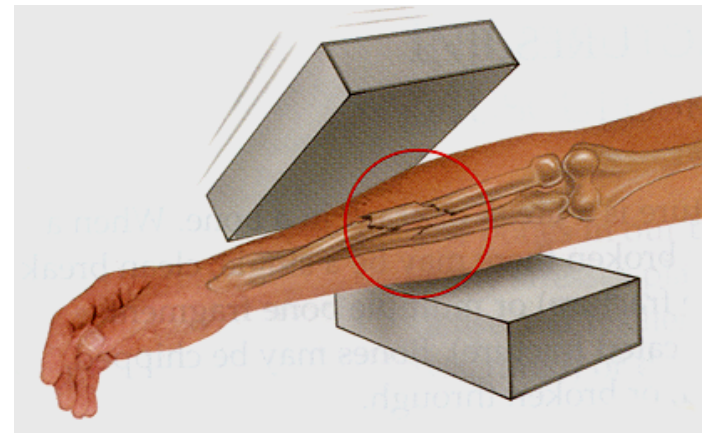


St. John Ambulance Singapore Higher First Aid Course 9/2002 Musculoskeletal Trauma

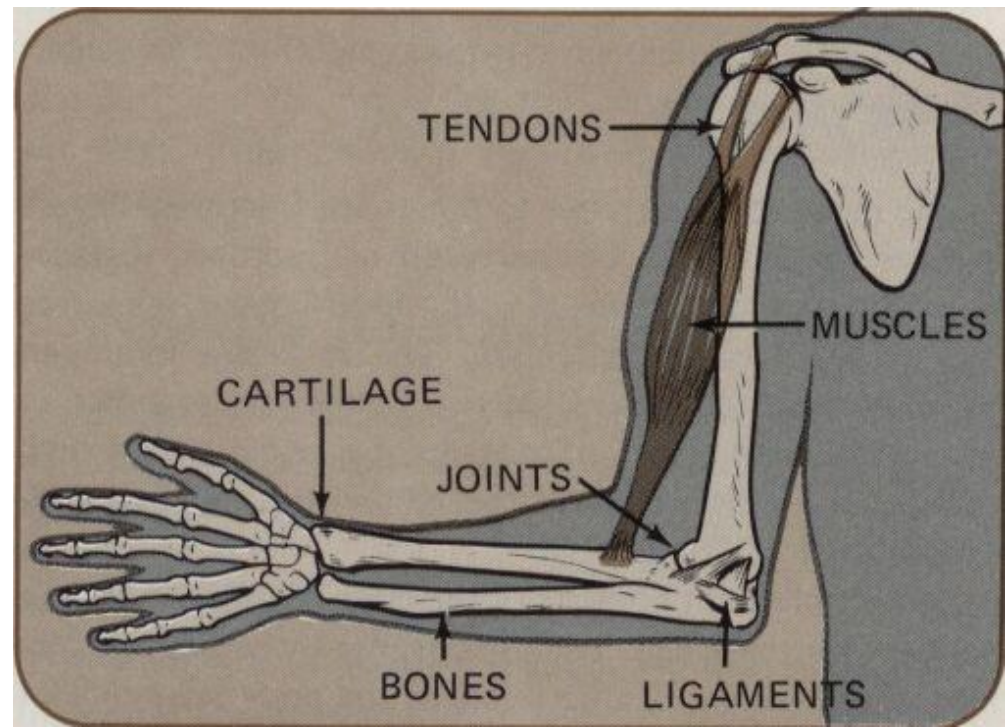
R Sim

TTS Hospital



Musculoskeletal Trauma

- Common, occasionally life-threatening and limb-threatening
- Major musculoskeletal injuries often indicate other injuries
- **Continued reevaluation!**



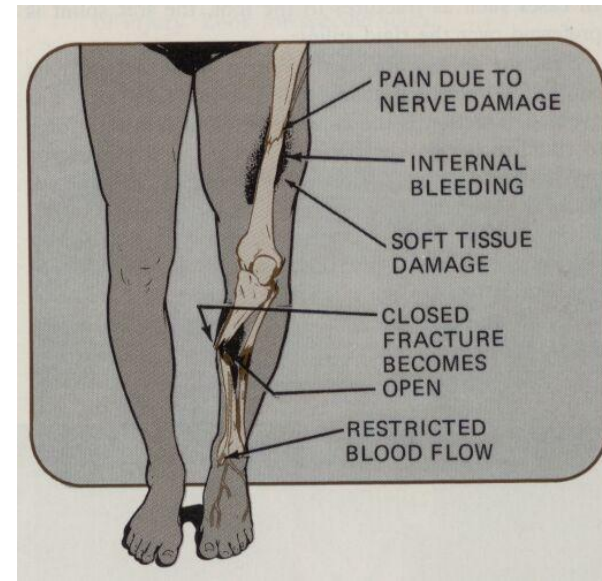
Primary Survey

- Recognise and control bleeding

Direct pressure

Splint fractures – support, decrease movement, pain relief, prevent further soft tissue injury

