THE 14 BIGGEST MECHANICAL FLAWS

By Phil Rosengren

BetterPitching.com
The 14 Biggest Mechanical Flaws

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# The 14 Biggest Mechanical Flaws

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>My Story</td>
<td>4</td>
</tr>
<tr>
<td>Introduction</td>
<td>7</td>
</tr>
<tr>
<td>Big Flaw #1: Poor Balance</td>
<td>8</td>
</tr>
<tr>
<td>Big Flaw #2: Lack of Early Momentum</td>
<td>9</td>
</tr>
<tr>
<td>Big Flaw #3: Leading with the Shoulders</td>
<td>10</td>
</tr>
<tr>
<td>Big Flaw #4: Poor Stride Direction</td>
<td>11</td>
</tr>
<tr>
<td>Big Flaw #5: Poor Back Leg Drive</td>
<td>12</td>
</tr>
<tr>
<td>Big Flaw #6: Sloppy Glove Arm</td>
<td>14</td>
</tr>
<tr>
<td>Big Flaw #7: Weak Landing Leg</td>
<td>15</td>
</tr>
<tr>
<td>Big Flaw #8: Lack of Front Foot stability at Ball Release</td>
<td>16</td>
</tr>
<tr>
<td>Big Flaw #9: Bad Timing – Upper and Lower Half out of Sync</td>
<td>17</td>
</tr>
<tr>
<td>Big Flaw #10: Poor Arm Position at Front Foot Plant</td>
<td>18</td>
</tr>
<tr>
<td>Big Flaw #11: Lack of Hip to Shoulder Separation at Front Foot Plant</td>
<td>20</td>
</tr>
<tr>
<td>Big Flaw #12: Lack of Forward Trunk Tilt at Ball Release</td>
<td>21</td>
</tr>
<tr>
<td>Big Flaw #13: Excessive Lateral Trunk Tilt at Ball Release</td>
<td>22</td>
</tr>
<tr>
<td>Big Flaw #14: Leading with the Elbow – “Throwing Darts”</td>
<td>23</td>
</tr>
<tr>
<td>Conclusion</td>
<td>25</td>
</tr>
</tbody>
</table>
I know firsthand the importance of developing good mechanics early in your pitching career. As a high school pitcher I was always a hard thrower, but I had some serious mechanical flaws that led to inconsistency and control issues (not to mention putting added stress on my elbow). Because I was wild but had good stuff, most at bats ended in either a walk or a strikeout and the pitches piled up fast. One time as freshman I went 8 innings and easily threw 160 total pitches (at 20 pitches an inning I think this is actually a conservative estimate). In spite of my wildness, I had decent success at the high school level. I got drafted after my senior year (mainly on potential) but chose to accept a scholarship to a top university and Division I baseball program. Things were looking pretty good... Then I got injured.

While pitching that summer I started feeling a sharp pain in my elbow. The pain was excruciating and just got worse and worse with each pitch. I resorted to throwing BP speed and just praying for them to hit it at somebody to get the inning over with. I’d had soreness before. This was different. The pain was so intense I had tears in my eyes. I knew something was seriously wrong. The diagnosis: a strained ulnar collateral ligament (if you’re not familiar with the UCL just look up “Tommy John surgery”). Arm Injuries happen for a number of reasons, but the leading causes are being overworked, under-conditioned, and having poor mechanics. In my case it was a combination of all three.

Tommy John surgery wasn’t as common back then and after consulting with the best doctors we opted for a conservative approach of rest and rehab. Realistically, it wasn’t a given that I would ever be able to pitch again without surgery. Getting to college and watching my new teammates practice and compete that fall while I wasn’t even
allowed to pick up a ball was one the toughest things I’d ever had to go through.

I had a decision to make. I could either feel sorry for myself, hang my head and give up, or I could dig in and commit to doing everything in my power to get back out there. Through a lot of hard work and determination, not only did I get back on the mound that season, but by dedicating myself to becoming the most powerful pitcher I could be I went from a mid 80’s fastball in high school to a low 90’s fastball by my junior year. I was eventually topping out at 94 MPH and got drafted again after both my junior and senior years in college.

