

**Pr. M.D. ELAMRANI**

# Anatomical terminology

# Anatomical terminology

For a « universal » study of human body , an international agreement (adopted in Paris in 1955) develops an international anatomical nomenclature in Latin,

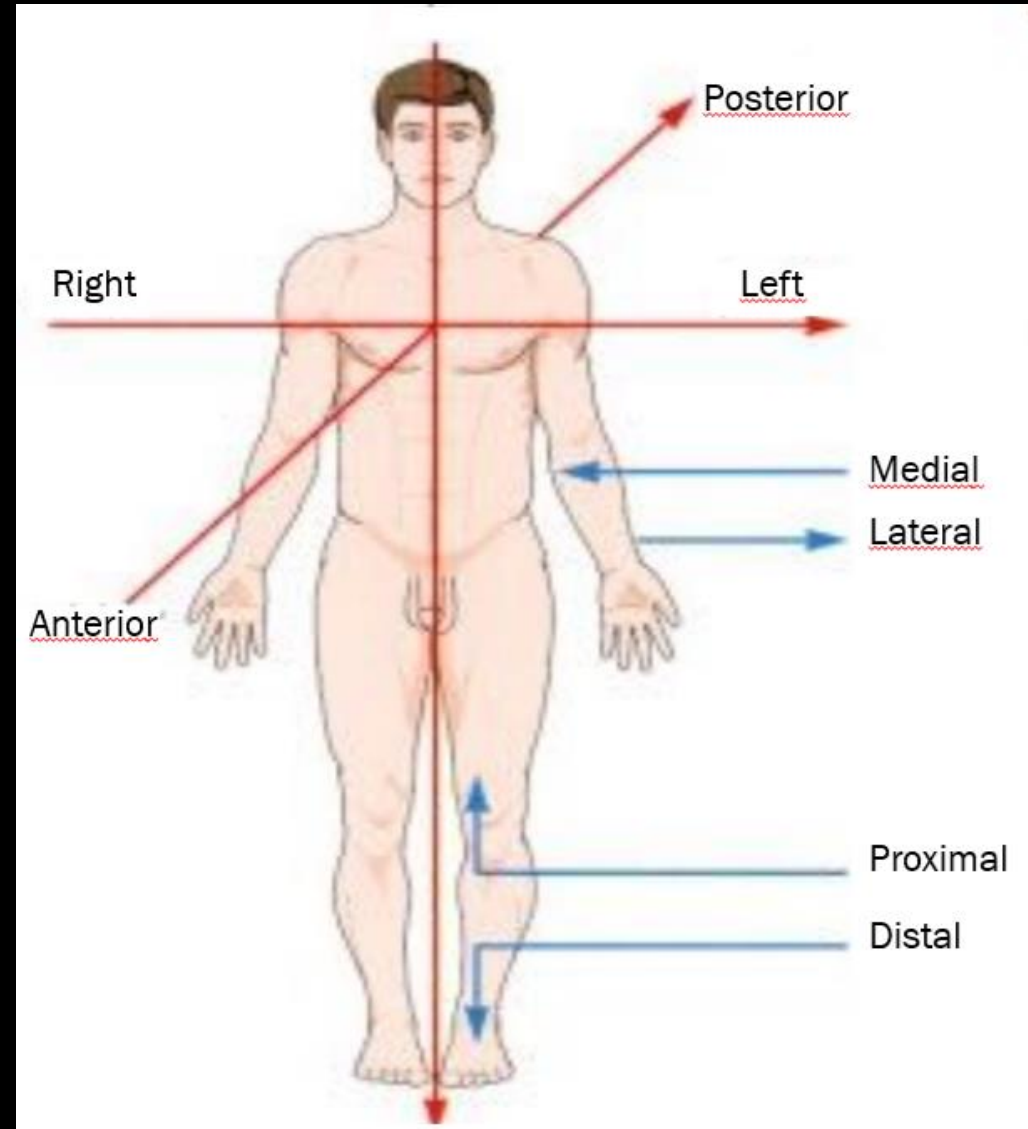
It is **Nomina Anatomica = New nomenclature**

EXAMPLE: Ulnar nerve for old term cubital nerve, fibula instead of calf bone

Be careful you will find in some ancient books, the old nomenclature

# Standard anatomical position

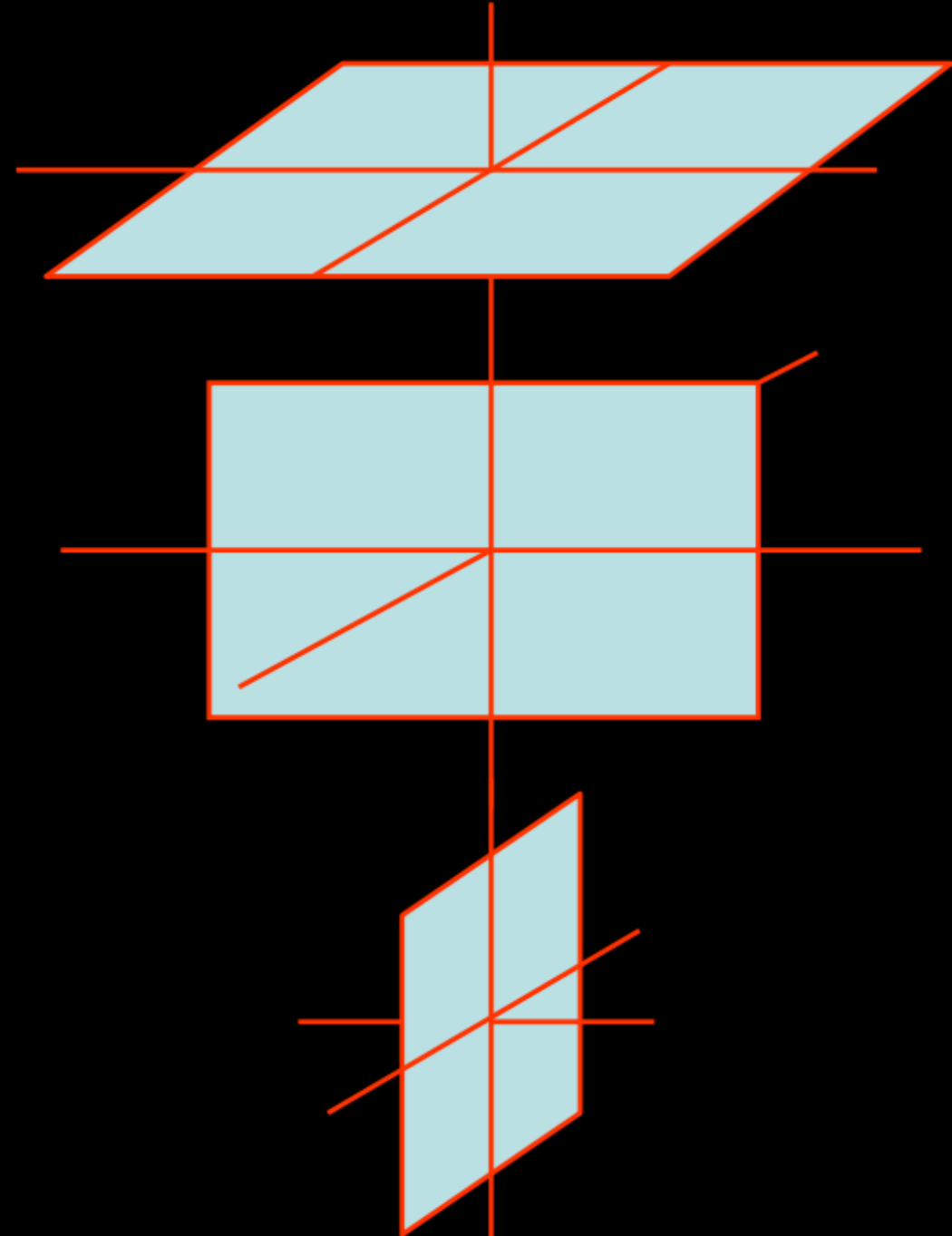
- Human body must be:
  - Standing
  - Upper limbs hanging down alongside the body
  - Palm of the hand turned forwards
  - Looking straight ahead



