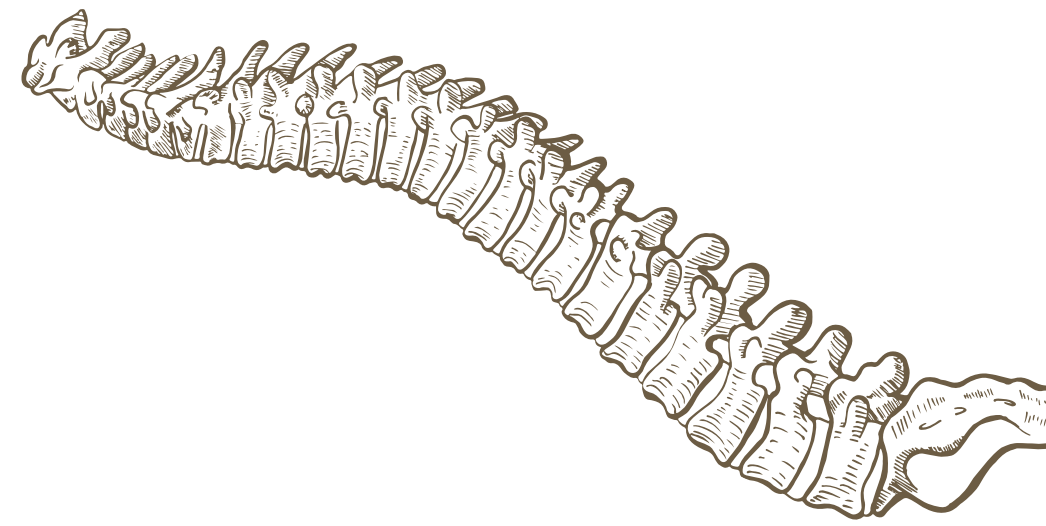
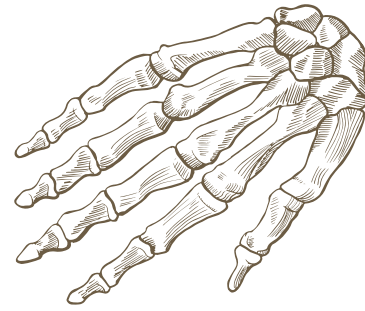
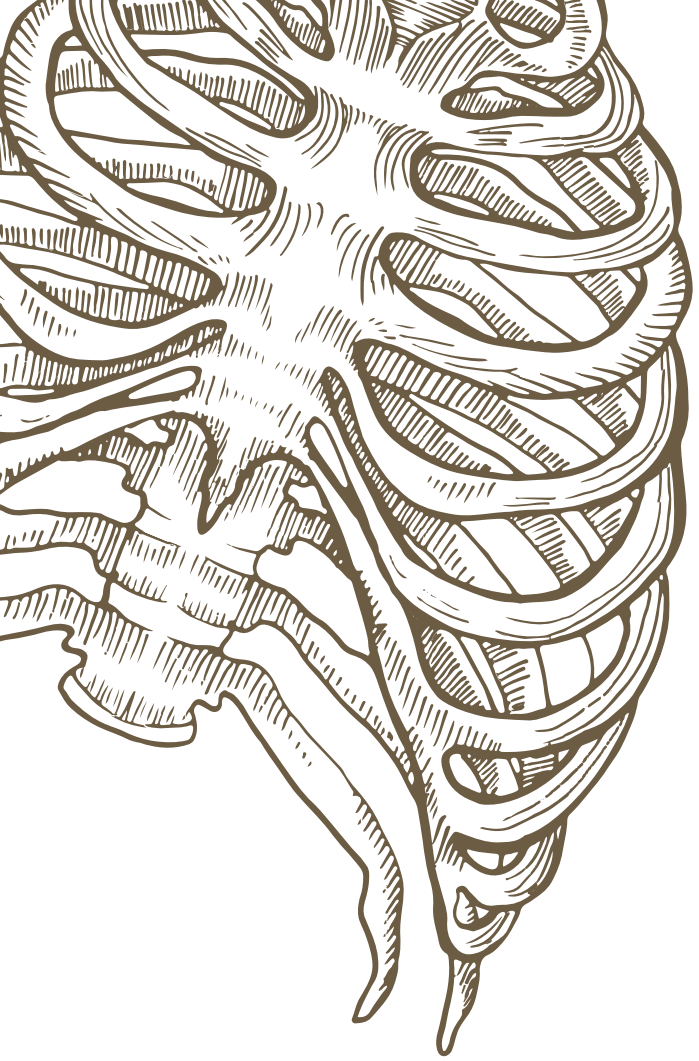
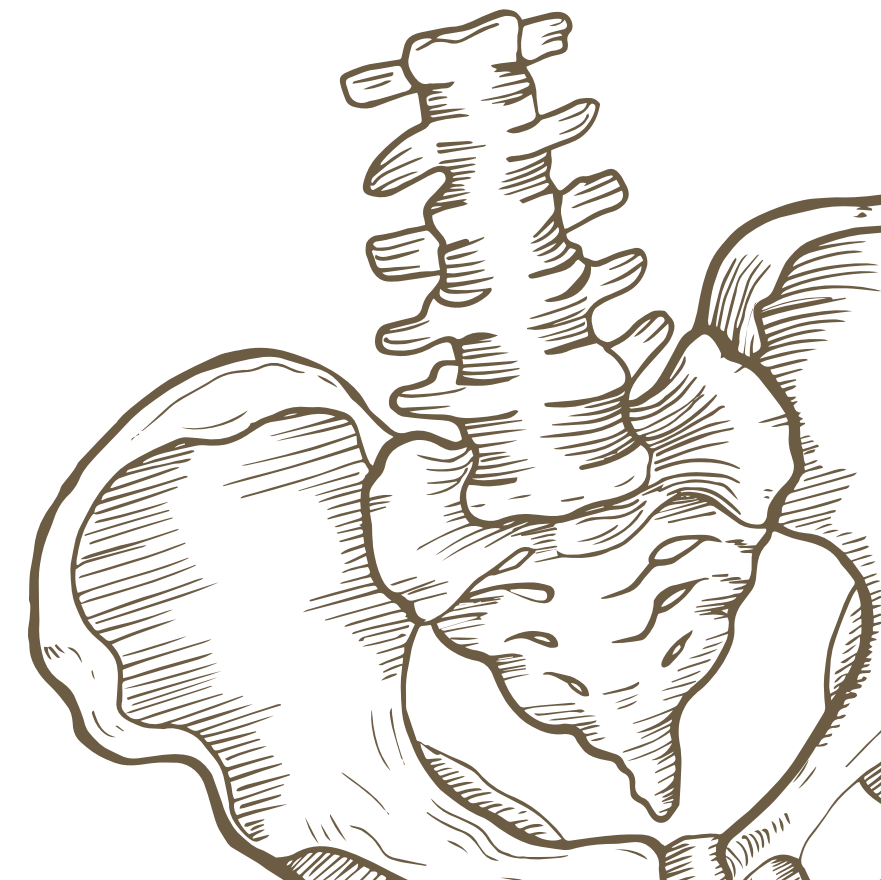
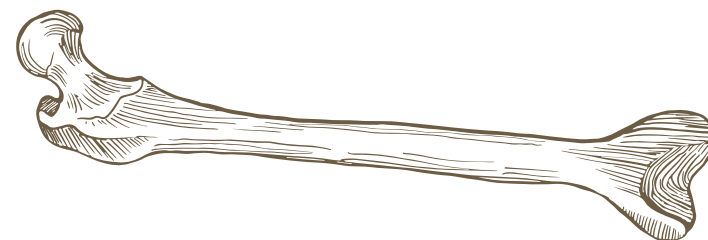
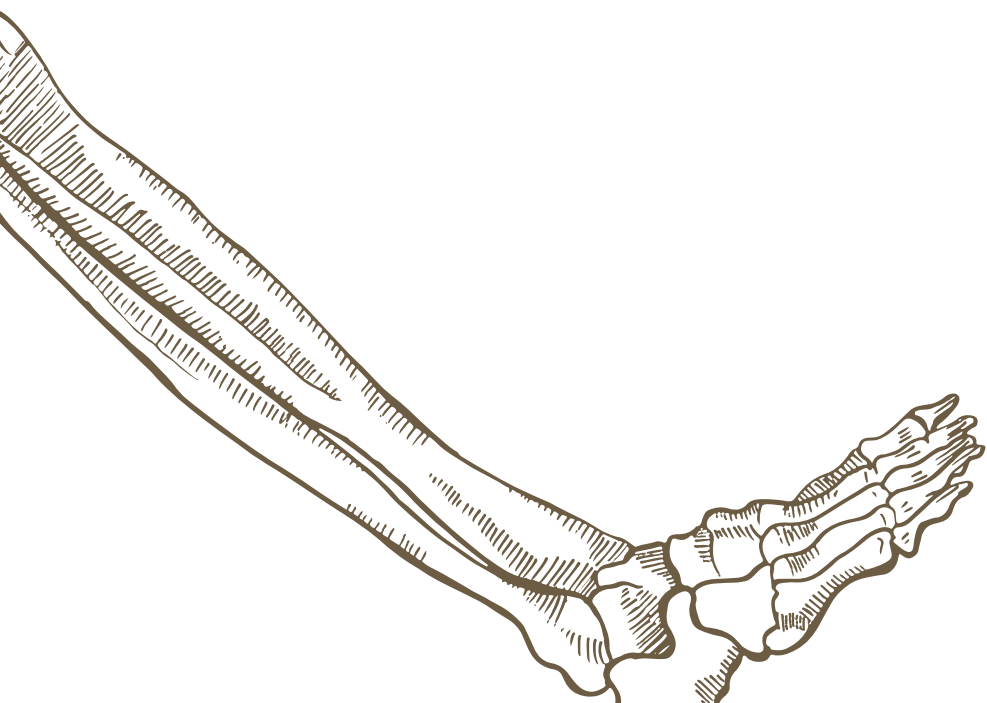




