The force is strong with you. But which one? Thanks to new research, we have the answer.

Teaming with biomechanist Scott Lynn, Ph.D., an associate professor at California State University, Fullerton and research director at force plate pioneer Swing Catalyst, we've spent the last three years measuring the way golfers—touring pros and players just like you—use the ground to create power on the downswing. With the help of Swing Catalyst's 3-D Motion Plate, a sensor that can measure force in three directions, we've gathered data from thousands of swings that proves what instructors have always sensed: Golfers create speed in varying ways. The core foundation of our research is that every player uses some combination of horizontal, rotational and vertical force (in that order from the top of the backswing) to deliver the club into impact. Depending on your body type and athletic ability, however, you're likely to prefer one force over the others, and building a swing around your natural "power source" can dramatically increase your swing speed (up to 25 mph in some cases).

We call players who emphasize linear force at the start of the downswing over the other two forces **"gliders."** On Tour, 2011 PGA Championship winner Keegan Bradley is a classic study in gliding. Notice in the sequence below (control Keegan's swing with your mouse or finger) how a glider maximizes right-to-left linear force (purple peak) as the club starts down from the top. (Bradley also demonstrates a fair amount of spin later in the downswing. He's technically a glider-spinner. Combos are common).

Players who emphasize rotational force are known as **"spinners."** The best example of using primarily spin to create power and speed on Tour is seven-time winner Matt Kuchar. You can easily see in the sequence below how a spinner rotates (yellow peak) far more than he or she glides or launches.

A **"launcher"** tends to tap vertical force to max out speed, usually near impact. Lexi Thompson and Bubba Watson (sequence below) are classic launchers, accelerating their bodies upward late in the downswing (blue peak) to produce forces approximately twice their body weight. Keep in mind that while a launcher primarily uses vertical forces to hit shots, he or she also glides and spins before turning on the thrust.

Which Force is Right For You?

You can copy your favorite Tour player, but you may not be suited to optimize his or her preferred force. Our advice? Get to know your body. In addition to performing this research, we've developed a series of five tests that provide the clues you need to determine if you're built for gliding, spinning, launching—and unlocking the power hitter within. It takes about 10 minutes to perform all five screens. We suggest you do it with a buddy or a family member, as some of

the screens require a helping hand. Before you begin, however, download and print the grid below. You'll need it to keep track of your results. Mark a "1" in the appropriate grid box depending on whether you test out for glide, spin or launch during each screen. After you complete all five tests, add up the "1s" to determine your preferred power source, then click the matching link for the moves, swing thoughts and drills to maximize it.

Class is in session. Meet the new and improved you.

Screen 1 for glide, spin or launch: Wingspan

For your first assessment, stand tall with your arms stretched out, like the letter "T." Ask a friend to measure your wingspan (fingertips to fingertips) and height. Compare the two measurements, then use the guidelines below to determine if you're built for gliding, spinning or launching.

If your wingspan is greater than your height, score a point for gliding. Having long arms means you don't have to bend over as much at address. And since a taller stance creates a flatter swing, you're forced to lift your arms on the backswing to create some angle to the ball. The only way to slot the club on the downswing from this upright arm position is to glide toward the target.

If your wingspan and height measurements are the same, score a point for spinning. With equal wingspan and height, neither gliding or launching are required to slot the club, so your best bet is to maximize spin.

If your height is greater than your wingspan, score a point for launching. Your shorter arm length requires you to flex your knees more at address to reach the ball and maintain balance. You naturally "pre-load" your body to launch upward (undo the flex in your knees) at impact right from the start.

Screen 2 for glide, spin or launch: Forearm length

Hold your right arm at your side, then hinge your forearm up, as if you're hitching for a ride. Have your friend compare the length of your right forearm to your right upper arm using a tape measure or alignment stick (as Mike is doing above). Use the guidelines below to determine if you're built for gliding, spinning or launching.

If your forearm is longer than your upper arm, score a point for gliding. A longer forearm tends to elevate the club to a more upright position at the top, requiring glide to lower and slot it coming down.

If your forearm and upper arm are the same length, score a point for spinning. In these screens, any "neutral" test result is a match for using rotational force as your primary swing engine.

If your forearm is shorter than your upper arm, score a point for launching. A shorter forearm tends to create a flatter position at the top. Only by launching can you create the steepness you need to catch shots flush.