# Orient yourself in space:

3 axes:

Horizontal  
Frontal  
Sagittal



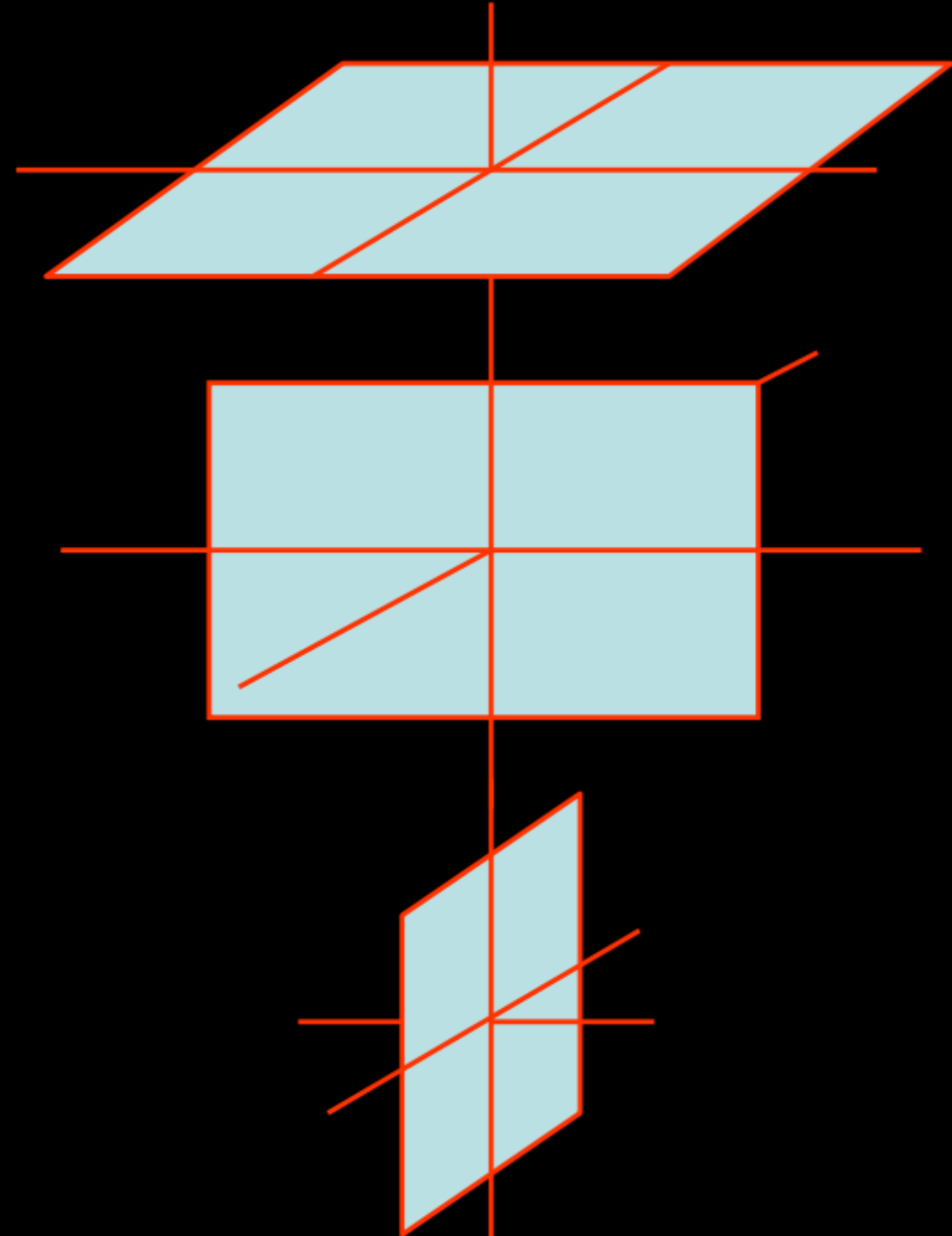
# Orient yourself in space:

3 axes:

Horizontal  
Frontal  
Sagittal

3 planes:

