Professional golfers more likely to have hip joints shaped differently than most of the population

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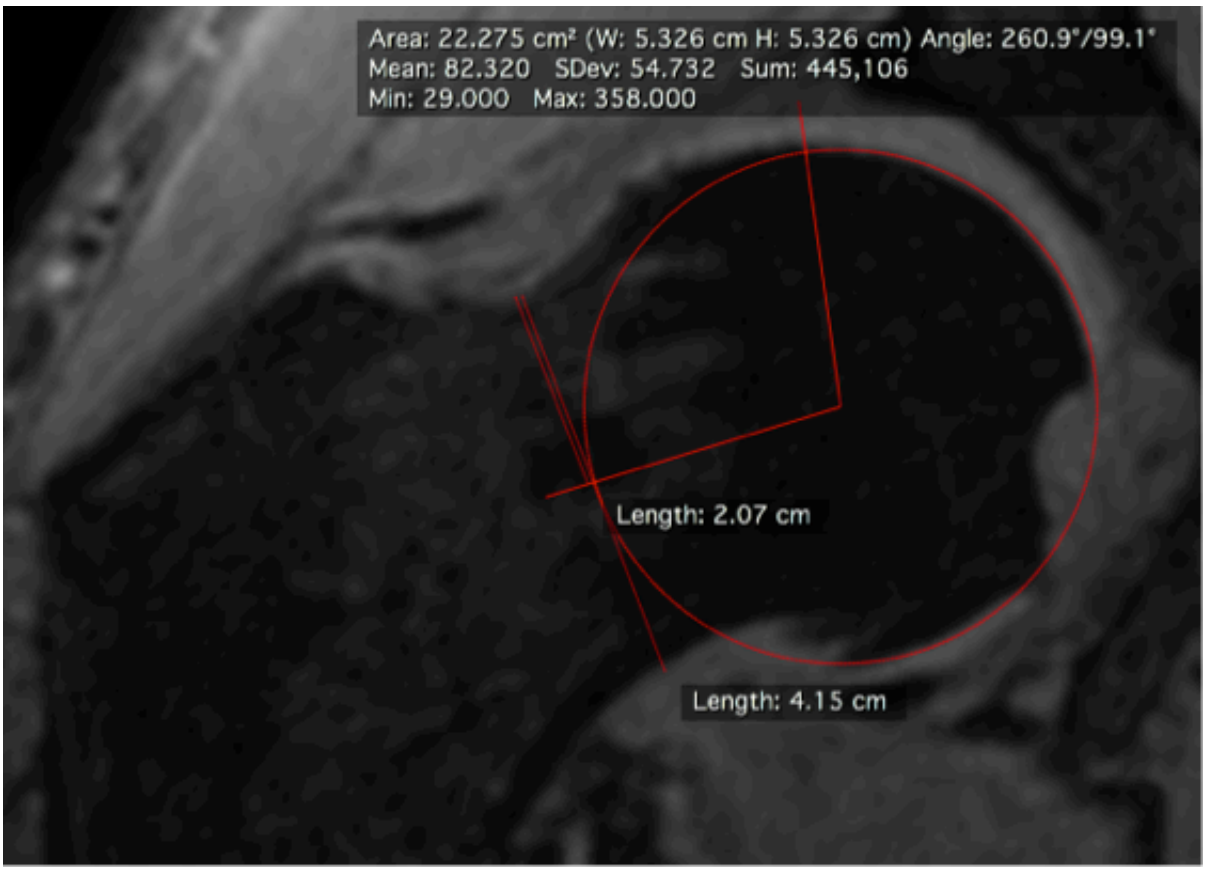


Credit: University of Warwick

Lack of success on the fairway may not be due to your swing – it could be your hips that are to blame.

New research from the University of Warwick has found that professional golfers are more likely to have different shaped right and left hips compared to the rest of us.

The finding was made by Dr Edward Dickenson and his colleagues at the University of Warwick's Warwick Medical School.

