

# TKA or UKA for acute fracture of the Knee



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Marseille, France**



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**IML**



Institut du Mouvement et de l'appareil Locomoteur





# Place of UKA=> not for acute fractures

Clin Orthop Relat Res  
DOI 10.1007/s11999-011-1963-2

SYMPOSIUM: PAPERS PRESENTED AT THE ANNUAL MEETINGS OF THE KNEE SOCIETY

## Lateral Unicompartmental Knee Arthroplasty Relieves Pain and Improves Function in Posttraumatic Osteoarthritis

Sebastien Lustig MD, PhD, Sebastien Parratte MD, PhD,  
Robert A. Magnussen MD, Jean-Noel Argenson MD,  
Philippe Neyret MD



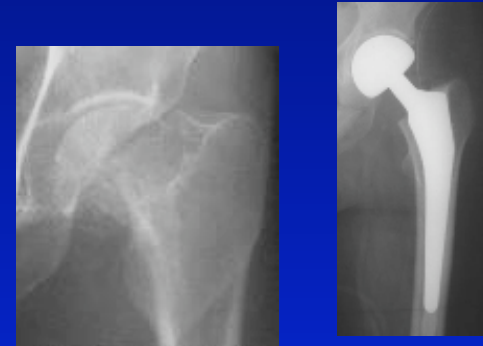
Table 3. Comparison with series of lateral UKA performed for all indications

Study	Number of UKAs	Followup (years)	IKS knee score (points)	IKS function score (points)	Preoperative alignment (°)	Postoperative alignment (°)	Survival rate
Sah and Scott [25]	49	5.2	89	80	190	186	100% at 5 years
Argenson et al. [2]	40	12.6	88	78	188	183	92% at 10 years 84% at 16 years
Ashraf et al. [3]	88	9.0	NR	NR	NR	NR	83% at 10 years 74% at 15 years
Pennington et al. [23]	29	12.4	NR	NR	190	186	100% at 12.6 years
Ohdera et al. [21]	18	5	NR	NR	190	186	89% at 5 years
Lustig et al.	13	10.2	88	87	188	185	100% at 5 and 10 years 80% at 15 years

UKA = unicompartmental knee arthroplasty; IKS = International Knee Society; NR = not reported.

# Prosthesis for fracture

## Garden IV



## Distal humeral fractures



Courtesy of P Bonneville

## Shoulder fractures



# Frequency

Osteoporos Int (2009) 20:43–46  
DOI 10.1007/s00198-008-0625-z

ORIGINAL ARTICLE

## Declining incidence of low-trauma knee fractures in elderly women: nationwide statistics in Finland between 1970 and 2006

P. Kannus · S. Niemi · J. Parkkari · H. Sievänen · M. Palvanen

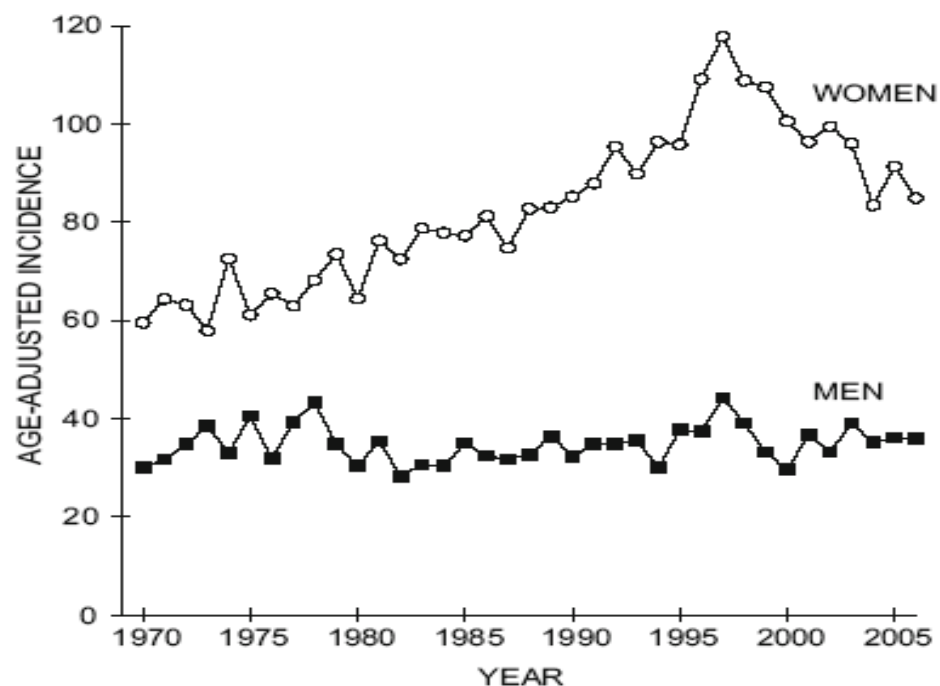
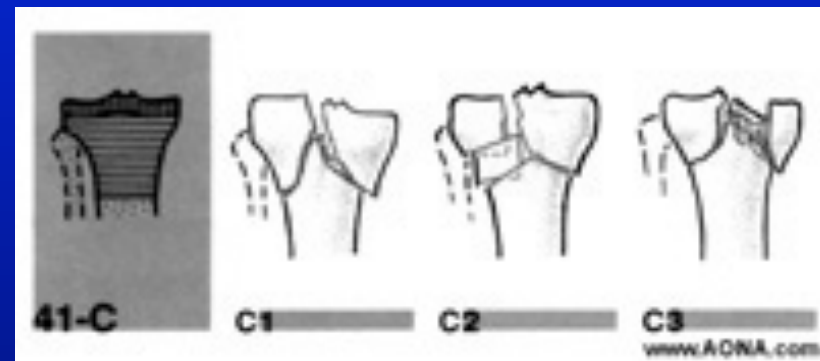
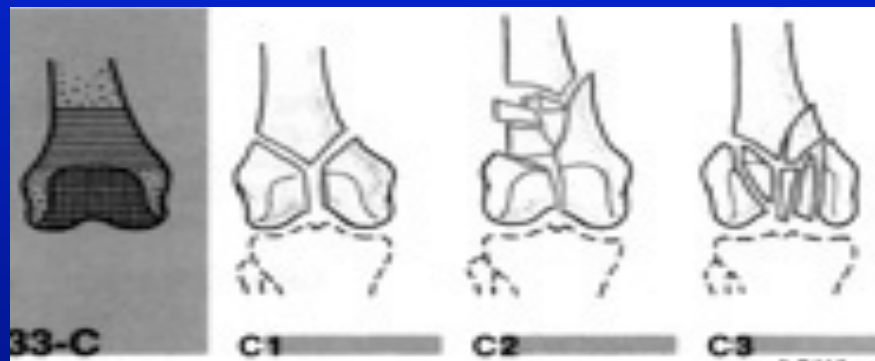
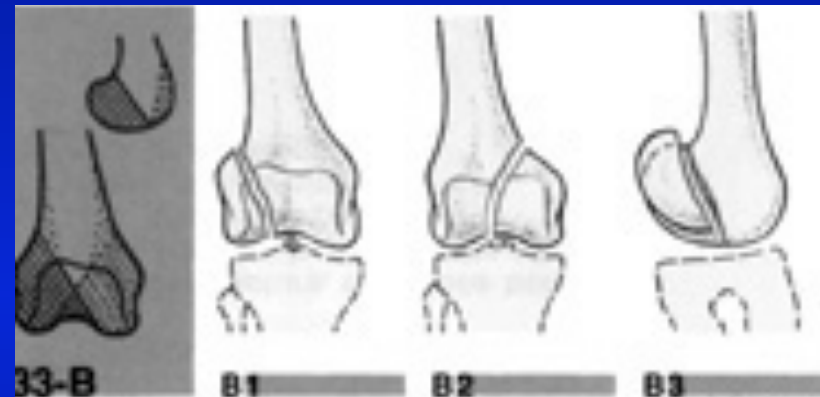
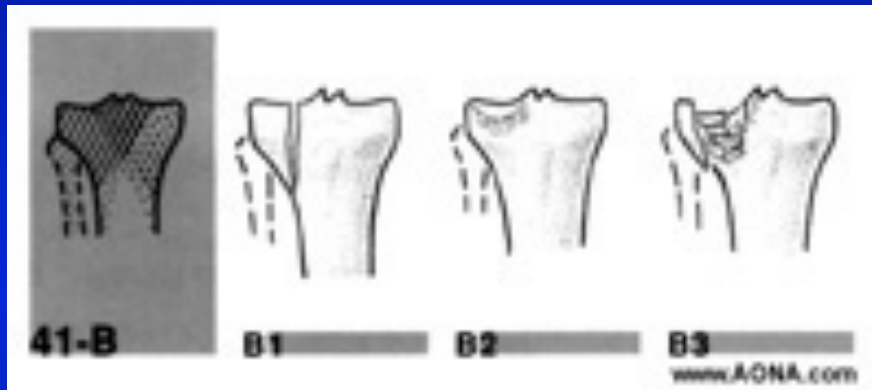


