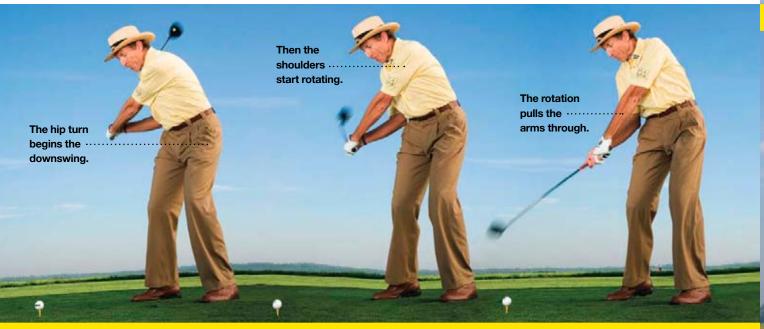




THERE ARE DOZENS OF theories about how to swing the golf club, but there's one common denominator among all great ball-strikers—and it's the key to making anyone a better player. From Ernie Els and his seemingly effortless swing to Michelle Wie and her incredible distance off the tee, the best players apply a tremendous amount of energy to the ball. The Chinese have a word for this kind of energy flow. They call it "chi" (rhymes with tee). They believe all people have a life force surrounding them and within them, and the better you utilize it, the better your quality of life.

Tapping into your energy force also will make you a better golfer. I call it "swing chi," and it comes from how you unleash power during the downswing. If you transfer your swing's energy to the ball more efficiently—the key move is leading the downswing with your lower body—you'll hit the ball more crisply and deliver more power. While this might seem like a metaphysical approach to the game, we've done research at my academy at ChampionsGate near Orlando to put real science behind it. I'd like to share with you the step-by-step of swing chi, including how we test a golfer's energy flow, and then offer you my best drills for improving your chi.



WHAT IS **SWING CHI?**

Simply put, swing chi is the energy you transfer from your body to the golf ball. The better your downswing technique, the better your chi. Ideally, I want all golfers to sequence their downswing from the ground up—the hips rotate toward the target, followed by the shoulders and then the arms. Amateurs typically sequence their

downswing in reverse order (arms, then shoulders, then hips). This is what distinguishes a poor ball striker from a good one. The transition from backswing to downswing is vitally important to delivering the maximum amount of energy to the ball. Ever hit a great shot that felt effortless? Congratulations, that's good swing chi.



HOW WE MEASURE A GOLFER'S CHI

WE USE A VARIETY of state-of-the-art, swing-analysis devices, including sensors that are placed on the body and club to record energy transfer. The data that is most important in determining a player's swing chi or energy transfer is the amount of weight shift from the top of the backswing to impact. Another important data point is the seperation between the hip and shoulder turns on the downswing. More separation means more clubhead lag (right) for more power.





TESTING

INDOOR Our indoor swing-analysis equipment is provided by the University of Pittsburgh Medical Center. Golfers stand on **DATA** sensitive plates that measure a golfer's body-weight force while he or she hits balls into a simulator screen. Sensors placed on the torso, arms, legs and club (above) record their swing and extrapolate statistics.

> Executing the proper weight shift is a very important part of transfering energy from the body to the ball. We've found that elite-level players use their body's mass to hit powerful shots while amateurs use only a fraction of it.

This sample data (above) shows that the pros we tested supported 90 percent of their body weight with their back foot at the top of the backswing, but the amateurs kept their weight evenly distributed - no shift away from the target. As the pros started down, they pushed off the ground with their front foot, registering a shift in mass heavier than their full body weight; amateurs registered only 65 percent-wasted energy. At impact, elite players transfered three-quarters of their weight into the hit, with only a quarter of their weight registering on the ground; amateurs were at 50 percent.

OUTDOOR TESTING

In our outdoor testing we use a device called the K-Vest provided by Bentley Kinetics. The student makes swings wearing the vest, as a computer does a 3D analysis of body movement (right, actual screen captures). This process also trains a player with color codes (red is bad; green is good) to help correct positions and improve swing chi.

BAD CHI

The computer captures an over-the-top downswing.

8 degrees of separation between hips and shoulders is poor.

GOOD CHI

This downswing is on plane and well sequenced.

of separation between hips and shoulders is good.



BAD CHI / This computer-screen capture shows a golfer swinging down the target line and also from overhead. His downswing is traveling from outside to inside the target line - a classic over-the-top move that will produce a slice. A big reason for this move is that he initiated the downswing with the arms, shoulders and hips moving together. This image shows only six degrees of separation between his hip and shoulder turns.



GOOD CHI / The club is on plane as this player swings down. More importantly, the sequencing of the hips, shoulders and arms is terrific. A key indicator is the 21 degrees of separation between the hip and shoulder turns. Essentially, all good players coil in the backswing and then uncoil in the downswing, with the body pulling the arms and the clubhead releasing through the ball at the last second.

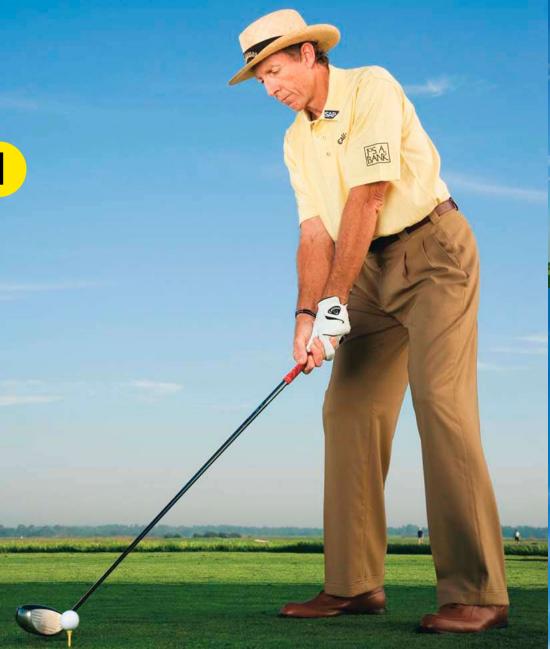
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Drills to improve your swing chi

OPEN STANCE

If you swing over the top, you're unwinding your upper body first. You need to train yourself to start your downswing by turning your hips. Dropping your front foot back a few inches away from the ball and opening your hips (pointing left of the target) will help initiate the proper downswing sequence. Try hitting drives on the range from an extremely open stance.





HALF BACK, HALF THROUGH

When you swing back too far, you can lose your coil and bleed your swing of energy. Try hitting with half swings. Take the club back to where your left arm is parallel to the ground, and then swing through to where your right arm is parallel. Create as much speed as you can in that space. When you get your sequence right-your swing chiyou'll be amazed how far you hit the ball.





BASEBALL SWING A good batter instinctively starts his swing the instant the pitcher goes into motion. His weight moves back slightly and then shifts forward as the ball comes to the plate. As he watches the ball approach, the batter makes the backswing and forward swing in one fluid motion; golfers think of them as two separate parts. The batter's weight shift is pure instinct. To make your swing more instinctive, forget about mechanics and just react. Grab a bat and have a friend stand to the side and toss golf balls to you. When you try to hit them, your body will coil and uncoil naturally. Transfer that reactive feeling to your golf swing.

STEP UP, STEP DOWN

slow motion, you'll notice he or she actually starts to shift forward before the clubhead completes the backswing arc. This forward shift starts a sequence of uncoiling much like cracking a whip, where the whip's handle is always a step ahead of the tip. To get a feel for the sequencing of the hips, shoulders and arms, lift your left foot off the ground as you take the club back, and then replant that foot just before the club gets all the way back.

