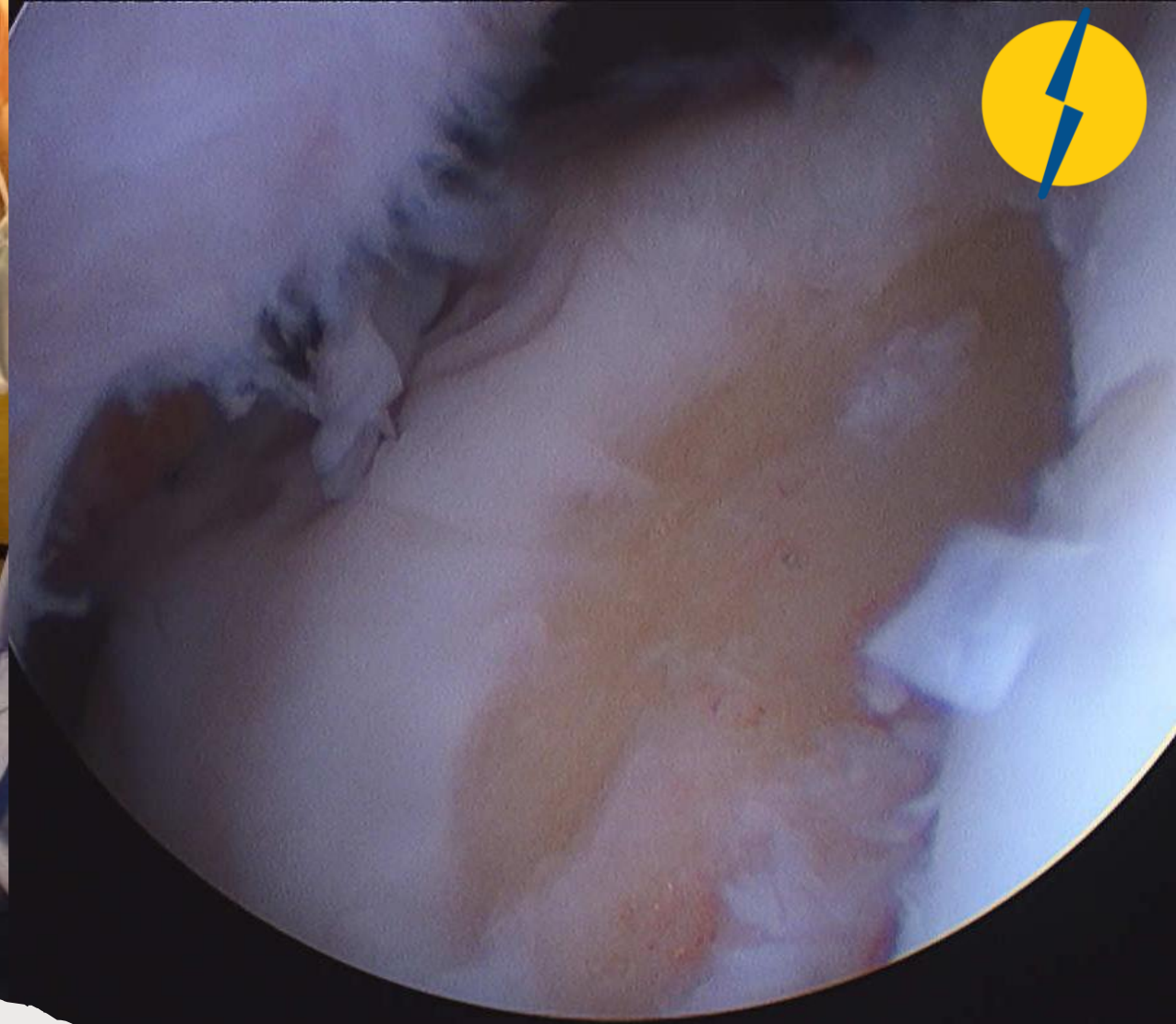




Hig-Density Autologous Chondrocyte Cell Therapy for Cartilage Repair in the Femoropatellar Joint

