




djosurgical™

EMPOWERING LIFE THROUGH NATURAL MOTION

EMPOWR Knee System™
NATURAL MOTION TECHNOLOGY



em·pow·r

əm'pou(ə)r/

verb make (someone) stronger and more confident, especially in controlling their life and claiming their rights.

WHY NATURAL MOTION?

Today's joint replacement patients are younger, more active and expect more from their knee implants. Studies show that approximately 20% of patients are dissatisfied with their knee replacements and one third of all knee replacement patients report that their knee doesn't feel normal.^{1,2}

Patient satisfaction has been linked to a natural feeling, higher functioning knee replacement.³ The EMPOWR Knee System was designed to provide natural motion throughout a full range of motion, from early to deep flexion, creating a more natural feeling knee for the patient.

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In designing the EMPOWR Knee System, DJO Surgical focused on addressing the currently unmet needs of surgeons and patients in total knee arthroplasty. All aspects of the procedure were addressed from implantation to patient recovery.

For surgeons, state-of-the-art instrumentation was enhanced by the use of fewer instrument trays to create a more streamlined procedure for the surgeon and hospital staff.

For patients, anatomic sizing profiles were paired with features that would make the EMPOWR knee move and feel as similar to the natural knee as possible. This concept, deemed Natural Motion Technology, is used to describe the many features that make the EMPOWR Knee a more natural feeling knee for the patient.



EMPOWR 3D Knee™

EMPOWR PS Knee™

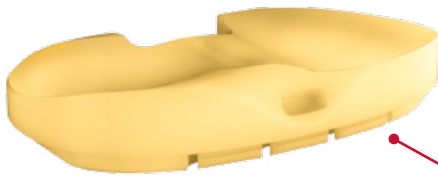


A TOTAL SYSTEM

The EMPOWR Knee System™ is comprised of two implant designs. The conforming insert of the EMPOWR 3D Knee enables its use with or without the PCL. The EMPOWR PS Knee replaces PCL function through a cam and post design.



Single Radius Femoral Designs



Conforming Insert Designs



Asymmetric Tibial Baseplate Design

EMPOWR 3D KNEE™

EMPOWR PS KNEE™

ENHANCING QUADRICEPS PERFORMANCE

The femoral components of the EMPOWR 3D and PS Knee feature a single radius design to maintain consistent soft tissue tension throughout a full range of motion.

When compared to multi-radius femoral components, single radius femoral components have been shown to enhance quadriceps function following total knee arthroplasty.^{4,5} Quadriceps weakness in total knee replacement patients has a negative impact on performance and motion patterns, such as stair climbing, walking, and other activities of daily living.^{6,7}

This single radius, in combination with a conforming insert design, controls the anterior-posterior translation of the femoral component with respect to the tibia, and enhances quadriceps efficiency for the patient.^{4,5}



RESTORING NATURAL STABILITY

The EMPOWR Knee System™ recreates the stability of the natural, healthy knee in throughout a full range of motion. By creating a knee replacement with inherent stability, patients have the ability to return to an active and healthy lifestyle.

The EMPOWR Knee System recreates natural stability in three dimensions: Early Flexion, Mid Flexion and Deep Flexion.



EMPOWR 3D Knee

Early Flexion

The conforming lateral compartment of the EMPOWR 3D Knee allows for a lateral pivot in activities of early flexion, replicating natural knee motion during gait. The single radius of curvature ensures consistent soft tissue tension throughout flexion.

Mid Flexion

The lateral compartment of the tibial insert is fully congruent with the femur up to 70 degrees. This combined with the 8mm anterior lip provides the patient with anterior-posterior stability and prevents paradoxical motion during mid flexion.⁸

Deep Flexion

The articulation of the EMPOWR 3D Knee is less conforming in deep flexion, allowing the soft tissues to drive femoral rollback and natural medial pivot motion. The widened medial condyle encourages external rotation, similar to the natural knee, and aids in patellar tracking and quadriceps function during deep flexion.⁸

EMPOWR PS Knee

Early Flexion

Prior to post engagement, the symmetric anterior lip of the EMPOWR PS insert, paired with the conforming insert surface, prevents excess anterior femoral translation. This recreates natural stability and provides the patient with confidence in their knee.

Mid Flexion

The EMPOWR PS Knee has a mid flexion engaging cam and post. The contoured cam of the femoral component softly engages with the contoured post to create a seamless transition from early to mid flexion.

Deep Flexion

The articulation of the EMPOWR PS Knee is less conforming in deep flexion, allowing the soft tissues to drive femoral rollback and natural medial pivot motion.

REDUCING WEAR WITH e+

Although knee replacement has a high success rate, problems with wear and fatigue damage of UHMWPE limit the longevity of the replacement.^{9,10} The EMPOWR Knee System™ utilizes e+, DJO's proprietary knee-specific Vitamin E polyethylene, which is scientifically formulated to reduce oxidation and long-term wear.¹¹

Blended In

To ensure optimal material performance, vitamin e is blended into the polyethylene resin, assuring consistent distribution throughout the material. This resin is then compression molded into bar stock and gamma irradiated to moderately crosslink the material. The bar stock is then machined into EMPOWR tibial inserts.



Utilizing the same knee specific formula, e+ patellar components are available in 26, 29, 32, 35 and 38mm options.



Naturally Occurring Anti-Oxidant

Vitamin E (α -tocopherol) is the most effective naturally occurring anti-oxidant in the human body.¹²

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MOTION IS MEDICINE⁺

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