

Surgical treatment of cartilage lesions

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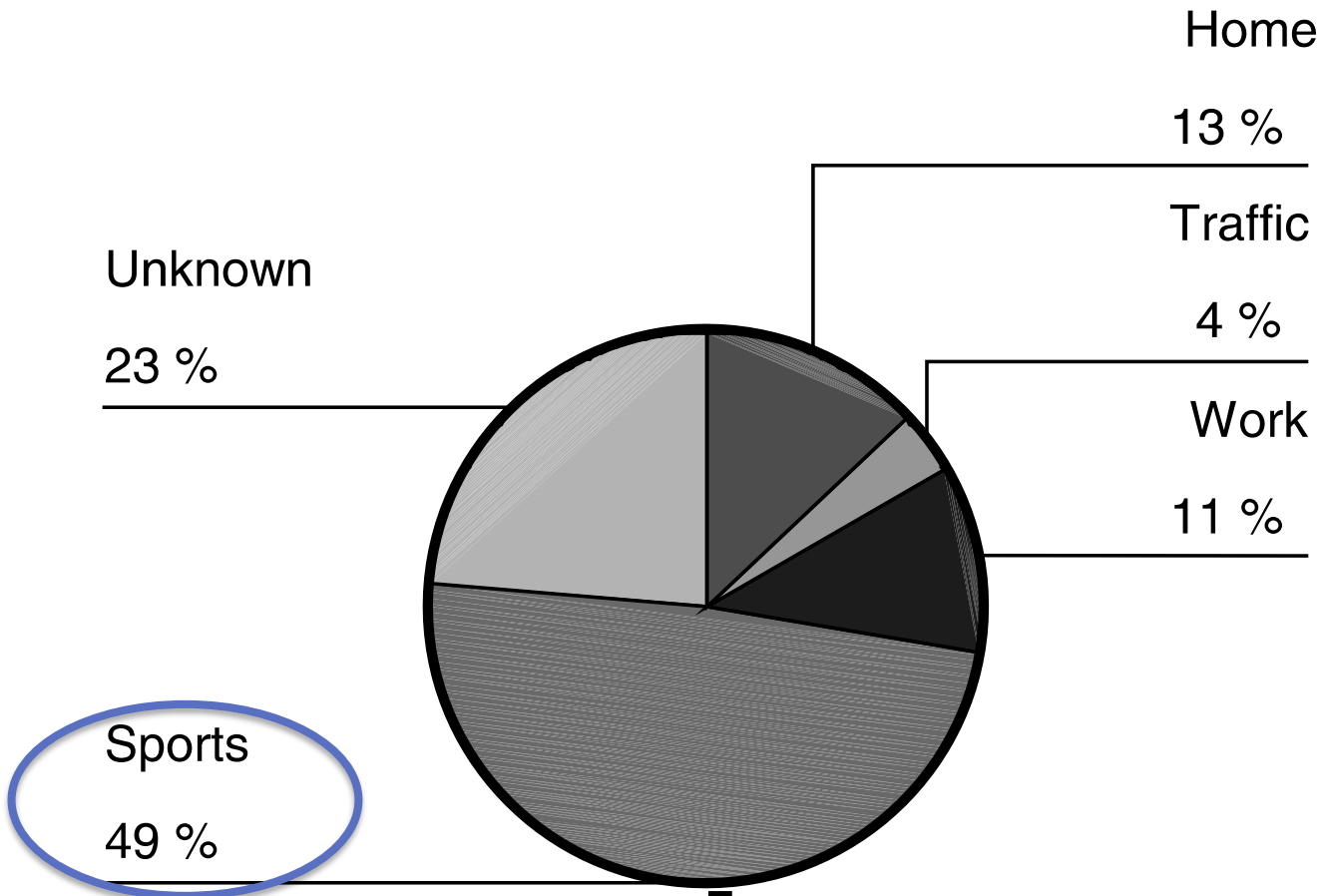
Cartilage lesions: incidence

- ▶ More frequent than previously thought
- ▶ 60% of 25.124 knee arthroscopies (1)

