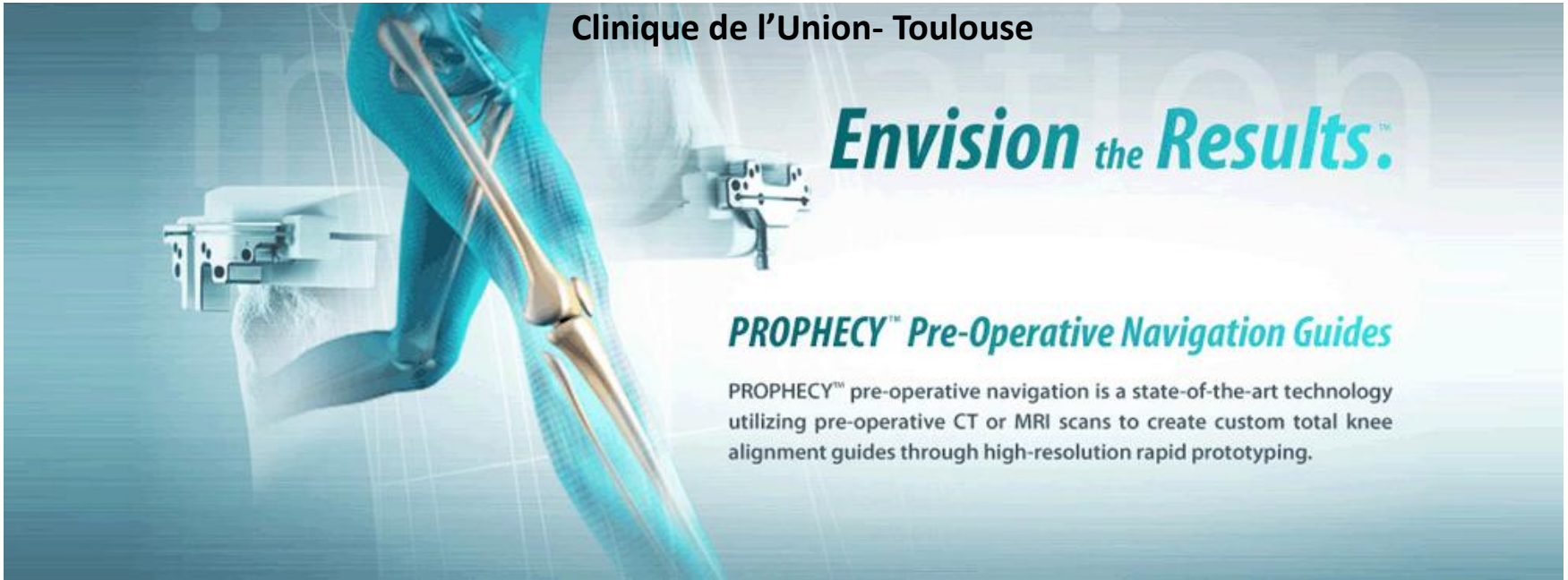
AMP

PROPHECY

PROPHECY™: THE TOULOUSE EXPERIENCE

Dr Aymard de Ladoucette

Clinique de l'Union- Toulouse



PROPHECY™
THE TOULOUSE EXPERIENCE

- **PRELIMINARY RESULTS**
  - **SEPT 2010- FEB 2011**
  - **PER OP RESULTS**
    - **Cut thickness**
    - **Size concordance**
  - **ALIGNMENT**

