

Pitching Mechanics / Fundamentals

Beginners (Goals for 7 to 12 year olds)

1. To teach a pitching motion that allows the beginner to **throw straight**. The straighter the pitcher throws, the more success they will have. As confidence grows the more likely they will be to try to throw a bit harder.
2. To teach a pitching motion that **protects the elbow and shoulder**. Special attention is paid to keeping the front shoulder closed and keeping the glove stabilized in front of the body which if not done correctly can result in early release of the baseball causing stress.
3. To introduce pitching in a way that **eliminates excess motion**. The less motion introduced into the process, the more likely the pitcher is to maintain proper balance and mechanics.
4. To **simplify the delivery mechanics** into a sequence that kids and their parents can quickly understand and repeat on their own.

Pitching Mechanics (Basics)

1. grip, set-up, balance and posture
2. lift leg to 90 degrees or above and thrust rear pocket
3. separate hands, execute arm circle and stride to Power T
4. start hip and delay shoulder rotation
5. square shoulders and bring glove to front (stabilize)
6. release ball beyond the front foot (8 to 12 inches)
7. follow through

1A. The Grip

Thumb and middle finger cut the ball in half. Beginners should use basic 4 seam fastball grip and use 3 or 4 fingers on the ball if necessary. Righty = backwards C; Lefty = forward C



1B. Set-up, Balance and Posture

All beginners should start from the **stretch position**. This will eliminate the potential for excess motion caused by additional movement introduced during a wind-up. Also note that more than 70% of pitches are from the stretch position once we begin holding runners on base.

Feet are set up staggered with ball of the foot contacting the rubber aligned with the instep of the other foot. Place feet fairly close together, within the shoulders, to prevent head movement when picking up the front leg. Some recommend adopting a basketball foul shot shooting stance with the back positioned like one is batting. This stance promotes minimizing head movement that may throw the body out of balance.

The hands should be chest high or higher to encourage keeping the arms/elbows up during the throwing motion.

For those with some experience who would like to pitch from the **wind-up position**, start with the feet fairly close together. Take a short step back. Weight stays even or slightly over the pivot foot. Therefore the head stays over the pivot foot and does not move back or lean to the side. The pivot foot must turn and set alongside the rubber and parallel to home plate bringing the body back to the same balanced position utilized in the stretch position. Beginners must bring the shoulders back to a closed position otherwise the shoulders are likely to be open causing an early ball release and additional stress on the shoulder.

Primary goal of the windup is to build rhythm and momentum going into the balance position.



2. Lift and Balance Leg the Thrust Rear Pocket

Goal of this step is to build momentum and kinetic energy that can be transformed into power.

Stride leg should be raised into a balanced position. Try to get the leg to a height of 90 degrees or higher. Pitchers should be able to stop or hold this position to demonstrate balance. Balance is usually achieved with the head, glove and belly button aligned over the center of gravity.

Rear pocket should be turned slightly toward the target as forward motion begins.

A higher leg kick can mean more momentum, but should only be executed if the pitcher can maintain balance.



Greg Maddux knee is slightly above 90 degrees. The photo on the right shows slight forward lean as he starts forward momentum. The head, belly button and glove are centered. "Hip leads." The hip pocket is first to the target.

3A. Separate Hands, Push Thumbs Down and Around in Circle in an Equal and Opposite Motion, Glove Travels Forward Over the Front Knee

This step **takes place simultaneously** with “Stride to Power T” position (3.B).

Hands break at belt buckle as the stride leg starts forward led by the hip pocket. The pitching hand makes a circle down hard and back with the hand on top of the ball throughout the “**arm circle**” (“showing the ball to second base”). The elbow leads the hand as the ball is taken around the circle. Glove hand stays connected to and over the front knee as if the knee and the glove are connected. Front and rear elbows create “equal opposites” to help the body maintain balance to foot strike.



