

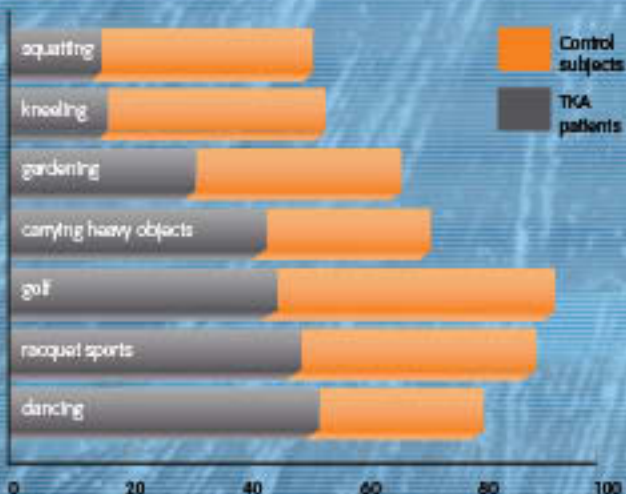
 **smith&nephew**  
**JOURNEY<sup>®</sup> UNI**  
Unicompartmental Knee System



**Explore  
Your  
Journey**

# The challenge is

Graph 1<sup>2</sup>  
Percent reporting no difficulty



Graph 2<sup>3</sup>  
Sports Activity



Today's fastest growing segment of knee replacement patients is seeking a return to a more active lifestyle.<sup>1</sup> Traditional knee replacement options don't meet the need for higher functionality, improved motion or long-term durability.<sup>2,3,4,5</sup> Most significantly, these traditional systems fall short in providing a return to a normal pattern of motion. Lack of motion, both selection and kinematics, can mean less satisfaction for patients who are unable to return to the demanding activities of their active lifestyle. Surgeons are left tempering patient expectations and tolerating the limited capabilities of traditional knee replacements.



The solution is

# PHYSIOLOGICAL MATCHING<sup>®</sup> Technology

Patella blend provides patella relief from impingement while tracking



Anatomic band restores the bone with a more conforming fit and natural feel



Round-on-flat design allows for anatomically driven kinematics

Twin peg and scaled fit provide excellent fixed bearing tibial fixation

Flex cut and divergent lugs are designed to provide superior femoral fixation for active patients



For orthopaedic surgeons seeking treatment solutions beyond traditional knee replacements, JOURNEY<sup>®</sup> UNI has been engineered to empower patients with a renewed right to an active lifestyle by breaking through traditional knee replacement barriers and helping patients revive their Function, Motion and Durability through PHYSIOLOGICAL MATCHING Technology.



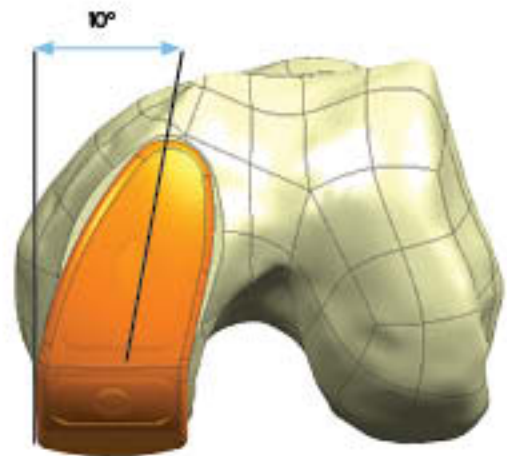
# Function

## Conforming

- Anatomically conforming implant that exhibits a 10° anatomic bend to mimic the natural femur anatomy and provide optimal bone coverage.
- Asymmetric femur and tibia implants that provide optimal bone coverage for both medial and lateral compartments. Unlike many unicondylar knee replacements, RM/LL and LM/RL conforming options allow surgeons to utilize one system for unicondylar disease indications.
- Anatomic metal-backed or all-polyethylene tibial baseplates improves cortical coverage and reduces the possibility of subsidence.<sup>14,17,19</sup>

## Forgiving

- A stable design that features a constant coronal radius and provides the same contact area for +/-12° of varus/valgus malalignment to help prevent edge loading
- Provides easy intraoperative use and adjustment by utilizing the same lug positions and cuts for sizes 3-7 of the femur and for all tibia sizes, so that no additional bone preparations are needed to upsize or downsize
- Flexible design allows any size femur to be used with any size tibia
- Fixed bearing design allows for easier learning curve and greater reproducibility compared to mobile bearing designs. Multiple studies have shown the more consistent results from a fixed bearing design.<sup>9,10,4,19</sup>