Isabel Guillen PhD.
Clínica CEMTRO, Madrid, SPAIN



Our experience in cell therapy since 1996



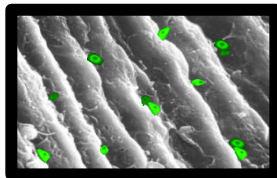
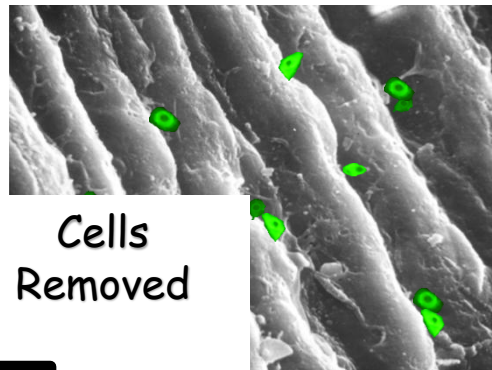
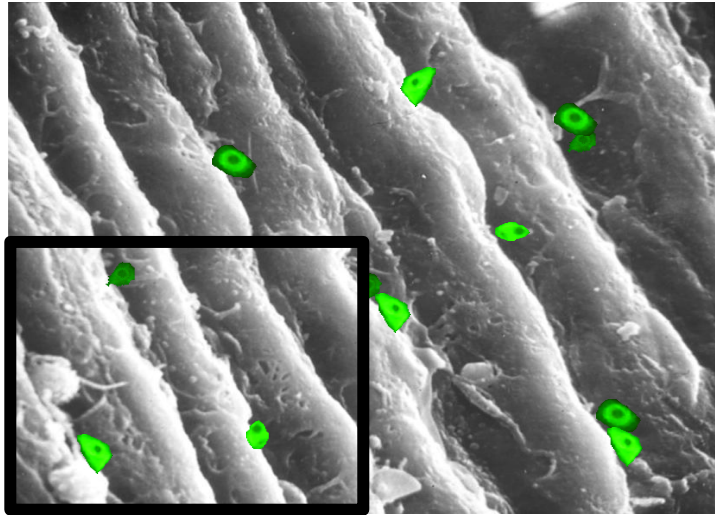
Our experience
in cell therapy
since 1996

	ACI	MACI	ICC	TOTAL
KNEE	146	154	468	768
ANKLE	6	20	112	138
HIP	0	0	3	3
WRIST	0	0	2	2

911 cases

MACI

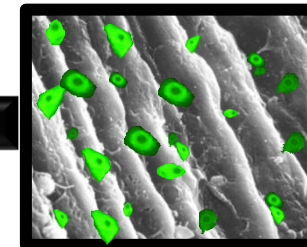
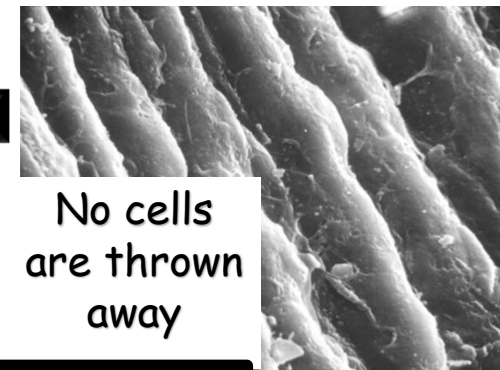
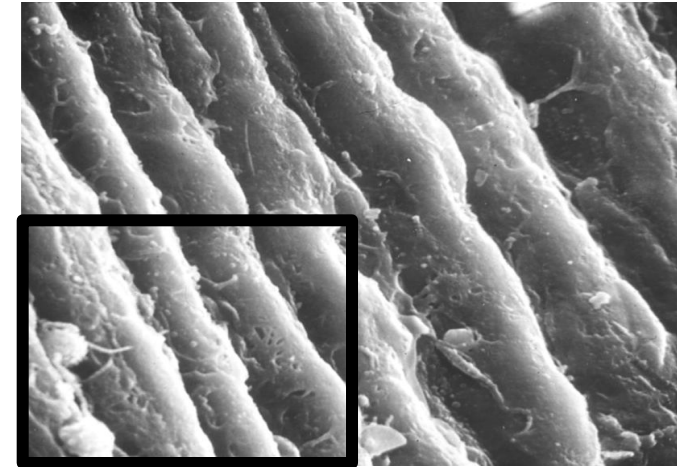
Membrane size 5x4 cm



