

# Patellafrakturer

AO Basic Danmark 2023

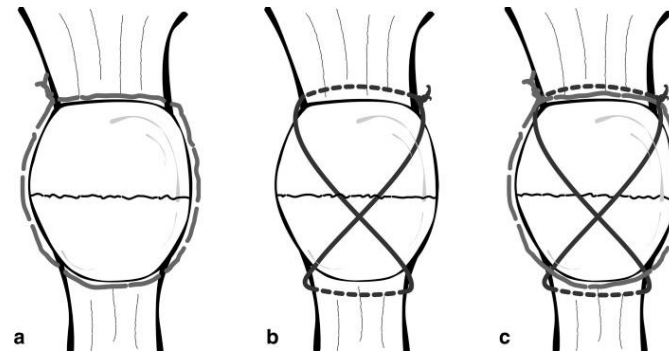


# Patellafrakturer – hvordan gør I hos jer?

1



2

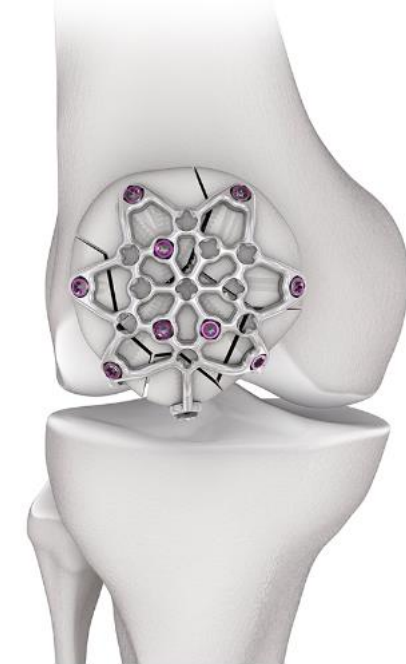


3



+ osteosutur/  
tensionband

4



# INDHOLD (15 min.)

- Epidemiologi/traumemekanisme
- Klassifikation
- Behandling
- Komplikationer
- Fremtiden
- Take-home messages

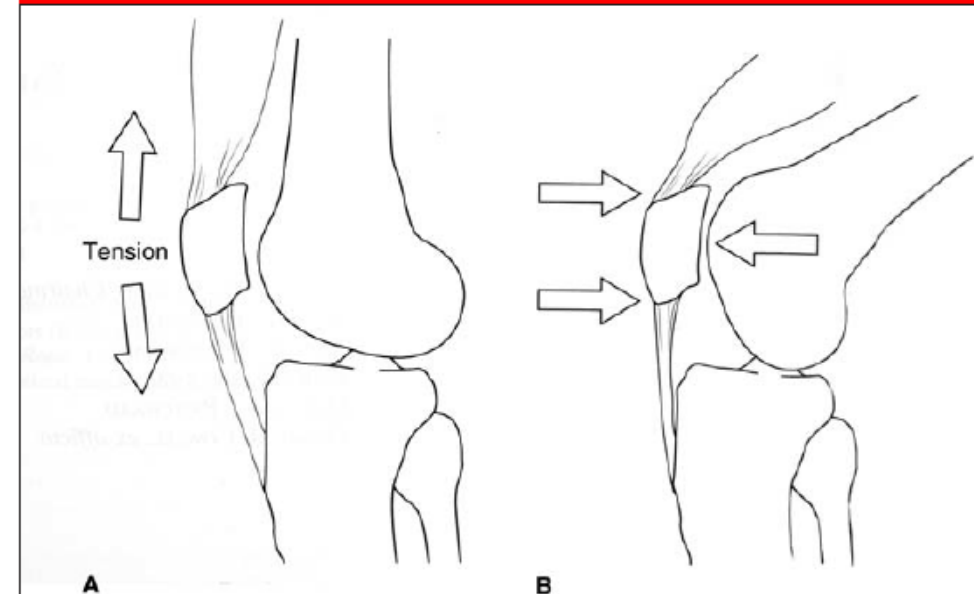


# Epidemiologi

- Ca. 1% af alle frakturer
- En udsat knogle, grundet placering og biomekanik
- Direkte traume er hyppigst
- Ca. 1/2 er udislocerede med bevaret ekstensorapparat



Figure 3



A, The patella is loaded primarily in tension with the knee in full extension. B, During flexion, the patella experiences a combination of tension, compression and three-point bending forces (arrows). (Reproduced with permission from Carpenter JE, Kasman R, Matthews LS: Fractures of the patella. *J Bone Joint Surg Am* 1993;75:1550-1561.)