My elbow was always an issue though, and it was a constant battle keeping the muscles around my elbow strong enough to support the joint and allow me to pitch. Ultimately, the damage done was too great and after my third season of pro ball my elbow just couldn’t take any more. I flew down to Birmingham to see Dr. Andrews, and this time surgery was the only solution. After the surgery, he told me my ligament was all mashed up and described it looking like a bunch of strands of spaghetti. When you hear about a pitcher tearing his ligament, you tend to think of it blowing out on one pitch, but this is rarely the case. More often, it’s the cumulative effect of years of repeated stress, where the last pitch is just the straw that broke the camel’s back. This is exactly what happened to me.

I rushed my rehab to get back for the next spring training, never giving my arm time to properly heal. I managed to pitch again, but continued to fight through pain until eventually hanging up my spikes a few years later. Ultimately, not addressing mechanical flaws early in my pitching career led me to fall short of my true potential. Armed with the information I have today after years of research, I know I should have done things differently. I could have addressed mobility issues I had in my hips and legs at an earlier age. I could have developed an efficient, repeatable motion to improve my command and keep my pitch counts down. I could have committed to a complete arm care program before injury and rehab forced it on me.
No regrets though, I worked hard and did the best I could with the information I had at the time. I also learned important lessons about overcoming adversity and was fortunate to have some great experiences along the way. I got to pitch in the Cape Cod League, the top collegiate summer league in the country, where I used to dream about pitching when I was a kid. I spent a year playing in Columbus, GA near Ft. Benning where my father had grown up. I'll never forget walking the grounds with him that summer, imagining my father as a small boy, seeing him in a totally new light. I would have never had that experience without baseball. At the end of my career, I even got to face off against one of my childhood favorites, Ricky Henderson, striking him out to end the game in my Atlantic League debut. So if nothing else, I can always say I struck out a Hall of Famer.

Today I’m grateful for all of it, even the struggles, because they’ve prepared me to be a better coach and help others avoid the same mistakes I made. I’ve committed myself to researching the latest studies and training techniques in order to help my pitchers reach their true potential. One thing I’ve come to understand is just how important it is to address mechanical flaws at an early age. It can take 1000 repetitions or more to replace old muscle memory, so the sooner you can start making positive changes the better.

The bottom line is if you really want to maximize your potential and have a long, successful pitching career, you need to start by conditioning yourself for success. That means developing a powerful, efficient pitching delivery and committing to a complete strength and conditioning program. It means committing to a winner’s mindset and developing the right mental approach. It's not easy, but with hard work and the right plan you’ll be amazed what you can achieve.
Introduction

Before getting into the meat of this book, I first want to let you know that I was very conflicted about writing it. As a pitcher, or any athlete, it’s very easy to get overwhelmed by too much information about mechanics. Performing any athletic skill is predominantly a right-brained activity involving the visual, feeling side of the brain. When you get too focused on having “good mechanics” you activate the analytical side of your brain, which can interfere with your natural athletic ability, resulting in “paralysis by analysis.” When learning a movement you will be much better off thinking in pictures, giving yourself a good mental image to follow, rather than thinking in words. And if you are a coach teaching pitching mechanics, here are some very powerful words of advice: show more, talk less.

So knowing this, how could I write a book that’s all about analyzing mechanics? Well the thing is, in order to make positive changes, you need to be able to recognize the areas that need improving. Once you are aware of these flaws and can recognize them, the next step is getting to the root of the problem. Sometimes this is as simple as breaking bad habits through deliberate practice and repetition to develop new muscle memory. But often the problem is more complicated, stemming from a variety of deficiencies in strength and flexibility/mobility. Ultimately, just knowing the principles of a good pitching delivery isn’t enough. To really be your best, you’ll need to start by addressing your areas of weakness.

So just think of the topics laid out in this book as signposts designed to get your attention and point you in the right direction. I’ve come to understand these concepts through years of pitching and coaching experience and by carefully studying the latest research. Armed with this information, you’ll be better prepared to take control of your training, putting you in the best position to realize your full pitching potential.
First let’s start by getting something straight. Being balanced in your pitching delivery does NOT mean being able to get to a “balance point.” There is really very little benefit to being able to lift your lead leg and hold it up there for an extended period of time. When I was first learning to pitch, conventional wisdom told me that getting to a good balance point was the most important part of the pitching motion. I practiced it daily, lifting my leg up and holding it, over and over again, countless times... what a waste! It’s simply not what successful, hard throwing big league pitchers do. Creating momentum early in your pitching motion is critical for generating power and developing good timing. By getting to a “balance point” and pausing at the height of your leg lift you’re actually killing momentum and disrupting your natural rhythm and timing.

