Robot-assisted hip and knee replacements

Robot-arm assisted hip and knee replacement (Mako, Stryker) is transformative technology that allows better planning before surgery, a customised surgical approach and precise implant positioning for patients

The technology combines preoperative CT images with 3D technology to allow surgeons to construct a surgical plan that's tailored to the individual patient's anatomy. This means patient specific implant positioning that's individualised to each patient.

At the time of surgery, sensors are placed around the joint that allow the software and robot to locate the joint in three dimensions. The robot arm enters the joint and is able to precisely and accurately remove the correct amount of bone while preserving soft tissues. This is carried out to fractions of millimetres.

Patients have less pain, quicker recovery and a quicker return to full function. It should translate to a higher likelihood of longer-lasting joints and joints that feel normal.



MELANIE HOLDCROFT WITH MR KIM

Melanie Holdcroft had robot-armassisted knee and hip replacements at the Alexandra Hospital in Cheadle, Manchester under Mr Kim's care. She says: "I started to notice that I had a pain in my leg and it came from my back and I mistakenly assumed it was sciatica because I started to feel like an old woman. I was limping, I couldn't walk properly, I wasn't enjoying my life and I wanted a better quality of life. I got to the point where I just couldn't carry on, and until I had an X-ray, I was completely shocked; I never dreamt it was my hip. Within two we the the tage to the tage to

by Mr Kim and within less than a month I was actually having my hip replaced. When I went to the Alex it was a very friendly and warm experience and when I sat with Mr Kim the combination of knowing I was going to go into the Alex and to have him as my consultant and also to have the robot to assist his procedure gave me total confidence.

It was a tool for Mr Kim, it was about precision; it actually meant that there was less damage to my soft tissue, there was less damage to the actual removal of the bone and it meant that I'd actually have a tailored joint replacement, which would mean I'd have a better joint. It probably is a better hip than it's ever been and that's because of the precision of the robot.

It's a case that they're supporting you back to full recovery and they celebrate that, and now when I walk I have no pain. I've got life to look forward to and that's what the combination of Alex, Mr Kim and the robot has given me and I know that and I wouldn't hesitate to recommend this to anybody else. I've lived it, I've done it, I've been there."

Robot-assisted technology provides much more information than was previously available to the operating surgeon. In the knee, the surgeon is able to balance the knee accurately and precisely throughout the range of movement while ensuring stability and optimal alignment of the knee. With this technology, surgeons have the confidence to perform partial knee joint replacements, if it's deemed appropriate.

ABOUT THE EXPERT

Mr Winston Kim, FRCS(Orth), consultant hip and knee surgeon, who practices at The Alexandra Hospital, Cheadle, Greater Manchester, performed the largest number of Mako robot-armassisted hip and knee replacements in the UK (year-end 2022, more than 300 cases). In total, he's performed more than 750 robot-assisted hip, knee and partial knee replacements.



In the hip, the centre of rotation

of the hip is restored. This means the

patient has reduced risks of unequal

dislocating after surgery. It should

translate into longer-lasting and

natural-feeling hip replacements.

leg lengths, hip catching and

For further information

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