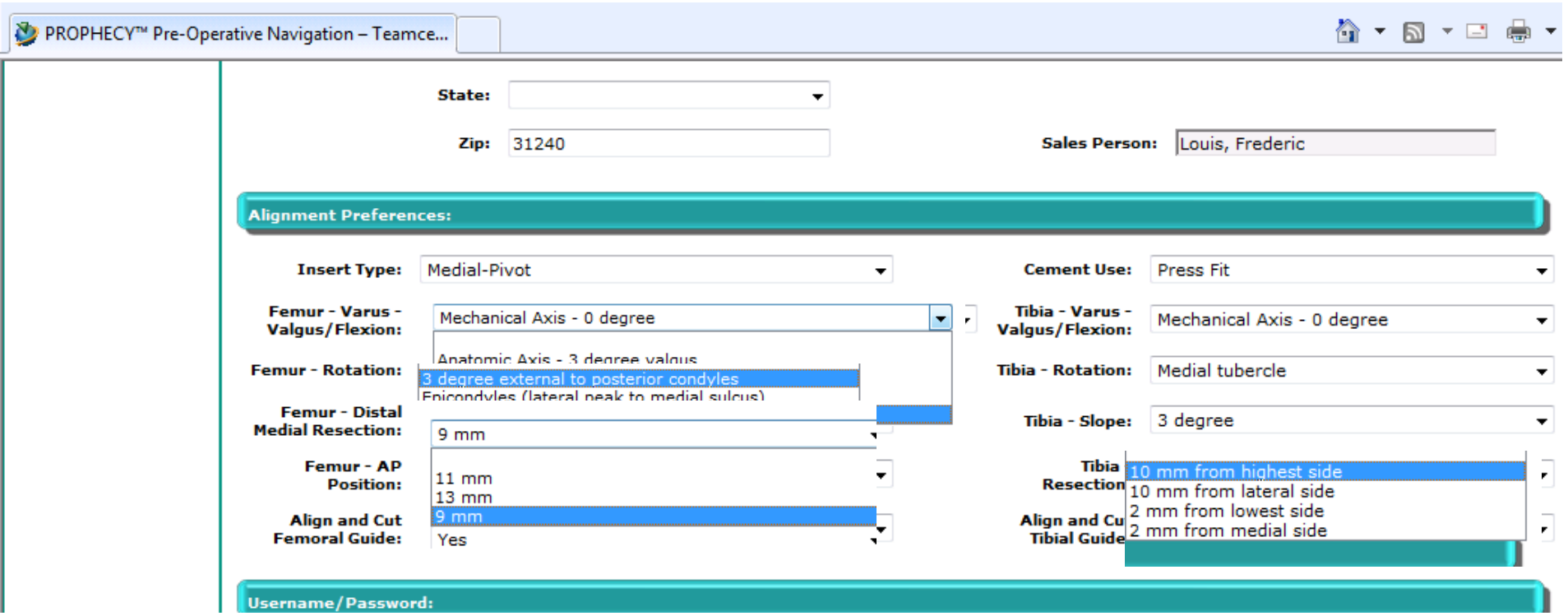
PROPHECY™
THE TOULOUSE EXPERIENCE

- **PATIENTS: 27**
  - **INDICATIONS**
    - **AGE**
    - **DEFORMITY**
    - **THA**

idem **COMPUTER ASSISTED SURGERY**

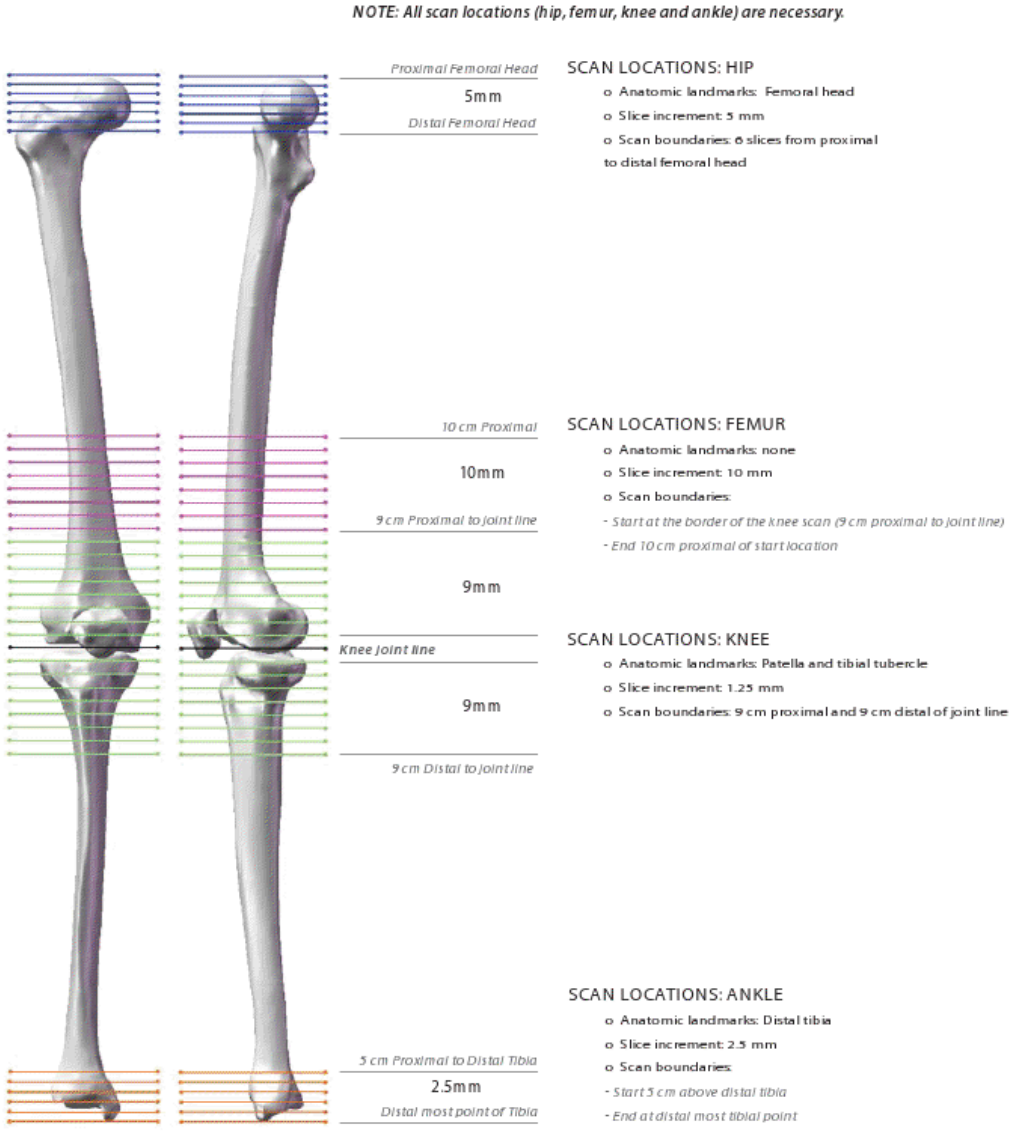
PROPHECY™
THE TOULOUSE EXPERIENCE

- **PLANIFICATION**
  - **WEBSITE**



PROPHECY™
THE TOULOUSE EXPERIENCE

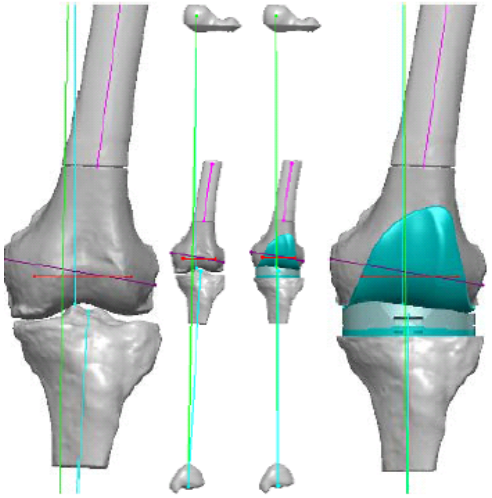
- **PLANIFICATION**
  - **– CT SCAN**



PROPHECY™
THE TOULOUSE EXPERIENCE

- **PLANIFICATION**
  - **REPORT**

Size 5 Left ADVANCE® Standard, Size 5 Base