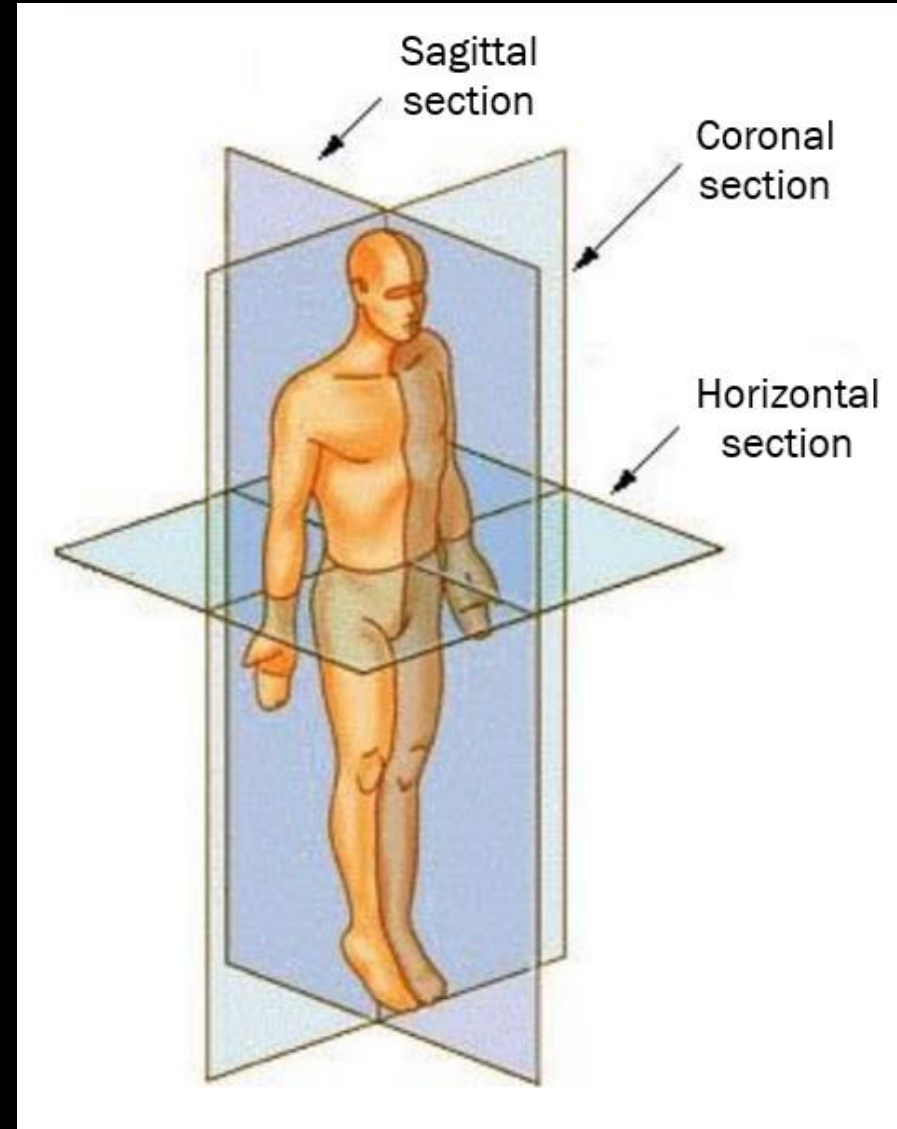
Horizontal  
Coronal  
Sagittal





# Standard anatomical planes

- Sagittal planes
- Frontal planes
- Horizontal planes



# Sagittal planes

- Sagittal planes are planes oriented in the anteroposterior direction



Median sagittal  
anatomical plane



# Sagittal planes

- Sagittal planes are planes oriented in the anteroposterior direction
- a) Median sagittal plane: is the axis that goes through the body and divides it into two equal halves, right and left



Median sagittal  
anatomical plane

# Sagittal planes

- Sagittal planes are planes oriented in the anteroposterior direction
  - a) Median sagittal plane: is the axis that goes through the body and divides it into two equal halves, right and left
  - b) Paramedian sagittal planes: are parallel to the previous one



Median sagittal  
anatomical plane

# Frontal planes

- They are anatomical planes that divide the body into anterior part (forwards) and posterior part (backwards).



Coronal plane of the head

# Frontal planes

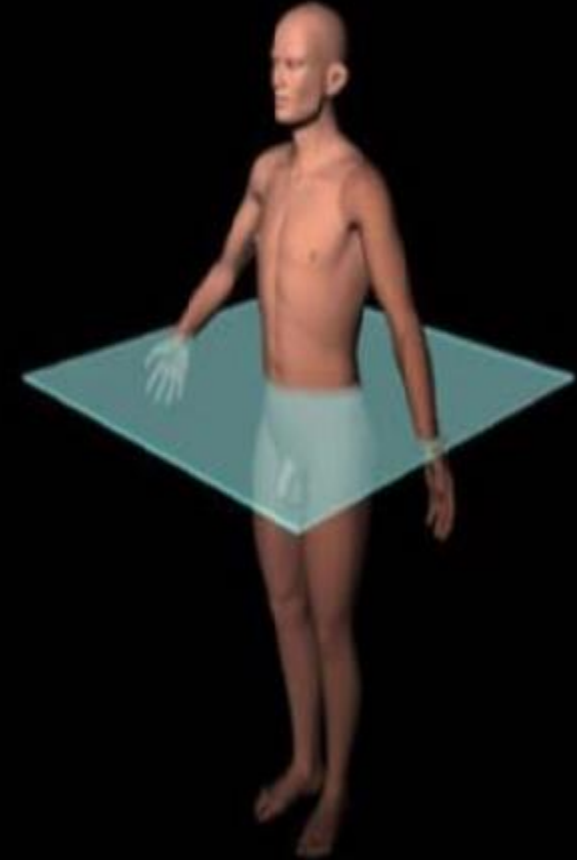
- They are anatomical planes that divide the body into anterior part (forwards) and posterior part (backwards).
- Coronal plane: is the axis that goes through the body and divides it into two equal halves, ventral and dorsal



Coronal plane of the head

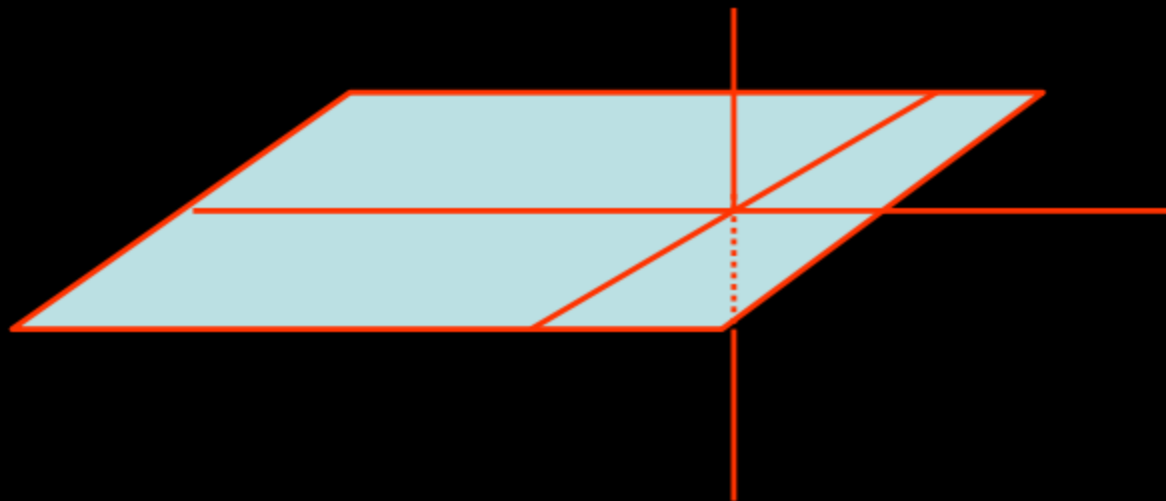
# Horizontal planes

- They are perpendicular to the previous ones and go through the body transversally.



