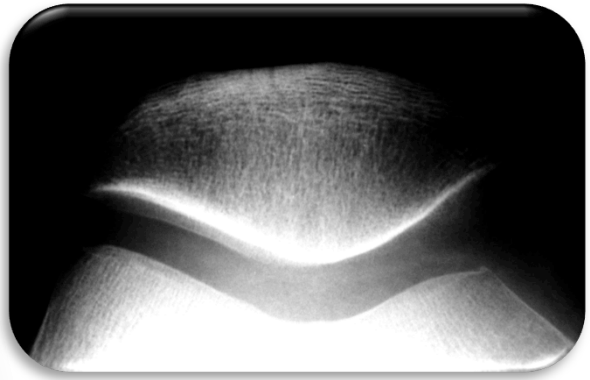
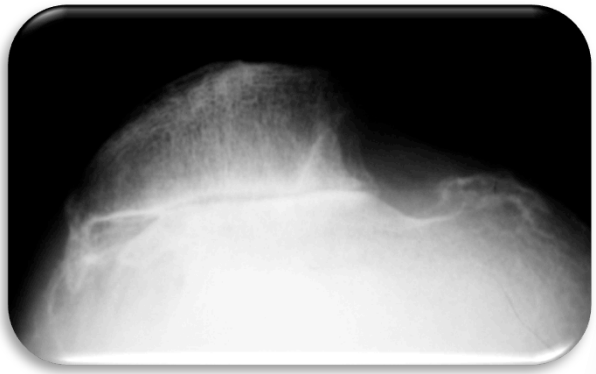
Patellofemoral Arthritis



?

What happens…



David DEJOUR

LYONORTHOCLINIC

www.lyon-ortho-clinic.com

LYONORTHOCLINIC

Who has a Isolated PF Arthrosis?

72 %

BMI

67 %

Obese

overweight

Age at surgery / 58 Years

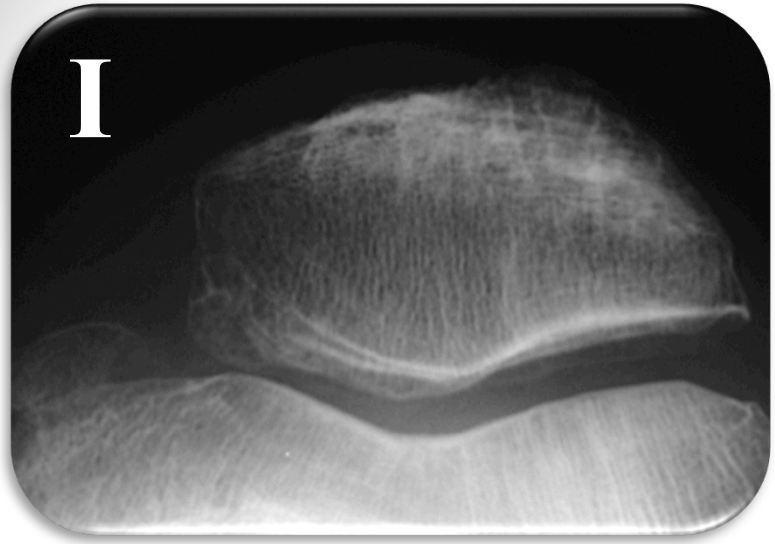
51 % Contralateral symptomatic knee

KSS { Score knee 59 points (0-75)
Score Function 47 points (0-76)