The research team, led by Professor Damian Griffin of the University of Warwick, have published two papers Hip morphology in elite golfers: asymmetry between lead and trail hips and Professional golfers' hips: prevalence and predictors of hip pain with clinical and MR examinations on Wednesday 17 August in a special Olympic golf themed issue of the *British Journal of Sports Medicine*, the top sports science and sports medicine journal in the world.

Elite golfers

The team originally set out to investigate hip problems in golfers. They were surprised to find that almost a fifth of European professional players reported hip pain. Further investigation found the pain appears to be related to the shape of the ball of their hips. Elite golfers were four times more likely to have an egg-shaped right hip (called cam morphology) compared to their left. These findings are unique to professional golfers; this pattern is not observed in the general population. The presence of cam morphology reduces the range of hip rotation, a movement required to generate power in the golf swing. The researchers found that golfers whose hips are more 'egg-shaped' were more likely to experience pain than those who have rounder 'ball-shaped' hips.

Dr Dickenson said: "Our findings have brought up new questions to be answered. What remains to be established is whether professional golfers develop these shapes because the way they are using their hips or

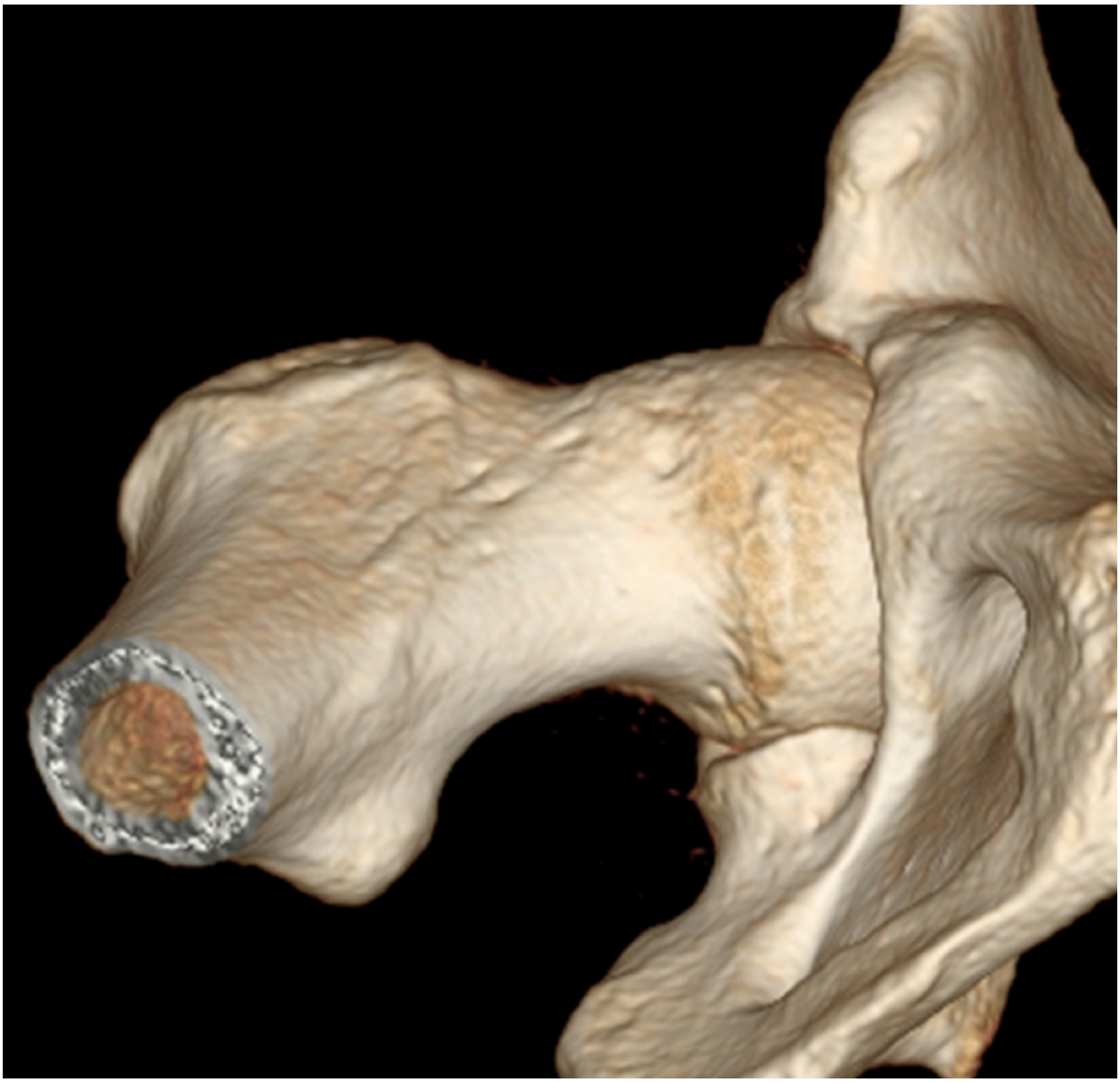
whether players with these hip shapes are more likely to become professional."

