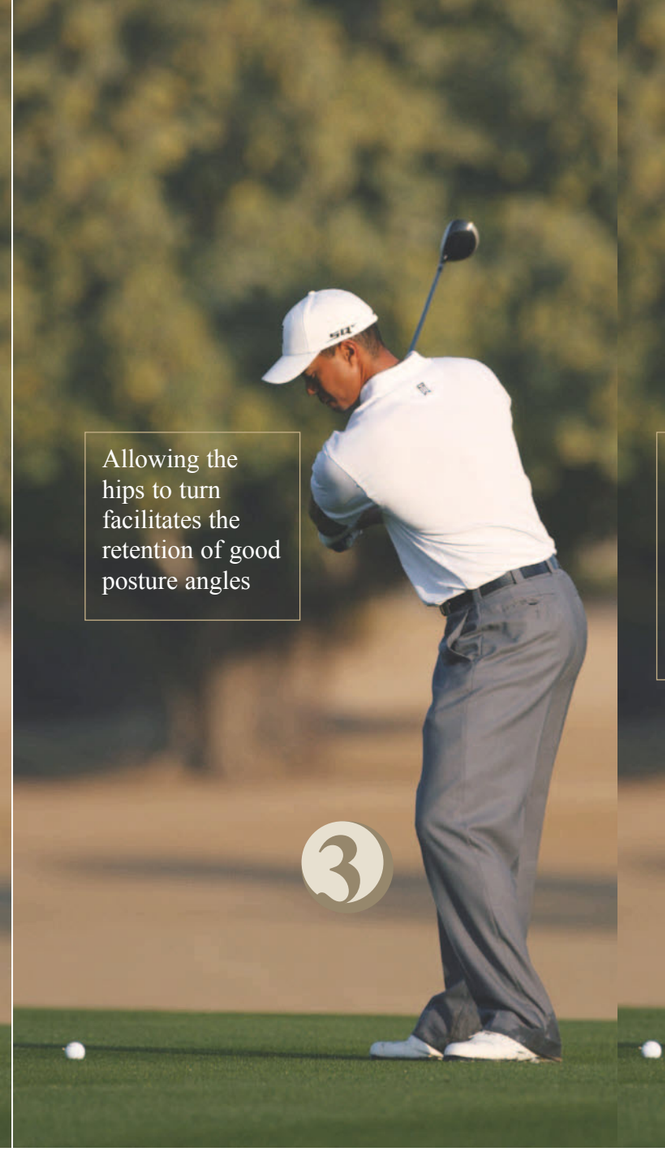
Striping it like Tiger

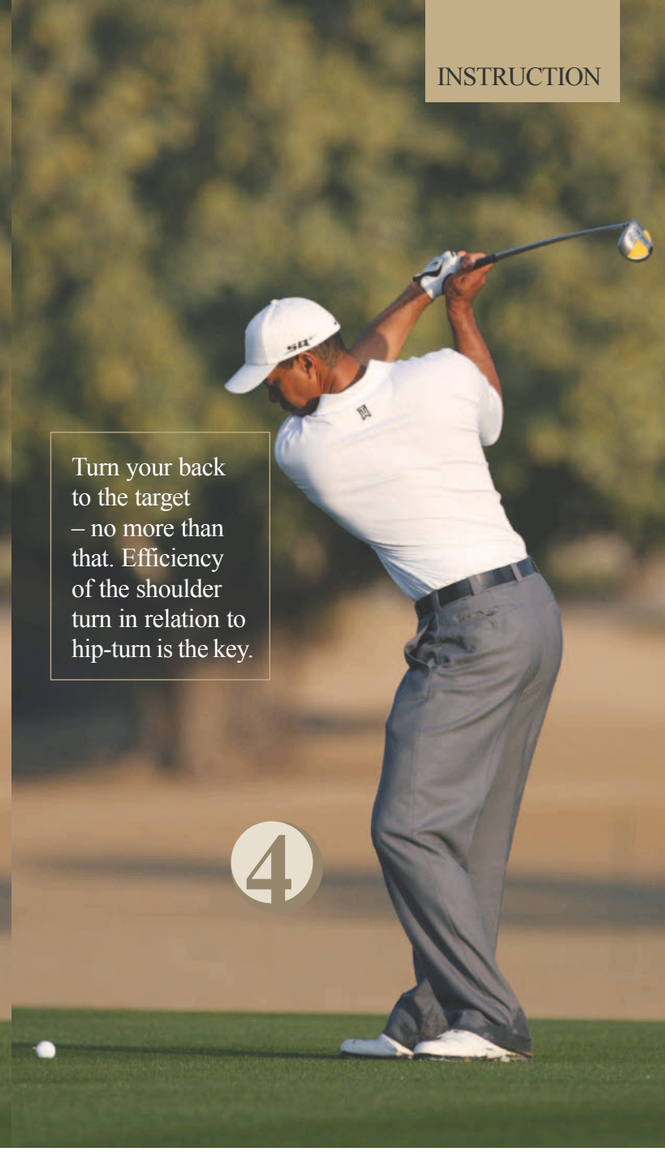
Understand – and learn from – the biomechanics of the world's No. 1