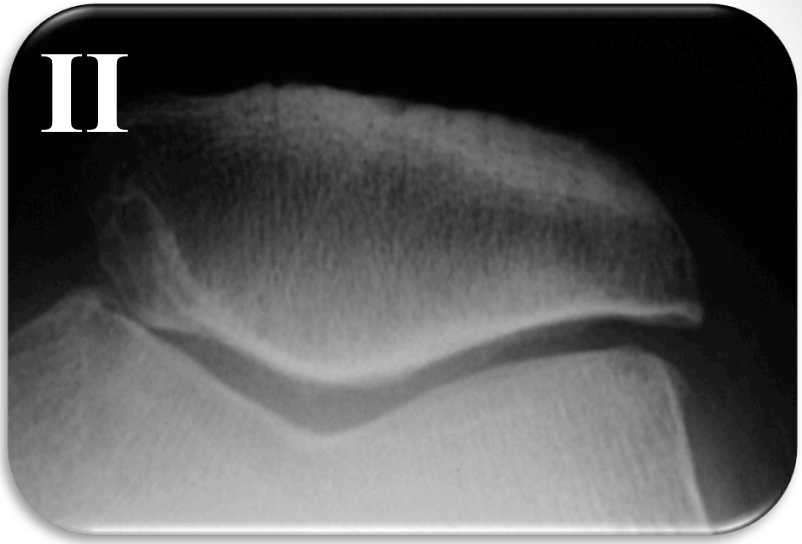
Idem
Femoro-tibial arthrosis

Iwano Classification

** Clin Orthop 1990*

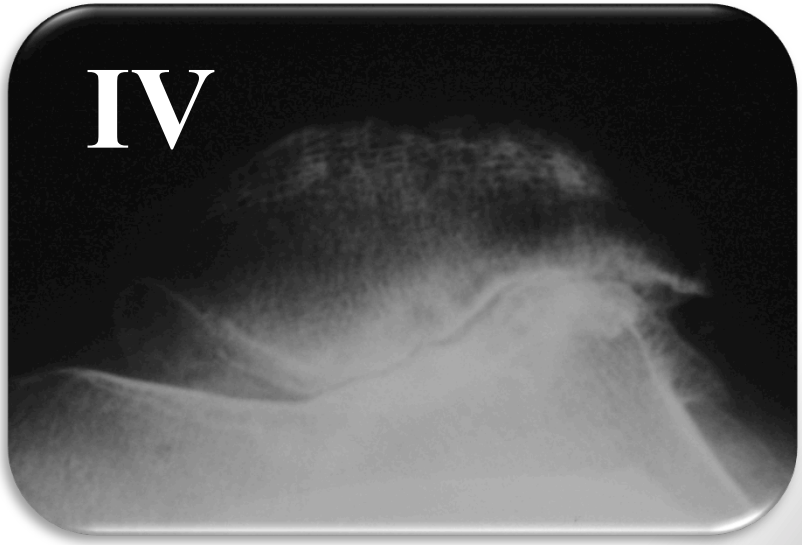


Stade I :remodeling



Stage II : joint narrowing< 3 mm

Stage III : joint narrowing> 3 mm



Stage IV : Bone on Bone

D.Dejour, J. Allain & All
French Journal Orthop 2003

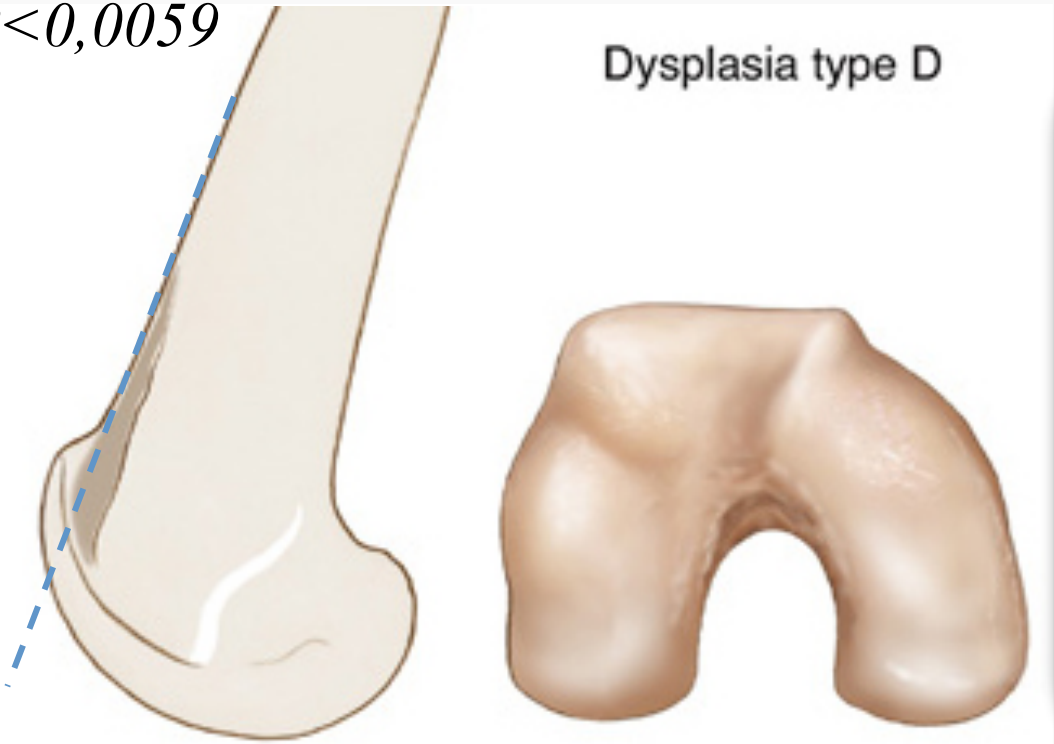
Predisposing factors

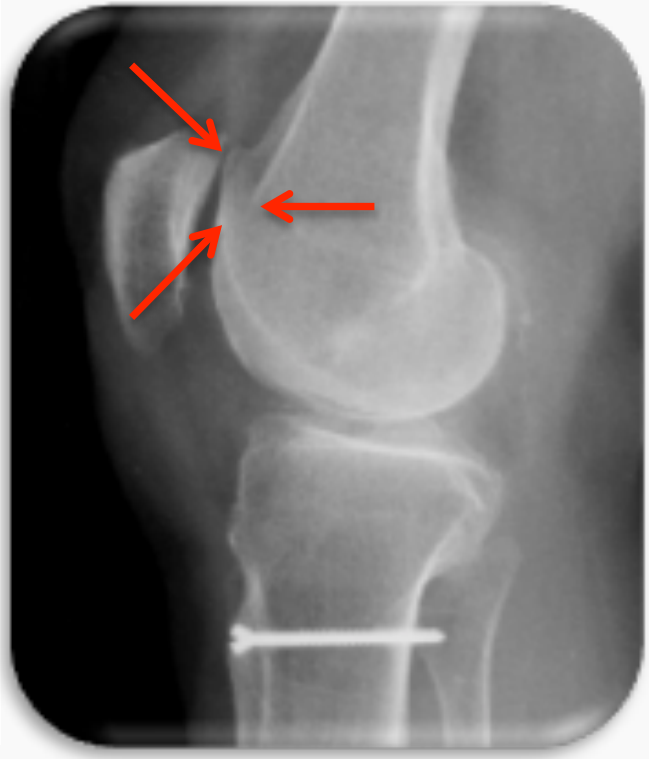
Anatomical factors

Trochlear dysplasia 78 %

Anti Maquet effect

P<0,0059

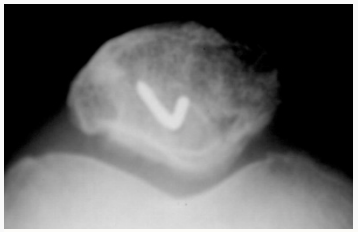




Note : Control population 3 % Patellar instability pop. 96 %

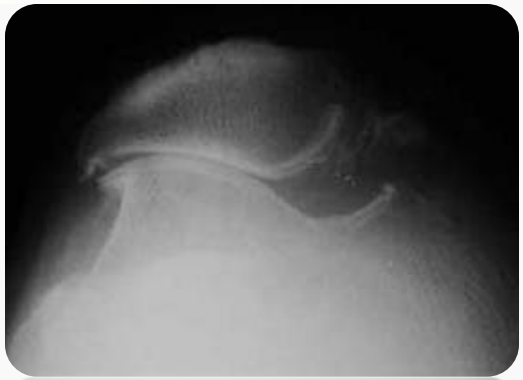
Isolated PF Arthritis

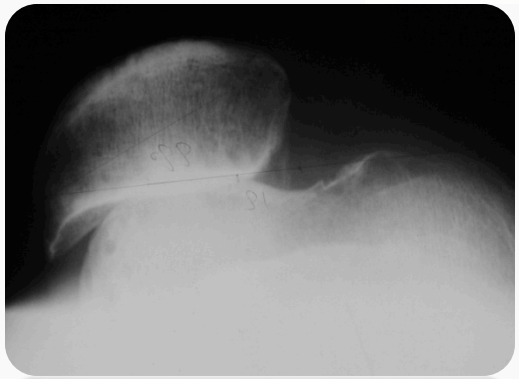
Aetiologies



Post - trauma 9 %

Chondrocalcinosis 9 %





“Primary arthritis”

No orthopedic antecedent

49 %

“Instability arthritis”

Dislocation history

33 %

- Dejour D, Allain J
