

ORIGIN[®] CR

Patient-matched knee prosthesis



symbios
custom-made for you

ORIGIN[®] Alignment Strategy

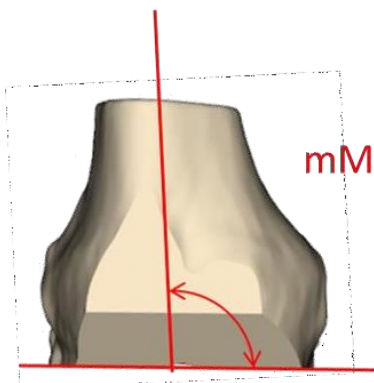
- 1 Restore native HKA alignment to within the “safe zone”
- 2 Reproduce native joint line obliquity
- 3 Match the shape of the implant to the patient’s anatomy



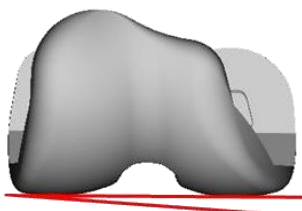
Preoperative planning

To differentiate the pathological from the natural

- Knee morphology using 3D data
- Additional clinical data [Symbios Connect]
- Long-leg standing X-rays loaded



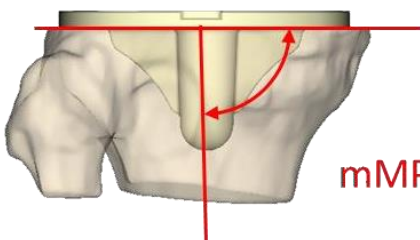
mMDFA : 87° to 93°



0° to 2°



0° to 2°



mMPTA : 87° to 93°

Safe Zone

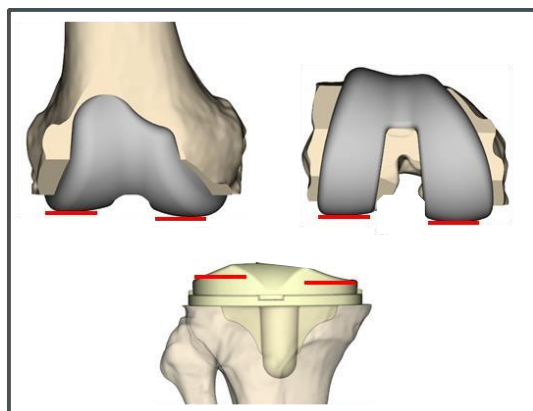
- $\pm 3^\circ$ for HKA
- $\pm 5^\circ$ for joint line
- Up to 10° of Tibial Slope

Obliquity reproduced, i.e.:

- in the offset of the condyles / insert
- in the femoral and/or tibial cut

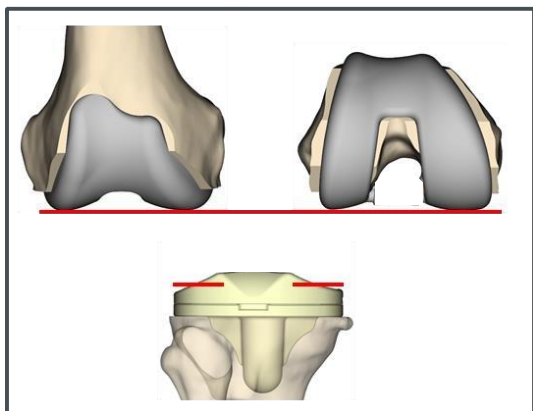
Kinematics

➔ Restore condyle shapes for more natural kinematics



Condyle offset

Inclination of joint line = MEDIAL pivot

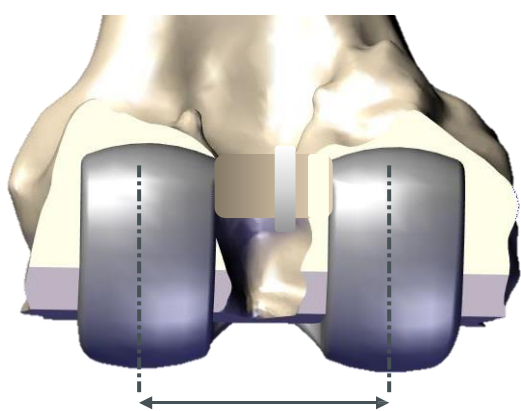


NO condyle offset

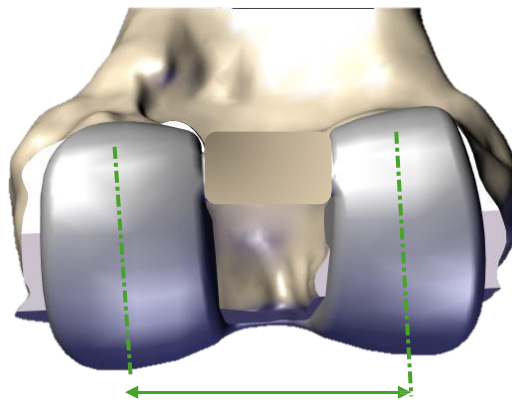
Right joint line = NO pivot



➔ Restore condyle centre distances
- for better varus/valgus stability



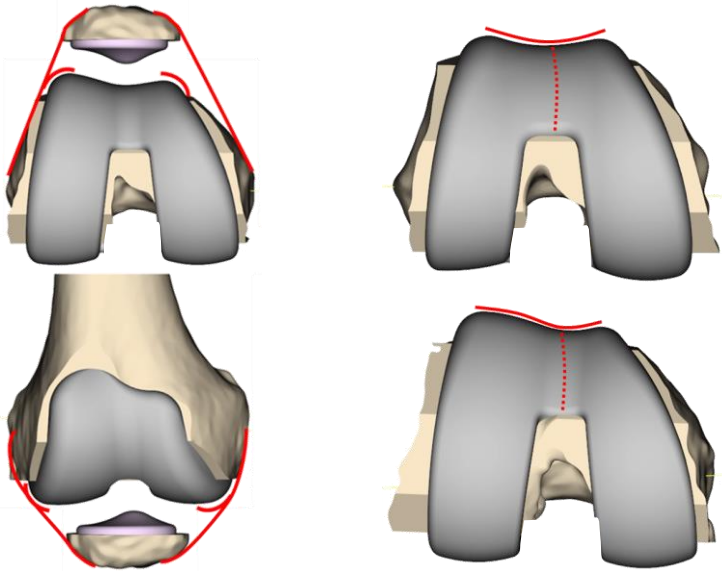
M/L undersizing



Patellofemoral Joint



Restore the native trochlea for better patella tracking



PFJ is decoupled from posterior condylar offset

Off-the-shelf femoral component

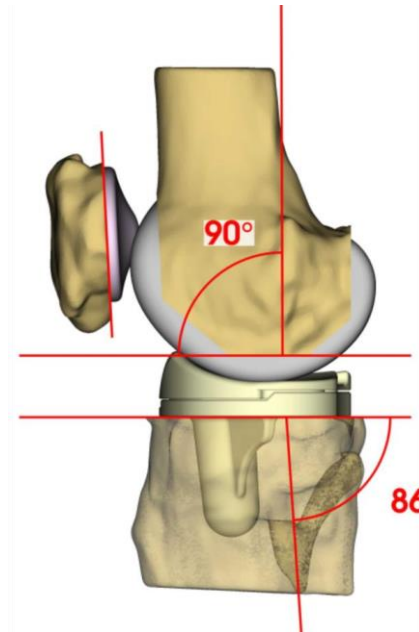
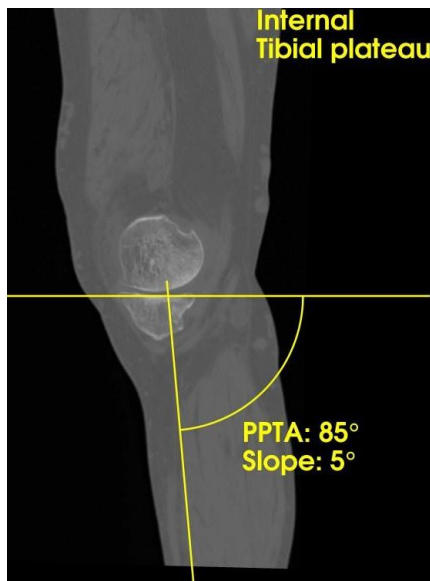
ORIGIN® patient-matched femur