Fig. 1 Age-adjusted incidence (per 100,000 persons) of low-trauma knee fractures in Finland in women and men 60 years of age or older between 1970 and 2006

In France  
1% of ER  
admission

# Types of fracture

- B and C

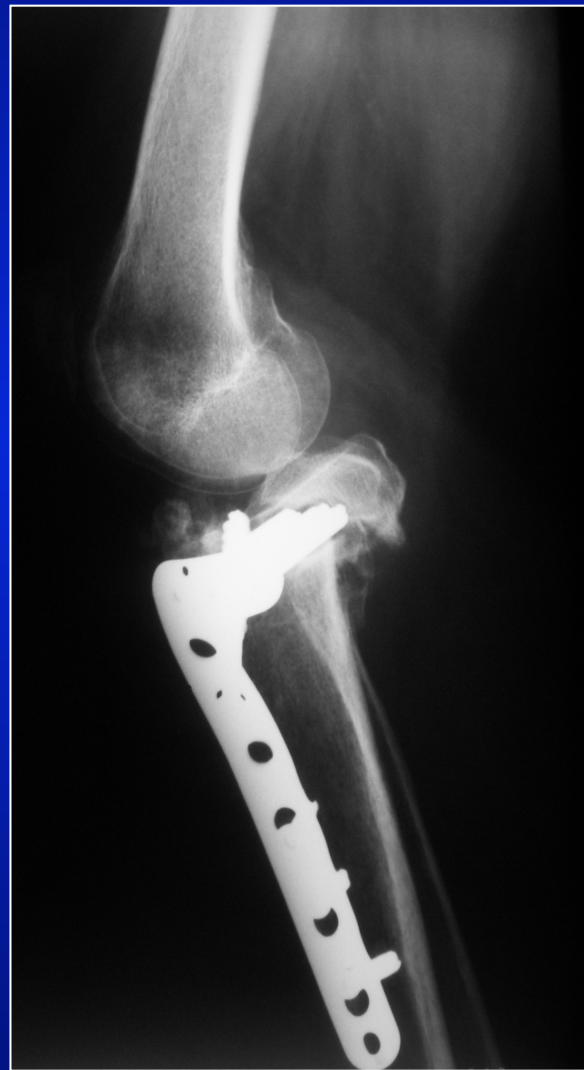
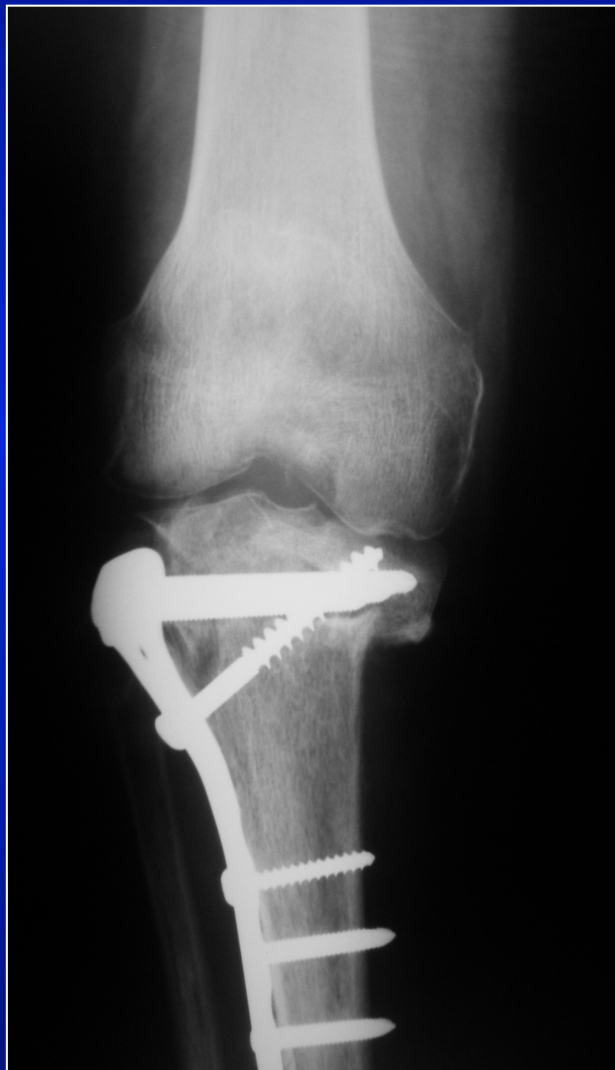


# Problem = Paradox

- Internal fixation stability...
- Walk or died .....



