

# DISTAL FEMORAL FRACTURES



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# LEARNING OBJECTIVES

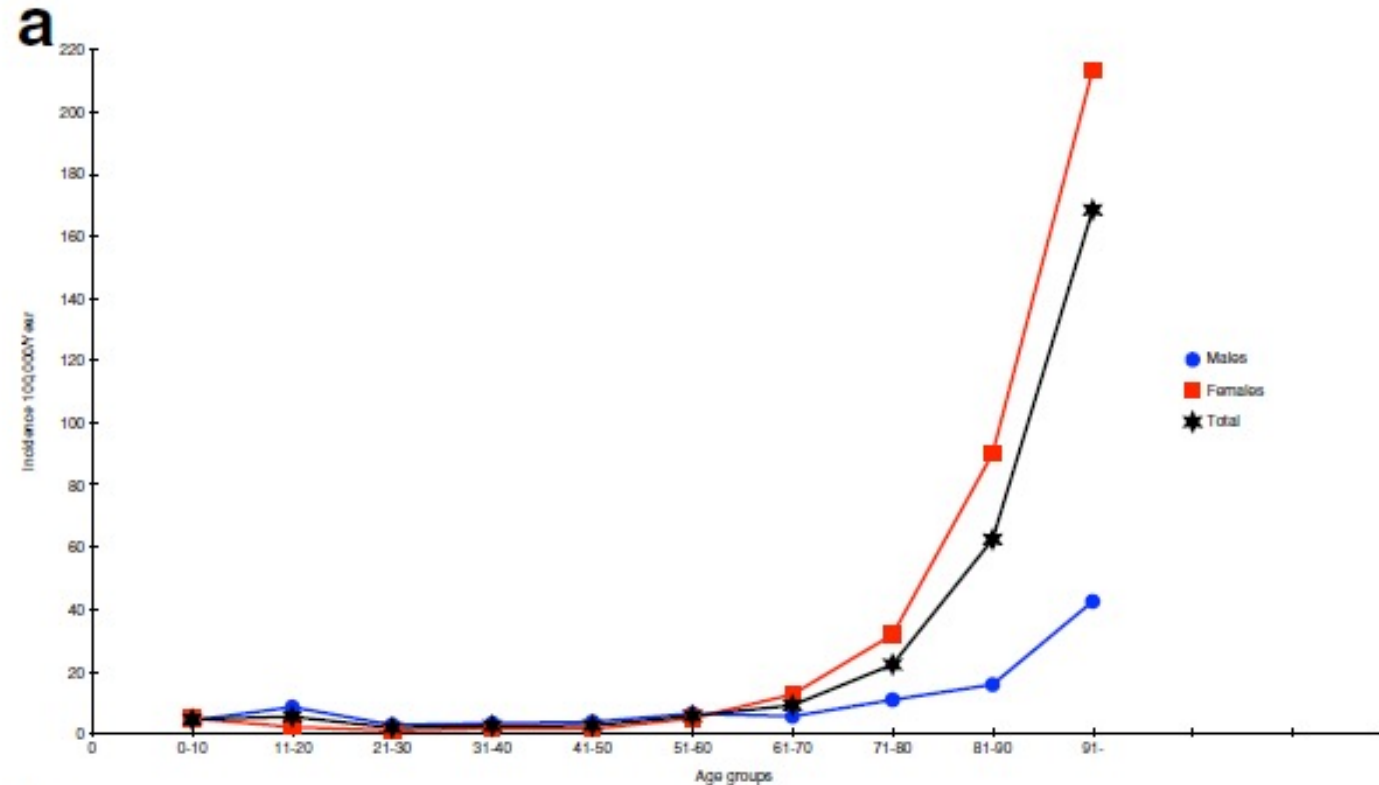
- Frakturens personlighed
- Behandlingsmål
- Muligheder for fiksatation
- Overvejelser ved valg af fiksatation
- Cases
- 4 learning points !



