

# Anatomy Day 2

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# Corrections corner





Fundamental bones

Differences in bone structure

Kinds of joints

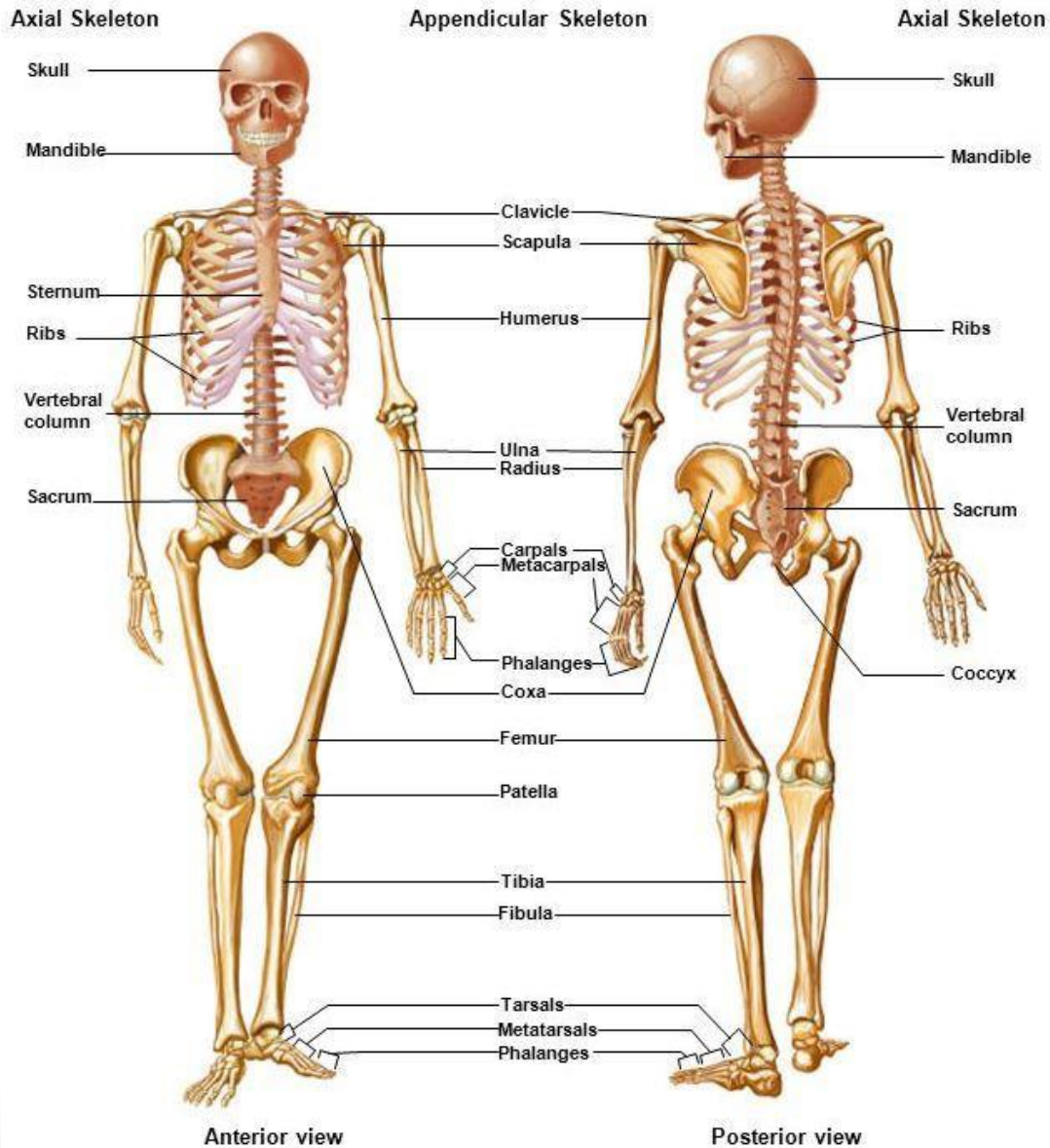
How do joints influence movement

Joints and flexibility