10mm Medial-Pivot Insert

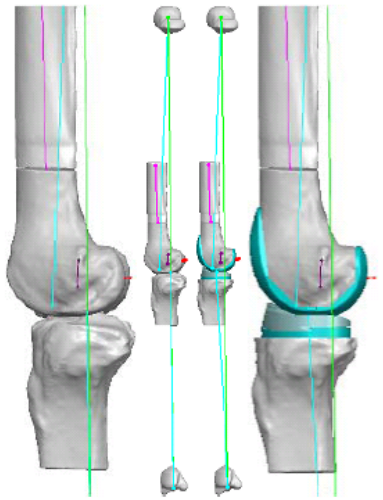


AP Pre-Op AP Post-Op

Varus-Valgus Angle
(measured from the femoral anatomic axis)
Pre-op: 4.9° valgus
Post-op: 8.1° valgus

Mech. axis to Anatomic axis angle (in coronal plane): **8.1°**
Hip-Ankle Line
Pre-op: 833.0 mm
Post-op: 834.9 mm

Fem. Anat. Axis
Fem. Mech. Axis
TEA
Hip/Ankle Line



Lat. Pre-Op Lat. Post-Op

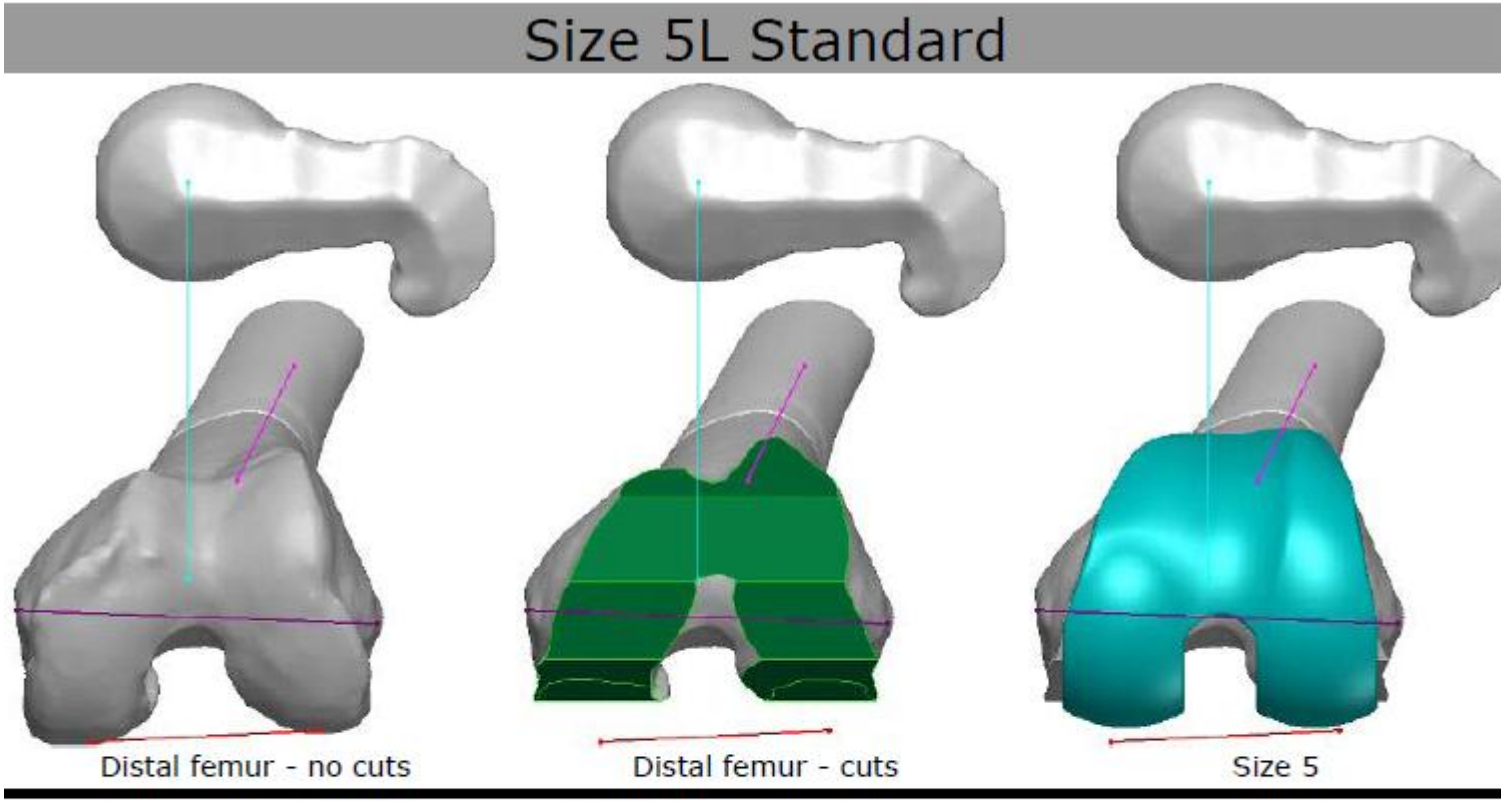
Sagittal Mech Axis Angle
(femoral anatomic axis to tibial anatomic axis)
Pre-op: 0.7° extension
Post-op: 1.4° flexion

