



HIT IT CLOSER POWER+ CONTROL

In the first of a three part series aimed at helping you get the ball closer to the hole, coach Hugh Marr explains how to send the ball further up the fairway.

PHOTOGRAPHY BY TOM CRITCHELL

To hit the ball further, you need to generate more clubhead speed at impact. However, your swing can only be as fast as guarantees a centred strike: all the clubhead mph in the world will count for nothing if you consistently strike the ball in the heel or the toe.

With this in mind, I want to share with you the secret of increasing clubhead speed without compromising control. It involves correct creation of the famous and often misunderstood “X-Factor” – the powerful torque created by the difference in shoulder and hip turns. There is, I believe, a misconception that X-Factor is created during the backswing, reaching its maximum at the top. Here, you will learn to think of X-Factor as more of a downswing action. Through my colleague and expert golf biomechanist Mark Bull, you will also gain an understanding that X-Factor is not simply about the amount of stretch, but also how quickly the muscles stretch and contract, or snap back.

Above all you will learn a technique to help you achieve more speed where it matters – without losing that all important sweetspot strike.

NEW SERIES: THREE PARTS TO A BETTER GAME

This new, three-part series uses a blend of tour-level instruction backed up by the latest scientific research to help you get the ball closer to the hole – from wherever you are on the course. In each article, Hugh Marr’s technical vision is complemented by Mark Bull’s compelling scientific insight. You’ll learn the secret of creating powerful

X-Factor stretch; the truth about the body’s ability to balance, and how that fits into the technique for consistent ironplay; and we will give you a statistical approach to the short game which, allied to a more honed action, will improve your performance. It’s a unique approach that gives you the trust and the tools to hammer that handicap.



HUGH MARR
Works with a host of Challenge and European Tour players. He has just been appointed Lead Coach for EGU’s Under 18 squad.



MARK BULL
One of the game’s leading experts in 3D Biomechanics and golf fitness, he works with numerous tour players. Visit www.markbullgolf.co.uk

UNDERSTANDING THE X-FACTOR

It involves hip and shoulder turn, so let's focus on these as we work through the swing.

1

ADDRESS

Leave a club to one side for a moment, and take up your address position. Place your right hand on your chest, the left on your belt buckle as shown. This will help you feel your shoulder and hip motion as we move through the swing.

2

AT THE TOP

Many people believe X-Factor is created by winding up the shoulders during the backswing, while keeping the hips as inactive as possible. But as you will discover, much of gaining power through X-Factor is about how quickly you can get the muscles to stretch and snap back. I want to show you a different approach that promotes a pacier stretch and recoil.

ROTATE

Rather than trying to turn your shoulders against the hips, feel your whole trunk – shoulders and hips – rotating together around a fixed point, marked by your twin hand positions. Rotation round a fixed point keeps you in posture, both face-on and down the line. This means you don't have to "get back to the ball", to "find it" – and that helps your consistency in finding the middle of your driver's face.

HIP TURN

This may feel like you are making a bigger hip turn than normal, and your right leg may straighten a little. Don't worry about that; tour statistics show that those with the biggest hip turns are generally among the longer hitters. Your right leg acts as a natural governor, controlling and stabilising hip turn.

3 FIRST MOVE DOWN

With hips and shoulders turning together, you may be wondering where the X-Factor coil comes in. Well, it comes in now, with the first move down.

Correct downswing sequencing – hips, shoulders, arms, club – is vital to creating power and ultimately clubhead speed. Start this sequence by pushing off with the right, or trailing foot; it should feel almost like pressure pushing down and out through the sole of your shoe, into the ground. Essentially, you are using the ground to create the leverage that allows you to push forward.

2 WAYS

So, for a brief moment, your shoulders are turning away from the target while your hips are turning towards it. Your body is momentarily moving in two opposite ways, and this creates good, fast X-Factor stretch. Returning to our drill, you should get a brief sensation that your left hand, on your belt buckle, is moving back to face the target, while your upper hand is still moving away from it.

CREATING STRETCH: FIRST MOVE DOWN

Let's have another look at this important transitional movement:



This image captures me right at the start of this double motion. My backswing is not quite completed, my shoulders still coiling, but I am just beginning to "push off" with my right foot applying pressure.



Now with the driver, we can see how this back foot push-off has created a lateral motion towards the target in my lower body – almost immediately followed by a rotation that has brought my hips pretty much back to square. You could argue that the maximum point of X-Factor stretch took place somewhere between these two images, with my shoulders fully turned while my hips move the other way; but at this point my shoulders have still retained most of their backswing coil. This is X-Factor stretch.

DEVELOPING THE 'SNAP'

Your X-Factor stretch is only as powerful as the speed with which it snaps back. Try this drill to maximise it.

1

Use a mid-iron for this drill, and tee the ball up if you like. Take up your regular stance. Make sure the ball position is central. Begin the drill by bringing your left or lead foot across to your trail foot, as shown. Nothing else should move at this stage.

