

Orthopaedic surgeons invent new system to accurately measure hip replacements

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(PhysOrg.com) -- A pioneering invention by the University of Warwick and University Hospitals Coventry and Warwickshire (UHCW) that can accurately measure patients for hip replacements for the first time could save the NHS thousands of pounds and improve efficiency for orthopaedic surgeons worldwide.

KingMark, developed by UHCW [orthopaedic surgeon](#) Mr Richard King in collaboration with Professor Damian Griffin at the University's Warwick Medical School, provides a non-intrusive, reliable method of calculating radiographic hip magnification.

Over 55,000 hip replacement operations are undertaken each year in the UK alone, with current estimation of replacement [hip](#) size only being correct in around 30% of cases.

The invention includes a simple kit for measurement and comprises a pad with an incorporated measurement system which is placed face down; the patient lies with their hips on the pad; a string of five linked precision balls are placed on the patients abdomen. The anterior (ball) and posterior measurements from the radiograph are entered and calculated and an accurate value for magnification is then generated.

Professor of Trauma and Orthopaedic Surgery at Warwick Medical School, Professor Damian Griffin said: "KingMark has removed all of the uncertainty about scaling digital radiographs for [hip replacement](#). Our radiographers find it easy to use, and I can be confident that the

measurements I make on scaled radiographs are correct. It is now unusual for my pre-operative templating not to be exactly right.”

This new system is much less intrusive for patients than the current methods of measurement, more accurate and also is particularly useful in measuring larger patients. More reliable measurement would lead to much less wastage and more efficiency and time savings for orthopaedic surgeons. The invention may also have potential for spinal work and trauma implants as well as other joint replacement operations and any surgery where magnification issues exist.

Orthopaedic surgeon at UHCW Mr Steve Krikler said: “Since changing to KingMark system, I have found the acetabular cup size to be very accurately predicted from the template, and the femoral size is also much more accurately predicted. I am now much more confident in choosing the stem offset and other parameters which are within my control, I always template my arthroplasties in TraumaCad and I will only accept pre-operative images which include KingMark.”

Orthopaedic specialists Voyant Health were approached by Warwick Ventures (who deal with the commercialisation of the University’s intellectual property). The company immediately saw the immense potential for the product and have agreed to manufacture and distribute KingMark; the product will become part of their solutions package for orthopaedic surgeries and will be marketed to the healthcare profession worldwide following its US launch in March.

Provided by University of Warwick

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