

oto®
PARTIAL KNEE SYSTEM

MOVING FORWARD IN PARTIAL KNEE



Brochure

Joint

Spine

Sports Med

edacta
International 

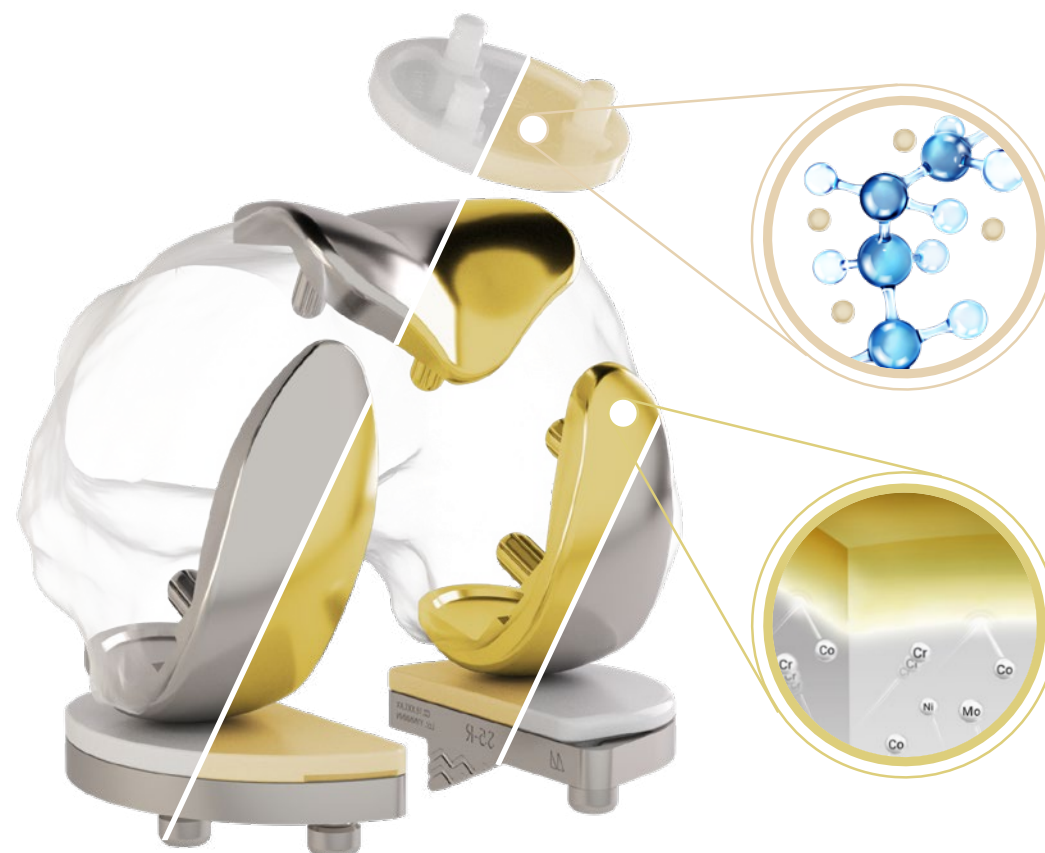
Unicompartmental Knee Arthroplasty (UKA) has been shown to provide better patient-reported outcomes compared to Total Knee Arthroplasty (TKA)^[1,2], and studies have demonstrated that patients undergoing UKA by high-volume surgeons exhibit comparable medium-term survival rate to those of patients undergoing TKA^[3].

At the time of surgery, 50% of knee replacement patients have only one compartment affected by the pathology^[4] and the anterior cruciate ligament is reported to be functional in more than 50% of the cases^[5]. Therefore, UKA could be a valuable alternative to TKA for many patients, with the benefit of preserving knee proprioception and healthy anatomic structures^[6] and achieving better clinical outcomes (knee mobility, ROM and activity level^[7-9]) with a less invasive procedure, shorter hospital stay and faster recovery^[10-11].

MOTO Partial Knee System includes anatomical, compartment-specific implants designed to improve bone coverage and optimize knee kinematics. The high degree of intraoperative flexibility, guaranteed by the specific features of the implants and by the surgical technique, facilitates the achievement of a correct and individualized balance and alignment, with the flexion and extension gaps balanced independently.

UNCOMPROMISED FIT, COVERAGE AND POSITIONING

The design of the MOTO System Implants was based on an **extensive anthropometric research** project performed using the **MyBody database***. Medacta's **MyBody database** is a collection of more than 100,000 **CT, MRI, and biomechanical models**, allowing for **anthropometric analysis** and **evaluation** throughout the Medacta designing process. The final goal of the analysis was to design the femoral and tibial components to optimize bone coverage and knee kinematics.



