

# Complex tibia plateau fracture - Circular external fixation



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# Message

- Circular frames and plates are not competing methods, but complementary tools
- Select on the basis of fracture patterns and soft tissue status

*The Canadian Orthopaedic Trauma Society*

**Open reduction and internal fixation compared with circular fixator application for bicondylar tibial plateau fractures. Results of a multicenter, prospective, randomized clinical trial.**

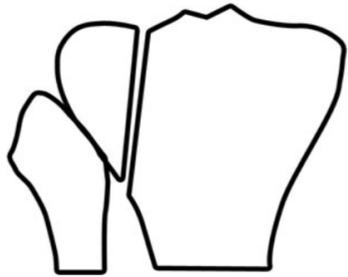
**J Bone Joint Surg Am. 2006; 88: 2613-2623**

# AIM

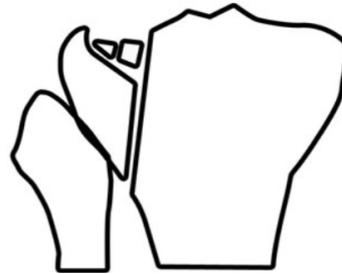
- Respecting the soft tissues
- Reducing the fracture
- Stabilizing the fracture with the appropriate method

# Ring fixation

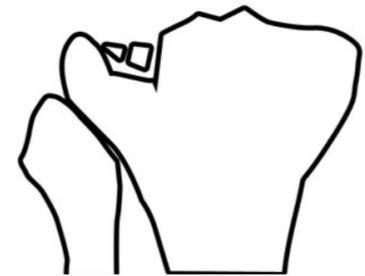
Schatzker J, McBroom R, Bruce D (1979) The tibial plateau fracture: the Toronto experience 1968–1975. Clin Orthop Rel Res 138:94–104



