

TRAUMA REVIEW



KINEMATICS OF TRAUMA

- **Density**
 - Denser the tissue the greater number of particles that will be impacted by a moving object, and therefore the greater rate and the total amount of energy exchanged.
- **Contact Area**
 - Size of the surface dictates the response on the body
- **Cavitation**
 - Impact on the tissue particles accelerates those tissues particles away from the point of impact, creating a hole or cavity



BLUNT TRAUMA

- **Important observations**
 - (1) direction of the impact
 - (2) external damage to the vessel (i.e. vehicle)
 - (3) internal damage (steering wheel, seats, etc)
- **Types of MVCs**
 - (1) Frontal impact
 - (2) Rear impact
 - (3) lateral impact
 - (4) Rotational impact
 - (5) Rollover



FALLS

- Falls from greater heights have greater incidence of traumatic injury
- Type of surface dictates the compressibility
- As velocity increases, bodily damage increases
- Compression fractures common



SPORTS INJURY

- Each sport comes with different mechanisms
- **Questions to ask:**
 - What forces acted on the patient and how?
 - What are the apparent injuries?
 - What part of the body was the energy transmitted?
 - Any other injuries from energy transfer?
 - Protective Gear?
 - Sudden compression, deceleration or acceleration?
 - Injury producing movement? Flexion, extension, etc.



PENETRATING TRAUMA

- **Profile**
 - Shape of the object
- **Tumble**
 - Movement as it goes into the body
 - i.e. turns over and over
- **Fragmentation**
 - Breaks up or remains intact



BLAST INJURY

- Primary
- Secondary
- Tertiary
- Quaternary

SCENARIO

- Responding code 4 to a single vehicle crash
- Single vehicle struck a tree
- Front end impact
- Sun around the tree and in a ditch on the side of the road
- Single occupant
- Airbag deployed
- Driver is moaning, still restrained
- Front end and rear end damage visible

- What are the potential injuries?
- What are the mechanisms of injury?
- What are your priorities?

TRAUMA SCENE ASSESSMENT

- Violence
- Hazardous Materials
- Crime Scenes
- MCI
- Anything Else?

THE BASICS

- Vitals
 - Temp
 - Pulse
 - Resps
 - SPO2
 - 3 Lead
 - BP

HISTORY!!!!!!

- SAMPLE
- OPQRST
- ABCDEFGHIJKLMNOPQRSTUVWXYZ

INITIAL PRIORITIES TO TREATMENT

- What are your priorities?
- Why?



TRIAGE...

- What are the priorities to triage?
- How do we re-evaluate this?
- Who's in Charge of this?



OK, SO WHEN DO WE ASSESS WHAT?

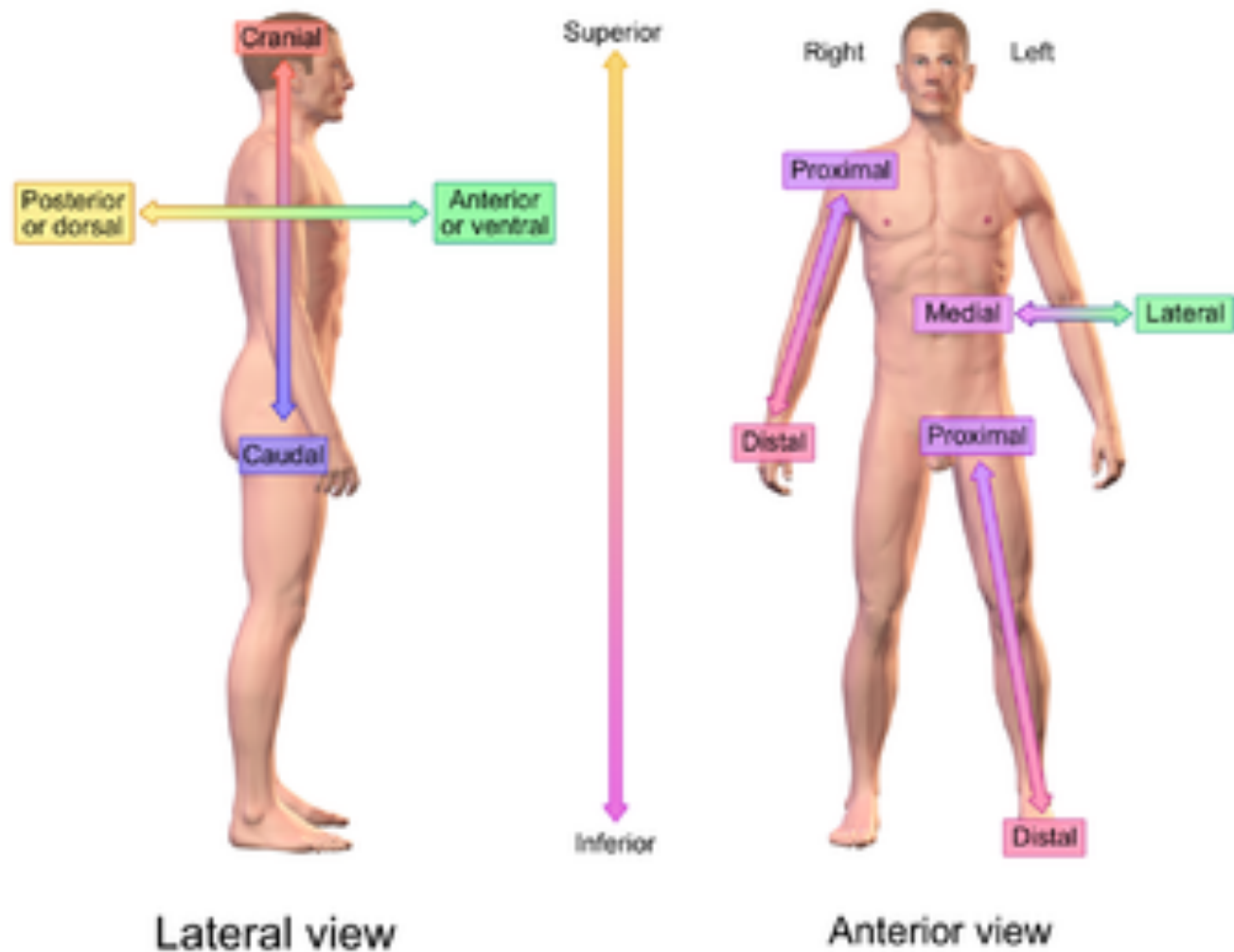
- When do we do a standard patient assessment?
- When do we do a trauma assessment?