E-CROSS™

Vitamin E highly crosslinked UHMWPE with improved oxidation and wear resistance^[12]

SensiTiN™

Ceramic-like coating designed to reduce the release of metal ions from the implant^[12]

MOTO MEDIAL

MOTO LATERAL

Round-on-flat design and multi-radius femoral sagittal profile accommodate deep flexion and natural roll-back

COMPARTMENT-SPECIFIC ANATOMIC DESIGN

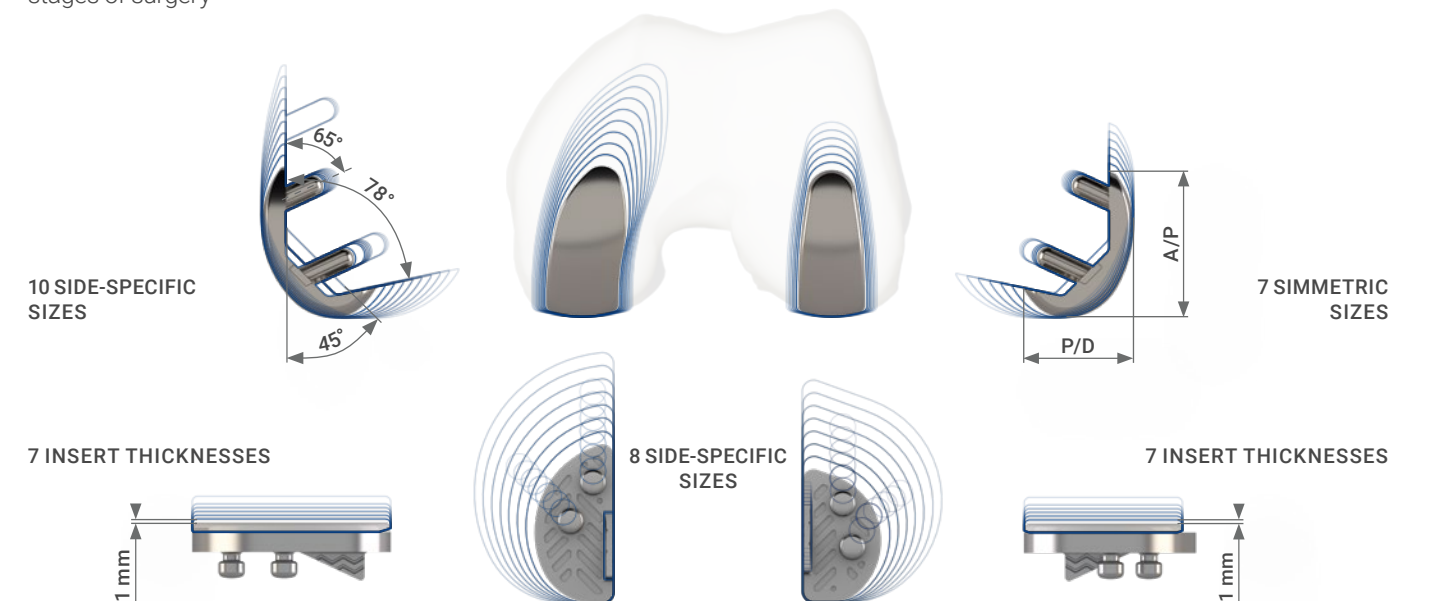
- Femoral coronal profiles optimized for patella and soft tissue compatibility, proper implant rotation, sizing, and positioning
- Femoral AP/PD ratios fine-tuned to improve bone coverage and achieve a wide ROM
- Tibial AP/ML ratios and profiles set to maximize coverage and full cortical rim contact, to help preventing implant subsidence and painful conflicts with posterior soft tissues

INTRAOPERATIVE FLEXIBILITY

The position of the femoral pegs and the distal and posterior cuts are equal across sizes to guarantee high intraoperative flexibility, with easy upsizing or downsizing even in the final stages of surgery

OPTIMIZED FIXATION ELEMENTS

- Femoral peg inclination and internal profile angles maximize stability and help preventing expulsion in flexion
- Mushroom shape of tibial pegs designed to improve tibial primary stability provided by the cement fixation between their upper surface and the tibial tray
- Triangular keel featuring a straight posterior wall to guide the implant to its end position and to avoid posterior sliding during impaction
- By analysing the distal tibial sections, the relative distances between pegs and keel were maximised while maintaining a safe distance from the cortical bone
- Multiple 45°-oriented linear cementation pockets improve tibial stability under AP and ML loads