IMPLANT

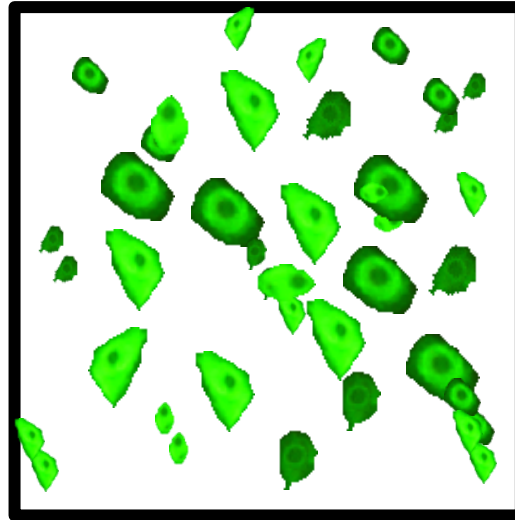
ICC

Membrane size 5x4 cm

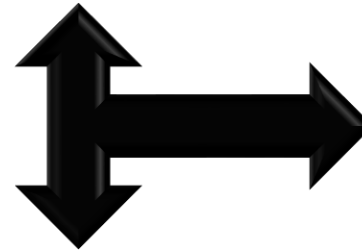
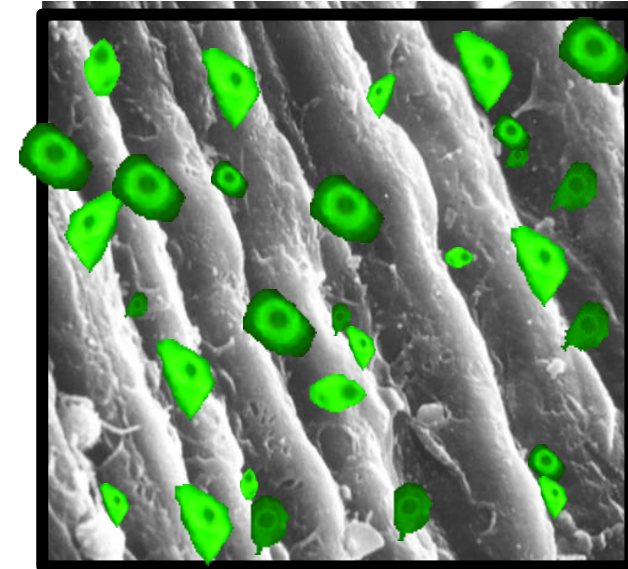




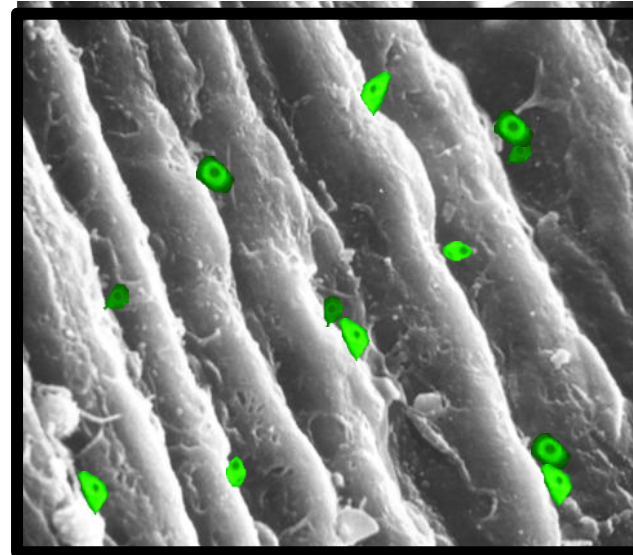
ACI
Membrane-free fluid
+ periosteum



INSTANT CENTRO CELL
ICC



MACI
Cells and membrane. Less
concentration



Indications:

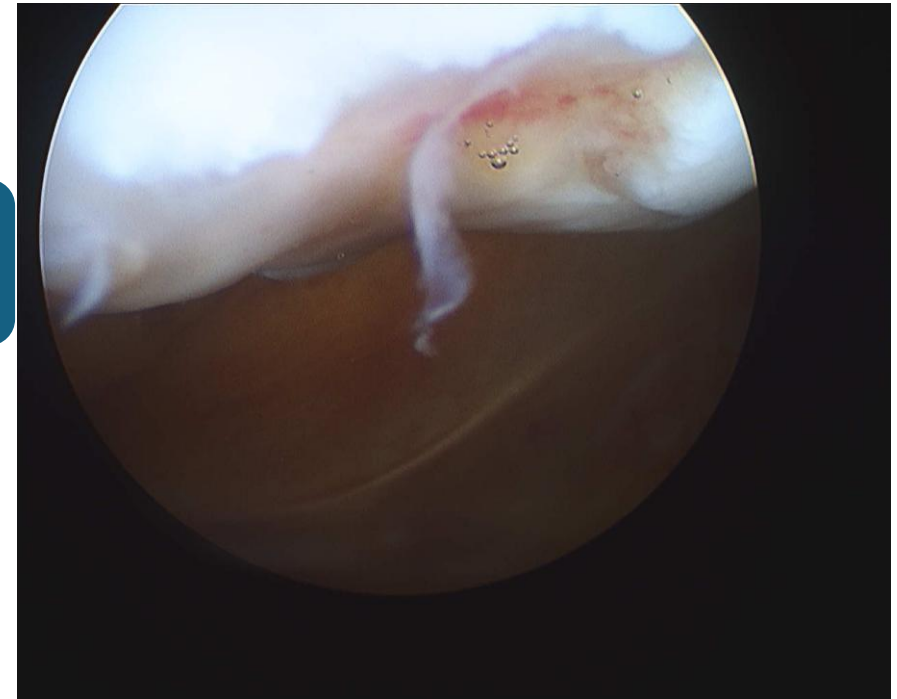
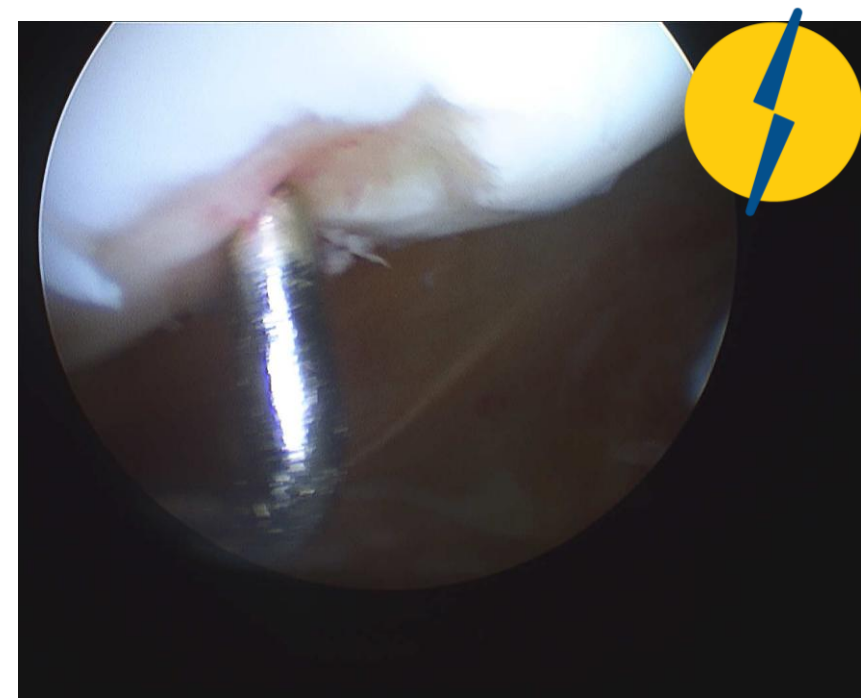
- 14 to 55 years old
- Chondral /osteochondral lesion grade III/IV