# Klassifikation

## AO/ OTA Classification

### Tager udgangspunkt i:

- **Disloceret / ikke disloceret**
- **Type:** Transvers, vertikal, avulsioner, komminutte, osteokondrale
- **Placering:** Centrale, proksimale, distale

<p><b>Extra articular</b></p> 	<p><b>34-A1</b> avulsion</p> 	<p><b>34-A2</b> isolated body</p> 	
<p><b>Partial articular</b></p> 	<p><b>34-B1</b> vertical, lateral</p> 	<p><b>34-B2</b> vertical, medial</p> 	
<p><b>Complete articular</b></p> 	<p><b>34-C1</b> transverse</p> 	<p><b>34-C2</b> transverse plus second fragment</p> 	<p><b>34-C3</b> complex</p> 

# Diagnostik

## Røntgen – 3 projektioner



# Behandling

## Målet er at genskabe:

- Ekstension
- Ledflade

## Konservativt

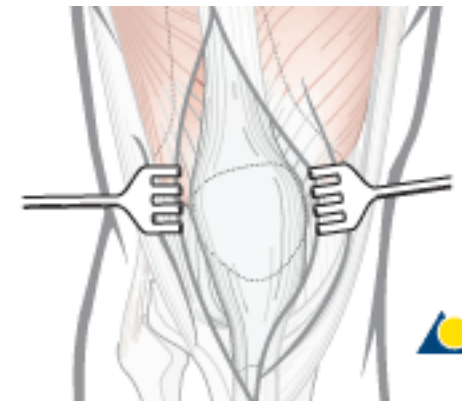
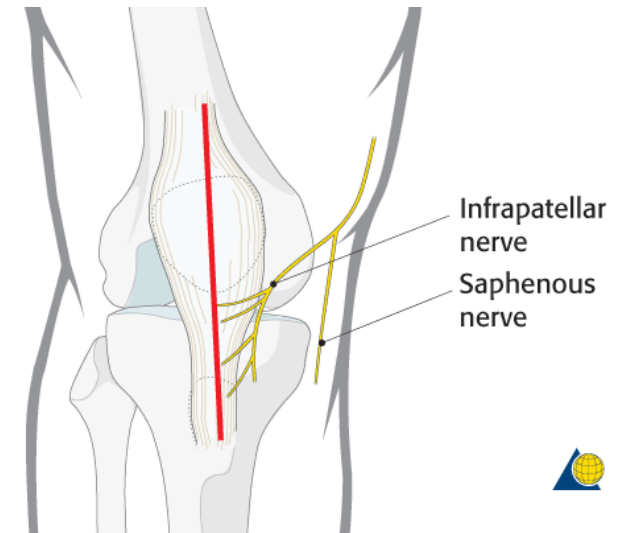
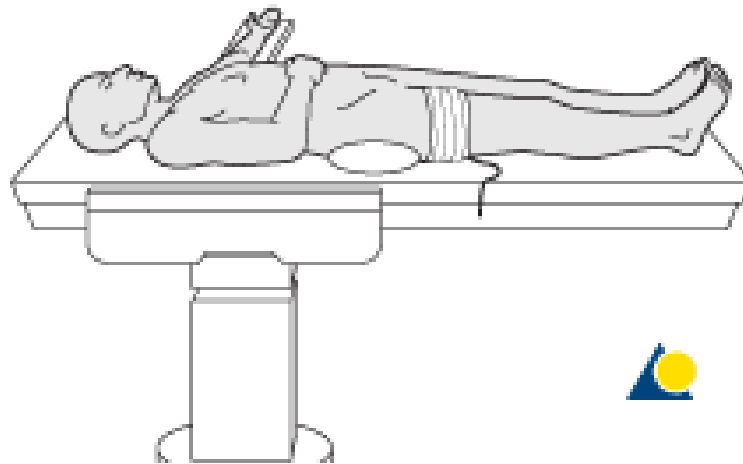
- Fleste vertikale + udislocerede (< 2 mm)
- Hængselbandage 6-8 uger med gradvis oplåsning