ORIGIN® Patella – medialised dome

Tibial Alignment and Coverage



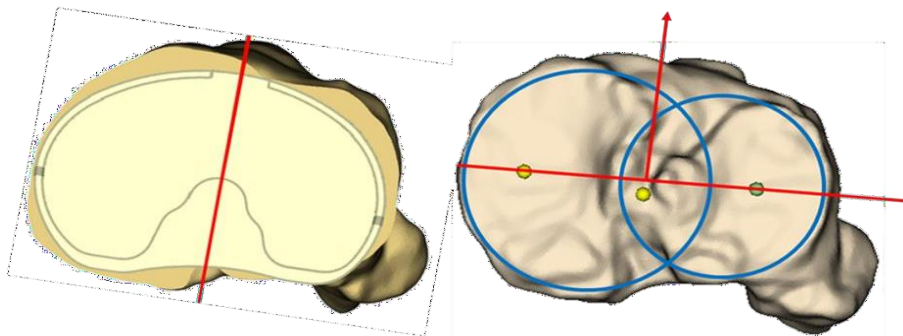
Restore the native tibial slope



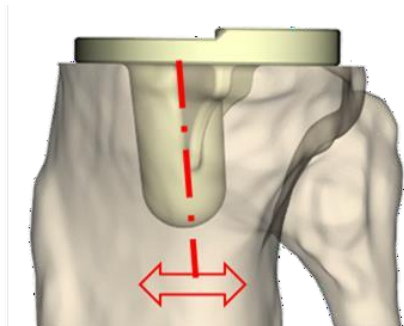
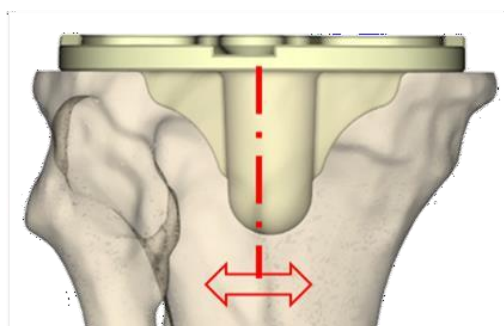
Limit: Up to 10° of tibial slope



Restore axial tibial alignment independently of coverage

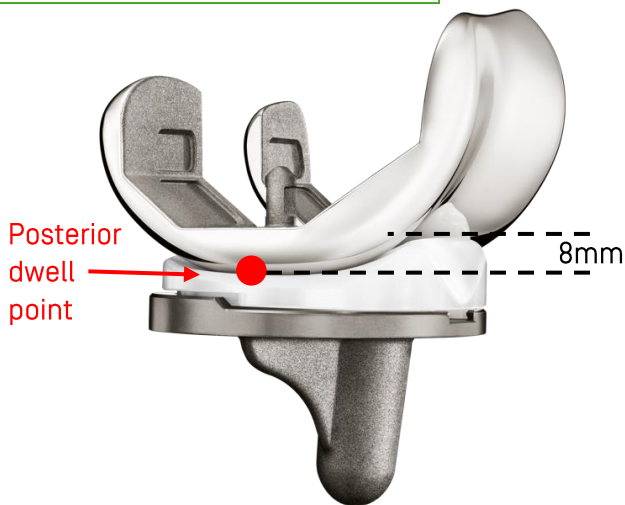


Avoid conflict with the tibial keel [adjustable A/P and M/L offset]