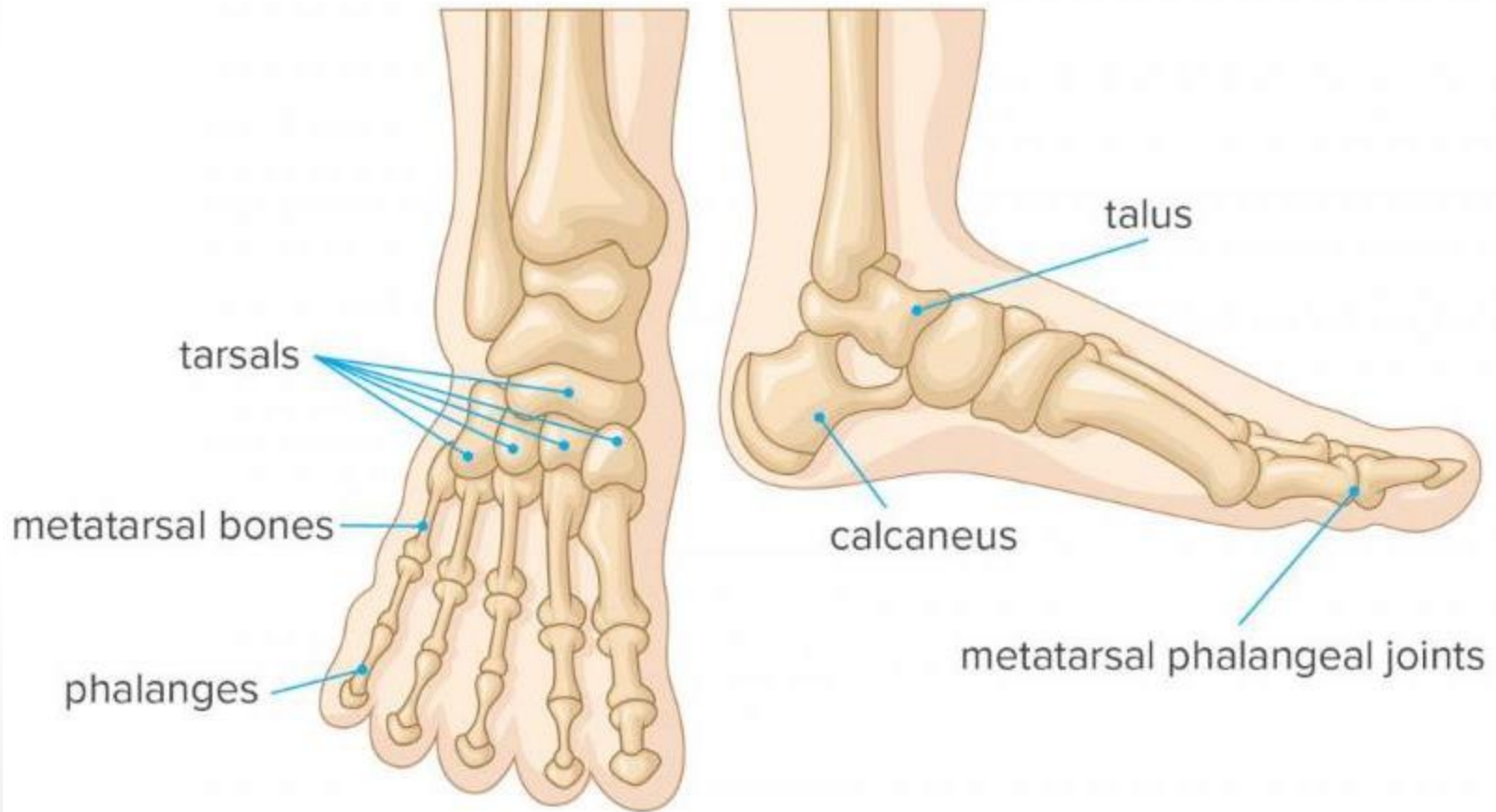
Compression and tension

# BONES AND JOINTS

# Fundamental Bones (p.13-17)



# Our fundament



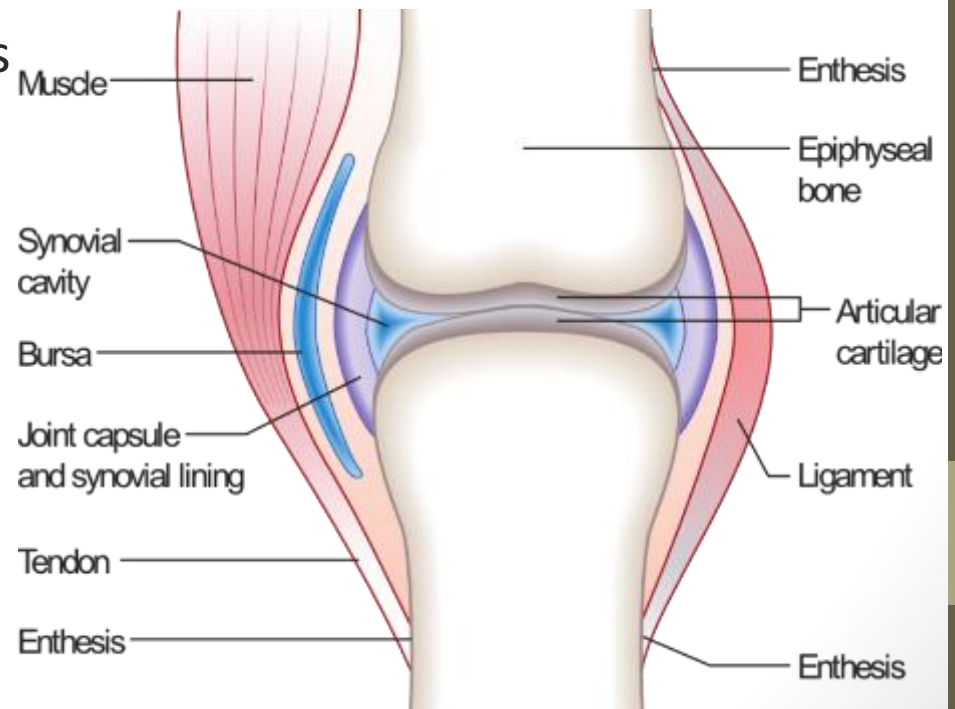
# Joints: How we move

Joints are where 2 bones meet, this is where movement takes place.