Transverse or horizontal  
anatomical plane

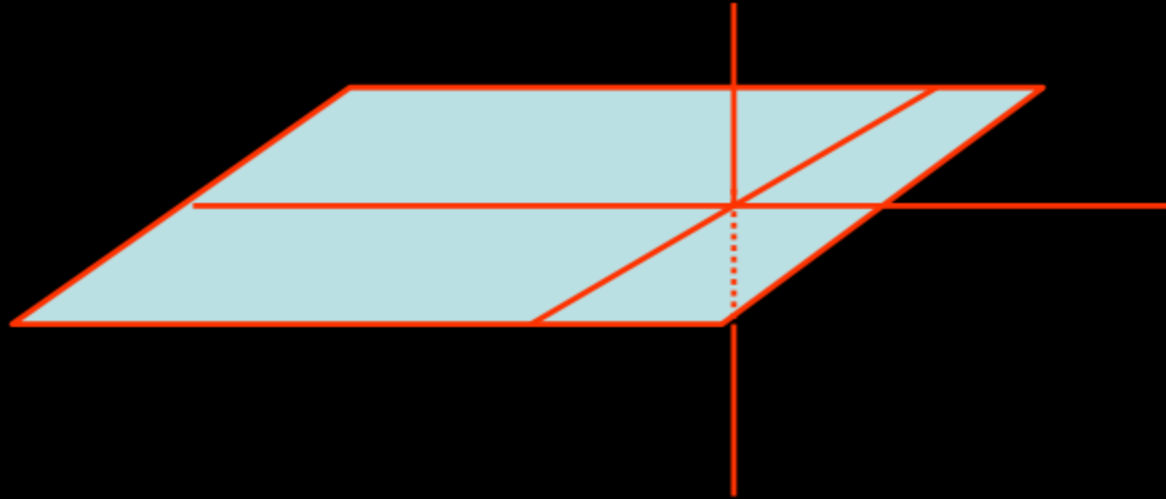
# Horizontal plane





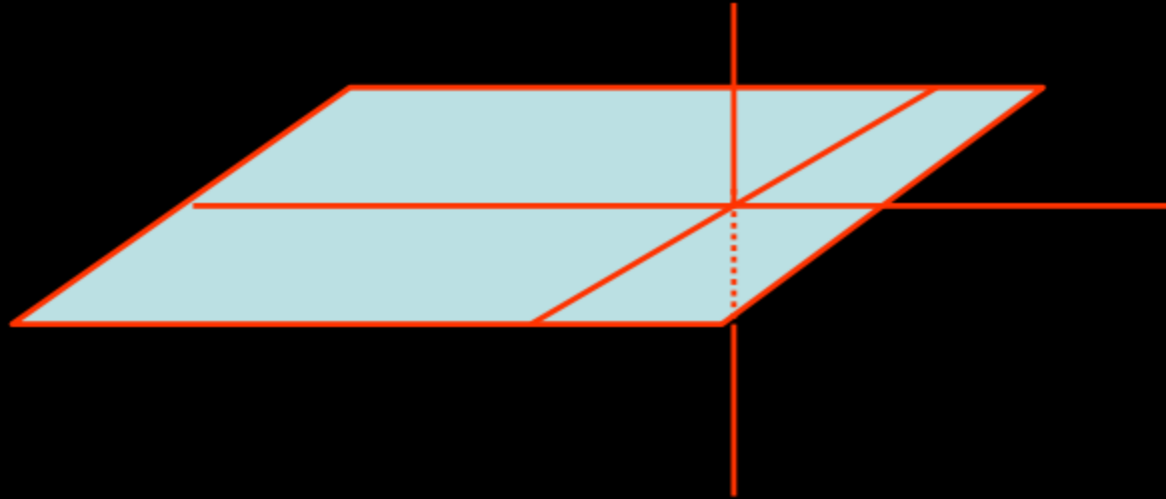
# Horizontal plane

Anything that is above is in a **cranial position**

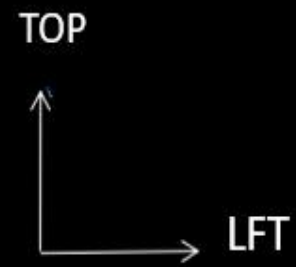


# Horizontal plane

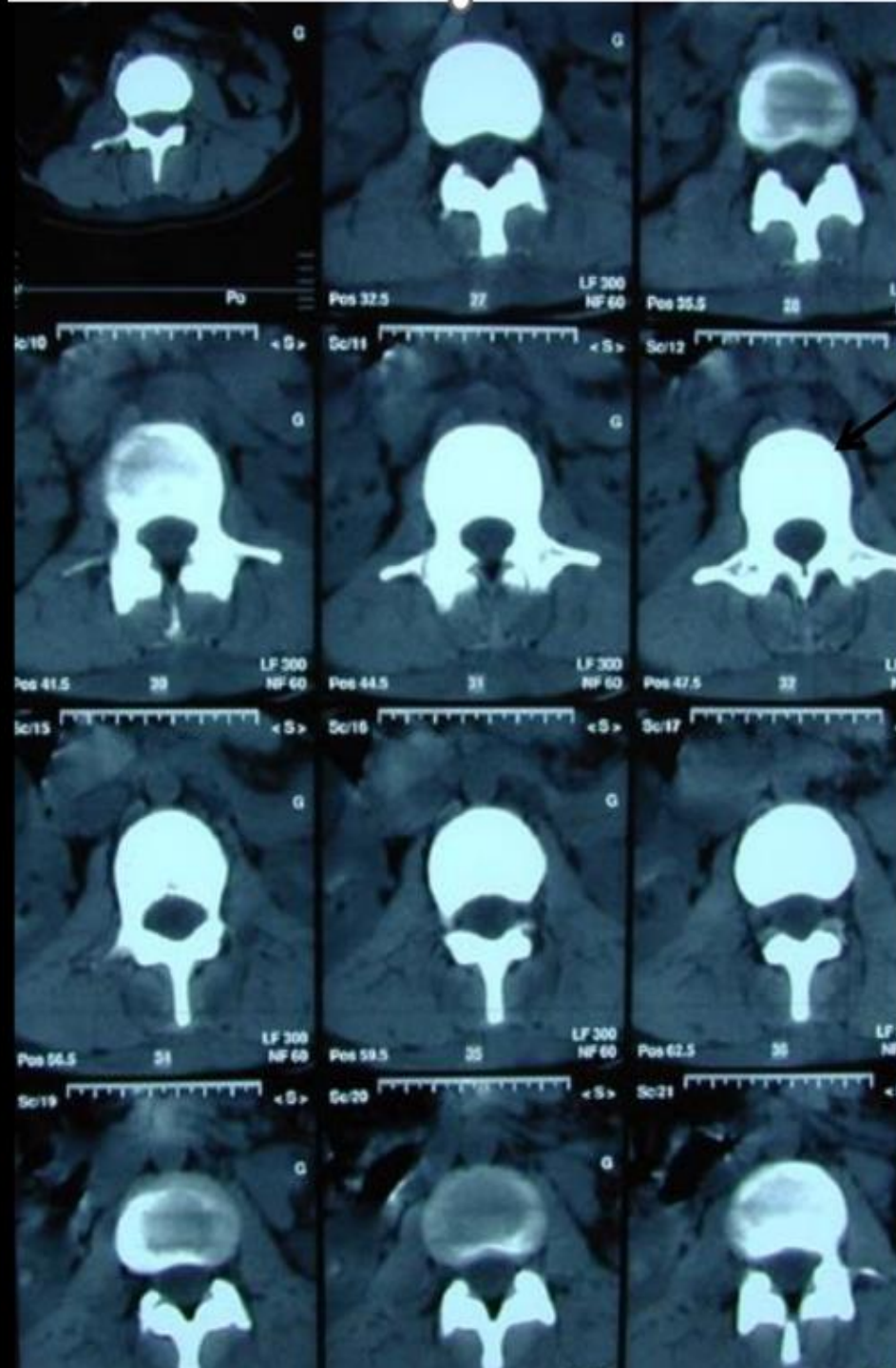
Anything that is above is in a **cranial position**