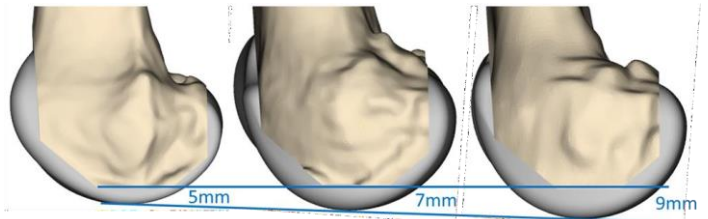


ORIGIN[®] CR Design Features - Femur

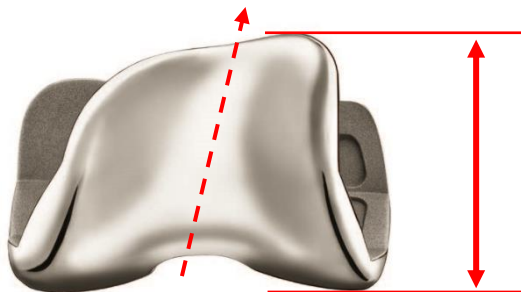
Patient Matched Sagittal Curves



- Contoured edges to reduce soft tissue impingement
- Resections proportional to the patient (preservation of bone stock)

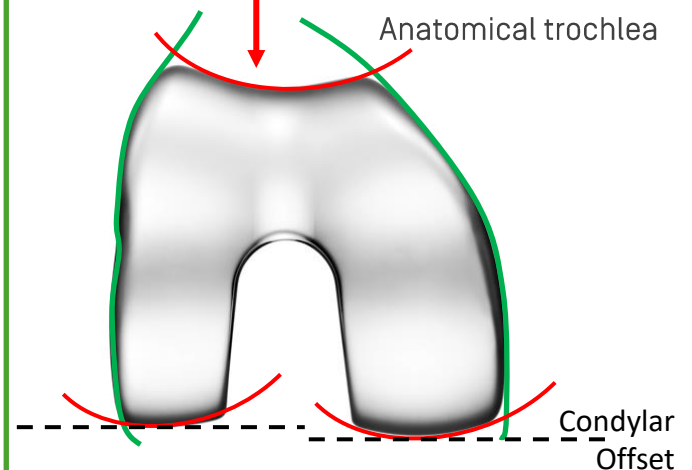
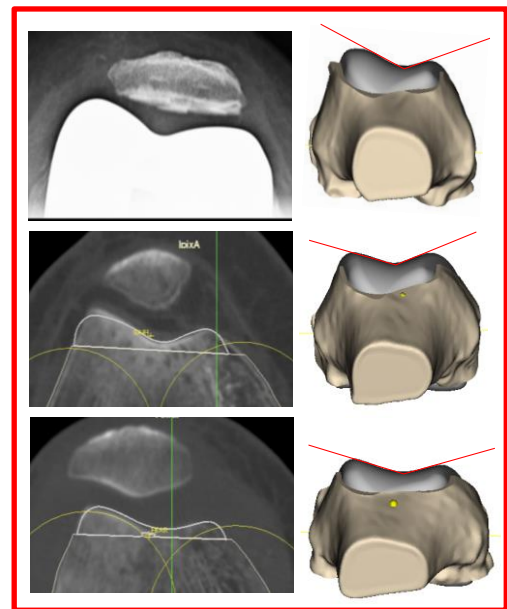


- Medial congruent [1:1.2] design
- Patient-matched radius of curvature [0° to 90°]
- Insert shape matches the femur medially
- 8mm anterior lip
- Posterior dwell point



Short anatomical flange:

- Resurface anterior cartilage only
- No additional bone removed
- Reduced risk of notching
- Reduced incidence of anterior cortex prosthetic pain
- Anatomical trochlea is positioned independently of posterior condyles