Much of our health relies on movement. Expansion and contraction of the body by muscle contraction and joint movement has a beneficial effect on our organs and glands and helps release our cell's products (e.g. hormones and digestive enzymes, etc.) Movement increases blood flow to the tissues, increases synovial fluid in our joints and helps our lymphatic system rid our bodies of toxins and cellular waste.

# Synovial joints

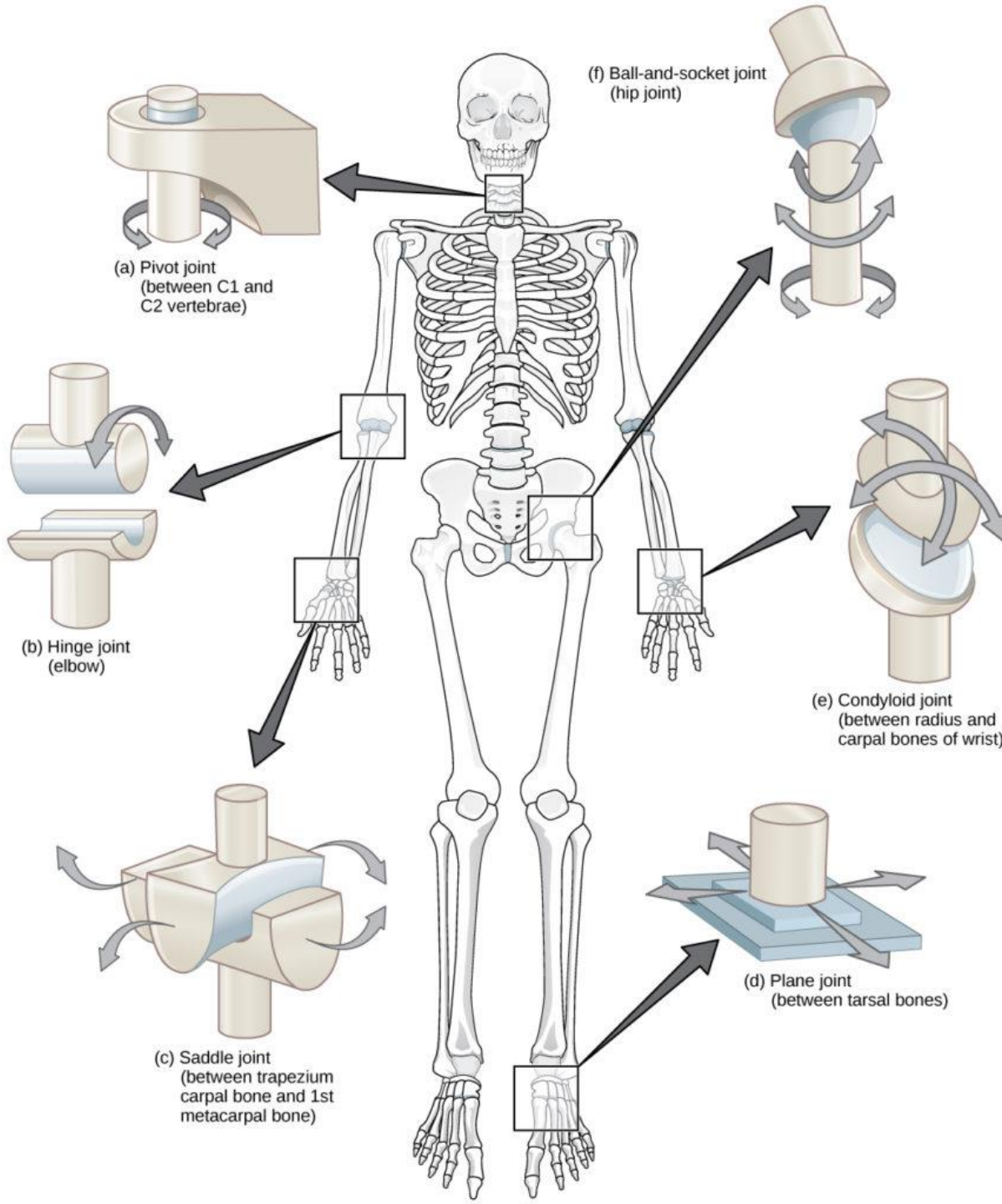
- Most joints are synovial joints, these are two or more bones encapsulated in a fluid filled connective tissue sac and supported by ligaments.
- Allow for the most of movement
- By understanding the joints we can keep ourselves and our students safe



# Types of synovial joints

Type	Description	Examples
Ball and Socket joint	One is spherical and the other is cup shaped	Shoulder and hip
Hinge joint	Convex into concave	Knee and elbow
Saddle joint	Both surfaces are saddle shaped	Thumb
Condyloid joint	One is roughly oval and the other is shallow	Wrist
Gliding joint	Both surfaces are flat	Sacroiliac joint
Pivot joint	A pointed or rounded process of a bone fits into a ring-like structure	Elbow