Distal Cuts
Medial: 9.0 mm
Lateral: 6.6 mm

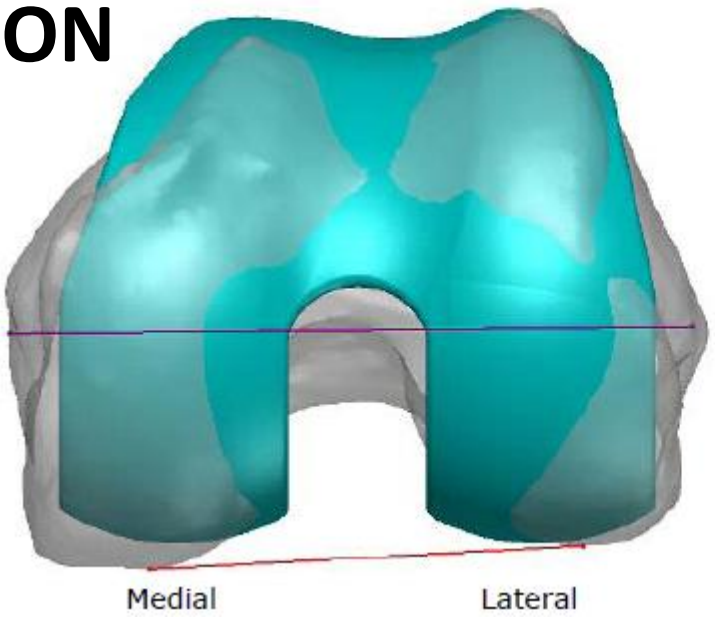
Posterior Cuts
Medial: 11.3 mm
Lateral: 8.2 mm

Mech. axis to Anatomic axis angle (in sagittal plane): **3.6°**

Fem. Anat. Axis
Fem. Mech. Axis
TEA
Hip/Ankle Line



- **PLANIFICATION**
  - **– REPORT**



TEA is 2.5° external from the posterior condyles

No stuffing of the patella

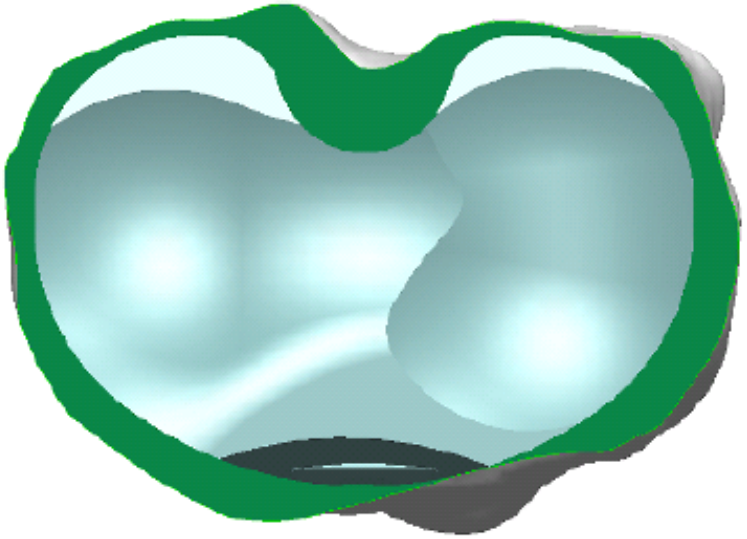
Similar trochlear groove profiles

TEA

Post. Cond. Line

- **PLANIFICATION**
  - **– REPORT**

Size 5, Medial-Pivot



- Tibial Cut 3.0° posterior slope
- Resection side:
  7 mm from highest side
- Insert AP orientation:
  Medial tubercle
- Medial resection: 3.1 mm
- Lateral resection: 7.0 mm

Femoral Alignment Method

- Distal cut is referenced to Mechanical Axis - 0 degree
- Femoral rotation set by the 3 degree external to posterior condyles
- Distal resection level set to 9 mm
- AP component position set by Anterior flange placed to prevent notch/overhang
- Femoral component flexed 2° from the mechanical axis in order to obtain optimal posterior resections
- Size 5 ADVANCE® Femur

- **PLANIFICATION**
  - **– REPORT**

Tibial Alignment Method

- Proximal cut 3° posterior slope to anatomic axis
- Component rotation set by Medial tubercle
- Resection level from 7 mm from highest side
- ADVANCE® Tibia Base Size 5
- Size 5 Left 10 Medial Pivot Insert