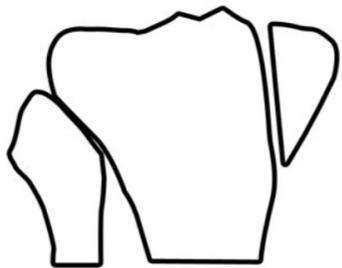
Schatzker I



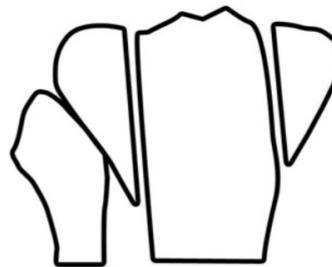
Schatzker II



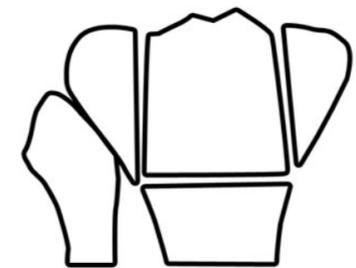
Schatzker III



Schatzker IV



Schatzker V

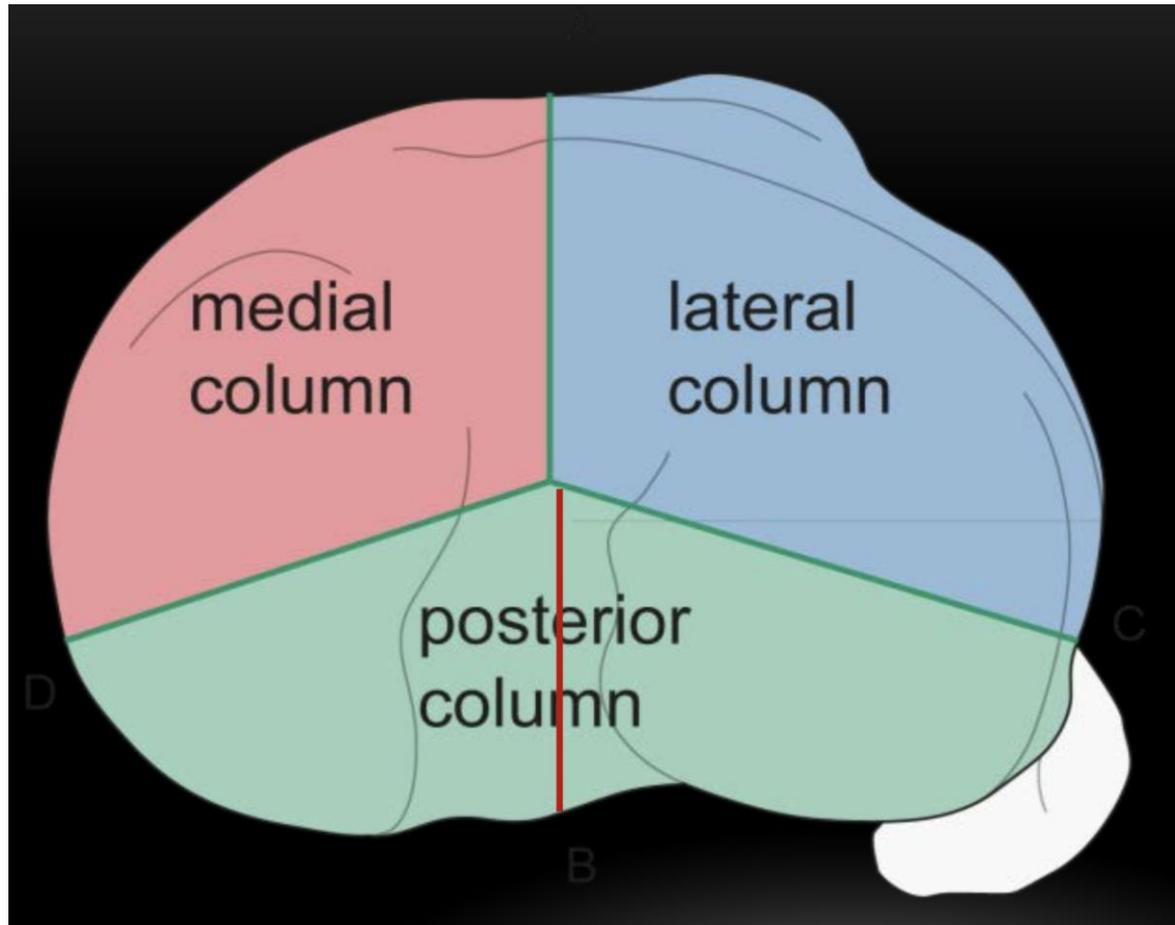


Schatzker VI

# Preoperative planning: 3 column concept

Medial approach in supine position

Lateral approach in supine position



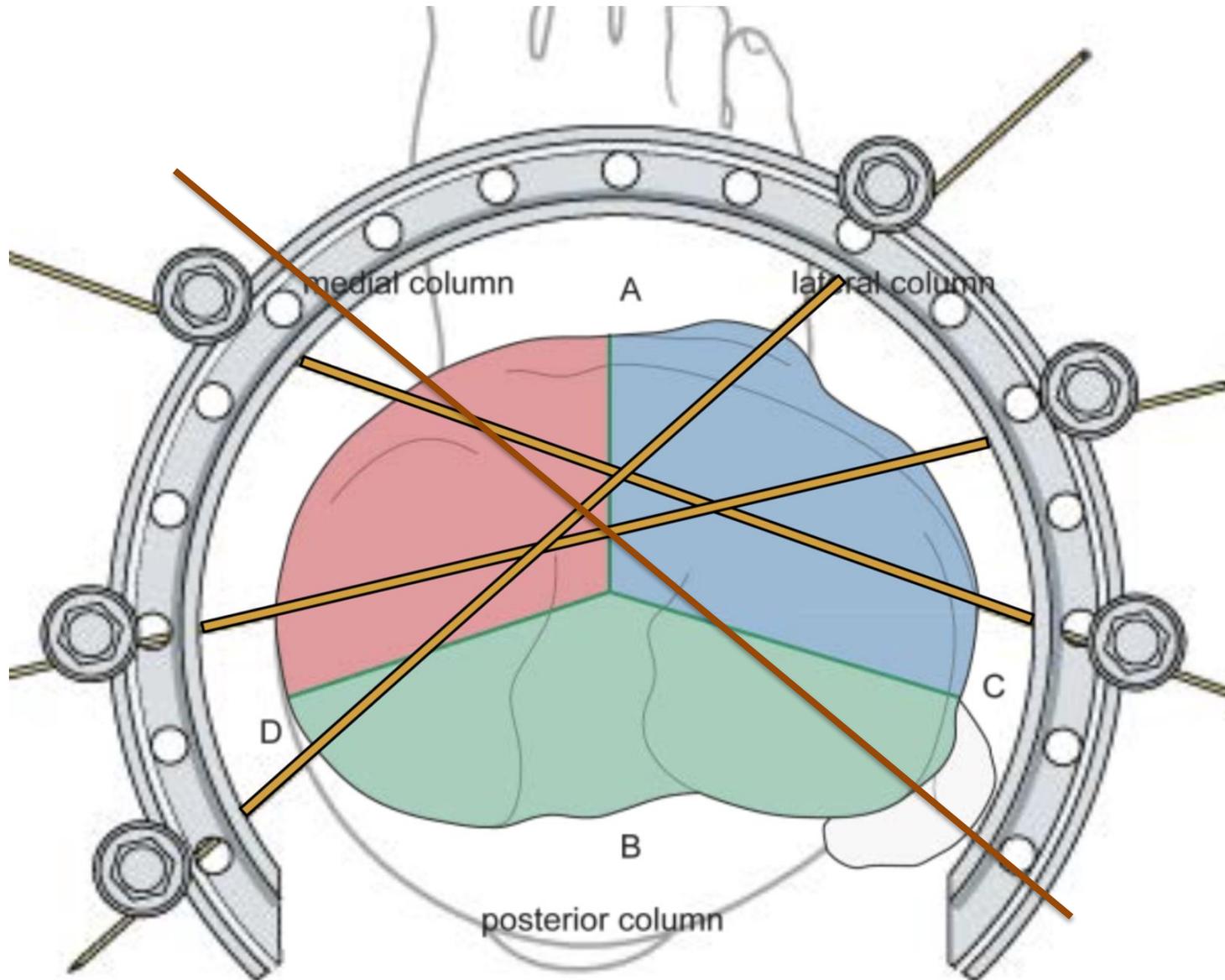
Postero-medial / posterior approach in prone position