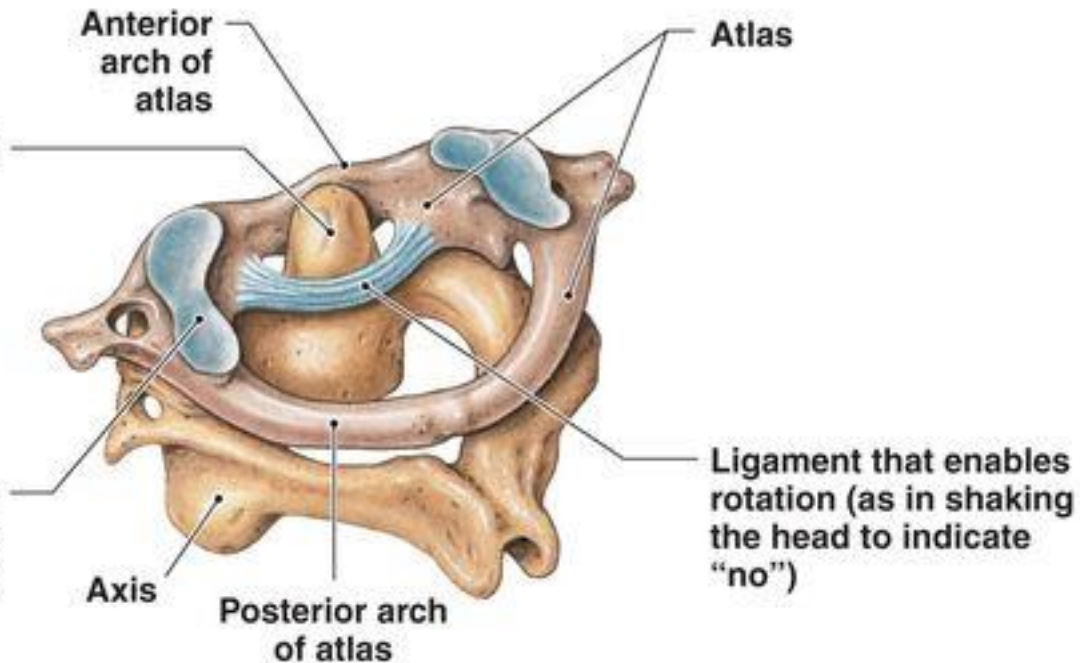


# C1 (Atlas) & C2 (Axis)

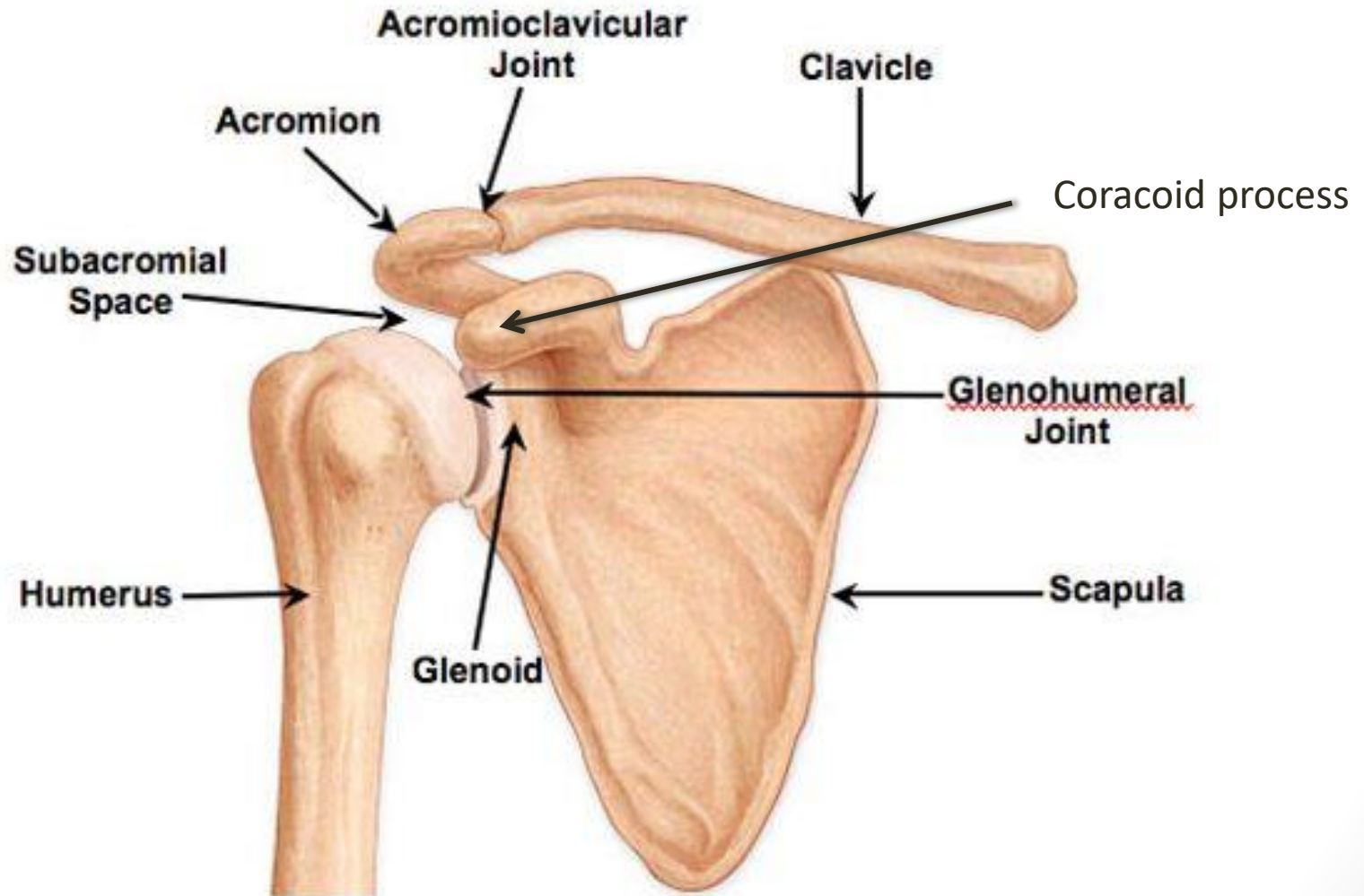
The first two cervical vertebrae: the atlas and the axis

