

Three Muscle Memory Drills for Consistent Hitting Mechanics

By Dan Piro

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When you step to the plate, you have much to consider. How much of a challenge is the pitcher to you at this moment? What pitches do you expect to see? Which of those pitches can you handle? What is the game situation? What do you have to do to get value from your turn at the plate? For example, tie game, bottom of the eighth, none out, runner on second? You will help your team if you advance the runner to third.

The last issue you want to have to consider is anything to do with your hitting mechanics. You need to deal with your mechanics between games. Go to the batting cages, use the batting tee, do soft toss, and do drills to improve your swing. Core mechanical hitting drills are the topic of this article.

In recent years, a growing cadre of professional players regularly practice three special drills developed by Mike Epstein, a former major leaguer who played under Ted Williams. Epstein was the brightest player Williams ever managed, and the Splendid Splinter enjoyed sharing his insights into the science of hitting with his young protege. After he retired from the game, Epstein maintained contact with Williams and advanced the understanding of the mechanics of hitting to new levels of clarity.

Epstein was able to show in great detail that the rotational mechanics favored by Williams generated more power and more consistency in hitting than methods that emphasized linear mechanics. He studied major league hitters and found that most of the good hitters employed rotational mechanics: Their hips led their hands; they matched the plane of their swing to the plane of the pitch; and they kept their hands inside the ball.

Epstein discovered that the swing is always triggered when the hitter drops the heel of his front foot. In preparation for his swing, the hitter coils his shoulders, turning away from the pitch with his upper body, so that he is ready to uncoil with force. In the process of coiling, he raises his front heel a bit. The moment he commits himself to swinging the bat, the hitter drops his front heel. This causes him to uncoil, with the hips following the heel and the hands following the hips. All of this happens so fast it is not

apparent that the hips follow the heel and lead the hands. However, when studied in slow motion, the biomechanical order of things becomes clear.

It is nice to know the theory, but drills that put the theory to practical advantage are worth their weight in gold. Six years ago, Mike Epstein was kind enough to share his drills with us. He has field tested these drills with hundreds of players, and they are proven to work. Any player who masters the drills will acquire consistently repeatable and sound hitting mechanics. These drills, which train muscle memory, will let you get more from the talent you possess. More of your swings will result in hard hit balls, and that is worth the effort.

This article presents three essential drills. You will need to execute the drills correctly at least 1500 to 2000 times in order to gain the advantage of muscle memory. At some point, you will find that you can trust your swing in a game without having to give any thought to your hitting mechanics.

During the course of practicing the drills that follow, you may want more information and instruction. Mike Epstein is in the business of providing hitting instruction 24/7. He says, "Teaching hitting is not what we do—it's who we are." You can avail yourself of his products and services by visiting his website at www.mikeepsteinhitting.com.

When doing these drills, keep in mind that these are instructional techniques, designed to

help you train your body in universal core mechanics. *The drills are not intended to affect your style:* open or closed stance; hands high or low, etc. Your style is personal to you; technique is universal. Once you master the core mechanics of rotational hitting, your personal style will "wrap around" them, with little conscious effort. The drills that follow temporarily suppress your style so that you can more efficiently train your body to perform core hitting mechanics.

Drill I:

The Torque Drill [Figures 1A and 1B] helps the hitter learn to develop and release torque, by teaching his body that before he launches his swing, his lower body must be open and his top half closed.

1) Place your feet side by side, about six to eight inches apart, facing the mound.

Move your stride foot forward about one bat length. The toes of both feet must be pointed toward the pitcher. Raise your back heel to keep your weight balanced. This stride and foot placement emulates the open position of the hips in a completed swing. Rest the bat against the side of your rear shoulder, not on top. This will help you keep your hands back and close to the body.

2) Next, raise your back heel high enough to allow you to sit directly over your back leg as it flexes. The back leg should resemble an inverted L (or L shape in the case of a left handed hitter) when viewed from the opposite

1A. Wind the rubber band



1B. Release the top half and swing.



Figure 1: The Torque Drill™

2A. Land on the ball of stride foot, heel elevated. Counter-rotate top half as a unit.

2B. Drop front heel. Raise back heel. Flex back leg. Tuck back elbow. Dip back shoulder.

2C. Hips fully open. Back foot rotates. Back leg fully flexed. Release top half as a unit.



Figure 2: The By-The-Numbers Drill™

batter's box. The flexed back leg establishes the crucial "tilt" which helps the hitter **match the plane of his swing to the plane of the pitch**. If you find you are standing vertically, you need to bend your back knee a bit more so that you tilt backwards.

3) **Coil** your upper body, hands and trunk **as a unit**, until you feel a stretching in your abdominal area. Epstein calls this "**winding the rubber band.**" Hold the position for a few seconds.