Identical peg configuration

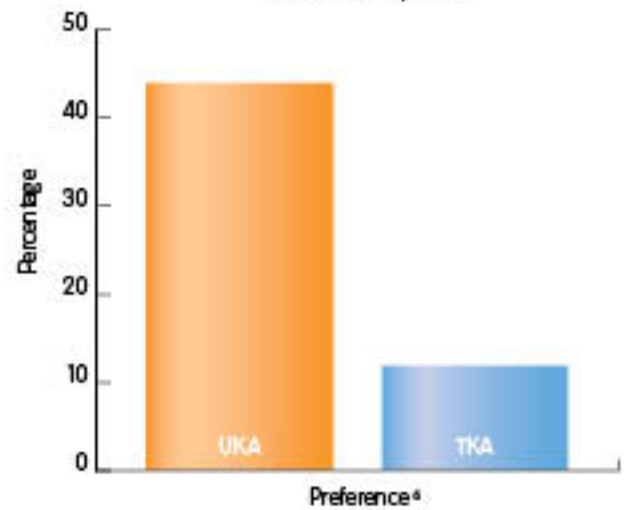
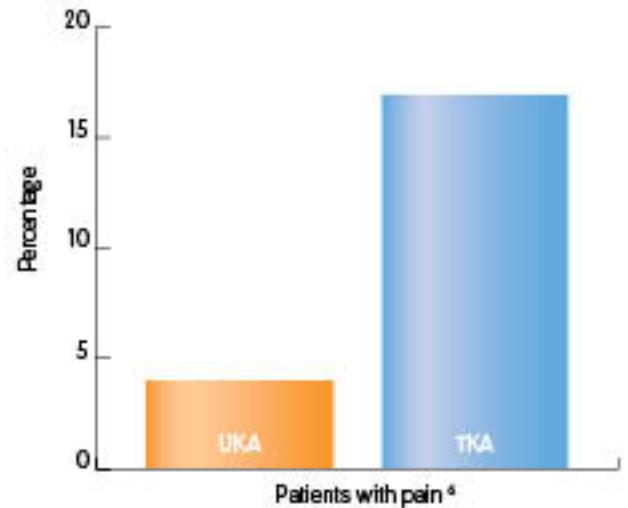


Coronal radial geometry



## Satisfaction

- JOURNEY<sup>®</sup> UNI allows patients to recover to a more normal and active lifestyle compared to traditional knee replacements (TKR) by preserving all 4 major knee ligaments, including the ACL. Many studies have shown the importance of the ACL and the proprioception that it provides for people in their daily lives.<sup>6-9,12,18,20,21,22,29</sup>
- JOURNEY<sup>®</sup> UNI provides satisfaction to patients, surgeons, and administrators alike, by providing minimal bone and ligament removal, minimal OR time and implant costs, and a small learning curve.
- Healthcare economic studies show that a unicondylar procedure results in thousands of dollars in cost savings (as much as 30% savings) to patients and healthcare facilities, via decreased implant costs, procedure costs, and recovery times.<sup>24,26,27,28,30</sup>
- Studies have shown that a range of patients, from low demand to young and active, who receive a unicoronylar knee implant, see improved function, less pain, higher satisfaction scores, lower morbidity rates, less blood loss, and quicker recovery times.<sup>10,18,19,20,21,22,23,29</sup>





# Motion

## Anatomically Driven Kinematics

- Achieves normal motion, by providing anatomically driven kinematics. JOURNEY® Uri's round-on-flat design allows a patient's native ligaments to drive motion, rather than trying to replace the function of those ligaments. Multiple studies have shown that the lack of constraint in a round-on-flat design also prevents early loosening of tibial and femoral components.<sup>7,14,15,19</sup>
- Features a 15° anatomic blend on the femoral component that allows for more normal patella tracking and helps to prevent bone impingement.
- Preserving the ACL has been shown to drive more normal kinematics that are unmatched by traditional knee replacements.<sup>4-9,12,18,20,21,22,29</sup>