# DISTAL FEMUR FRAKTUR (DANSK POPULATION)

Elsoe R et al Int Orthop 2018

- Incidence: 9 per 100.000 per år
- Age: 62 år (72 for kvinder)
- Køn: 67% are females
- Flest lav energi frakturer (97%)
- Simple frakturer (33A1 and 33A2) mest almindelige

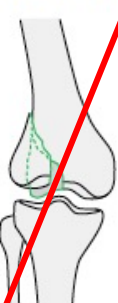
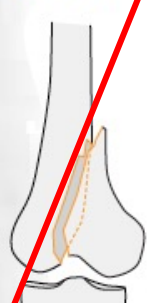
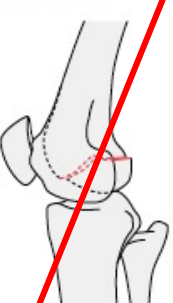
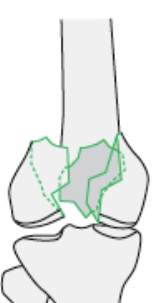
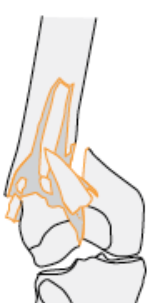


# CLASSIFICATION

35-50%

18-30%

7-18%

|                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 33-A1                                                                             | 33-A2                                                                             | 33-A3                                                                             | 33-B1                                                                              | 33-B2                                                                               | 33-B3                                                                               | 33-C1                                                                               | 33-C2                                                                               | 33-C3                                                                               |
|  |  |  |  |  |  |  |  |  |
| 33-A extra-articular fracture                                                     |                                                                                   |                                                                                   | 33-B partial articular fracture                                                    |                                                                                     |                                                                                     | 33-C complete articular fracture                                                    |                                                                                     |                                                                                     |
| 33-A1 simple                                                                      |                                                                                   |                                                                                   | 33-B1 lateral condyle, sagittal                                                    |                                                                                     |                                                                                     | 33-C1 articular simple, metaphyseal simple                                          |                                                                                     |                                                                                     |
| 33-A2 metaphyseal wedge and/or fragmented wedge                                   |                                                                                   |                                                                                   | 33-B2 medial condyle, sagittal                                                     |                                                                                     |                                                                                     | 33-C2 artic. simple, metaphyseal multifragmentary                                   |                                                                                     |                                                                                     |
| 33-A3 metaphyseal complex                                                         |                                                                                   |                                                                                   | 33-B3 frontal                                                                      |                                                                                     |                                                                                     | 33-C3 articular multifragmentary                                                    |                                                                                     |                                                                                     |

## BEHANDLINGSMÅL

- Stabil osteosyntese, der tillader tidlig mobilisering og vægtbæring
- Anatomisk reposition og absolut stabilitet på intraartikulære frakturer
- Genskabe længde, akse og rotation på femur
- Bevare lokal biologi (blodforsyning)



# High Mortality

ORIGINAL ARTICLE

## Patient Mortality in Geriatric Distal Femur Fractures

Myers, Philip DO<sup>\*</sup>; Laboe, Patrick MD<sup>†</sup>; Johnson, Kory J. DO<sup>‡</sup>; Fredericks, Peter D. MD<sup>§</sup>; Crichlow, Renn J. MD<sup>\*</sup>; Maar, Dean C. MD<sup>\*</sup>; Weber, Timothy G. MD<sup>\*</sup>

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Overall mortality for distal femur fractures 13.4%  
Surgical treatment  
>2 days after injury = higher patient mortality.

