



# Evolution<sup>®</sup>

MEDIAL-PIVOT KNEE



**25 REASONS  
25 YEARS**



# INNOVATION THAT LASTS



Advance® Knee Medial-Pivot

Advance® Knee CCK

Advance® Knee Stemmed Knee System

Advance® Knee Stature

Advance® Knee Tibial Offset Trays

Advance® Knee with Biofoam® Tibial Trays

Evolution® Knee Medial-Pivot

Evolution® Knee Cementless Femur and Tibia

Evolution® Knee Revision Tibia

Evolution® Knee CCK Femoral

Evolution® Knee CS stemmed femur & Evolution® Knee with NitrX™ coating



25 year anniversary of MicroPort Orthopedics Medial-Pivot

1998 1999 2002 2007 2008 2009 2010 2014 2016 2017 2018 2019 2023



Google Inc. founded in California



Introduction of the Euro currency



NASA's Mars Odyssey begins mapping the surface of Mars



Apple's CEO Steve Jobs introduces the first iPhone in San Francisco



First surgery using bionic eyes performed in London



Discovery of an Ardipithecus Ramidus Fossil Skeleton, deemed the oldest remains of a human ancestor ever found



First 24-hour flight by a solar powered plane is completed by Solar Impulse



MicroPort Scientific acquires orthorecon business unit from Wright Medical



The UK votes in a referendum to leave the European Union



First observation of a collision between two neutron stars is hailed as a breakthrough in astronomy



China lands on the dark side of the moon



MicroPort Scientific founded

*Evolution*<sup>®</sup>  
MEDIAL-PIVOT KNEE



## 1. THE ORIGINAL

### Original medial-pivot knee

The MicroPort Orthopedics Medial-Pivot Knee was launched in 1998, making it the first Medial-Pivot Knee available on the market. A culmination of years of research and design by Wright Medical and Dr. J. David Blaha resulted in a truly unique knee replacement design.

## 2. PATELLA FRIENDLY

### Designed to optimize patella tracking

Anatomic patella-friendly constant radius femoral components outperform other types of implants in reducing anterior knee pain and patella-femoral joint complications in TKA, even when the patellae are left un-resurfaced.<sup>1</sup>



## 3. SATISFACTION

### 95% Satisfaction with the medial-pivot knee

Patient reported satisfaction with a Medial-Pivot prosthesis is 95%.<sup>5</sup> A recent study also confirmed higher patient satisfaction when knees are balanced with a tighter medial compartment.<sup>2</sup>

## 4. CONTINUUM OF CARE

### Medial-pivot design across primary & revision

MicroPort Orthopedics offers a primary knee with both cemented and cementless options. A stemmed primary for both the femur and tibia, and a revision portfolio featuring a CCK with Medial-Pivot articulation.

## 5. BONE CONSERVING

### No need to resect a box

The Medial-Pivot femur is more bone conserving than that of traditional posterior stabilized knees, which require resection of more bone for the spine/cam mechanism. While also a posterior cruciate sacrificing (PS) device, there is no requirement to resect the box with the Medial-Pivot knee.

## 6. STABILITY

### Maximizes stability throughout the range of motion

Traditional knee replacements have been shown to exhibit anterior-posterior translation, which decreases stability and can cause early revisions.<sup>3-4</sup> Through medial ball-in-socket articulation, coupled with lateral mobility, the Medial-Pivot Knee System has been formulated to maximize stability throughout the range of motion.



## 7. SURVIVORSHIP

### 98.8% Survivorship at 17 Years

Since the Medial-Pivot Knee System was first released 25 years ago, it has achieved outstanding clinical success worldwide, with documented 98.8% survivorship at 17 years.<sup>5</sup>

## 8. GLOBAL SIZING PROFILE

### Sizing scheme designed with global patients in mind

The sizing scheme of the Evolution<sup>®</sup> Medial-Pivot Knee System is based on CT scans and surgical and cadaveric assessments from patients around the world. Clinical evidence confirmed that an anatomic tibial profile provides ideal tibial coverage without compromising alignment.<sup>6</sup>

## 9. QUADRICEPS EFFICIENCY

### Full Function, Faster<sup>®</sup>

In one study, the Medial-Pivot Knee System demonstrated enhanced quadriceps efficiency and reduced quadriceps avoidance compared to a traditional PS knee replacement.<sup>7</sup> Furthermore, evidence has shown increased efficiency reduces quadriceps muscle fatigue and has the potential to achieve greater function with less pain.<sup>8</sup>