So what is “good balance” in your pitching delivery? Good dynamic balance is all about being able to control your body while moving. It also means keeping your center of gravity (hips to belly button) over your driveline throughout your motion. Your driveline is an imaginary line starting at your back foot and extending out to home plate. When your center of gravity gets away from that driveline, you’re basically diverting energy and power away from your target, leading to lower velocity and poor command. By maintaining your driveline and keeping everything moving towards home plate, you make it easier to repeat your delivery with good stability, efficiency and power.

You should start by adding dynamic balance work to your training, particularly movements that translate well to the pitching delivery. At BetterPitching.com we use a variety of dynamic balance drills that I have found to be very effective in helping pitchers develop good balance throughout their deliveries.
Big Flaw #2: Lack of Early Momentum

So our discussion of the “balance point” brings us to the next Big Mechanical Flaw: Lack of Early Momentum. If all you do is lift your lead leg without starting to move your hips towards home plate, you are missing out on the biggest opportunity to create momentum and generate more power in your delivery. Let me ask you this: when an outfielder gets ready to gun down a runner at home does he lift his leg and get to a balance point first? Of course not, that would be ridiculous. Not only would it be too slow, he’d never get as much on his throw as he would by moving explosively towards home plate with an aggressive crow hop. So to think that lifting your leg, pausing and getting balanced was an effective way to begin a powerful pitching delivery just doesn’t make sense.

Of course you aren’t allowed to crow hop from the mound when you pitch, but you should think about bringing that kind of explosive power to your delivery as much as you can. And you can build momentum early by getting your hips moving towards home plate in your leg lift. This is where power starts! It’s about basic laws of physics, mainly inertia: a body at rest tends to stay at rest, a body in motion tends to stay in motion. If you try pushing a car, it’s going to take a while to really get it moving. But once you get the wheels moving it becomes easier and easier and you can get to a point where you’re actually running behind it because inertia and momentum are working with you. I’m not suggesting you rush your motion, rather just work on getting things started early to create momentum and promote a longer, more powerful stride. Then you can gradually accelerate down the mound and explode into ball release.

Not only does creating momentum early help you generate more power, it also promotes good timing and rhythm in your delivery, helping you get your arms and legs in...
sync. It’s not just the high velocity guys that do this, but you can look at guys like Greg Maddux, known more for their control. Pausing at the top kills momentum, breaks your rhythm, disrupts natural timing, and hurts control. Getting your hips moving early leads to a more fluid well synchronized pitching delivery. So just remember, as a pitcher, momentum is your friend.

![Lack of Momentum](image1.jpg) ![Good Early Momentum](image2.jpg)

for more on this topic see an article I wrote at: Betterpitching.com/early-momentum

**BIG FLAW #3: LEADING WITH THE SHOULDERS**

When you begin your movement towards home plate (which again you want to start early!) it’s important that you lead with our hips. Leading with the shoulders is common problem among pitchers, especially with those who are upper-half dominant. When we first learn to throw we generally place all the emphasis on the upper half, developing good arm action, making sure we’re not dropping our elbow, etc. And if you ask a young pitcher what part of the body you use to throw a baseball, they’ll usually
The 14 Biggest Mechanical Flaws

tell you we throw a baseball with our arm. In reality though, the act of pitching is a total body activity involving your legs, hips, and trunk. And while your arm ultimately accelerates to launch the baseball, your power really comes from your lower half and is transferred to your upper half at the end, with your arm just going along for the ride.

When you’re upper half dominant, the tendency is to lead with your shoulders as you come out of your leg lift. This will cause you to get your weight out over your front foot early, leading to a shorter, less powerful stride. It also creates a major timing issue. In your stride you want to create a powerful drive towards home plate and then transfer that force to your upper half by bracing up well at front foot plant. This results in a powerful trunk rotation and catapult effect over your front leg. If you get your weight out front early you lose some of that power and catapult effect with your trunk. Leading with your shoulders also causes your throwing arm to drag, increasing the stress on your shoulder.