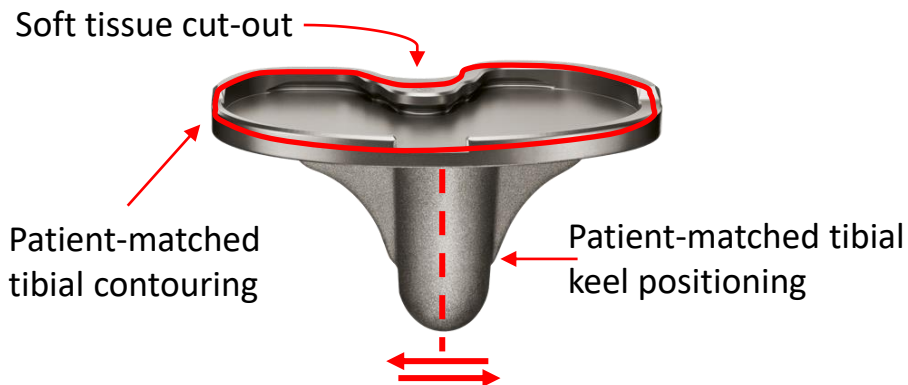
Patient matched shape, size, curves, angles



M/L Contouring
M/L Condylar Widths
M/L Curves

ORIGIN[®] CR Design Features - Tibia

Monobloc CR Tibia



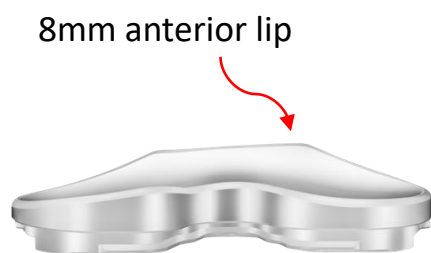
Modular CR Tibia



Titanium Alloy Cemented Tibia

- Full, peripheral locking mechanism
- Swept-back keel
- Built-in 3° of posterior tibial slope
- Modular stems [20mm, 30mm, 40mm, 70mm]
- Pre-operatively planned A/P and M/L keel offset adjustments to match the patient's anatomy