# ORIF





# TKA first

## L. Rosen et E. Strauss

- 24 femorales F (type C A)
  - Age m= 76 years (68-85)
  - Known arthritis: 5
- Rotating hinge modular
  - Operative time m=3,3h
  - Transfusion = 2,5
- No complication



# TKA first

*Revue de chirurgie orthopédique*  
2006, 92, 242-247

© Masson, Paris, 2006

MÉMOIRE

Arthroplastie totale de genou pour fracture récente grave  
de l'épiphyse tibiale proximale chez le sujet âgé

*Total knee arthroplasty for recent severe fracture of the proximal tibial epiphysis  
in the elderly subject*

G. Nourissat \*, E. Hoffman \*\*, C. Hémon \*, L. Rillardon \*\*, P. Guigui \*\*, A. Sautet \*

\* Service de Chirurgie Orthopédique, Hôpital Saint-Antoine, 184, rue du Faubourg-Saint-Antoine, 75571 Paris Cedex 12.

\*\* Service de Chirurgie Orthopédique, Hôpital Beaujon, 100, boulevard du Général-Leclerc, 92118 Clichy Cedex.

- Complex epiphysal fractures
- Older than 75 years-old
- Walking before fracture

# Goals and justification

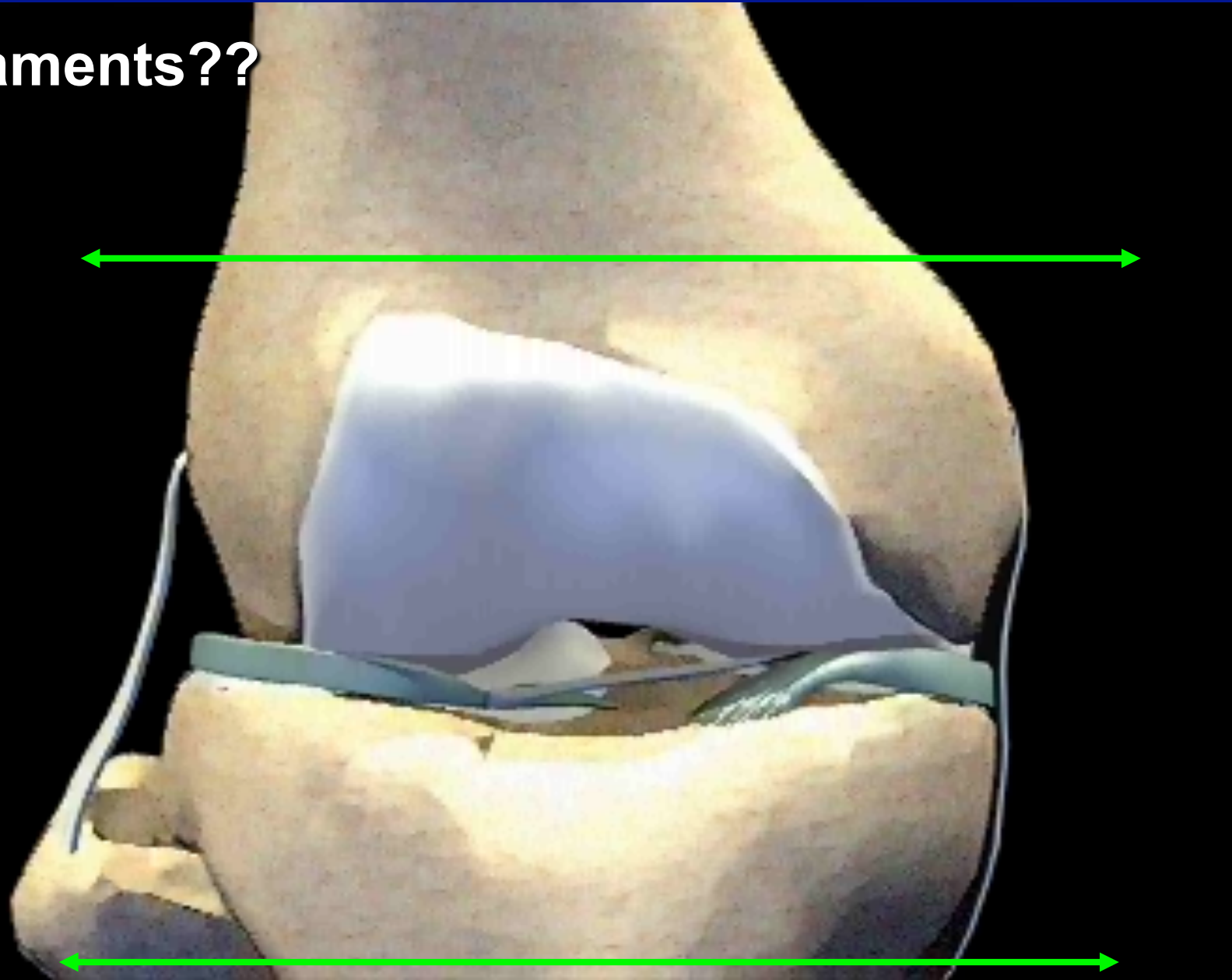
- Early full weight-bearing
- Limited prone complications
- Better function

# Surgical technique

1. Implants choice and constrain
2. Approach
3. Height of the joint line
4. Femoral rotation
5. Bones cuts
6. Implant size
7. Bone loss filling
8. Complementary internal fixation

# 1. Implant choice

Ligaments??

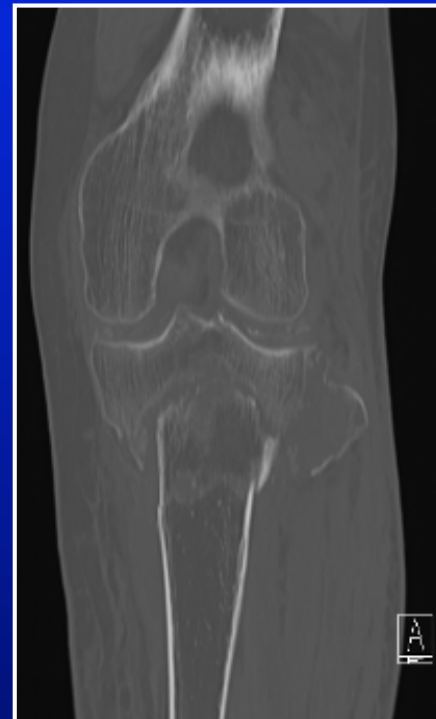


# 1. implants choice

Can we preserve the collateral ligaments?

