TISSUE VITALITY AND EFFECT OF INJURY

"…the bone is a plant, with its roots in the soft tissue, and when its vascular connections are damaged, it often requires, not techniques of a cabinet maker, but the patient care and understanding of a gardener." Girdlestone

VIL I LAVE ORIF?

- Hvad skal vi lægge til grund for beslutningen?

VIL I LAVE ORIF?

- Hvad skal vi lægge til grund for beslutningen?
  - Frakturtype?
  - Alder?
  - Comorbiditet?
  - Rygning?
  - Diabetes?
  - Puls i fod?
  - Medicin?
  - Skademekanisme?

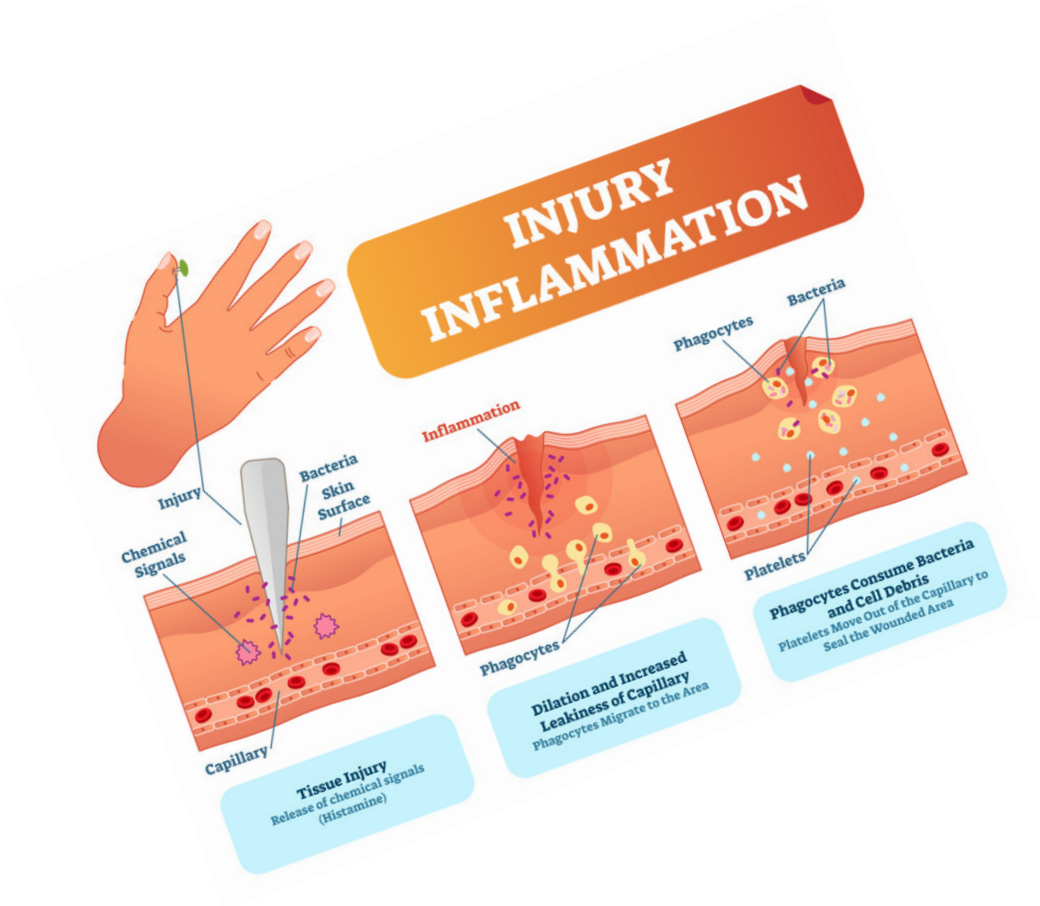
LAVPRAKTISK METODE

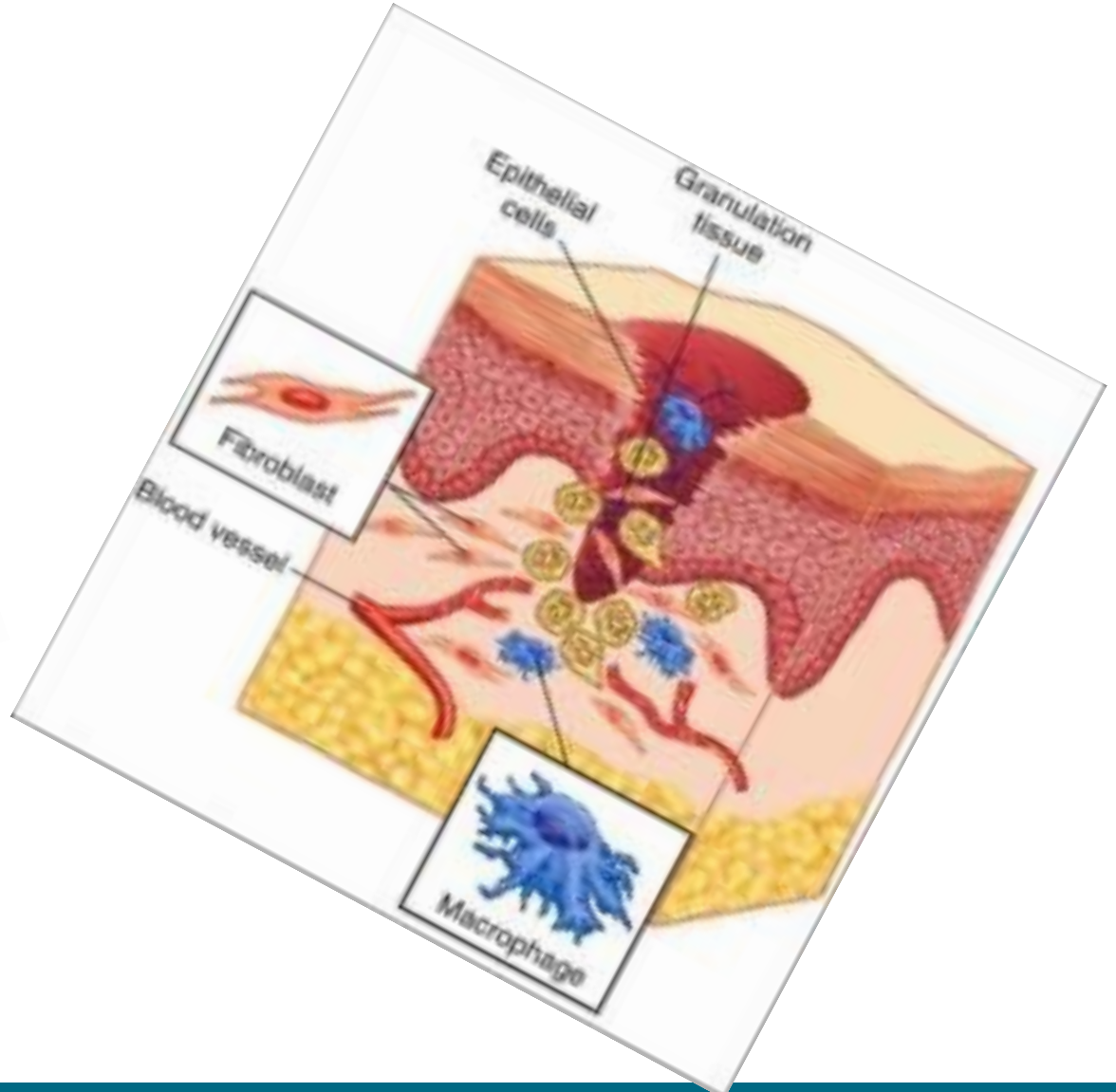
- Rynketesten

UDEFRA KOMMENDE FAKTORER

- Type of insult and area of contant
- Magnitude of force applied
- Direction of force
- Where on the body
- Contamination