Rev Chir Orthop 2004; 90(Suppl 5):1S69–129.

- R. Grelsamer, D.Dejour,
Orthop Clin N Am 39 (2008) 269–274

Global Treatment

- **Rehabilitation**
- **Patient Education**

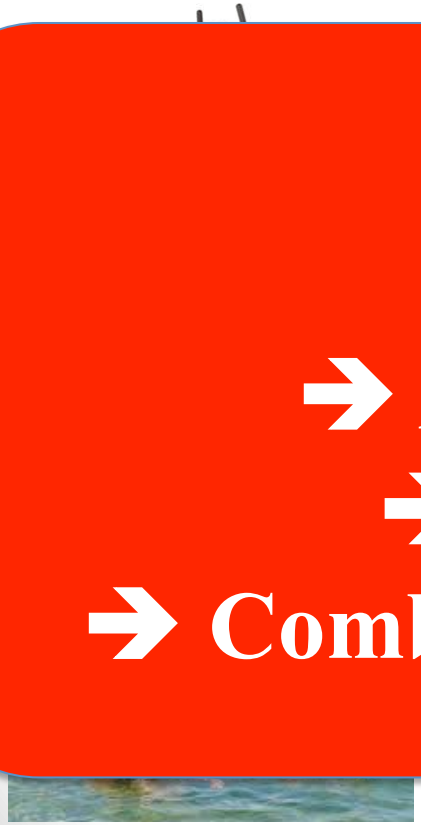
Cycling: Low speed, No resistance, High saddle
➔ 3 times a week / 15 min

Stretching: global, core, back, lower limb
➔ 2 times a week

Swimming : Relaxation, walking, cycling
➔ 1 time a week

Global Treatment

- **Rehabilitation**
- **Patient Education**



Indication :

➔ Always to all patients

➔ Test for 6 months

➔ Combined to medical treatment

Non Surgical Treatment

Non implant :

- Arthroscopy Lavage – lateral release, “débridement”
- Lateral patellectomy: facetectomy
- Tibial Tuberosity osteotomy (Maquet, medialization, antero-medialization)

Partial Joint:

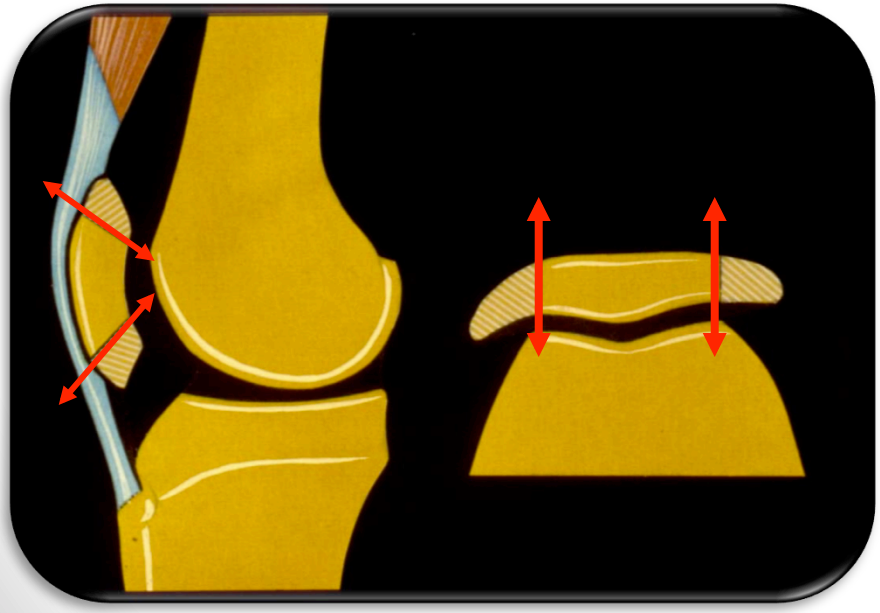
- Patello femoral arthritis
  - Resurfacacing (no cut) Onlay
  - Anatomic (trochlear cut) Inlay