## LEARNING POINT #1

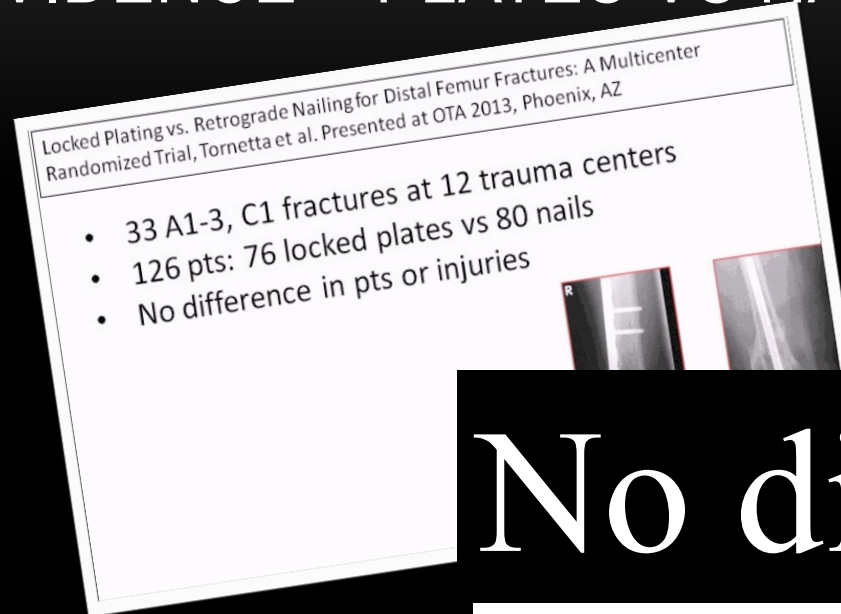
DISTAL FEMUR FRAKTUR HAR HØJ MORTALITET,  
OPERATION < 48 TIMER REDUCERER  
MORTALITETEN



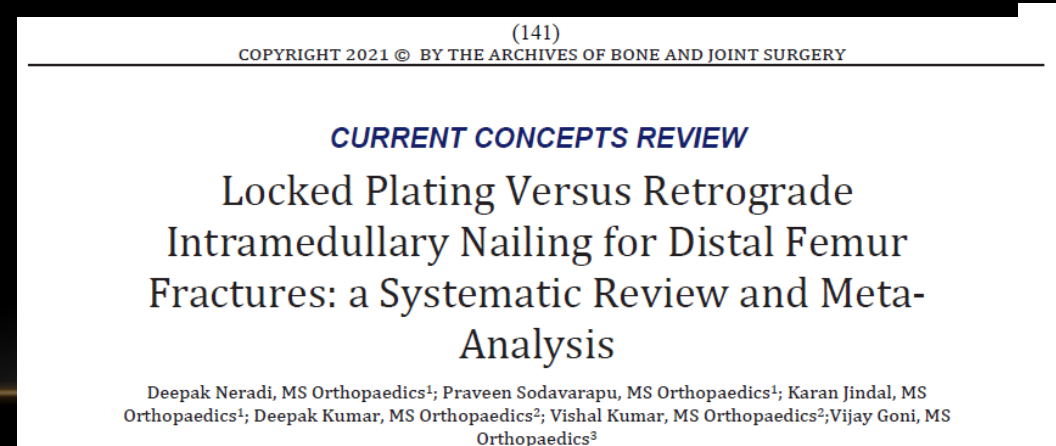
Mest almindelige  
muligheder for fiksatation



# EVIDENCE – PLATES VS NAILS



# No difference



# FACTORS TO THINK ABOUT IN PLANNING SURGERY

- Patient characteristics
  - Age, comorbidity, function
- Bone quality
  - Osteoporosis
- Fracture type
  - Intra articular
  - Medial comminution
  - Periprosthetic (nails)
  - Very low fractures
- Surgical approach
  - Lateral vs anterior
  - Open vs minimally invasive