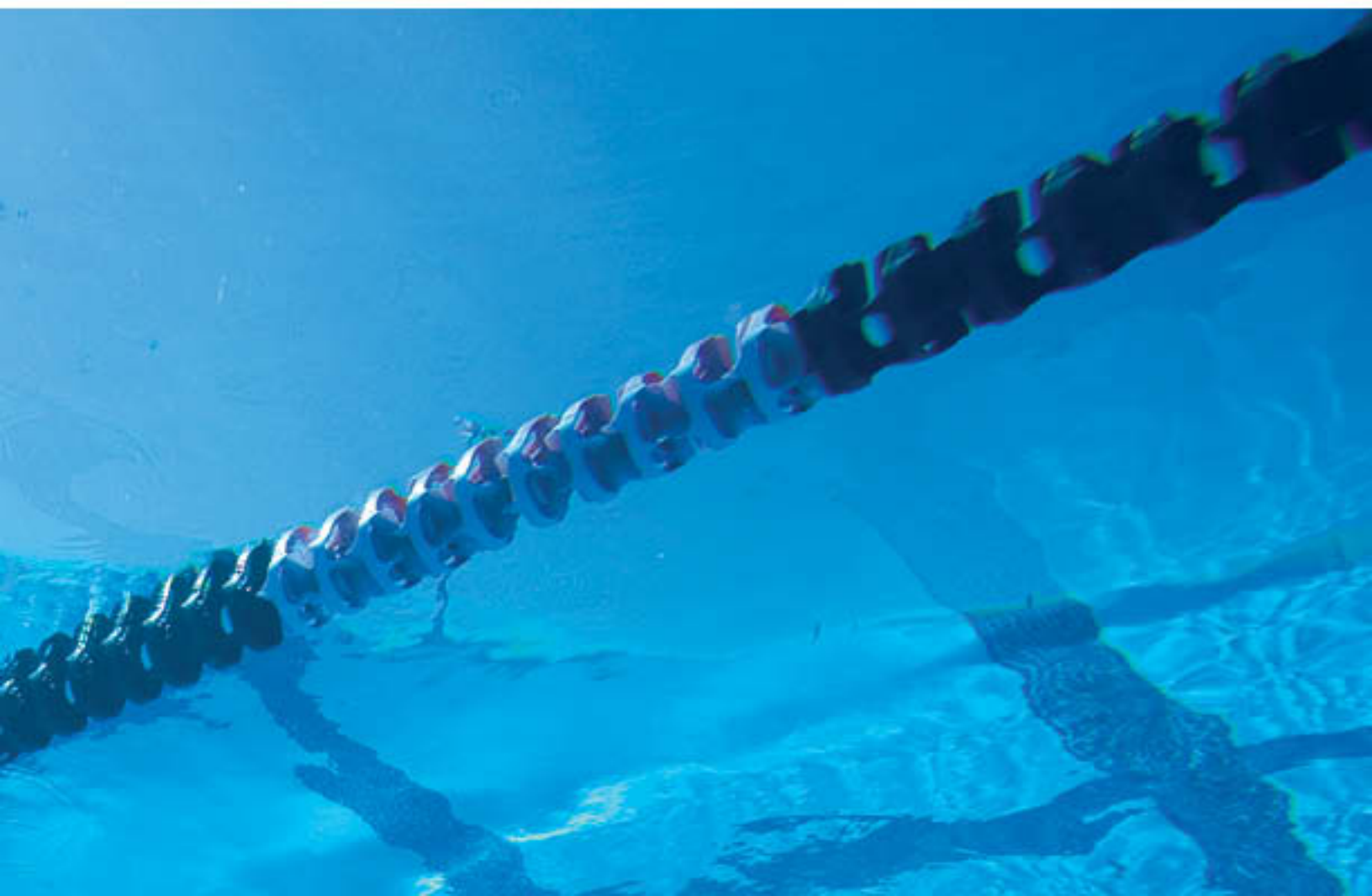
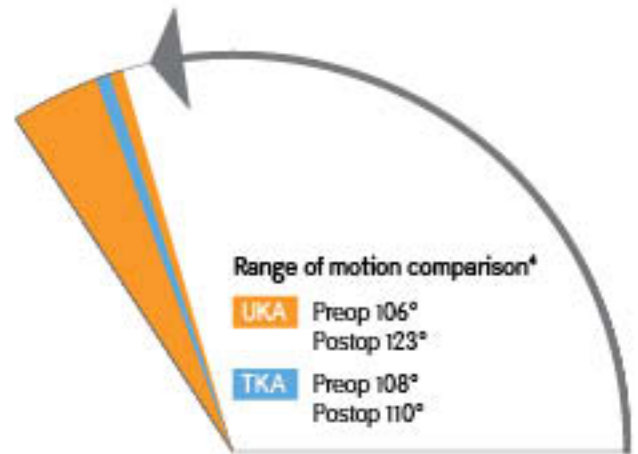