No=> Rotating hinge

Yes=> PS +/- reconstruction



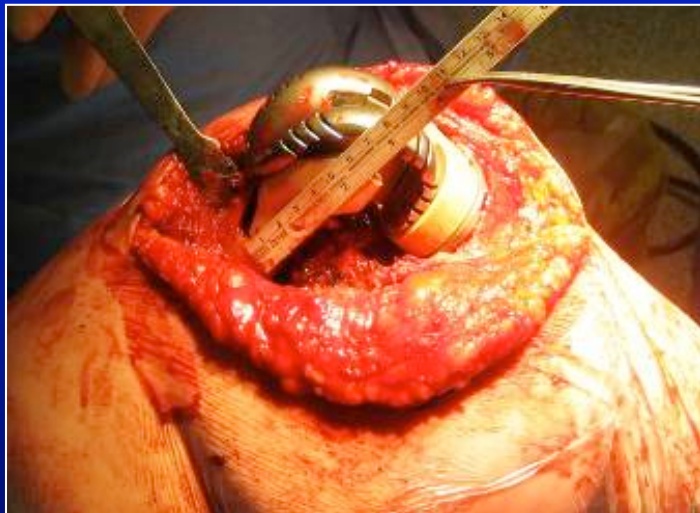
## 2. Approach

- Nothing special
  - Tourniquet or not
  - Approaches
    - Medial: para-patellar or subvastus
    - Lateral possible
    - ATT not required
- => Sometimes already done!