Tibial Plateau Fracture Characteristics: Computed Tomography Mapping of Lateral, Medial, and Bicondylar Fractures

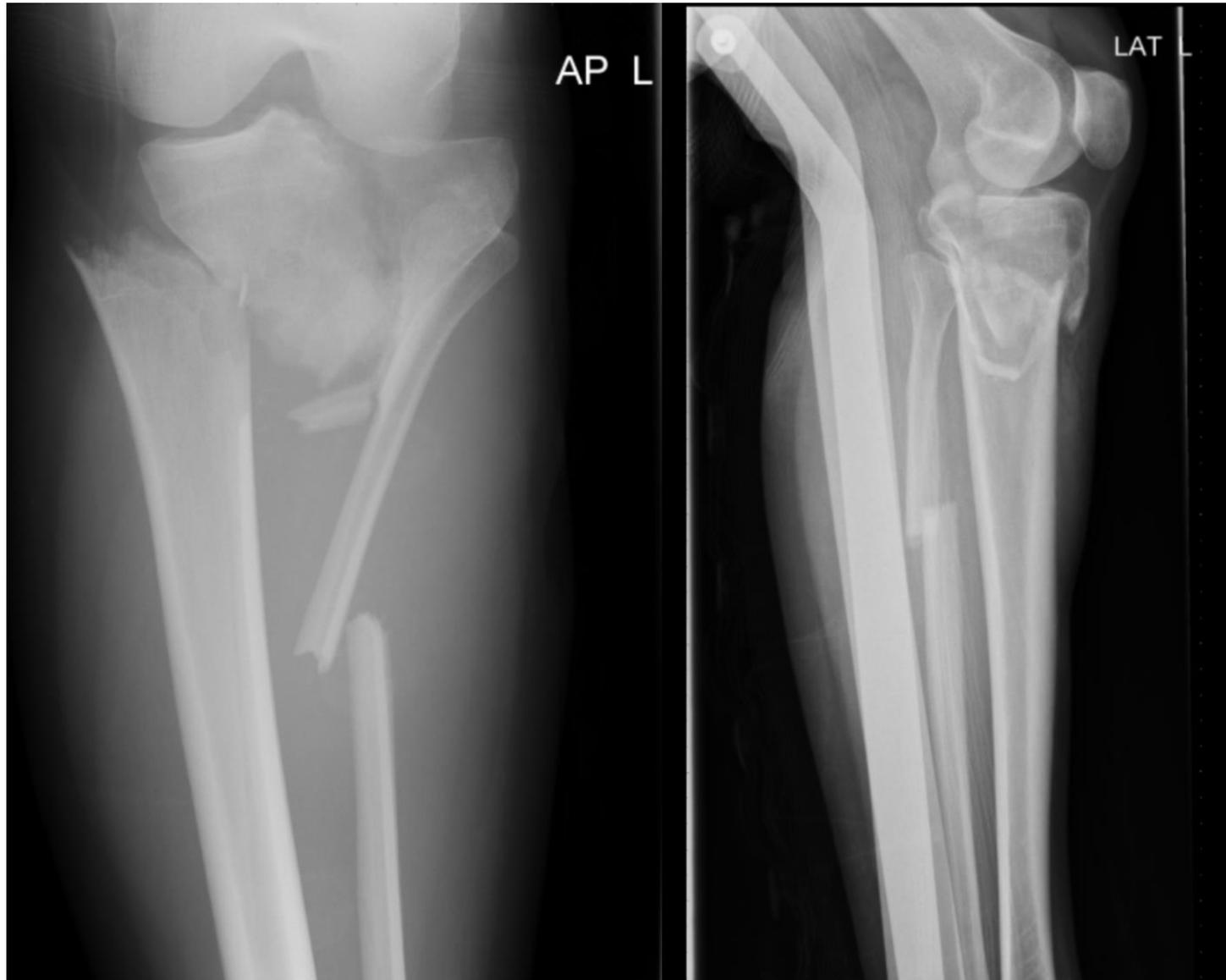
Rik J. Molenaars, BSc, Jos J. Mellema, MD, Job N. Doornberg, MD, PhD, and Peter Kloen, MD, PhD  
Orthotrauma Research Center Amsterdam, Academic Medical Center, Amsterdam

