Part Four: The Follow-through

by John Pinkman

This is the final segment of our four-part series covering basic pitching mechanics. Pitching fundamentals are the same whether you are eight or fifty-eight, and the follow-through—or "deceleration phase," as it is called by experts in biomechanics—is the most difficult part of the throwing motion for everyone.

After watching pitchers for 25 years, I'm convinced that this is due to a fear of falling off the mound and/or a lack of flexibility; especially for older pitchers. Although deceleration is the least understood pitching fundamental, it is a key to gaining velocity without increasing risk of injury.

A Quick Review

First, let's review major points from our first three articles in "Hardball: Windup vs. Stretch" (Fall 2004), "Beginning Balance," (Summer 2005) and "Dynamic Balance" (Holiday 2005).

1. Eliminating unnecessary or incorrect movements improves balance and prevents mechanical mistakes.
2. Pitch from the stretch whenever possible.
3. The big old-fashioned windup wastes energy and may create imbalance in the overall motion, leading to loss of velocity and accuracy.
4. Step straight toward the plate
5. Open your hips before your shoulders rotate to throw.
6. Keep your glove firmly located on your front side in line with the plate.
7. Take your chest to the glove. Do not bring your glove to the chest.

Your arm throws the ball, not your legs. If you want to throw faster, move your hand faster. Pitchers have historically been misled by non-scientific tales about the role of the legs in pitching. Concepts such as "drop and drive," and pushing off the rubber to increase velocity have been invalidated for several years by modern biomechanical scientists (and in an ongoing study conducted by the National Institute of Health by Kepple, Alderink, Pinkman, et al).

Your legs provide your core and arm with a solid foundation. When the movements of the lower body are consistently and correctly executed, they deliver a kinetic flow of energy, producing the consistently correct release point that is responsible for accuracy. Your legs do not increase velocity; they sustain it throughout the game, pitch after pitch. Improper lower body mechanics can disrupt velocity, however.

Completing the Delivery

The first three articles have brought us to the release point. Now, consider this: at what point in your delivery do you stop applying energy to a pitch?

Many pitchers unconsciously begin to decelerate before releasing the ball. Why? Because they do not follow through, or complete the pitching motion, with the entire body. They actually force the body to prematurely stop.

Athletes, especially pitchers, respond and learn faster when they understand how the correct execution of a mechanical skill affects performance. This is the best analogy I have found for teaching the concept of the complete delivery and follow-through:

Two men run a 30-yard race. One runner is forced by a barrier to stop at the finish line while the other runs through an open gate at the finish line. Assuming that they are closely matched athletes, which runner will would win this race? Obviously the one who could maintain peak speed through the finish line! The other must decelerate prior to the finish line because he has no room to slow down afterward.

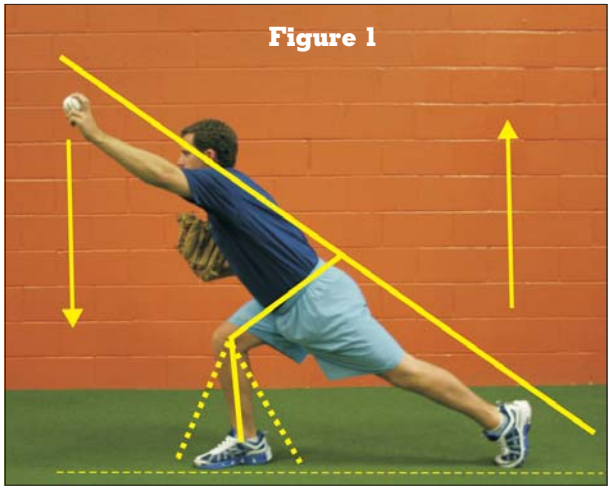


Figure 1

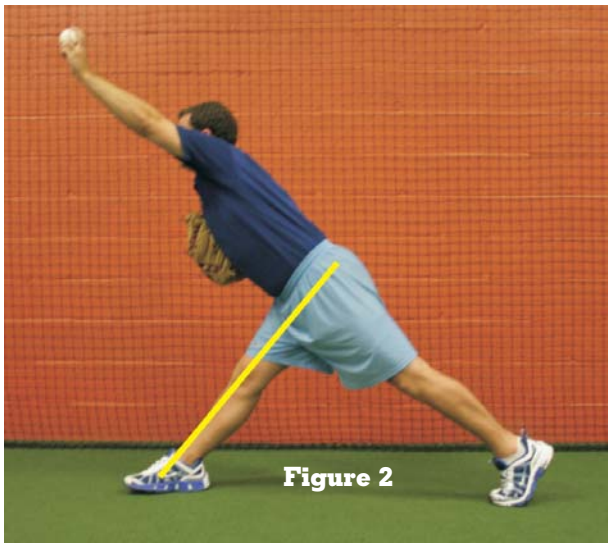


Figure 2

Flexibility and the Follow-through

As men age, flexibility becomes a problem. We always take this into consideration when teaching the follow-through. Maintaining flexibility is not easy, but if you want to be a better pitcher it is critical. Take that into consideration as you read further. It will not be helpful for you to murmur, "How does he think I can do that?"