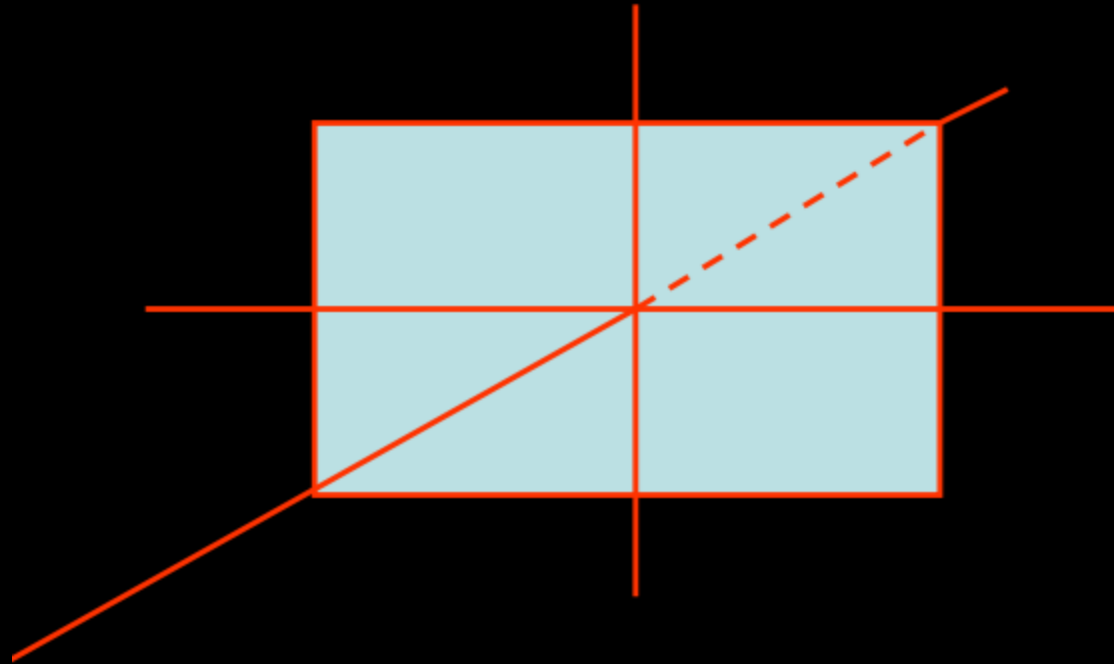
Anything that is below is in a **caudal position**