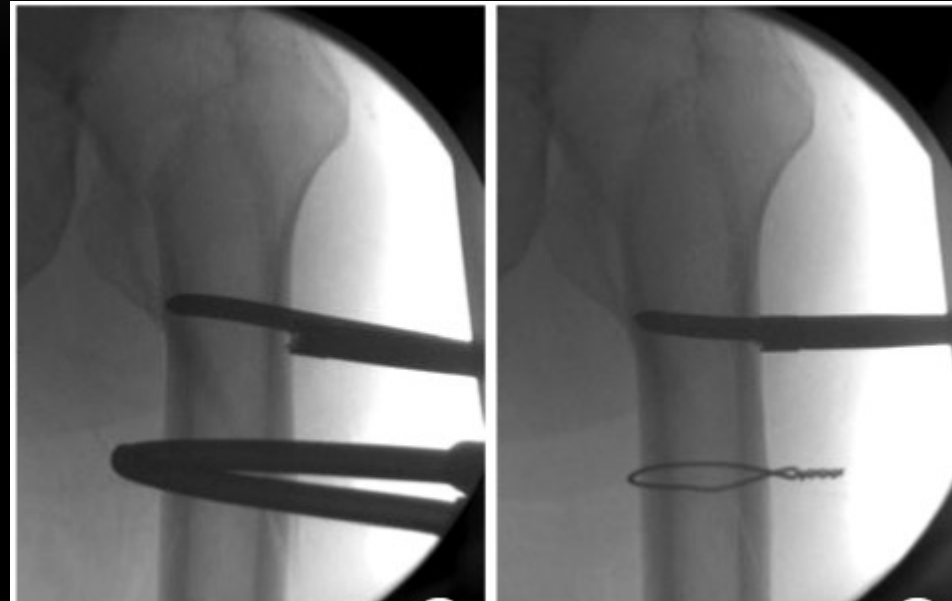


# CASE

- Simpel, ekstra artikulær



# REPOSITION

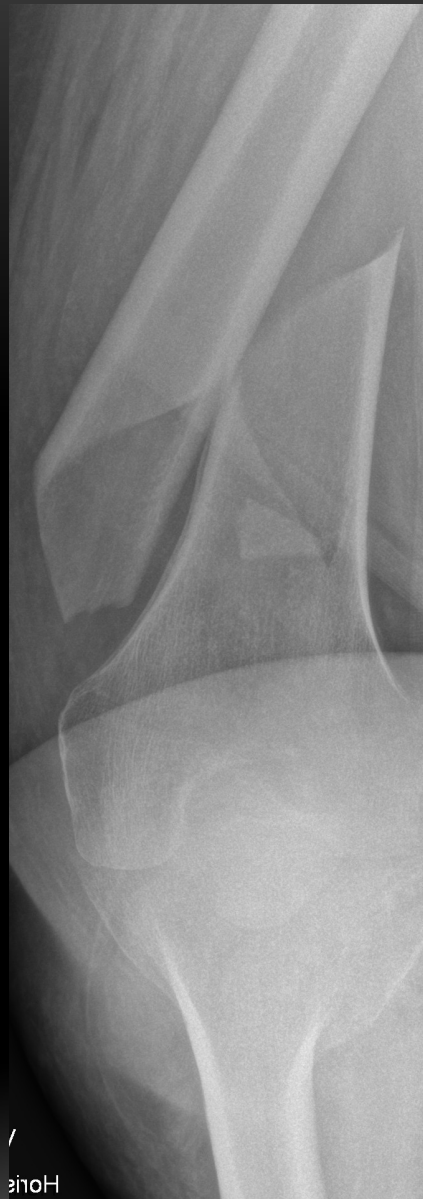


Direkte

Ser fraktur og reposition med egne øjne

Lag-skrue eller cerclage HUSK LÆNGDE!!