Anatomic Patella Blend



## Flexion

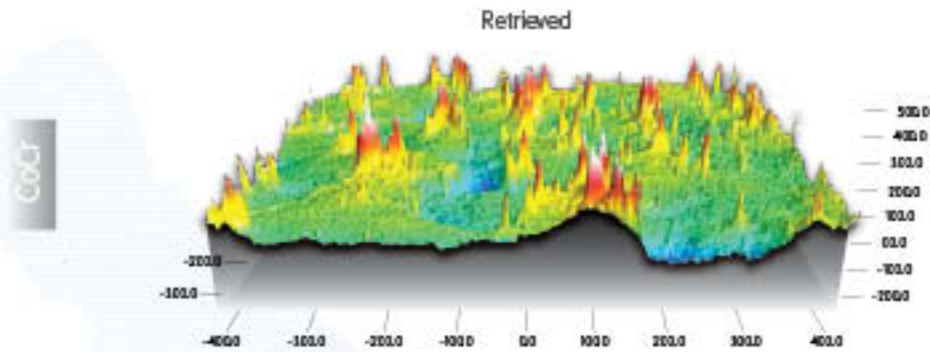
- UKR patients tend to achieve better range of motion compared to traditional knee replacements. <sup>6</sup> JOURNEY<sup>®</sup> UNI is engineered to provide up to 140° of flexion.
- Features a 15° flex cut and divergent/angled lugs designed to provide superior fixation and prevent femoral loosening.
- Flex cut also provides compressive forces in deep flexion, rather than the shear forces most UKR induce in deep flexion. This allows for greater fixation and longevity of the implant by preventing shear loads on cement, which have been shown to cause implant loosening.<sup>16</sup>



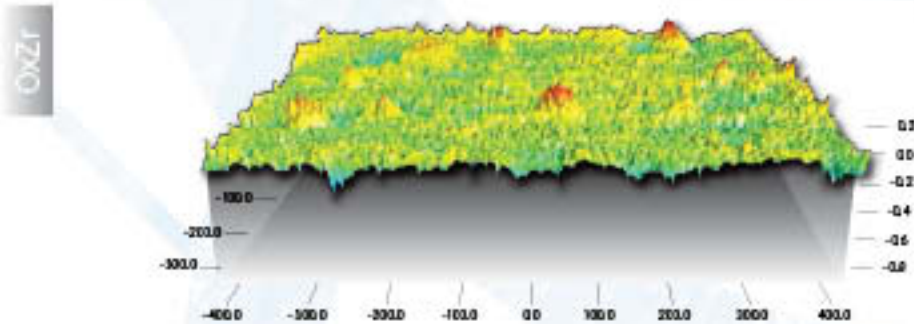


# Durability

3D surface profiles of retrieved Oxidized Zirconium and Cobalt-Chromium femoral components



Sa = 0.11, Sy = 1.58



## Wear

- OXINIUM® Oxidized Zirconium is an advanced bearing material that combines the strength of metal with the wear resistance of ceramics
- OXINIUM Technology is 4,900 times more resistant to abrasion than CoCr<sup>38</sup>
- OXINIUM Technology is more than twice as hard as CoCr<sup>39</sup>
- OXINIUM Technology has a coefficient of friction that is up to half that of CoCr<sup>33</sup>
- OXINIUM alloy femoral components are available for all JOURNEY® II Active Knee Solutions products

## Metal Sensitivity

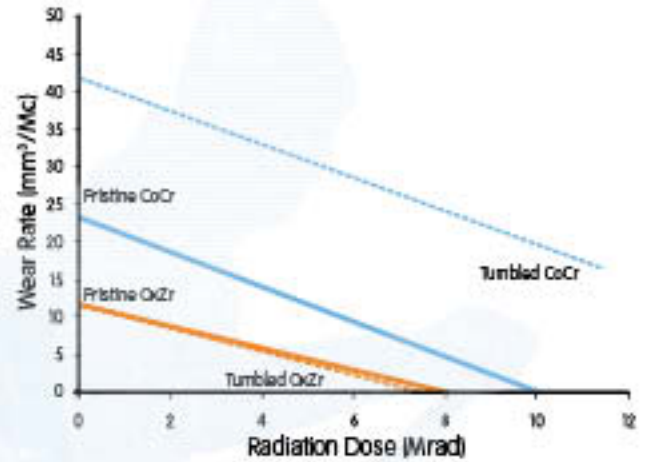
We understand that no measurable nickel content is of immeasurable benefit to nickel-sensitive patients.