## 2. Joint line

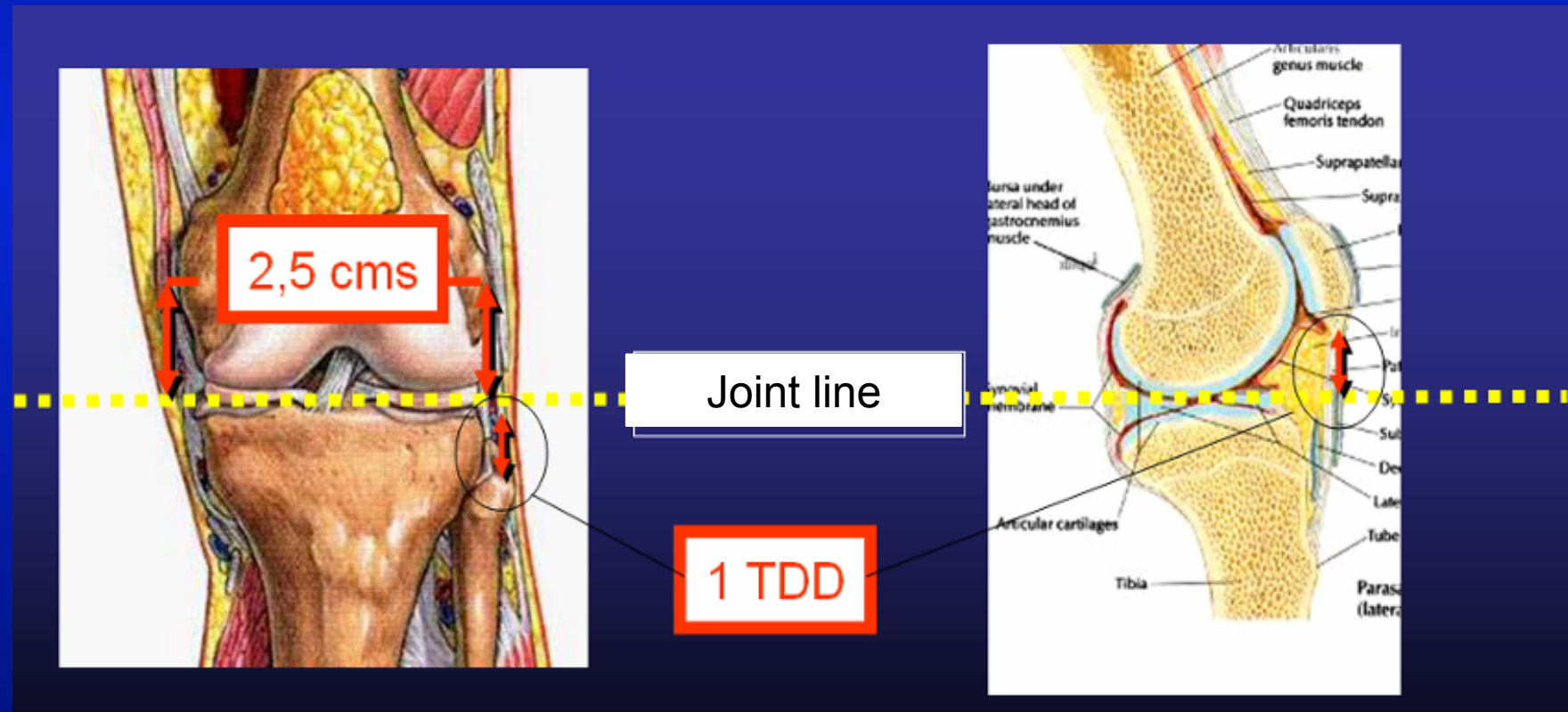
Principle=> temporary reduction





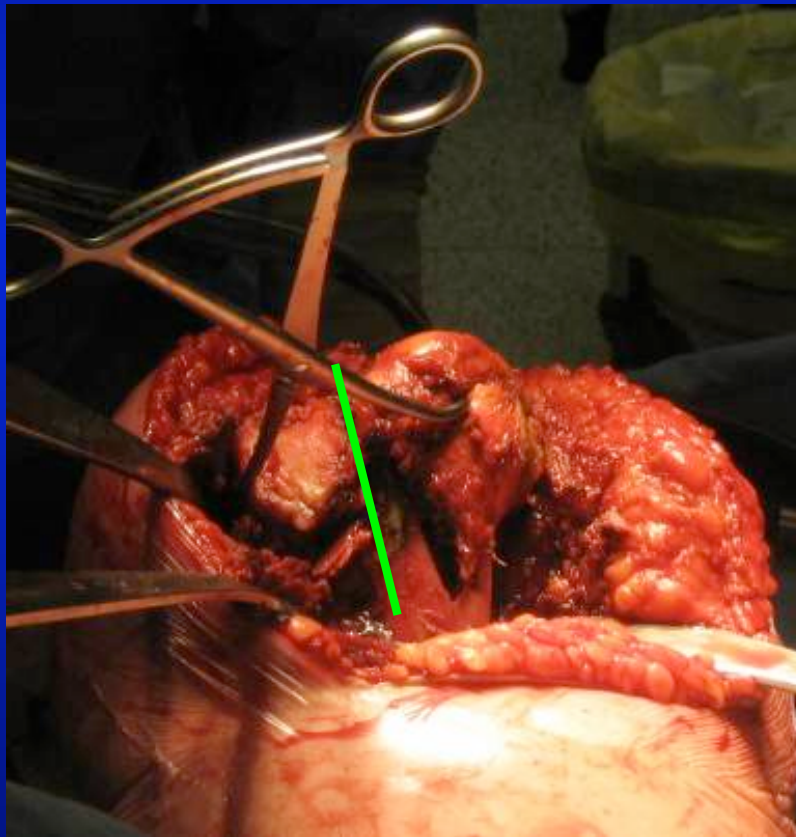
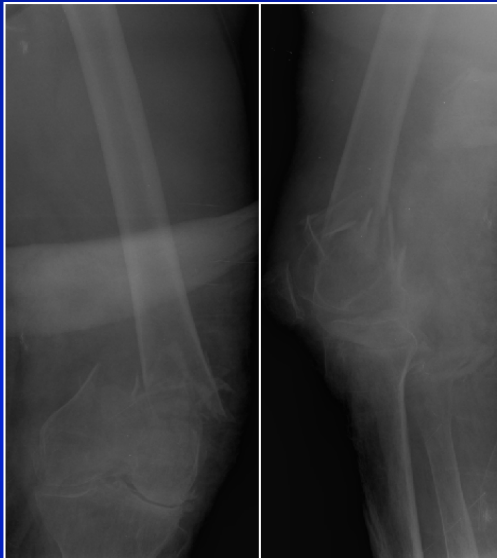
## 2. Height of the joint line

If no landmark => revision principals



## 2. Femoral Rotation

Principle=> temporary reduction



## 2. Bone cut

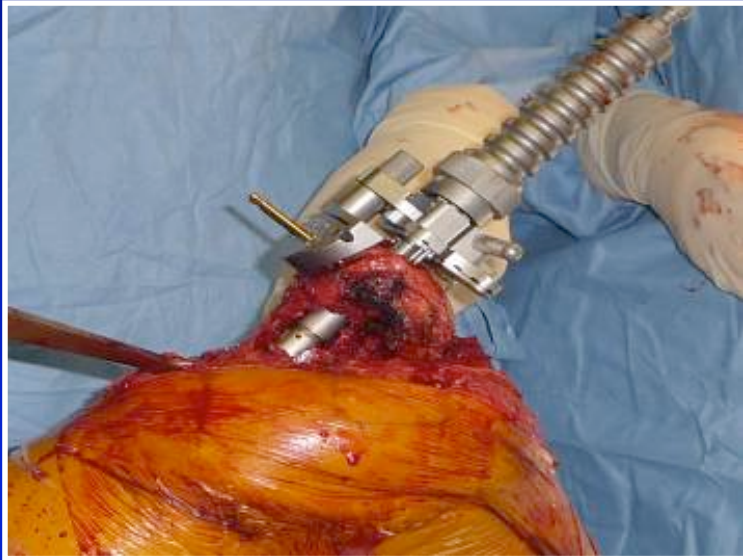
5. Coupes osseuses



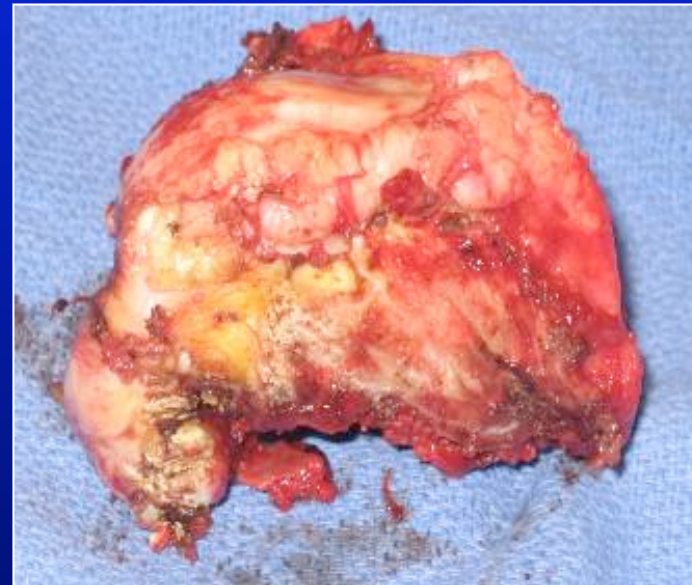
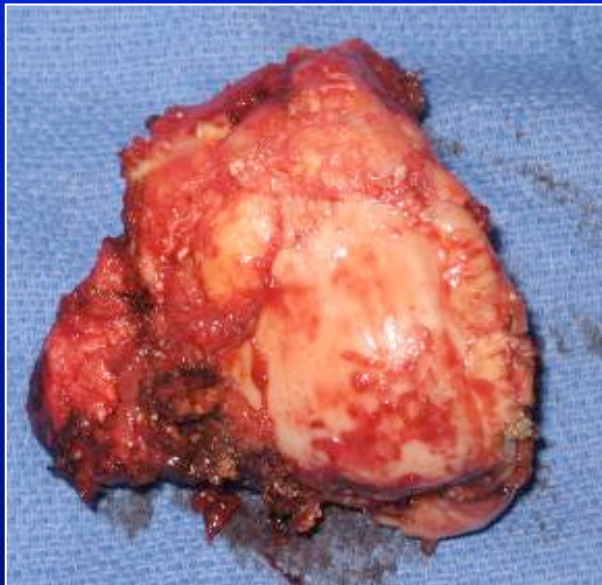
Courtesy of  
P Bonevialle