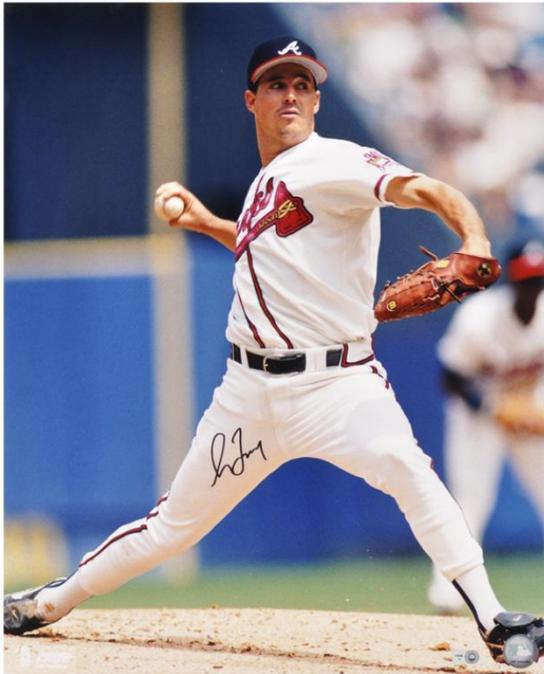
This photo series depicts Greg Maddux’s downward hands separation and arm circle. The hand stays above the ball, the elbow leads . . . arms are equal and opposite at foot strike. The glove hand stays over the front knee throughout the stride.

3B. Stride to “Power T” Position

The stride toward home plate should be led with the rear pocket or showing the back pocket to the catcher, lifting the front leg to 90 degrees or higher and striding as far and fast as possible. Push from the ankle.

Proper leg lift will create kinetic energy help maximize the stride distance. During this phase it is imperative that head and torso alignment be centered (not up, down, back, forward, left or right) be emphasized therefore maintaining balance. During the stride, the head and belly button should travel slightly behind the center of gravity. The stride foot should remain mostly under the stride knee especially at the top of the knee lift helping prevent drifting and balance issues.

Stride foot landing open, straight or closed does not matter. Foot strike of major leaguers is 50% closed, 25% straight and 25% open. Stride as far as you can, as fast as you can. Most big leaguers stride distance is 80-90% of their body height. Hall of famer strides tend to be upwards of 100% to 110% of their body height.



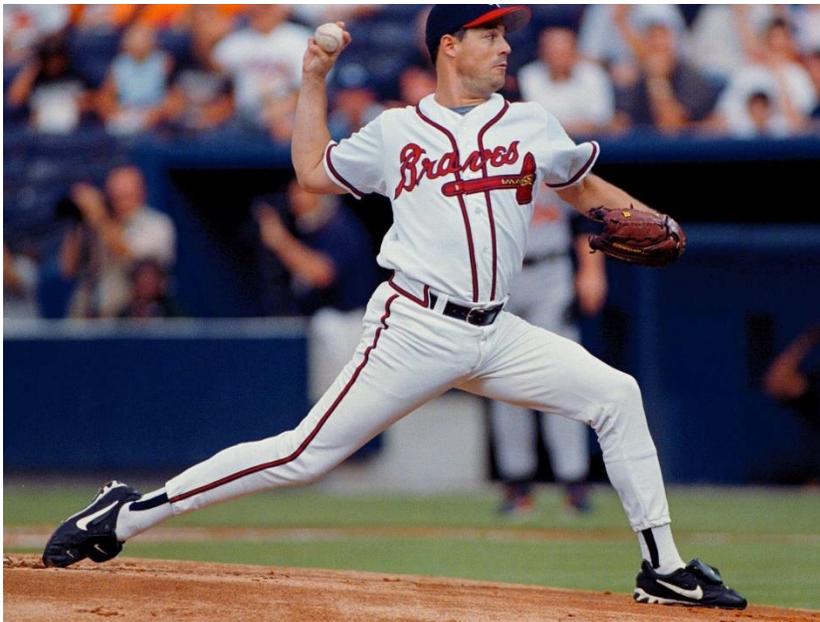
Arms are in Power T Position. Shoulder and hip are perpendicular to the target at foot strike. It can help to tell young pitchers not to start throwing the ball until the front foot is down.

Power T. At foot strike two things should be accomplished. First, the shoulders should be positioned perpendicular to the target. Second, the glove arm and pitching arm should be opposite and equal in position to continue to be in balance. If they are not, the adjustment should be to the glove arm, never the pitching arm.