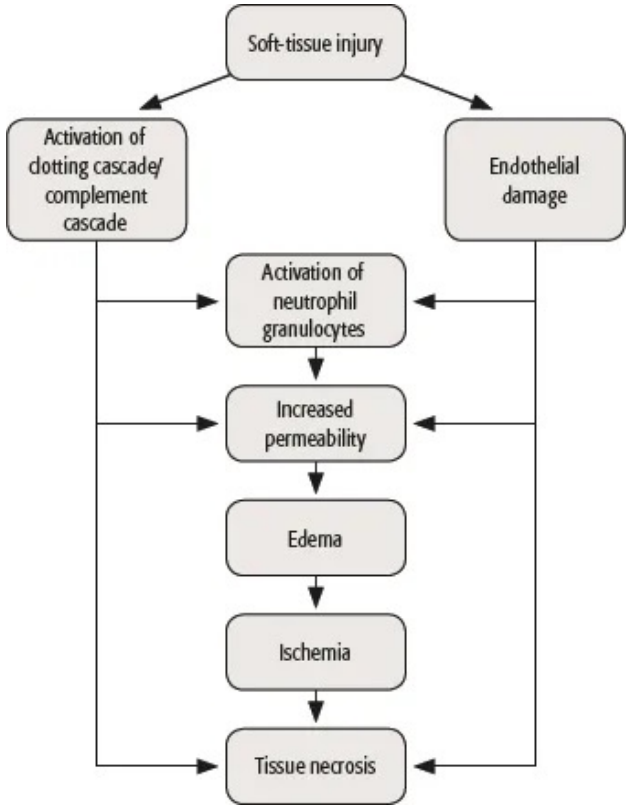
MEN HVAD ER BAGGRUNDEN FOR VORES VURDERING





MEN HVAD KAN VI GØRE NOGET VED?

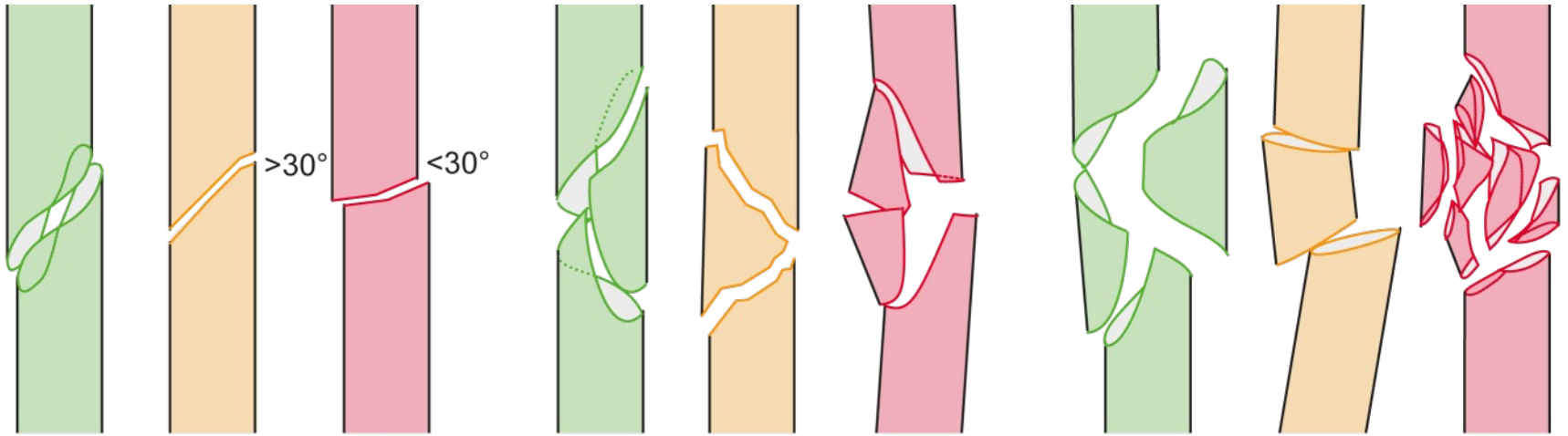
- Sekundær skade



HVAD VISER PATIENTEN OS?