## Patellectomi, helt eller delvist



# Behandling - ORIF

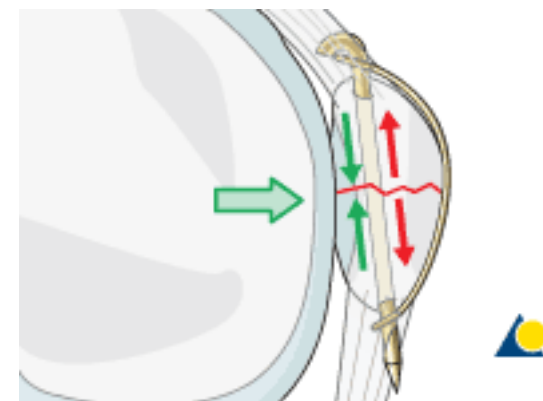
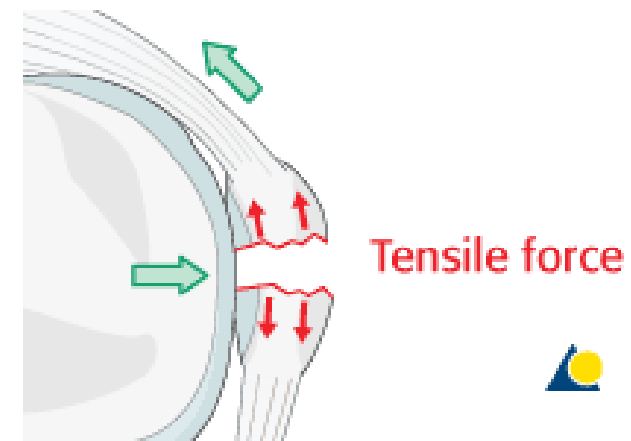
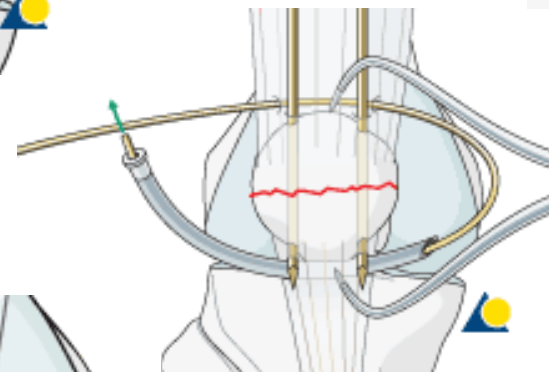
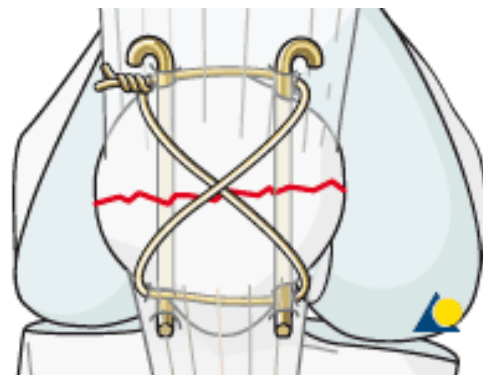
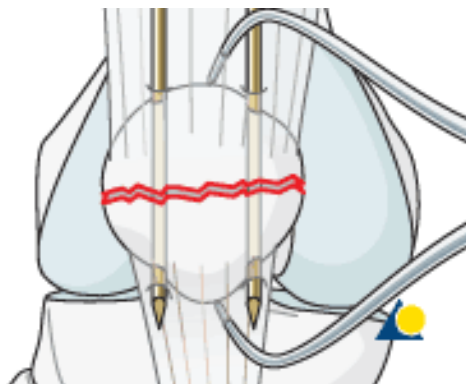
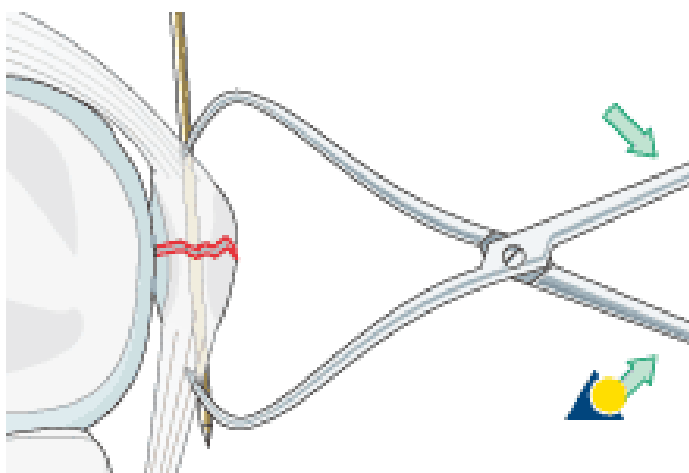
- K-tråde og cerclage
- Skruer +/- osteosutur/tensionband
- Skinner