The discovery comes in what is perhaps the biggest year in golf's recent history, with the Olympics, four Majors, and the Ryder Cup.

The Scottish Hydro Challenge

Professor Griffin, who also treats people with hip problems at University Hospitals of Coventry and Warwickshire NHS Trust added: "Golf is one of the most popular global sports with 57 million participants worldwide and four million in the UK. This new finding of asymmetry between the hips may explain differential rates of pain reported between the left and right hips in golfers. Beyond golf, it helps us to understand why and how hip pain due to femoroacetabular impingement syndrome develops in young active people."

The data for the study was collected at the Scottish Hydro Challenge, a European Challenge Tour event in Aviemore, Scotland in 2015. For the first time ever a portable MRI scanner was taken to a golfing event. The tournaments players were asked to complete a health questionnaire, be examined by Dr Dickenson and have an MRI scan of their hips. In total 55 players volunteered to undergo an MRI scan and it is these results that have revealed the difference in hip shape.



Credit: University of Warwick

Cam morphology has been identified as a cause of femoroacetabular impingement syndrome, a condition that causes hip pain in young and active people. Professor Griffin and his team at Warwick Medical School have been researching this problem for many years, and he leads the FASHIoN trial, an international study to test keyhole surgery for

femoroacetabular impingement syndrome. This is important because cam morphology and femoroacetabular impingement syndrome cause hip pain in many people, and are also associated with hip osteoarthritis later in life.

Hip joints

In the new study, cam morphology was found in 16% of right hips (the rear hip during a swing in a right handed player) and 4% of left hips (the front hip during the swing in a right handed player) in professional golfers. Golfers hip joints rotate in different directions and at different speeds during the golf swing. These findings of different shapes between hips go some way to explain differential rates of pain between the left and right hips in golfers.

Dr Andrew Murray, specialist sports doctor for the European golf tour said: "Overall, we know golf can provide considerable health benefits, with likely improved longevity, and better physical and mental health. But golf puts huge forces through the hips every time a player swings the club. The *British Journal of Sports Medicine* and the European and Challenge Tour golf have recognised these key challenges, and that quality research is required to look specifically at the hip joint in golfers. These papers, conducted with elite golfers have exciting new findings for the sport."

More information: Edward Dickenson et al. Hip morphology in elite golfers: asymmetry between lead and trail hips, *British Journal of Sports Medicine* (2016). DOI: 10.1136/bjsports-2016-096007

Edward Dickenson et al. Professional golfers' hips: prevalence and predictors of hip pain with clinical and MR examinations, *British Journal of Sports Medicine* (2016). DOI: 10.1136/bjsports-2016-096008

Provided by University of Warwick