Horizontal  
section  
Cervical spine  
CT scan

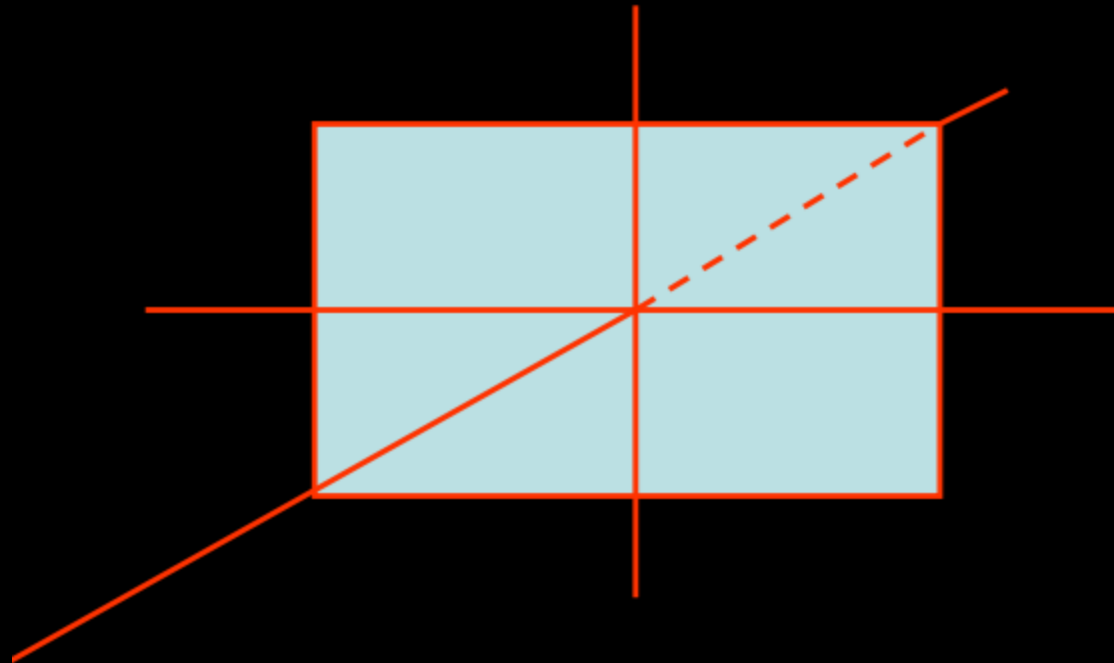


# Frontal plane



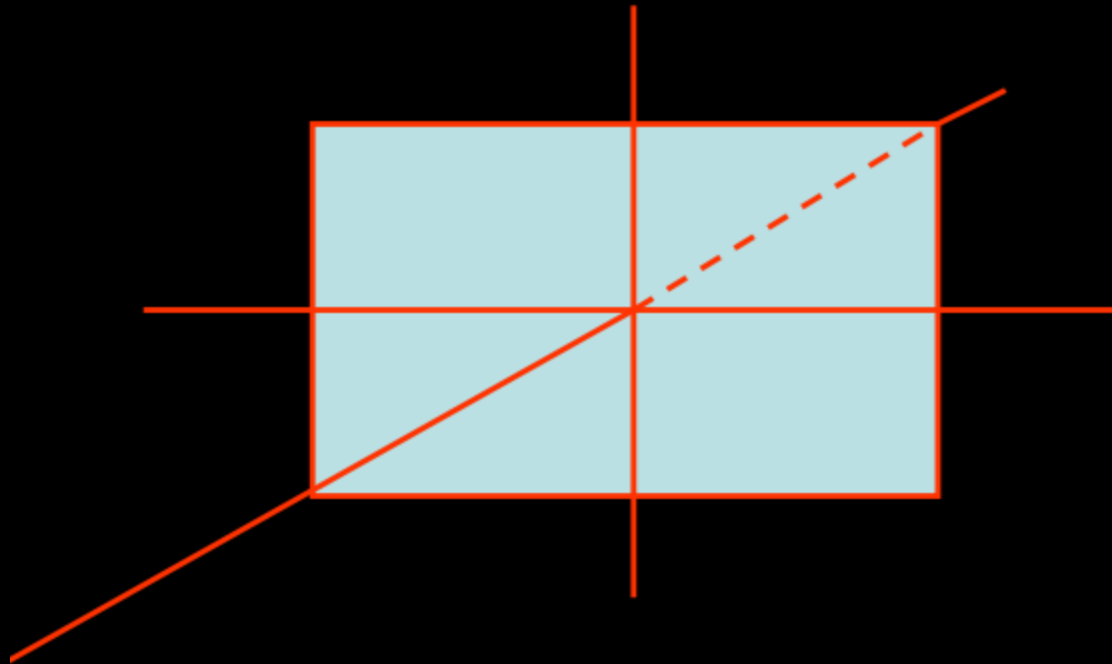
# Frontal plane

Anything that is forwards is in a **ventral or anterior position**



# Frontal plane

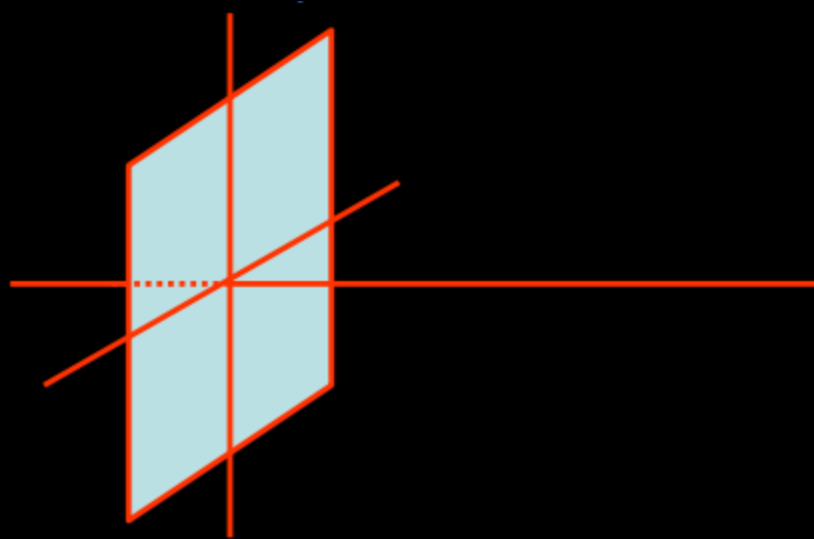
Anything that is forwards is in a **ventral or anterior position**



Anything that is backwards is in a **dorsal or posterior position**

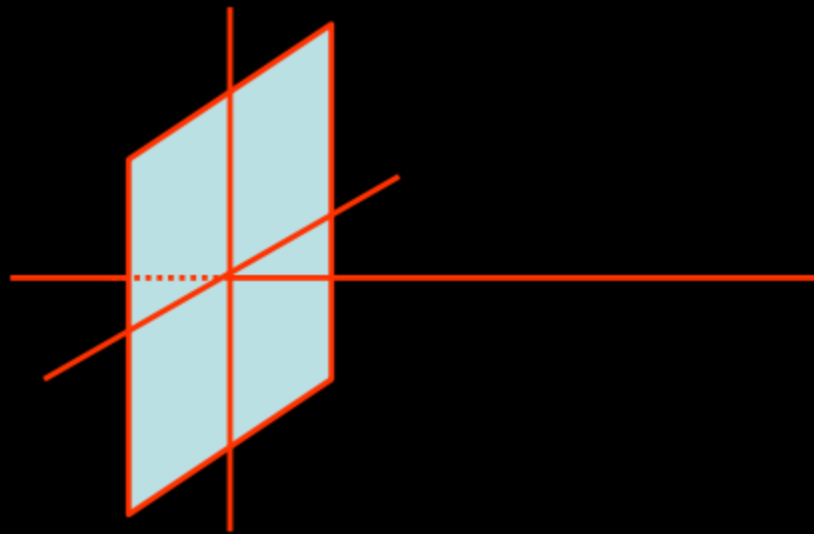


# Sagittal plane



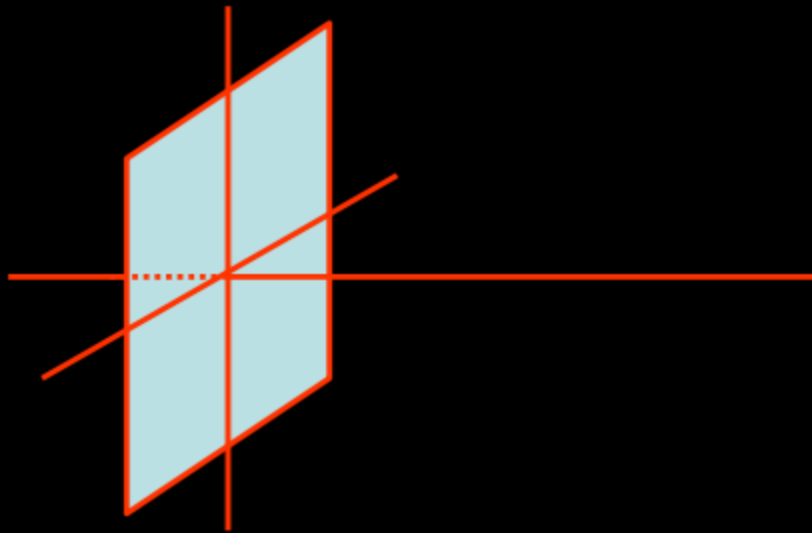
# Sagittal plane

Anything approaching the median sagittal plane is inside or  
in a medial position