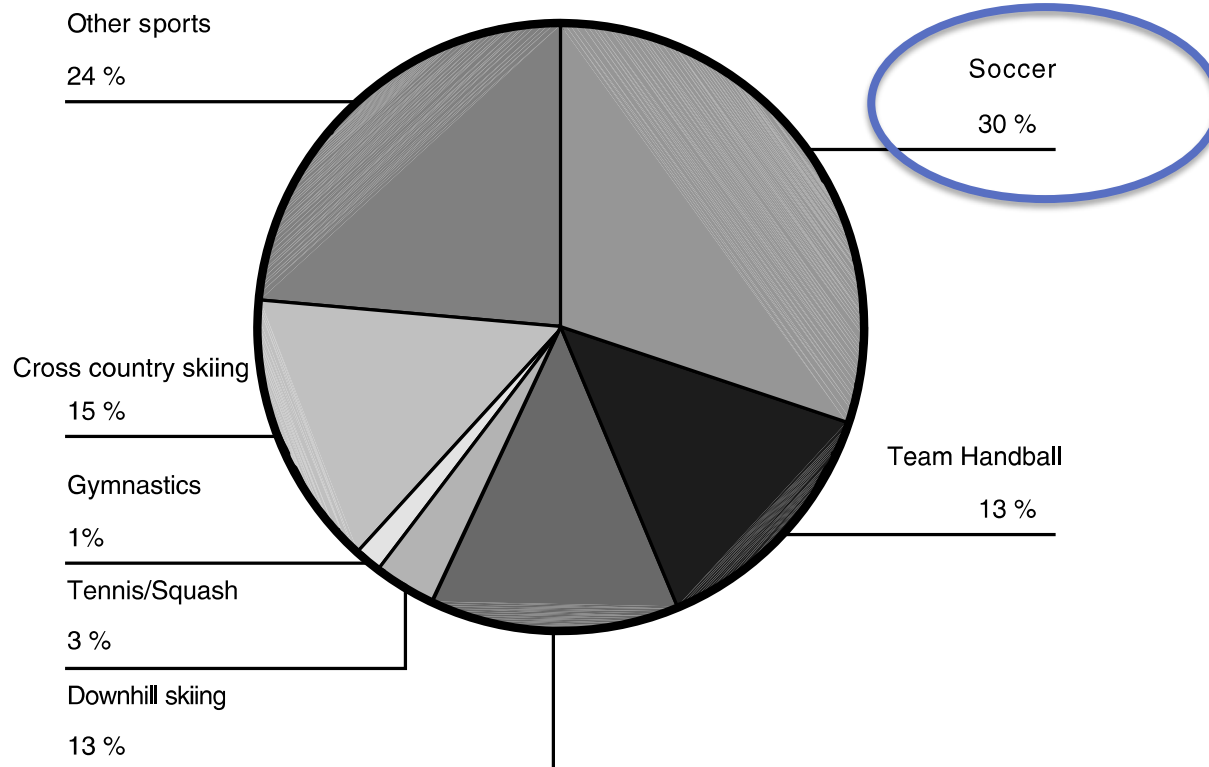
1. Widuchowski W, Knee 2007;14(3):177-8



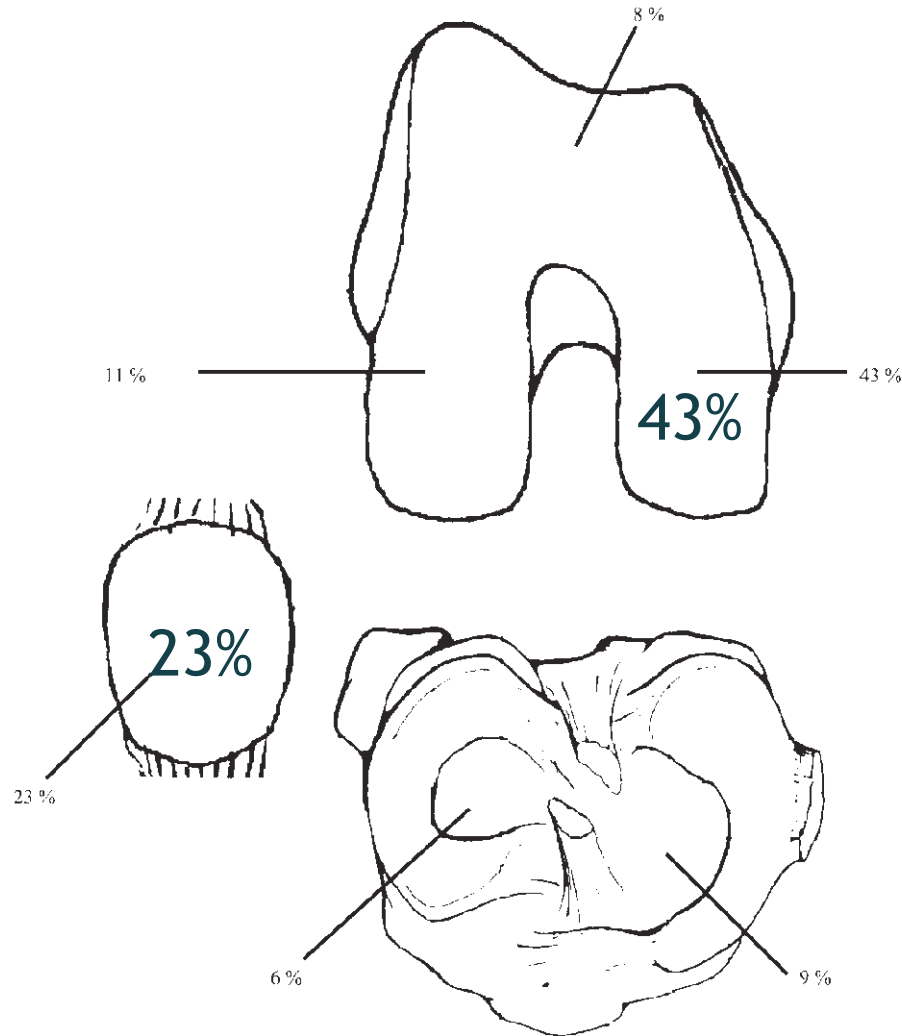
Cartilage lesions: etiology



Cartilage lesions: etiology



Cartilage lesions: most common location



Cartilage lesions: diagnosis

▶ Symptoms:

- ▶ Pain associated with loading
- ▶ Swelling (trochlear defects)
- ▶ Locking
- ▶ giving- way sensation
- ▶ crepitation



Cartilage lesions: diagnosis

▶ MRI

- ▶ Most accurate test for assessing cartilage in the knee
- ▶ Bone oedema
 - ▶ sign of mechanical overload
 - ▶ correlated with pain and symptoms



Cartilage lesions: diagnosis

▶ Arthroscopy

- ▶ Location, size, opposing surface
- ▶ identification of concomitant lesions
 - ▶ ACL, PCL insufficiency
 - ▶ meniscal lesions



Cartilage lesions: diagnosis

▶ Standard full-leg X-Ray

- ▶ to study the mechanical and anatomic axis
- ▶ Normal alignment is necessary for success in cartilage restoration techniques



Cartilage lesions: classification



Grade	ICRS
0	Intact cartilage
I	Superficial affection (soft indentation, fissures, cracks)
II	Lesion less than half the thickness of articular cartilage
III	Lesion more than half the thickness of articular cartilage
IV	Exposed subchondral bone



Cartilage lesions: natural evolution?

- ▶ Which lesions become symptomatic?
- ▶ What governs the evolution of symptoms ?
- ▶ What is the effect of interventions on that natural history



Cartilage lesions: natural evolution?



Sept 2016



Sept 2017



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Cartilage lesions: treatment

Aim



To minimise the symptoms

- ▶ with an as brief as possible rehabilitation
- ▶ as long as possible duration of the results.