## 10. PATIENT PREFERRED

### Patients feel the difference

Patients can tell a difference according to a peer-reviewed study that examined patient satisfaction among patients who underwent bilateral staged total knee replacement with different prostheses. A Medial-Pivot design was preferred equally to an ACL-PCL retaining prosthesis and preferred more than all other designs (CR, PS, and Mobile-Bearing).<sup>9</sup>



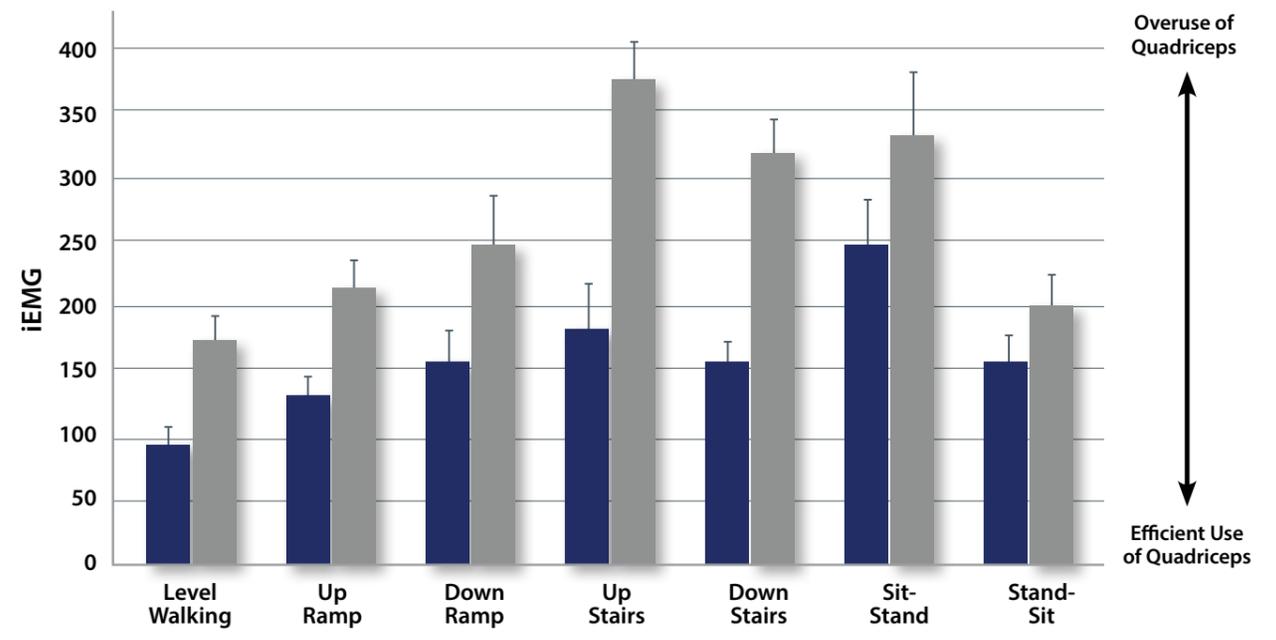
## Quadriceps efficiency affects patient satisfaction after TKR.<sup>7</sup>

*Evolution<sup>®</sup> Medial-Pivot knee requires lower quadriceps activation compared to PS designs.<sup>7</sup>*



Join the *Evolution<sup>®</sup>*

**VM-iEMG Data**



Evolution<sup>®</sup> CS Knee  
 Triathlon<sup>®</sup> PS Knee\*  
 \*Triathlon is a trademark of Stryker<sup>®</sup>

## 11. NATURAL KINEMATICS

### Designed to promote natural kinematics

The Medial-Pivot insert is designed to allow normal motion and natural function by replicating the native structure of the knee and providing a highly-conforming surface on the medial side.<sup>10</sup>

## 12. CRUCIATE SACRIFICING DESIGN

### Replicates the function of the PCL

The Medial-Pivot insert features an anterior raised lip, to replicate the function of the PCL, and a posterior raised lip, to replicate the function of the ACL, acting like an ACL-PCL substituting knee. Comparative studies also show that, by removing the PCL, the Medial-Pivot design achieves higher flexion<sup>11</sup> and closer replication of natural kinematic.<sup>12</sup>

## 13. FORGOTTEN JOINT

### Higher forgotten knee score than traditional knee systems

Patients who underwent total knee arthroplasty (TKA) with the Medial-Pivot knee scored significantly better on the Forgotten Joint Score (FJS) than those who underwent a TKA with a modern posterior stabilized (PS) knee, particularly with regard to deep knee flexion and stability of the prosthesis.<sup>13</sup>



**91.9**  
**vs 75.3**

**Forgotten Joint Score**  
**Medial-Pivot vs**  
**Traditional PS Design**<sup>26</sup>

## 14. CONFORMITY

### High conformity without constraint

Unlike traditional multi-radius designs, the Medial-Pivot Knee System has a constant radius femoral component with a highly conforming tibial insert to provide stability in mid-flexion, constant collateral ligament tension and prevent anterior-posterior translation throughout the range of motion.