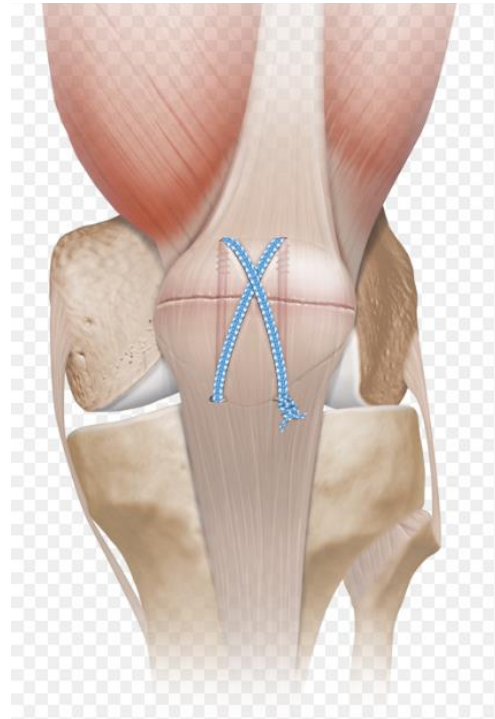
# Behandling - ORIF

- K-tråde og cerclage
- Skruer
- Skinner

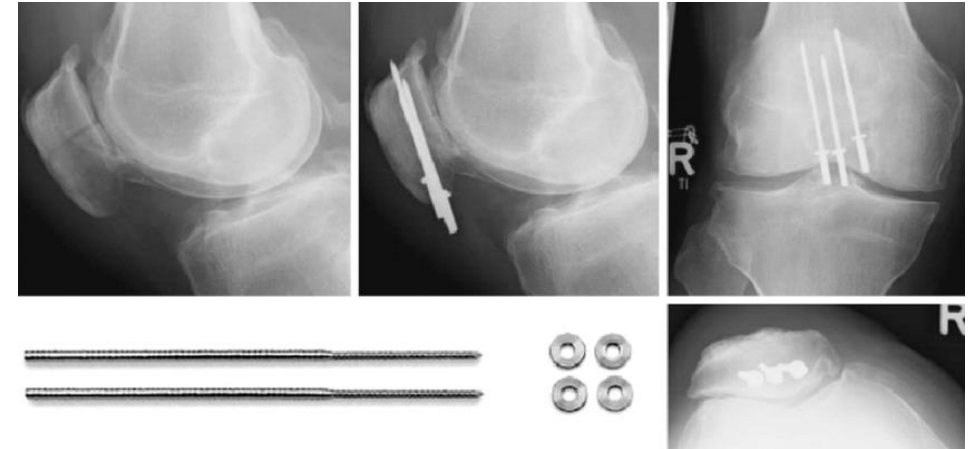


# Behandling - ORIF

- K-tråde og cerclage
- **Skruer**
- Skinner

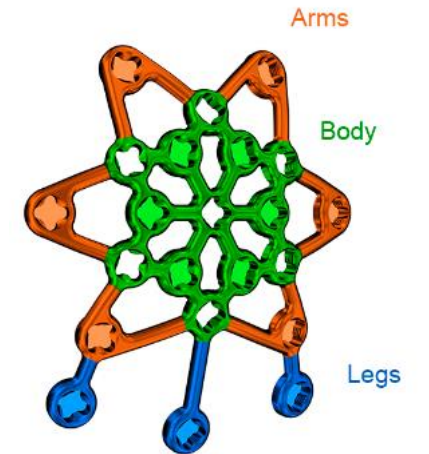
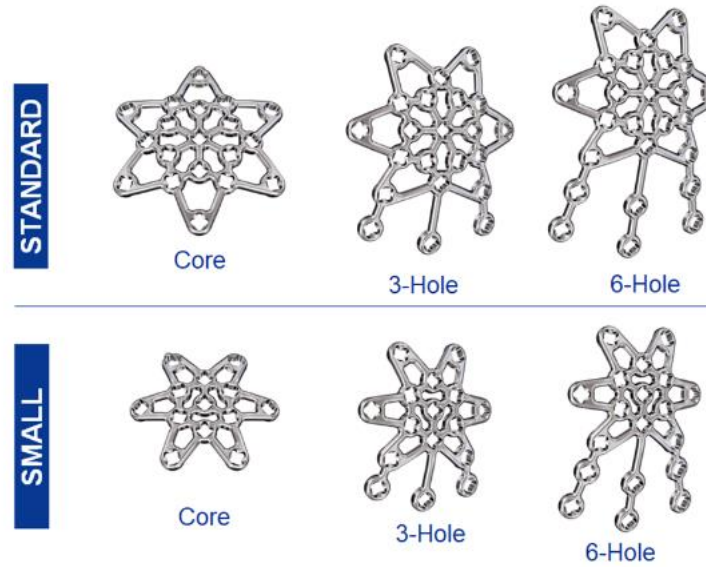
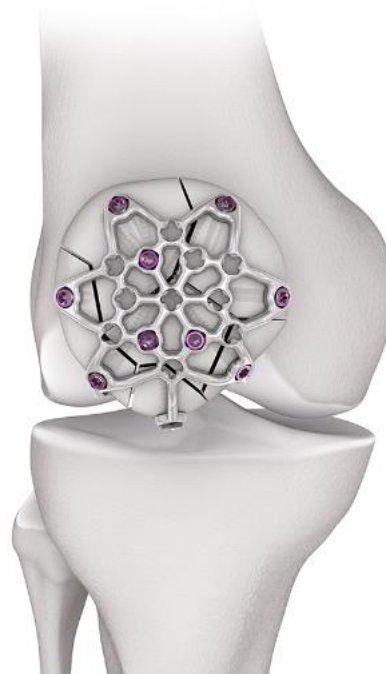


## FRAGMENT FIXATION SYSTEM



# Behandling - ORIF

- K-tråde og cerclage
- Skruer
- **Skinner**



# Behandling – hvad skal man vælge...

Adjal and Ban Jou  
<https://doi.org/10.1186/s13047-015-0088-1>

**TECHNIQUE**

## Patella band

J. Adjal\* and L.



# Behandling



## Summary

Archiv

Surgi

Andrew

Division c

\*Correspo

Received

Citation:

Patella fractures are common and present in a variety of fracture patterns. Multiple techniques exist for management and the treatment options are dictated by fracture comminution, displacement, and integrity of the extensor mechanism. The goal of all fixation methods is to achieve an anatomic reduction with a construct that can tolerate early knee range of motion while resisting fracture displacement. Modern techniques and implants attempt to achieve these goals while minimizing symptomatic hardware irritation.

Careful consideration of the fracture pattern and the use of non-absorbable suture tension bands through cannulated compression screws or low profile patella plates can improve patient outcomes and decrease complications.

Review

# Behandling

## Abstract

- ▶: A preoperative computed tomography scan may be considered to improve surgical planning, as secondary fracture lines are poorly visualized on radiographs.
- ▶: Oblique internal and external rotation fluoroscopic views may be used intraoperatively to fully evaluate the medial and lateral facet articular reduction if direct assessment by visualization or palpation is not completed.
- ▶: Partial patellectomy for inferior pole fractures should be avoided, and bone-preserving procedures are recommended.
- ▶: A lateral arthrotomy may be used for direct visualization of the articular reduction for multifragmentary fractures. An inferomedial arthrotomy should be avoided to protect the dominant blood supply of the patella.
- ▶: Tension band fixation with cannulated screws yields a lower reoperation rate, improved functional outcome scores, and better performance in biomechanical studies than Kirschner wire-based tension band fixation.
- ▶: Preliminary studies of novel plate and screw constructs for osteosynthesis have shown promising results.