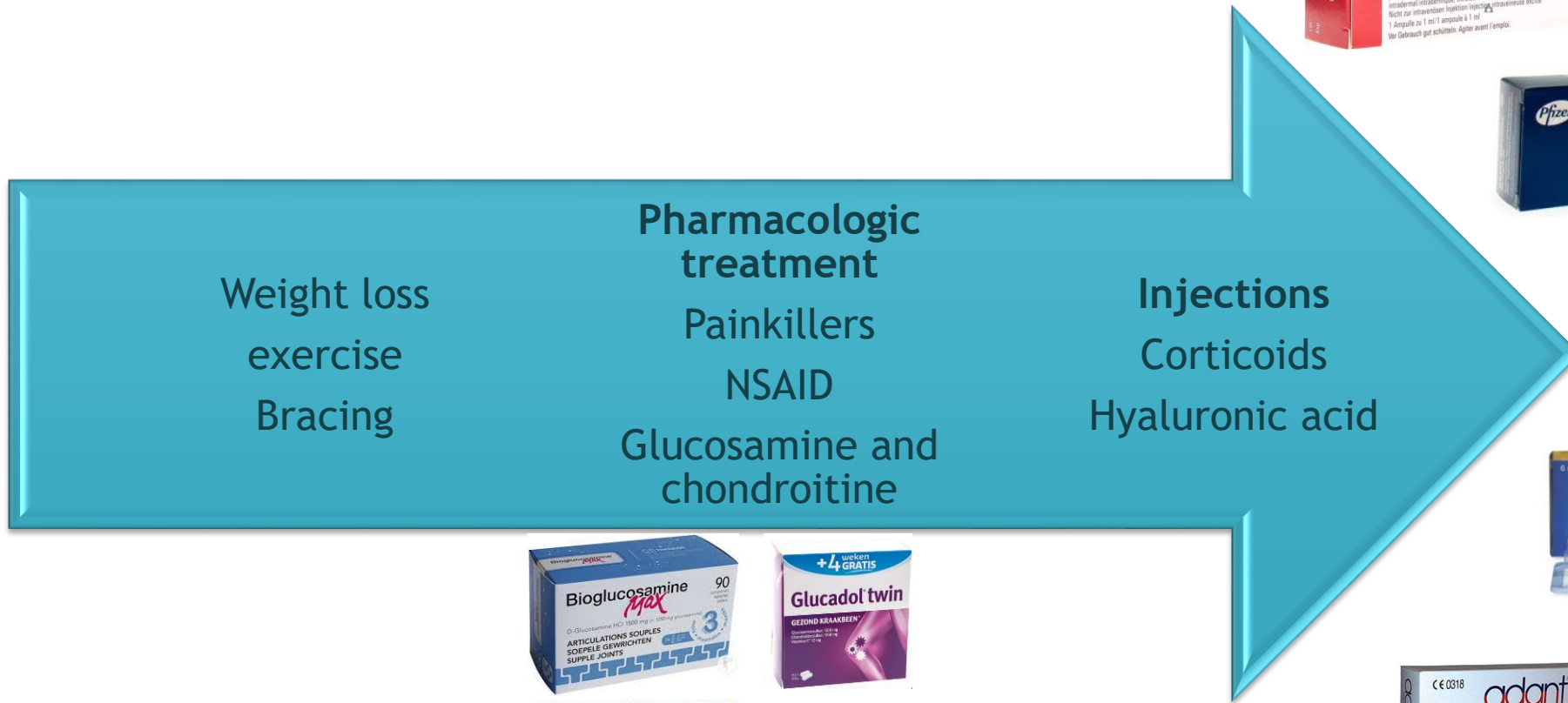
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Chondral lesions: conservative treatment

first line of treatment for all chondral defects



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Chondral lesions: surgical treatment

▶ Indication

- ▶ All **symptomatic** cartilage defects of ICRS type III or IV, not responding to conservative therapy

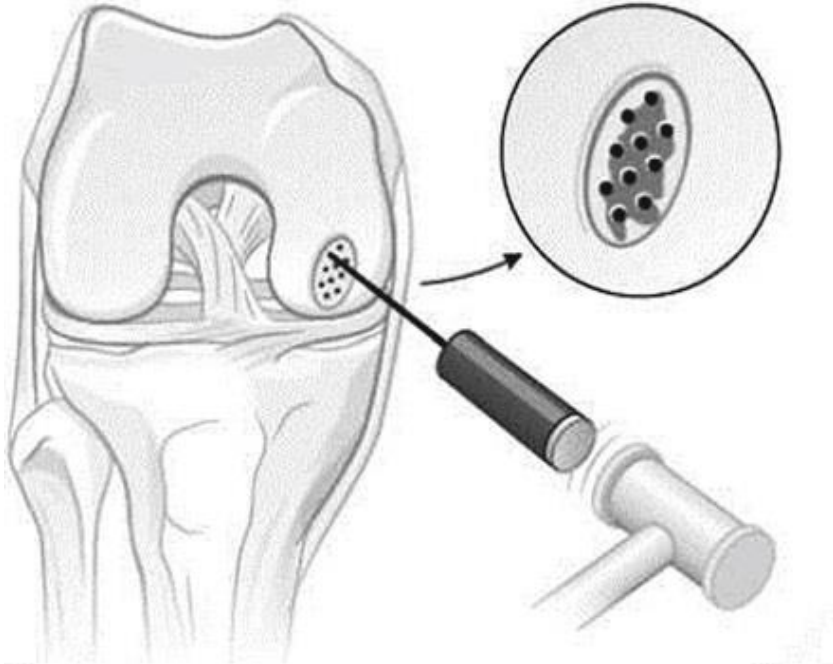


Cartilage lesions: surgical treatment

- ▶ Various techniques proposed over the years
- ▶ None gives tissue healing with biomechanical properties that match the physiologic condition.
- ▶ Unique ultrastructure makes hyaline cartilage difficult to replace or regenerate
 - ▶ absence of an intrinsic source of new chondrocytes
 - ▶ avascular tissue

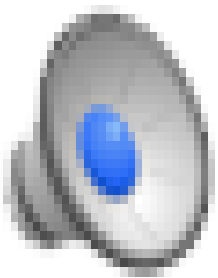


Microfracture (ice picking)