Apply splint early but avoid delay in resuscitation



Secondary Survey

- Expose, avoid hypothermia
- Identify life- and limb-threatening, and occult injuries
- Examine skin, circulation, neuromuscular and skeletal

Secondary Survey

Look

- Bleeding, deformity, colour
- Posteriorly using log roll
- Spontaneous, active movement

Secondary Survey

Feel

- Temperature, tenderness, crepitus
- Sensation
- Joint stability
- Back and pelvis: tenderness, gap

Secondary Survey

Circulation Evaluation

- Colour, temperature
- Pulse, capillary refill
- Numbness
- Pulsation/Thrill

Prehospital observation and care

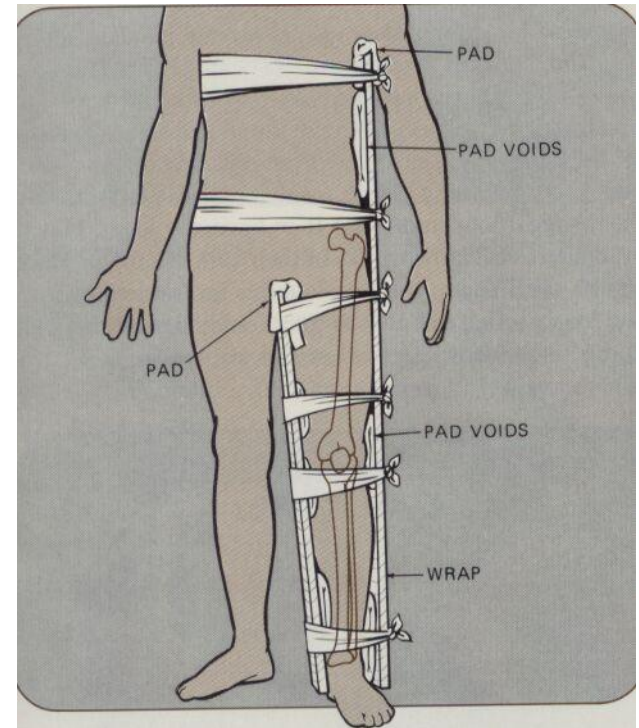
- Time of injury
- Position patient found in
- Estimated amount of blood loss/pooling
- Bony ends that may have been exposed
- Open wounds in proximity
- Obvious deformity
- Power and sensation
- Extrication procedure and transport

Prehospital observation and care

- Changes in limb function, perfusion, neurologic status especially after immobilisation or during transfer
- Reduction of fracture-dislocation during extrication or splinting at the scene
- Dressings and splints applied with special attention to excessive pressure over bony prominences that may result in nerve compression and compartment syndrome

Life Threatening Injuries

- Pelvic fractures
- Major arterial bleeding
- Crush syndrome
- Fat Embolism



Limb Threatening Injuries

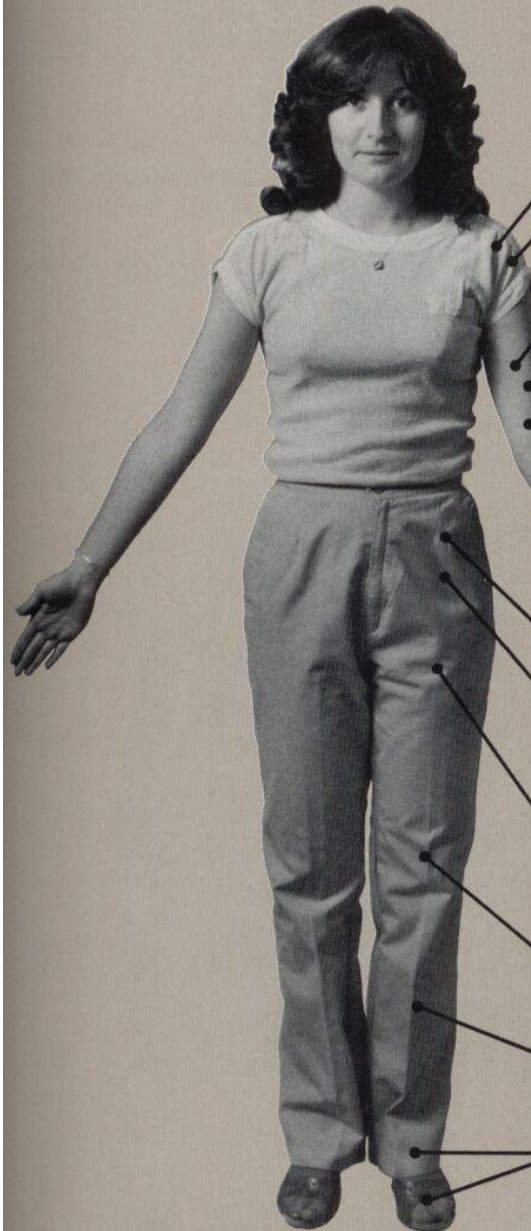
- Open fractures and joint injuries
- Vascular injuries
- Compartment syndrome
- Neurologic injury