THE JOURNAL OF BONE & JOINT SURGERY 2015

# Preoperative planning

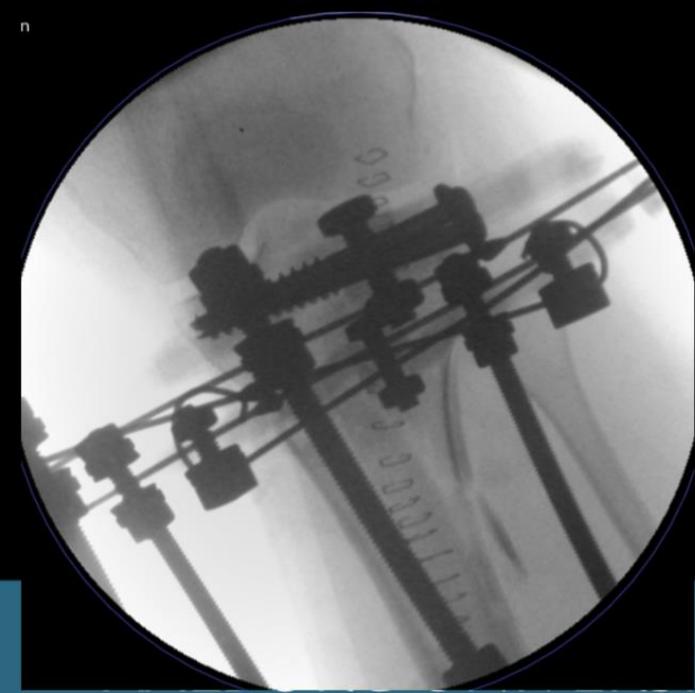


24 years old female; high-energy open Schatzker VI



# Span – Scan - Plan





## Circular frame strategy

- 1) Basis frame – Femur ring: Ligamentotaxis (condylar height)
- 2) Open reduction: allograft; cannulated screws: absolute stability of intra-articular fragments
- 3) Proximal tibia ring: relative stability of metaphyseal fracture