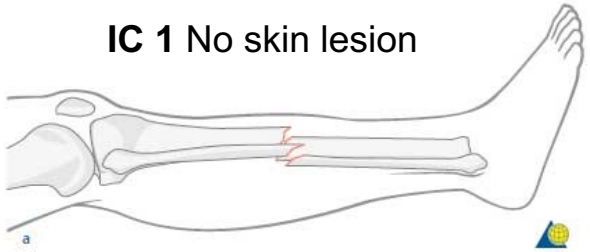
FRAKTURMØNSTRE (AO KLASSIFIKATION)

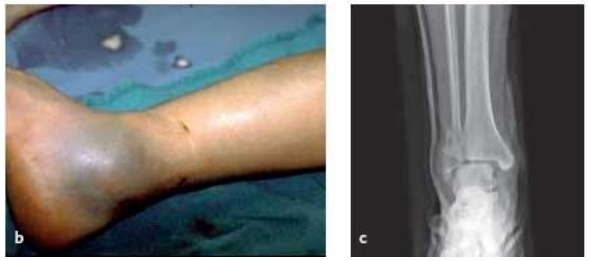
- Torsion (ski)
- Bøjning (indirekte)
- Kompression (fald fra højde)
- Kontusion (direkte, Kofangerskade)
- Kombinationer



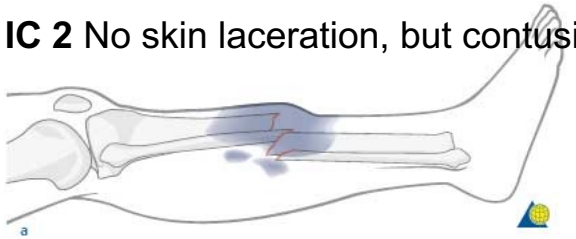
AO soft-tissue classification: closed skin lesions