Dens (odontoid process)

Joint that permits nodding (as in indicating "yes")

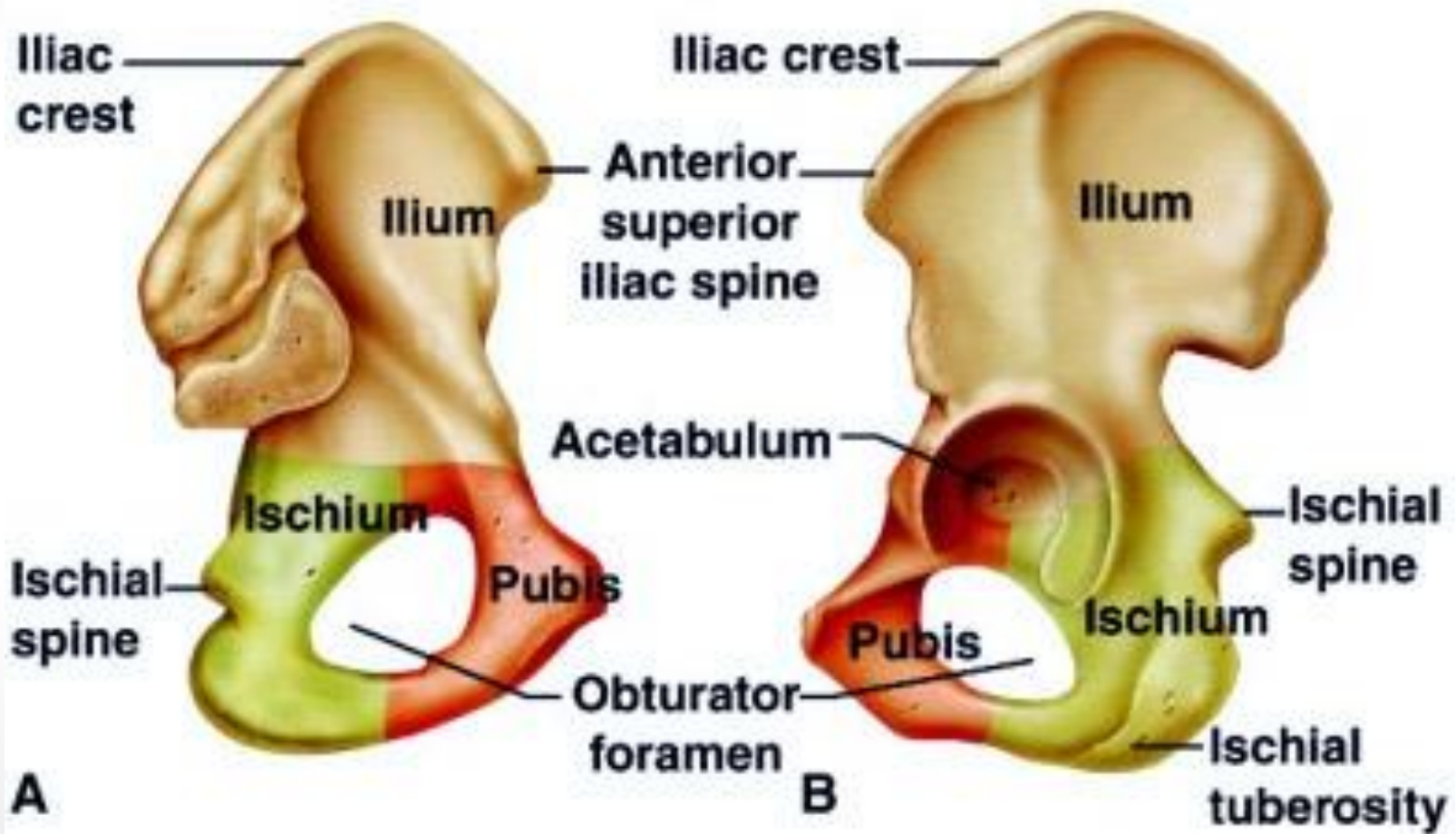


# The shoulder



Bony anatomy of the shoulder

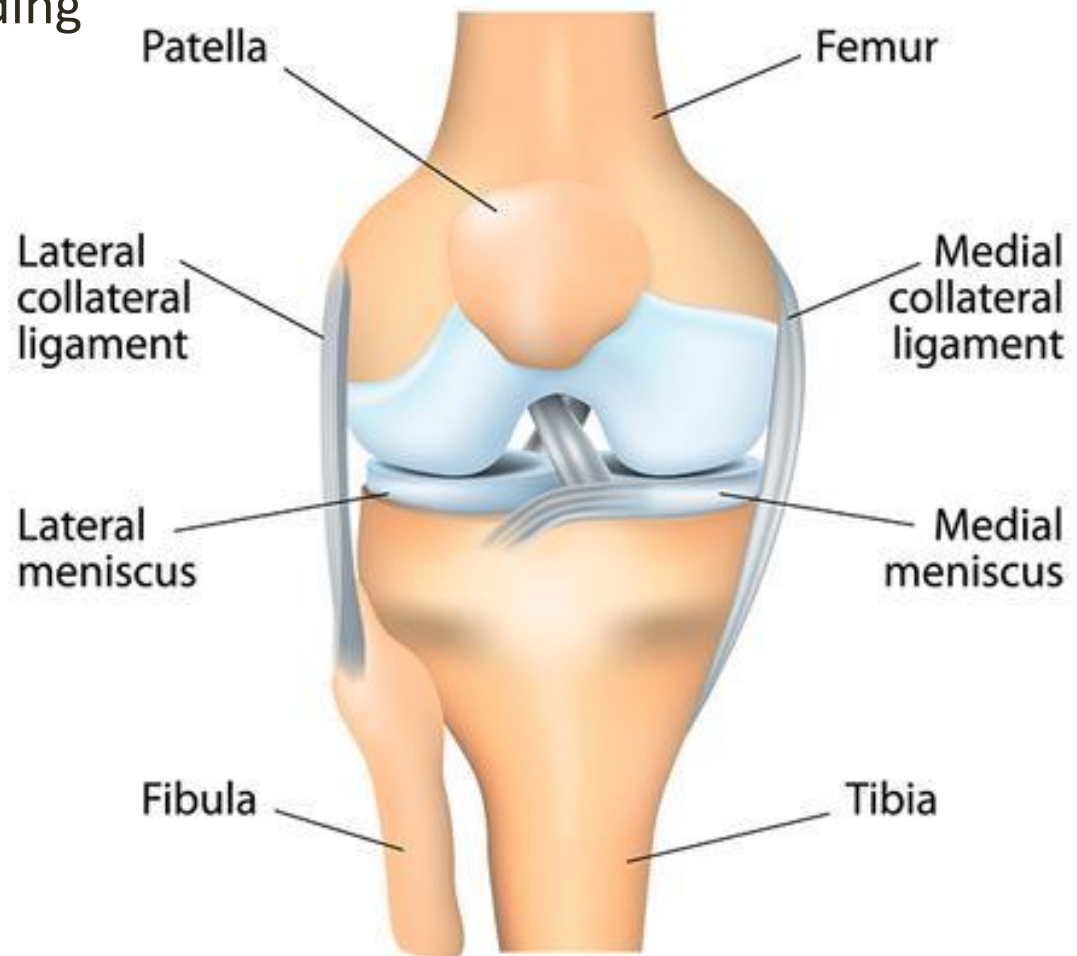
# The hips



# The knees

Create stability in the knees  
by activating surrounding  
muscles

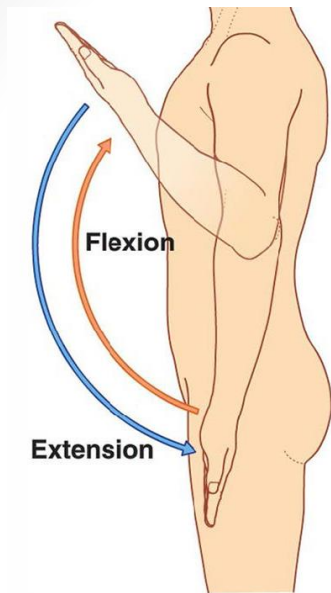
## THE HUMAN KNEE



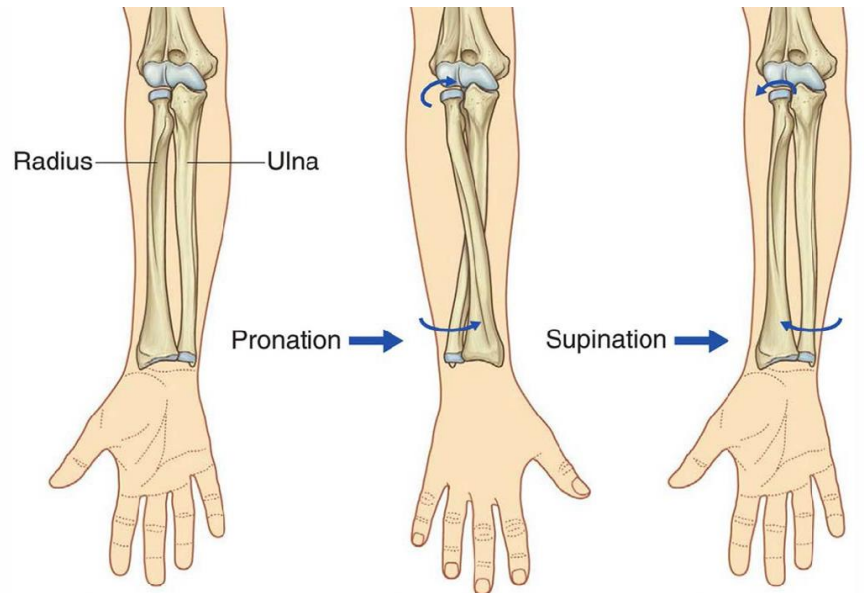
# Movements of the joints

Movement	Direction
Flexion	Joint angle becomes smaller
Extension	Joint angle becomes larger
Abduction	Segment moves away from the midline of the body