A full body follow-through, amazingly enough, involves the entire body. Start with Figure 1, The Release Point: nose over toes, head up, firm glove; notice that—at the point of ball release—a straight line from the ball, through the body and back leg intersects the rubber at a 45-degree angle, with the ball-release well in front of the face.

Let me back up here a bit. The stride leg must maintain a constant angle when the foot hits the ground and weight is shifted to the ball of that foot as the arm accelerates the ball. If your stride leg collapses or straightens out (see Figure 2) during the pitch you will most likely have high/low strike zone problems and you can injure your knee.

This is the most important concept. The follow-through motion is like a see-saw. The front end goes down before the back end can go up (see Figure 3). Your stride leg knee becomes

the fulcrum. The lower leg (from knee to ankle) must maintain a 90 degree angle to the mound until the ball is released.

If your hips did not open fully prior to the throwing arm moving forward, as described in the last article, none of this can happen. This can easily be diagnosed by standing behind the pitcher. If after ball release he looks like he is mounting a horse, or like a dog peeing on a tree, then his hips are late. Late hip rotation can cause a pitcher to lose balance and fall off the mound in the direction of his glove side. This creates a hole up the middle in the defense and exposes the pitcher to a line drive. Let's go to Figure 5. See how your arm passes through a natural slot? It should exit this slot and pass across the front of your body to another slot diametrically opposed to the release point arm slot, and to the glove side of your knee, as seen in Figure 3.

I have included a drill in Figure 4. Make sure your back is flat. Hand the ball to the coach. This drill teaches you how far the hand must travel to complete the follow-through.

Your back must be flat. You have a third fewer muscles to decelerate than accelerate. Therefore you must learn to engage many body core muscles (upper and lower back, ribs, etc.) to share in the load. If you use only your shoulder muscles and biceps to stop your arm, you will inevitably injure yourself.

Don't Drag Your Trailing Foot

Here's the part that scares everyone: getting your trailing leg up. This movement extends your release toward the plate, maximizes the effect of the mound, and reduces major muscle stresses. Extension to the plate makes the ball more difficult for the batter to see. With your fingers on top of the ball, you exert downward forces that create ball movement. That is hard to do with a foot dragging like an anchor.

A persistently incomplete follow-through contributes to poor action in the curve ball, cut fast ball and change up. I wish I had a nickel for every time I've yelled, "Finish the pitch!" Extension to the plate and maintaining arm speed through the delivery is a key to a late and sharp-breaking pitch.

We teach our elite high school and college pitchers that the trail leg will always follow the same slot as your arm (see Figures 5 and 6). It may be hard to believe, but it's true. We have captured it on video.

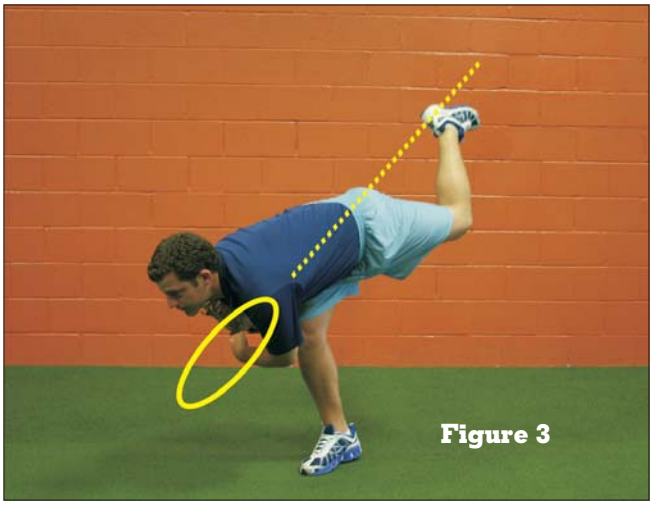
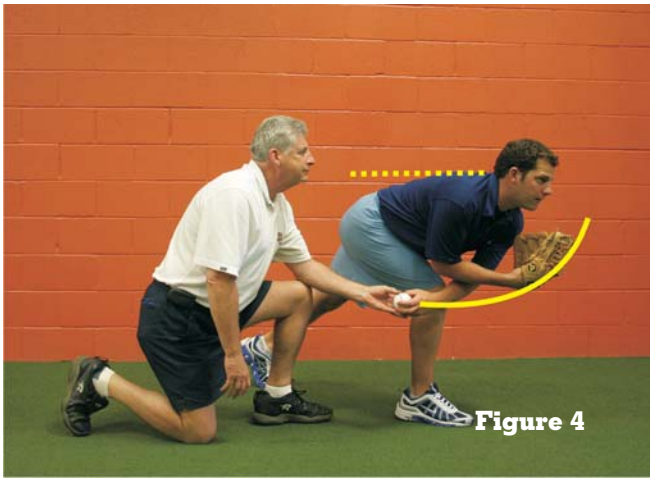