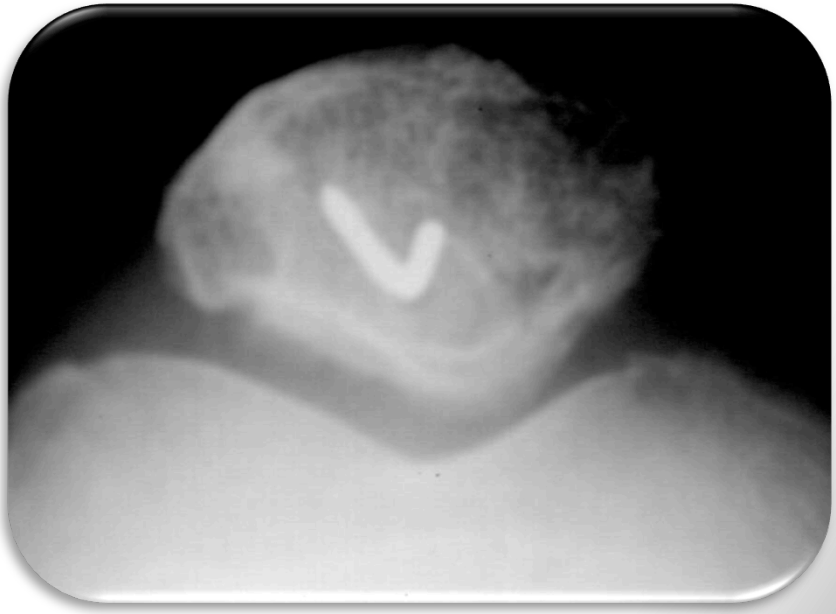
Total Joint:

Patelloplasty

Patella Magna - Post traumatic

Osteophyte resection, global remodelling





JL Lerat 1992 SOFCOT

Arthroscopy

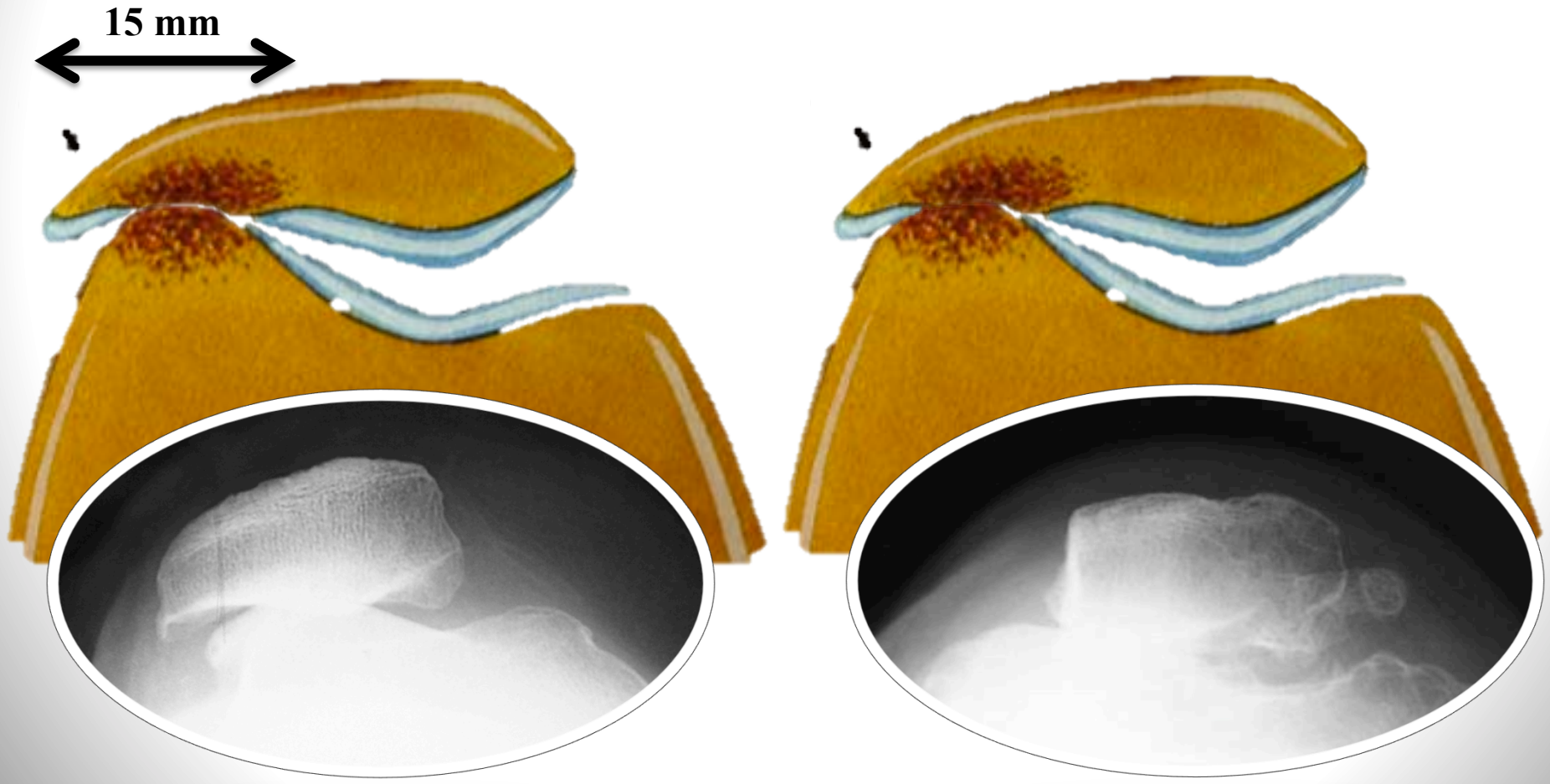
Howell, S. M. (2010). "The role of arthroscopy in treating osteoarthritis of the knee in the older patient." Orthopedics **33**(9): 652.

