Smith+Nephew

Accuracy and reproducibility: the clinical value of robotics in UKA

Despite the clear benefits and improved outcomes of UKA versus TKA, the number of UKA procedures performed remains low.[1] 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*[1,11–13]

*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).[14–21]

Robotically assisted-UKA (rUKA)



Up to **58%** **decrease in risk of revision**†[22,23]

†Compared to cUKA.

Compared to cUKA, rUKA allows for improved surgical outcomes[24] and enhanced knee alignment accuracy,[25] irrespective of individual surgeon experience.[26] 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.[27]

JOURNEY II UK

JOURNEY II UK has shown excellent early survivorship‡[28,29] and demonstrated 100% survivorship in the UK NJR when used with Smith+Nephew handheld robotics§[30]



JOURNEY II
Unicompartmental Knee Arthroplasty



CORI
Surgical System

‡At 2 years. §At 1 year, n=122.

Performance optimised with CORI◊ Surgical System

rUKA using Smith+Nephew handheld robotics provides surgeons greater accuracy and reproducibility, which improves the extensive clinical benefits of cUKA, including:

- Significantly improved joint line restoration (p<0.05)[14–17]
- Significantly earlier discharge from hospital (p=0.005) and physical therapy (p=0.02)[18]
- Significantly higher PROMs (p<0.05)¶[19–21]

¶KOOS-JR at 6 months post-UKA (p=0.037)[19] and IKSS-O (p<0.05)[20] and KSS-F (p=0.01)[21] at ≥1-year post-UKA.

Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Smith+Nephew representative or distributor if you have questions about the availability of Smith+Nephew products in your area. For detailed product information, including indications for use, contraindications, warnings and precautions, please consult the product's Instructions for Use (IFU) prior to use.

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; UK NJR = National Joint Registry of England, Wales, Northern Ireland, the Isle of Man and the States of Guernsey.‖

‖Acknowledgments: We thank the patients and staff of all the hospitals in England, Wales and Northern Ireland who have contributed data to the National Joint Registry. We are grateful to the Healthcare Quality Improvement Partnership (HQIP), the NJR Steering Committee and staff at the NJR Centre for facilitating this work. The views expressed represent those of the authors and do not necessarily reflect those of the National Joint Registry Steering Committee or the Health Quality Improvement Partnership (HQIP) who do not vouch for how the information is presented.

References: 1. Wilson HA, et al: *BMJ.* 2019;364:l352. **2.** Wills-Owen CA, et al. *Knee.* 2009;16(6):473–478. **3.** Batailler C, et al. *Knee Surg Sports Traumatol Arthrosc.* 2019;27:1232–1240. **4.** Keene G, et al. *J Bone Joint Surg Br.* 2006;88:44–48. **5.** Murray DW, et al. *Bone Joint J.* 2018;100-b(4):432–435. **6.** Siman H, et al. *J Arthroplasty.* 2017;32(6):1792–1797. **7.** Geller JA, et al. *J Arthroplasty.* 2011;26(8):1468–1474. **8.** Biswas D, et al. *J Arthroplasty.* 2014;29(1):101–105. **9.** Scott RD, Shah VM. Results of unicompartmental knee arthroplasty. In: Scott RD, Shah VM, E-book. *Unicompartmental knee arthroplasty.* Elsevier Health Sciences; 2022:25–28. **10.** Hauer G, et al. *Arch Orthop Trauma Surg.* 2020;140(2):231–237. **11.** Schwab P, et al. *Knee Surg Sports Traumatol Arthrosc.* 2015;23(12):3494–3500. **12.** Kalbian, I, et al. *Bone and Joint Journal.* 2019;101B(7 Supple C):22–27. **13.** Liddle AD, et al. *Lancet.* 2014;384(9952):1437–1455. **14.** Ashok Kumar PS, et al. *J Robot Surg.* 2024;18(1):49. **15.** Herry Y, et al. *Int Orthop.* 2017;41:2265–2271. **16.** Negrin R, et al. *Knee Surg Relat Res.* 2021;33(1):5. **17.** Negrin R, et al. *J Exp Orthop.* 2020;7(1):94. **18.** Shearman AD, et al. *Arch Orthop Trauma Surg.* 2021;141(12):2147– 2153. **19.** Crizer MP, et al. *Adv Orthop.* 2021;1–8. **20.** Canetti R, et al. *Arch Orthop Trauma Surg.* 2018;138:1765–1771. **21.** Mergenthaler G, et al. *Knee Surg Sports Traumatol Arthrosc.* 2021;29:931–938.2023. **22.** Sun Y, et al. *BMJ Open.* 2021;11(8):e044778. **23.** Bensa A, et al. *Bone Jt Open.* 2024;5(5):374–384. **24.** Chen K, et al. In: Lonner JH, editor. *Robotics in Knee and Hip Arthroplasty:* Springer; 2019. **25.** Allen MW, Jacofsky DJ. In: Lonner JH editor. *Robotics in Knee and Hip Arthroplasty:* Springer; 2019. **26.** Karia M, et al. *Adv Orthop.* 2013;2013:481039. **27.** Jacofsky DJ, et al. *J Arthroplasty.* 2016;31:2353–2363. **28.** D'Amario F, et al. *J Clin Med.* 2025;14(5):1748. **29.** Fricka KB, et al. *Cureus.* 2024;16(11):e74596. **30.** National Joint Registry for England, Wales and Northern Ireland: JOURNEY II UK Unicondylar (Robotics) bespoke implant summary report. 09 April 2025. Copy available upon request.

Smith & Nephew, Inc. 1450 Brooks Road Memphis, TN 38116 USA.
42782 V2 06/25. Published June 2025. ©2025 Smith+Nephew. All rights reserved. ◊Trademark of Smith+Nephew. All Trademarks acknowledged

Developed by Evidence Communications, Global Clinical & Medical Affairs, www.smith-nephew.com