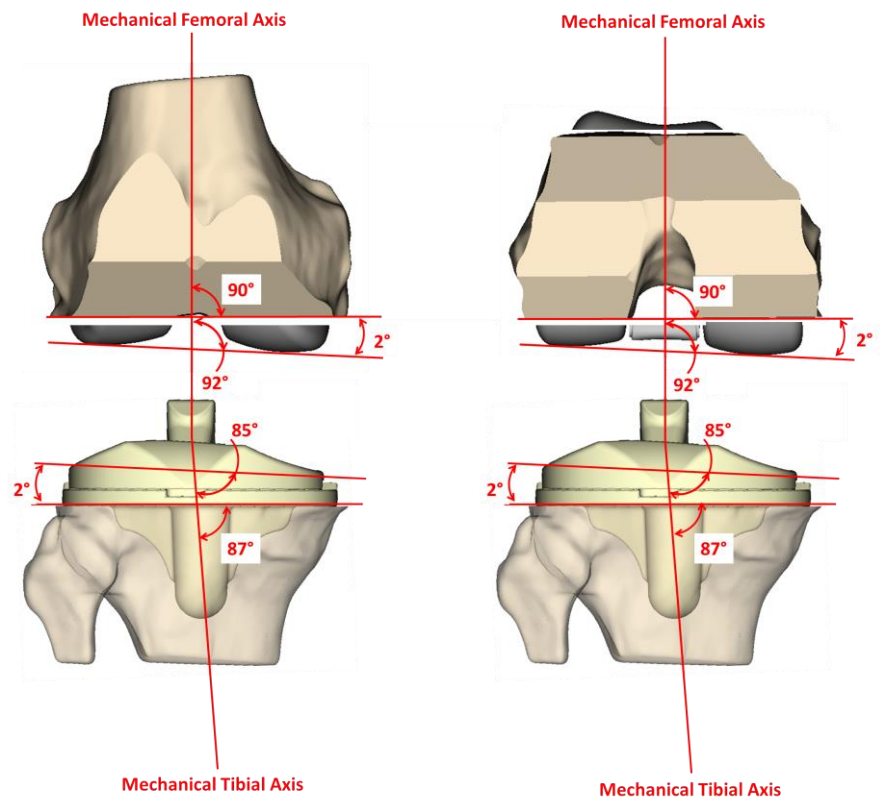
UHMWPE Insert



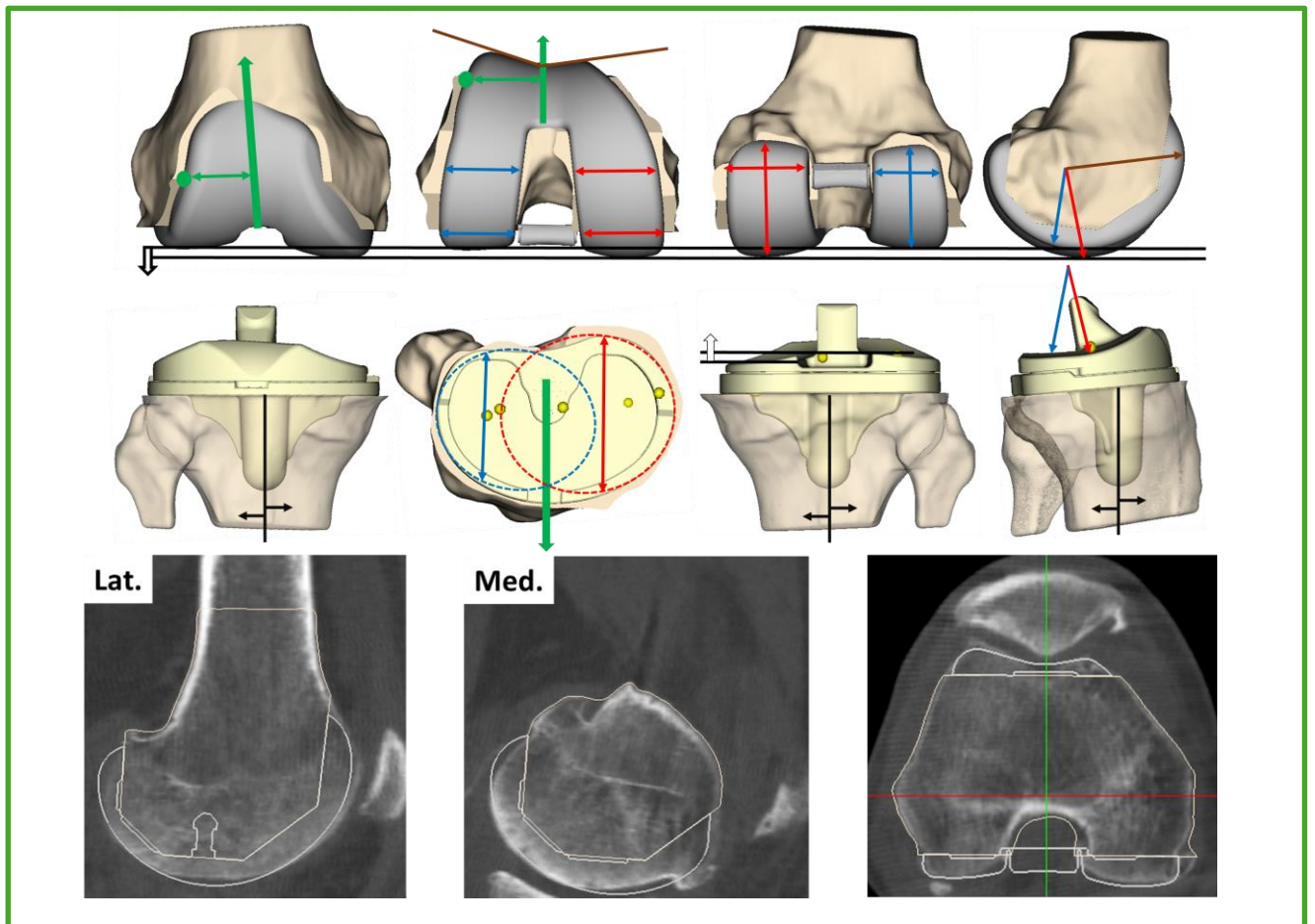
- Medial congruent design
- Articular surface shape matches the j-curve of the femur [according to the patient's anatomy]
- 2° of joint line slope M/L
- 2 inserts supplied [0mm and +2mm]
- Allows for up to 6mm of gap adjustment with the aid of a re-cut block