## 15. GET HOME FASTER

### Get patients back to their lives

Surgeons utilizing the Evolution® Medial-Pivot Knee System have clinically proven that their patients recover faster and are back to activities of daily life sooner.<sup>14</sup>



## 16. BIOFOAM® TECHNOLOGY

### Fixation with Bite™

BioFoam® Cancellous Titanium provides a cementless tibial option with true trabecular architecture that acts as a biological scaffold designed to support early bone apposition.<sup>15</sup>

## 17. ANATOMIC GAP BALANCING

### Restore the natural asymmetric balance of MCL & LCL

The Medial-Pivot design not only helps achieve natural kinematics, but also allows for anatomic gap balancing. As a result, a medially tighter and laterally looser gap can be achieved.<sup>16</sup>

## 18. WEAR LIMITING DESIGN

### Repeatable motion leads to less wear

The design of the Medial-Pivot Knee System has been shown to have a lower wear potential in a comparative aspiration study, due to the repeatable motion path and minimized contact stresses.<sup>17-18</sup>

## 19. RANGE OF MOTION

### More natural knee movement

In-vivo long-term clinical studies have shown that Medial-Pivot achieves equal or higher degrees of flexion than traditional posterior stabilized (PS) knee design, with an average of 124°. <sup>19-20</sup>

## 20. GLOBAL PRESENCE

### Sold in over 70 countries worldwide

MicroPort Orthopedics has fostered partnerships with a reliable distributor network around the globe to ensure a high level of service and fast delivery of our products. We currently sell the Medial-Pivot Knee in more than 70 countries around the world.

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MEDIAL-PIVOT KNEE

## 21. KINEMATIC ALIGNMENT

### Match your patient's anatomy

MicroPort Orthopedics is now combining the Evolution® Medial-Pivot knee with the Kinematic Alignment (KA) technique, which restores a patient's pre-arthritis joint line, patient's native anatomy and kinematics. This new solution strives to increase patient satisfaction, a more natural feeling knee, and a higher functioning knee.

## 22. TECHNOLOGIES PLATFORM

### Robotic and Augment Reality Technologies

MicroPort Orthopedics is at the forefront of technology development and offers, in collaboration with partner companies, robotic and augment reality surgical solutions. Skywalker® Robotic System is the newest robotic platform designed for Medial-Pivot allowing real-time gap balancing and aiming to elevate patient care experience.

## 23. REMOTE FOLLOW UP TOOLS

### Digital Solution for Joint Replacement Journeys

MyMPO™ is a MicroPort Orthopedics digital application designed to guide patients throughout their Full Function, Faster® journey. All the steps before surgery, during hospital stay, and when the patient is back at home are incorporated in the application pathway, giving the patient the right information at the right time.



## 24. FULL FUNCTION, FASTER®

### Improved peri-operative patient pathway

The Full Function, Faster® Total Knee Replacement (TKR) concept is the first in its kind to have a multifactorial patient treatment approach. This is achieved through the combined efforts of the key clinical stakeholders during the treatment, in conjunction with the use of a function enhancing Medial-Pivot TKR.<sup>21</sup>



## 25. GOLDEN OPTION

### Reduce release of metal ions while promoting natural kinematics<sup>22-23</sup>

The Evolution® Knee with NitrX™ coating features a titanium niobium nitride (TiNbN) coating, which creates a barrier against the potential release of metal ions common in cobalt chrome implants.<sup>22</sup> Since metal sensitivity in patients is linked to metallic debris and metal ions, preventing that debris from interacting with soft tissue may have a benefit of reducing the incidence of tissue reactions.<sup>24-25</sup>

# Evolution®

MEDIAL-PIVOT KNEE



Individual results and activity levels after surgery vary and depend on many factors including age, weight and prior activity level. There are risks and recovery times associated with surgery and there are certain individuals who should not undergo surgery.

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