Splints and Wraps for Leg Fractures

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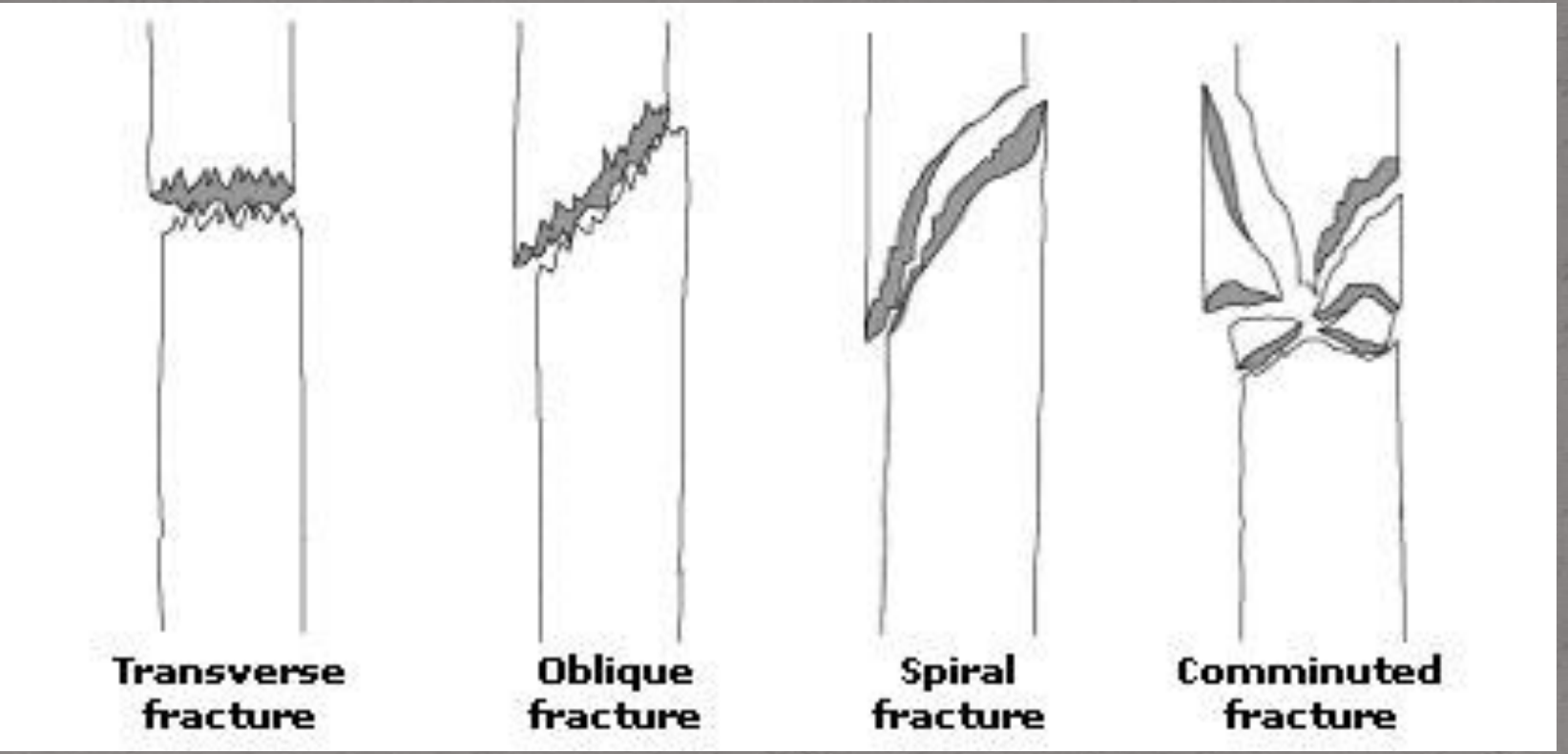
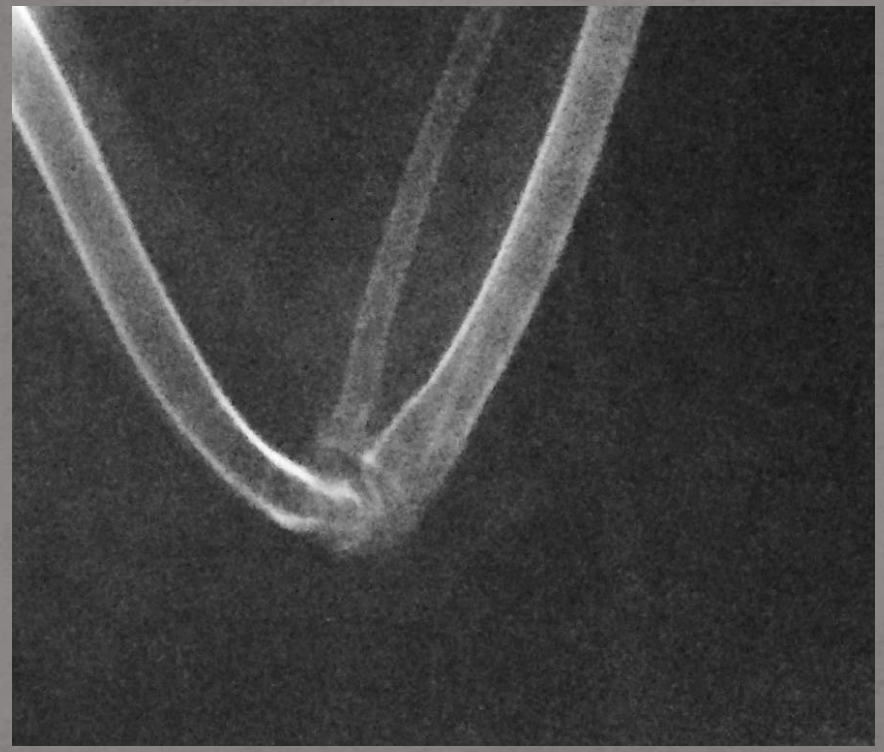
Basic types of fractures:



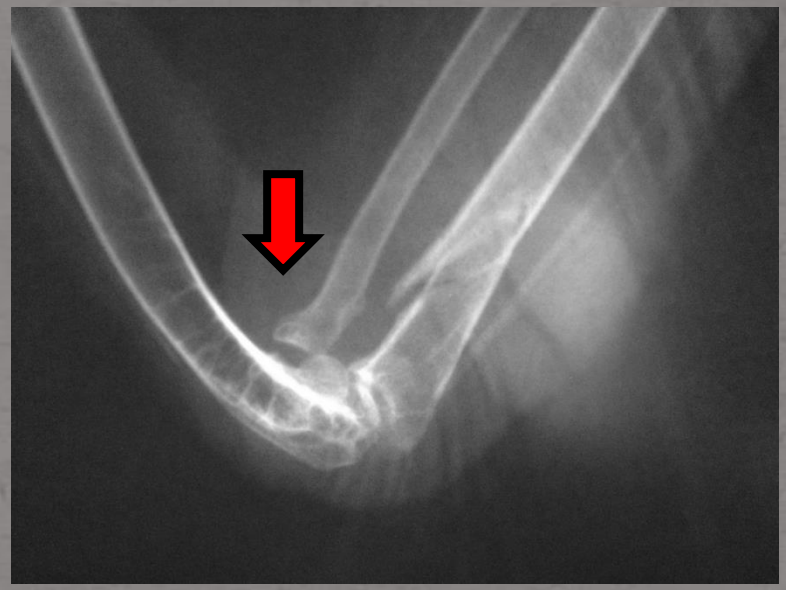
Longitudinal fractures

Luxations:

Bones not broken but ligaments damaged (dislocated)



Normal GHOW elbow



GHOW elbow
Luxated radius
(and fx'd ulna)