Adduction	Segment moves towards the midline of the body
Lateral flexion	Lateral shortening of a joint angle
Rotation	Twisting around the midline of the segment
External rotation	Rotation away from the midline of the body
Internal rotation	Rotation towards the midline of the body
Supination	External rotation of the forearm or foot

Movement	Definition
Pronation	Internal rotation of the forearm or foot
Dorsiflexion	Top of the foot moves toward the shin
Plantar flexion	Top of the foot moves away from the shin
Horizontal flexion	With the arm in 90 degrees of shoulder flexion, moving the arm towards the body
Horizontal extension	With the arm in 90 degrees of shoulder flexion, moving the arm towards the body
Retraction	Scapulae move towards the spine
Protraction	Scapulae move away from the spine
Elevation	Scapulae move up towards ears
Depression	Scapulae move down towards the pelvis



A



B Palm anterior

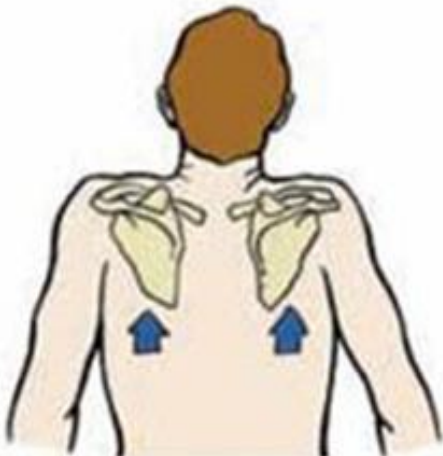
Palm posterior

Palm anterior

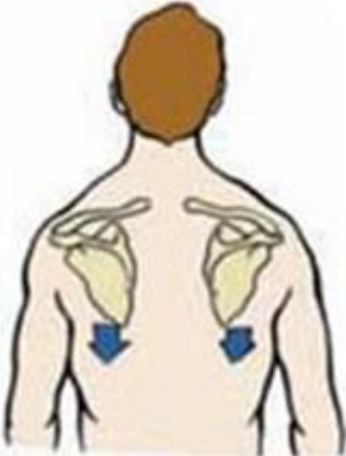




**Figure 3-34**  
Scapular  
movements



Elevation



Depression



Adduction (retraction)



Abduction (protraction)