## 2. Bone cut

5. Coupes osseuses



Bone preservation

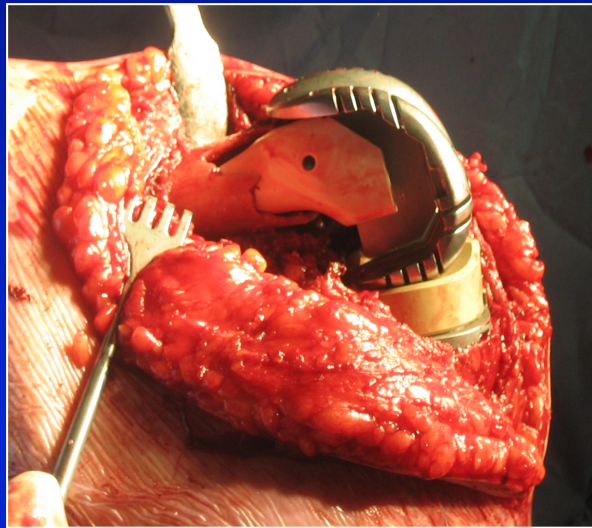


## 2. Sizing

Like for a bipolar hip  
On the table



# 7. Bone loss management



TM Cones

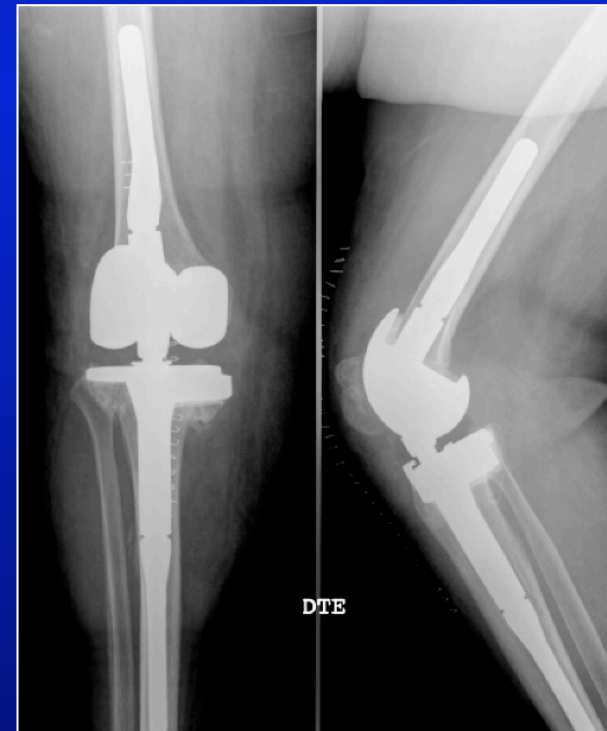
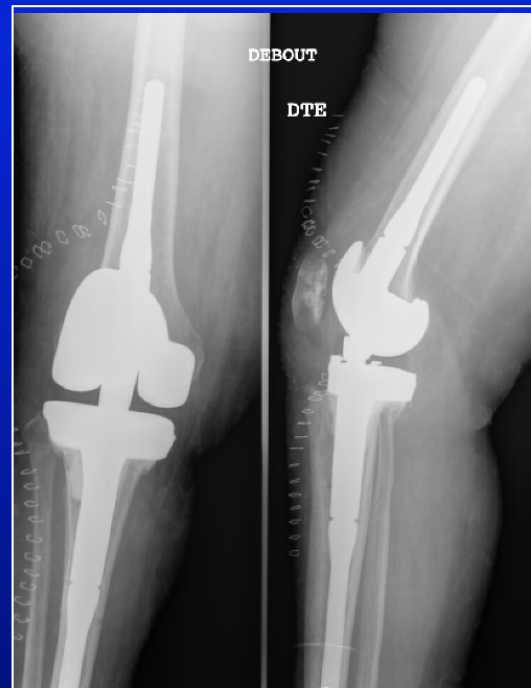