ORIGIN® Planning Example

- Femoral distal cut : 90° to femoral mechanical axis
- Tibia proximal cut : 3° varus to tibia mechanical axis
- 2° additional valgus of distal femur integrated in prosthetic distal condyles
- 2° additional varus of proximal tibia integrated in prosthetic insert



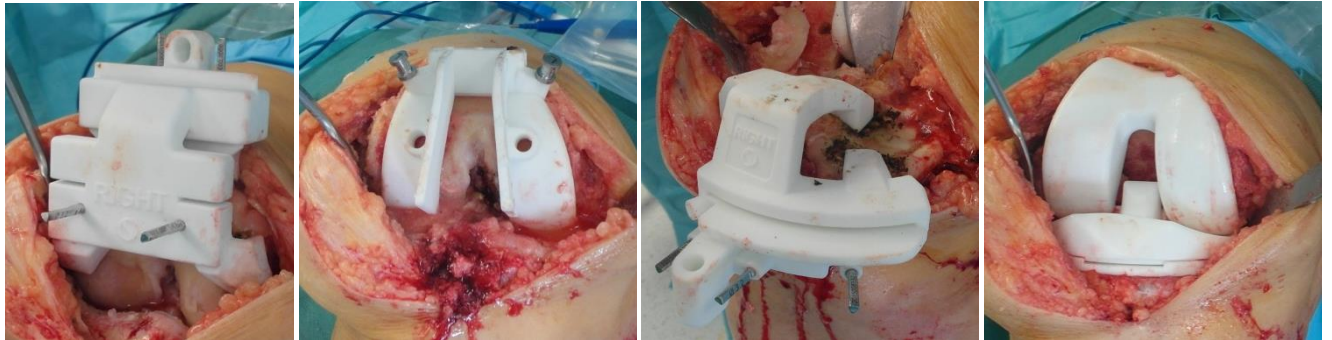
Custom implant design proposal



ORIGIN[®] Instrumentation

➡ Conventional technique with 4-in-1 femoral cuts

➡ Sturdy PSI guides for reliable cuts and reproducible technique



➡ Recut block and spacer block to assist with balancing

➡ Bone models for each case to check PSI guide position

➡ Only 1 tray of reusable instruments



ORIGIN[®] Clinical Results



Launched in 2018



Over 12,000 ORIGIN[®] cases to date



PMCF 10-year study of 434 patients ongoing. Results:

- ORIGIN[®] PS showed significant improvements in patient satisfaction scores at 1, 2 and 3 years [data on file]

	Pre-op	3-6 Months	1 Year	3 Years
KSS Knee Score / 100	30.3	92.6	95.1	94.9
Last FU KSS Knee > 85.5	90.8%			
KSS Function score / 100	54.3	93.3	96.9	93
Last FU KSS Function > 72.5	93.8%			
Knee flexion [degrees]	118.4	121.3	127.5	129.4
Forgotten joint score [FJS] /100	15.7	50.6	65.3	69.1
Oxford Knee Score / 48	21.6	36.3	40.2	41
Patient satisfaction / 10	N/A	8.6	9.5	8.9

- ORIGIN[®] TKA demonstrated proven accuracy of the component positioning

Accuracy within $\pm 3^\circ$	Within $\pm 3^\circ$	Outliers $> 3^\circ$
Loaded HKA Angle [°]	69%	31%
Alpha Angle [°]	96%	4%
Beta Angle [°]	92%	8%
Tibial Slope [°]	98%	2%

- ORIGIN[®] PS showed a revision rate of 0.9% at a mean follow-up of 2.7 years



Custom total knee arthroplasty combined with personalised alignment grants 94% patient satisfaction at minimum follow-up of 2 years – Lampros Gousopoulos · Andreas Dobbelaere · Salvatore Ratano · Louka Bondoux · ReSurg · Carsten O. Tibesku · Tarik Ait-Si-Selmi · Michel P. Bonnin
European Society of Sports Traumatology, Knee Surgery, Arthroscopy (ESSKA) 2023