



The
Health
Harbour



ACL preservation; the
next step to normal

 **smith&nephew**
JOURNEY[◊] II XR[◊]
Bi-Cruciate Retaining Knee System

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.



Unsatisfied

20%

20% of total knee replacement patients report unmet levels of satisfaction¹

Rediscover normal



Smoother recovery²

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



Improved function³⁻⁸

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 satisfaction²⁻³

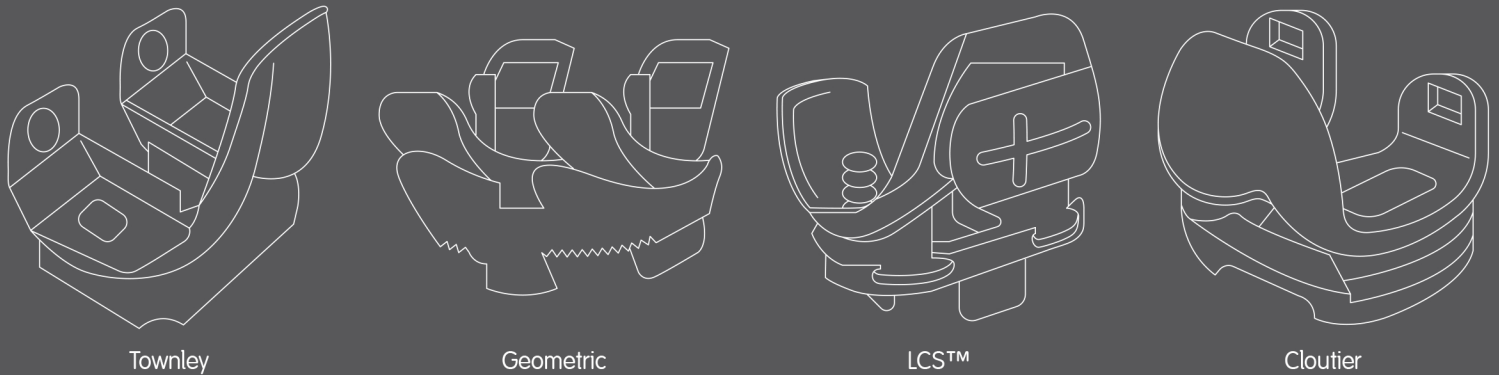
Quicker recovery, improved function and normal kinematic patterns of motion lead to **high levels of patient satisfaction.**

Referenced claims are based on JOURNEY[®] II BCS.