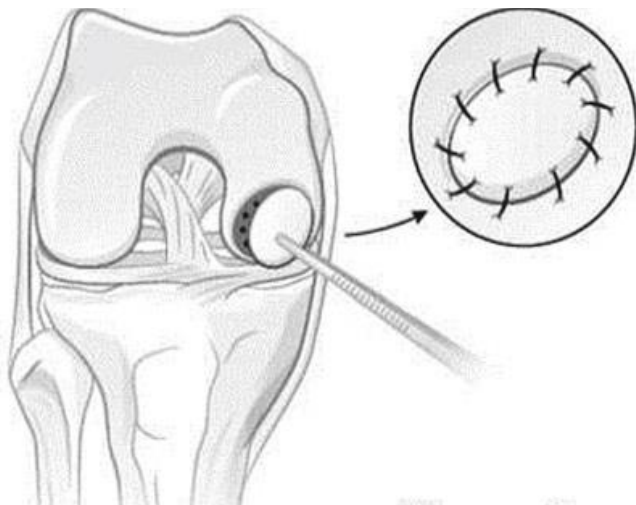
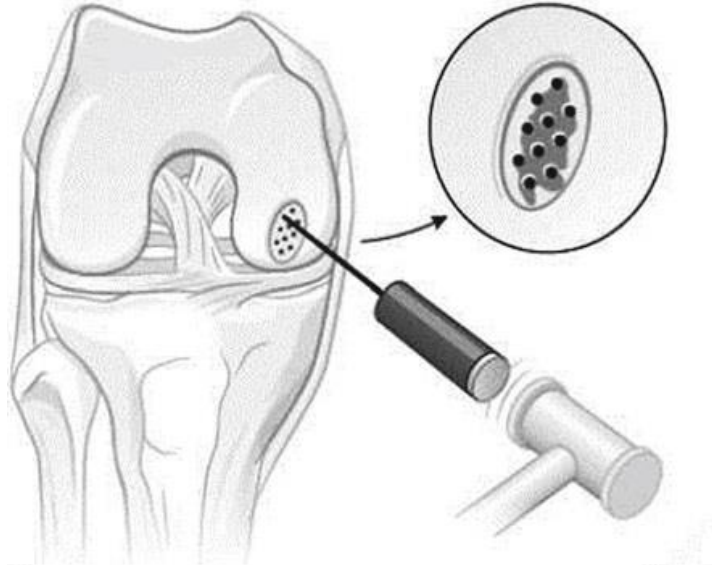


Fibrocartilage from bone marrow stimulation

- ▶ + easy procedure
- ▶ + arthroscopically
- ▶ - limited hyaline cartilage production
- ▶ - results deteriorate over time