# Komplikationer

- Smerter og nedsat bevægelse/kraft (40-80%)
- Infektion (3-10%)
- Osteosyntesesvigt (-> 20%)
- Gener fra hardware => AA (-> 37%)
- Posttraumatisk artrose (8,5%)



[GMS Interdiscip Plast Reconstr Surg DGPW](#), 2016 Jan 18;5:Doc01. doi: 10.3205/ipsr000080. eCollection 2016.

## Current concepts review: Fractures of the patella.

[Gwinner C](#)<sup>1</sup>, [Märdian S](#)<sup>1</sup>, [Schwabe P](#)<sup>1</sup>, [Schaser KD](#)<sup>2</sup>, [Krapohl BD](#)<sup>3</sup>, [Jung TM](#)<sup>1</sup>.

[Orthop Clin North Am](#), 2016 Jan;47(1):77-83. doi: 10.1016/j.ocl.2015.08.010.

## Surgical Management of Patellar Fractures.

[Kakazu R](#)<sup>1</sup>, [Archdeacon MT](#)<sup>2</sup>.

# Fremtiden...?





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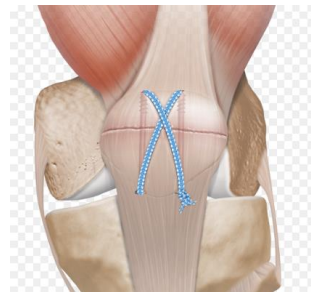
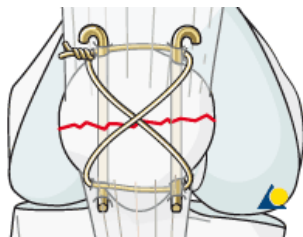
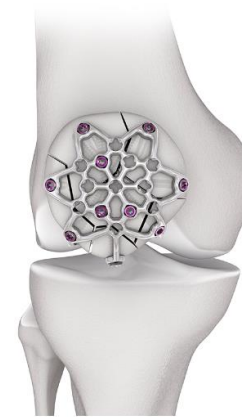
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2	<input type="checkbox"/>	Recruiting	<a href="#">Tension Band Versus Locking Plate Fixation for the Treatment of Patella Fractures</a>	<ul style="list-style-type: none"> <li>Patella Fracture</li> <li>Surgery</li> <li>Orthopedic Disorder</li> </ul>	<ul style="list-style-type: none"> <li>Procedure: Tension band fixation</li> <li>Procedure: Plate fixation</li> </ul>	<ul style="list-style-type: none"> <li>Aalborg University Hospital Aalborg, Denmark</li> <li>Aarhus University Hospital Aarhus, Denmark</li> <li>Regional Hospital Hjoerring Hjoerring, Denmark</li> <li>(and 3 more...)</li> </ul>
3	<input type="checkbox"/>	Completed	<a href="#">Clinical Outcome After Treatment of Patellar Fractures With Locking Plates</a>	<ul style="list-style-type: none"> <li>Fracture of Patella</li> </ul>		<ul style="list-style-type: none"> <li>Diakoniekrankenhaus Friederikenstift Hannover Hannover, Niedersachsen, Germany</li> </ul>
4	<input type="checkbox"/>	Completed	<a href="#">Effect of Designated Education Session on Patellofemoral Pain</a>	<ul style="list-style-type: none"> <li>Knee Cap</li> </ul>	<ul style="list-style-type: none"> <li>Other: Physiotherapy + education</li> <li>Other: Physiotherapy</li> </ul>	<ul style="list-style-type: none"> <li>Royal Liverpool &amp; Broadgreen University Hospitals Trust Liverpool, Merseyside, United Kingdom</li> </ul>

# Fremtiden...?

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# Take-Home messages...

- Rekonstruktion af ekstension og ledflade
- Forskellige former for ORIF, evidensen...
  - Klassisk TB < Skruer + TB ≤ Skinner?
- Oftest en svær operation med høj komplikationsrate!



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