# FIKSATION



Heide



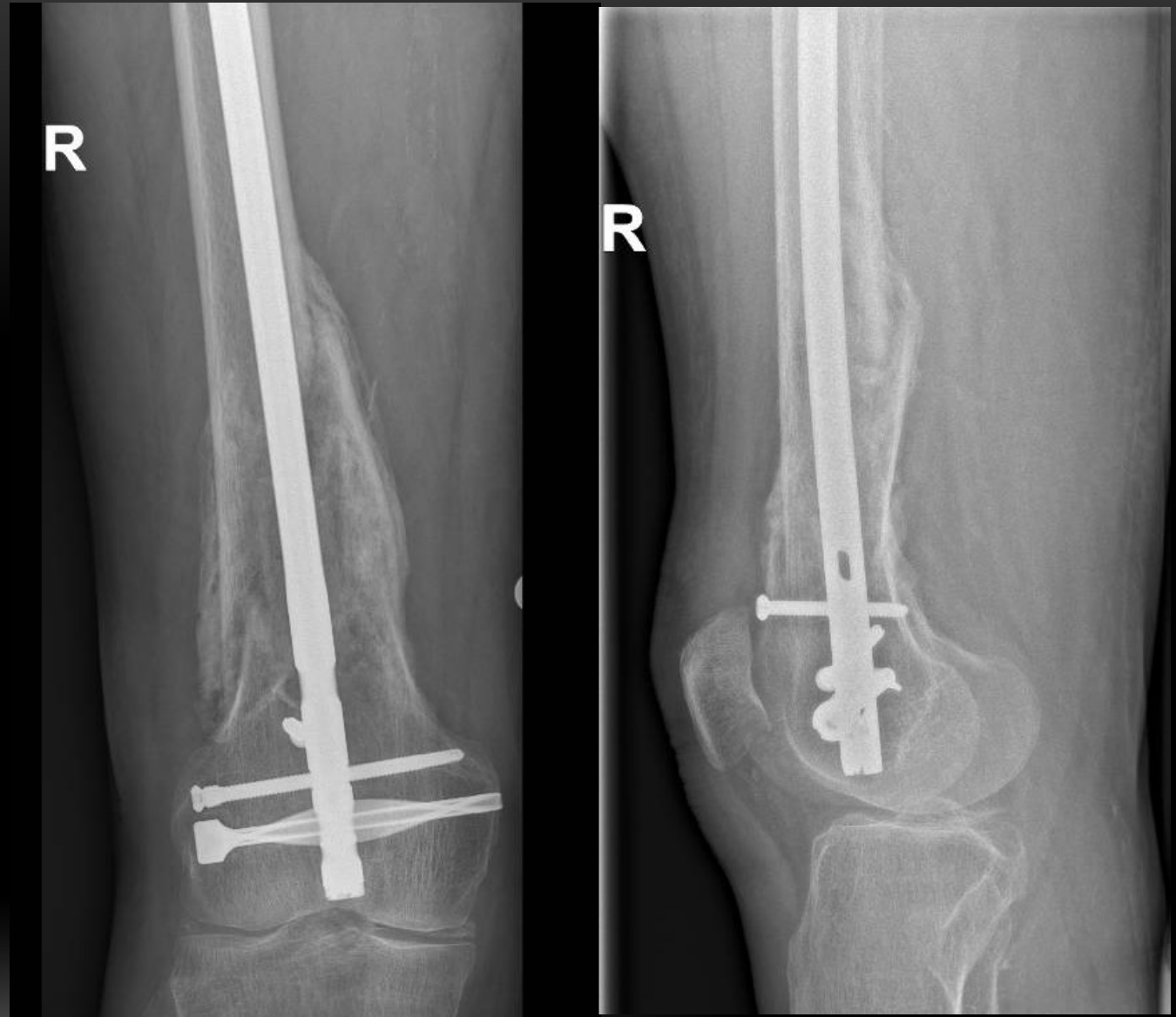
Metafysær fraktur og  
mediale cortex komminut:  
Supplerende skinne

eller...





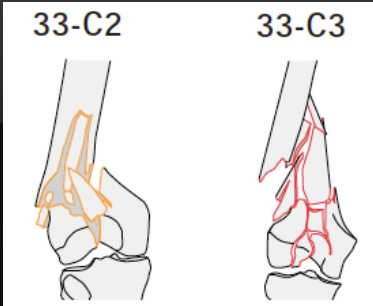
- Minimally invasive. Soft tissue friendly
- Load shearing device
- Soft tissues intact – facilitates indirect reduction
- Improved design extends indication