- OXINIUM Oxidized Zirconium, exclusively from Smith & Nephew, addresses the needs of nickel-sensitive patients by having <0.0035% nickel content, compared to 0.5% in cobalt chrome and 0.1% in titanium.
- Zirconium is a nearly inert material that has not reported to induce immune reactions.<sup>34</sup>



## Longevity

- Oxidized Zirconium provides the perfect combination of toughness and excellent wear properties for young and/or active UKR patients that will require implants to last many years. OXINIUM® has universally been shown to have lower wear rates when compared to the same devices with CoCr.<sup>31,32</sup>
- JOURNEY® UNI is fully integrated and interchangeable with all JOURNEY® Active Knee solutions. It can be used in combination with JOURNEY PFJ (patella-femoral joint) in cases of unicompartmental disease with PFJ disease progression as well as revision cases where disease has progressed to the PFJ.
- Unlike many robotic and patient specific UKRs, JOURNEY® UNI has a full complement of cruciate retaining and posterior stabilized total knee systems that provide seamless bailout or revision in the case of contraindications or disease progression.



## From the company that first brought a uni to market...

Following on a rich history of partial knee arthroplasty and success of the JOURNEY® BCS design – which showed recovery of normal patterns of motion and high gains in flexion <sup>4-13, 21, 27-28</sup> – Smith & Nephew has created a seamless, next generation family of partial and primary knee designs intended to restore patients' level of function, motion and durability.



### 2006 JOURNEY PFJ

The JOURNEY PFJ combines the clinically proven performance of its trochlear groove with powerful precision—the first completely instrumented JOURNEY PFJ system for greater reproducibility and ease of use. **Designers:** E. Lyle Cain, Jr, MD, Jeffrey R. Dugas, MD, Dr. John Neuman, FRCS, William B. Smith, MD.

### 1972 Richards Manufacturing Company Marmor Uni

Richards Manufacturing collaborate with Dr. Leonard Marmor to commercially produce the first unicondylar knee on the market.

### 1988 GENESIS® Total Knee System

The introduction of the GENESIS TKS was a significant step in the evolution of the modern knee designs. It was the first system to "Address the Unexpected." With a single set of instruments and implants, virtually any interoperative situation could be handled. This technological advancement greatly simplified the process of TKA.

**Designers:** Dr. Ramon Gustilo, Dr. Jim Rand, Dr. Richard Laskin, Dr. James Howe, and Dr. Todd Swanson.

### 1997 GENESIS II Total Knee System

Launched as one of the first asymmetric femoral component designs, opening up the opportunity for less traditional knee designs. Over 1 million GENESIS II knees have been implanted globally.

The first OXINIUM® alloy total knee implantation. Over the past 15+ years over 600k OXINIUM® Alloy hips and knees have been implanted worldwide

### 1995 GENESIS UNI

GENESIS UNI launched in collaboration with Professor Cartier and Dr. James Andrews has demonstrated to be one of the most clinically successful unicondylar knees on the market (94.5% at 10 years).<sup>41</sup>



### 1991 OXINIUM Oxidized Zirconium Patented

Patented the usage of Oxidized Zirconium with orthopaedic medical devices

### 2005

#### Engineering Materials Achievement Awarded to Smith & Nephew for use of OXINIUM Oxidized Zirconium.

Established in 1969, this award recognizes an outstanding achievement in materials or materials systems relating to the application of knowledge of materials to an engineering structure or to the design and manufacture of a product. Smith & Nephew is the only orthopaedics company to ever win this award. Past recipients include: GE, Dupont, IBM, Texas Instruments, Dow Corning, Northrup Grumman

### 2005 JOURNEY BCS

Using advanced biomechanical modeling technologies, the JOURNEY BCS was the first TKA to accurately replicate the normal kinematic patterns of the healthy knee joint. Over 60,000 JOURNEY BCS knees have been implanted around the world. 'Most Significant New Product at AAOS' (2004) **Designers:** Prof. Johan Bellemans, Dr. Jonathan Garino, Dr. Steven Haas, Dr. Michael Ries, and Prof. Jan Victor.



