

# Robot assisted surgery more accurate than conventional surgery

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A new study from Imperial College London shows that robot assisted knee surgery is significantly more accurate than conventional surgery.

The team of surgeons tested whether Acrobot, a robotic assistant, could improve surgical outcomes for patients undergoing partial knee replacement. Acrobot works by helping the surgeon to line up the replacement knee parts with the existing bones.

The surgeons looked at 27 patients undergoing unicompartmental knee replacement. The patients were separated into two groups as part of a randomised controlled trial, with 14 having conventional surgery, and the remaining 13 having robot assisted surgery.

Although the operations took a few minutes longer using the robotic assistant, the replacement knee parts were more accurately lined up than in conventional surgery. All of the robotically assisted operations lined up the bones to within two degrees of the planned position, but only 40 percent of the conventionally performed cases achieved this level of accuracy.

The team found there were no additional side effects from using robot assisted surgery, and recovery from surgery was quicker in most cases.

Professor Justin Cobb, from Imperial College London, who led the research team, said: "These robots are designed to hold the surgeon's hand in the operating theatre, not take over the operation. This study

shows they can be an enormous help, preventing surgeons from making mistakes. More importantly, by showing how the increased accuracy makes a difference to how well a knee works after surgery, we will be able to develop a new generation of less invasive procedures without the risks of error, providing faster recovery and better functional outcomes for patients."

The study involved both surgeons and engineers from Imperial College, with medical robotics engineers designing the Acrobot prototype, and surgeons testing it.

Professor Cobb added: "This study could have important implications for not just surgery, but also for health economics. By improving the accuracy of surgery, and ultimately improving the outcome for patients, we can make sure the knee replacements work better and last longer, preventing the need for additional surgery."

Source: Imperial College London

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