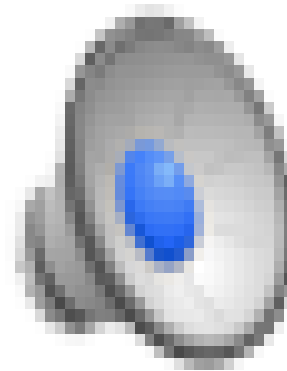


AMIC procedure

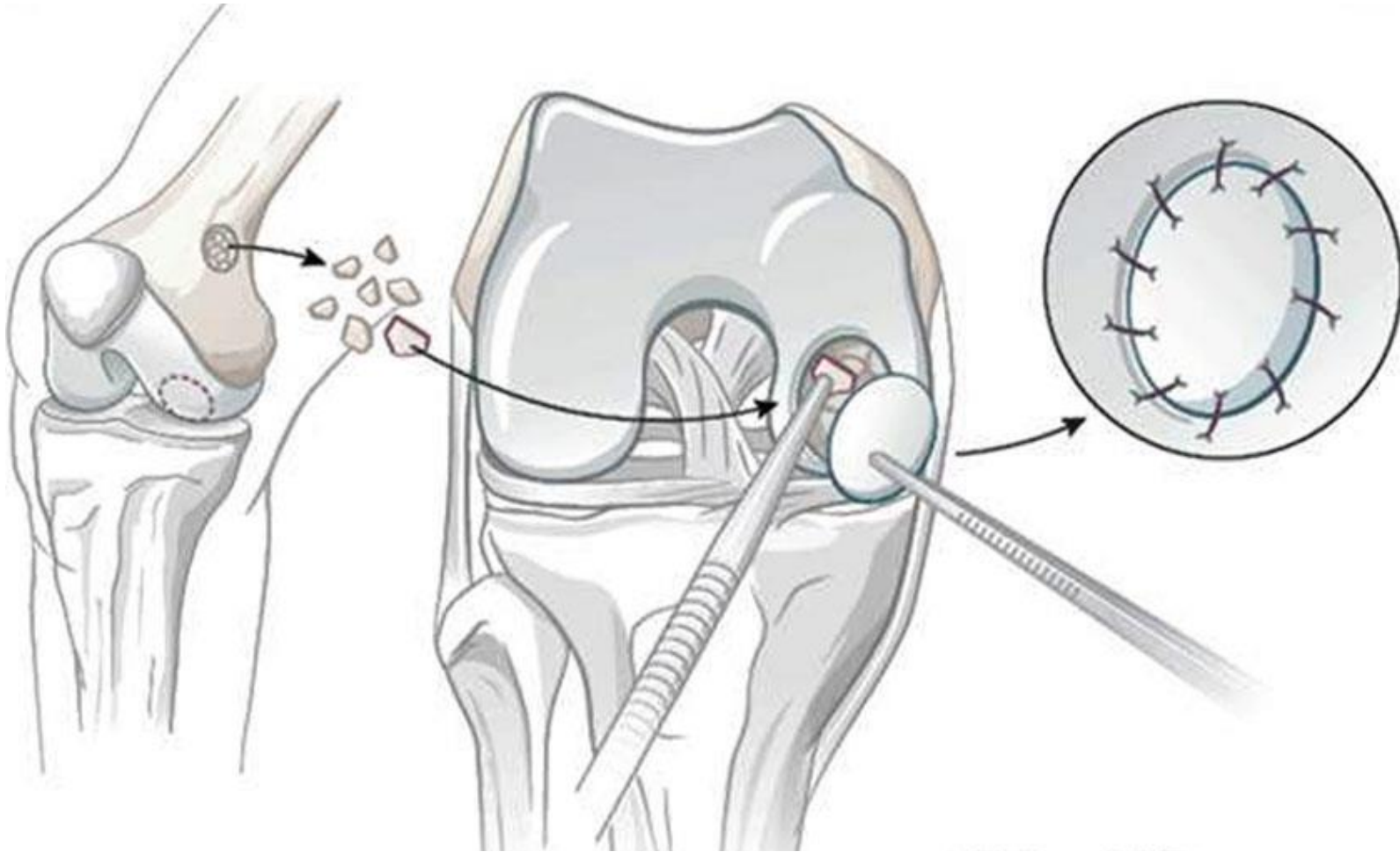


Autologous matrix induced chondrogenesis

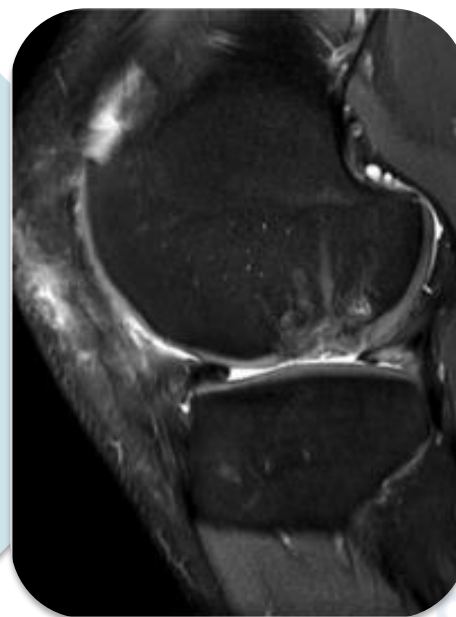
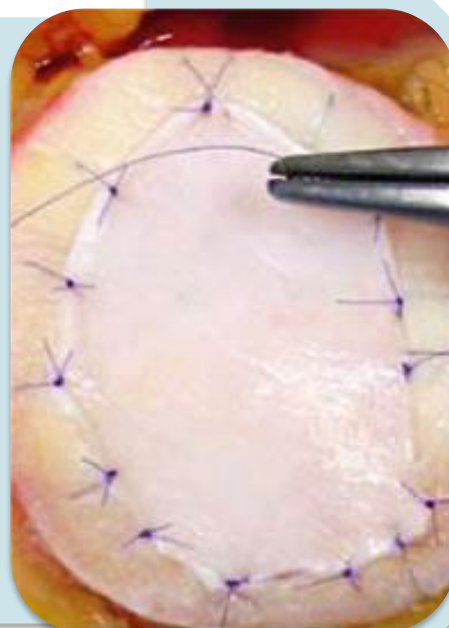