Augments  
Autograft  
Both

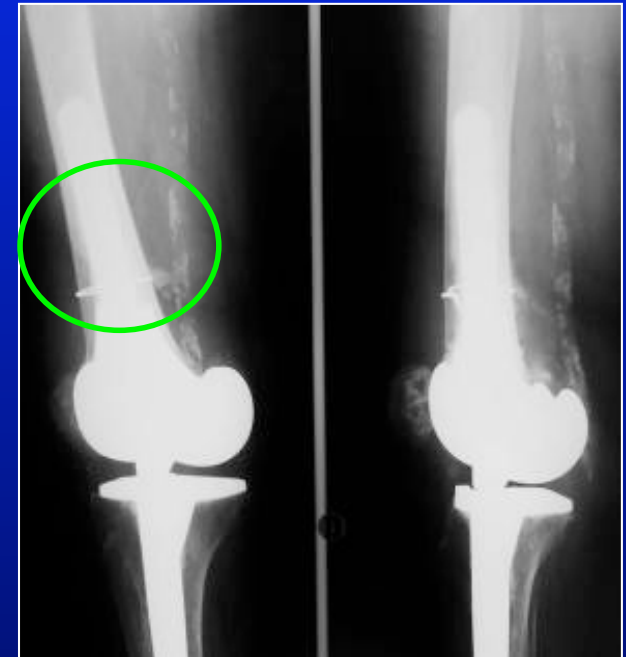


# 7. Bone loss management tibia

Augments  
Autograft  
Both



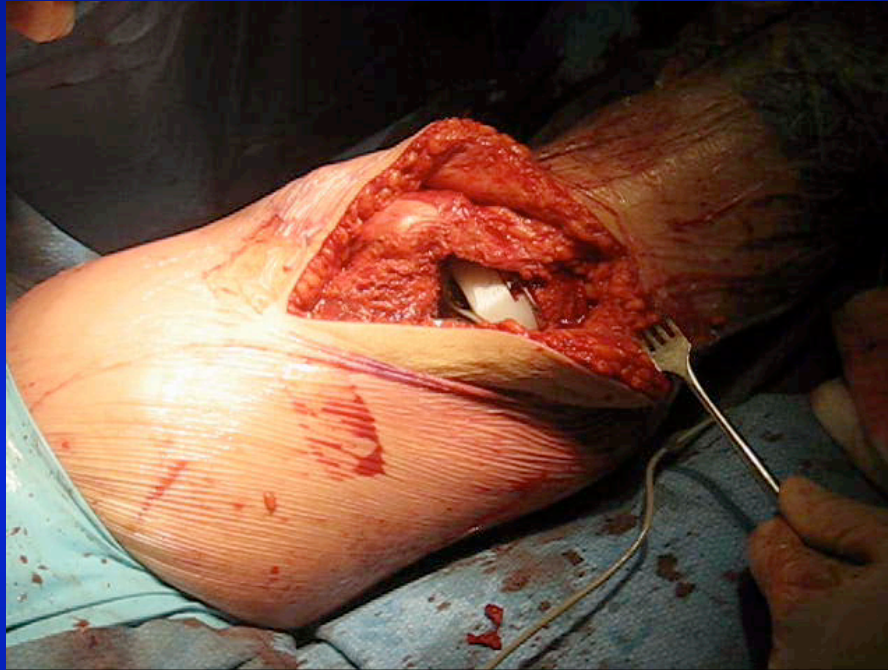
# 8. Complementary fixation



Simple lucky wire  
Limited stability



# Stability Patellar tracking => Immediate weight-bearing



# Results

Orthopaedics & Traumatology: Surgery & Research (2011) xxx, xxx–xxx



Available online at  
 ScienceDirect  
www.sciencedirect.com

Elsevier Masson France  
 EM|consulte  
www.em-consulte.com/en



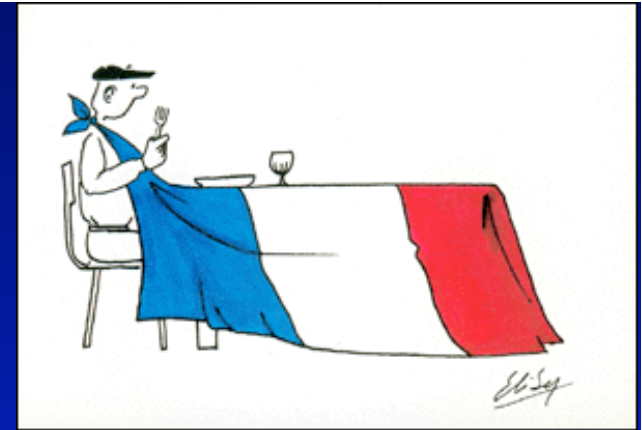
ORIGINAL ARTICLE

## Primary total knee arthroplasty in the management of epiphyseal fracture around the knee<sup>☆</sup>

S. Parratte<sup>a,\*</sup>, P. Bonneville<sup>b</sup>, G. Pietu<sup>c</sup>, D. Saragaglia<sup>d</sup>,  
B. Cherrier<sup>e</sup>, J.M. Lafosse<sup>f</sup>



# Series



- Women :21      Men :      5
- Mean Age      **80.5 years (74-98)**
- Mean Parker score :      7,7 ( 14 patients à 9)
- Mean ASA score :      2,2 ( 3 patients à 1)
- Way of Life :
  - Alone at home : 16
  - Required help : 4
  - Elferly facility : 4