Relative contraindications:

- Malalignment
- Instability

Absolut Contraindications:

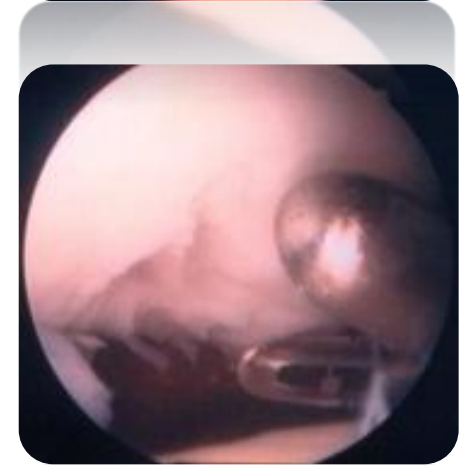
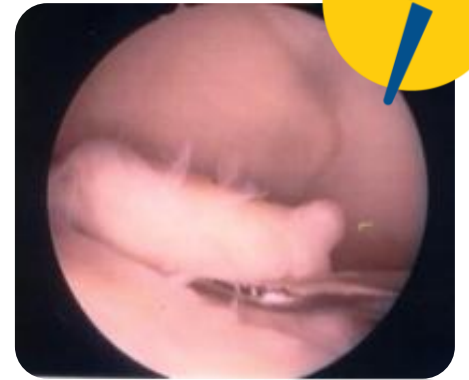
- Infections
- Osteoarthritis



ACI = MACI = ICC

Clinical and radiological diagnosis

- **1st Surgery:** Diagnostic arthroscopy and biopsy. Culture 4-5 weeks.
- **2nd Surgery:** CHONDROCYTE IMPLANTATION



INSTANT CENTRO CELL[®]

Bilayer collagen matrix

Viable cell population
(40-50 cells per 10x field)

Mesenchymal strain (vimentin)
Occasional expression of epithelial markers

Poorly differentiated population, with
absence of s100 protein expression

Absence of atypical mitoses
Absence of p53 expression

Proliferative capacity (ki 67) (10-15%)



Extracción de una muestra de cartílago, un grano de arroz. Ésta puede realizarse por artroscopia o cirugía que se lleva a cabo



Se cultivan y multiplican los condrocitos (células de cartílago) a lo largo de 4-6 semanas hasta alcanzar 20-30 millones de células.



Cirugía de implante de cartílago, en la que se depositan los condrocitos (células de cartílago) en una membrana de colágeno, que se amolda al defecto del cartílago existente.



Tras la cirugía, el paciente debe permanecer en reposo unas semanas, y realizar una caminata controlada sobre la articulación.



Tras el implante de cartílago, puede volver a realizar deporte pasados 9-12 meses.