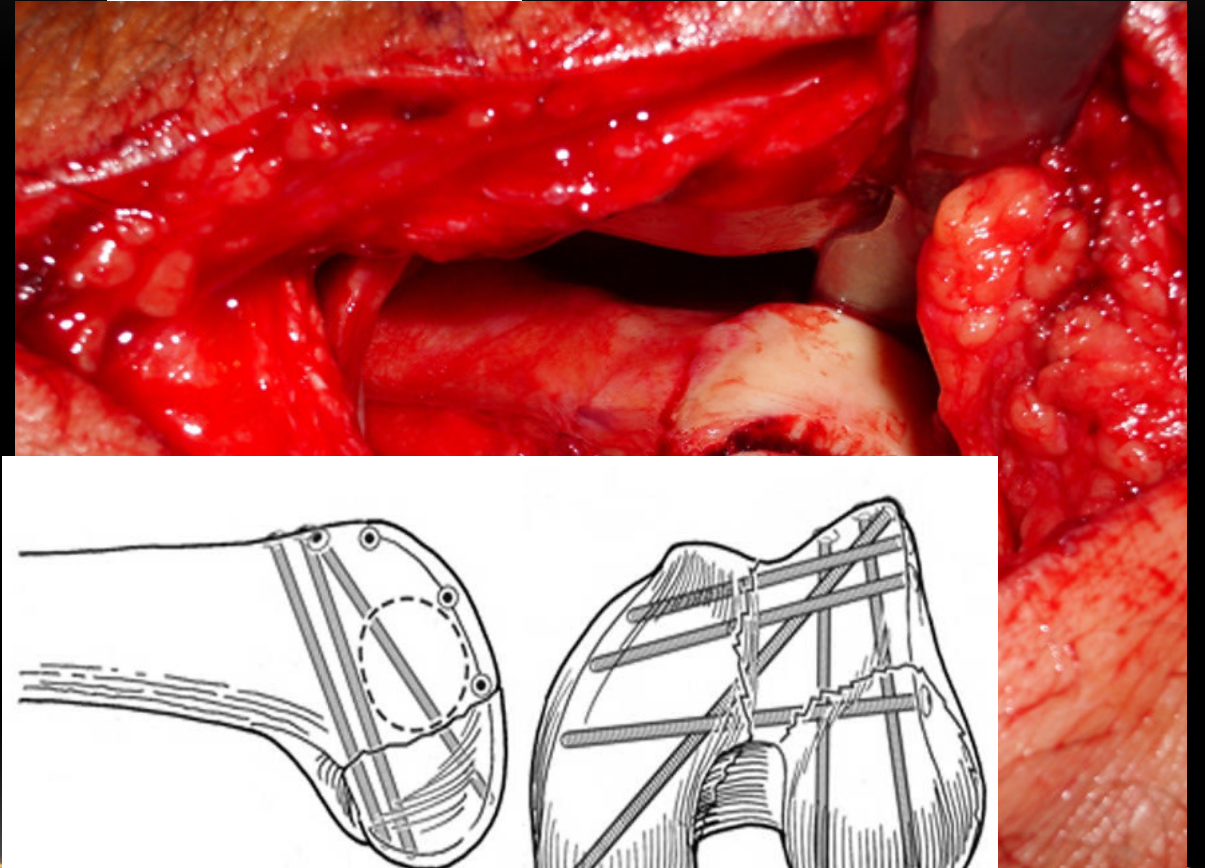
## LEARNING POINT # 2

LOCKING PLATE ER WORK HORSE, MEN SØM ER  
BEDRE I NOGLE CASES

Metaphyseal comminuted – displaced or complex intra articular



- **Locking plate**
- Supine (traction)
- Big anterior midline skin incision
- Lateral para-patellar approach
- Open reconstruction joint
- Lateral locking plate
- Medial augmentation (plate)



OUH  
0  
S



Syddanmark

PostOP



SOUTHERN DENMARK



4 Mo



AO  
TRAUMA

## LEARNING POINT # 3

INTRAARTIKULÆRE FRAKTURER KRÆVER ÅBEN  
REPOSITION OG FIKSATION MED ABSOLUT  
STABILITET

# CASE, 67-YEAR-OLD FEMALE, OSTEOPOROSIS



AFTER FEW DAYS, DISTAL FEMORAL REPLACEMENT



3 months

## LEARNING POINT # 4

# RESPEKTER GRÆNSER – ALLOPLASTIK KAN VÆRE BEDSTE LØSNING

## TAKE HOME MESSAGE

- Flest ældre, hurtig mobilisering redder liv
- Locking plate er work horse, men søm er bedre i nogle cases
- Intraartikulære frakturer kræver åben reposition og fiksaton med absolut stabilitet
- Respekter grænser – alloplastik kan være bedste løsning