The skeleton sistem

Dora Spinelli



Skeleton division

Appendicular

Includes:

- arms
- legs
- scapula
- clavicle
- pelvis

Axial

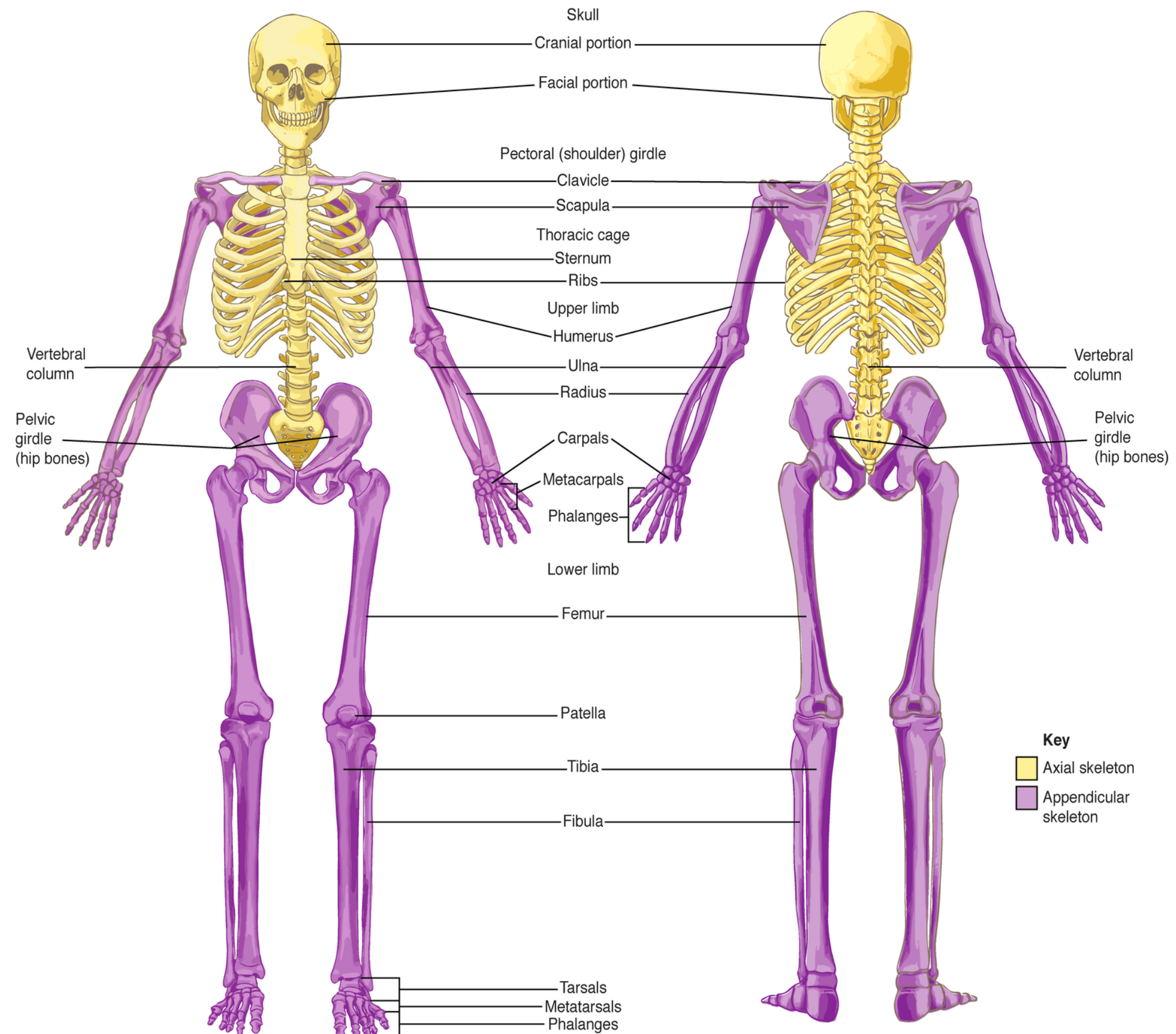
Forms central axis of the body

Includes:

- cranium
- spine
- rib cage
- sternum

Exam tip:

The *scapula* and *pelvis* are part of the appendicular system because they support the limbs