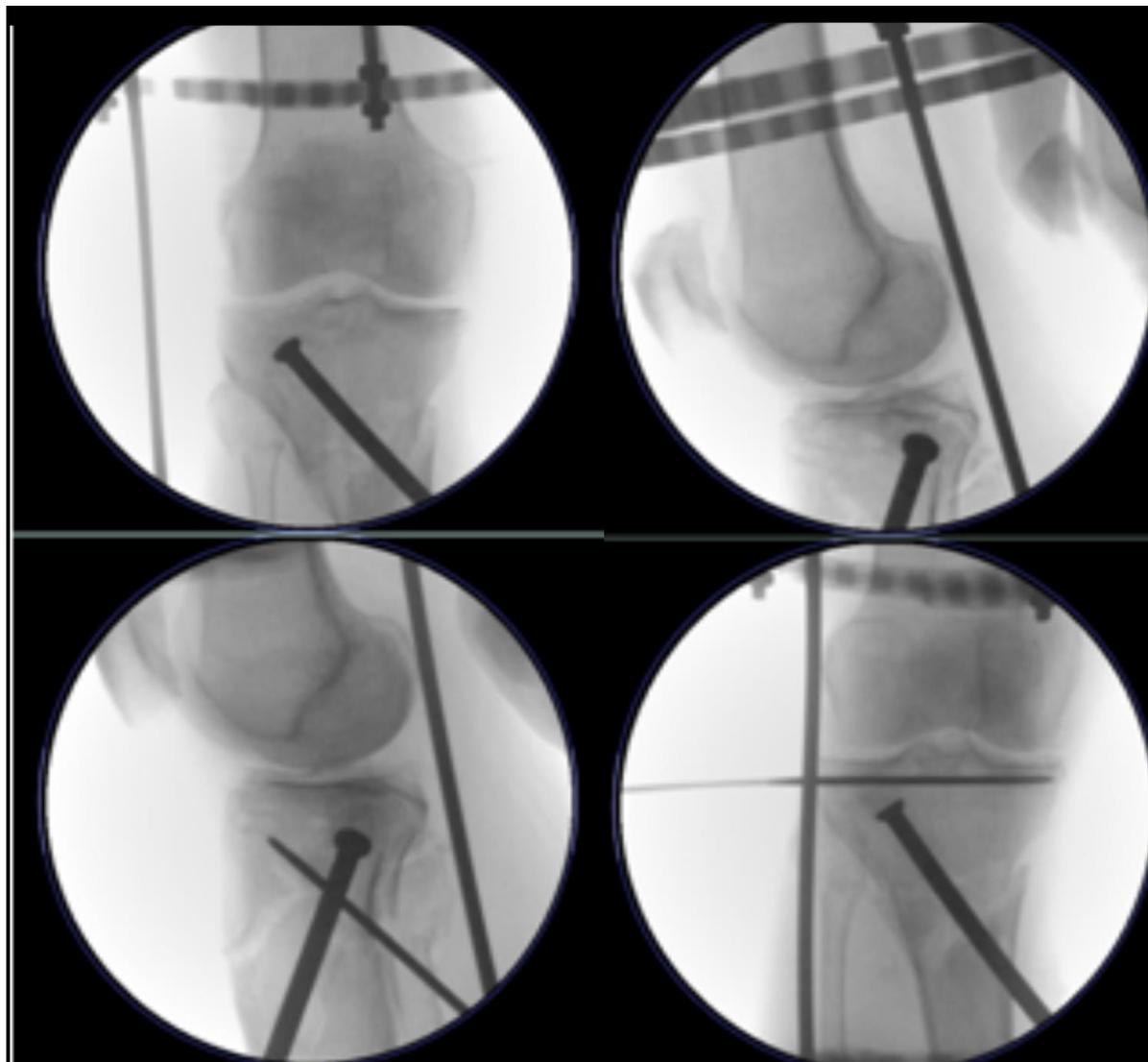


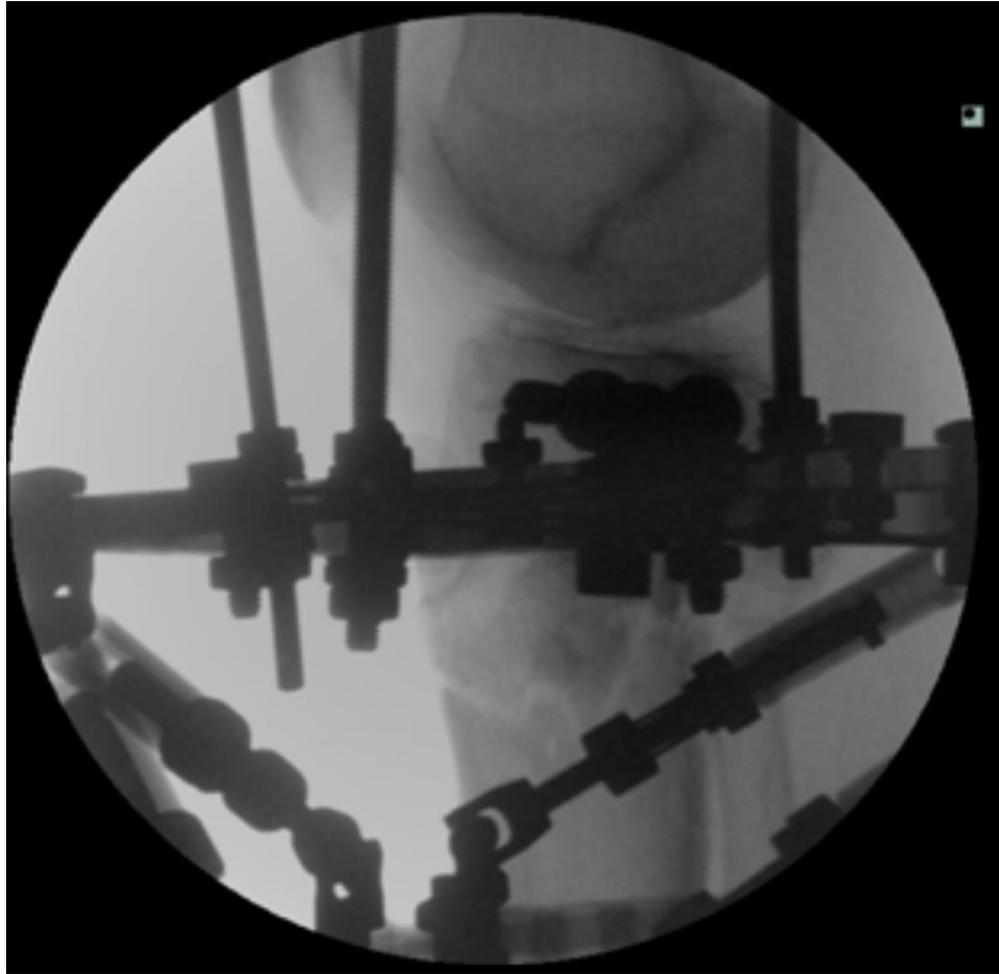
- Non-weight bearing for 6 weeks
- ROM exercises with orthoses for 6 weeks
- Frame-time: 6 months