4) Release the top half by swinging the bat. Your open bottom half pulls the trunk and hands through the contact zone with great rotational velocity. You create torque by opening the hip and counter-rotating the hands and trunk, then you release the top half.

5) As you release, your back elbow must tuck into your side to allow your lead elbow to work upward a little. Epstein calls this "**weathervaning.**" Coupled with the flexed rear leg and slightly back leaning body tilt, the lead elbow guides the swing into the plane of the approaching pitch. The follow through, for purposes of instruction, should finish near the opposite shoulder.

Of all the movements involved in the Torque Drill, flexing the back leg may be the most taxing. If you get wobbly, take a break and resume it a bit later. If you continue, you're prone to execute the movements imperfectly, which defeats the purpose.

For more on Mike Epstein's hitting tips, go to www.mikeepsteinhitting.com

Drill II: By-The-Numbers

Before you proceed to Drill II, you must master the Torque Drill.

The **By-The-Numbers Drill** [Figures 2A-B-C] teaches you how to move quickly and efficiently from your stance through the completion of your swing—which is also the starting position of the Torque Drill. When mastered in combination, these two drills are the building blocks of a mechanically sound rotational swing.

In the By-The-Numbers Drill, the numbers 1-2-3 correspond to stance-stride-swing. As in the Torque Drill, you need to place your bat against the side of your shoulder in the stance position. You may also need to lower your center of gravity a bit to achieve better balance.

Epstein stresses that the distance from back foot to front foot in the completed stride should be equivalent to your normal walking stride, which, coincidentally is about one bat length. You can use your bat to mark the spot where your front foot should land.

1) Start the By-The-Numbers Drill by counter-rotating your top half as a unit slightly before you take your normal stride [Figure 2A]. Stride forward and land on the ball of your front foot, heel elevated. As you stride, open your front foot from the 90° position (in which the side of the front foot is parallel to the pitching rubber) to about the 45°

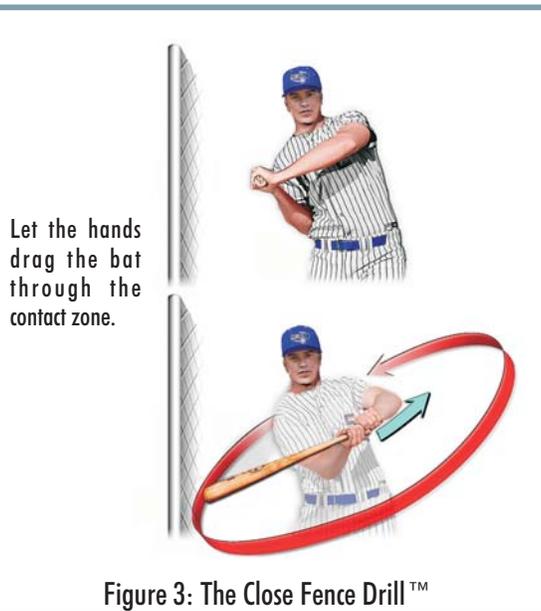
position (in which the big toe of the front foot is closer to the mound than is the heel). Partially opening the front foot will begin the process of opening your lower half.

2) Drop your front heel. Simultaneously, raise your back heel [Figure 2B] and flex your back knee. By dropping your front heel, you brake your forward momentum and accelerate the rotation of the hips with great efficiency and power. By simultaneously raising your back heel, you free the back foot and leg to pivot and flex. Also, you stop coiling your upper half, releasing it to follow the accelerating hips. As you release your top half, simultaneously dip your back shoulder and begin to weathervane. As you track the pitch, raise the lead elbow more for a low pitch, less for a high one.

3) In the final phase of the drill, your hips and front foot will rotate into the fully open position. Simultaneously, your back foot will rotate, following the hips. Your raised heel will allow the back foot to rotate until it is fully open, and your back leg is flexed into the inverted L (or, if you are hitting from the left side, is flexed into the L position.) **The concept of "squishing the bug," in which your attention is focused on your back foot, has no place in this drill. Your momentum naturally will deliver the correct back side rotation.**

With your weight over your flexed back leg, hips open, rear shoulder dipped, back elbow tucked into your trunk, lead elbow up, you are perfectly positioned to complete the swing.