Screen 3 for glide, spin or launch: Right-arm action

Decoded deep in your DNA is a natural swing shape, determined primarily by how your trailing arm likes to move. Discovering your natural right-arm action—the third assessment—is critical for long-term success. Your only chance to produce efficient power is to pair your right-arm motion with its lower-body-action counterpart.

Do this: stand at address with your palms together. Next, swing your right arm back, keeping your hands together. Stop at chest height. Look at the position of your right hand, then use the guidelines below to determine if you're built for gliding, spinning or launching.

If your right hand moves under your left, you're what we call an "under" golfer. Score a point for gliding. You need a big shift toward the target at the beginning of the downswing to slot the club from this "under" position.

If both your right and left hands swing back on the same angle, you're what we call a "side-on" golfer. Score a point for spinning. You naturally exert pressure to the right side of the handle. As you do, your hips respond by spinning. Take advantage of it by maximizing rotational force.

If your right hand moves on top of your left as you swing back, you're what we call an "on-top" golfer. Score a point for launching. Because your right arm likes to push down, you need to offset it through impact by launching up.

If your right-arm action doesn't match the ones pictured here, don't sweat it. We've tested a lot of "tweeners" in our day. If you're somewhere between under and side-on (right palm slightly under left), you're what we call a "side-under" golfer. With this hand action, your body prefers to both glide and spin. Score a point for each force.

If you're somewhere between side-on and on-top (right palm slight on top of left), you're what we call a "side-cover" golfer. With this hand action, your body prefers to both spin and launch. Score a point for each force.

Screen 4 for glide, spin or launch: Pivot post

Just as there are three basic right-arm motions, there are three basic ways to pivot. Each is equally efficient, as long as you match it with the correct lower-body action.

To determine how your body naturally rotates, hold a club across your thighs as you stand erect. Now rotate in a mock backswing, keeping the club against your thighs.

If you shift toward your rear leg as you rotate, you're what we call a "rear-poster." Score a point for gliding. A glider needs horizontal force on the downswing to move weight from his back foot to his front; otherwise, the shot may be caught thin.

If you remain centered as you rotate, you're what we call a "center-poster." Score a point for spinning. Using more rotation than launch or glide helps to keep you centered over the ball for a solid strike.

If you shift toward your front leg as you rotate, you're what we call a "front-poster." Score a point for launching. Your weight can't go any further forward, and since you never want to move energy *away* from the ball at impact, your only option is to go up.

Screen 5 for glide, spin or launch: Lower-body differential

For the final test, crisscross alignment sticks at 45-degree angles to your target line, as shown above. Run a third stick through your front belt loops. Straddle the center of the "X" formed by the sticks on the ground and, without a club, swing your right arm back and through, stopping just after impact. (We test this by having a student "slap" a padded mitt, as Bernie demonstrates here). The position of the alignment stick through your belt loops (call it Stick 1) relative to the one pointing to the left of the target on the ground (Stick 2) tells you how fast your hips move on a typical swing. As a general rule, the faster your hips move (that is, the more Stick 1 points left of the target than stick 2), the more you should take advantage of that speed and focus on spinning through impact.

If your hips are rotated more than 45 degrees (Stick 1 points more to the left than Stick 2), score a point for spinning. You have fast hips—use them!

If your hips are rotated close to 45 degrees (Sticks match), score a point each for spinning and launching.

If your hips are rotated less than 45 degrees (Stick 1 points more to the right than Stick 2), score a point for launching. Your body simply isn't built to produce speed through rotation. That's okay: Vertically launching is just as powerful!

How Did You Score?

Add up the "1s" in each column. The one with the highest total is your primary power source. In our studies, we've tested just as many launchers as spinners and gliders—there are no right answers here. The next step? Click the appropriate link below for the setup adjustments, drills and swing thoughts that will optimize your personal power move and send your swing speed off the charts. In our schools, the *least* amount of additional clubhead speed generated with this method is 8 mph. That translates into nearly 20 extra yards with a driver. This is not swing mumbo-jumbo. It's you listening to your body and taking maximum advantage of the way you're built to move.

“Launch” your way to more speed and power

Step 1: Adjust Your Setup

Since your goal is to use vertical force and launch upward through impact, add some knee flex at address. You can’t shoot skyward if your legs are already straight! And since your right hand likes to push down on the ball, set it on top of the grip in a traditionally “weak” position. It won’t feel weak when the ball explodes off the clubface.