# 1 year post-injury: Full ROM

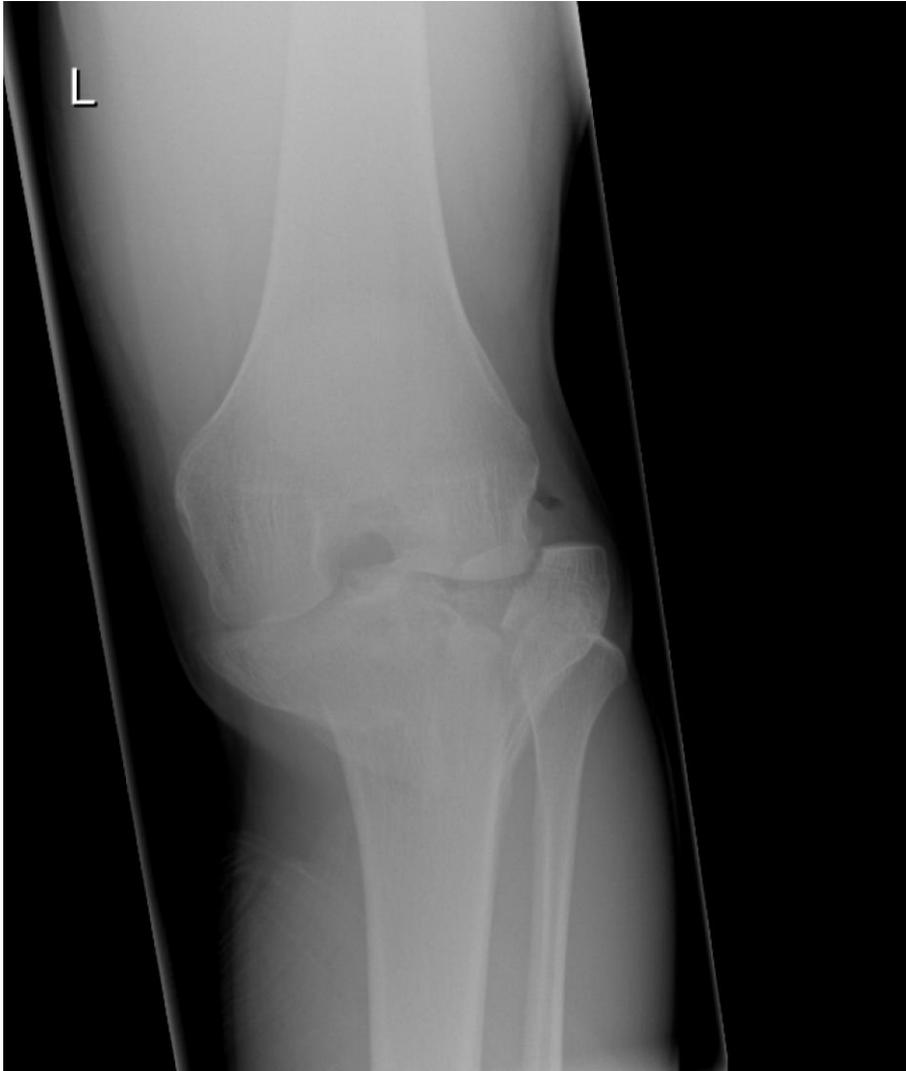


# 64 years-old skiing injury

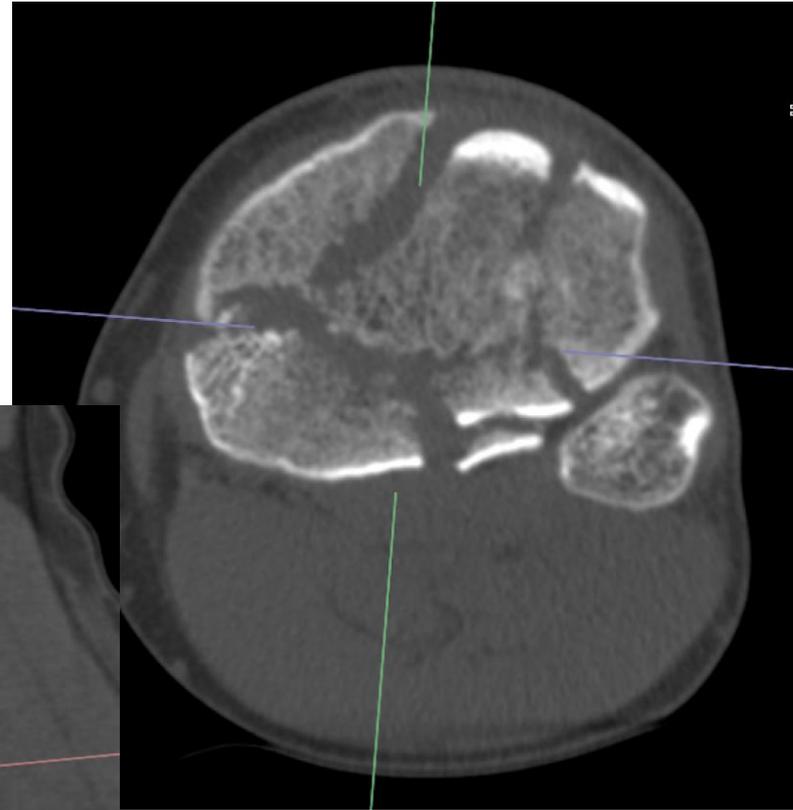




Frame ?