Keep your lower back reasonably flat, but make sure your head falls in line with your upper spine (not the lower back)

Keep hands and arms 'quiet' as you initiate your back-swing with the rotation of your trunk – let every-thing else follow



Allowing the hips to turn facilitates the retention of good posture angles



Turn your back to the target – no more than that. Efficiency of the shoulder turn in relation to hip-turn is the key.

1 As they say, it all starts at address. Here, Tiger still exhibits a very athletic posture, although his forward bend in both the hips and torso is now greater than it was in his time with Butch Harmon (as can be seen by the distance that his hands hang from his body, which is slightly greater). He has still maintained a neutral relationship between his hips and torso as his lower back is relatively flat and there is not too much rounding in his upper back with his head sitting comfortably clear from his chest allowing his arms to hang tension free from his torso.

Tiger's poise over the ball promises an acceptable range of motion in his lower/upper back in extension and good muscular control of the abdominals, low back, gluteal and shoulder blade.

2 Throughout his takeaway movement, Tiger shows good "dissociation" skill between his low back and hips as he is able to maintain his posture and pelvic plane (i.e. the angle at which the pelvis rotates in relation to the address posture). His arms, whilst maintaining connection to his trunk, are not over extended, with his clubface still remaining relatively square to his shoulders.

Why not test your own dissociation skill between your pelvis and lower back.

Stand in your golfing posture and fold your arms across your chest (preferably in front of a mirror). Now, rotate your pelvis on its axis around 30 degrees clock-wise and anticlockwise without any motion in your torso. Do not allow your pelvis to rock from side to side or move in any plane other than it is set.

As a secondary test, hold your pelvis still and rotate your torso on its axis around 45 degrees clockwise and anticlockwise. Look out for any motion in your torso that is out of plane to its axis or excessive motion in your pelvis.

3 Halfway back and Tiger's posture has been perfectly maintained with both his torso and pelvis rotating on the plane that they were set at address, allowing his shoulders to turn comfortably under his head. His arms have started to move across his chest with the club continuing upwards following its relationship to his arms at address.

Although there is resistance between hips and torso in initiating the backswing the hips must be allowed to turn, firstly to allow the torso to maintain posture and to make the most efficient use of the available 'stretch'later in the swing.

4 At the top of Tiger's backswing his torso has turned around 95 degrees with the hips having turned around 45 degrees (while still maintaining perfect posture). His arm swing is now on a more similar plane to that of his shoulder plane, resulting in a touch less head sway to the right – I would estimate it at around 5cm compared to around 10cm when working with Harmon. There is no restriction evident in his internal hip rotation through his right hip dis- playing high levels of single leg stability on his right leg while supporting the rota-tion of his trunk. Tiger is now perfectly "loaded" to move into the all important transitional phase of his swing.

