# Fracture-related infection

Diagnose deliberately and treat the bone, implant and tissues.

RECOVERY & COMPLICATIONS / ADULT TRAUMA

## Infection management must preserve or restore fracture stability while achieving microbiological and soft-tissue control.

### 01 Separate clues from proof

A sinus or wound breakdown communicating with bone or implant, or purulence, is confirmatory. Pain, redness, drainage or raised inflammatory markers are suggestive and warrant further investigation.

### 02 Obtain meaningful samples

Plan multiple separate deep tissue samples using clean instruments. Superficial swabs are unreliable for defining the deep pathogen. Coordinate microbiology, histology and antimicrobial timing with the specialist team.

### 03 Choose a surgical strategy

Assess union, implant stability, tissue viability and host factors. Options include retention in selected cases, removal after union or exchange when the fracture remains unhealed. Debridement, dead-space management and coverage are central.

### 04 Coordinate antimicrobial care

In a stable patient, obtain operative samples before empirical antibiotics, then tailor therapy to results. In sepsis, urgent treatment must not be delayed for an elective sampling plan. Arrange multidisciplinary follow-up.

**WATCH POINT** Normal inflammatory markers do not exclude a chronic fracture-related infection.

DISCUSS WITH THE TEAM

**Is the fracture united, is the construct stable, and can the soft tissues support the proposed strategy?**

READ THE SOURCES

[1] FRI Consensus Group: diagnosing fracture-related infection (2020).
[2] FRI Consensus Group: general treatment principles (2020).

Educational summary for clinicians. Apply local protocols and patient-specific judgement.