### 2005 LEGION® Revision Knee (RK)

The LEGION Revision Knee System was designed to strike a perfect balance by providing simple, efficient instruments specific to revision and a broad range of implant options to address even the most demanding surgeries. Combined with Oxidized Zirconium, LEGION Revision helps surgeons give their patients the potential for better outcomes with lower wear.



## 2007 PLUS Orthopedics

Smith & Nephew purchased the Swiss company PLUS Orthopedics. This added the PLUS SOLUTION knee family to the portfolio: TC-PLUS® PRIMARY, TC-PLUS REVISION, and RT-PLUS® REVISION. The PLUS Knee family is developed and manufactured in Switzerland and offers a seamless system; from Primary – Complex Primary – Revision – Hinge Knee.

## 2007 JOURNEY® DEUCE®

Revolutionary approach to addressing medial femoral and patello-femoral disease in monolithic component. The lessons gained from experiences have allowed advanced kinematic evaluations. **Designers: Dr. Lindsey Rolston and Dr. Gerard Engh.**

## 2009 VISIONAIRE® Patient Matched Instrumentation

In 2009 Smith & Nephew globally launched the foundation of its patient specific solutions, VISIONAIRE Patient Matched Cutting blocks. Smith & Nephew was the first company to launch patient matched technology developed and manufactured completely in house.



## 2008 JOURNEY UNI

JOURNEY UNI knee treats isolated compartmental disease with anatomic components coupled with simple, intuitive instrumentation for a streamlined, reproducible technique. **Designers: Dr. William Bugbee, Dr. Donald Polakoff, Dr. Jonathan Young, Dr. Stuart Smith, Dr. Douglas Naudie, Dr. Paul Saenger, Dr. and Jerome Rubini**

## 2008 Launched VERILAST® Technology

VERILAST Technology, a one-of-a-kind advanced bearing couple of OKINIUM® Oxidized Zirconium with highly-crosslinked polyethylene formulation designed specifically for knees.

## 2012 Acquisition of LifeMod

Smith & Nephew announces the acquisition of LifeModeller, Inc. (LMI), the leading provider of biomechanical human body simulation tools and services. LMI's groundbreaking software shortens the time taken to develop new products by enabling the evaluation of innovations in a virtual model of the human body. New orthopaedic products can be tested and validated faster, more extensively, and more cost effectively prior to the production of a physical prototype.

## 2012 LEGION® Hinge (HK)

LEGION Hinged Knee is launched as an extension of the clinically successful LEGION Total Knee System. Its kinematic and bone sparing design not only alleviates patients' symptoms, but also restores an almost natural knee function. Coupled with its ease of use by allowing surgeons to seamlessly transition intraoperatively from a constrained revision implant to a hinged assembly, it makes knee salvage, knee rescue.

## 2012 JOURNEY II BCS

The next generation of normal function, motion and durability. More normal kinematics and function-strength, stability and higher flexion achieved through the unique features of the JOURNEY II BCS system; normal shapes, normal position and normal motion. **Designers: Prof. Johan Bellemans, Dr. Jonathan Garino, Dr. Steven Haas, Dr. Michael Ries, and Prof. Jan Victor, Dr. Mark Snyder and Dr. Fred Cushner.**



## 2013 VISIONAIRE Technology and Patient Specific Logistics

In 2013 Smith & Nephew launched Patient Specific Logistics with Universal Instrument Trays. This industry leading initiative allows for Smith & Nephew to provide "just in time logistics" where instruments specific to each patient including size and hand are provided for each surgery helping to reduce hospital costs and improve operating room efficiency.

## 2014 JOURNEY II CR

Designed to be the first kinematically correct cruciate retaining TKA on the market designed in collaboration with **Professor Johan Bellemans, Dr. David Drucker, Dr. Alois Franz, Dr. Murali Jasty, Dr. Gerald Jerry, Dr. Michael Ries, Mr. Neil Thomas, Dr. Alfred Tria, Professor Jan Victor and Dr. Ate Wymenga**



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00650 V1 11/13