type of joints

Fixed



skull

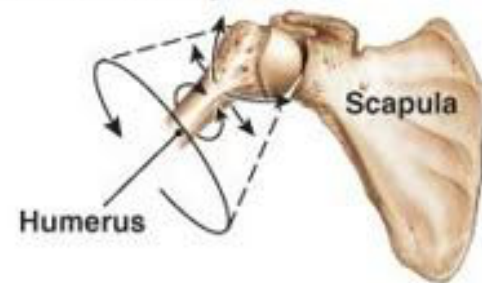
no
movement
at all

maximum
stability

Synovial

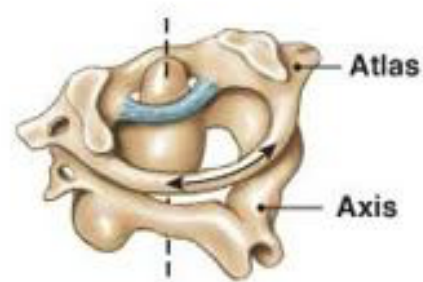
Ball and Socket

Ball-and-socket joint



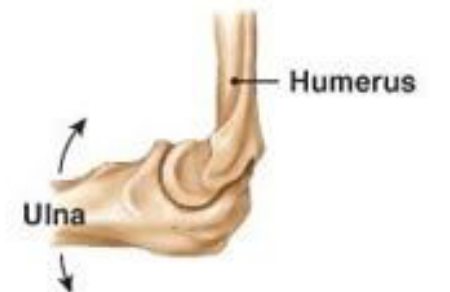
Pivot

Pivot joint



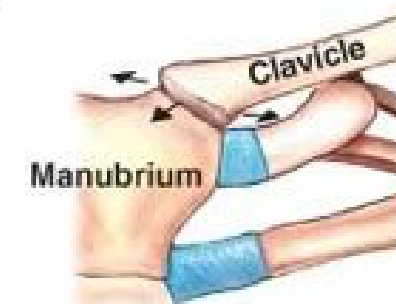
Hinge

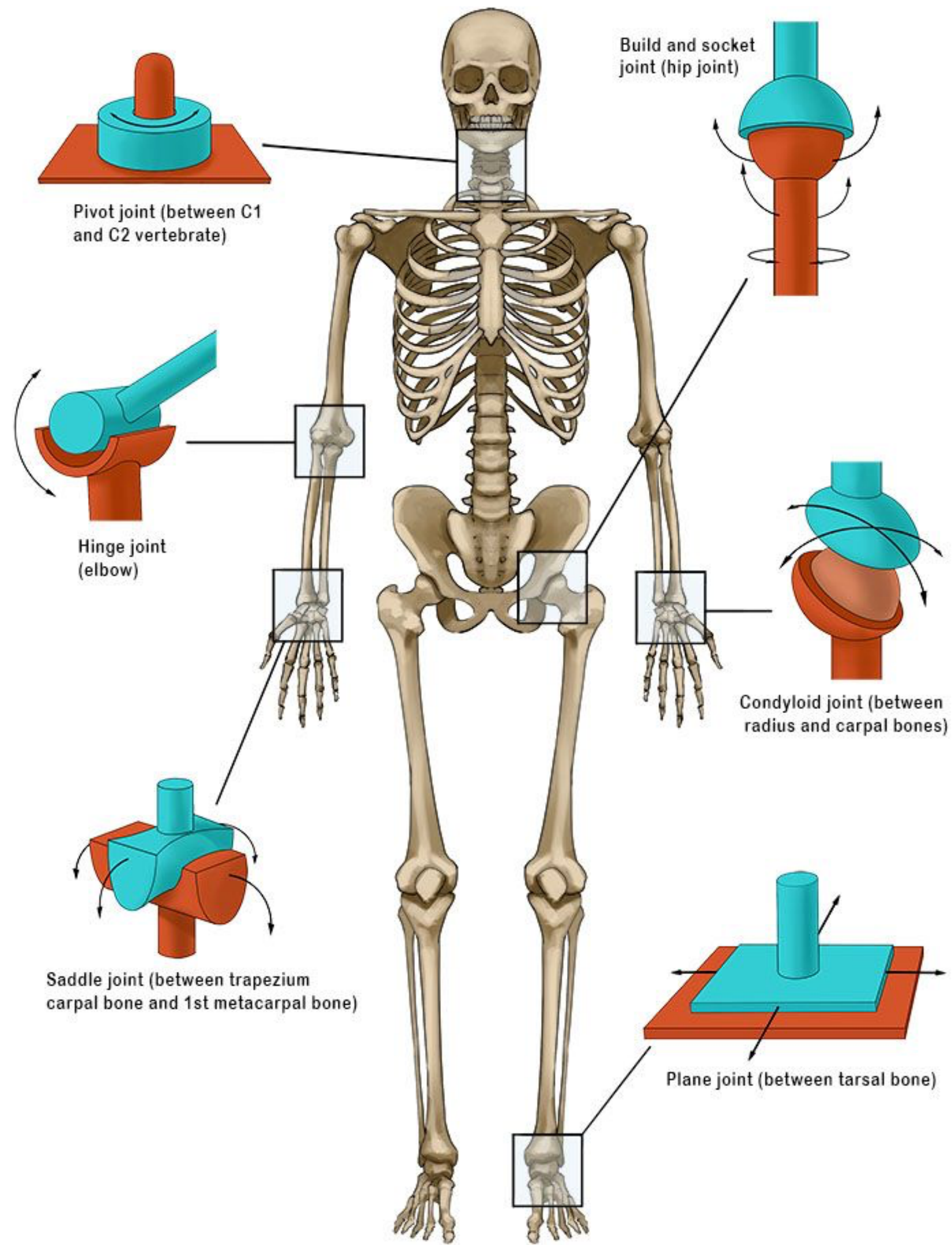
Hinge joint



Gliding

Gliding joint





Our focus:
Synovial joints

Ball and Socket

Shoulder
Hip

Highest mobility

Like a joystick 🎮

Multiplanar, move in every direction

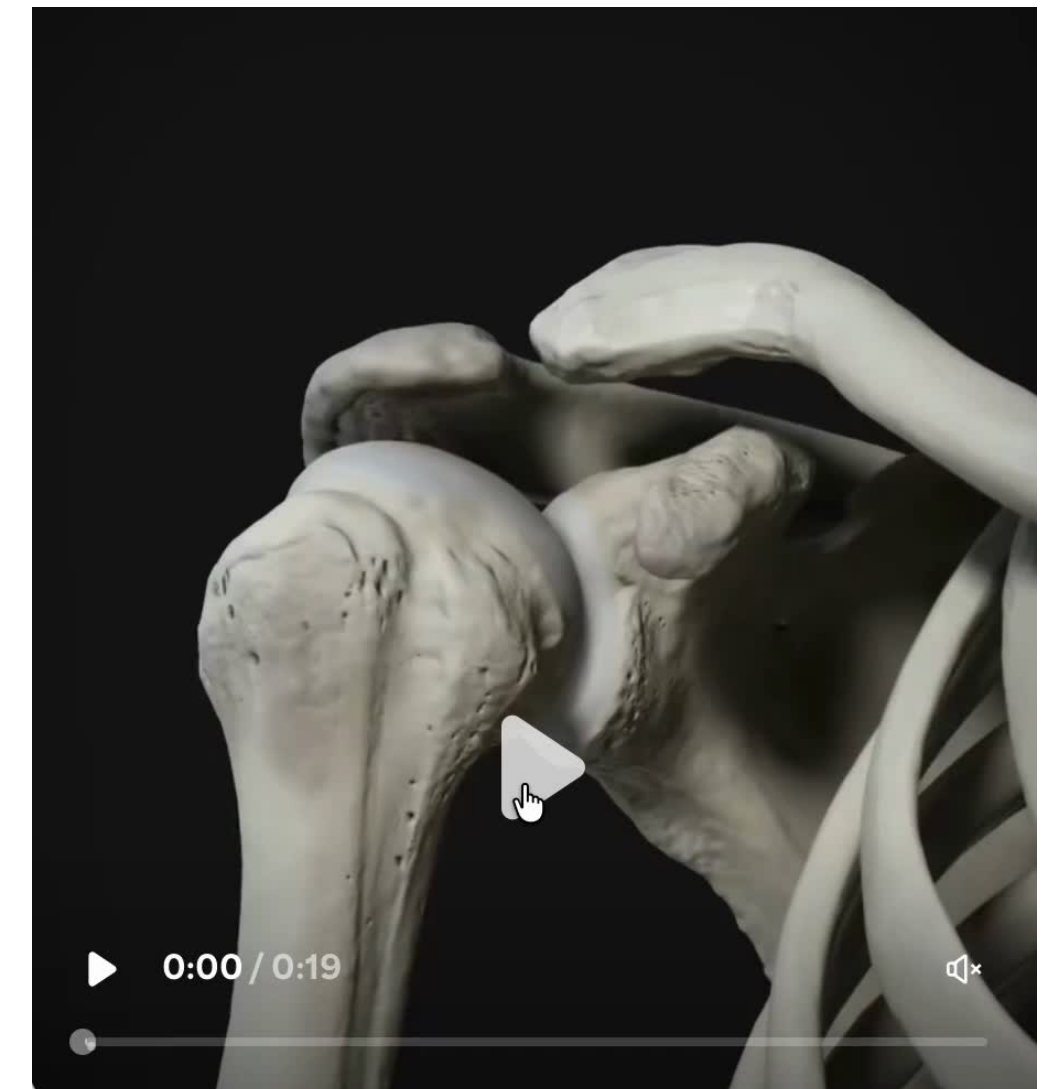
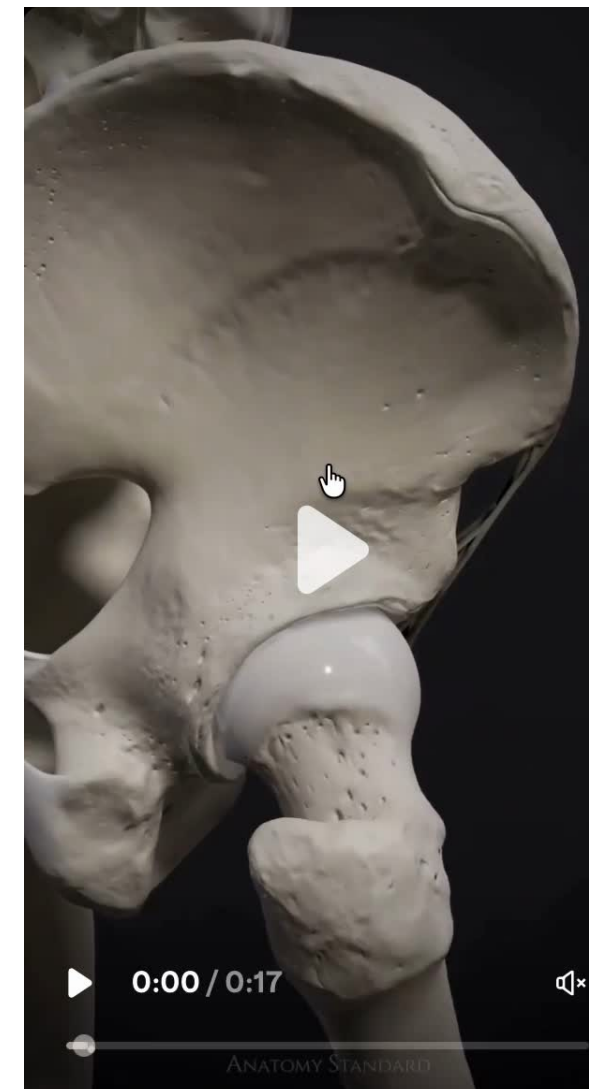
Circumduction: big circular motion