Indication : NO !!!

Non Implant

Lateral Patellectomy

Facetectomy O'Donoghue



Non Implant

Partial Lateral Patellectomy

Yercan, H. S., T. Ait Si Selmi, et al. (2005). "The treatment of patellofemoral osteoarthritis with partial lateral facetectomy." Clin Orthop Relat Res(436): 14-19.

Roland Becker & all : Surgical Treatment of Isolated Patellofemoral Osteoarthritis Clin Orthop Relat Res (2008) 466:443–449

- **"Low cost" surgery**
- **Fast recovery**
- **No contraindication for future surgeries**
  - **Partial joint**
  - **Total joint**

Goal:

- **Stop locking syndrome**
- **Improve pain**
- **Improve function**
- **Give 10 more years**

But…

No action on the X-rays

Non Implant

Patellectomie Verticale Externe

Yercan, H. S., T. Ait Si Selmi, et al. (2005). "The treatment of patellofemoral osteoarthritis with partial lateral facetectomy." Clin Orthop Relat Res(436): 14-19.

Indication :

YES!!!

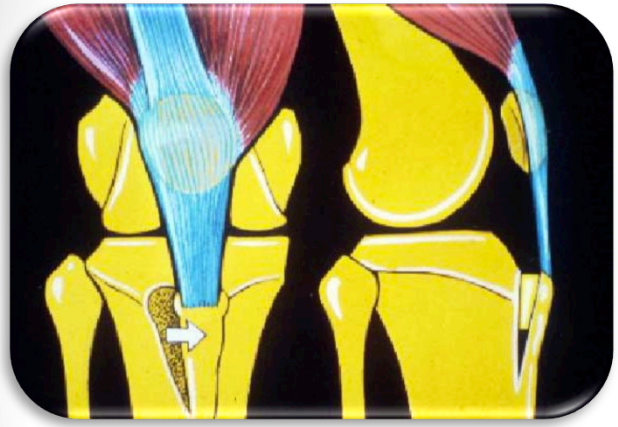
➔ **Young Patient < 55 ans**

➔ **Active Patient**

Non Implant

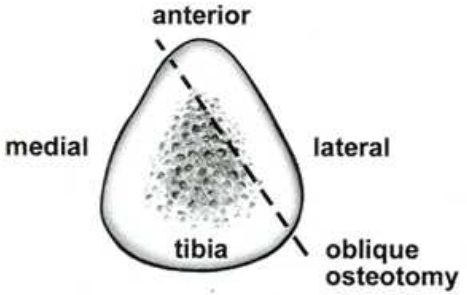
Tibial Tubercle osteotomy:

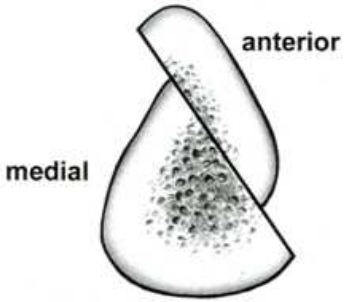
Maquet procedure

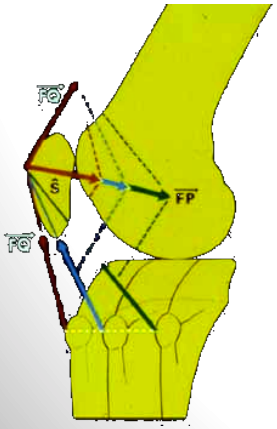


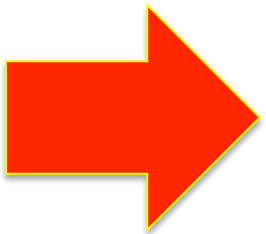
Maquet procedure

Antero-medialization
“Fulkerson”









Diminish the PF pressure

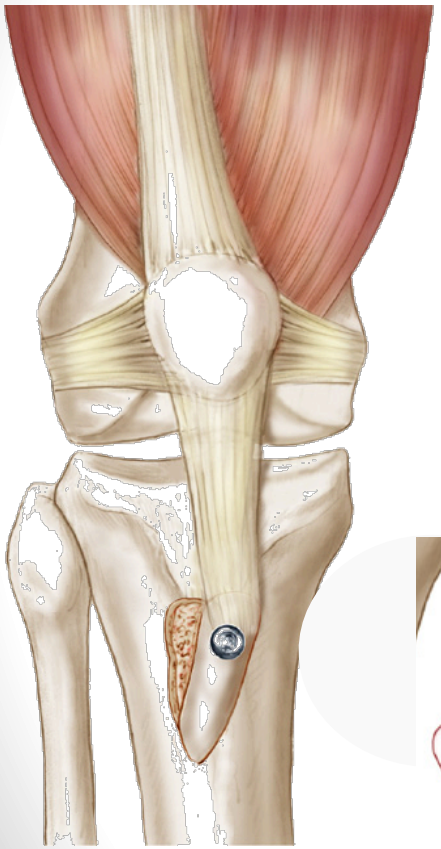
Maquet procedure

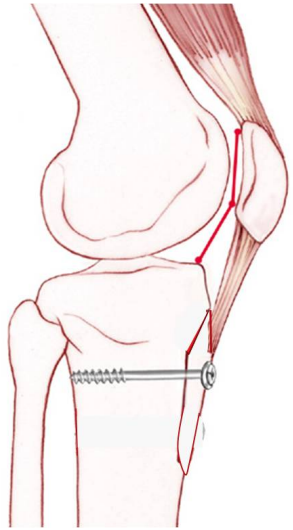
Indication : NO !!!