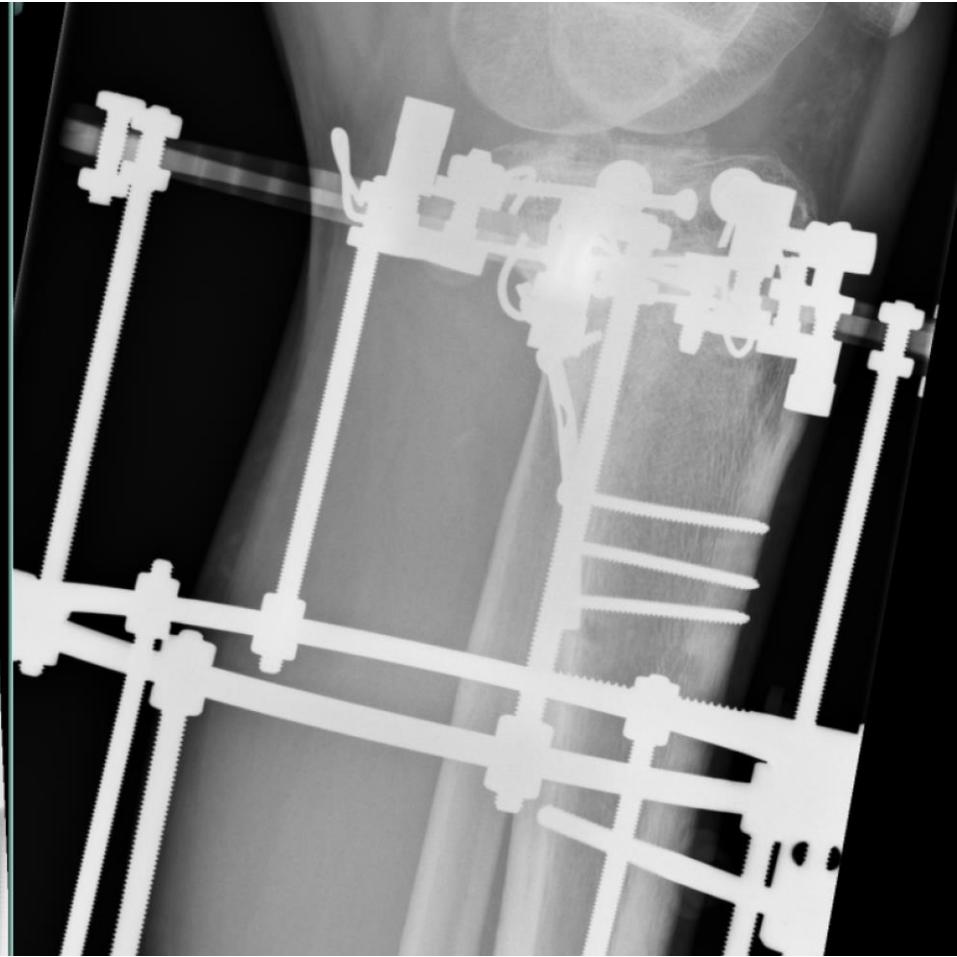
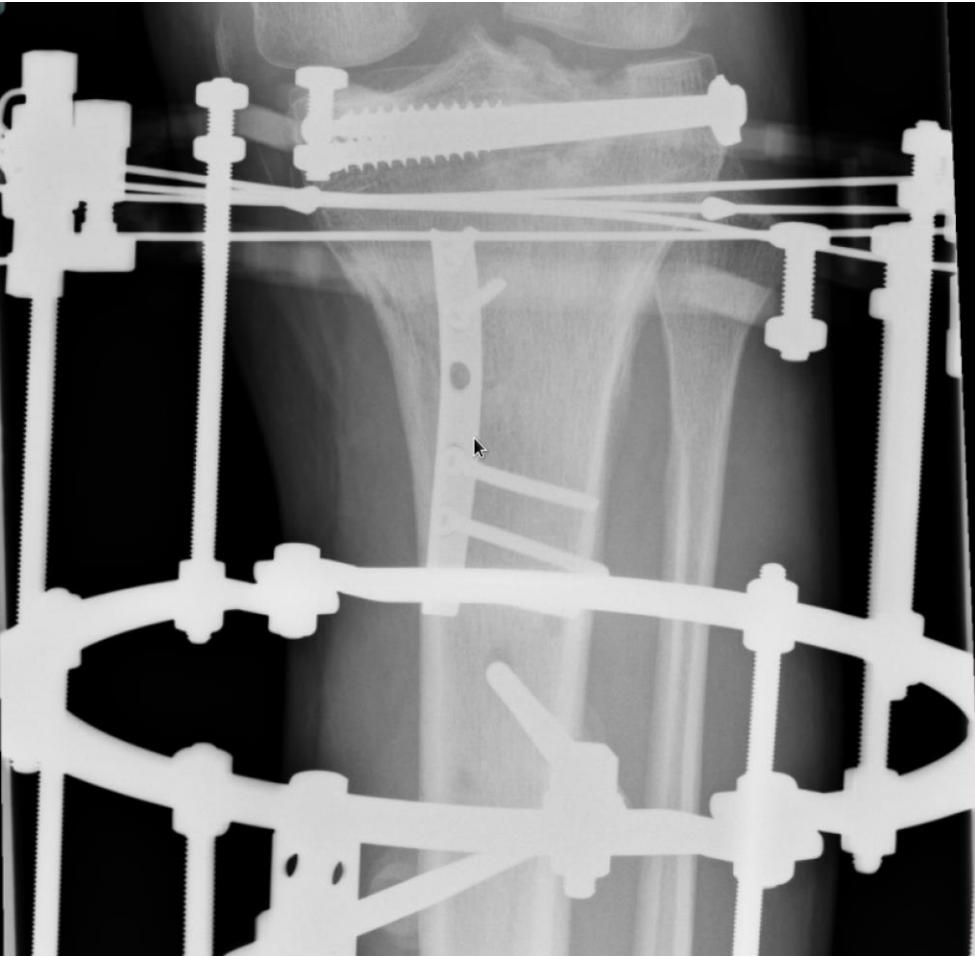
# 3 column fracture