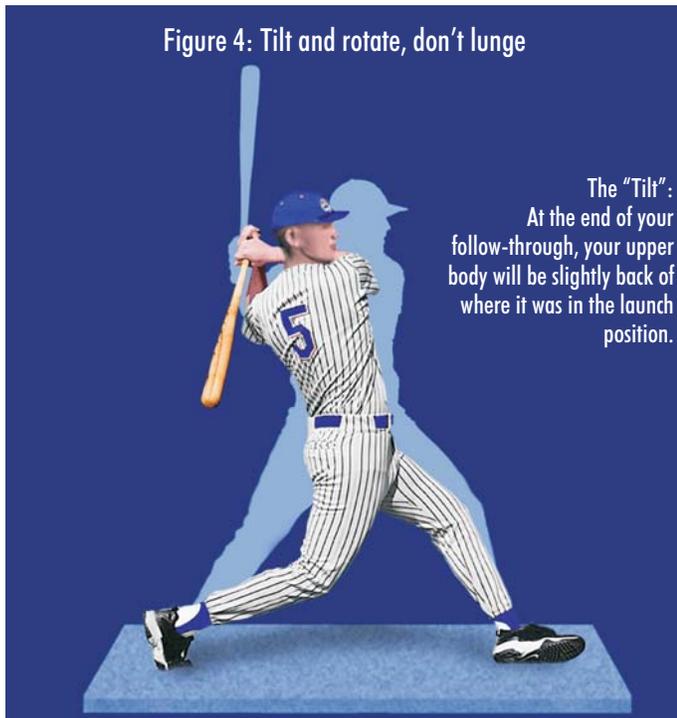
Once you have mastered these drills, you will have good command of the core mechanics of rotational hitting. Your hips will lead the way (creating torque), your swing will match the plane of the pitch, and your



Let the hands drag the bat through the contact zone.

Figure 3: The Close Fence Drill™

Figure 4: Tilt and rotate, don't lunge



The "Tilt":
At the end of your follow-through, your upper body will be slightly back of where it was in the launch position.

hands will stay close to the body (inside the ball) until contact.

Tee Work, Wiffle Ball, and More Tips

As you master the mechanics of the first two drills, proceed from "dry" repetitions to hitting a baseball off a tee. When you do tee work, vary the height of the ball so that you can practice working your elbows to match the plane of your swing with the plane of the pitch.

Keep in mind that when you correctly execute a rotational swing, your upper body will not lunge forward at all. You will be rotating and tilting slightly back, not driving toward the ball. Therefore, at the completion of your follow through, your upper body will tilt slightly back toward the catcher as shown in Figure 4.

Notable Baseball Quotes

"I became a good pitcher when I stopped trying to make them miss the ball and started trying to make them hit it."—*Sandy Koufax*

"Baseball players are smarter than football players. How often do you see a baseball team penalized for too many men on the field?" —*Jim Bouton, 1988*

"Baseball, it is said, is only a game. True. And the Grand Canyon is only a hole in Arizona." —*George F. Will, Men at Work: The Craft of Baseball, 1990*

"I see great things in baseball. It's our game—the American game. It will take our people out-of-doors, fill them with oxygen, give them a larger physical stoicism. Tend to relieve us from being a nervous, dyspeptic set. Repair these losses, and be a blessing to us." —*Walt Whitman*

"Why does everybody stand up and sing 'Take Me Out to the Ballgame' when they're already there?" — *Larry Anderson*

Source: thequotegarden.com

Epstein recommends hitting golf wiffle balls with a specially designed fiberglass wiffle bat. Because the wiffle ball bat is light, you will be able to do a great many repetitions without fatiguing, and you will more likely to focus on your mechanics. If you want to practice in your backyard, you can visit www.personalpitcher.com and purchase the Personal Pitching Pro package from Sports Products Consultants. (See their ad on this page.) The Personal Pitcher is a portable machine that pitches golf wiffle balls to you.

Drill III - The Close Fence Drill

Many hitters suffer by allowing the hands to stray too far from the body. The Close Fence Drill [Figure 3A-B] reinforces the mechanics necessary to keep your hands inside the ball through the contact zone.

This drill is no different from the Torque Drill except that you assume the torque position—completed stride, front foot flat, back heel raised, back leg flexed, top half closed, bottom half open—with your back foot about **12 to 15 inches from a fence, not home plate!** Your front foot should be about one bat length from the fence.

Remember to dip the back shoulder, tuck the back elbow and slightly elevate the lead elbow. Let the hands drag the bat through the contact zone, slowly at first. Gradually increase speed with subsequent reps. Amazingly, your bat will not hit the fence!

Practice, Practice, Practice

Practice these drills regularly to reinforce muscle memory. Even a few of the big league hitters who gained from these drills have made the mistake of dropping the drills and seeing their mechanical consistency decline.

Adult recreational athletes, playing once or twice per week, must work especially hard to maintain these skills. You don't want to be thinking, "What do I do first?" in the batter's box or, "What did I do wrong?" on the way back to the dugout.

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