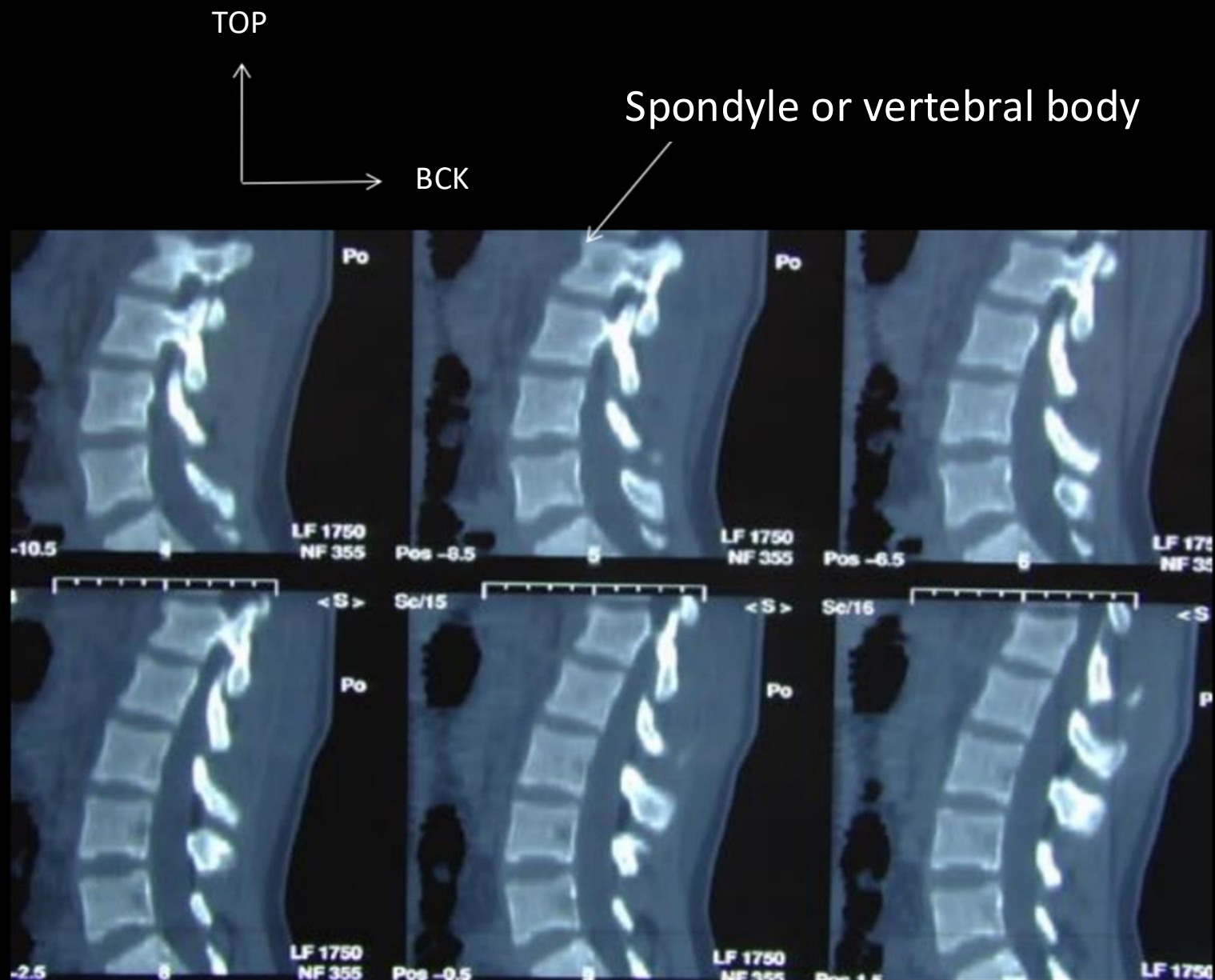


# Sagittal plane

Anything approaching the median sagittal plane is inside or  
in a medial position