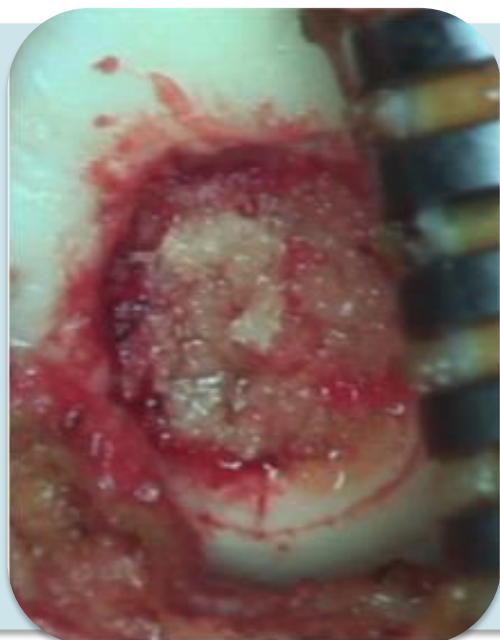
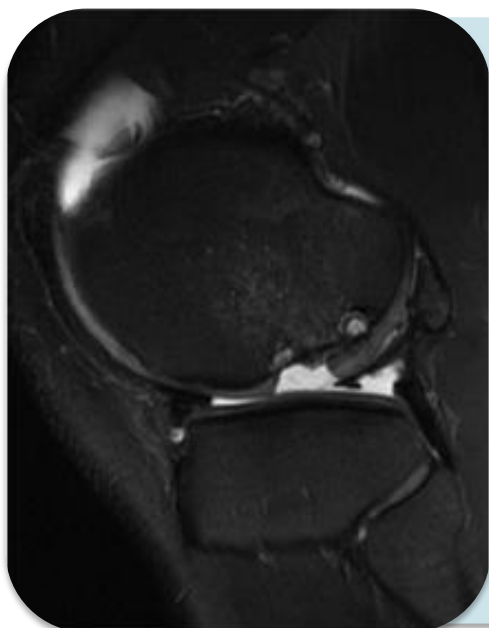
- ▶ + Protection of bloodcloth by chondro-gide membrane
- ▶ + applicable in case of OCD with bone grafting
- ▶ - arthroscopy



