ACL preservation; the next step to normal

Supporting healthcare professionals
The challenge

Since total knee arthroplasty began, surgeons and manufacturers have aspired to reproduce a patient’s normal knee anatomy through design evolutions. The dream of restoring patients back to their normal activities, succumbed to simply aspiring to get patients moving again without pain.

Discover outcomes beyond survivorship.

Patients want their normal.

20% of total knee replacement patients report unmet levels of satisfaction.
Rediscover normal

**Smooother recovery**²

JOURNEY® II TKA has been demonstrated to significantly improve flexion by enabling range of motion improvement earlier in the recovery period.³

**Improved function**³-⁸

The normal knee designs of JOURNEY II TKA have shown to deliver improvements in both knee function and motion with increased medial/lateral (M/L) stability mid-flexion.⁶

**Higher patient satisfaction**²-³

Quicker recovery, improved function and normal kinematic patterns of motion lead to high levels of patient satisfaction.

Referenced claims are based on JOURNEY™ II BCS.
Learning from the past to innovate for the future

Bi-cruciate retaining (BCR) knees have been designed since the very early days of orthopedics - as even in those early days, surgeons and manufacturers recognized the importance of ACL function. Smith & Nephew designed JOURNEY® II XR™ with the knowledge and learnings of past BCR knee designs - while improving these concepts through the proven principles of LIFEMOD® knee stimulation software, anatomic shapes, improved instrumentation and technique and advanced bearing materials.

Revolutionizing the BCR design

- Self-Prepping Pegs (Fixation)
- Integrated Mushroom Pegs (Fixation)
- Anatomic Profile (Coverage, Rotation, Cruciate, Capture)
- Convex lateral surface designed to promote native rollback
- Medial concavity designed to promote anatomic medial pivot
- 20º Posterior Keel Angle (Fixation without impinging cortex or invading bone bridge)
- Cement Grooves (Fixation)
- Large anterior keel (fatigue strength)
- 3º jointline
The JOURNEY® II Knee System is engineered with state-of-the-art computer simulation and optimization techniques utilized in aerospace and automotive design processes. Smith & Nephew leveraged this technology to create Computer Aided Design (CAD) models and run them through a computer knee simulator (proprietary, enhanced version of LifeMOD/KneeSIM®) to analyze knee implant design impacts on various load-bearing activities, such as, deep knee bend and gait simulation.\textsuperscript{11}
JOURNEY® II XR® is designed to replicate normal motion through ACL retention and JOURNEY’s patented design features. The ACL is crucial to providing patients with normal function through kinematics, proprioception and stability. Despite the fact that up to 6 out of 10 patients undergoing a TKA procedure present with an intact ACL, traditional TKA systems sever this vital ligament. JOURNEY II XR retention of cruciate ligaments is less invasive and therefore should provide more normal proprioception.

Shape
By retaining ACL and including JOURNEY’s anatomic shapes, the system is designed to improve stability throughout the range of motion.

Position
JOURNEY II XR is designed to restore the normal anatomic joint line and anterior-posterior position, as well as retain the ACL. This promotes a more normal position of the knee.

Motion
By retaining the ACL and restoring the normal kinematic patterns of the knee, patients can experience more normal muscular firing patterns and proprioception throughout the range of motion.
The solution
Bi-cruciate retention with JOURNEY° II XR°

JOURNEY II XR is the next step in this evolution to change the discussion around TKA, by retaining rather than substituting for the ACL and PCL. The ultimate design intent is to provide the patient satisfaction of a partial knee replacement with the long term survivorship and reproducible principles of TKA.

• BCR knees exhibited more physiologic patterns of motion compared with CR knees.\(^{15}\)

• In a large study of patients with bilateral knee replacements, BCR TKA was preferred over CR and PS TKA.\(^{14}\)

• A study of 60 patients showed that patient’s proprioception after a BCR TKA is comparable to that after UKA.\(^{16}\)

• Publications have shown that BCR TKA knees can have excellent long term survivorship of 82% at 22 years\(^{17}\) and 89% at 23 years.\(^{18}\)

JOURNEY II XR results show that the operation can be completed in a routine fashion without complications. The early results are similar to those of a standard TKA.\(^{19}\)
Rediscover normal

The anatomical shape of JOURNEY® II TKA is designed to help patients rediscover their normal through a smoother recovery, improved function and higher patient satisfaction.2-8

For detailed product information, including indications for use, contraindications, precautions and warnings, please consult the product’s applicable Instructions for Use (IFU) prior to use.

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10. Lenz N. Comparing ligament strain in total knee arthroplasty designs using a computational model. Poster 1810 presented at ORS; March 5-8, 2016; Florida, US.
19. Tria A. Can a Bicruciate TKA be Successful? Poster presented at AAOS Symposium; March 7-10, 2018; New Orleans, Louisiana, USA.