Fracture prognosis

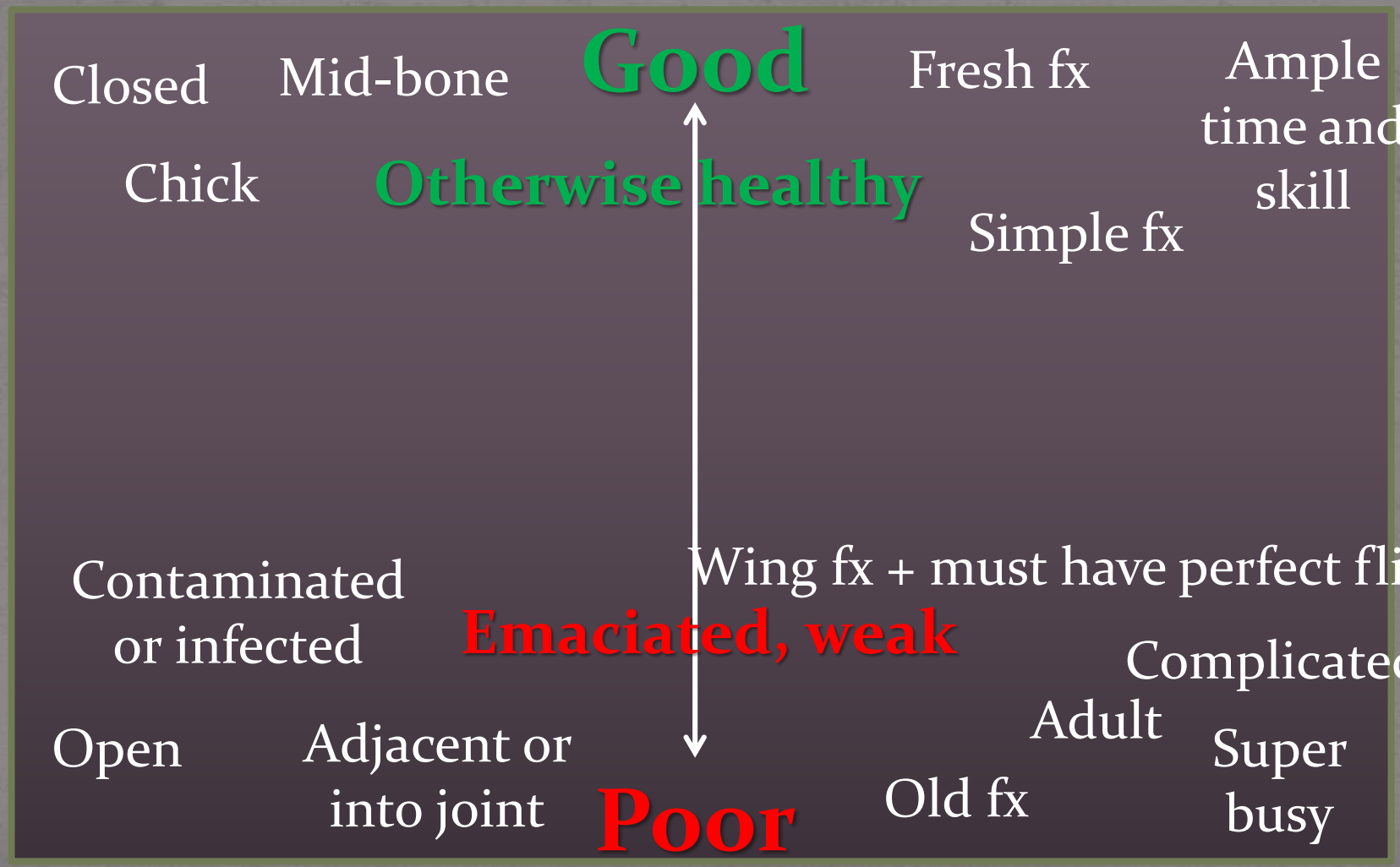
Animal factors

- Anatomy affected
- Health status
- Open fx?
  - Contaminated?
- Close to joint?
  - Broken into joint?
- Multiple fractures?
- Species/age

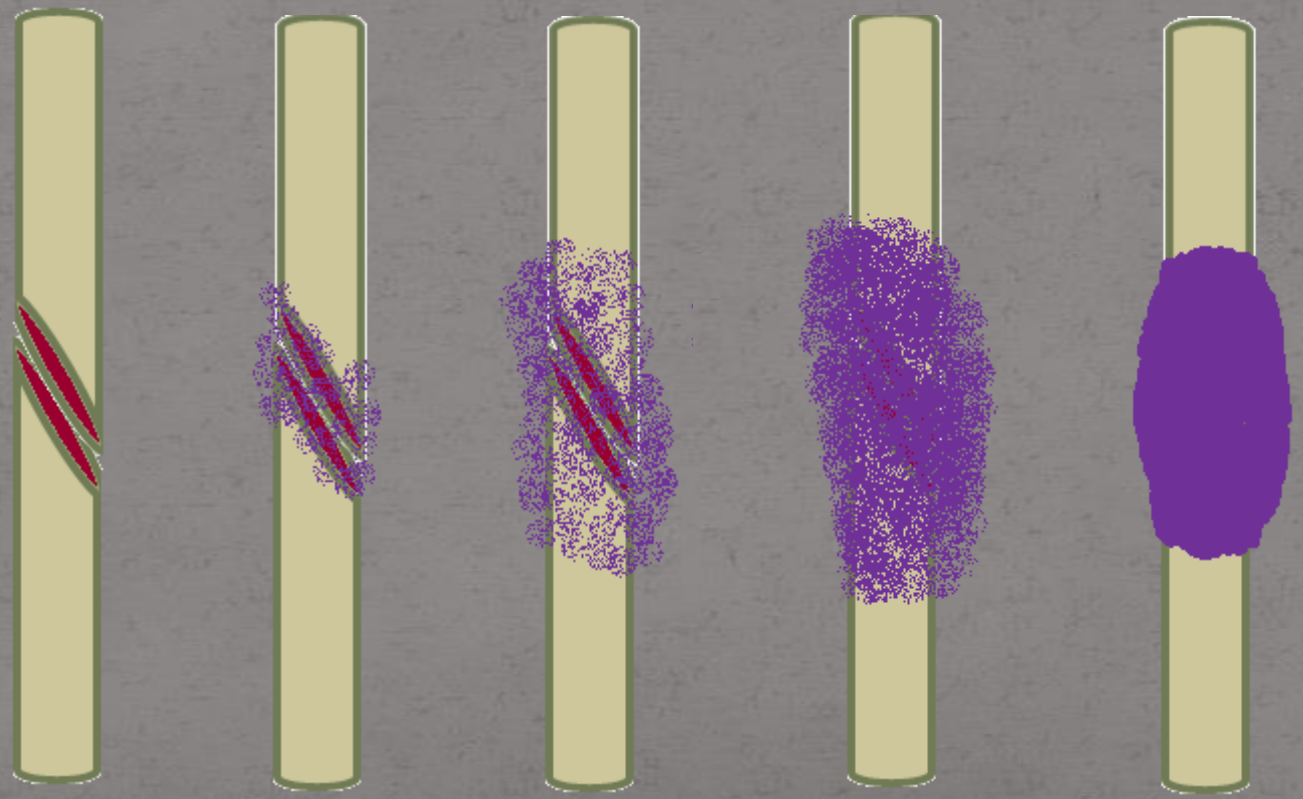
External factors

- Work load
  - Will time invested adversely affect other patients?
- Personnel availability
  - Attentive aftercare is required
- Cost