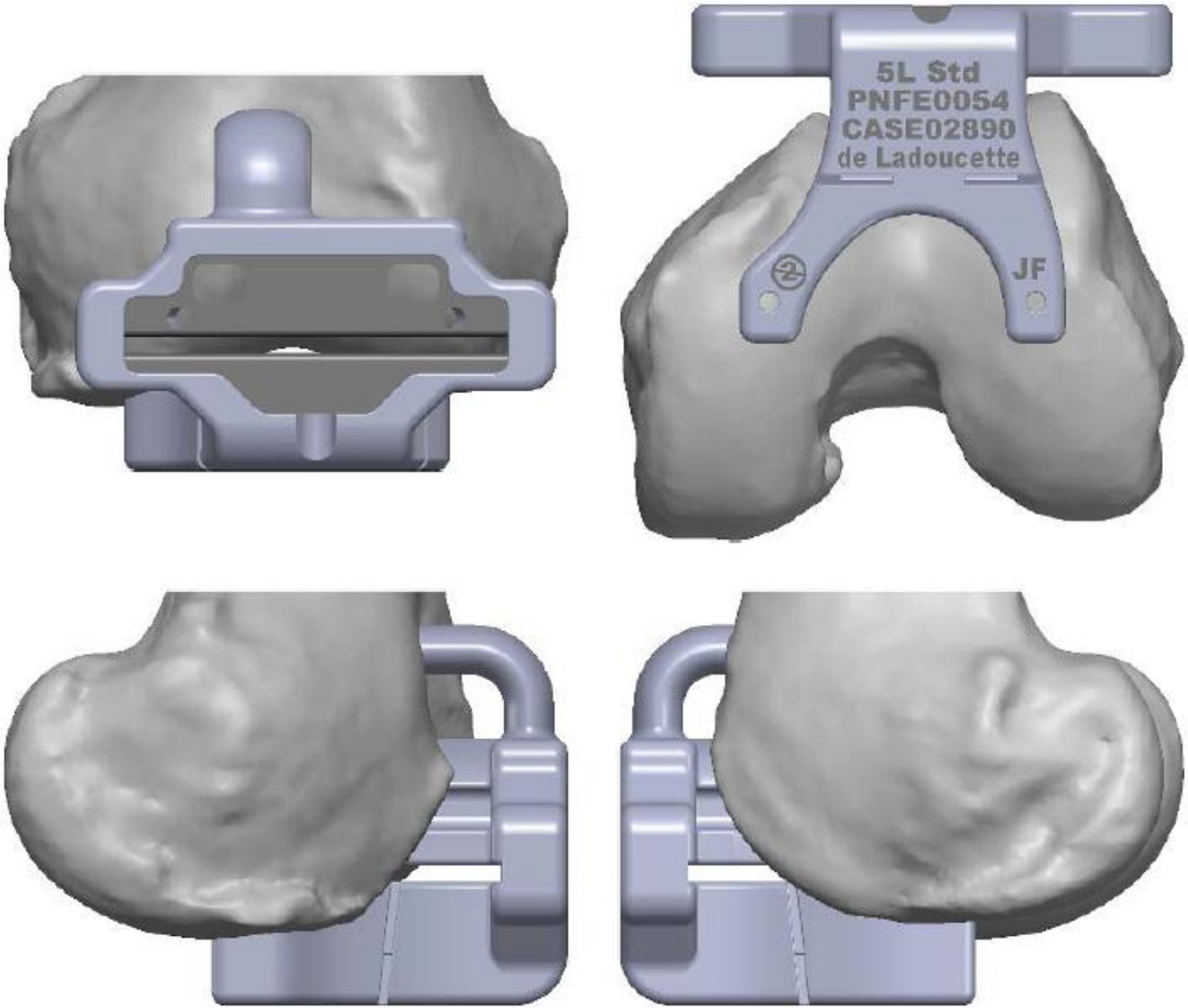
Prophecy™ Engineer Comments

The tibial resection was set to 7 mm from the highest side to provide a complete resection while sparing bone stock and maintaining the pre-operative to post-operative limb length.