**Big Flaw #4: Poor Stride Direction**

As we discussed in Big Mechanical Flaw #1 (poor balance), to throw with maximum power and efficiency you want to keep your center of gravity over your driveline. Any movement away from that driveline affects velocity and can hurt your control. When your stride direction is off, you’re forced to compensate in some way to get your release point back on track. By compensating, you compromise the efficiency of your delivery, reducing your body’s ability to convert force to velocity, and potentially increasing the
stress on your throwing arm. Poor stride direction is probably the biggest contributor to poor balance and inconsistency at ball release.

When your stride is too closed (towards 3rd base for a righty) you have to lean over to your glove side to compensate, throwing across your body and leading to poor balance and instability at ball release. If you are not strong and stable with your front leg, with your front foot planted firmly in the ground, you are going to have a hard time being consistent with your release point. Take a look at pitchers who fall off towards their glove side in their follow through. If they’re really falling off excessively, it’s a good bet they are striding too closed and throwing across their body.

When your stride is too open (towards 1st base for a righty) you force your hips to open early, losing rotational power and putting more stress on your arm. Just like hitting, pitching involves rotational power with your hips and trunk. When a hitter is fooled by an off-speed pitch he opens his hips early and has to rely on his arms to supply the power (this is one reason why disrupting a hitter’s timing is such an important part of successful pitching). The same thing applies to your pitching delivery. If you stride towards your glove side, you open early with your hips, losing late rotational power that’s an important component to a high velocity pitching delivery. It also creates a major timing issue leading to arm drag, putting added stress on your throwing shoulder.

**Big Flaw #5: Poor Back Leg Drive**

Growing up, I always had coaches telling me to “use my legs” or “get a bigger stride.” They weren’t wrong, but it’s really more than that. You don’t just want to stride out as far as you can with your front leg. A long, powerful stride comes from leading with your hips and driving out with your back leg. Thinking of just stepping out farther with
The 14 Biggest Mechanical Flaws

your front foot can cause you to open early with your hips and actually decrease velocity. Another big trend during my early pitching days was a shift away from “drop and drive” pitching mechanics in favor of “tall and fall.” The idea was to stay tall, get balanced at the top of your leg lift, and use gravity and momentum to deliver the pitch with a smooth, effortless delivery. Well, it sure sounded good to me and had a nice ring to it, but there was just one problem... “Tall and fall” is dead wrong.

All you have to do is take a look at the motion of any successful power pitcher to see the importance of a powerful stride. Achieving high velocity begins with your legs. A series of studies by leading sports research center ASMI, “Comparison of High Velocity and Low Velocity Pitch Deliveries” supports this with an interesting finding:

“...early in the pitching motion, the two groups were dissimilar in the timing of their movements, while their later movement timing was much more similar.”

You can read more of the study here: [http://www.asmi.org/asmiweb/research/usedarticles/highlowpitches.htm](http://www.asmi.org/asmiweb/research/usedarticles/highlowpitches.htm)

This actually makes a lot of sense, since the early part of the pitching delivery, the stride phase, involves your legs and trunk while the later movements are more upper half, throwing arm dominated. High velocity pitchers use their lower half more effectively than low velocity pitchers. In the pitching delivery, your legs and core are your power generators – your throwing arm is just along for the ride. So if you just get tall and let gravity take you down the mound without actively driving with your back leg, you’re just not going to be able to create as much power as you would with an active back leg drive.

Now, before you get thinking you need to be in that “Drop and Drive” category,
The 14 Biggest Mechanical Flaws

that’s not quite right either. If you just drop after your leg lift, collapsing your back leg, you’re not going to be able to create force and power efficiently. The key is moving “down and out” at the same time, riding a strong back leg rather than moving “down then out.” You want to take the momentum you created by getting your hips moving towards home plate and use that to accelerate down the mound. Ultimately, the speed and length of your stride directly affects velocity as you transfer force into your upper half at front foot plant.

