Active confidence in every step.

3DKnee™
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The 3DKnee is a premium high flexion total knee replacement designed after a decade of research. The 3DKnee instills confidence through every step of the total knee replacement process, from the surgeon’s joint selection decision, to the surgical procedure and patient post-operative function.

The Benefits of a Mobile Bearing in a Fixed Bearing Design

The 3DKnee is designed to provide stability while allowing normal total knee rotation.

Confidence in Design

Over a decade of research confirmed that the ACL deficient total knee has very different kinematics from an ACL intact normal knee. The 3DKnee is based on data from insert retrievals, tibial plateau analysis, and fluoroscopic review (shown in Figures A and B) which concluded that an ACL deficient knee has a lateral rotational bias. With a ball and socket lateral condyle for rotation and a flatter medial condyle designed for translation, the 3DKnee is designed to allow ACL deficient TKA kinematics. The design has performed successfully in vivo with excellent Knee Society scores.

Research Behind the Design

In stair activities, Cruciate Retaining (Figure A), Rotating and Translating Mobile Bearing (Figure B), and Rotating Platform Mobile Bearing Knee designs exhibit a statistically significant lateral center of rotation.

Average Center of Rotation

-15° < flexion < 10° red
10° < flexion < 10° yellow
30° < flexion < 50° purple
50° < flexion < 90° green
Confidence in Procedure

Through every step of the 3DKnee procedure, surgeons have accurate guidance from the instrumentation and yet are allowed the freedom and flexibility to alter intra-operative plans as needed. M.I.K.A.™ (minimally invasive knee arthroplasty) or standard incision instruments are available and allow a surgeon to work confidently through the best incision possible for each patient.

The sleek, narrow M.I.K.A. instrumentation was designed for precision and stability to promote confidence with every cut. The M.I.K.A. and Primary instruments allow for the efficiency, reproducibility and options a surgeon requires.
The 3DKnee is designed to allow a high level of patient motion and function.

Confidence in Motion

As most knee replacement patients reach maximum flexion when femoro-tibial impingement occurs, the 3DKnee insert sulcus is positioned 5mm posterior to the AP center, encouraging roll-back and delaying ROM-limiting impingement.¹

A posterior based technique allows for maintenance of the posterior condylar offset of the femur.² While a single radius of curvature allows 1:1 contact through mid-flexion, control of translation is relaxed as the knee goes into deeper flexion, allowing ligamentous structures to take control.

Anterior and posterior lips stabilize the knee in the absence of the ACL, and the PCL if compromised.

Early roll-back is promoted.

Designed to allow safe, impingement free deep flexion.
Confidence in Strength

A very congruent, stable articulating surface allows for the quadriceps muscles to operate much more efficiently, reducing hamstrings co-activation and the demands on the extensor mechanism, making patients effectively stronger as a result of an intrinsically stable knee joint.1,3,4,7,8

Confidence in Stability

By controlling the translation of the lateral condyle in extension, and giving increased lateral A/P laxity in flexion, the 3DKnee articulating surface is designed to accommodate for the loss of the ACL and provide intrinsic AP stability to the replaced knee.4

The 3DKnee femoral design incorporates a single radius of curvature. This design feature seeks to reduce mid-flexion instability and creates a more stable joint in terms of varus/valgus laxity.5,6 Less compensatory muscle activity is required to stabilize the total joint.7

The 3DKnee insert is used with or without an intact PCL. A stable articulating surface is created without the use of a less bone sparing post and cam design. The high anterior lip and conforming articulating surface stabilize the femur on the insert.

"They gave me back my life."

Cynta, 3DKnee Patient

The 3DKnee provides patient Cynta the motion, strength and stability she needs... in every step.