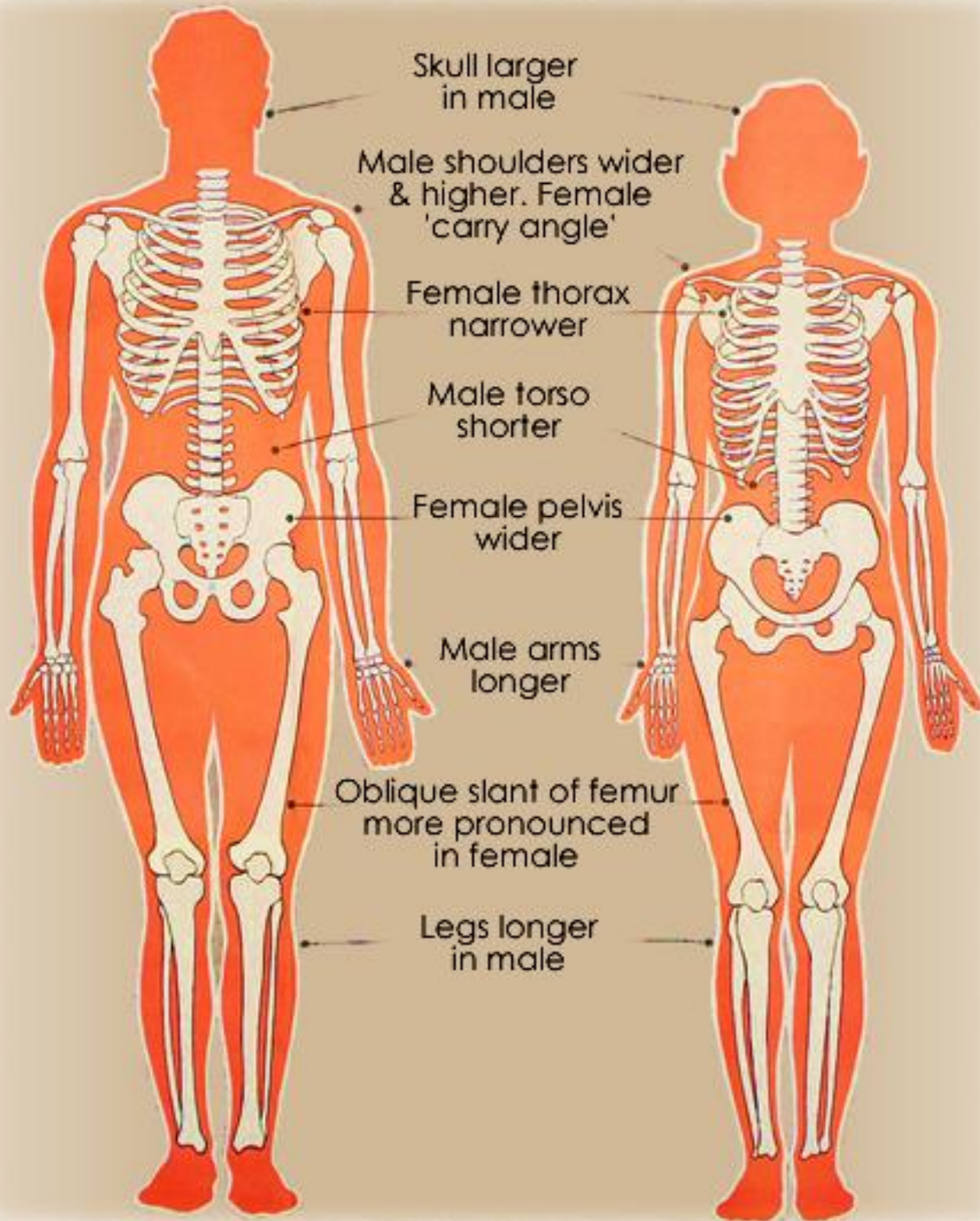
Upward rotation



Downward rotation (return to  
anatomical position)

# What limits stretching and range of motion?

- Strength
  - Can improve through practice
- Tension
  - Fascia or muscle tissue needs to be lengthened
  - Can improve with consistent practice
- Compression
  - Shape of bone prevents further movement
  - May or may not change but requires long term consistent therapeutic practice and sustained postures off the mat, includes modifying asana
- Pain
- Neurological limitations
- Awareness



# Differences in men and women









Coracoid process



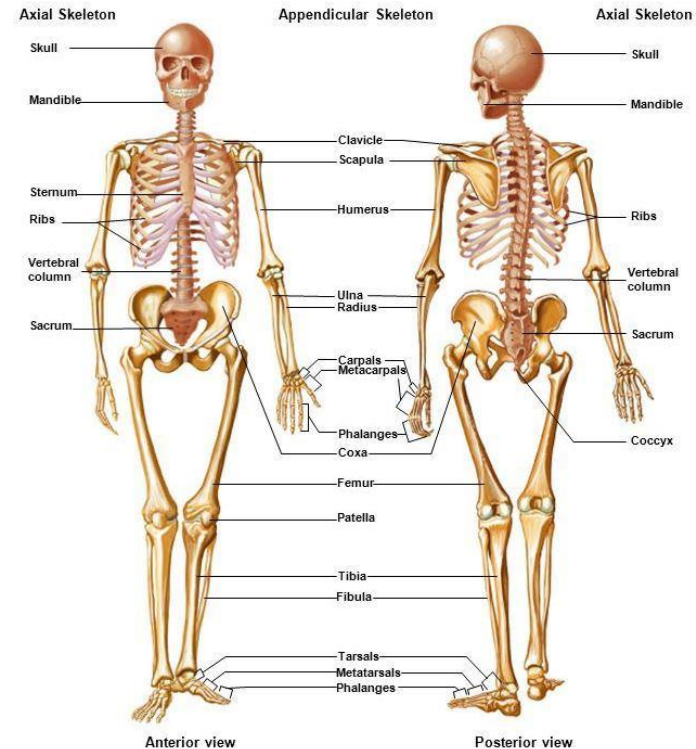


Acromion



# Homework

- Study Harry's anatomy using the slide above, the book is very good to take a closer look but goes into a lot of detail
- Make sure you know what the following movements mean in the body and be able to give examples: Flexion, extension, lateral flexion, abduction, adduction and (internal & external) rotation



# Thank you!

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**Normal person:  
Yoga people always seem  
so zen and calm**

**Yoga people running late for yoga:**



shit shit shit shit shit shit shit shit