**Big Flaw #6: Sloppy Glove Arm**

So in the first phase of the pitching delivery you are creating momentum and driving powerfully towards home plate. The next step is transferring that force from your lower half to your upper half at front foot plant. This means bracing up well with your front side. Your front side, or glove side, has to firm up at front foot plant. This effectively creates a pivot that your trunk will rotate around. If you don’t firm up well and form a good pivot, you end up with an energy leak and lose some of that power, resulting in lower velocity. Most of this involves bracing up with your landing leg (see #7), but your glove arm also plays an important role.

If you don’t control your glove by bringing your elbow down in to your side, but instead swing it out (towards 1st base for a righty) or let your glove drop as your throw, you will open early and lose the rotational power needed for maximum arm speed. You’ll hear coaches refer to this as “flying open.” Not only is flying open an energy leak, it’s also a major timing disruptor, which hurts control. If you consistently fly open with that glove arm, your throwing arm will drag, putting more stress on your shoulder and causing you to miss high to your arm side with your pitches.

In recent years, one pitching cue that has gained popularity is the idea of bringing
your chest to your glove rather than pulling your glove elbow down as your throw. While this isn’t exactly wrong, I’m not a big fan because I feel like it places the emphasis on the wrong thing. We really want to be getting good trunk rotation, so I much prefer the cue “control your glove” since it puts the focus on bracing up with the front side and creating a good pivot for full trunk rotation.

For more on this topic see an article I wrote at: BetterPitching.com/control-your-glove

**Big Flaw #7: Weak Landing Leg**

This is one of the most common mechanical flaws, and along with poor back leg drive and lack of hip to shoulder separation it’s one of the biggest contributors to lower velocity. As referenced in #5, studies done by ASMI have found distinct differences between high velocity pitchers and low velocity pitchers. One of the key findings states that low velocity pitchers show more front knee bend (flexion) after front foot plant. In high velocity pitchers, the front knee actually straightens (extends) into ball release. This front knee action is critical for effectively transferring force from your lower half up into your hips, trunk and throwing arm.

![Correct: Front Knee Extends into Ball Release](image1)

![Incorrect: Front Knee Collapses](image2)

To help understand how this works, imagine you’re riding a bicycle at full speed and
suddenly slam on the front brake. What happens? The front wheel will stop and inertia will launch the back of the bike up in the air sending you over the handlebars. Well the same thing is happening in your pitching delivery. The more powerfully you drive towards home plate and brace up with your front leg, the more powerfully you will transfer force to your upper half, catapulting over your front leg and accelerating your arm for maximum velocity.

This takes tremendous leg strength. Not only are you moving powerfully with your stride, the slope of the pitching mound enhances gravitational force so that at front foot plant you land with force equal to up to 175% of your body weight. If you are weak with that front knee, not only do you lose power, you’ll have a tough time being strong and stable at pitch release, which can hurt control. Developing the strength and motor coordination to execute this movement properly takes work, but the results will be well worth it.

For more on this topic see an article I wrote at: BetterPitching.com/front-knee-action

Big Flaw #8: Lack of Front Foot stability at Ball Release

If you are not strong and stable with your front foot at ball release you’re going to have a hard time getting to a consistent release point and your control will suffer. Lack of stability with your front foot generally means you are either spinning on your heel or letting your weight get outside your ankle, drifting towards home plate or pulling towards your glove side at ball release.

To better understand what I’m talking about, try standing with your legs wide apart with your toe pointed towards home plate simulating your full stride position. Now turn
The 14 Biggest Mechanical Flaws

your front foot out (towards 1st base for a righty) spinning on your heel. Feel how unstable this makes you. Now turn that front foot in slightly (toe slightly towards 3rd base for a righty). Feel how this helps you stabilize? This puts you in a good position to brace up and resist the powerful ground forces created in the drive phase of your delivery so you can transfer all of that power to your upper half and out to your arm into ball release.

Poor stability with your front foot at ball release is usually the result of bad stride direction (and consequently poor balance), but limited hip mobility can also be a factor. If this is happening with you or a pitcher you work with, you need to understand the cause before you can properly fix it. Mobility work and dynamic balance drills can go a long way in helping to develop better front foot stability, but it can take a lot of work, particularly if you have flexibility/mobility issues. This isn’t the most often talked about aspect the pitching delivery, but it really shouldn’t be overlooked. Having good total body mechanics is the basis for generating maximum force and velocity, and it begins by being sound with your feet.