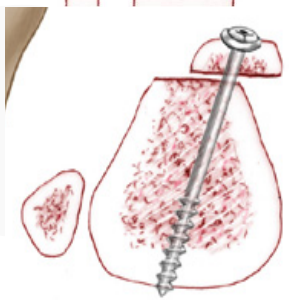
Non Implant

Tibial Tuberosity Medialization

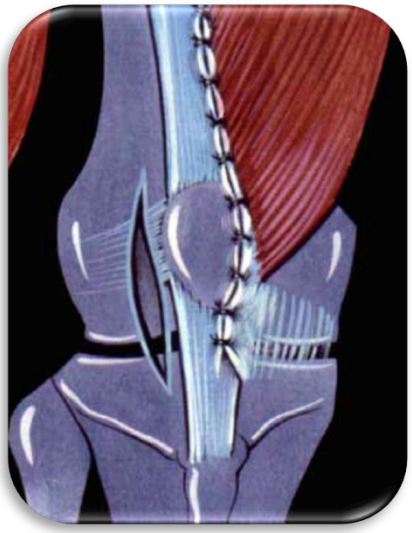
Whitout Maquet effect







+/-



Medialization + VMO

Realignment, unload the lateral facet, Tilt correction…

Patellar alignment

Indication

TT Osteotomies :

➔ Young Patient

➔ Excessive TT-TG > 20 mm

➔ Mild arthritis

Joint Replacement

Partial : Total

?

Global results?

Less than 20 articles published…

Good and very good results from 65 % to 90%

Kooijman best results Richards (98% at 17 years, 86 % good and very good results

Jonbergen 13 years F.U 185 Richard II™ 84% at 10 years & 69 % at 20 years. 24 % revision and 13 % global arthritis.

Wagenberg Autocentrique™ 21 revision at 5 years on 24 patients.

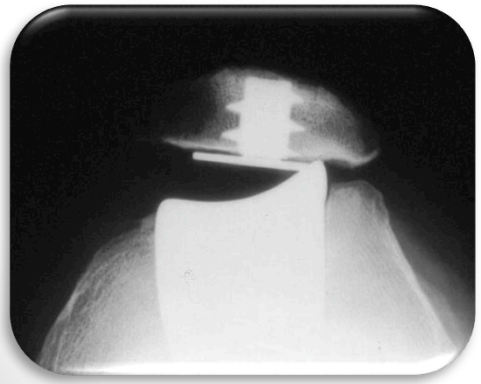
Nicol 103 cases at 7 years, 14 % revision and 12 % for global arthritis all had no trochlear dysplasia

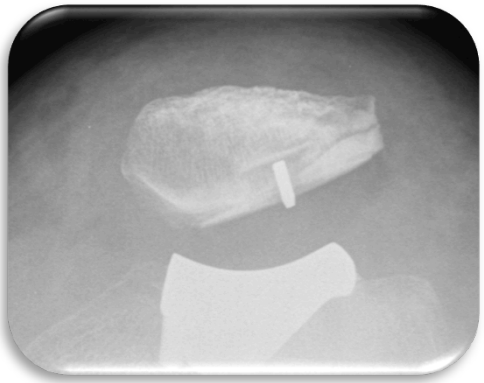
20 % of the PFJ ends with a total knee arthroplasty

High rate of revision
6% to 50 %

PF Complications : Up to 40%

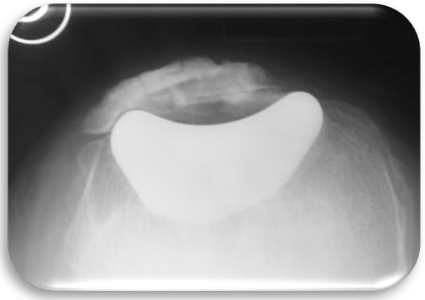
- Technical problems
- Implant positioning
- Extensor mechanism realignment

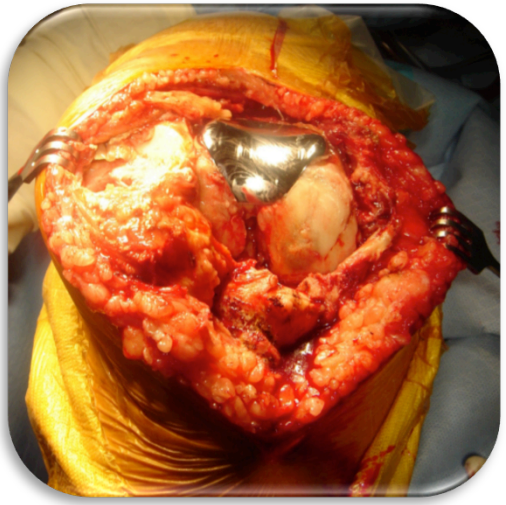




Long term F.U…

Global arthritis
Up to 30%





Highest rate

If no trochlear dysplasia

If no dislocation antecedent

- *Dejour D, Allain J*
Rev Chir Orthop 2004; 90(Suppl 5):1S69–129.

