains flat

As you can see from metrics provided from Lance Wheeler, keeping your back foot flat on the ground keeps arm stress lower and arm speed higher. This increases velocity, accuracy and reduces the stress on the arm (which reduces the possibility for injury).



If coaches would spend more time assessing the beginning of the delivery, pitchers wouldn't have near as many problems after they land. Here are just four symptoms of velocity leaking from the feet:

- Late arm
- No separation
- Stride alignment
- Inconsistent arm angles
- And others...

Bonus Two: Stride Foot Landing

I will also touch on this briefly because many pitchers do this incorrectly. Many pitchers land on the heel of their stride foot first. That's not correct, but most pitching coaches, even in college and pro's, completely miss this seemingly simple mechanical "flaw". Pitchers should land on the ball of their foot.

On the Rich Eisen Show, the great closer Randy Johnson told a story on how pitching legend Noland Ryan made him a more consistent and accurate pitcher.

Ryan pointed out one seemingly little mechanical flaw Johnson had that was never identified in High School, college, four years in the minors and the first two years in the majors. Johnson said:

"I was landing on the heel of my stride foot, not the ball of my foot. By landing on my heel, my foot was unstable and caused it to rotate. Therefore, my momentum wasn't straight, forcing me to fall-off to the third base side which kept me from having a consistent arm angle. This obviously disrupted my momentum, velocity and accuracy. When I started to land on the ball of my foot, the cleats kept everything stable, I stopped falling off and my momentum stayed straight. This also kept me from losing my arm angle. My accuracy increased and I had consistent velocity."

Summary

The majority of “flaws” amateur’s and pro’s frequently talk about, like working on your follow through, arm angle, pointing your glove and so on, 9 times out of 10 are symptoms - not the root cause. Most “flaws” are by-products stemming from a poor beginning/ foundation. The root cause must be correctly identified and addressed first so athletes aren’t left wondering why they suffer from poor performance like average velocity, inconsistent control, early fatigue or injuries. Just as in hitting, you have to correct the foundation and timing first BEFORE you try to correct anything above.



Take a look at the leaning tower of Pisa. How would you fix this building? Would you start by working on the top floors or start at the bottom with the foundation? The foundation of course.

What happens when you readjust the foundation? Everything above starts to fall in line plus it eases stress on the building.

Working on pointing your glove, follow through, arm angle, etc. first is like trying to straighten your 5-story building from the top floor. There’s no way to permanently correct your building until you repair the base where the majority of problems reside.

The point is, when the first movement(s) of your delivery are wrong, the rest of the body has to try and compensate to make up for it (and paying the price for it). The upper body is a direct reflection of what the lower half is doing.

We train players how to do all three things correctly and easily