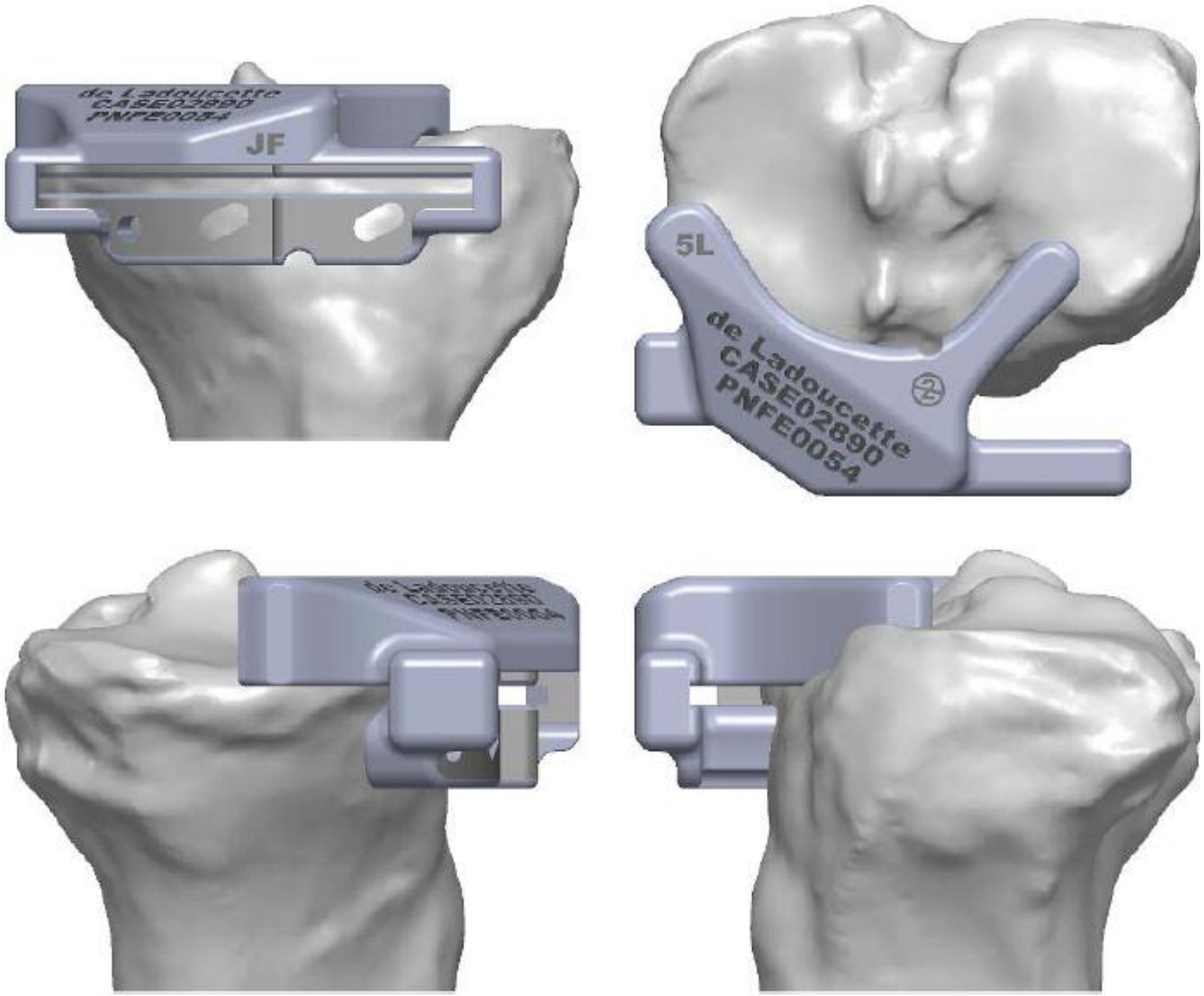
Recommended Implants

- Femoral component: KFTCPC5L
- Tibial base: KTSCFM50
- Insert: KIMP510L
- Part Number: PNFE0054
- Order Kit: K100KT80 and K100KT5L
- Order kit K100KT65 for press-fit tibial implants

Femoral Guide Placement

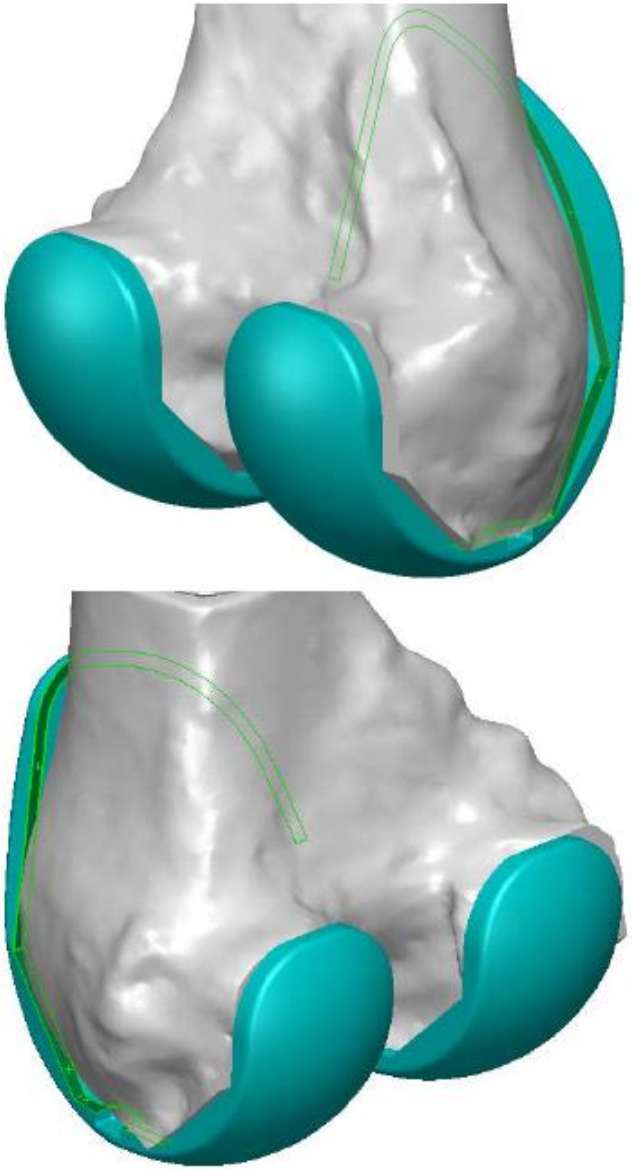


Tibial Guide Placement



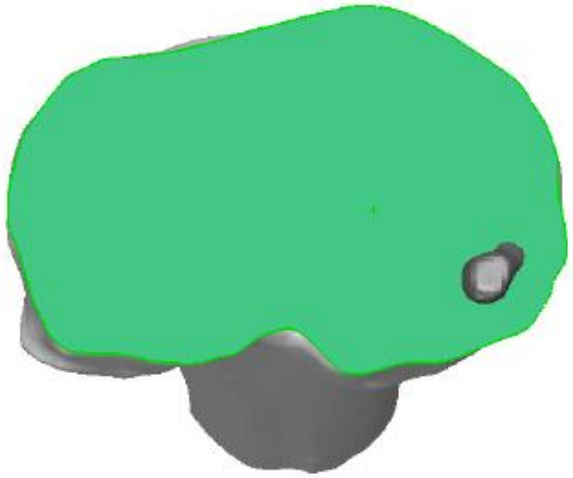
Femoral implant

Size 5 Standard implant with 2° of flexion from the mechanical axis presents overhang at the lateral and medial sections, as shown below.