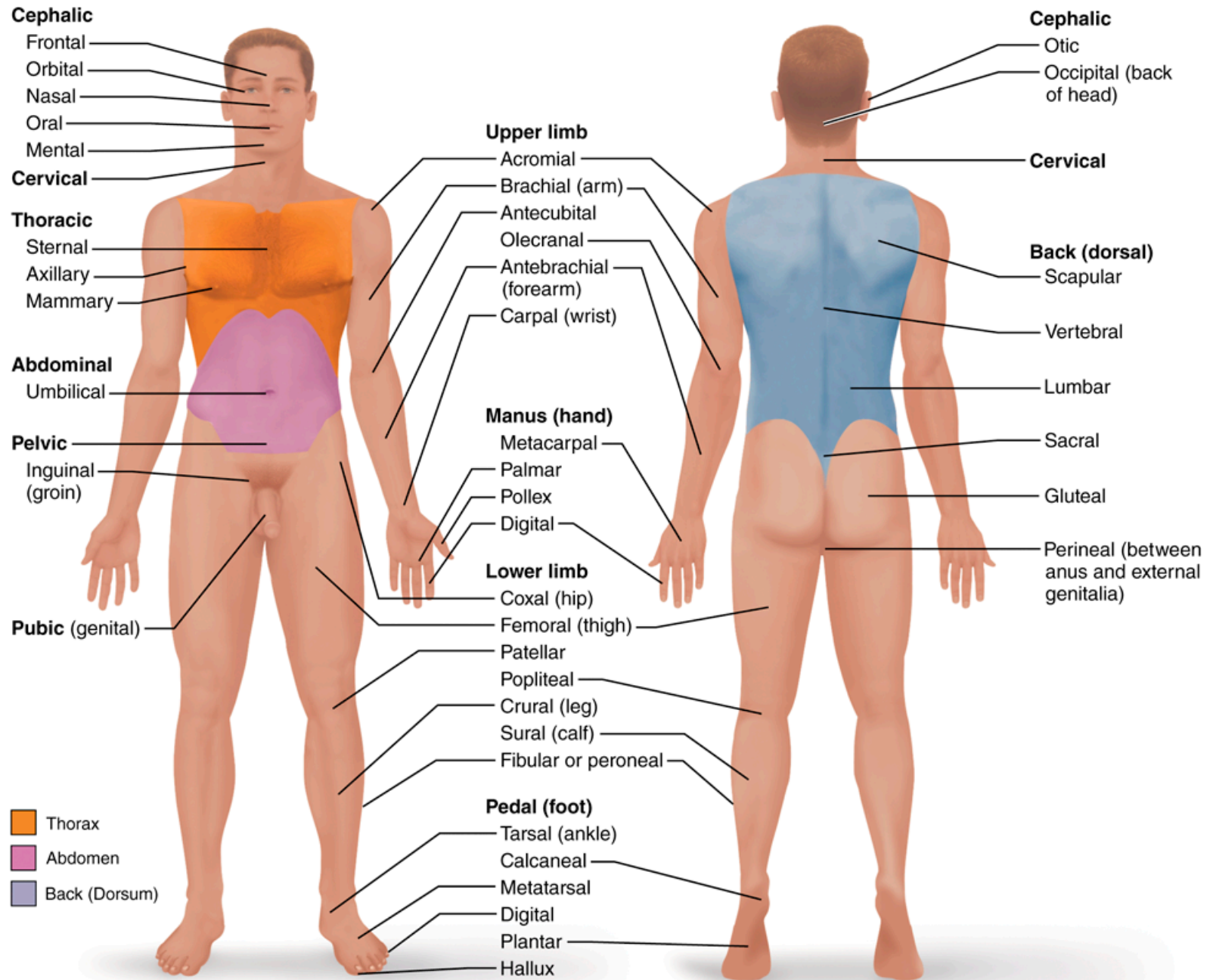
ANATOMY REVIEW

- Directions
- Regions
- Bones
- Muscles
- Organs