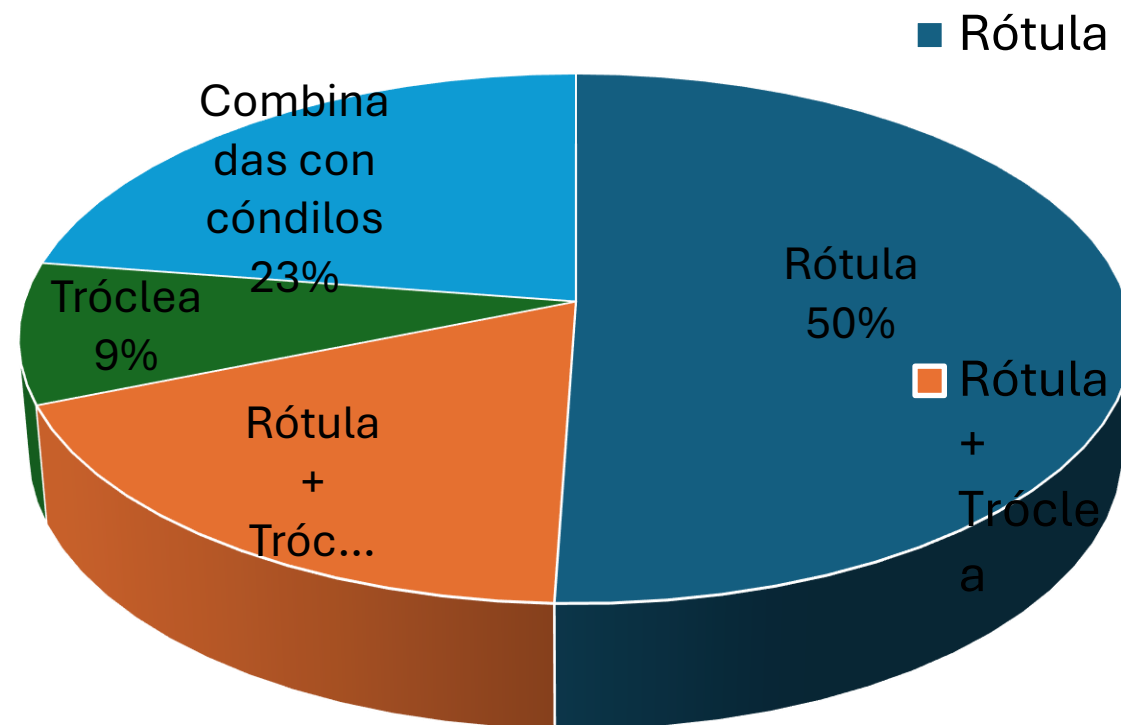


Estudio de investigación

- **Análisis retrospectivo**
 - **93 pacientes**
 - **Operación: HD-ACI o ICC en articulación femoro-patelar con o sin otras lesiones de cartílago de rodilla asociadas**
 - **Entre 2010 y 2018**
 - **Seguimiento mínimo de 2 años**
-