Actions to remember:

- Flexion - Extension (forward, backward)
- Abduction - Adduction (away from, toward the body)
- Internal - External Rotation (spiraling inward, outward)

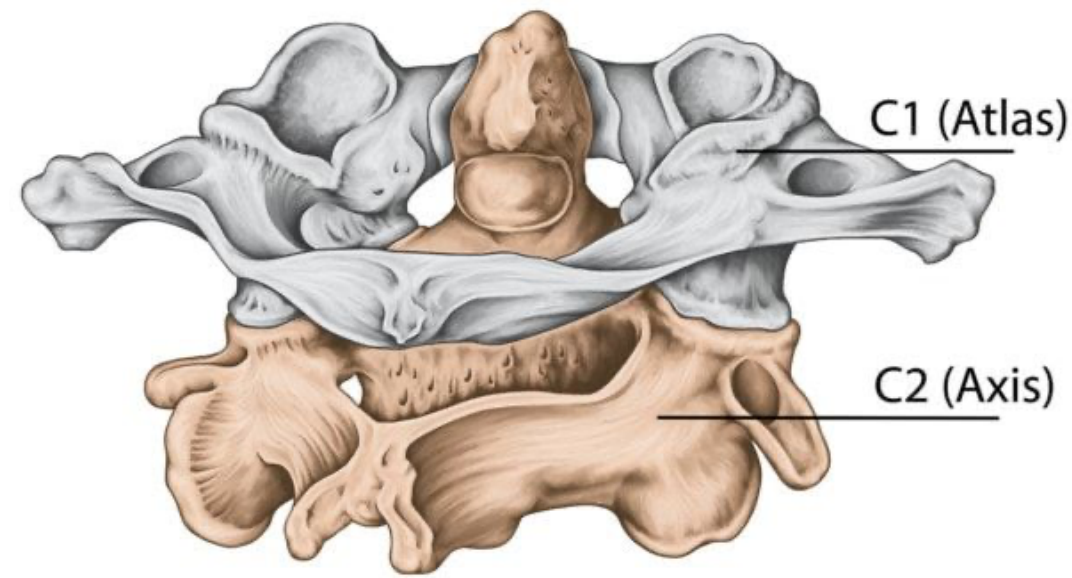


Ball and Socket



Pivot → C1 - atlas
→ C2 - axis

Rotation



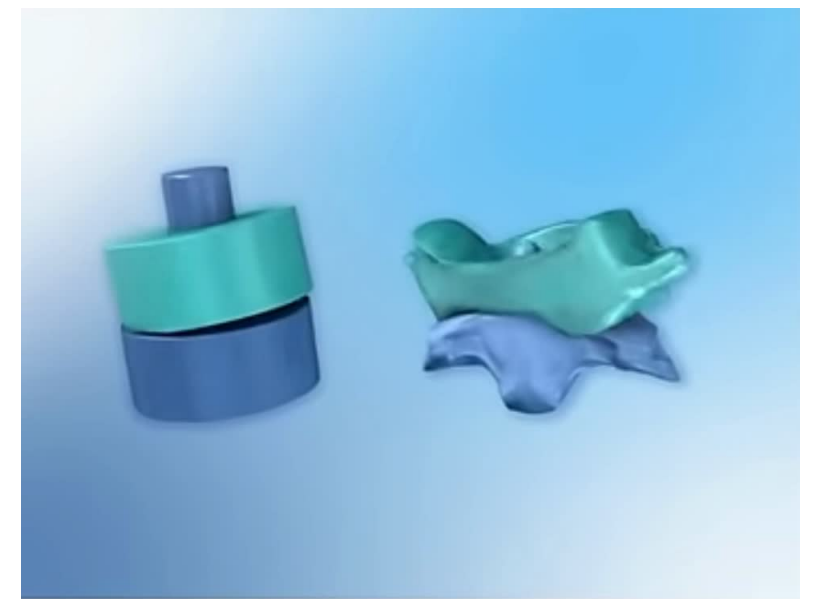
C1: holds the head

C2: pivot point, it has a vertical projection that acts as the axis around which C1 (and the head) rotates