Analysis by Stewart Corstorphine

PHOTOGRAPHY BY MATTHEW HARRIS

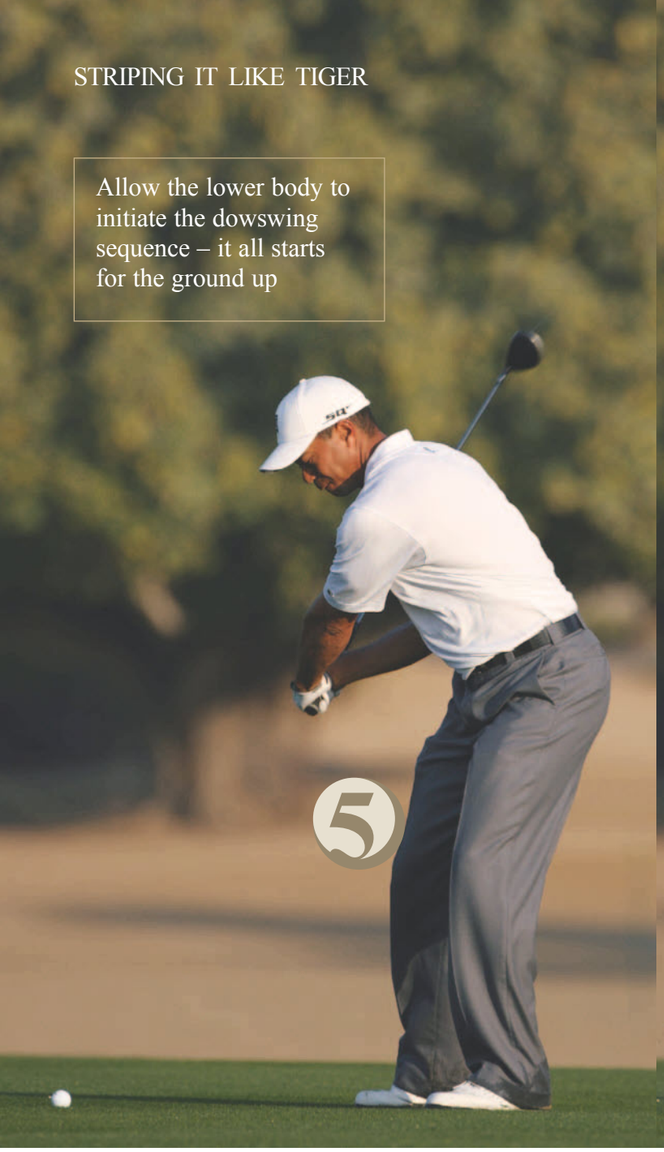
There have been many opinions expressed over Tiger's decision in 2005 to split from his long-time coach Butch Harmon and work on his game with Hank Haney, coach to his close friend Mark O'Meara. One thing is certain: these world-renowned coaches hold their own individual theories on the swing, so we can only assume that Tiger – who comes over as a very smart individual – favoured the ideas that most closely matched those of his own as he contin-ues his pursuit of technical perfection.

On one specific point, following surgery on his left knee, it may have been that he felt his knee could not continue to support the great lateral and rotary forces his 'old'technique placed upon it. Very few golfers have the ability and strength of character to make such noticeable alterations in their technique while continuing to compete at the very top of their game, our own Nick Faldo being another single-minded performer who underwent similarly radical restructuring when he left Ian Connelly to work with David Leadbetter. From a performance standpoint, it is well documented, that Tiger felt that he had a ten-dency to get "stuck" in his downswing where his hands and club would sometimes fall behind his body in transition, resulting in the clubhead approaching the ball on too shallow a plane. The resulting lack of consistency and control – especially off the tee – could prove very destructive. His only answer to this problem was to either slow down his hips or speed up his arms, relying on rhythm, bal-ance, timing and feel to square up the clubface or adopt his "stinger" shot in many circumstances.