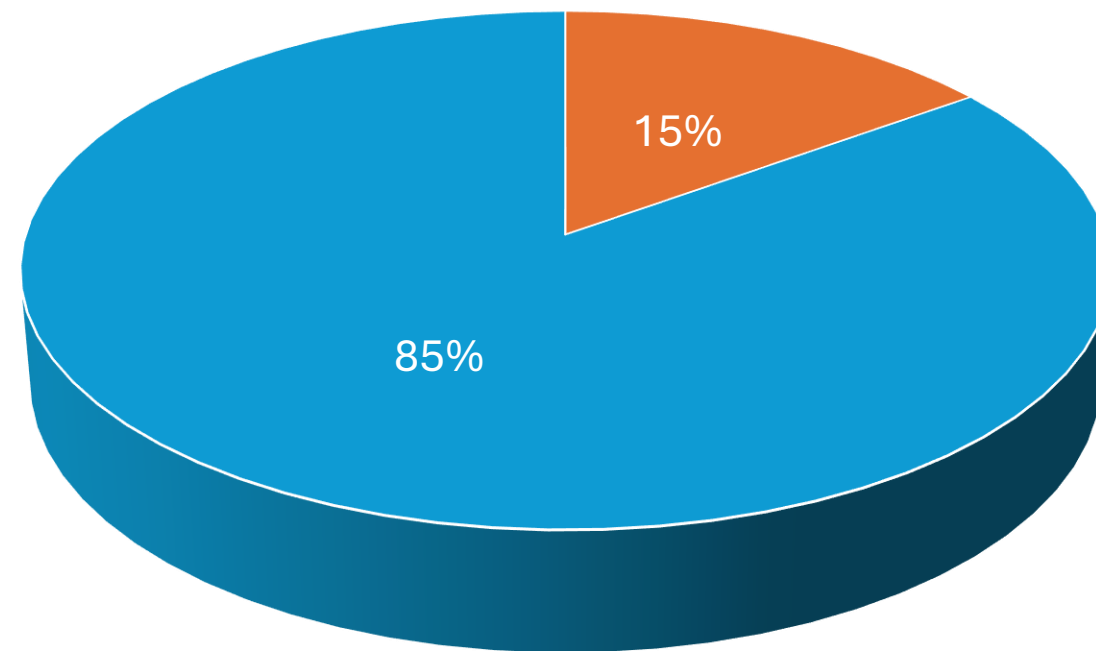


Localización de la lesión





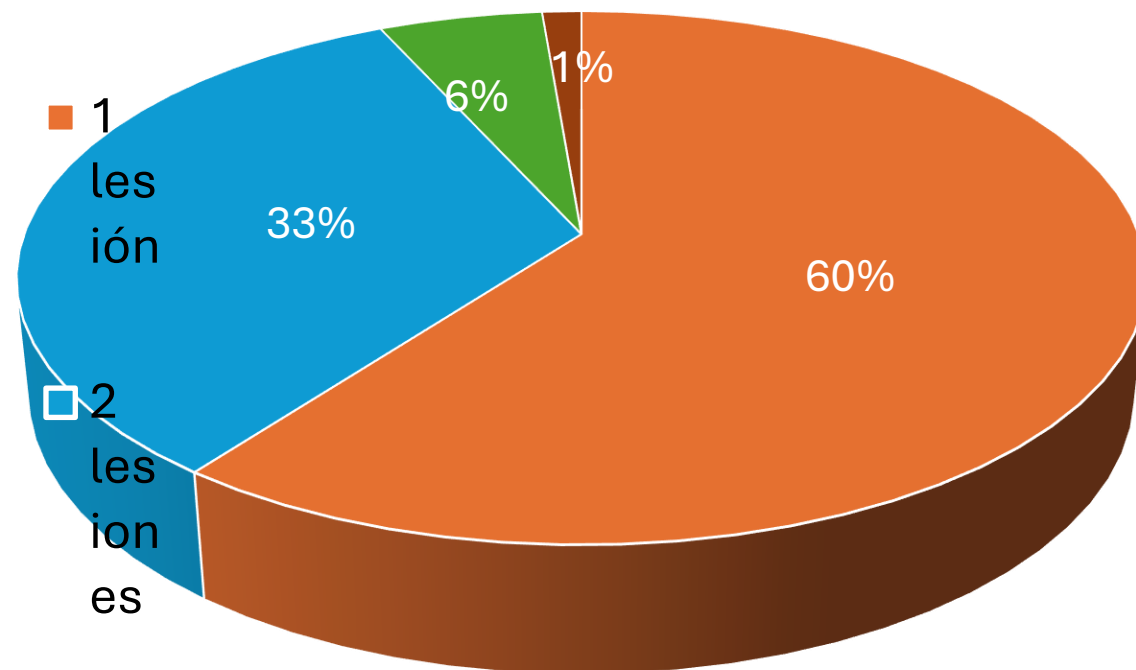
Calsificacion de las lesiones



■ Grado III ■ Grado IV

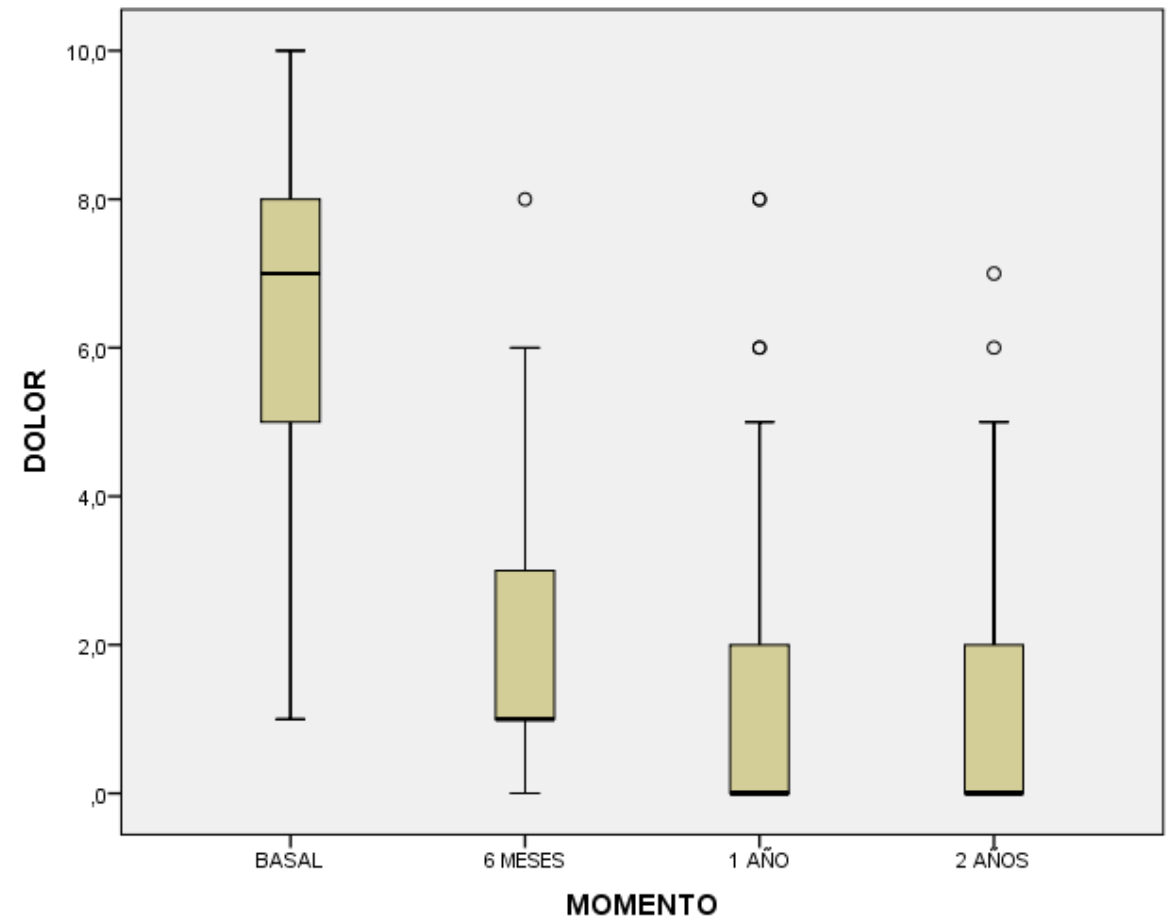


Número de lesiones



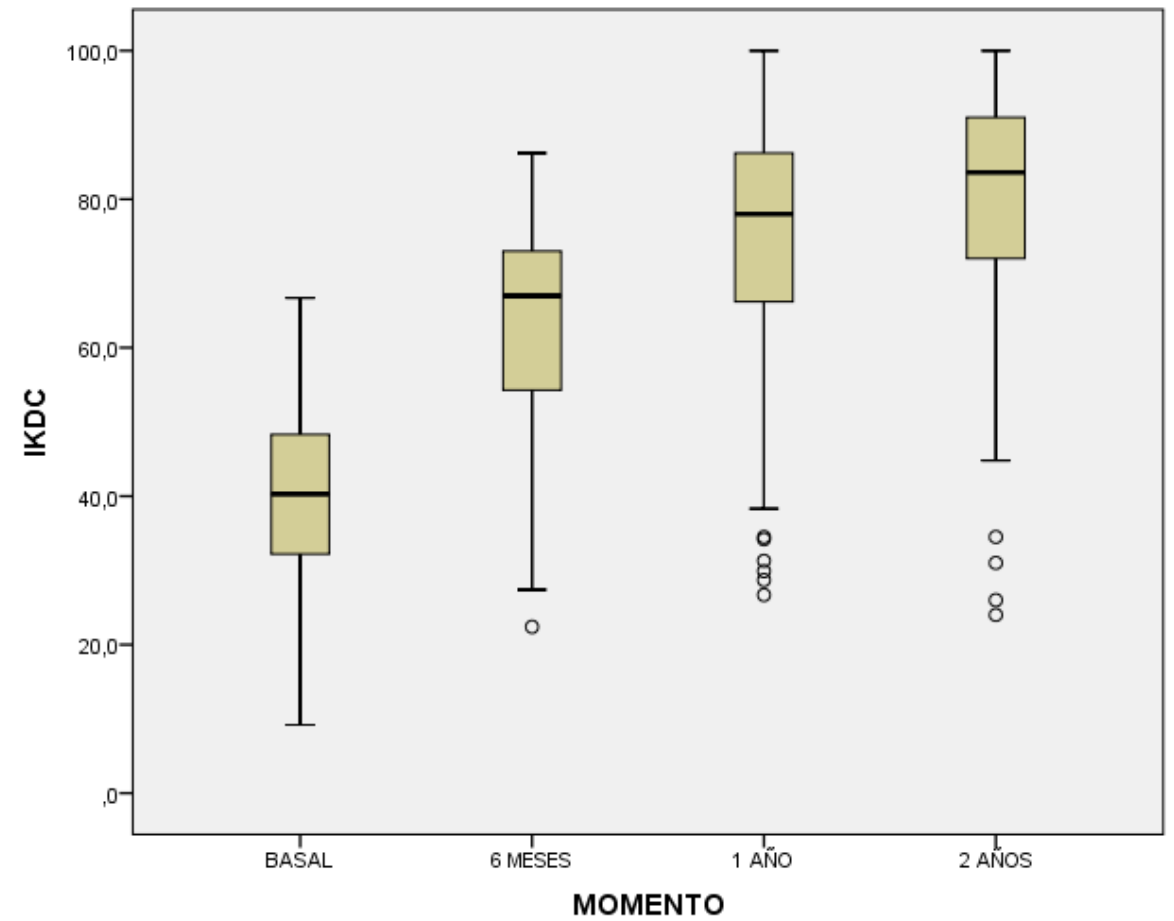
Resultados

- Ausencia de derrame articular a los 6, 12 y 24 meses, con respecto a un 24,7% en el control prequirúrgico
- El dolor EVA disminuyó significativamente ($p < 0,001$) desde la determinación basal hasta los dos años de seguimiento