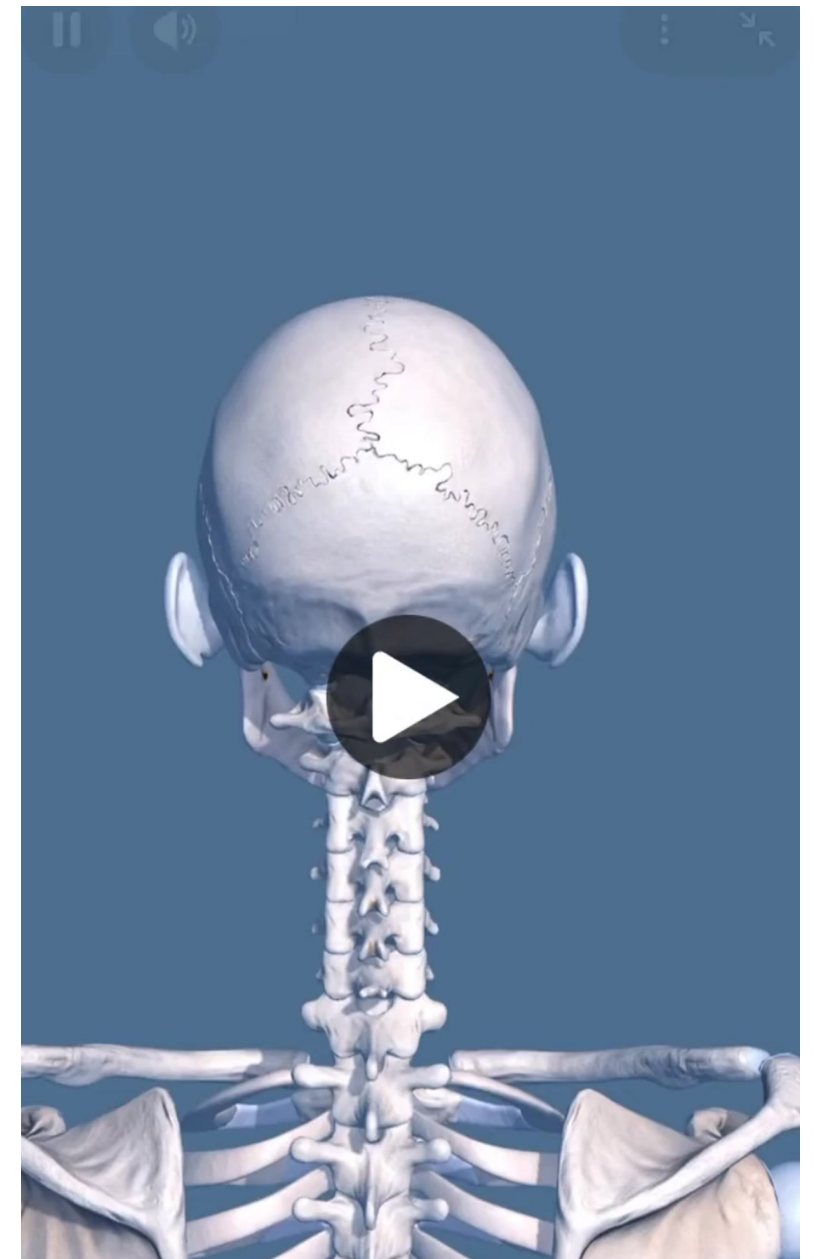
This joint allows you to shake your head "No."

This rotation occurs in the transverse plane

Quiz: *"Which vertebra acts as the point of rotation for the head?"*



Pivot



Gliding - plane

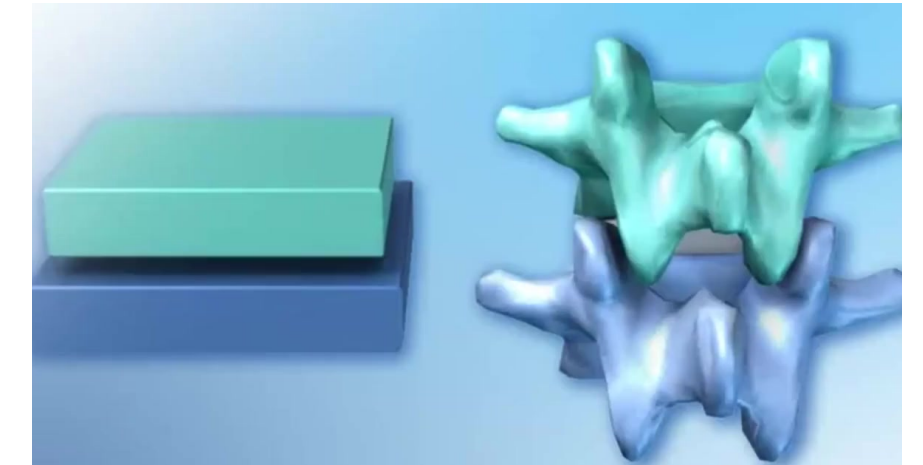
Shifting movements

Examples:

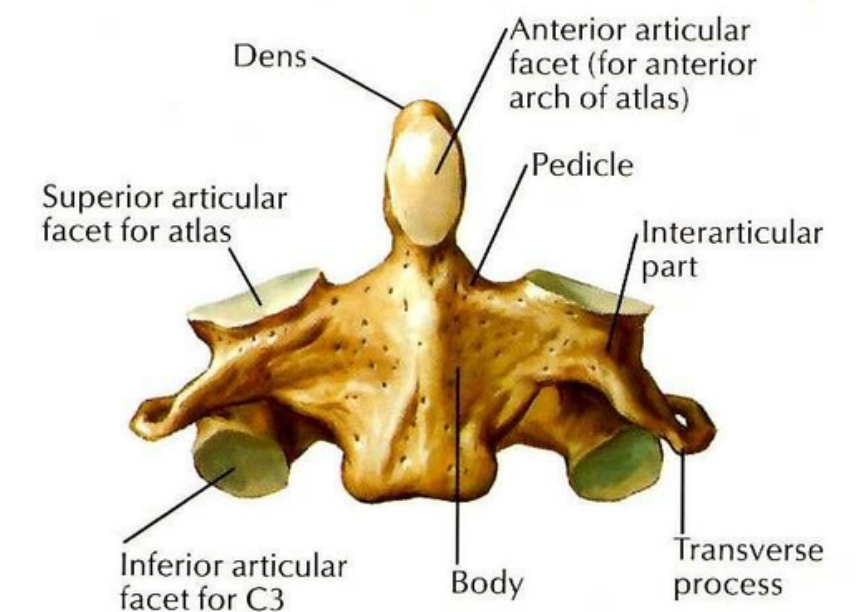
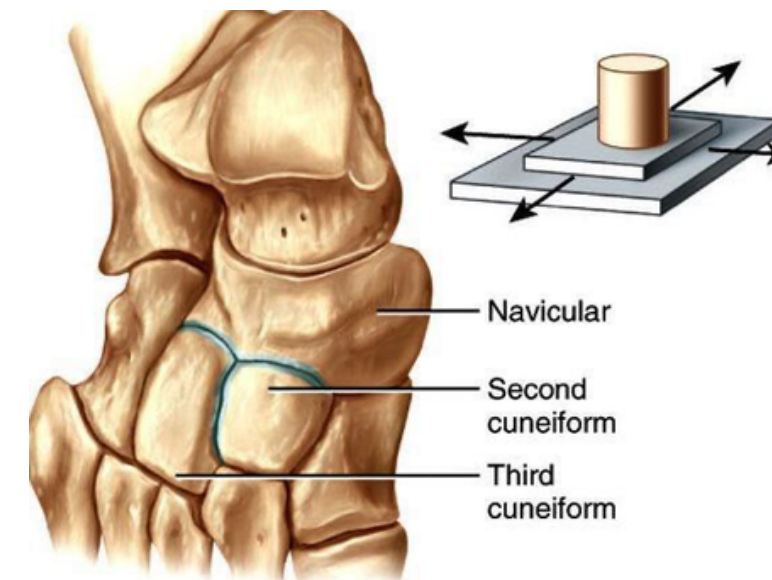
- Carpal bones: bones in the wrist
- Facet joints of the spine: joints that connect the vertebrae

In the spine, these facet joints are what allow the vertebrae to slide during flexion, extension, and lateral flexion.

Without these gliding movements, the spine would be a rigid rod instead of a flexible column.