**Big Flaw #9: Bad Timing – Upper and Lower Half out of Sync**

Having an efficient pitching delivery is all about balance and timing, or getting your upper half and lower half in sync. With the pitching delivery we’re dealing with a complex chain of movements (often referred to as the kinetic chain) with a lot of moving parts. So it’s really important that each segment in that chain is tightly linked, with each movement leading to the next, everything fluid and in sync.

When your arms and legs get out of sync, this disrupts the kinetic chain, killing momentum and robbing you of power. This usually shows up when pitchers start raising
The 14 Biggest Mechanical Flaws

their elbows early before they have really begun their stride or gained ground towards home plate. When this happens, the pitcher gets his upper half in a position to throw too soon, leading to early trunk rotation and loss of power. Another problem is being too late with your arms, which we’ll discuss more in #10.

A lot of the timing issues pitchers have can really be blamed on old conventional pitching wisdom. Many pitchers are taught at a young age to get to a “balance point” and to get to a “power position” at full stride. By putting the emphasis on these positions instead of developing a fluid, efficient delivery, pitchers tend to become stiff and robotic. One phrase I use a lot is that you want to have good mechanics, but you don’t want to be mechanical. When you have a timing issue, the problem usually isn’t that you are rushing or moving too fast. In most cases, you’re actually moving too slowly, resulting in a disconnect in your kinetic chain. By learning to use momentum to build power, keeping things fluid and in sync, you’ll be able to efficiently transfer power in your delivery, maximizing consistency and velocity.

Big Flaw #10: Poor Arm Position at Front Foot Plant

This is a controversial one, and I even considered leaving out entirely. But in the end I decided it was worth addressing. The thinking is that breaking your hands by lifting with your elbows is something that should be avoided in your delivery. Lifting with your elbows tends to result in what are referred to as the “inverted W” or “inverted L” positions
into front foot plant. These terms were popularized by Chris O’Leary and he explains the concepts thoroughly on his site, so I won’t go into great detail, but here are some good examples:

His theories have gained attention of late following some high profile elbow injuries among pitchers like Stephen Strasburg who exhibit the inverted W in their deliveries. And while more research should really be done to determine whether these tendencies directly lead to increased risk of arm injury, they do clearly indicate a timing issue. To be fair, Chris O’Leary makes this distinction in his argument, as he theorizes that it’s not the positions themselves but rather the timing issues that lead to increased stress on the elbow and shoulder.

Whether these positions lead to injury or not, the bottom line is that everything we do in the first phase of our delivery (the stride phase) should be designed to generate power and get us into a good position at front foot plant. If your arm is not in a good position to throw at front foot plant, you usually wind up opening early with your glove side, resulting in lower velocity and greater stress on your arm. For these reasons, it’s recommended that a pitcher separates his arms with his hands leading the action, getting to a good throwing position at front foot plant.
Big Flaw #11: Lack of Hip to Shoulder Separation at Front Foot Plant

One of the biggest differences between high velocity pitchers and low velocity pitchers is the degree of hip to shoulder separation they can achieve as they reach front foot plant. Hip to shoulder separation occurs when the hips have opened (belt buckle facing home plate) while the shoulders remain closed (chest facing 3rd base for a righty). This creates torque, or twisting power. A 2005 study done by Tom House and the NPA (National Pitching Association) concluded that as much as 80% of real pitch velocity comes from rotational forces. The best pitchers exhibit 40-60% of separation between hips and shoulders at front foot plant. This creates great torque, and then when they brace up with their front side, all of that force gets transferred to the upper half, leading to powerful trunk rotation and higher velocity. Here are some examples of good hip to shoulder separation:

Creating maximum hip to shoulder separation is one of the most difficult aspects of the pitching delivery to master. It requires good timing along with a powerful back leg drive. Most pitchers open too early with their shoulders, allowing their trunk to begin rotating before front foot plant. Not only does this result in lower velocity, it's also been proven to increase stress on your elbow. Another mistake pitchers often make is turning
their front foot towards home plate too soon in their stride, which leads to opening their hips early. It requires great motor coordination, strength, and mobility/flexibility, but one thing is clear: without good hip to shoulder separation, you will never be able to convert the power from your lower half into the rotational forces necessary for maximum velocity.