4. Start Hip and Delay Shoulder Rotation (Separation)

Hip and shoulder separation are responsible for 80% of a pitcher's velocity and health of an arm. The goal is to gain maximum separation (40% to 60%) of the hips and back shoulder for as long as possible after foot strike while the body squares up and tracks forward.

This puts the most velocity on the baseball with the least amount of strain on the shoulder and elbow. Also, the longer you can delay bringing the back shoulder forward, the closer your release point will be to home plate improving perceived velocity.



Rear Foot and Hip have turned toward target. Shoulder separation is clear.

5. Square Shoulders and Bring Glove to Front (Stabilize)

Stack and Track phase is the last 20% of velocity . . . happens as the shoulders complete rotation and square up. The posture is staying upright and vertical (eyes level) as the hips complete their rotation and the arm begins to come forward. The torso continues to move forward until the angle of the front knee reaches 90 degrees or more.

The process of swivel and stabilizing the glove over the front foot is last step before release point. The glove should be upward with the palm facing the torso. Glove should stabilize between center of the body or in front of the armpit. Glove doesn't come back to or under the body . . . the body continues to track forward to the glove.

If glove gets outside torso (i.e. chicken wing) it affects torso and release point. Throwing the glove out of the way causes release point to be early and puts strain on the arm. Work toward adjusting the glove . . . not the pitching arm. Pitches missing the target are usually high or low in this case. Pitches consistently right or left can be caused by initial alignment on the pitching rubber or by the head (eyes not level) and torso pulling off the proper alignment.



Greg Maddux glove has swiveled and stabilized in front of body. Chest continues to track toward glove and target. Back foot drags as the body continues to track forward. Throwing arm is in an external rotation position

6. Release Ball beyond the Front Foot (8 to 12 inches)

Prior to release the throwing arm lays back in an external rotation position. The elbow continues to lead the hand. Elbow should be at 90 degrees or higher as the arm passes the body. The arm snaps forward to a hand leading release point that should be 8 to 12 inches in front of landing foot. Head should be pointed directly at the target, eyes level. Glove should be in front of the body and over the front knee.

Never mess with the pitching arm slot, instead ensure the pitcher has good balance. The arm slot will come naturally.



Glove stays in front of body through arm snap and release. Release is 8-12 inches in front of front foot/knee. Note the long dragline of the back foot.



7. Follow Through

Follow through should be a natural deceleration process based on all the previous steps. Note the back foot should pop up in exactly the same slot as the arm. This action will ultimately determine the path of the follow-through. Look to the dragline to give you an indication of how long the drag foot is staying down and how much momentum is being transferred to home plate.



Eyes and chest continue toward target. Glove stays in front of chest even in follow through making it easier to become a defender.



Beginner Short Version for Pitching Mechanics and Sequence

- Begin from stretch to minimize unnecessary head/body movement. Feet shoulder width or less apart. Knees slightly bent. Feet staggered. (Grip, set-up, posture and balance)
- Stay balanced, lift leg 90 degrees (or more for better athletes) and thrust the hip pocket at the target. Check head movement. Head and belly button are straight line up. Hip goes first.
- Separate hands hard, thumbs down and around in circle (arm circle) in an equal and opposite motion. Fingers on top of the ball at back most position in the circle, showing the ball to the second basemen, back of the hand faces pitcher. Elbow leads the hand back and then forward. Glove hand should stay on top of knee as if the knee and glove are connected.
- Step straight toward the target. Keep shoulders closed. Go for stride length between 80 to 90 percent of height.
- Achieve the power T stance at foot strike. Look for equal and opposite glove and throwing arm.
- Begin to open the hips and turn foot before the arm starts forward.
- Shoulders square up with head and body moving toward the target.
- Foot drag continues as body tracks forward until point of ball release.
- Swivel the glove and bring it in front of the body.
- Keep the eyes (head) level as the body continues to move toward the glove and target.
- Keep the glove stabilized in the center and not pulled in or to the glove side.
- Rotate through to a release point that is 8 to 12 inches in front of the landing foot.

- Decelerate completely. Finish the throw. Follow through should be natural. Rear foot kicks up in the same slot as the arm.

Credits: Much of this material is developed with the techniques and drills found through the National Pitching Association, Ripken Baseball and a number of training articles, images and videos found on the web.