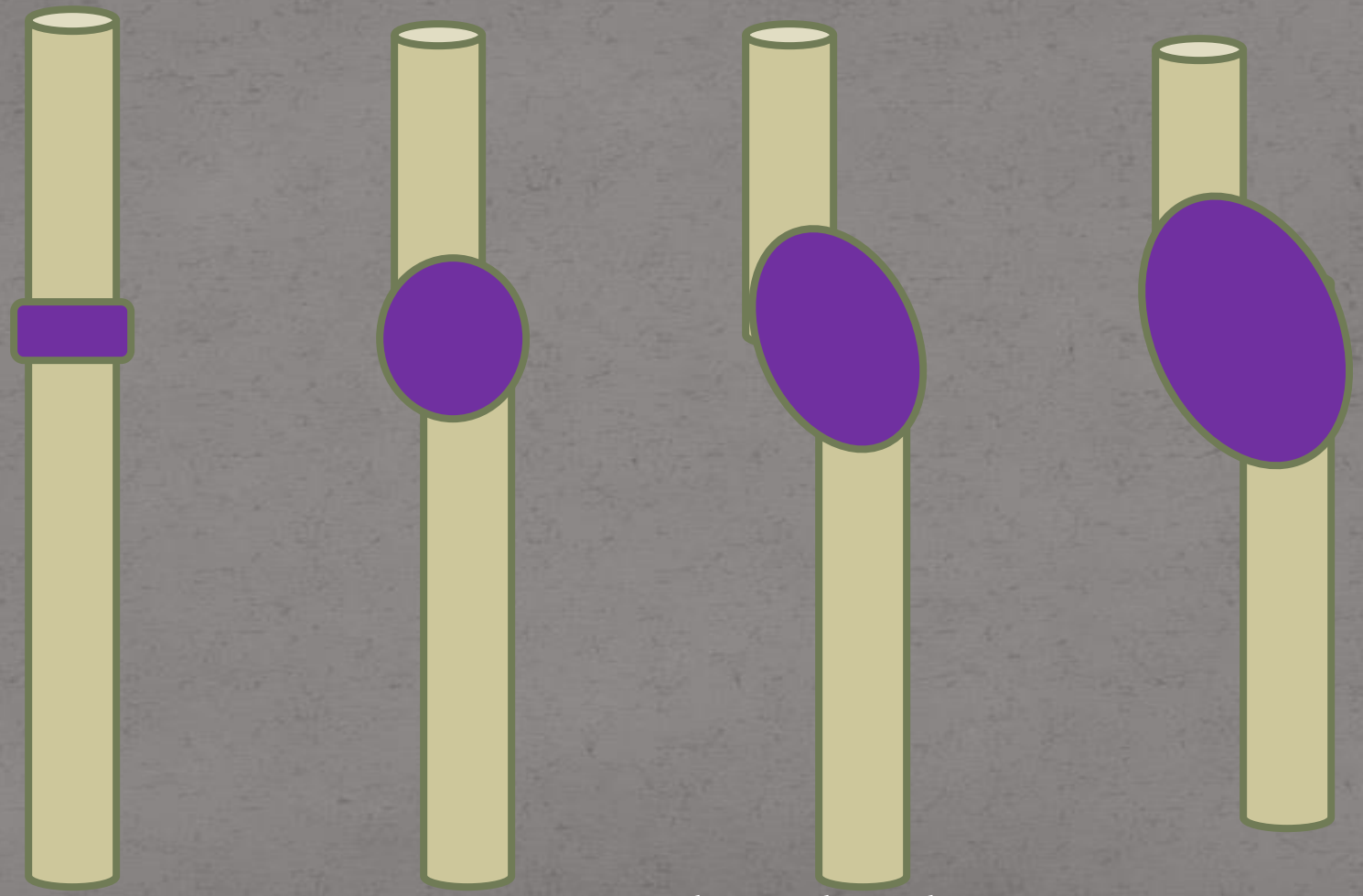
Long bone fracture prognosis



Callus formation

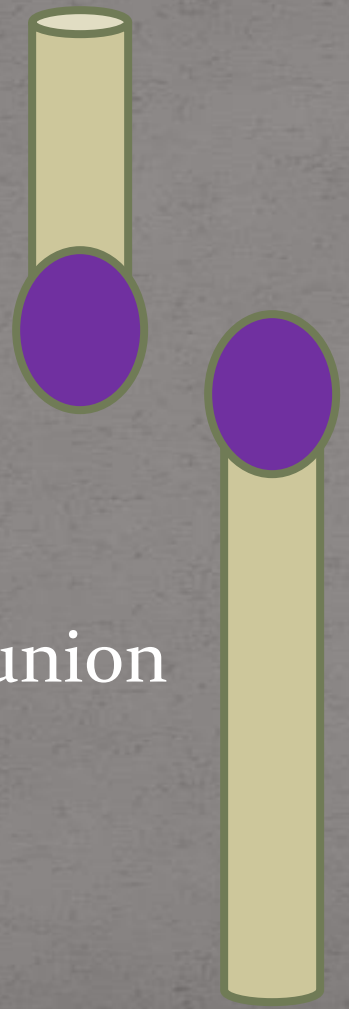


More about callus formation…

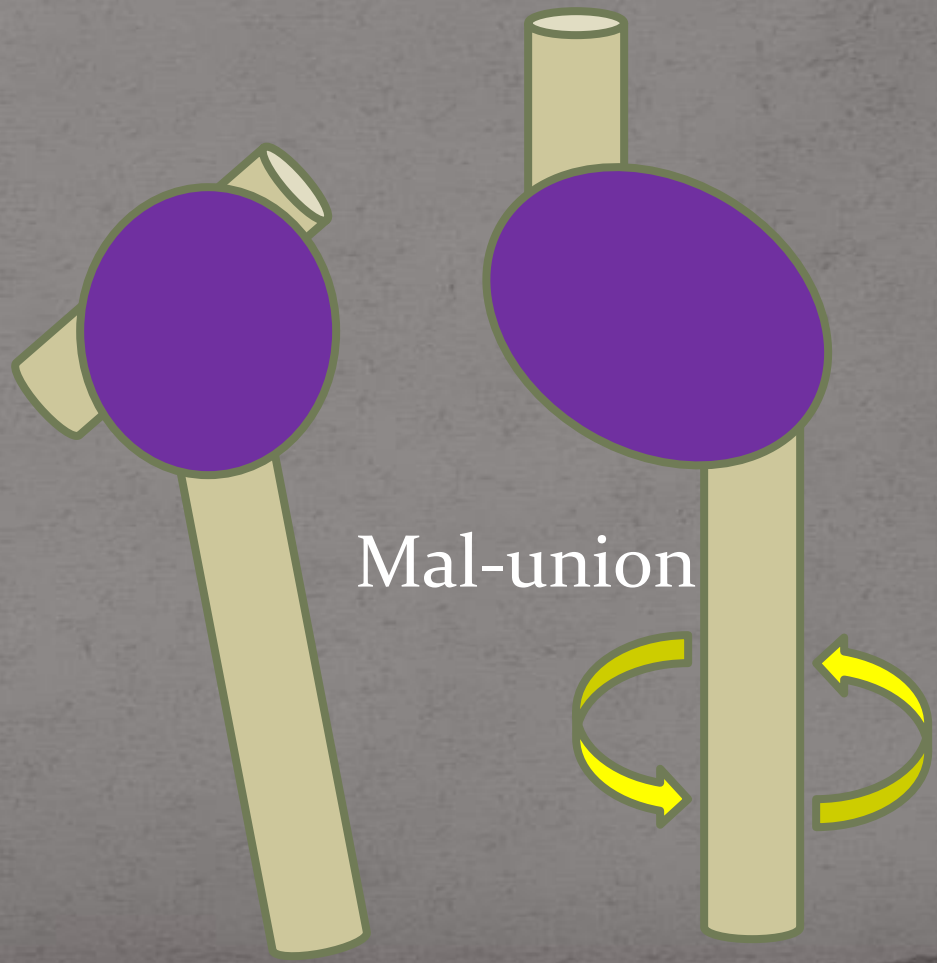


…is proportional to displacement

Healing failures:



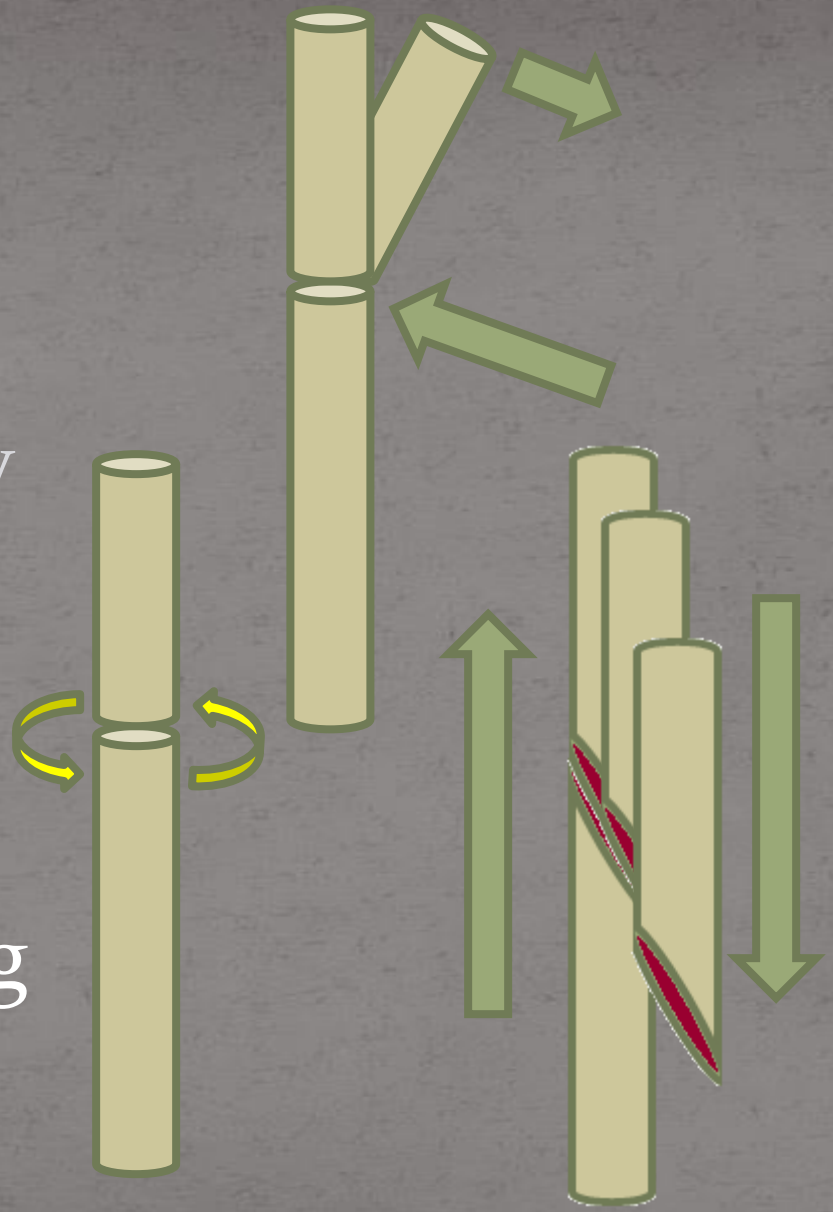
Non-union



Mal-union

Fracture stabilization

- Must provide
  - Rotational stability
  - Stability against bending
  - Compression stability
- While NOT creating
  - Joint contractures
  - Skin injuries