If you were to study Tiger's swing circa 2000-03, you will see a noticeable 'head fight'(i.e. his head is facing down behind the ball) through impact with an excessive straightening of his left leg while his pelvis is rotating at high speed. It is not only the physiologi- cal damage that would no doubt have resulted if he had continued swinging with such force and tech-nique but the resulting inconsistencies of his club- face through impact would compromise his control of direction, launch angle and spin rate.

Now, to us mortals, it seems absurd that a player so dominant in 2000 could contemplate such radical changes in technique from his more upright hand path to that of one where his shoulders and arms turn and swing in a more similar plane. However with Hank Haney having studied under Jim Hardy early in

Allow the lower body to initiate the dowswing sequence – it all starts for the ground up



5 In transition, although there is less lateral shift in his lower body than previously seen, there is a significant increase in the stretch between his hips and torso. Any loss of height in transition is a result of compression through Tiger's ankle, knee and hip joints and not through only his torso. In doing so Tiger is able to control his hand path and shaft plane, which are no longer "stuck" behind his right hip with the club far more "on plane"

An excellent range of motion is evident here, as well as significant strength in Tiger's left gluteals, oblique abdominals and left shoulder blade retractors.

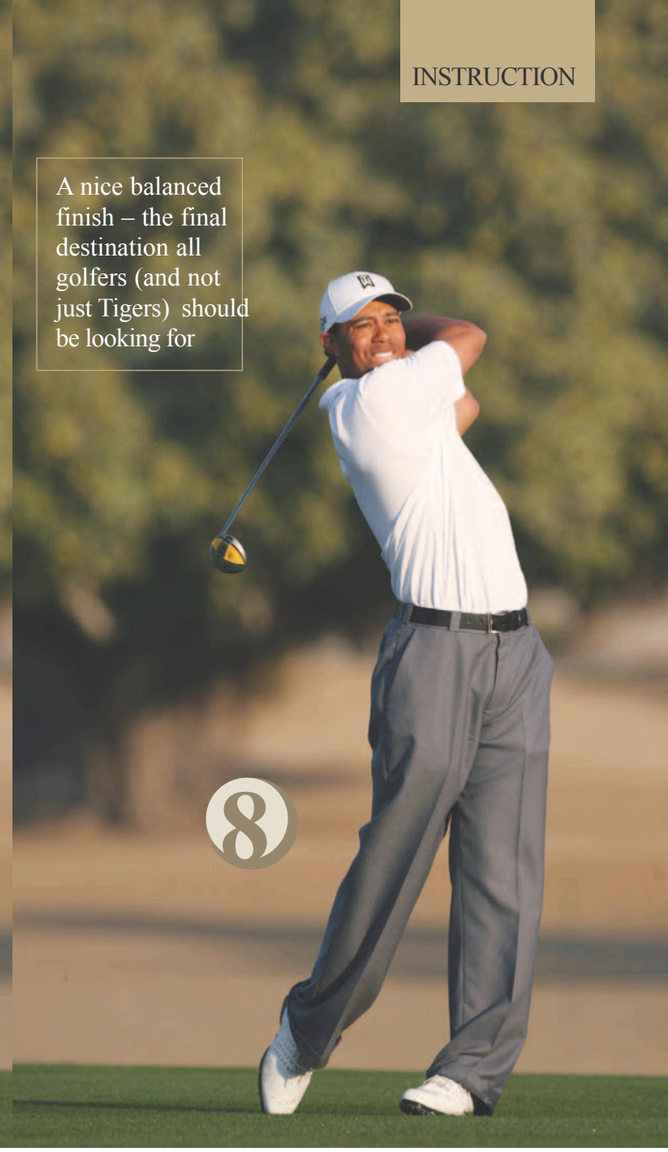
For me,the biggest change of all: look at the way Tiger allows his head to rotate with the swing through impact (like Annika Sorenstam).Who said 'keep the head still'?!