Resultados

- IKDC



REHABILITATION

Usual protocol

CONTINUOUS PASSIVE MOBILITY

- Start 6-12 hours after surgery

WEIGHT

- Gradual progression: touch-down 8 weeks to full charge at 12 weeks

JOINT RANGE OF MOTION

- 0-90° first weeks; increase 10° per week

MUSCLE ENHANCEMENT

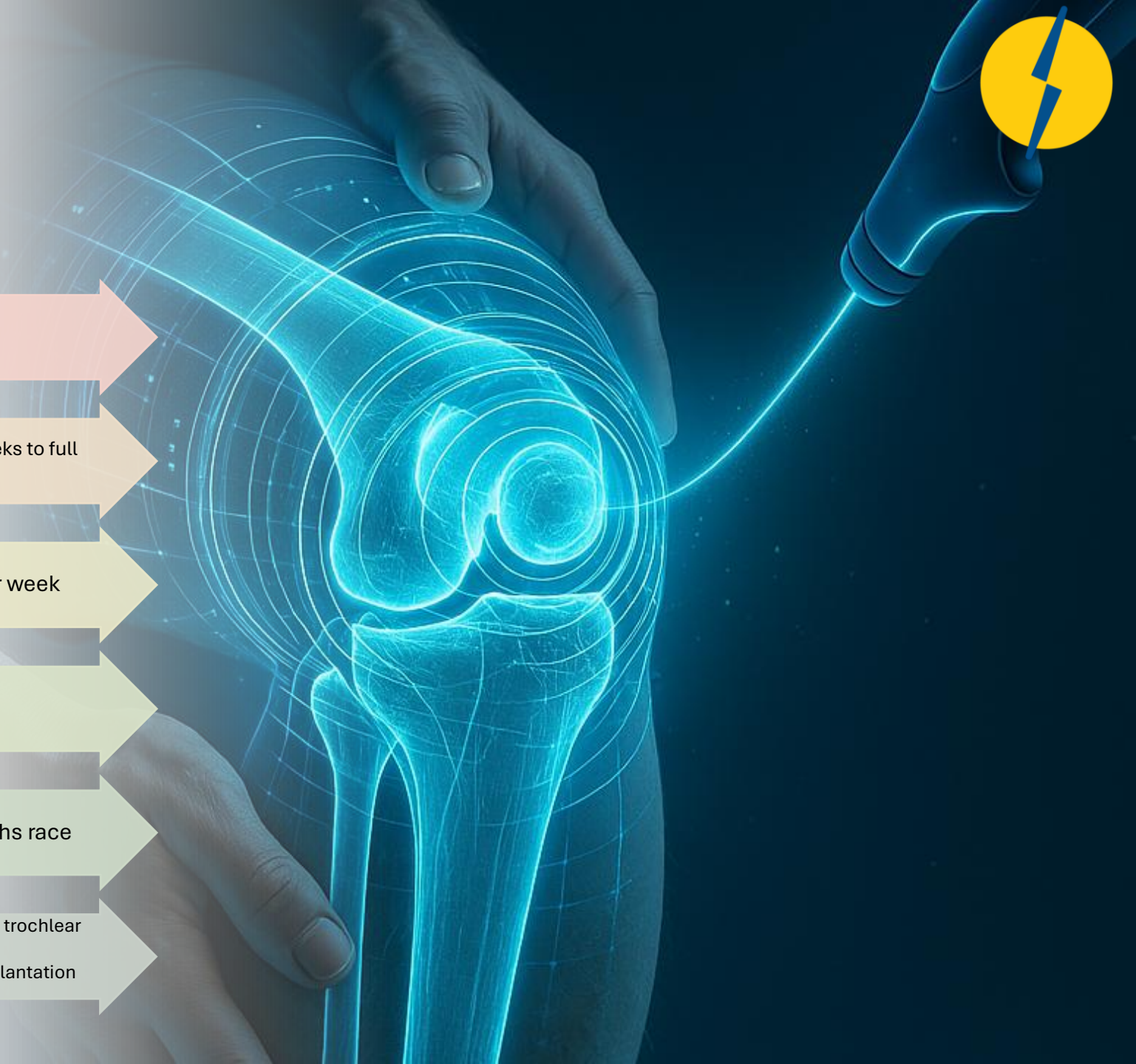
- First quadriceps

IMPACT

- Low impact 5 to 6 months; 9 months race

SPECIAL CONSIDERATIONS

- Avoid lateral displacements for patellar or trochlear lesions 3 months (minimum)
- In combined lesions, priority cartilage implantation





Conclusiones:

- Disminuye el dolor y mejora la función con respecto a la situación basal a los 2 años de seguimiento
 - Tiene baja incidencia de efectos adversos y/o complicaciones, técnica segura
 - The results support the use of the ICC repair technique, especially when the stimulation techniques have not obtained the expected result.
 - It has the advantages of having no limit on the size of the lesion, not associating morbidity of the donor area and the best use of culture VS MACI.
-



THANK YOU

Isabel Guillen PhD.
Clínica CEMTRO, Madrid, SPAIN