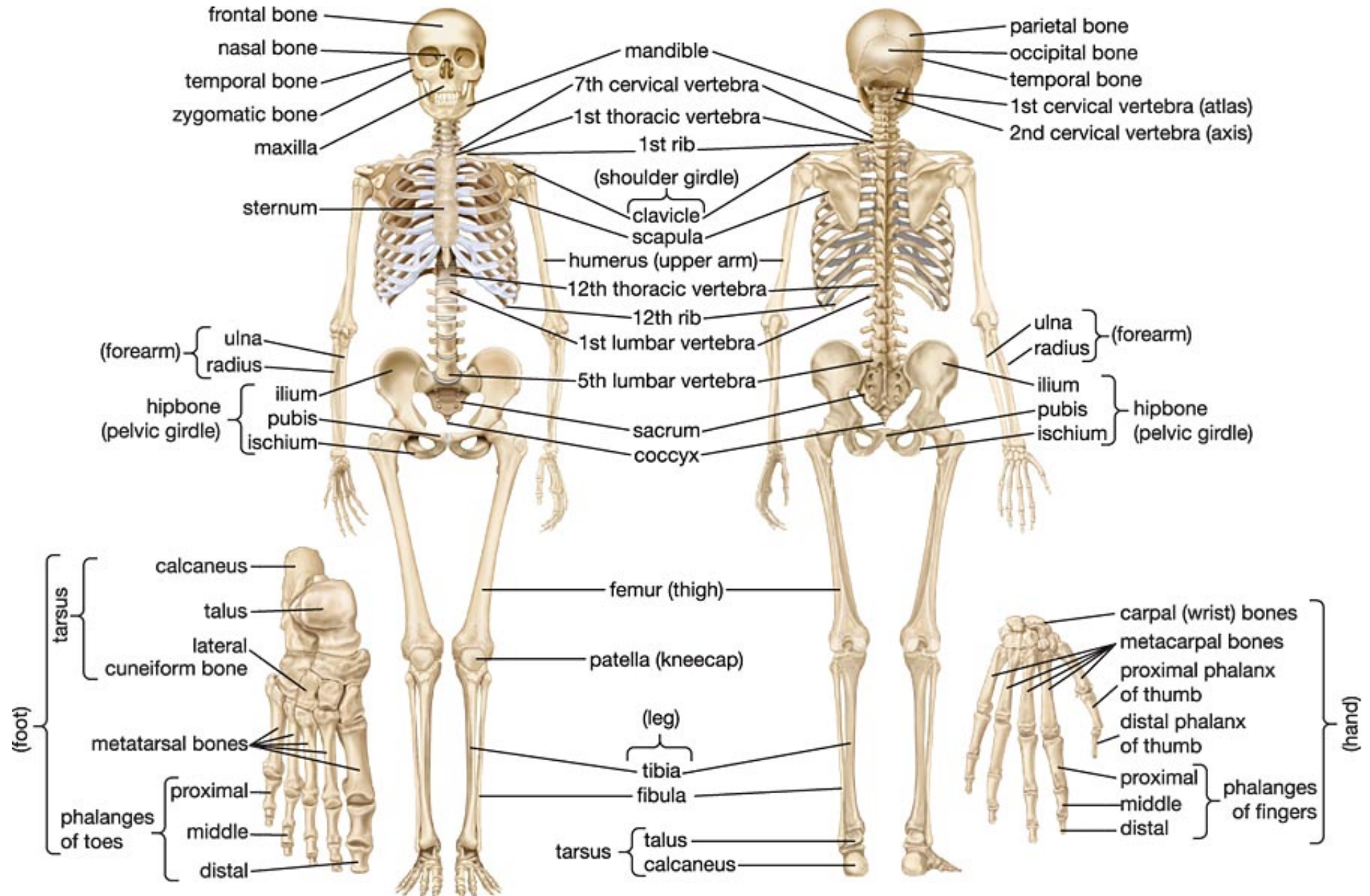


Directional References



(a) Anterior/Ventral

(b) Posterior/Dorsal



Muscular System