Figure 3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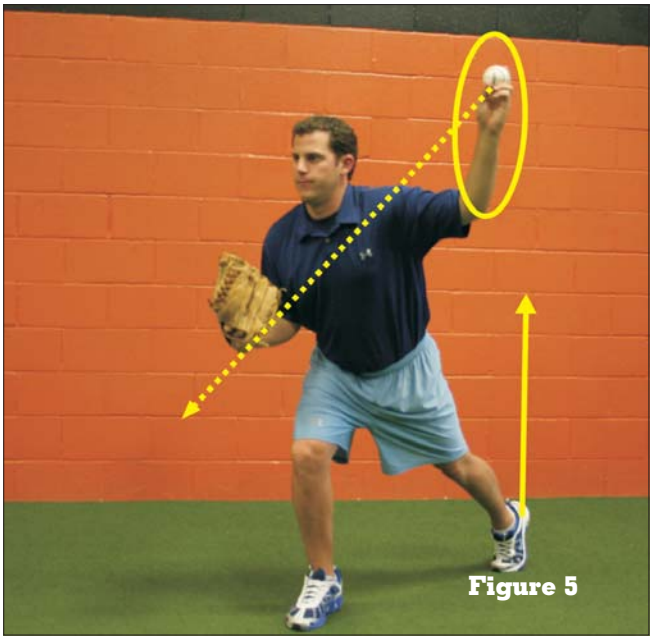
Figure 5