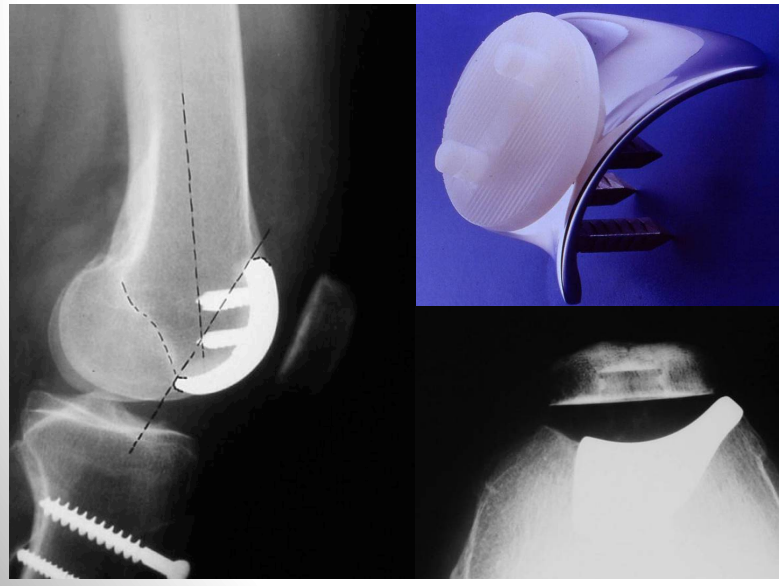
- *R. Grelsamer, D.Dejour,*
Orthop Clin N Am 39 (2008) 269–274

*Nicol, S. G., J. M. Loveridge, et al. (2006)." Knee **13**(4): 290-295.*

Two types of Trochlea design

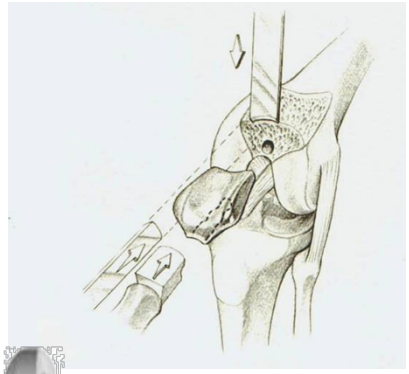
"Resurfacing" prosthesis

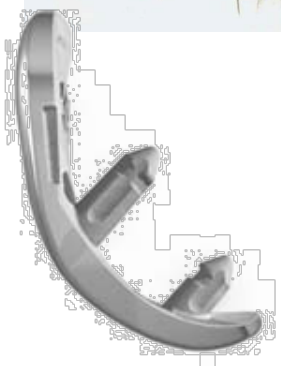
- No cut
- Anatomical positioning in the original groove