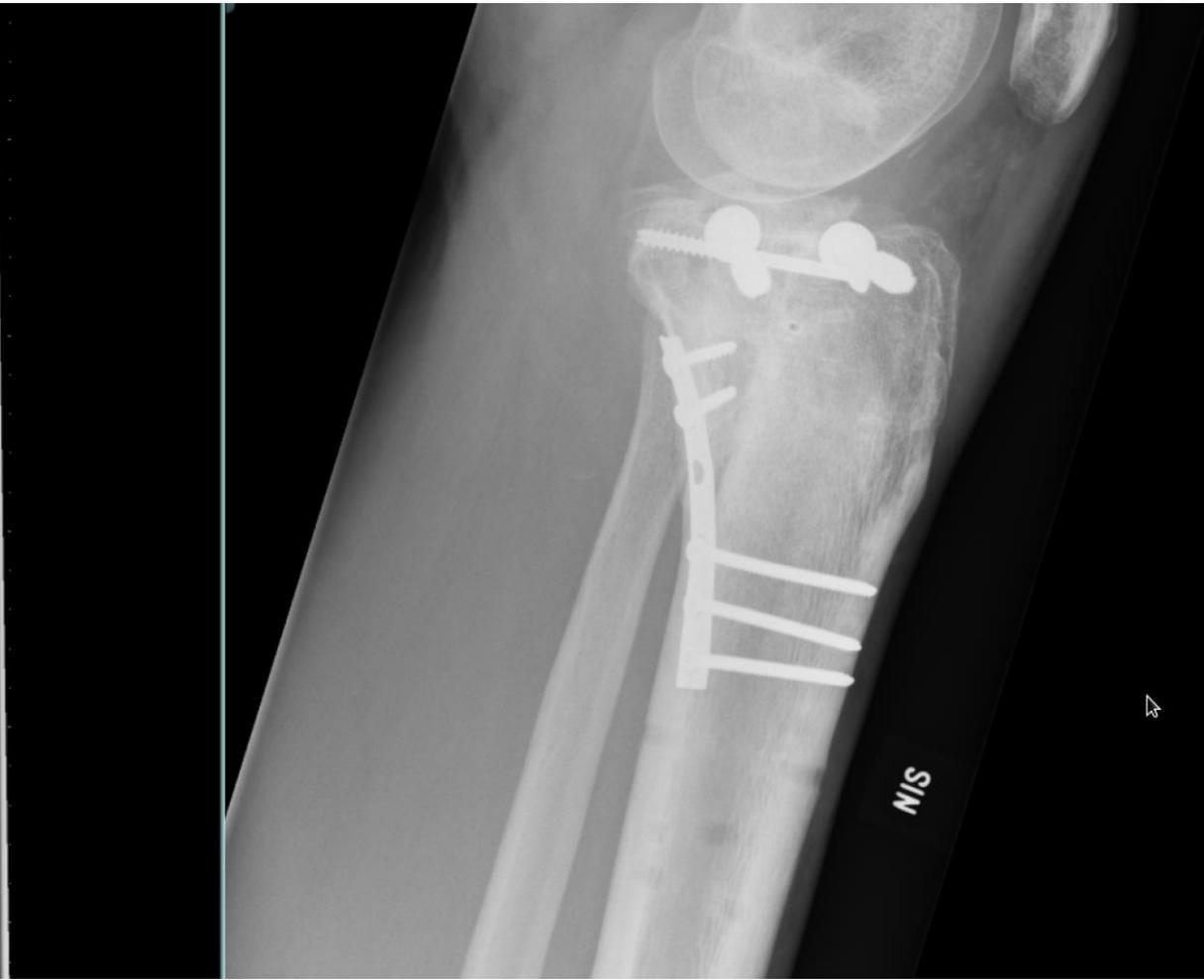
# 3 column fracture



# 3 column fracture



# 3 column fracture



# Take Home Message

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