Step 2: Go to Launch

Set up for the lower-body differential screen again, this time with your hands pressed together in a mock address position. Swing back. Your goal? Smack the pad, just as in the drill. As you start down from the top, however, pressure your left knee in the direction of the ball of your left foot. This pre-sets your launch. Then, spin around your left leg, allowing it to straighten (launch) as you deliver your hands to the pad with a mighty “thwack.”

Step 3: Pre-set Your Power Source

Flexing your knees at address is a good way to position your lower body for an upward launch. Take it a step further by increasing the flex in your left knee as you swing the club to the top. It may look funny, but you’ll definitely feel like you’re pressuring the ground for a massive strike.

Swing Thought: Raise Your Buckle

As you start down, think of your belt buckle. If you launch correctly, you’ll feel it move several inches higher from its position at the top to its position at impact. The trick is to thrust upward while maintaining your original spine angle. Focusing on your belt buckle helps.

“Spin” your way to more speed and power

Step 1: Adjust Your Setup

Take a medium-width stance with both feet flared out, and set your right hand in a very neutral position on the handle (V pointed toward right ear). Flaring makes it easier to rotate—what your body is designed to do.

Step 2: Ramp Up Your Rotation

You’re built to spin, so the faster you rotate, the farther you’ll hit it. Set up for the lower-body differential screen again, this time with a club placed against your thighs. Make sure the grip end is to your right. Simply repeat the screen, whipping your hips faster and faster in a mock downswing, smacking the padded mitt with the butt end of the club (or stopping just after impact if you’re doing it alone). Keep the club pressed against your thighs—and pound that mitt!

Step 3: Pre-set Your Power Source

Take a seat in a chair with your a club held across your chest. Without moving anything else, rotate your shoulders as far back as your flexibility allows. If you can get the club to point straight out in front of you, focus on keeping your left heel on the ground during your backswing on real swings. Your ample flexibility allows you to rotate your shoulders while “resisting” with your hips as you swing to the top, adding extra coil and swing power. If you can’t get the shaft to point out in front of you, go ahead and allow your left heel to rise slightly during your backswing, and “release” your hips as you turn your shoulders. With either method, the goal is to rotate your hips as fast as possible as you power the club into the impact zone. You simply need to start from the correct place. (Drill courtesy of performance and conditioning expert Ben Shear.)

Swing Thought: Strike a Post

To maximize spin, get your left leg to “snap” straight through impact. This easy moves creates a post for your hips to swing past at a much higher rate of speed, as if slamming a door.

“Glide” your way to more speed and power

Step 1: Adjust Your Setup

Take a slightly wider stance and rotate your right hand to the right on the handle until it feels like it’s slightly “under” the shaft. A wider base makes it easy to “glide” toward the target at the start of the downswing without falling off balance. The under grip facilitates a glider’s natural right-arm action.