For more on how to create better hip/shoulder separation read: BetterPitching.com/pitching-mechanics-better-tempo-increases-torque/

**Big Flaw #12: Lack of Forward Trunk Tilt at Ball Release**

One of the most common mechanical flaws I see among pitchers is the tendency to finish too upright in their deliveries. Lack of good forward trunk tilt is a big issue for a couple of reasons. First off, it reduces velocity (both real and perceived). Right after front foot plant, you want to be bracing up with your front leg so that you can catapult powerfully over your front leg with your chest and throwing arm. By finishing too upright you lose some of that catapult effect.

Good trunk tilt also gets you out farther over your front foot, allowing you to release the ball closer to home plate and increasing what’s known as perceived velocity (it’s estimated that every foot of extra distance at release point equals 3 MPH in perceived velocity to the hitter). Ideally, you want your head and chest over your front leg with the ball leaving your fingers at or past your front foot.
The 14 Biggest Mechanical Flaws

The second big issue created by lack of forward trunk tilt has to do with your follow through. Finishing with your chest down over your front leg aids in decelerating your throwing arm after the pitch. The acceleration of the pitching arm from maximum external rotation (or layback) to extension and ball release is the single fastest human movement in all of sports. In the first phase of the delivery, you use your entire body to generate force and power. If you finish too upright, abruptly stopping that catapult with your trunk, you are asking the small muscles in the back of your shoulder to do all the work in slowing your arm down. So you can also think of good forward trunk tilt as your body’s shock absorbers. You should make every effort to maximize forward trunk tilt in your delivery. Not only will it help you improve velocity, but your shoulder will thank you.

Big Flaw #13: Excessive Lateral Trunk Tilt at Ball Release

It’s common for young pitchers to hear coaches tell them to “get their arm up” or “get on top of the ball” and think this means they need to throw straight over the top in order to throw hard. There’s nothing inherently wrong with throwing over the top if that’s your natural arm slot, but you need to be able to do it without sacrificing balance or leaning sharply to your glove side at ball release. Too often, making a conscious effort to throw over the top leads a pitcher to yank his head to the side to clear room for his arm. Where your head goes your body tends to follow, so this usually pulls the pitcher away from his driveline, increasing the stress on his elbow as his arm accelerates into ball release.

Now one thing that really bugs me is when coaches go overboard in the other direction, thinking that throwing over the top needs to be avoided at all cost. I have personal experience with this. I was always one of those guys who had a high natural arm slot. I knew I had developed some bad habits though, so when I was rehabbing from
elbow surgery, I flew across the country to seek out expert advice from one of the nation’s foremost authorities on pitching bio-mechanics. He took one look at me and had me dramatically drop my arm angle so that my delivery more closely resembled Randy Johnson’s. I knew this didn’t feel right, but I respected him so I committed to making the change. The result was a dramatic loss of velocity and bite on my breaking pitches. I got released the following spring training, bouncing from team to team in the independent leagues before going back to my natural arm slot and regaining some of my good stuff. I would have been better off simply working to stabilize better with my front side while maintaining my natural throwing style. But sometimes coaches, like doctors, have a tendency to over-diagnose. When all you have is a hammer, everything looks like a nail.

So if you notice excessive lateral tilt in your delivery, and a tendency to fall off towards your glove side, this doesn’t mean you have to immediately change your arm slot. In fact, some lateral trunk tilt is normal, and throwing with a high arm slot has advantages like getting better leverage and throwing on a more downward plane. But if taken to the extreme, trying to throw over the top can lead to poor balance, lack of command, and higher risk of injury. If you’re concerned about excessive lateral trunk tilt, focusing on stabilizing better with your front side to maintain your driveline is usually a good place to start.

**Big Flaw #14: Leading with the Elbow – “Throwing Darts”**

One common problem among young pitchers I’ve worked with is a tendency to lead with their elbow in their throwing motion. To accelerate the arm and achieve maximum velocity, the shoulder needs to first externally rotate (see picture of MLB pitcher at max external rotation) and then powerfully internally rotate as the arm extends into ball release. As your throwing elbow passes by your head, your forearm should be catapulting forward and extending so that your hand overtakes your elbow. By leading with the elbow,
or throwing like a dart, you lose some of this catapult effect, resulting in lower velocity. In fact, this is how I would throw if I was purposely trying to throw slower.

