Smith+Nephew

Accuracy and reproducibility: the clinical value of robotics in unicompartmental knee arthroplasty (UKA)

Despite the clear benefits and improved outcomes of UKA versus total knee arthroplasty (TKA), the number of UKA procedures performed remains low. Although 25–47% of patients undergoing TKA are eligible for UKA,[1] only 8–15% of all knee arthroplasties are accounted for by UKA.[2] Low utilisation of UKA is partly accounted for by surgical complexity,[3,4] reduced threshold for revision,[5] and limited patient selection criteria.[5]

Advantages of UKA

Post-operatively:

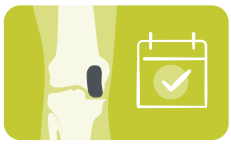
- Quicker recovery*[6]
- High patient satisfaction[7,8]
- Preservation of normal kinematics[9]
- Improved function*[1]
- Better range of motion*[10]
- Reduced morbidity*[1,11–14]

*Compared to TKA.

JOURNEY® II UK with OXINIUM® Technology

Surgeon needs have evolved with a growing preference for soft tissue preservation and functional alignment techniques tailored to the individual patient. With the introduction of robotic technology, the volume of UKAs is expected to increase, providing benefit to patients and healthcare systems alike. When implanted correctly, UKA patients experience greater functional outcomes and improved patient reported outcome measures (PROMs), compared to conventional UKA (cUKA).[15–22]

Robotically assisted-UKA (rUKA)



17% decrease in risk of revision†[12]

Compared to cUKA, rUKA allows for improved surgical outcomes[23] and enhanced knee alignment accuracy,[24] irrespective of individual surgeon experience.[25] Pre- and intra-operative surgical planning capabilities enable a personalised approach whilst alleviating surgical complexity, tailored to achieve optimal implant sizing, precise positioning, and balancing of soft tissues.[26]

†Compared to cUKA.

JOURNEY II UK

The JOURNEY II UK predicate device‡ demonstrated the lowest revision rate in the 2023 Australian registry of 12.3% at 15 years, compared to a cumulative rate of 18.8% for all UKA.[12]

JOURNEY II Unicompartmental Knee Arthroplasty

CORI Surgical System

‡ZUK® device.

Performance optimised with CORI® Surgical System

rUKA using CORI Surgical system with RI.Knee provides surgeons greater accuracy and reproducibility, which improves the extensive clinical benefits of cUKA, including:

- Significantly improved joint line restoration (p<0.05)[15–18]
- Significantly earlier discharge from hospital (p=0.005) and physical therapy (p=0.02)[19]
- Significantly higher PROMs (p<0.05)§[20–22]

§KOOS-JR at 6 months post-UKA (p=0.037)[20] and IKSS-O (p<0.05)[21] and KSS-F (p=0.01)[22] at ≥1-year post-UKA.

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Abbreviations: IKSS-O = International Knee Society Score-Objective; KOOS-JR = Knee Injury and Osteoarthritis Outcome Score for Joint Replacement; KSS-F = Knee Society Score-Function.

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