Immobilisation

- One joint above and below the fracture
- Support in most natural and comfortable position, or position found in
- One attempt at straightening if no pulse felt
- Reassess pulse, colour and sensation after splinting

Special sites

- Skull
- Maxillofacial
- Cervical spine
- Spine
- Ribs and Sternum
- Pelvic
- Fracture-dislocations
- Open fractures



SHOULDER—Sling and swathe

ANTERIOR SHOULDER—Anterior dislocation:
pad, sling, and swathe

HUMERUS (PROXIMAL)—Sling and swathe

HUMERUS (SHAFT)—Wrist sling and swathe
or rigid splint and sling

HUMERUS (DISTAL)—Rigid splint and sling

ELBOW—Rigid splint from armpit past finger-
tips or short board splint secured to forearm
and arm. Soft splinting is possible.

FOREARM (PROXIMAL)—Soft splint with sling
and swathe or rigid splint and sling. Air-inflat-
ed splint

FOREARM (SHAFT AND DISTAL)—Rigid splint
and sling; soft splint with sling and swathe.
Air-inflated splint

WRIST—Soft splinting or rigid splint and sling

HAND—Rigid splint and sling or pillow splints

FINGERS—Tape to adjacent noninjured finger,
tape with tongue depressor splint, or rigid
splint as for wrist and hand

PELVIS—Tie legs together and secure to long
spine board

HIP—Dislocation: secure to long spine board
and immobilize limb
Obvious fracture: tie patient's lower limbs
together and secure to long spine board . . . or
use long board splints . . . or traction splint
(not for elderly)

FEMUR—Traction splint or long board splints



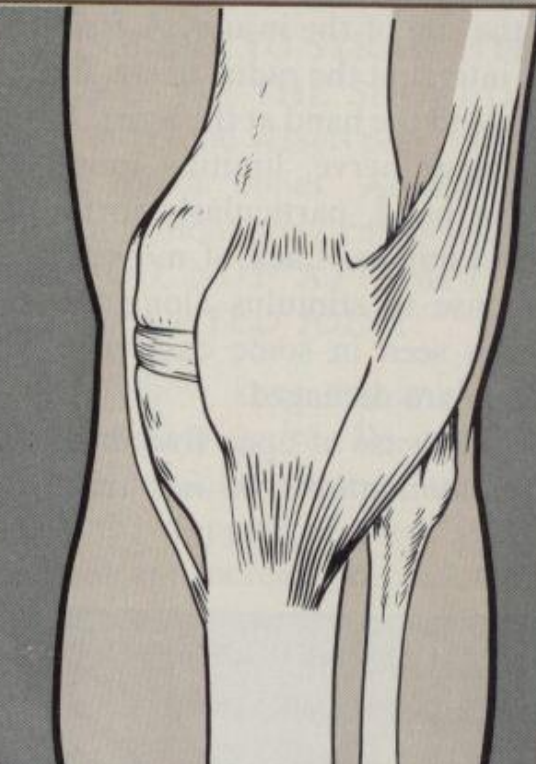
KNEE—Soft splint or use rigid splint

LOWER LEG—Rigid splints or air-inflated
splints

ANKLE AND FOOT—Soft splint or short rigid
splint

Summary

- Primary Survey: Identify life-threatening injuries
- Secondary Survey: Identify limb-threatening injuries
- Control bleeding
- Early immobilisation
- FIRST DO NO HARM

TYPE	DISLOCATION JOINT DEFORMITY	SPRAIN LIGAMENT TORN	STRAIN MUSCLE OVER- STRETCHED
INJURY			
SIGNS	<ul style="list-style-type: none"> ● DEFORMITY ● JOINT SWELLING ● CONSTANT PAIN ● INCREASED PAIN ON MOVEMENT ● LOSS OF MOVEMENT 	<ul style="list-style-type: none"> ● SWELLING ● DISCOLORATION ● PAIN ON MOVEMENT 	<ul style="list-style-type: none"> ● PAIN