

SPINAL CORD INJURY:

*mechanism of injury

- flexion → ruptures posterior ligaments
- hyperextension → ruptures anterior ligaments
- flexion rotation → tearing of ligaments
- extension rotation
- compression → crush vertebrae + force tiny bones into spinal canal

most unstable

*level of injury

↳ skeletal (vertebral level)

- cervical → tetraplegia
- thoracic, lumbar, sacral → paraplegia

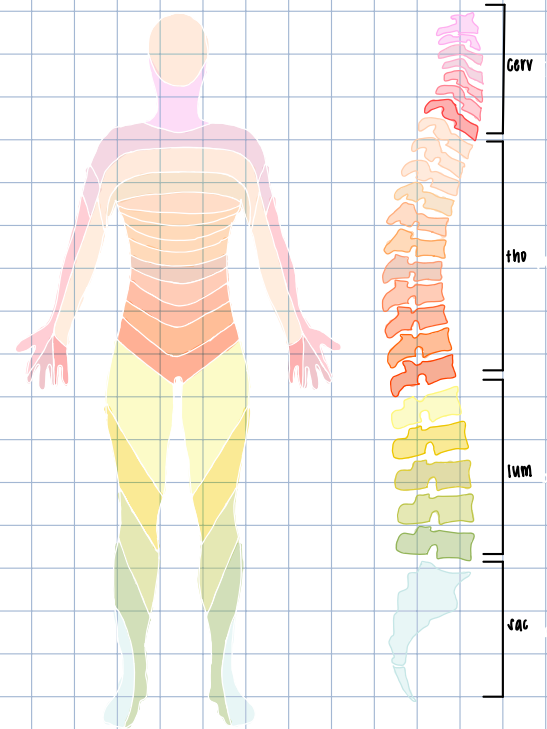
→ lower the level the more function in the arms

↳ neurologic (lowest segment of spinal cord w/ normal sensory + motor function)

*degree of injury

↳ complete - total loss

↳ incomplete - mixed loss



ASIA IMPAIRMENT SCALE: recording changes in neurologic status

- A [complete] - no motor, no sensory, no sacral sparing
- B [incomplete] - no motor, sensory only
- C [incomplete] - 50% muscles < grade 3
- D [incomplete] - 50% muscles > grade 3
- E [normal] - motor + sensory function are normal

ACUTE SCI care guidelines:

- spine immobilization
- spine x-ray/CT/MRI
- neuro assessment
- airway
- steroids → ↓ inflammation + swelling
 - ↳ methylprednisolone (no benefit 8hr after injury)
- monitor VS

*DIAGNOSTICS

- o CT scan
- o cervical x-ray
- o MRI
- o comprehensive neurologic examination
- o CT angiogram
- o diagnose DVT

* DRUG MANAGEMENT

- low molecular weight heparin
 - vasopressor → phenylephrine + norepinephrine
- ↳ maintain MAP

*TREATMENT

- immobilization devices + traction

↳ gardner-wells tongs

- reduce fx
- temporary

↳ halo

- external fixation

↳ TLSO

- for thoracolumbar fx
- uncomfortable
- skin breakdown due to moisture

↳ hard collar

- allows pt to mobilize + ambulate w/ cervical bone fx

[bladder management]

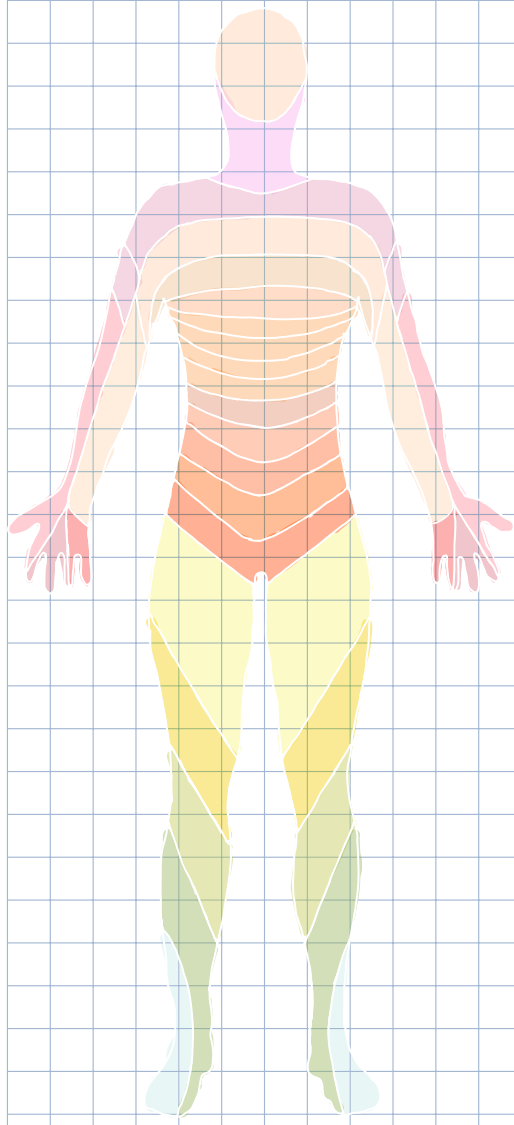
- ↳ neurogenic bladder
 - indwelling urinary catheter program
 - ↑ fluid intake
- ↳ intermittent catheterization
 - 4-6 times daily

[bowel management]

- ↳ daily rectum stimulant

[temp control]

↳



above C4 = total loss of respiratory muscle function (mechanical ventilation required)

below C4 = respiratory insufficiency but phrenic nerve is functioning

above T5 = paralytic ileus, gastric distention, stress ulcer, bowel dysfunction

above T6 = bradycardia, hypotension (cardiac monitoring necessary)

below

above T12 = bowel is areflexic, + sphincter tone

* neurogenic shock:

- hypotension, bradycardia, hypothermia

* spinal shock:

- reflex depression
 - ↳ ↓ reflexes
 - ↳ loss of sensation
 - ↳ absent thermoregulation
 - ↳ flaccid paralysis