2

Make your regular backswing with your ankles tight together. Avoid technical thoughts – just focus on balance and control.

3

When your backswing reaches three-quarter length – hands opposite your ear – plant your front foot forward, back to its original position. This motion, which takes place while your upper half is still completing its coil, sees your body move in two, opposing ways at once. More than turning the shoulders against the hips, this dual move is the most effective way to create X-factor stretch.

4

The forward momentum created by planting your front foot carries on, with weight moving forward as the lower body leads the downswing. From here onwards your hips, slowing down, begin a reverse process that sees those stretched-out lead side muscles contract. Again, see Mark's panel for more on this.

5

This sequence puts you in great shape at impact. Weight is forwards, shirt buttons are slightly ahead of the ball, creating this forward lean in the shaft. This allows you to apply maximum pressure on the ball in an efficient and powerful strike.

6

Let the momentum take you through to a comfortable, balanced finish – shoulders stacked above the hips, and weight on left foot and right toe.

THE SCIENCE BEHIND X-FACTOR

Mark Bull explains why, when it comes to X-Factor stretch, your focus should switch from how much to how fast.

X-Factor arrived in golf's lexicon in 1992, when American coach Jim McLean sought to describe the torque-based swing power gained through the difference between shoulder and hip turns. However, even back then, research revealed an anomaly – that quite often golfers who created more X-Factor stretch were in fact less powerful than those who created less.

Twenty years later we have the answer for this – that X-Factor power lies not so much in the amount of stretch, but in the speed of stretch – and of its subsequent recoil.

In some respects muscles are like elastic bands. They have a natural stretch-shorten cycle; the faster they lengthen, the faster they contract. Think of this like squatting to jump up; you will get higher from a fast, dynamic squat than from a laboured descent.

The golf swing version of that dynamic squat is a fast creation of X-Factor stretch. As Hugh has shown you, it can be achieved through starting the downswing with the lower body, causing the hips to turn back to the target while the shoulders are still coiling the other way. This move creates fast stretch in several muscle groups, including the obliques – that run across your abdomen and rotate the torso – and the latissimus dorsi muscles, which

run from under your armpit to the small of your back. The faster you can create this stretch, the faster the muscles will snap back – and the more clubhead speed you can generate. Biomechanists term the pace of this snapping-back motion "rate of recoil". In practice, the recoil is a reversing of the downswing sequence; hips slow down, allowing shoulders to accelerate; shoulders slow down, allowing arms to accelerate – and so on, out to the clubhead.

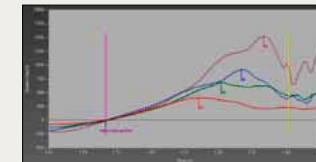
As we have said, muscle physiology means the faster the stretch, the faster this recoil; but equally, your ability to recoil quickly can be helped or hindered by how well you move, with balance, flexibility, co-ordination and stability all playing key roles.

Certainly one way to encourage the stretch and its recoil is through correct sequencing, and the techniques Hugh is showing you here. Biomechanists describe the optimal downswing sequence as a "Proximal to Distal" order – basically inside to outside; in order pelvis, torso, arms, hands, then club. This downswing sequence affords you your best use of your muscles' elastic property, so maximising clubhead speed and minimizing potential injury. You can load your muscles fuller, and faster – and that translates into more clubhead speed, and more distance.

	Swing Distance (ft)	X-F (°)	MaxAF (°)	RoR (%)	RoR (°)
Long Hitters	304.8	-17.7	-47.7	-253.4	910.3
Short Hitters	268.6	-10.4	-50.3	-161.7	628.5
Difference	36.2	7.2	17.5	91.7	281.8
% Difference	13%	69%	36%	57%	114%
p-value	0.000	0.113	0.006	0.001	0.022
Correlation		-0.36	-0.73	-0.86	0.69

LONG v SHORT: THE TRUTH

These statistics, from measuring European Tour players, compare long hitters to short ones through X-Factor. As you can see, long hitters not only demonstrate more stretch; the Rate of Stretch (RoS) and Rate of Recoil (RoR) are also a lot higher. This last stat is clearly the biggest difference with the long hitter snapping back more than twice as fast. Good downswing sequencing will help you achieve a faster recoil.



ALL IN ORDER

This graph reveals the downswing sequence of a tour professional. It shows a clear order – hips (red), shoulders (green), left arm (blue) and hands (brown) – with each part getting sequentially faster.

HIP TURN FIRST

A great indicator of your ability to snap the stretch back is your left latissimus muscle. It runs down your left flank, and this picture shows it stretched out as the hip turn races ahead of the shoulders.

The faster you can get this muscle to contract from here, the more speed you can create through the ball. By this position, halfway into the followthrough, the muscle has completely contracted. Pick up a mid-iron and see how quickly you can move from position one to position two.

**NEXT MONTH:
HIT IT CLOSER
FROM THE
FAIRWAY**