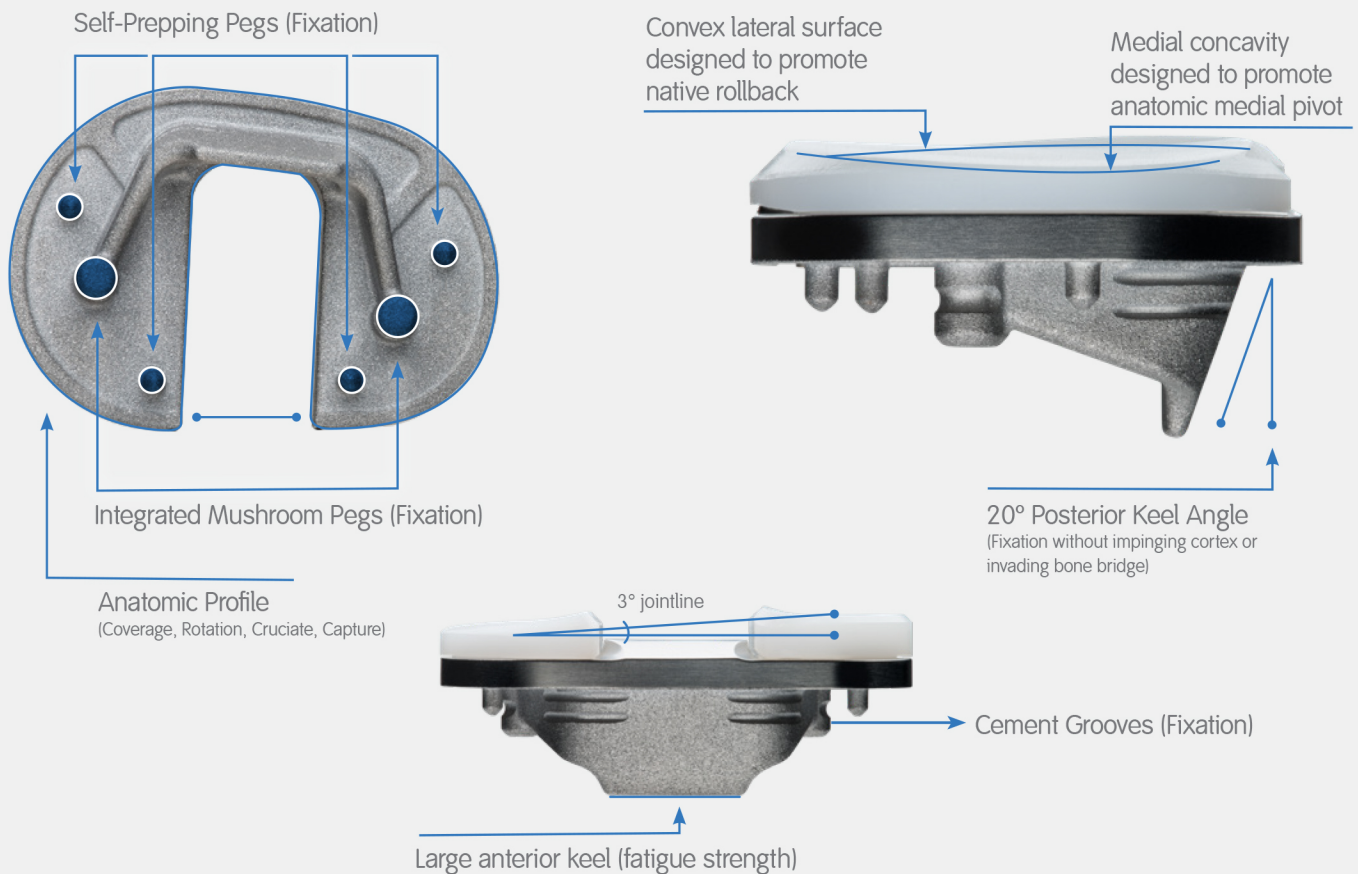


Learning from the past to innovate for the future

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^{9,10} of LIFEMOD[®] knee stimulation software, anatomic shapes, improved instrumentation and technique and advanced bearing materials.



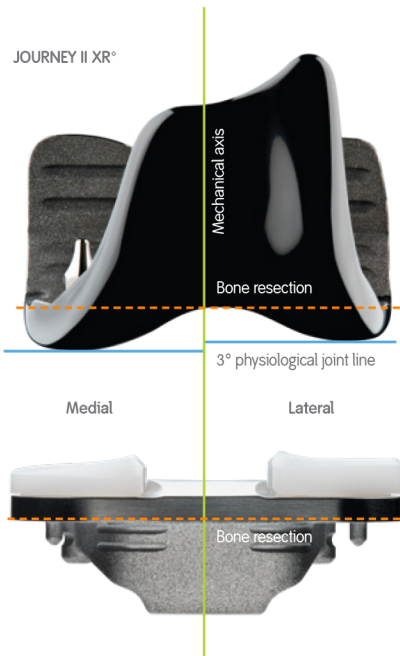
Revolutionizing the BCR design



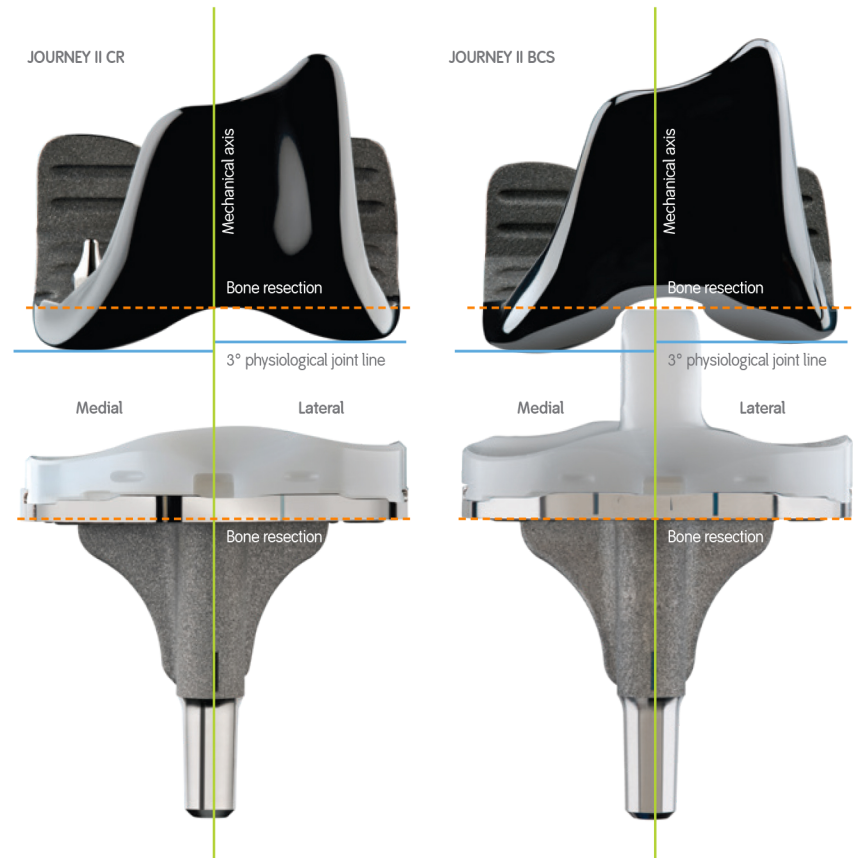
Designing normal

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.¹¹

ACL Retaining



ACL Replicating



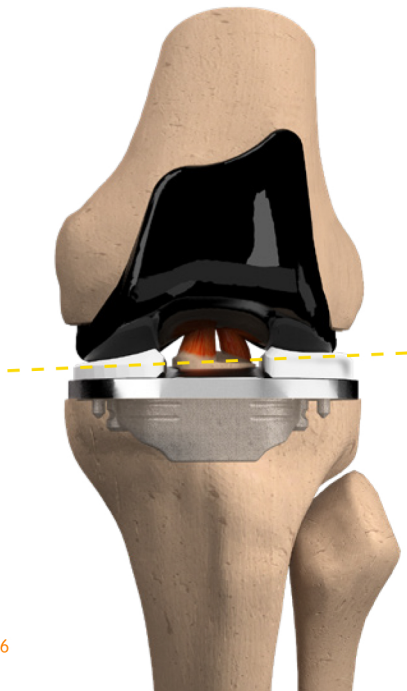
Designing Normal with the ACL

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.¹² 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.¹³



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.¹⁴



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 years¹⁷ 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