6 As he passes through impact we see the most noticeable changes in Tiger's swing. Tiger now has the freedom to rotate hard as he allows his head to rotate more freely towards the target; his hands now play a much more passive roll, witnessed by the fact that the clubface is still relatively square to his shoulders through the impact area, therefore much more stable and able to produce more consistent ball flight. Although he has posted well into his left side, there is no longer evidence of the "locking out" of his left leg that was causing him so much discomfort previously.

Although this is now much more efficient it still requires high levels of low back, gluteal and upper back/shoulder blade control and strength to produce, reduce and the stabilise the forces generated.

7 Tiger is now beautifully rotated through impact, maintaining perfect balance. There is less of an arch in his lower back (sometimes referred to as a 'reverse C') allowing efficient transfer of the retained energy through the body and minimising the compression and rotational forces that will be repeatedly tolerated by the lumbar spine structures. Less strain is also evident in his neck, left elbow, shoulder and wrist as less compensation is required through impact.

A nice balanced finish – the final destination all golfers (and not just Tigers) should be looking for



8 Tiger the athlete certainly makes the golf swing look easy, but the level of golf-specific conditioning required to function at such speeds is truly astonishing. It may take many years to achieve the level of flexibility, stability, control, strength and power seen here but for any aspiring tour player to achieve their dreams they must take note and – above all else – appreciate the vital importance of being fit for golf.

his career it is therefore of no great surprise that this has raised a 1- plane Vs 2- plane debate.

The benefit of the clubhead travelling on or close to its optimum plane in relation to the body angles set at address and their relationship to the target can not be overstated. A clubface that is square to its path (providing the angle of that arc is correct) through the impact area is surely more efficient and consistent to that of one where the clubface is closed or open to that path. There have been many players in the history of the world tours that may have proved this last statement wrong, but we are dealing with very athletic individuals nowadays who, given their power, are much more predisposed to injury if their technique varies too far from the optimal.

Before we take a closer look at Tiger's more recent swing we should take some time to remember the "classic" swing that he built with Butch Harmon.

In 2000, from front on, Tiger's stance was fairly wide with a little upper body tilt to his right. His posture was very 'athletic', with a neutral forward bend to his pelvis, well maintained curves in his lumbar and upper spine and his chin sitting clear of his chest. Many golfers make the mistake of running a club from their tailbone up their upper spine and touching the back of their head. This will create tension in their neck and upper spine as well as too much arching in their lower back resulting in restrict- ed turn of their torso in their backswing. This is not the case with Tiger.

His old takeaway was very wide with, if anything, the clubhead sitting slightly *outside* the path of his hands, resulting in his arms swinging in a more upright plane to that of his shoulder turn (or as Jim Hardy would say '2 plane'). To support this swinging motion, Tiger's torso would turn into his right side, with his head moving around 10cm's to his right in response. Throughout the backswing Tiger's postural angles would be maintained throughout.

In transition, Tiger's lower body would shift towards the target increasing the stretch between torso and pelvis and setting into motion the awesome stretch recoil that would underpin his tremendous power. There were, however, two issues of concern: Firstly, he had a tendency to 'snap'his left leg straight through impact, placing his left knee joint under tremendous pressure. Secondly, his head was stuck looking downward and slightly backwards ('head fight') resulting in the clubhead and right arm sometimes being slightly stuck behind his right hip creating pushed and hooked shots, especially from the tee. Many of the changes he has made over the last few years are evident in this sequence of Tiger taken in Dubai this year. The angle of the pictures makes it difficult to comment exactly on the change of plane and body alignments and tilts, but there are a number of points, especially focussing on the more structural components of his swing that good play- ers can study and learn from.