Tibial plateau fractures & the soft-tissue envelope

Plan around limb safety, joint stability and the condition of the skin.

SURGICAL DECISIONS / ADULT TRAUMA

A tibial plateau fracture is a joint and soft-tissue injury; the timing of reconstruction must account for both.

01 Check limb safety

Assess wounds, swelling, skin tension, perfusion and nerve function. Repeat compartment assessments when the injury or symptoms warrant them. Escalate a threatened limb immediately; a palpable pulse does not exclude compartment syndrome.

02 Understand the pattern

Use radiographs and CT to define depression, displacement and fracture extent when planning treatment. Consider associated ligament or meniscal injury. MRI may help selected questions, including persistent clinical suspicion with unrevealing radiographs.

03 Choose a staged plan

Selected stable patterns may be managed without surgery. Displaced or unstable injuries need specialist planning. Marked soft-tissue damage or physiological concerns may favour temporary external fixation before definitive reconstruction.

04 Specify rehabilitation

Document weight-bearing limits, knee-motion advice and follow-up imaging. Match progression to fracture stability, treatment and tissue recovery. Discuss the possibility of stiffness and post-traumatic arthritis even when alignment and healing are satisfactory.

WATCH POINT Increasing pain, pain on passive stretch or evolving sensory change requires prompt review. Do not attribute deterioration to swelling without assessment.

DISCUSS WITH THE TEAM

What currently limits definitive treatment: physiology, the soft tissues, instability or the articular injury?

READ THE SOURCES

[1] AAOS OrthoInfo: Fractures of the Proximal Tibia; assessment and treatment.
[2] BOASt: Compartment Syndrome of the Extremities (revised July 2025).