Anything that moves away is outside or in a lateral position



Sagittal section CT scan

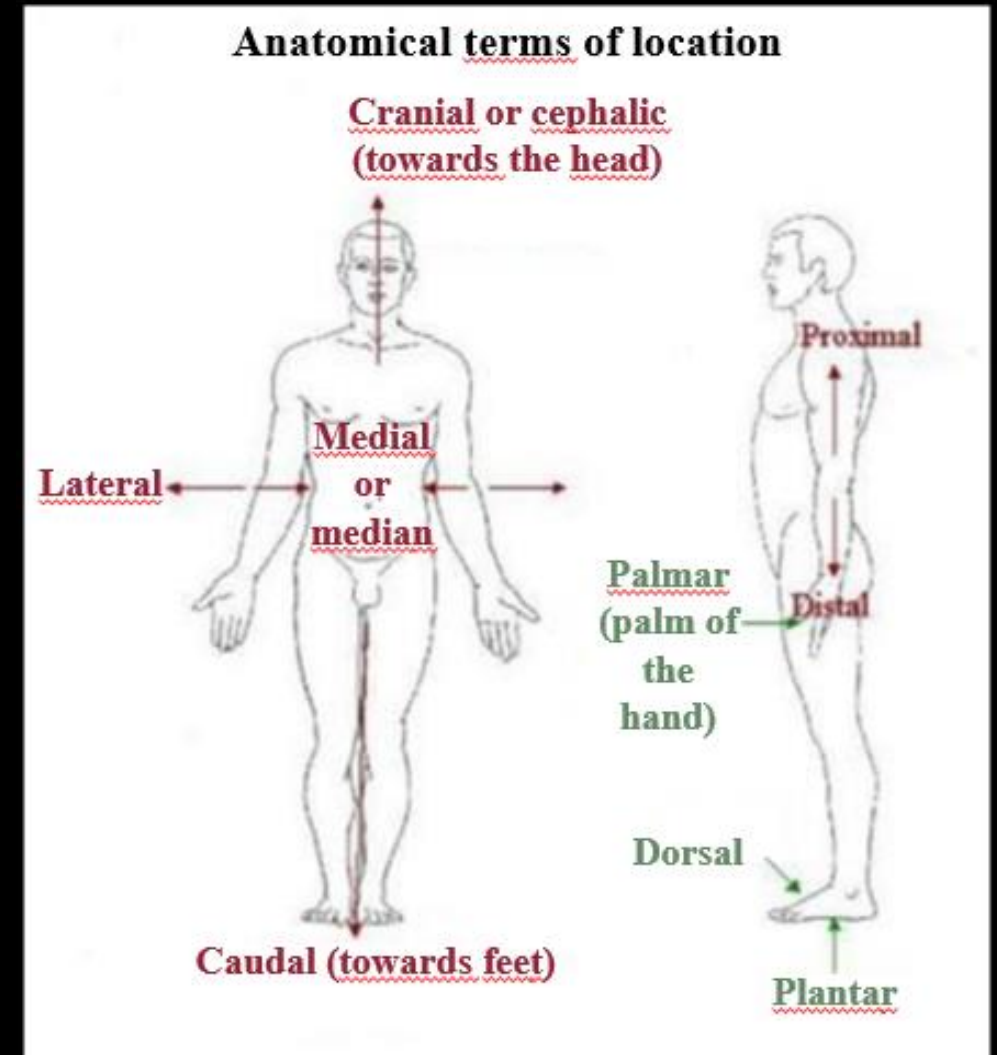
Ventral  
Anterior



Dorsal  
Posterior

# Anatomical terms of location

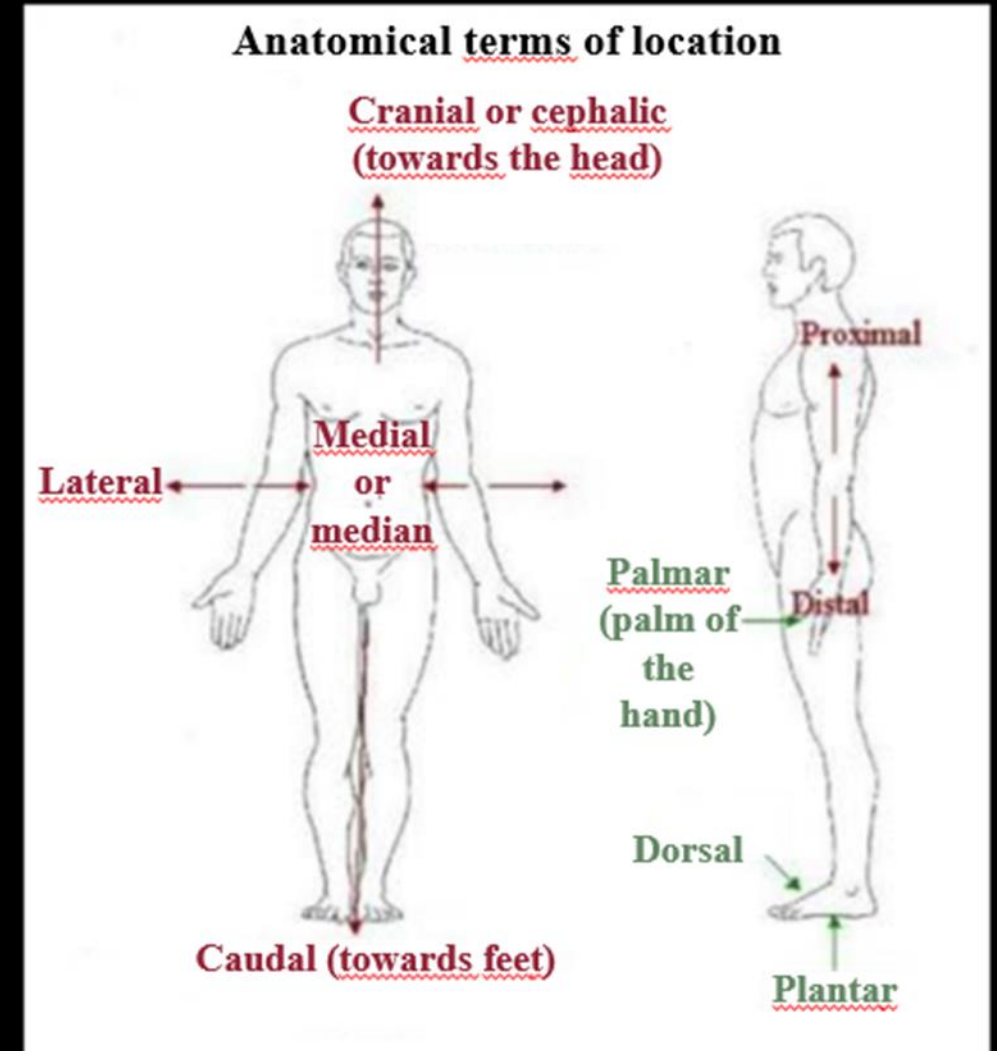
- **Medial:** near the median sagittal plane.
- **Lateral:** far from the median sagittal plane.
- **Superior or cranial or cephalic:** close to the upper end.
- **Inferior or caudal:** close to the lower end.
- **Proximal:** near the point of attachment of the limb.
- **Distal:** far from the point of attachment of the limb.
- **Ipsilateral:** belong to the same side.
- **Contralateral:** belong to opposite sides.





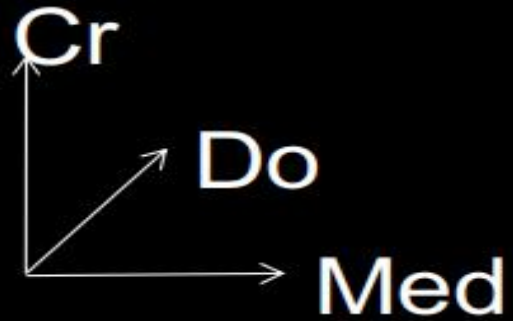
# Anatomical terms of location

- **Anterior or ventral:** near the anterior wall.
- **Posterior or dorsal:** near the posterior wall.
- **Internal:** close to the inside or to the centre of a cavity or an organ.
- **External:** close to the outside or to the periphery of a cavity or an organ.
- **Superficial:** near the surface.
- **Deep:** far from the surface.



Cranial (Cr), proximal, superior

## Anterior view of the femur



Lateral (Lat),  
outside,  
external

Medial (Med),  
inside,  
internal

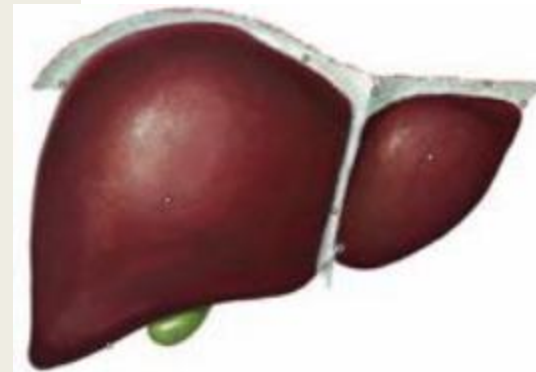
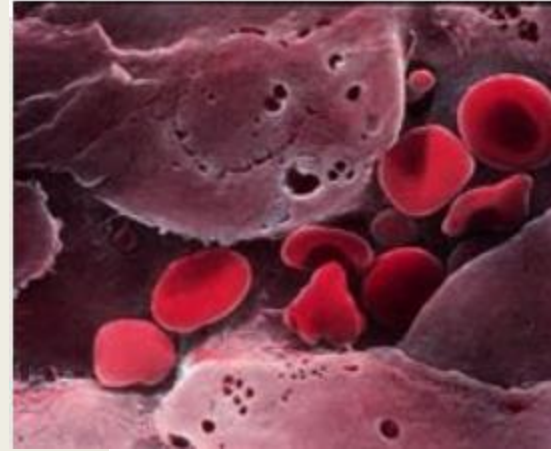


Caudal (Ca), distal, inferior

# Structural organization of the human body

# Levels of structural organization

- **Cell:** basic structural and functional unit e.g. : neuron, blood cell.
- **Tissue:** set of cells that have homologous function. E.g. : bone tissue.
- **Organ:** brings together different tissues for a specific function. E.g. : liver, brain.



# Levels of structural organization

- **System:** set of comparable organs from a structural point of view. E.g. : skeletal system, central nervous system.
- **Apparatus:** (locomotor, digestive, urinary, cardiovascular...): set of organs that participate to the same function.