MOTO PFJ

PAINLESS PATELLA TRACKING

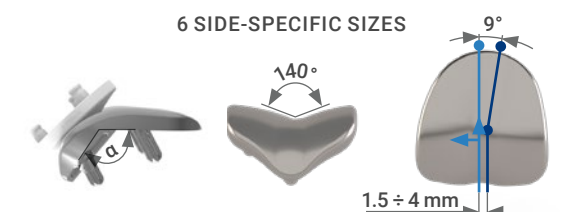
- MOTO PFJ's anterior ONLAY design immediately captures the patella during knee flexion, while the distal INLAY design prevents patellar overload and reduces retropatellar pressure in full flexion
- V-angle, trochlea groove lateralization and Q-angle are fine-tuned to produce painless patellar tracking

TAILORED IMPLANT FITTING

Flat anterior resection and narrow distal aspect allow for optimization of anterior coverage and implant positioning

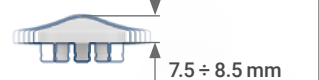
STABILITY

Antero/distal angle (α), internal distal box, and position of the 3 pegs have been set to maximize mechanical stability and bone preservation for all sizes



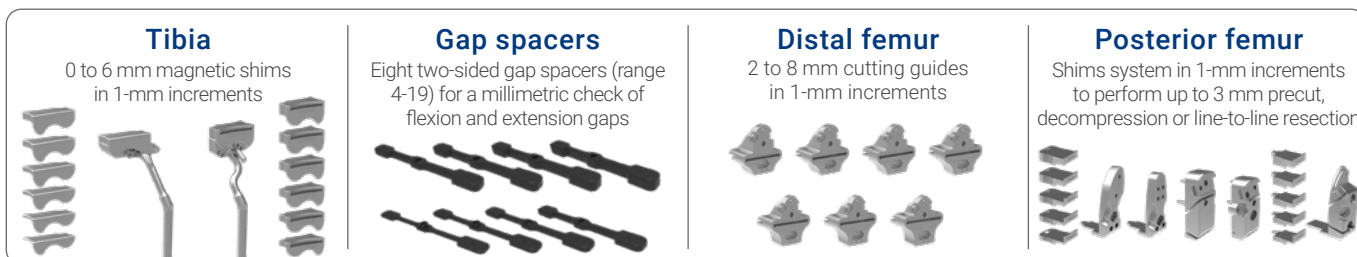
Dedicated **MOTO Resurfacing Patella** fully congruent with MOTO PFJ

6 PATELLA DIAMETERS



BALANCE WITHOUT COMPLEXITY, MAXIMIZE INDIVIDUALIZED OUTCOME

MOTO Medial and **MOTO Lateral** implants design and instrumentation work together so that intraoperative decision-making and flexibility are optimized for each patient. **Multiple resection options**, with **millimetric** control, allow for **independent balancing** of flexion and extension gaps and complete control of alignment at every step of the procedure. This results in optimal implant positioning, tailored to the patient's anatomy, as well as soft tissue balance, with a bone-preserving, accurate and reproducible surgical technique.



PREOPERATIVE 3D PLANNING

Based on the CT or MRI scan of the patient's knee, the MyKnee UNI patient-specific cutting block dedicated to MOTO Medial allows for performing the **tibial transversal resection** and for setting a **reference for the tibial sagittal cut** according to the preoperative planning. Moreover, the software provides assessment of **both tibial and femoral size and positioning**.



The **MOTO PFJ** surgical technique is highly reproducible and **minimally invasive** thanks to **fully guided steps not requiring intramedullary canal violation**. Complete fine-tuning of anterior cut parameters and dedicated reaming guides for box preparation and distal finishing optimize the restoration of the patellofemoral compartment.

The MOTO Patella dedicated instrumentation allows for precise control of the resection thickness, optimizing patellar positioning with a bone-preserving reconstruction.



COMPREHENSIVE SURGEON EDUCATION

The M.O.R.E.'s unique Education Program allows the surgeon to gain experience on how to leverage the unique design features of MOTO implants, in synergy with the instruments and the surgical techniques, through top level medical education and continuous support tailored to every surgeon's needs.



REFERENCES

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* The CT and MRI scans contained in the "MyBody" database are anonymous and do not permit in any way the identification of patients. Medacta recognizes the importance of personal data protection and considers that preserving the confidentiality of personal data is one of the main objectives of its activity, in compliance with any applicable privacy law and regulation.

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