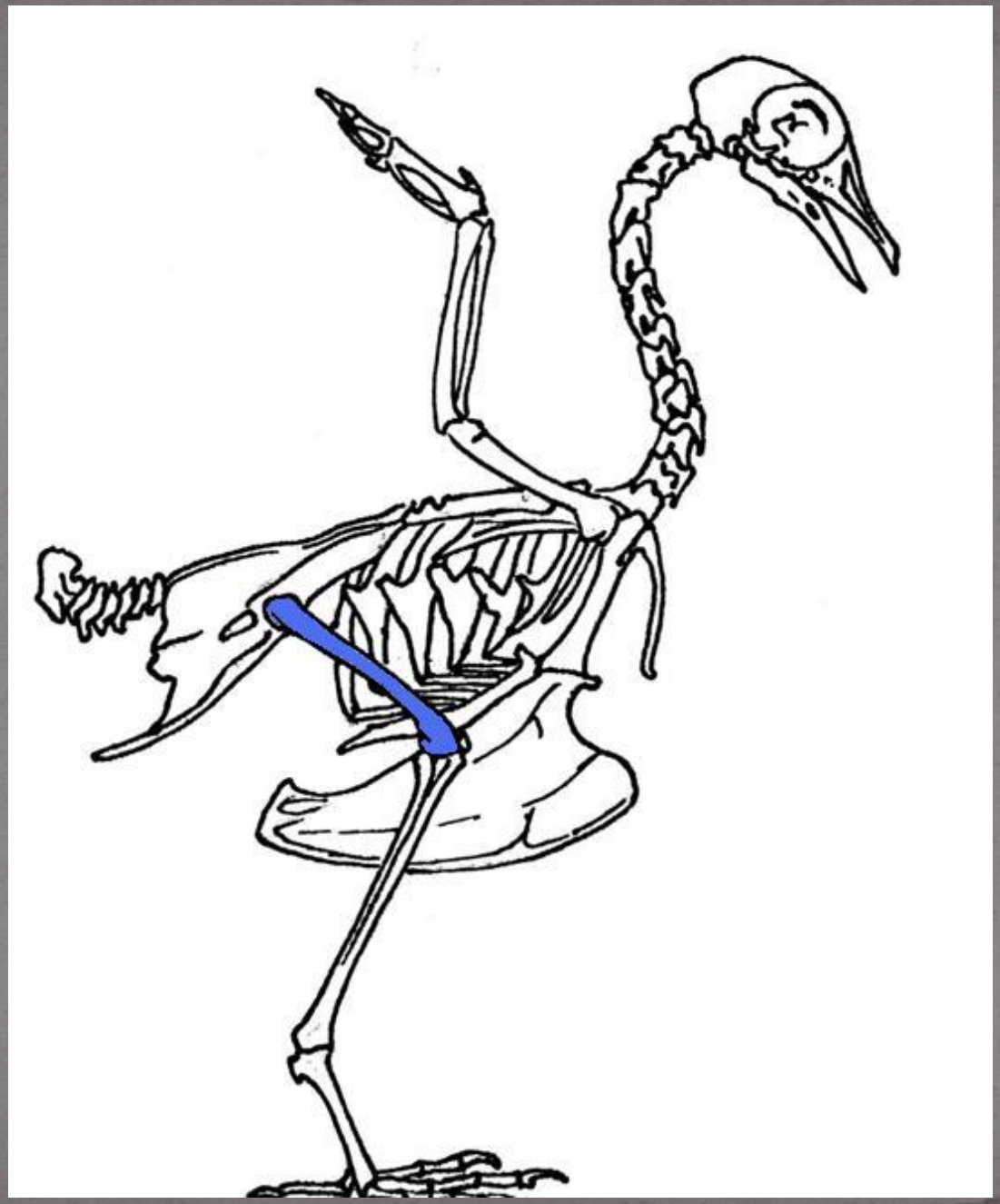
Interference with healing

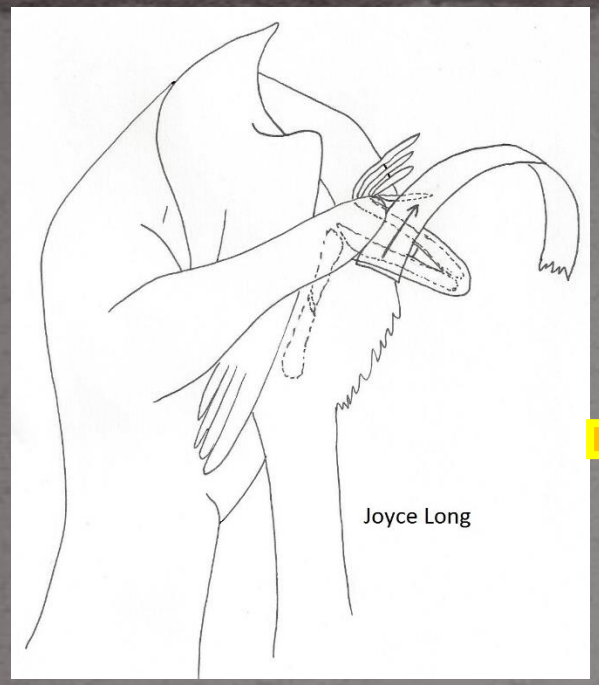
- Motion at site
- Infection
- Poor alignment of pieces
- Inadequate raw materials to complete repair
  - Calcium (usual reason)
  - Vit D_3
  - Overall nutritional depletion

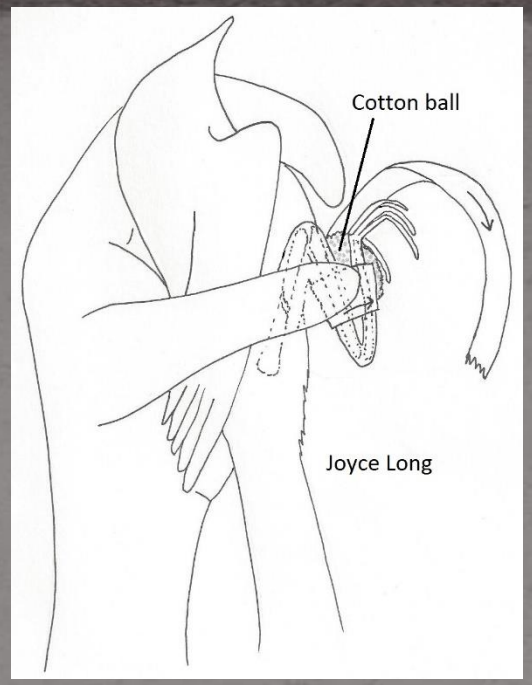
Femur fractures:

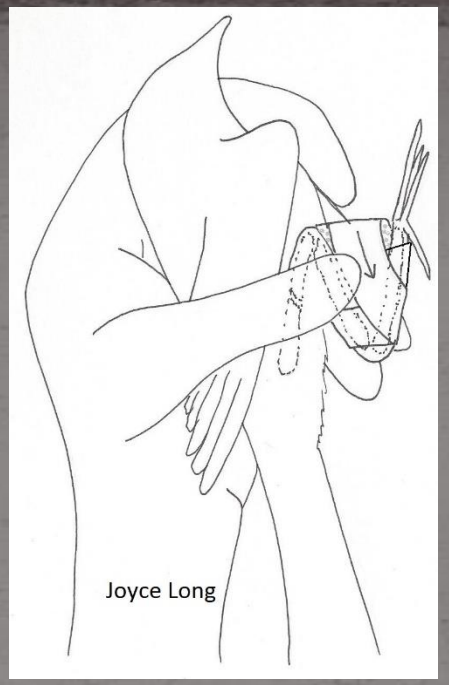
Guarded prognosis with wrap only

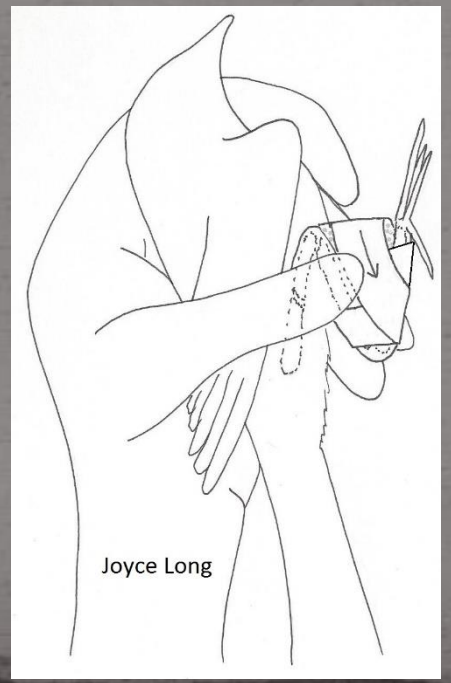
Best prognosis with surgical pinning

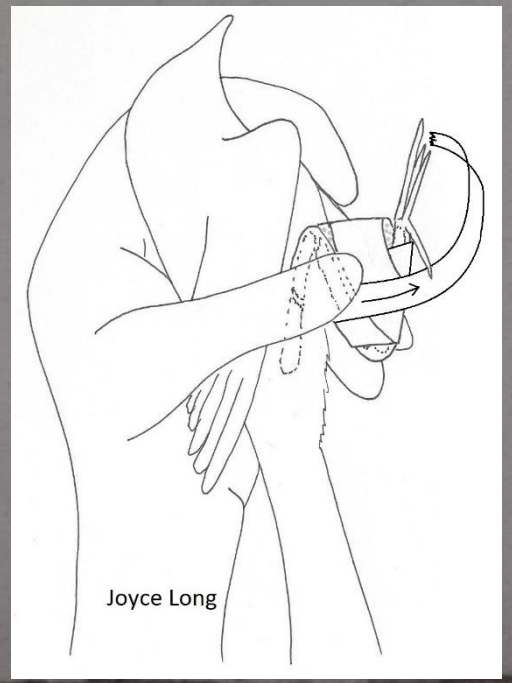


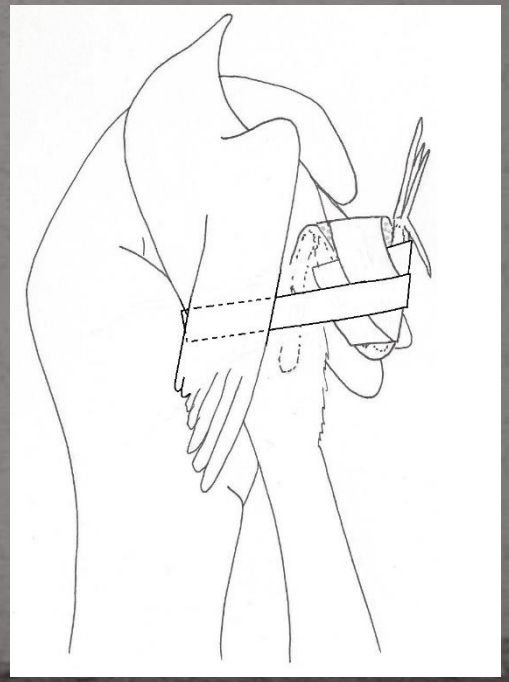












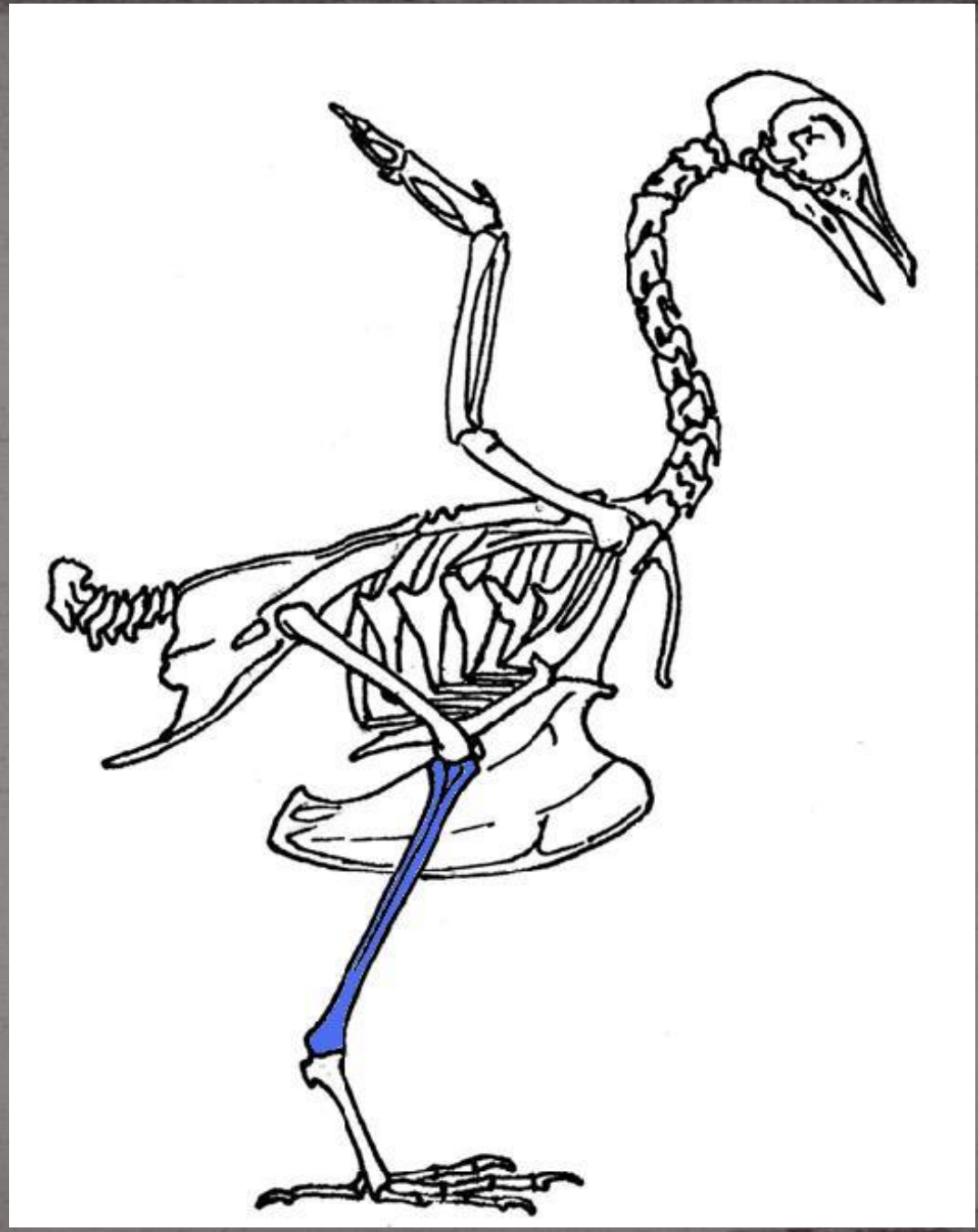
Wrapping the femur

Tibiotarsus fractures:

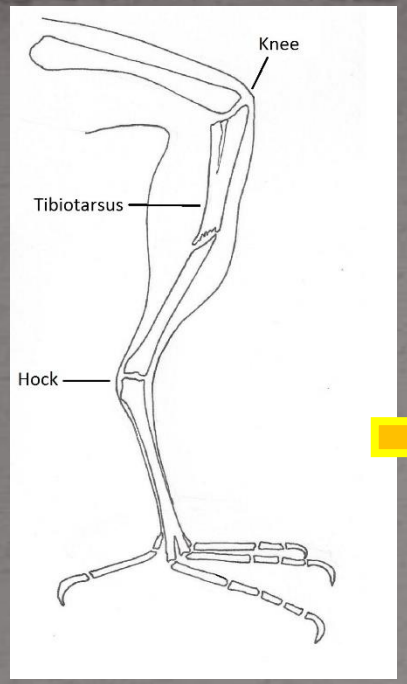
Good prognosis with splint only (in spp TBT splint can get around—not diving birds)

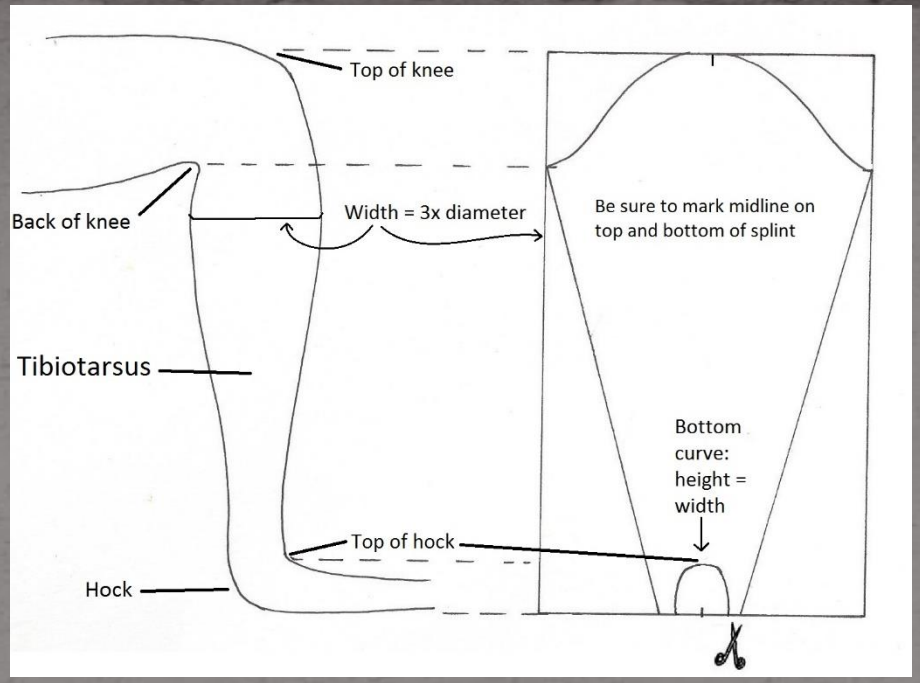
Consider pinning if:

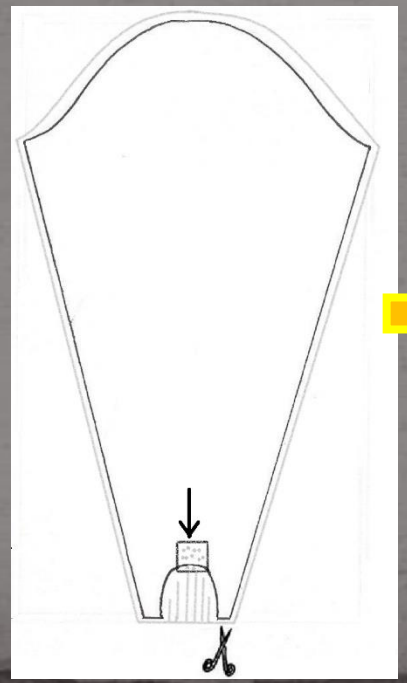
1. Close to knee
2. Open fracture
3. Large species
4. Anatomy not conducive to splinting

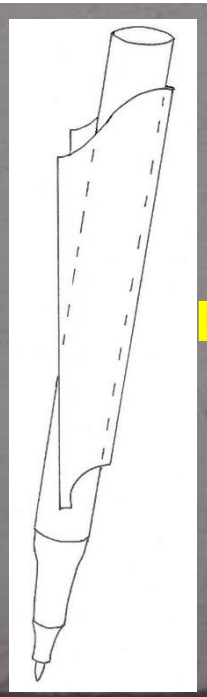


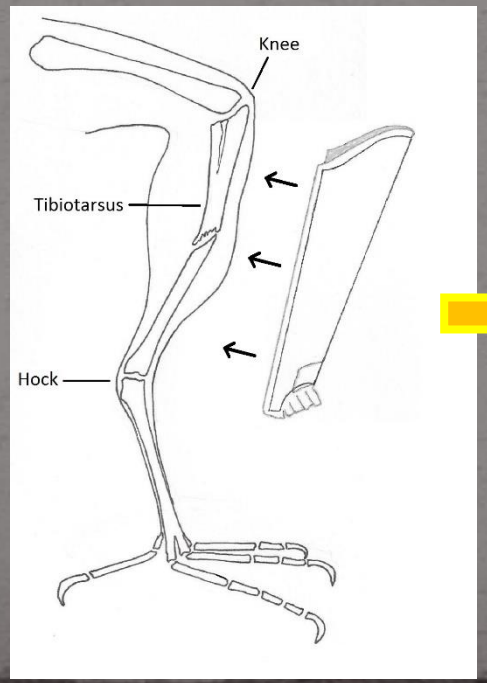
Splinting the tibiotarsus

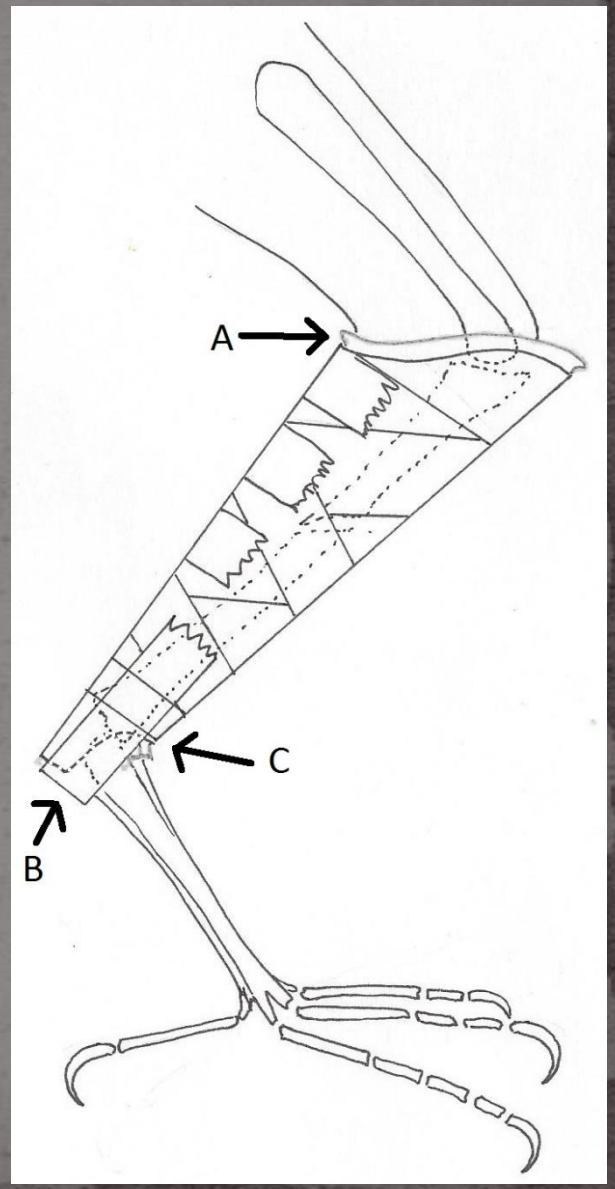












Sora: TBT fx, splint plus shoe (to prevent knuckling)

Splint removed 12 days later

Tarsometatarsus fractures:

Songbirds, ducks:
Good prognosis with splint only

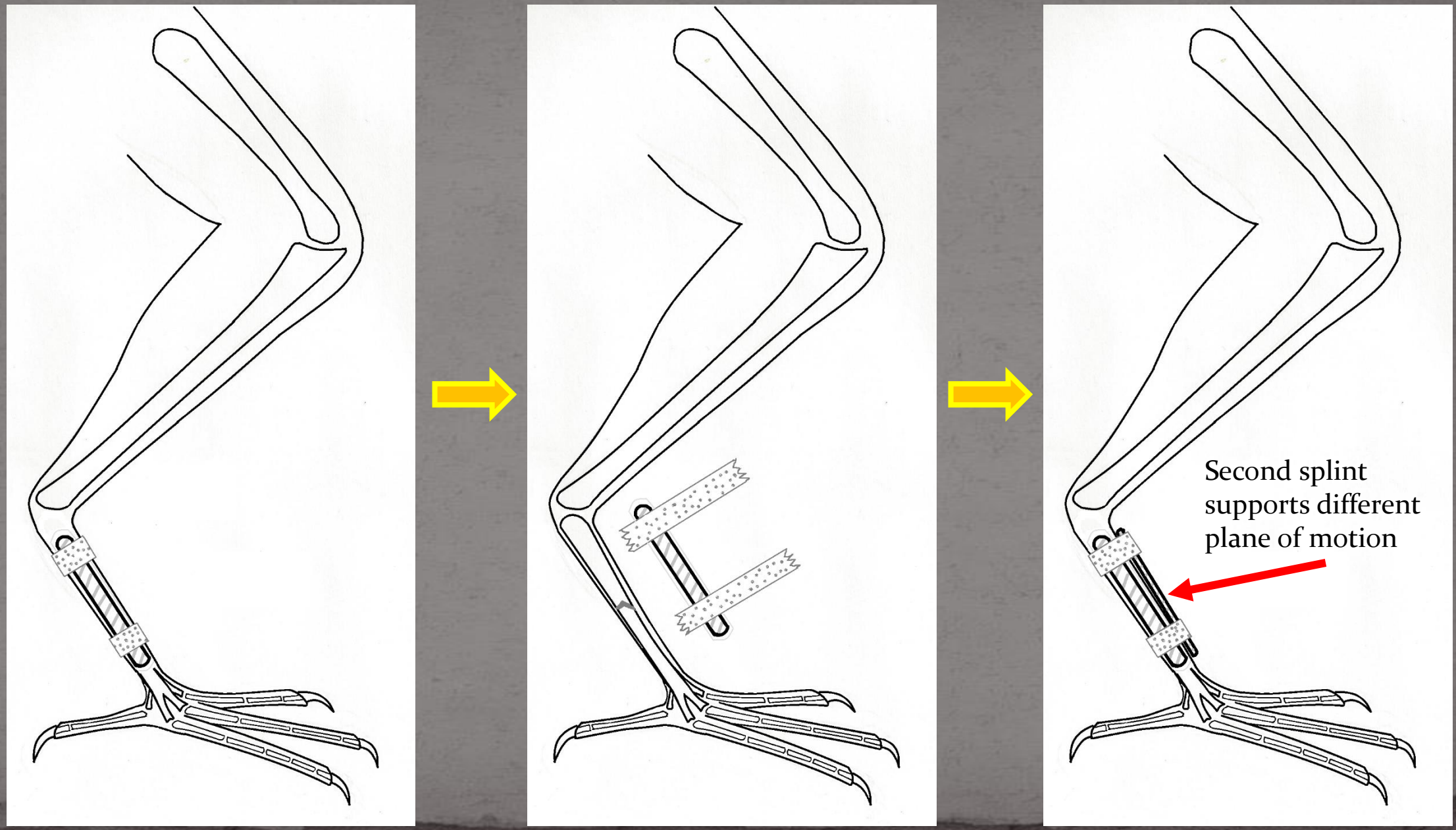
Make each support narrower than leg

Herons/egrets/geese/pelicans:
Surgically pin preferred

Poor prognosis if:

- Dark foot discoloration

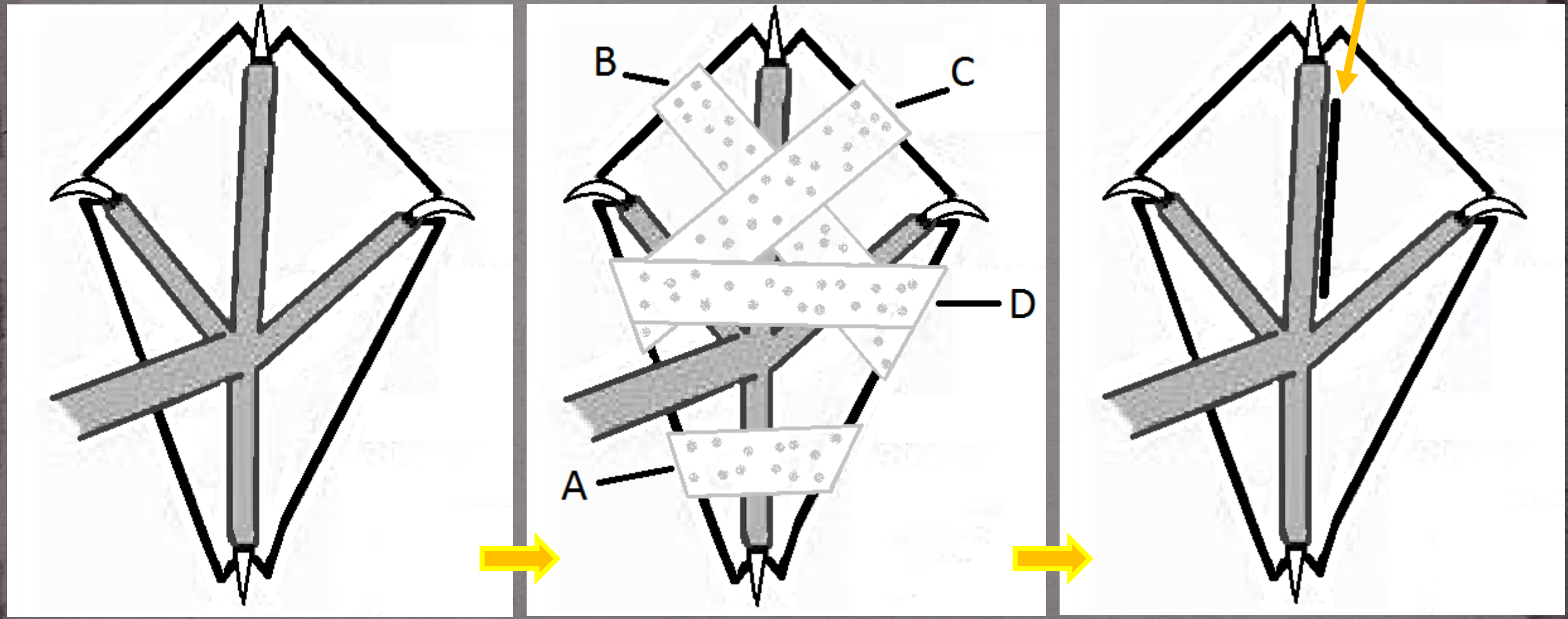
Splinting the tarsometatarsus



Last but not least: Toes

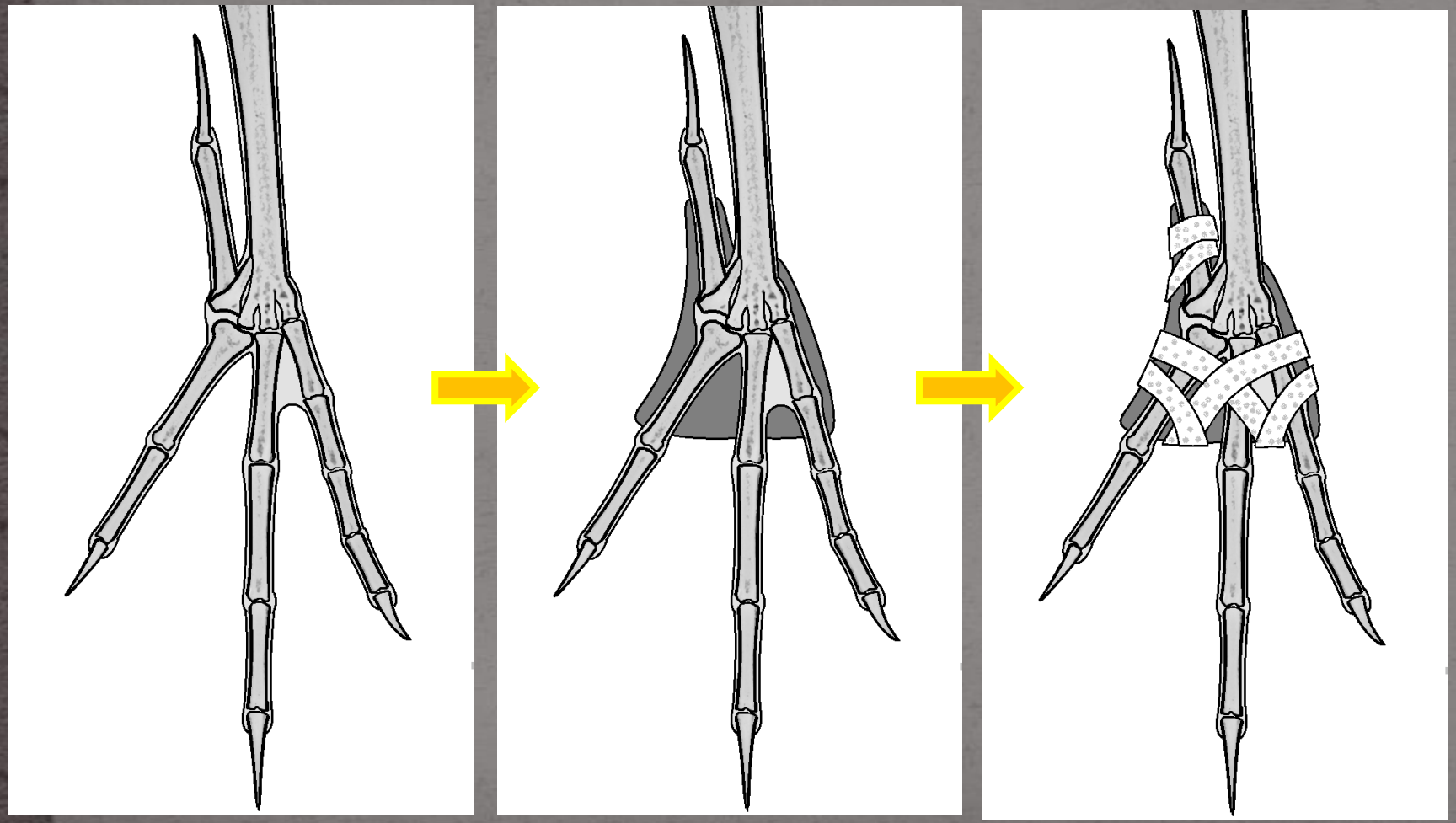
- Use shoe as splint for most spp
- Some species absolutely need certain toes, can do without others
- Open fractures (or luxations): need full or partial amputation
- Pay attention to toes in all leg fx birds! No knuckling allowed!