IC 1 No skin lesion

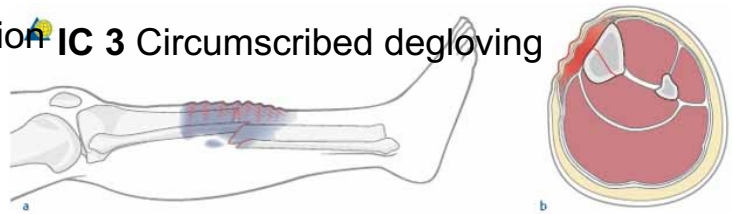




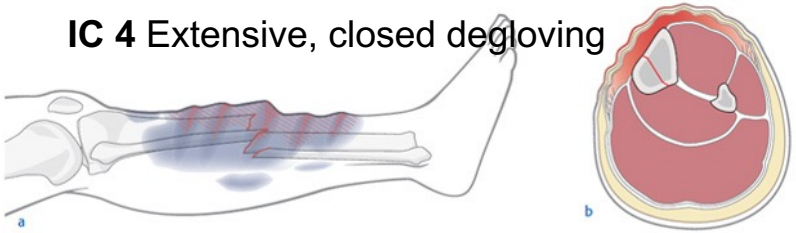
IC 2 No skin laceration, but contusion



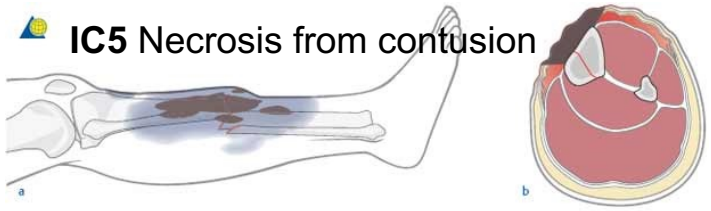
IC 3 Circumscribed degloving



IC 4 Extensive, closed degloving

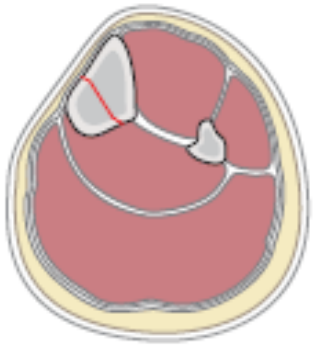


IC5 Necrosis from contusion



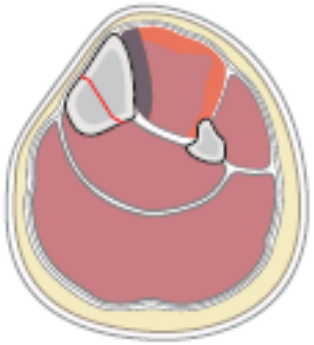
AO MUSCLE INJURY CLASSIFICATION: MT = MUSCLE AND TENDON

MT 1



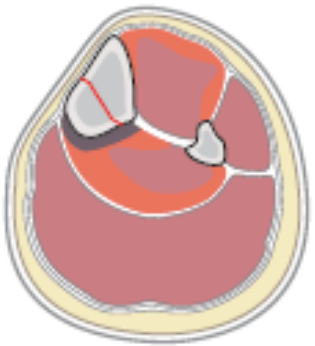
No muscle injury

MT 2



Circumscribed muscle injury, one compartment only

MT 3



Considerable muscle injury, two compartments

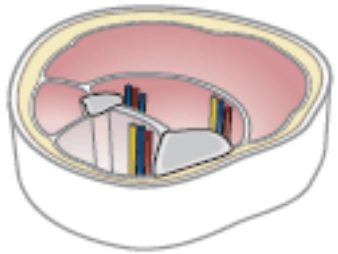
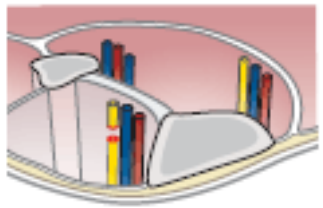
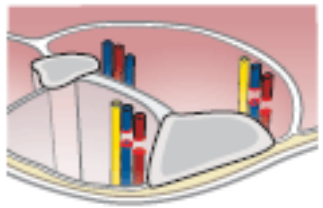
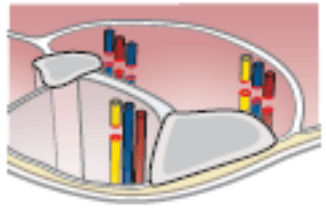
MT 4

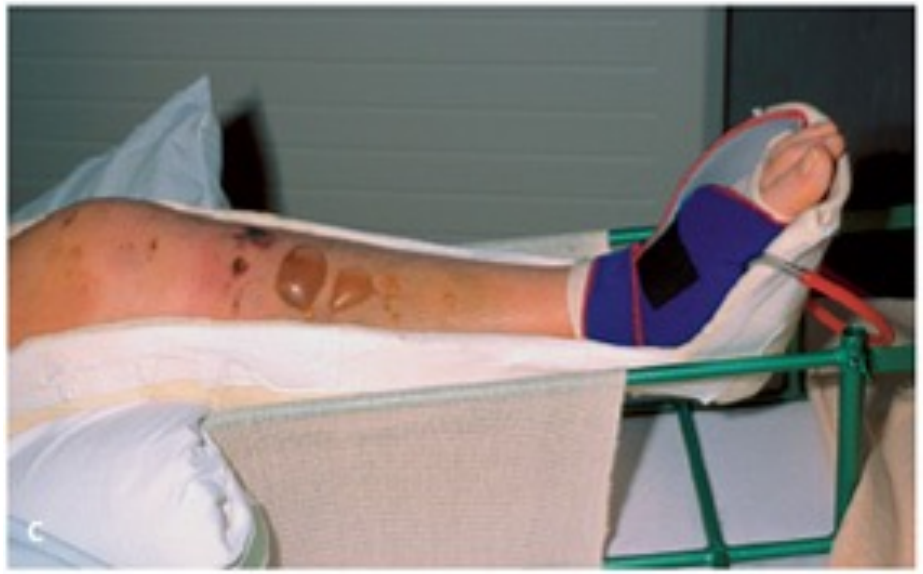
Muscle defect, tendon laceration, extensive muscle contusion