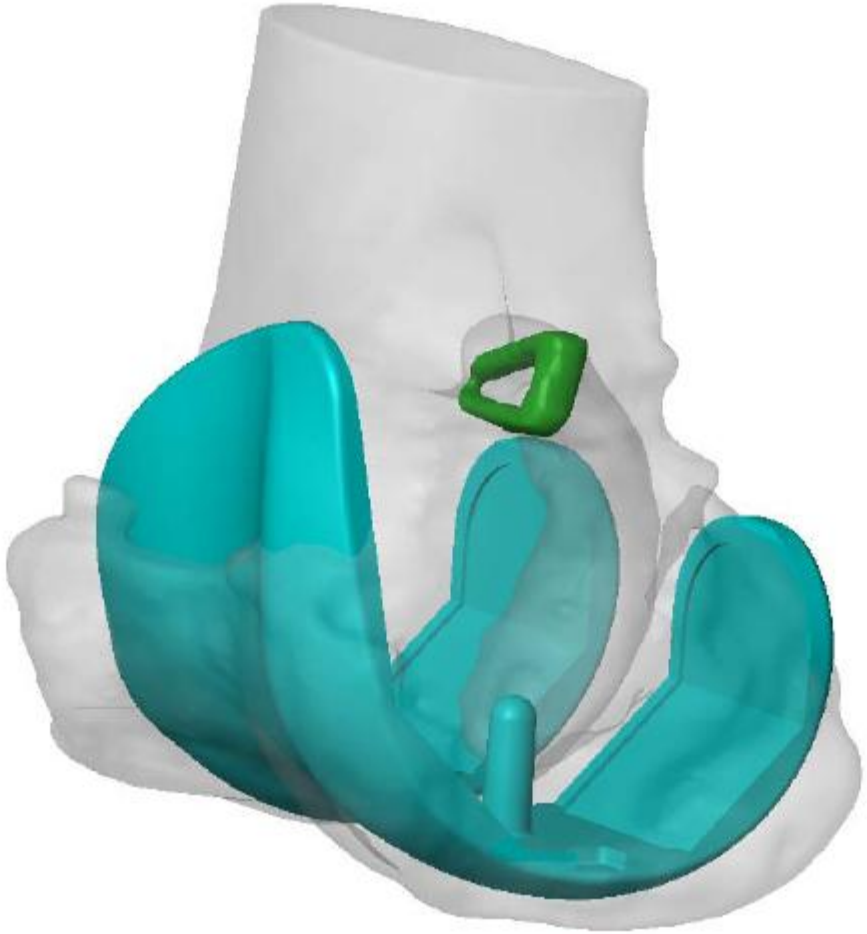
Cavity at the Tibia

The tibia presents a cavity in the posterior medial side. The cavity interferes with the tibia resec



Hardware at Femur

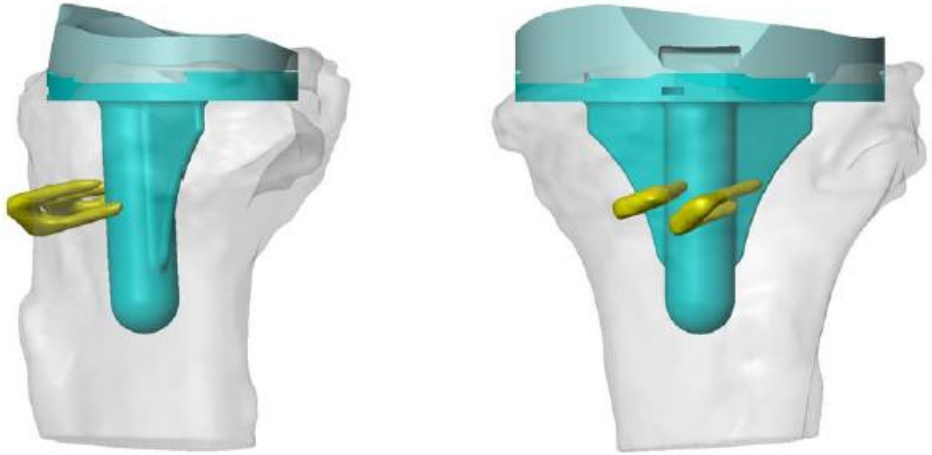
The patient has metal hardware. The hardware is not interfering with the femoral implant.



Oblique view of femoral implant and metal hardware

Hardware at Tibia

The patient has metal hardware that interferes with the tibia implant.