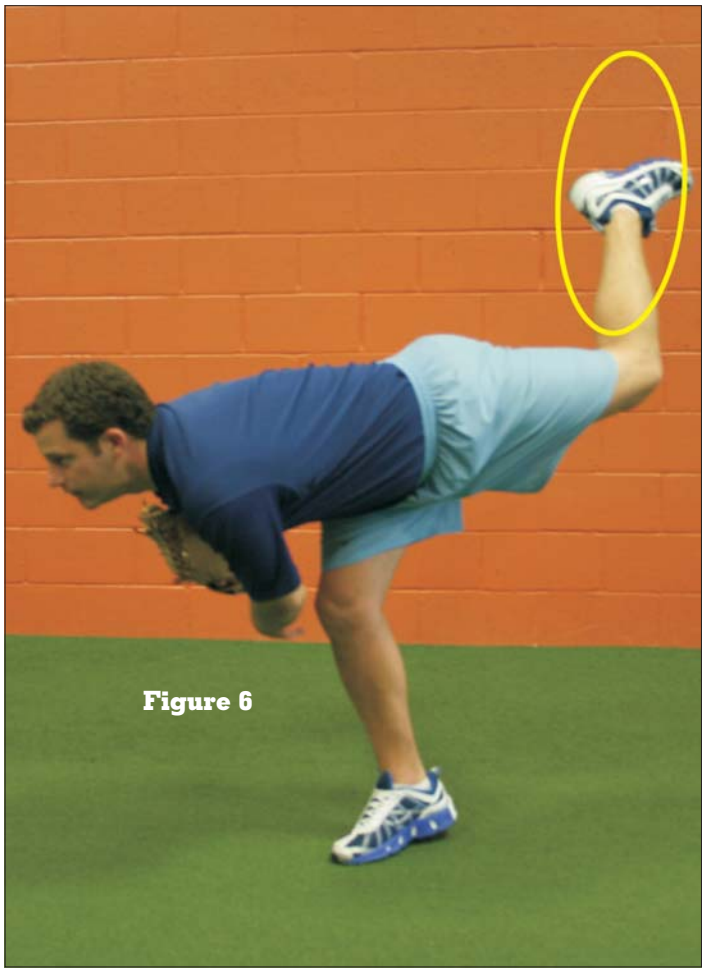
Figure 6

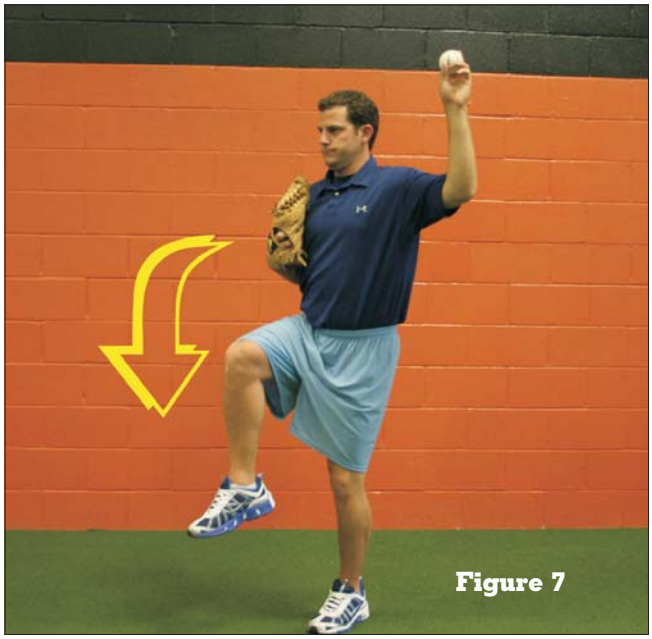
Figure 7

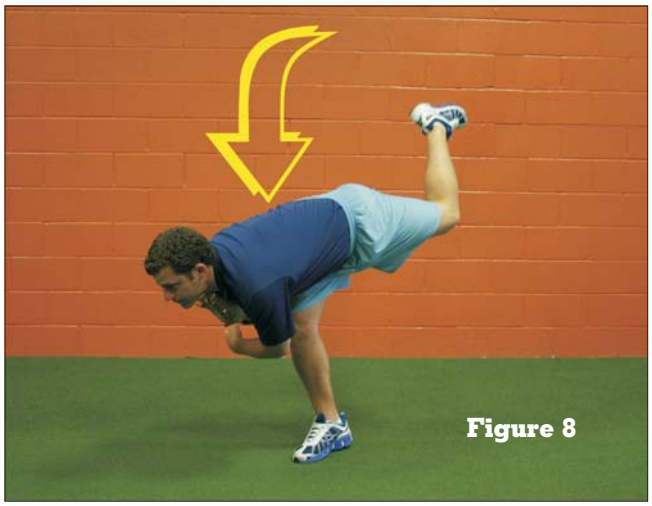
Figure 8

While it may be difficult for older pitchers to achieve that degree of flexibility, you shouldn't stop trying to get it up as high as you can.

The Hi 5 Drill

Figures 7 and 8 show a valuable Hi 5 Drill we have successfully used for many years. Before you try the drill you must know how to raise your leg.

Lie on the ground in a prone position on your stomach. Stiffen your right leg and raise it several times as high as you can. Concentrate on sensing which muscles you engage: not your hamstring or quads or hips, but your butt and lower back.

Now that you know which muscles to use, stand up and do the Hi 5 Drill: Glove up, stride leg up, arm up in a high 5 position. Step forward land on your stride leg; stabilize your core with a firm glove side. As your back gets flat, parallel to the ground, raise your leg. Your thigh must be parallel to the ground as well. After a few dry throws (without the ball) you can throw. But keep in mind this is a body-training drill, not a throwing drill. Remember not to bend or straighten your stride leg as you throw the ball.

Your leg will naturally come down on its own slightly in front of and to the side of the other. You should feel the need to take another small step with the stride foot to fully deplete the momentum created by your delivery motion and the slope of the mound.

You should land in a fielding position with both, feet, knees and eyes looking directly at home plate. major league Golden Glove pitchers (Maddux, for example) are always the ones with the best pitching mechanics. They always land in perfect fielding position to move left, right or in.

You must protect yourself against the yo-yo pitch, the one that comes back as fast as it goes in! You may have only 2/10's of a second to recognize that the ball is about to hit you and protect yourself. Flying off the mound out of control can get you hurt in many ways.

In Conclusion

I hope you have found some benefit from these articles. My experience over the years with MSBL pitchers has proven to me that they can become more successful by learning the new training protocols. HardBall believes, as do I, that you can teach an old dog new tricks. The game is worth the effort.

If you visit the nation's capital, stop by one of our Academies. They are close to either Dulles or National airports in Virginia 15 to 30 minutes from DC. And thanks for the emails and calls. I appreciate the contact. Honor the Game!

The purpose of this article is to make professional training concepts and techniques available to MSBL/MABL members. HardBall Magazine, the author and the editor of this article assume no responsibility for injury to anyone who claims to have been damaged in any way by attempting to use the information presented in this article.

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About Our Contributor

A regular contributor to Collegiate Baseball News, **John Pinkman** is a nationally recognized leader in the field of pitching instruction. His clear language and common-sense approach to pitching instruction have earned him the admiration of some of the best minds in baseball.

According to **Tom House**, "It's obvious that John has taught his students the pitching skills that we require in professional baseball. John is a dedicated student of the game as well as an excellent teacher."

John's instructional facility is located in the Washington, DC area. Designed for serious players, Battery Park ™ is a bright, safe indoor environment that meets the demands of elite teams, professional instructors, or father-and-son workouts. The facility is available to rent seven days a week, from early morning to late at night.

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