# Results

## Complications

### General:

– death 1

– TVP (1 PE) 3

– Stroke 1

### Local :

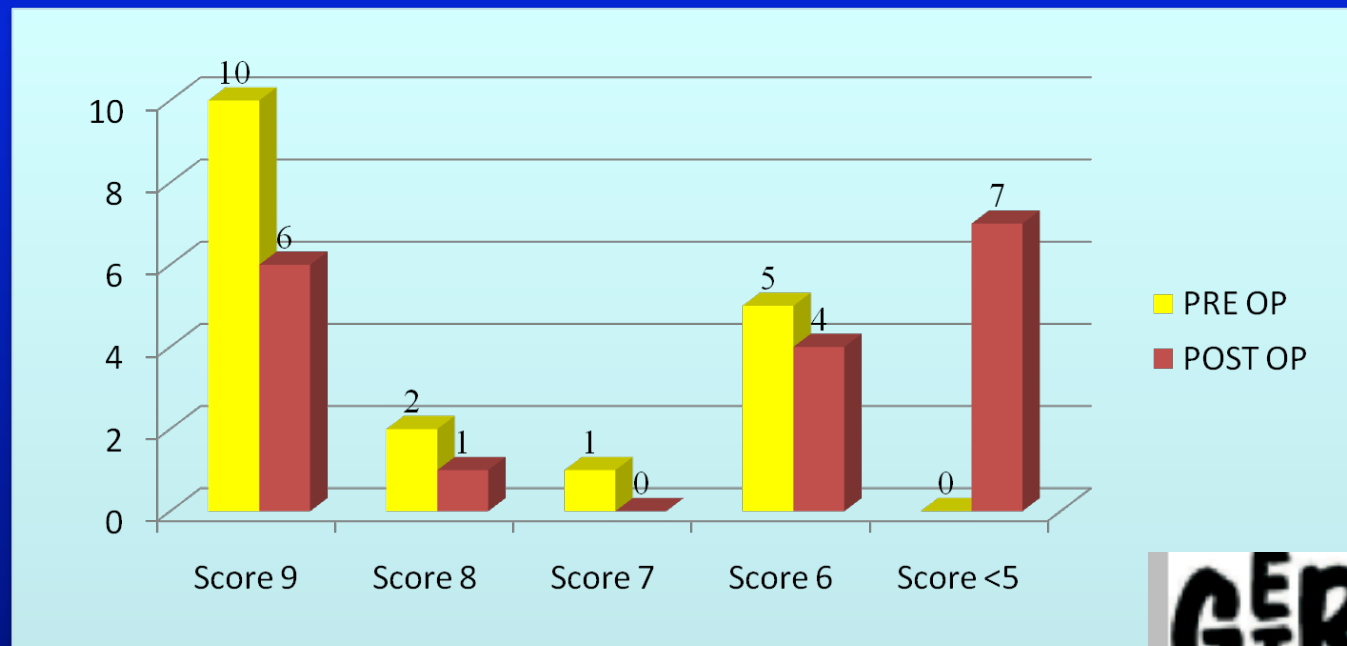
Cutaneous PB 1

ATT avulsion 1



# Results

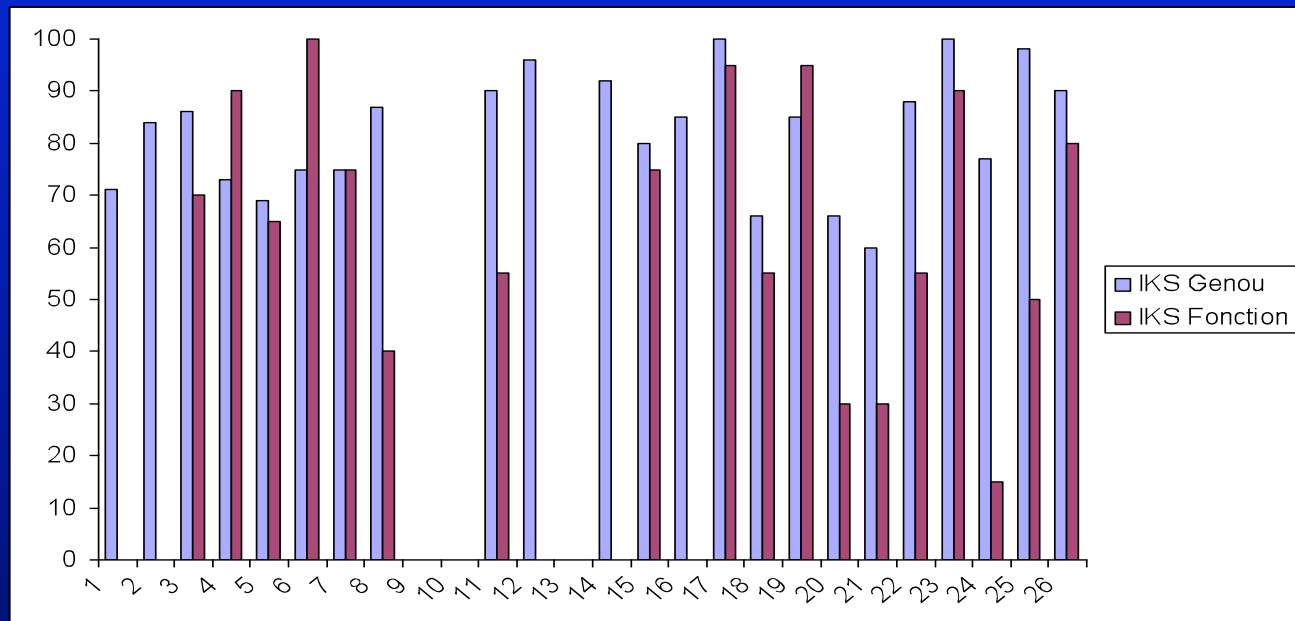
- Parker Score (n=23) :
  - Final m = 6,3
  - Lost m = 1,7



GERAM

# Results

- Active mobility(n=16)
  - Flexion  $m=99^\circ$  (75-140°)
  - Extension  $m= -2,7^\circ$



# Results of the literature

- G. Wolfgang Clin. Orthop 1982, 171, 80 n=1 distal femur
- K. Bell J.B.J.S Br 1992, 74, 400 13 DF
- K. Rolston J.B.J.S Am 1995, 77, 924 4 DF
- N. Yoshino J. Arthroplasty 2001, 16, 741 3 DF
- T. Nau J. Arthroplasty 2003, 18, 968 3 DF /3 PT
  
- A. Rosen Clin Orthop 2004, 425, 101 24 DF
- G. Nourissat Rev Chir Orthop 2006, 92, 242 4 PT

# Discussion

It's working if elderly patient

- Parker >5
- No major obesity
- No dementia

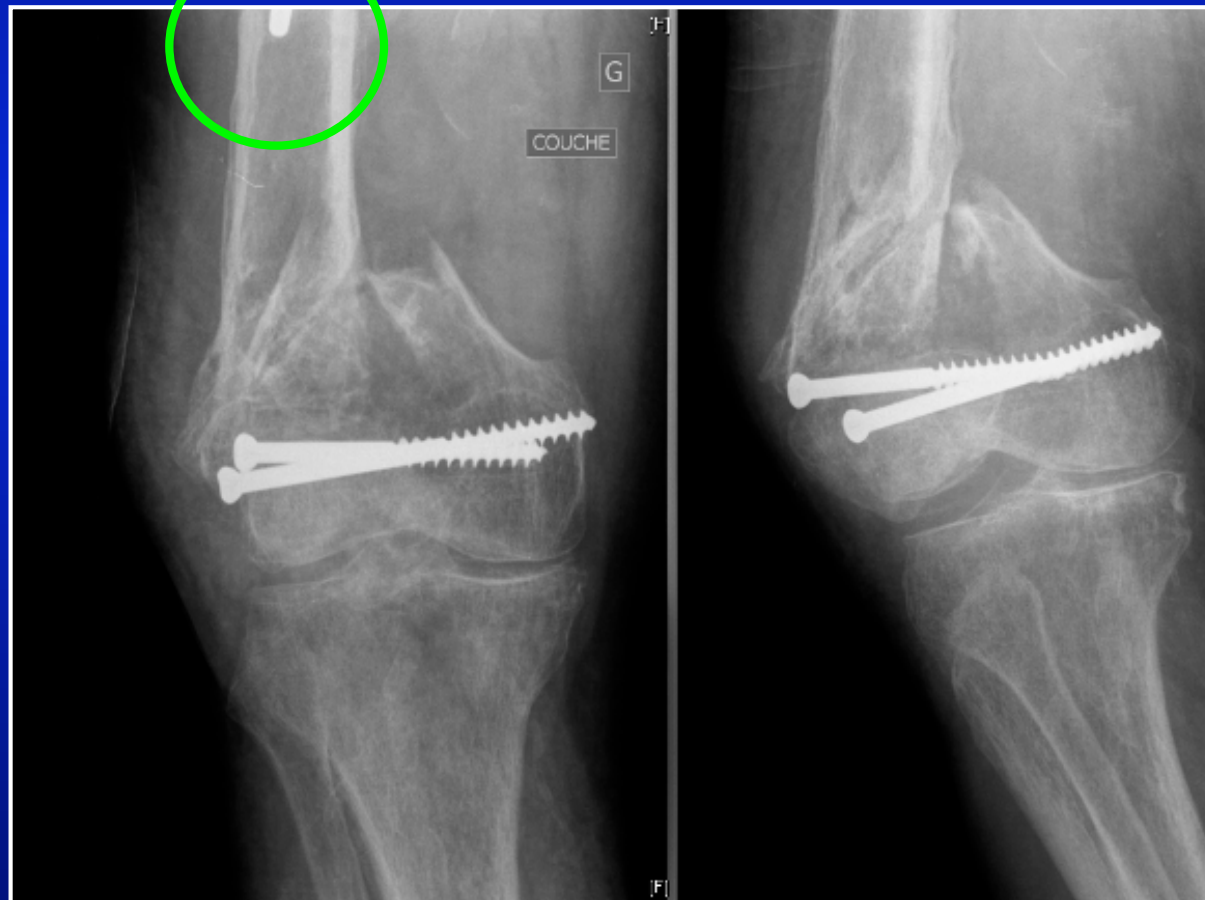
=> Patient participation



# Discussion

## Sometimes not possible

- Women 79-years old



# No stem



Change of the modulus of elasticity !

# Discussion

## Sometimes not possible

- Women 88 years-old



When possible: do not wait too long



# Conclusion

- Interresting solution
- Not easy=> be prepared
- Patient participation
- Keep as much bone as possible