Sagittal and Coronal views of hardware interfering with tibia implant

Oblique view of tibia implant and metal hardware

PROPHECY™
THE TOULOUSE EXPERIENCE

- **PRE OP DEFORMITY**
  - **24 Varus (prophecy planification)/ 27**
  - **16 Varus (X- ray)/ 19**

PROPHECY™
THE TOULOUSE EXPERIENCE

- **ALIGNMENT**

  - **PROPHECY PLANIFICATION:**
    Valgus 1,6 ± 4° (anatomical axis)
    Varus 4 ± 4° (mechanical axis)

  - **X- RAY GONIOMETRY:**
    Varus 5 ± 6° (mechanical axis)

PROPHECY™
THE TOULOUSE EXPERIENCE

- **SIZE CONCORDANCE**
  - **FEMUR:**
    - **2 upsized (standard vs stature) / 24**
  - **TIBIA**
    - **2 downsized (standard vs plus) / 24**
    - **1 upsized (plus vs standard) /24**

PROPHECY™
THE TOULOUSE EXPERIENCE

- **DIFFERENCE= PLANNED – DONE**
  - **DISTAL FEMUR**
    - **MEDIAL : 1,1 ± 1,3 (≠)**
    - **LATERAL : 0,3 ± 1,3 (=)**

PROPHECY™
THE TOULOUSE EXPERIENCE

DISTAL CONDYLES

	PLANNED	DONE	
MEDIAL	9 ± 0,5	8 ± 1	*S*
LATERAL	7 ± 1	6 ± 2	*NS*

PROPHECY™
THE TOULOUSE EXPERIENCE

- **DIFFERENCE= PLANNED – DONE**
  - **POSTERIOR FEMUR**
    - **MEDIAL : 1,2 ± 2 (≠)**
    - **LATERAL : 1,9 ± 2 (=)**

PROPHECY™
THE TOULOUSE EXPERIENCE

POSTERIOR CONDYLES

	PLANNED	DONE	
MEDIAL	11 ± 1	10 ± 2	*S*
LATERAL	9 ± 1	8 ± 2	*NS*

PROPHECY™
THE TOULOUSE EXPERIENCE

- **DIFFERENCE= PLANNED – DONE**
  - **TIBIA**
    - **MEDIAL : - 1 ± 2 (=)**
    - **LATERAL : - 2 ± 1 (≠)**

PROPHECY™
THE TOULOUSE EXPERIENCE

TIBIAL PLATEAU

	PLANNED	DONE	
MEDIAL	4 ± 1	4 ± 2	*NS*
LATERAL	7 ± 1	9 ± 2	*S*

PROPHECY™
THE TOULOUSE EXPERIENCE

DIFFERENCE	< -2	-2< <2	>2
MED DIST COND	0	13	3
LAT DIST COND	0	16	1
MED POST COND	1	13	4
LAT POST COND	0	11	6
MED TIB PLAT	1	13	2
LAT TIB PLAT	7	8	1

PROPHECY™
THE TOULOUSE EXPERIENCE

- **POLYETHYLENE**
  - **4 PE increased 2 mm**
    - **Lateral Tib Plat - 4 mm**
    - **Medial Post Cond 3 mm**
    - **Medial Dist Cond 4 mm, Medial Tib Plat – 5 mm**
    - **Medial Post Cond 5 mm , Tib Plat – 4 mm (+ 2)**
  - **1 PE increased 4 mm**
    - **Lateral Tib Plat – 3 mm, Medial Tibial Plat -2,5 mm**

PROPHECY™
THE TOULOUSE EXPERIENCE

- **CONCLUSION 1**

  CT- SCAN > X- RAY

PROPHECY™
THE TOULOUSE EXPERIENCE

- **CONCLUSION 1 CT- SCAN > X- RAY**

- **CONCLUSION 2**

COMPONENT SIZES APPROPRIATE

PROPHECY™
THE TOULOUSE EXPERIENCE

- **CONCLUSION 1: CT- SCAN > X- RAY**
- **CONCLUSION 2: COMPONENT SIZES APPROPRIATE**

- **CONCLUSION 3**

CUT DONE ± CUT PLANNED

PROPHECY™
THE TOULOUSE EXPERIENCE

- **CONCLUSION 1: CT- SCAN > X- RAY**
- **CONCLUSION 2: COMPONENT SIZES APPROPRIATE**
- **CONCLUSION 3: CUT DONE ± CUT PLANNED**

- **CONCLUSION 4**

NO CORRELATION PE THICKNESS/ CUT

PROPHECY™
THE TOULOUSE EXPERIENCE

- **CONCLUSION 1: CT- SCAN > X- RAY**
- **CONCLUSION 2: COMPONENT SIZES APPROPRIATE**
- **CONCLUSION 3: CUT DONE ± CUT PLANNED**
- **CONCLUSION 4: NO CORRELATION PE THICKNESS/ CUT**

- **CONCLUSION 5**

CARTILAGE THICKNESS

PROPHECY™
THE TOULOUSE EXPERIENCE

- CONCLUSION 1: CT- SCAN > X- RAY
- CONCLUSION 2: COMPONENT SIZES APPROPR
- CONCLUSION 3: CUT DONE ± CUT PLANNED
- CONCLUSION 4: NO CORRELATION PE THICKN
- CONCLUSION 5: CARTILAGE THICKNESS

–CONCLUSION 6

LAXITY

PROPHECY™
THE TOULOUSE EXPERIENCE

- **CONCLUSION 1: CT- SCAN > X- RAY**
- **CONCLUSION 2: COMPONENT SIZES APPROPRIATE**
- **CONCLUSION 3: CUT DONE ± CUT PLANNED**
- **CONCLUSION 4: NO CORRELATION PE THICKNESS/ CUT**
- **CONCLUSION 5: CARTILAGE THICKNESS**
- **CONCLUSION 6: LAXITY**

- **CONCLUSION 7**

STUDIES COMPLETED

PROPHECY™
THE TOULOUSE EXPERIENCE