AMIC plus procedure



CASUS AMIC plus

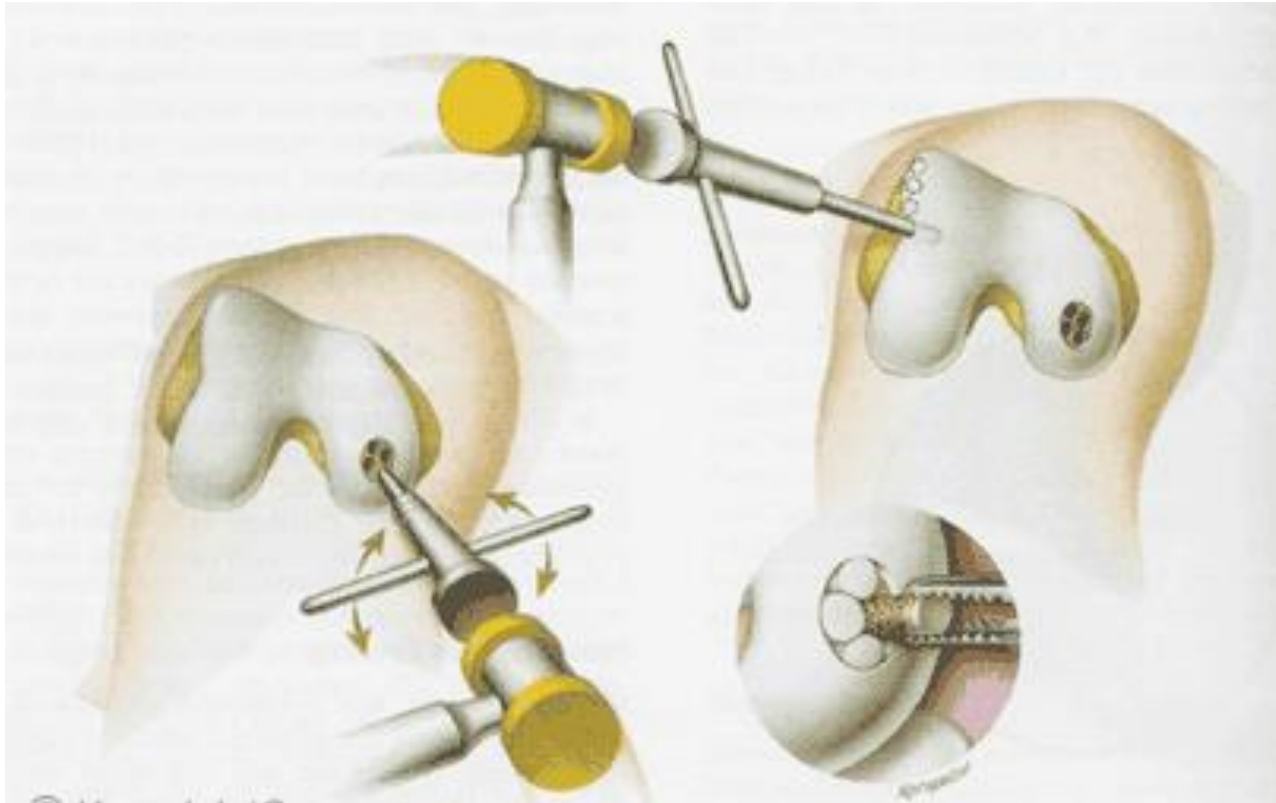


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Osteochondral Autograft Transfert System

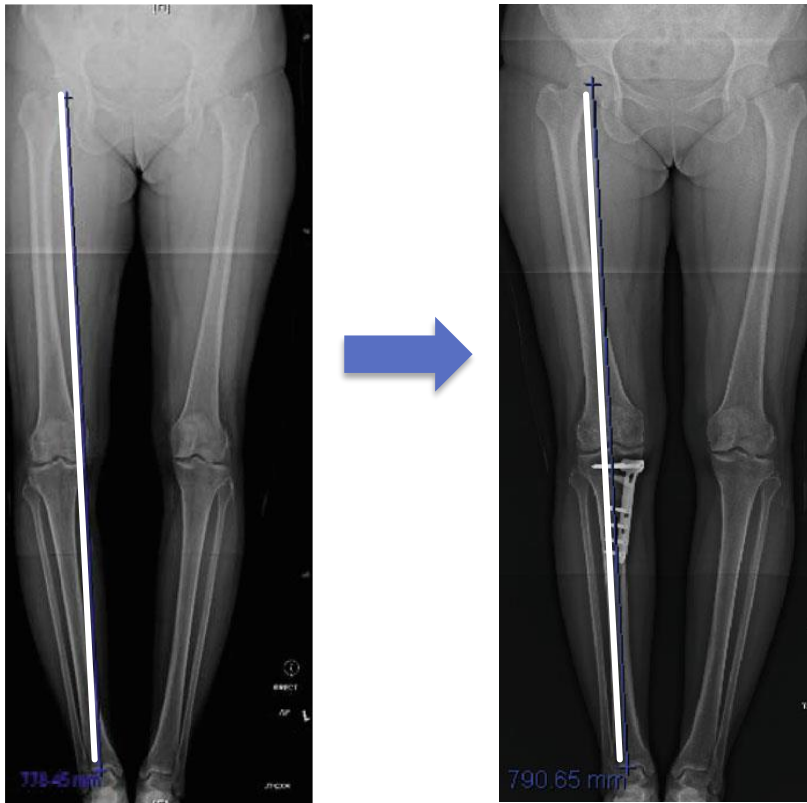
Mosaic plasty



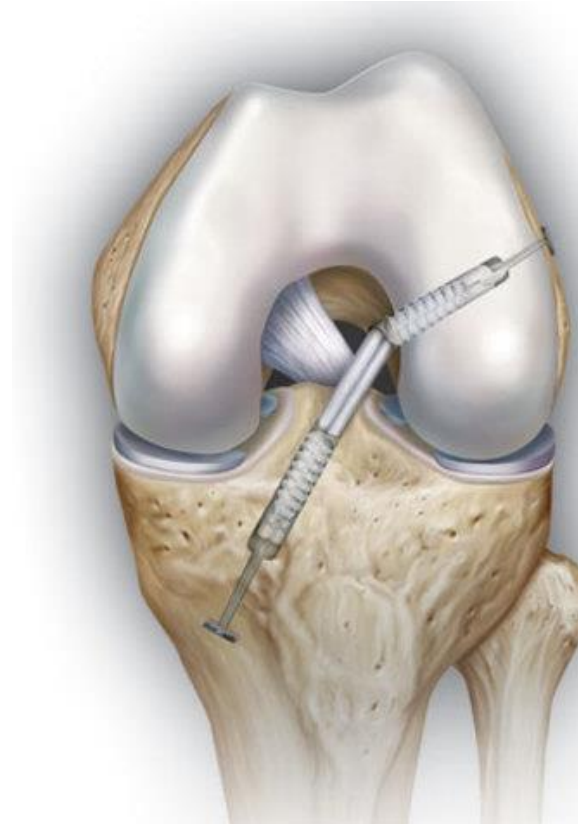


GOLDEN RULE

- ▶ Combine osteotomy in case of malalignment



- ▶ Combine ligament surgery in case of instability





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Thank You