"Anatomical" prosthesis

- Trochlea cut
- TKA Trochlea



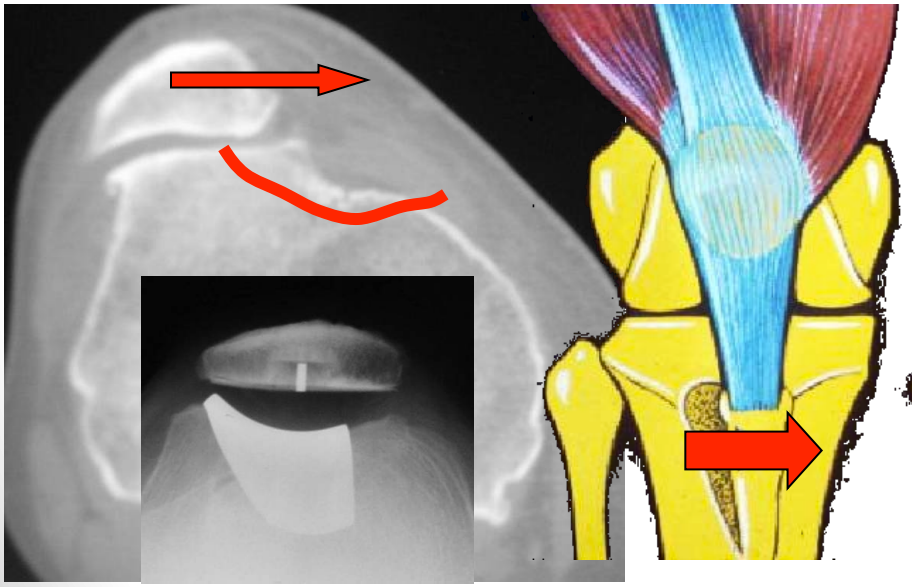


Conclusion : Best results if…

PFJ + realignment

Distal

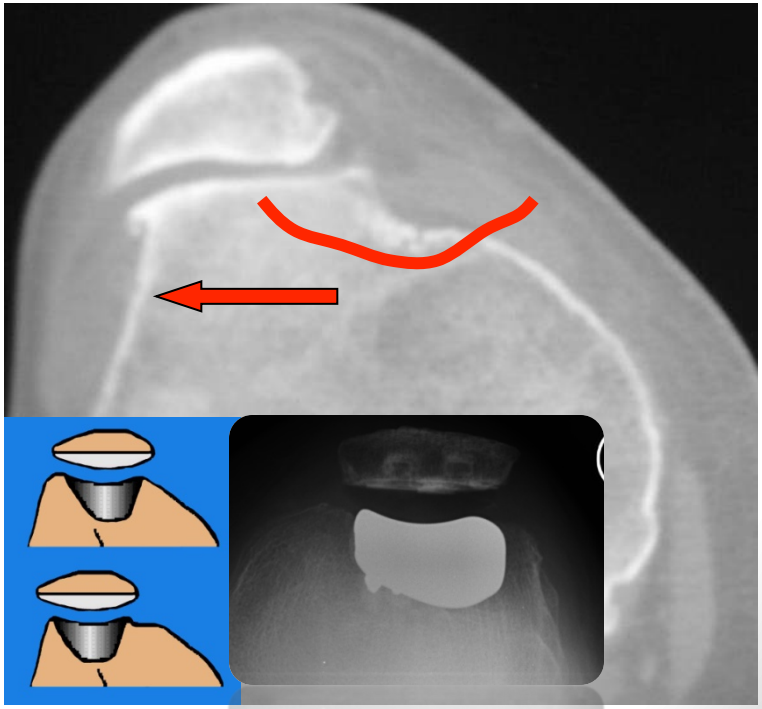
Tibial T. medialisation



Resurfacing prosthesis

Proximal +++

Trochlea lateralisation

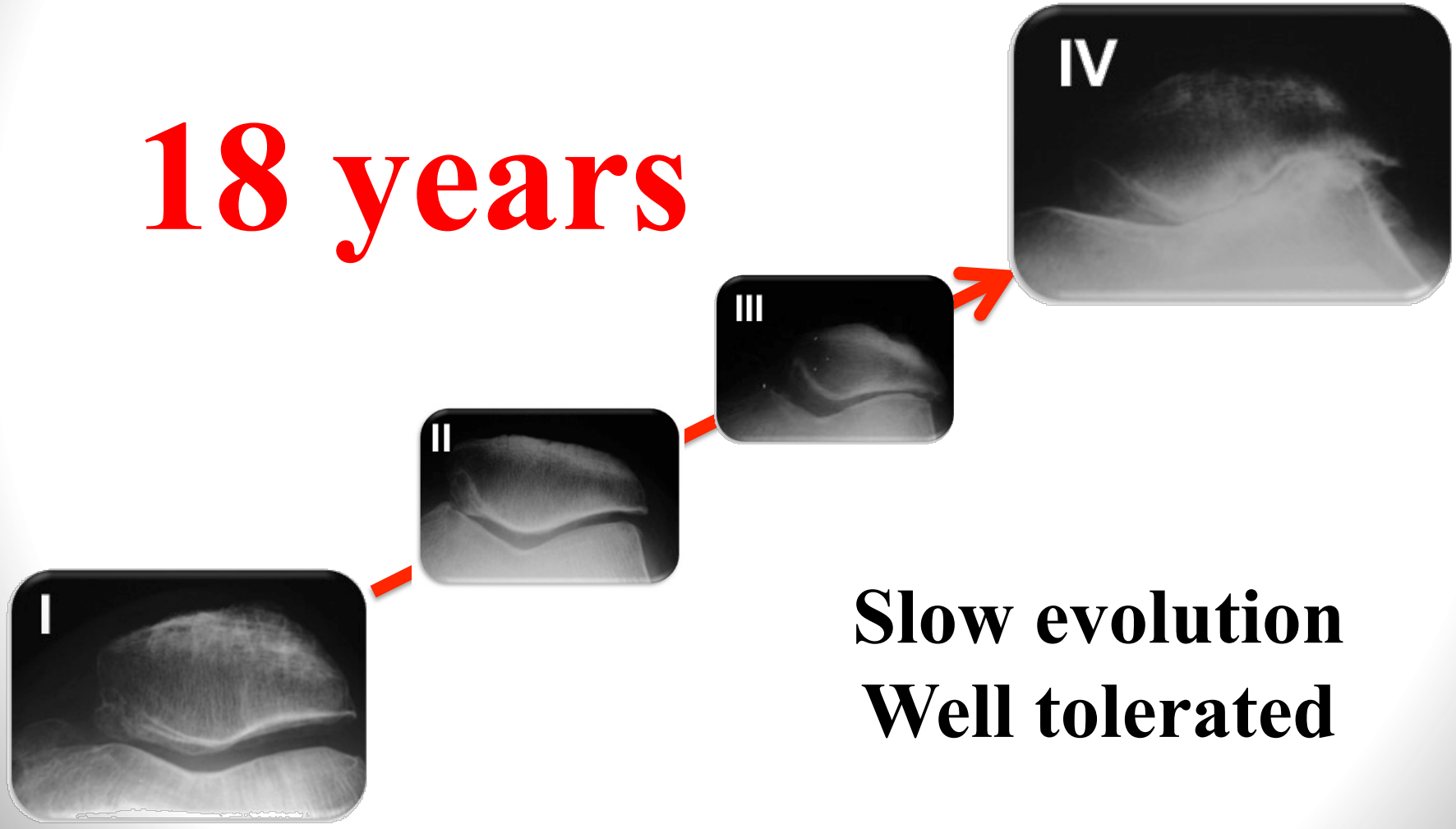


Anatomical prosthesis

Natural History

Isolated patellofemoral arhrosis

18 years



Slow evolution
Well tolerated

Natural history

PF Arthrosis

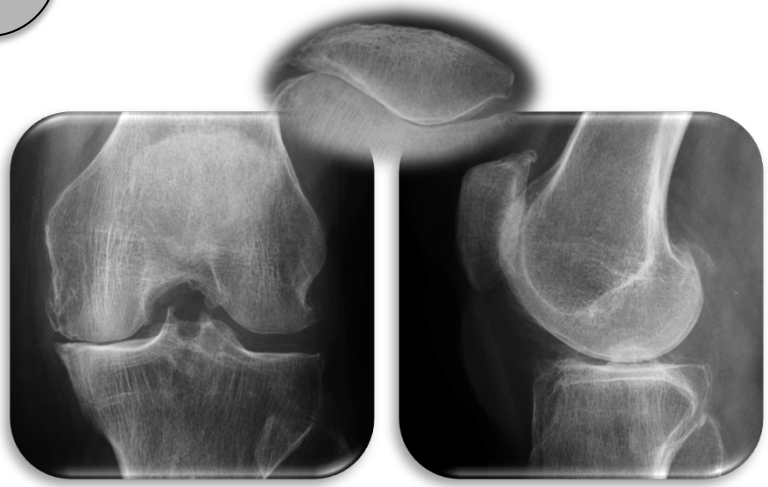
Different upon the aetiology

Primitive

41 %

$P < 0,001$

Global arthrosis



Dislocation

32 %