Gliding



Axis (C2): anterior view

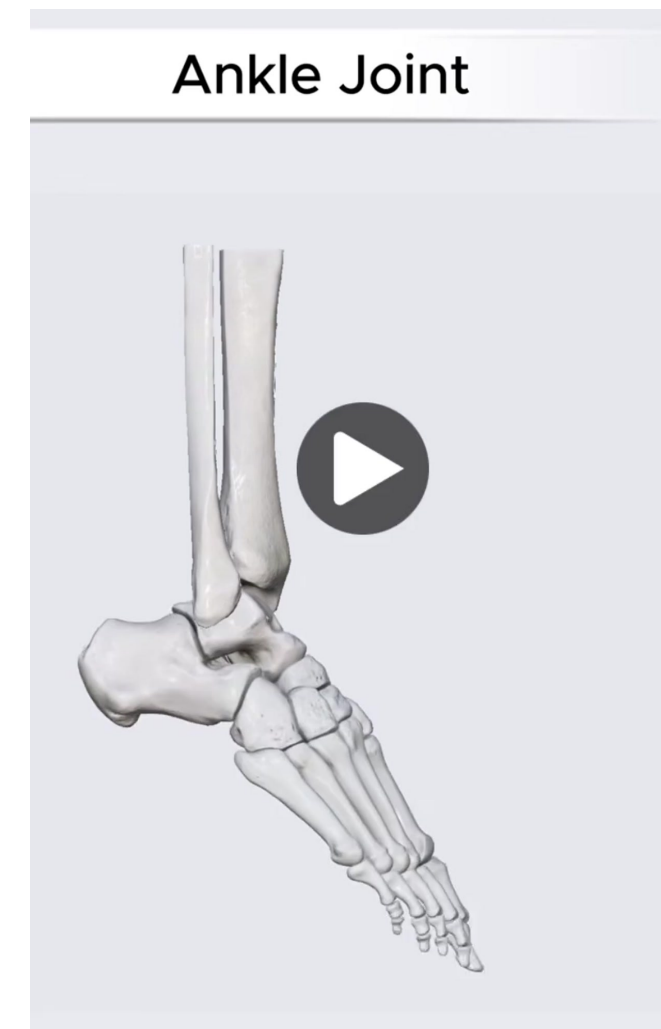
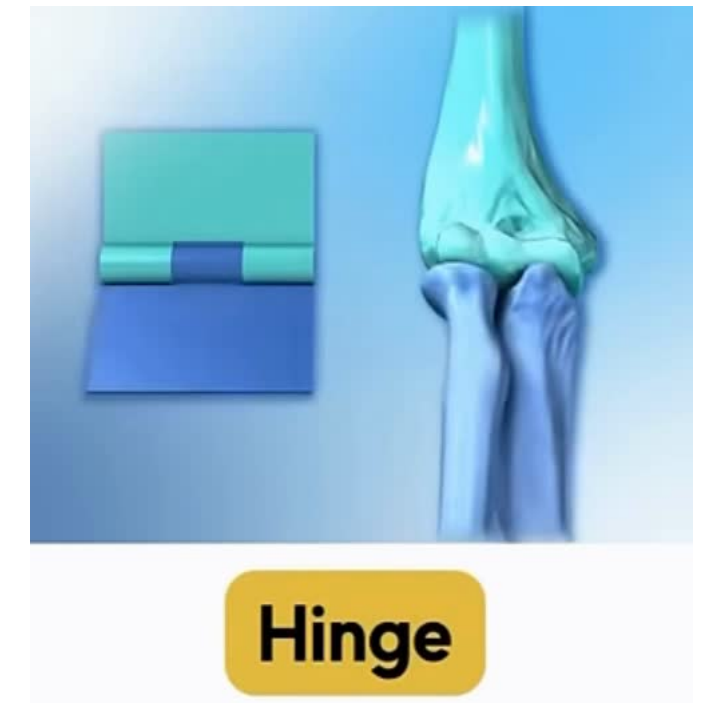
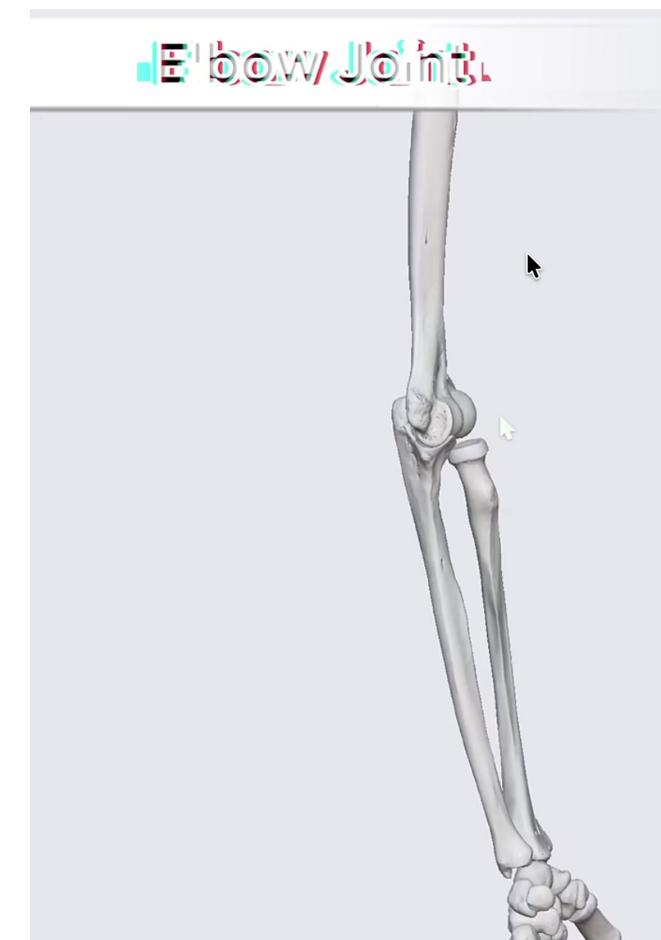
Hinge

One-way movement

- Stability
- **Knee:** the largest hinge joint in the body
- **Elbow:** allows you to bend and straighten your arm
- **Ankle:** allows for pointing and flexing the foot

2 actions allowed:

- Flexion: bending the joint to decrease the angle
- Extension: straightening the joint to increase the angle.



Quiz time:

1. Which joint involves the glenoid fossa?

- A) Knee Joint
- B) Elbow Joint
- C) Shoulder Joint

2. The shoulder and hip joints are examples of which type of synovial joint?

- A) Hinge joints
- B) Pivot joints
- C) Ball and socket joints

3. Rotation does NOT occur at which of the following joints?

- A) Knee joint
- B) Spine
- C) Elbow joint
- D) Pelvis

4. Which of the following is considered a "fixed joint"?

- A) Elbow and Knee
- B) Fingers and Feet
- C) Skull and Teeth

Quiz time:

5. The knee and the elbow are classified as which type of joint?

- A) Gliding joints
- B) Hinge joints
- C) Ball and socket joints

6. Which of the following is a classic example of a "facet joint"?

- A) Clavicle
- B) Spine
- C) Rib Cage

7. Rotation in a flexed position only occurs at which of the following joints?

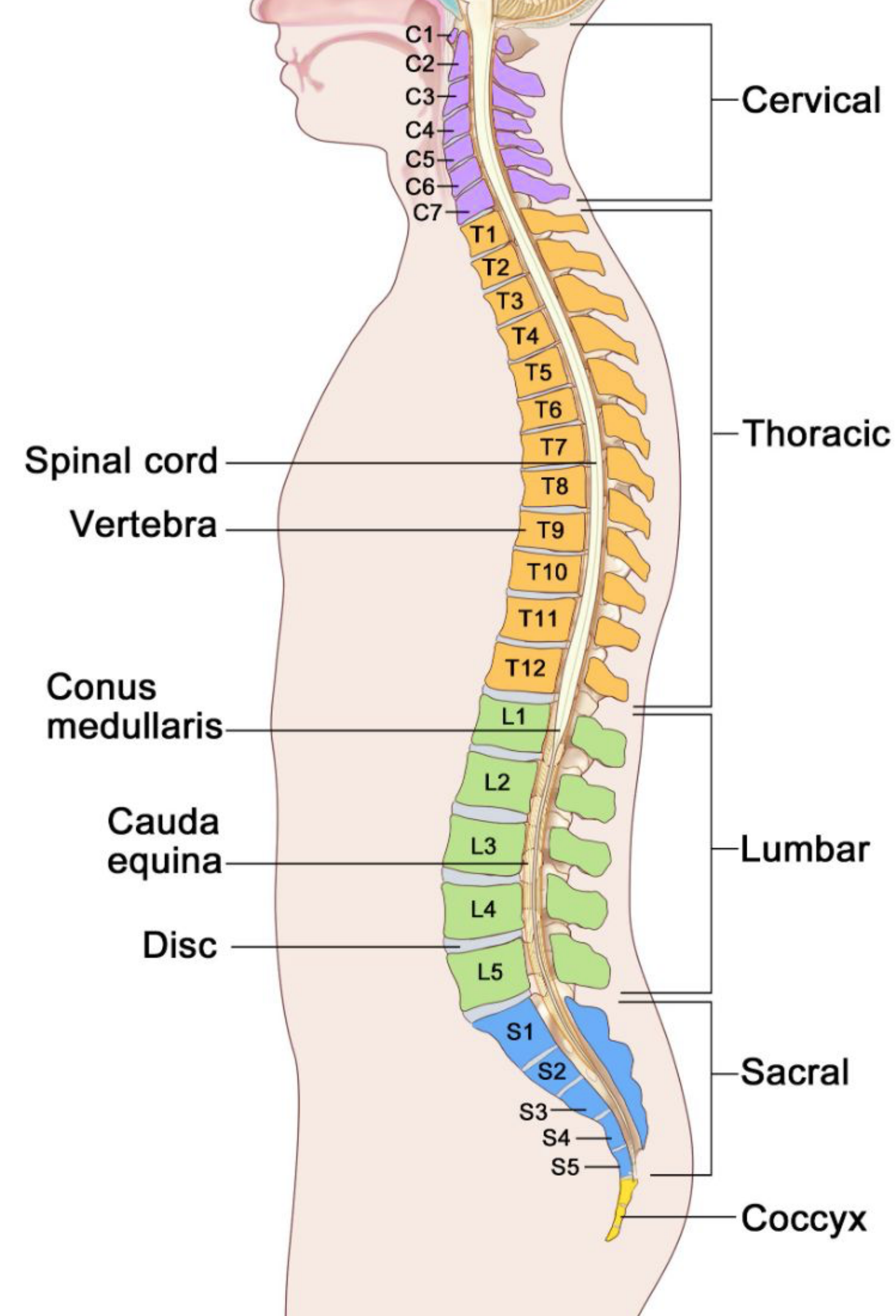
- A) Hip joint
- B) Elbow joint
- C) Spine
- D) Knee

8. Which vertebrae form the pivot joint that allows for the rotation of the head?

- A) T1 – T2
- B) L5 – S1
- C) C1 (Atlas) and C2 (Axis)

The Vertebral Column

Central **axis** of the body
5 distinct **regions**
33 vertebrae total



The Vertebral Column

Three **natural curves** for flexibility and weight distribution

Cervical lordosis: the inward curve of the neck (7 vertebrae)

Thoracic kyphosis: the outward curve of the mid-back (12 vertebrae), which articulates with the ribs and has more limited mobility

Lumbar lordosis: the inward curve of the lower back (5 vertebrae), this region bears the most load and is the most common site for back issues