Step 2: Coordinate Your Shift

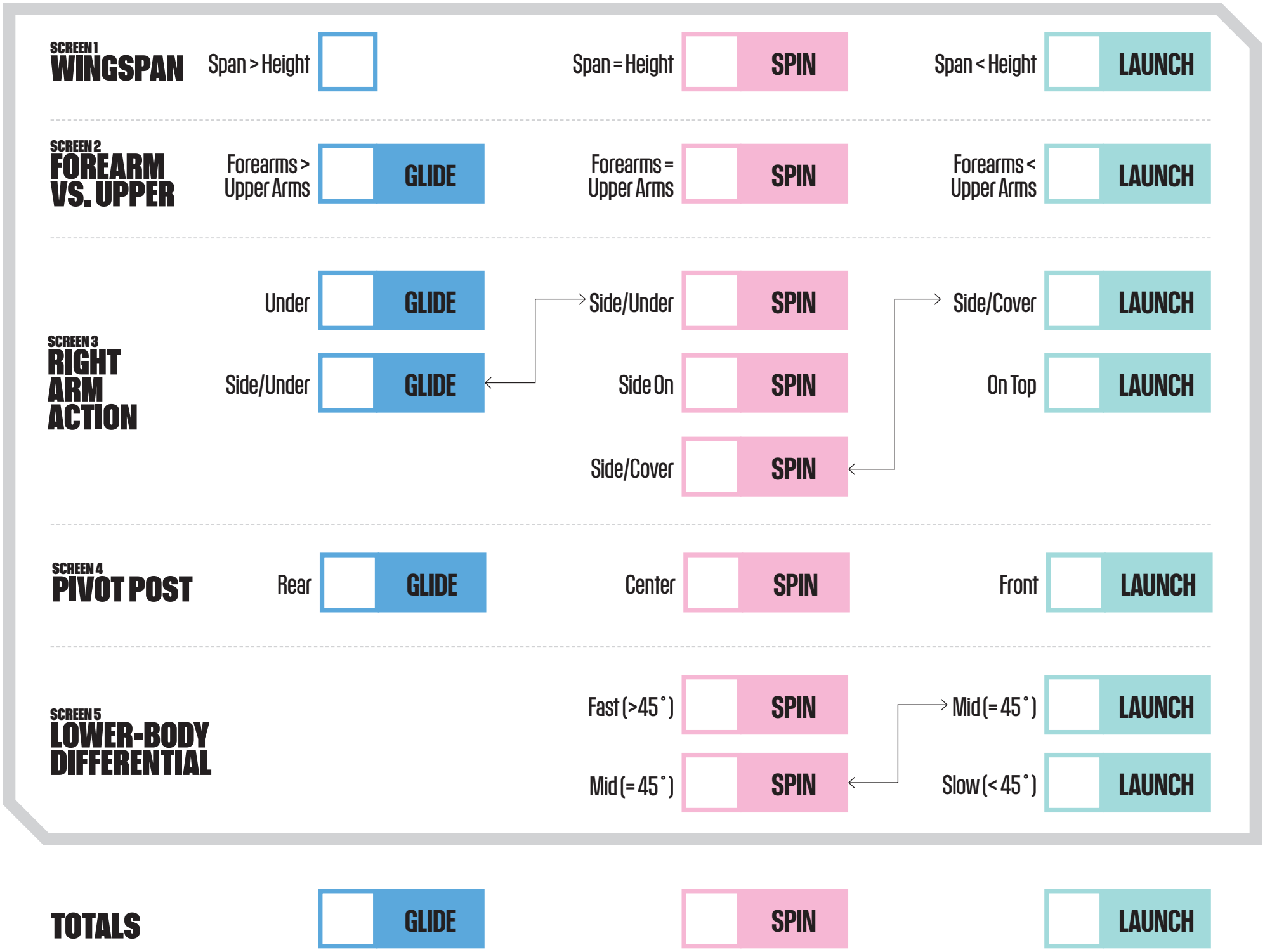
At the range, set up as normal with a mid-iron and your feet together (no ball necessary). Swing the club to the top and stop. Next, “bump” your left hip toward the target and lean to the left. Once you bump, step toward the target with your left foot, planting it in its normal address position. As you plant, put the club into motion and begin spinning your hips. Do it in slow-motion at first, then gradually build speed. Once you have the feel of gliding before spinning, add a ball. You’ll be money in no time.

Step 3: Pre-set Your Power Source

Before you can glide, you have to load. On the way to the top, focus on swinging your arms more up than around, and rotating so that your right hip and shoulder are higher than their left-side counterparts when you reach the top. Now you’re in prime glide position.

Swing Thought: Shift from Heel to Ball

The above moves should make your glide move automatic. If you begin to falter on the course, simply focus on moving weight from your right heel to the ball of your left foot as you swing down from the top. This easy move effectively slots the club from its high position at the top—the key move to maximizing glide.


SCREEN 1
WINGSPAN
Span > Height
Span = Height
SPIN
Span < Height
LAUNCH
SCREEN 2
FOREARM VS. UPPER
Forearms > Upper Arms
GLIDE
Forearms = Upper Arms
SPIN
Forearms < Upper Arms
LAUNCH
SCREEN 3
RIGHT ARM ACTION
Under
GLIDE
Side/Under
GLIDE
Side/Under
SPIN
Side On
SPIN
Side/Cover
SPIN
Side/Cover
LAUNCH
On Top
LAUNCH
SCREEN 4
PIVOT POST
Rear
GLIDE
Center
SPIN
Front
LAUNCH
SCREEN 5
LOWER-BODY DIFFERENTIAL
Fast (>45˚)
SPIN
Mid (= 45˚)
SPIN
Mid (= 45˚)
LAUNCH
Slow (< 45˚)
LAUNCH
TOTALS
GLIDE
SPIN
LAUNCH