Imagine a figure skater twirling in circles on the ice. Now imagine a chain of skaters all holding hands, with the first skater twirling in circles in one spot with the other skaters being flung around the ice in a giant circle. The skater on the outside, furthest from the center, will be going the fastest. The same principle applies to the throwing motion. A more powerful catapult combined with better extension (a longer lever) equals greater velocity.

Leading with the elbow, or pushing the ball (essentially the same thing) often stems from poor timing or being out of sync with your arms and legs in your stride phase. It may also simply be a case of a pitcher never having learned proper throwing technique. If you tend to lead with your elbow, you may need to work on getting earlier internal rotation with your throwing arm. This can be addressed through drill work that isolates arm action and reinforces it through repetition. Even if every other aspect of your delivery is flawless, getting good back leg drive and bracing up well with your front side, you will never achieve your full potential velocity if you haven't also developed good arm action.
CONCLUSION

The Big Mechanical Flaws listed in this book don’t fully cover every possible inefficiency in your pitching motion, but in my experience they represent the biggest flaws that stand in the way of most pitchers achieving their true potential. Not fixing my mechanical flaws early led me to ultimately fall short of achieving my dream of pitching in the big leagues. But you have one thing I didn’t – access to better information. My hope is that you will use this short book as a guide to start making positive changes to make yourself a better pitcher.

Now I have to warn you, making changes in your delivery isn’t easy. It’s been said that it takes over 1000 repetitions to create new muscle memory. It also takes a lot of strength and motor coordination to perform a powerful pitching delivery efficiently. But it’s worth it because more explosive, efficient mechanics can help you throw harder with greater consistency. Think about it, what could a few extra MPH and better command mean for you? Making the team? Getting a scholarship? Getting drafted? Getting out of A ball?

Just being able to identify the biggest mechanical flaws is a good first step. Next, you need to start using video to analyze your motion. The act of pitching is one of the fastest, most explosive movements in all of sports. You simply can’t see everything that’s going on with the naked eye. Get video of yourself pitching at game intensity so that you can have a trained eye compare yours to the best big league pitching deliveries. This can really be an eye opening experience.

Once you can identify the precise areas you need to work on, you’ll be ready to develop a plan for making the needed changes. Inefficiencies can simply be the result of bad habits, but they’re often caused by limited flexibility/mobility and a lack of the necessary explosive strength. To get to the root of the problem, you should always get a
full strength and mobility assessment as part of your training plan. Understanding good pitching mechanics won’t do you any good if you don’t have the strength and mobility to perform them effectively.

Finally, you need to have the right game plan and commit to it. Let nothing stand in the way of reaching your goals. A solid plan for becoming the best pitcher you can be should include the following:

1) A complete strength and mobility assessment
2) Motion analysis
3) A comprehensive strength and conditioning program for developing explosive strength
4) A complete arm care program to maximize stability in your joints and handle the rigors of pitching
5) Training drills for developing the proper motor coordination needed for an explosive pitching delivery
6) A well organized, easy to follow schedule to keep you on track and progressing towards your goals
7) Mental visualization exercises for developing a winner’s mindset. This is too often overlooked, but it is absolutely essential for achieving lasting success.

Above all else, you will need a positive attitude and an open mind. You will need to overcome old habits and limiting self-beliefs. But if you have that burning desire, know that you can make the changes needed to realize your full potential. Live without regrets and take action today to start moving closer to your dreams and become the best pitcher you can be.

Ok, now it’s time to start taking action! First, check the next page to see how you can get even more great pitching information, then start getting after it!
I hope you have found this guide helpful. Baseball has been unbelievably good to me over the years, blessing with me too many great memories to count. Today I consider myself fortunate to be in a position to give back and help others create their own baseball success stories. To learn more about my training programs and services visit my site at:

www.BetterPitching.com

If you are ready to get started with Video Analysis, send me a video at: Motion@BetterPitching.com

You can also contact me directly by emailing me at Phil@BetterPitching.com

Wishing you the best of luck and success on your baseball journey,

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