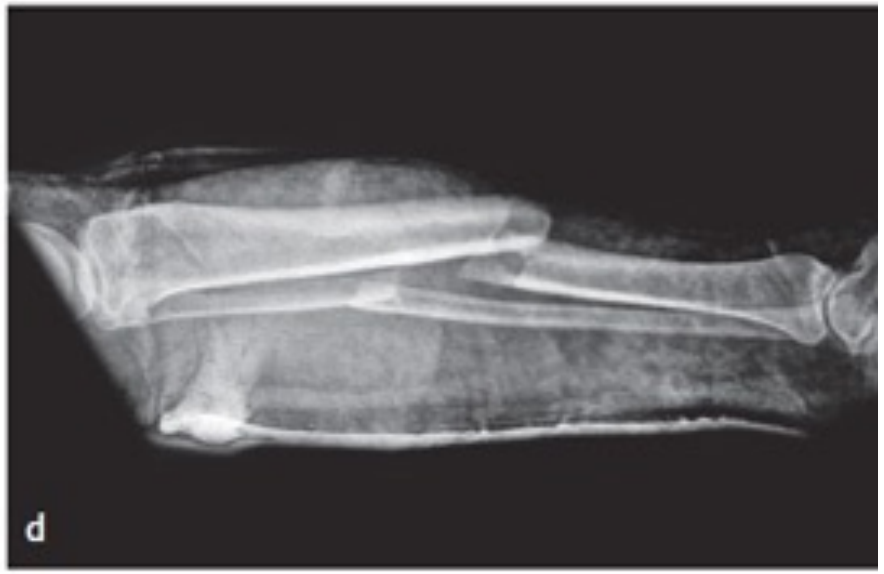
MT 5

Compartment syndrome/crush syndrome with wide injury zone

AO NEUROVASCULAR INJURY CLASSIFICATION: NV = NERVE & VESSEL

NV 1		No neurovascular injury
NV 2		Isolated nerve injury
NV 3		Localized vascular injury
NV 4		Extensive segmental vascular injury
NV 5		Combined neurovascular injury, including subtotal or even total amputation





42-A2/IC4-MT5-NV1

Midtskafts tibiafraktur - simpel oblique
Massiv bløddelsskade:

- Vabler og mistanke om omfattende degloving
- Mistanke om omfattende muskelkontusion and compartment syndrom
- Ingen NV-skade

HVORNÅR SKAL PATIENTERNE OPERERES?

Type of injury	Details of injury	Time of primary surgery	Procedure of primary surgery	Time of early reconstruction surgery	Definitive reconstruction surgery
Polytrauma	Hemodynamically unstable	Immediate	Damage-control surgery External fixator	5–10 days "window of opportunity"	After 3 weeks
	Hemodynamically stable	Immediate	Early appropriate care	–	–
Open fracture	Type I–IIIA	< 12–24 hours	Debridement and definitive fracture fixation	24–72 hours Redebridement and soft-tissue coverage	After 6–20 weeks Bone graft and soft-tissue management
	Type IIIB and IIIC	< 6 hours	Debridement, definitive fracture fixation or local damage control	24–72 hours Redebridement and soft-tissue cover by 5 days and definitive fracture fixation when clean	–
Closed fracture	Good soft tissues	1–3 days	Definitive fracture fixation	–	–
	Poor soft tissues	< 24 hours	Local damage control, spanning external fixator	–	After 10–18 days when wrinkle sign presents Definitive fracture fixation
Unstable fracture dislocation	Good soft tissues	< 12 hours	Definitive fracture fixation	–	–
	Poor soft tissues	Immediate	Local damage control, spanning external fixator	–	After 10–18 days when wrinkle sign presents Definitive fracture fixation

KONKLUSION

- EVALUER BÅDE BLØDDELE OG FRAKTUR
- VÆR TOLMODIG