Basic songbird shoe/sandal

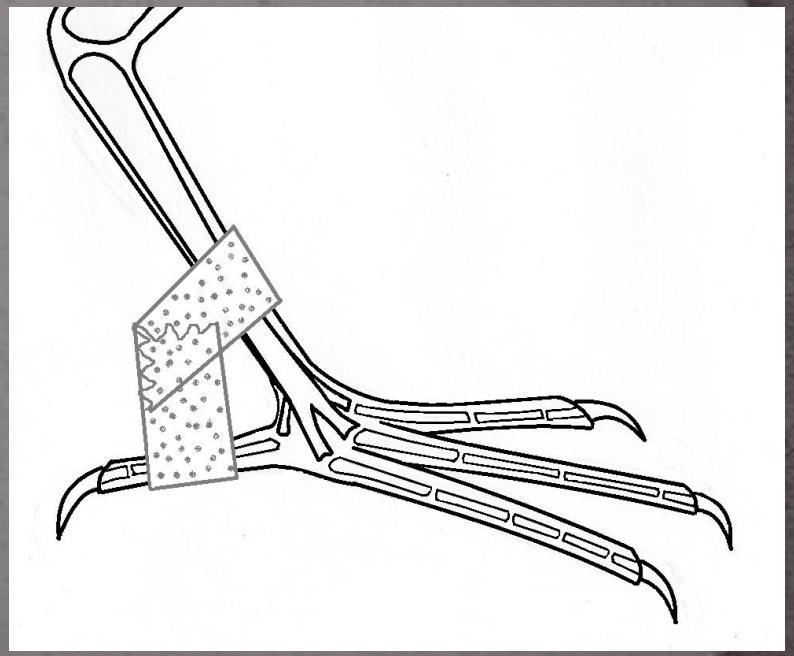


Misc footwear

Heron partial shoe



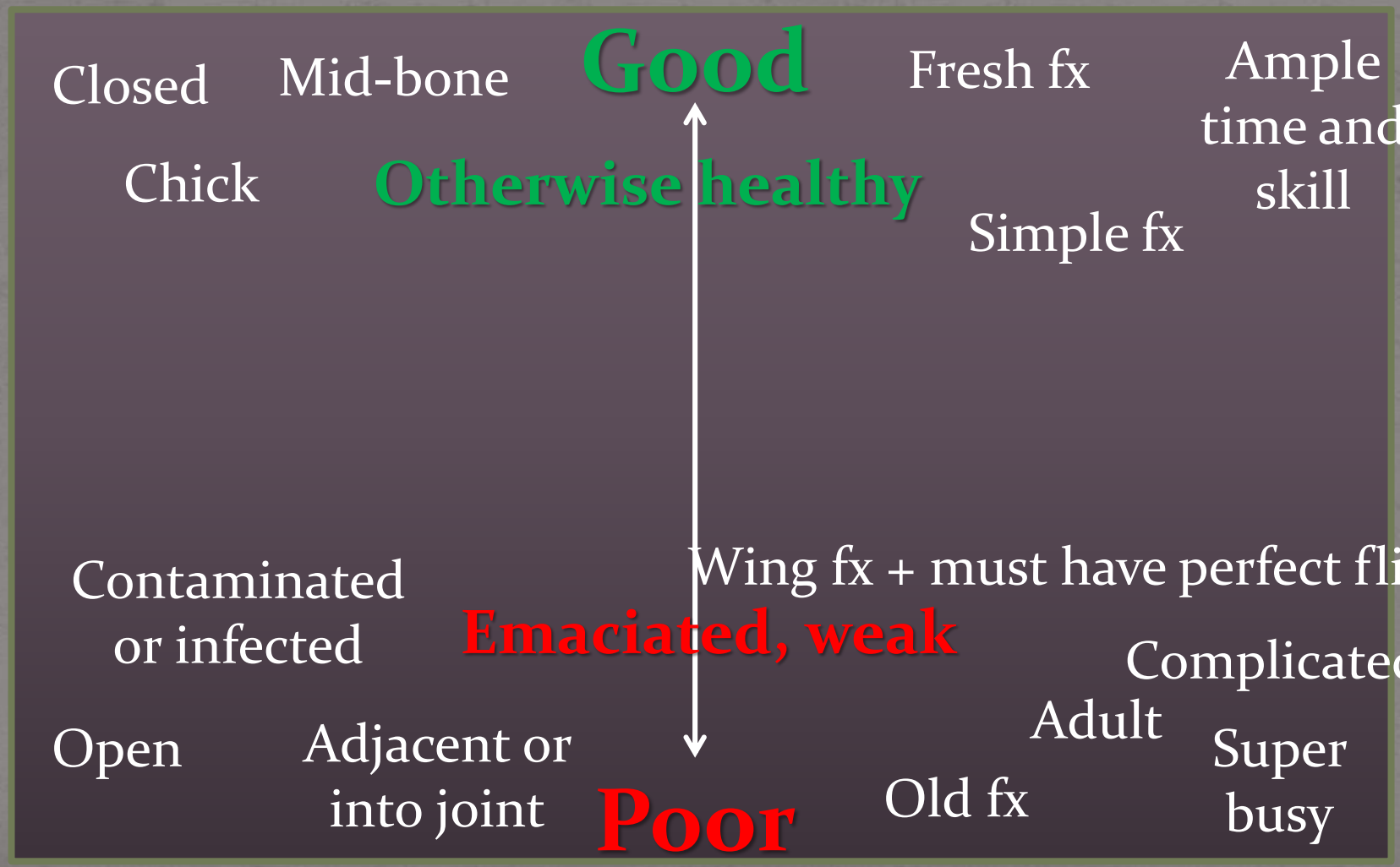
Bad digit #1 tape



Final thoughts: After fracture has healed

- Function depends on:
  - Joint, nerve, muscle, tendon, ligament recovery
- Function less related to:
  - Perfect alignment of fragments
  - How many pieces it's in
- Physical therapy can help maintain/restore normal function
  - Never apply a splint or wrap without a plan for removal
- Euthanize appropriately

Long bone fracture prognosis



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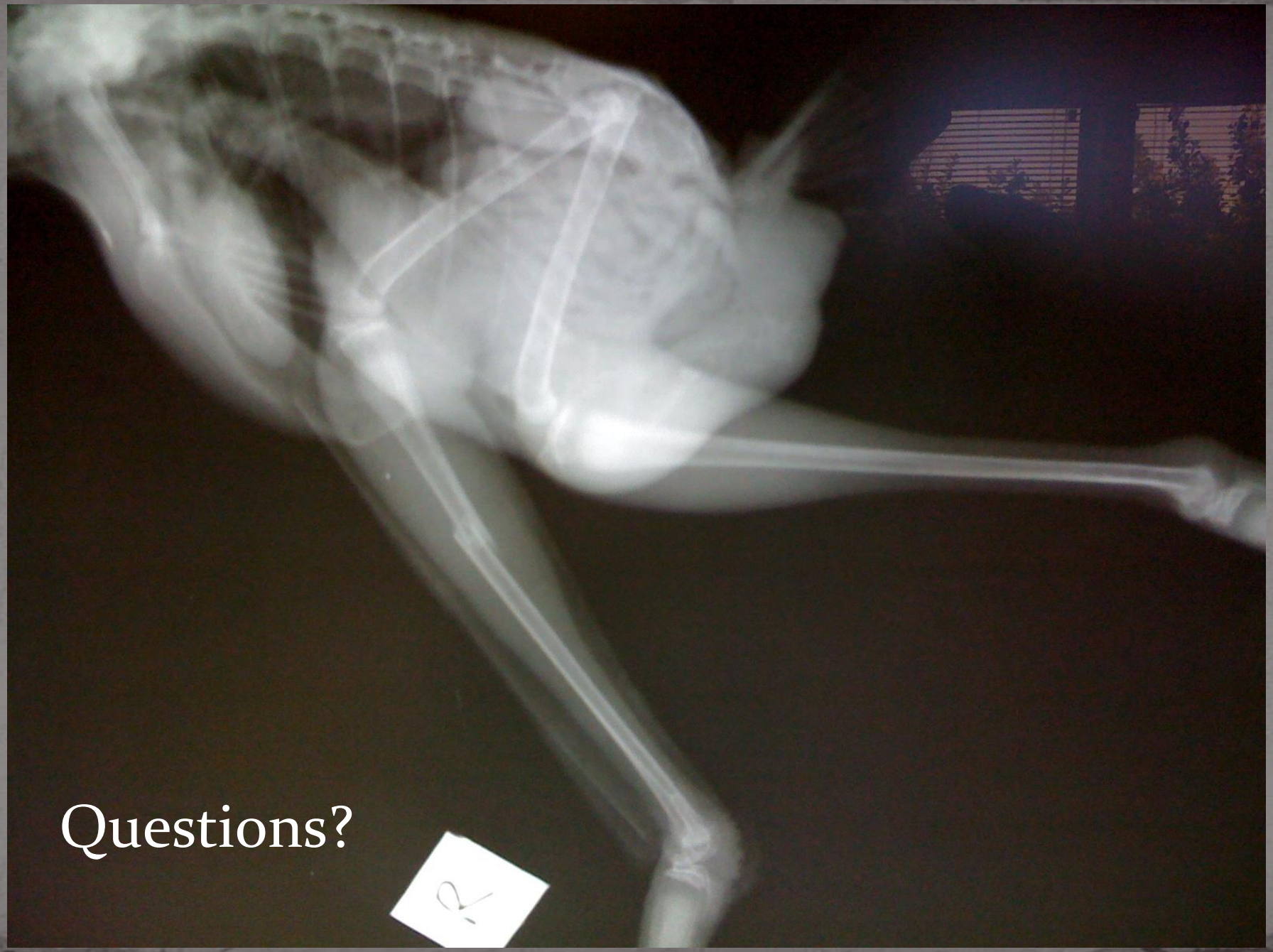
Questions?