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
ANTEROIOR 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 fingertips 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-inflated 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
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<tr>
<th>TYPE</th>
<th>DISLOCATION</th>
<th>SPRAIN</th>
<th>STRAIN</th>
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<tr>
<td>INJURY</td>
<td>JOINT DEFORMITY</td>
<td>LIGAMENT TORN</td>
<td>MUSCLE OVER-STRETCHED</td>
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<td>DISCOLORATION</td>
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