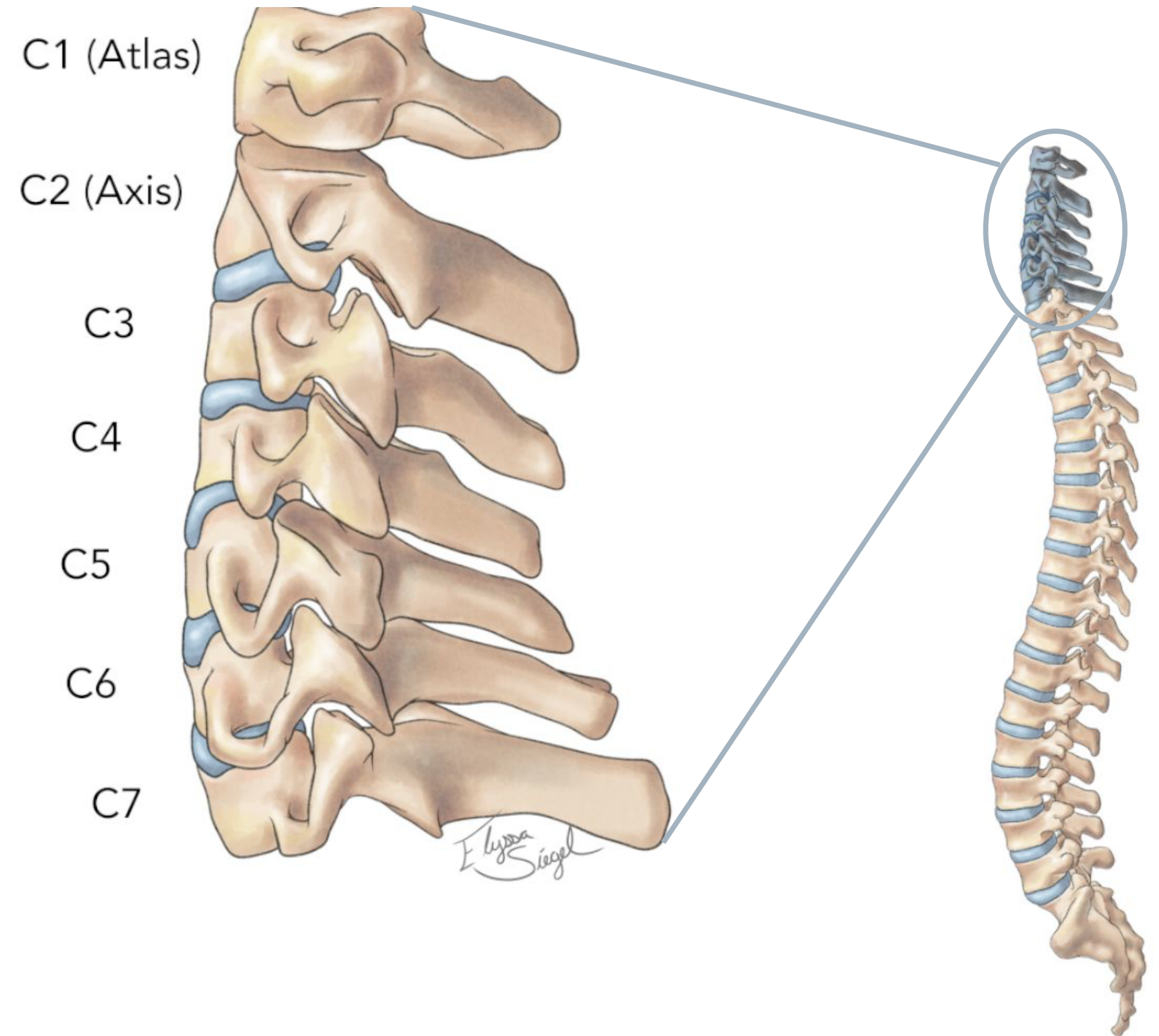
Cervical Spine

7 vertebrae

located in the neck

C1 holds the head

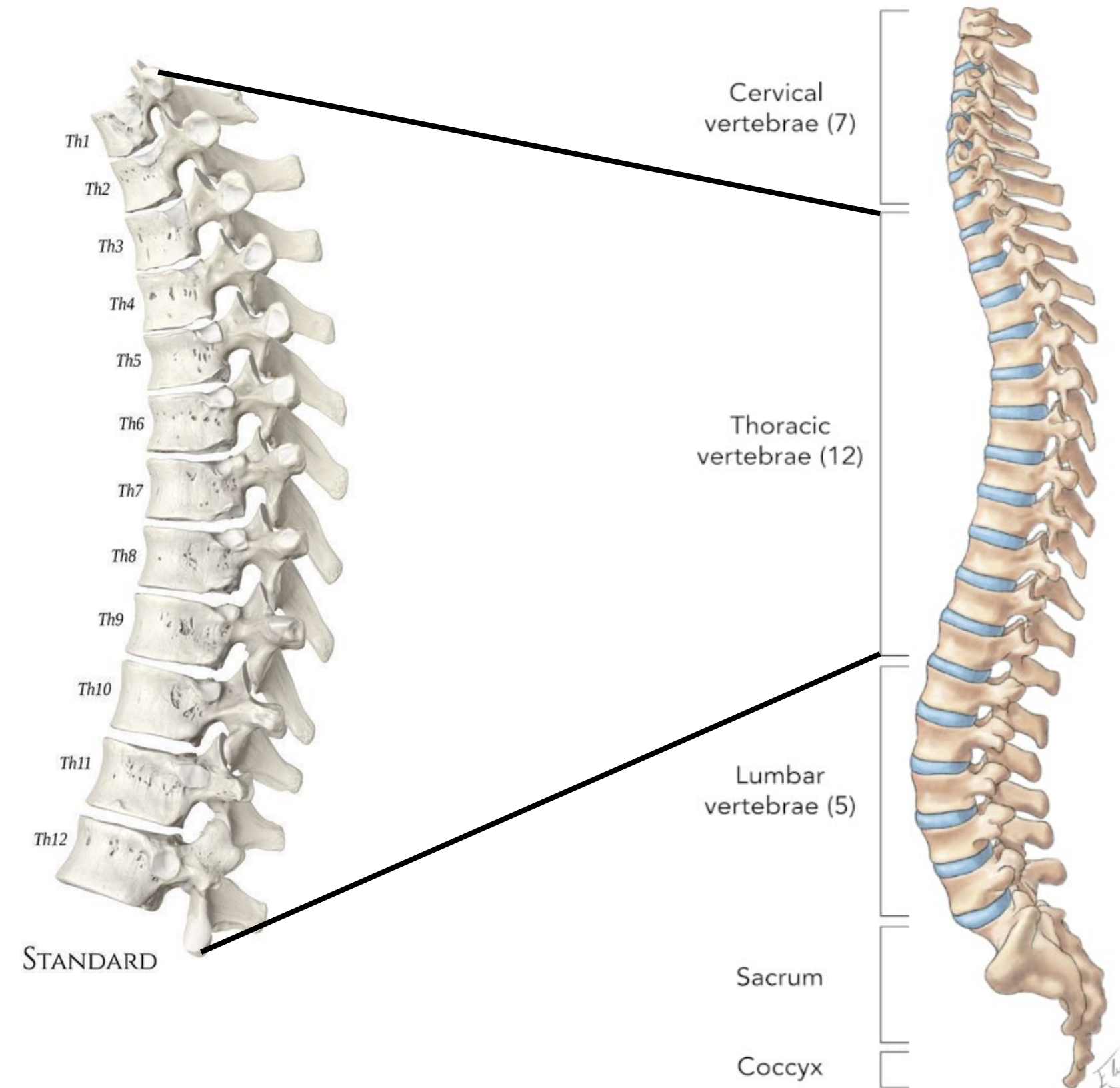
C2, the pivot point for head rotation



Thoracic Spine

12 vertebrae

Articulates directly
with the rib cage,
limited mobility due
to rib attachments

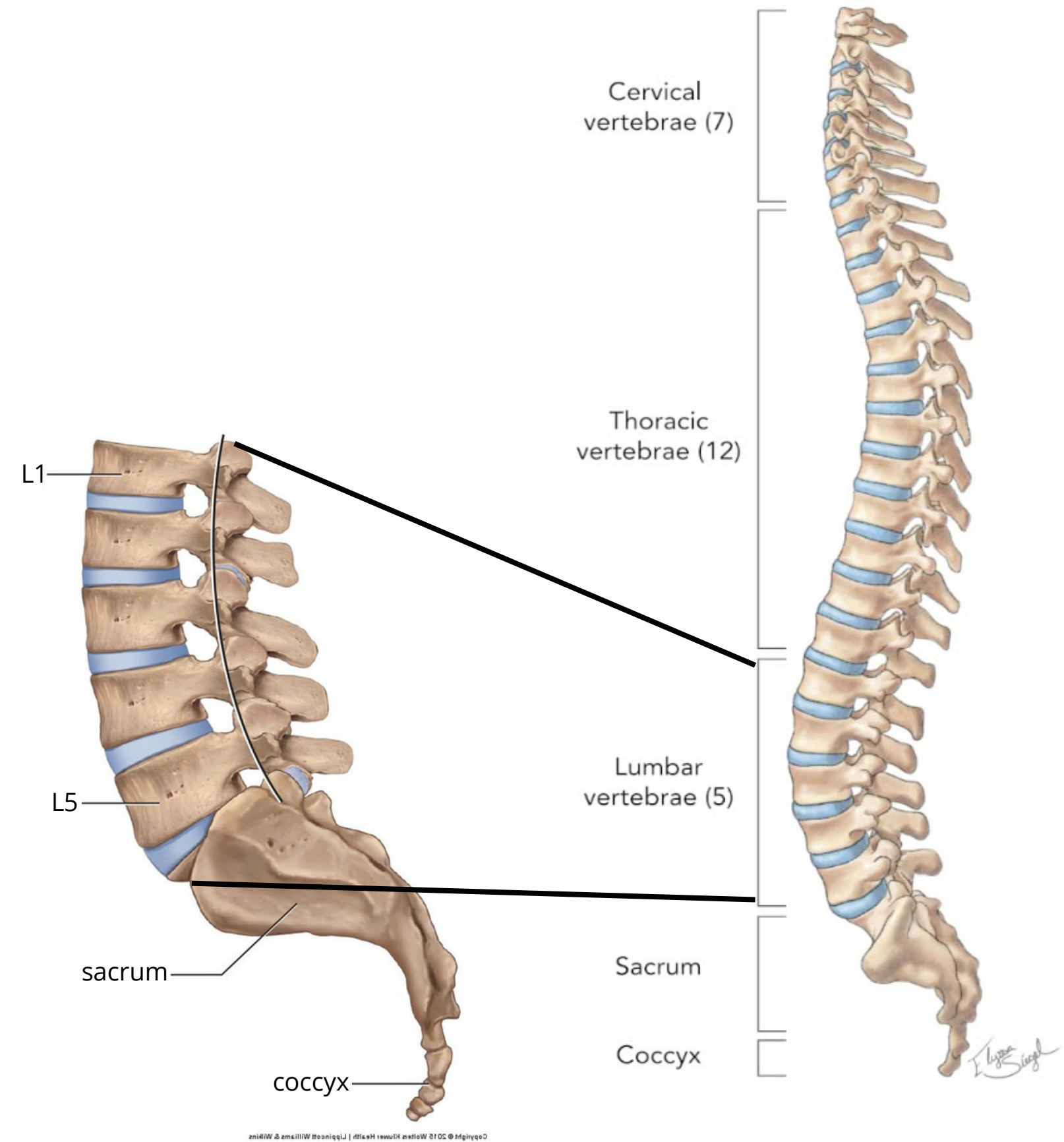


Lumbar Spine

5 vertebrae

Bears the most
bodyweight load

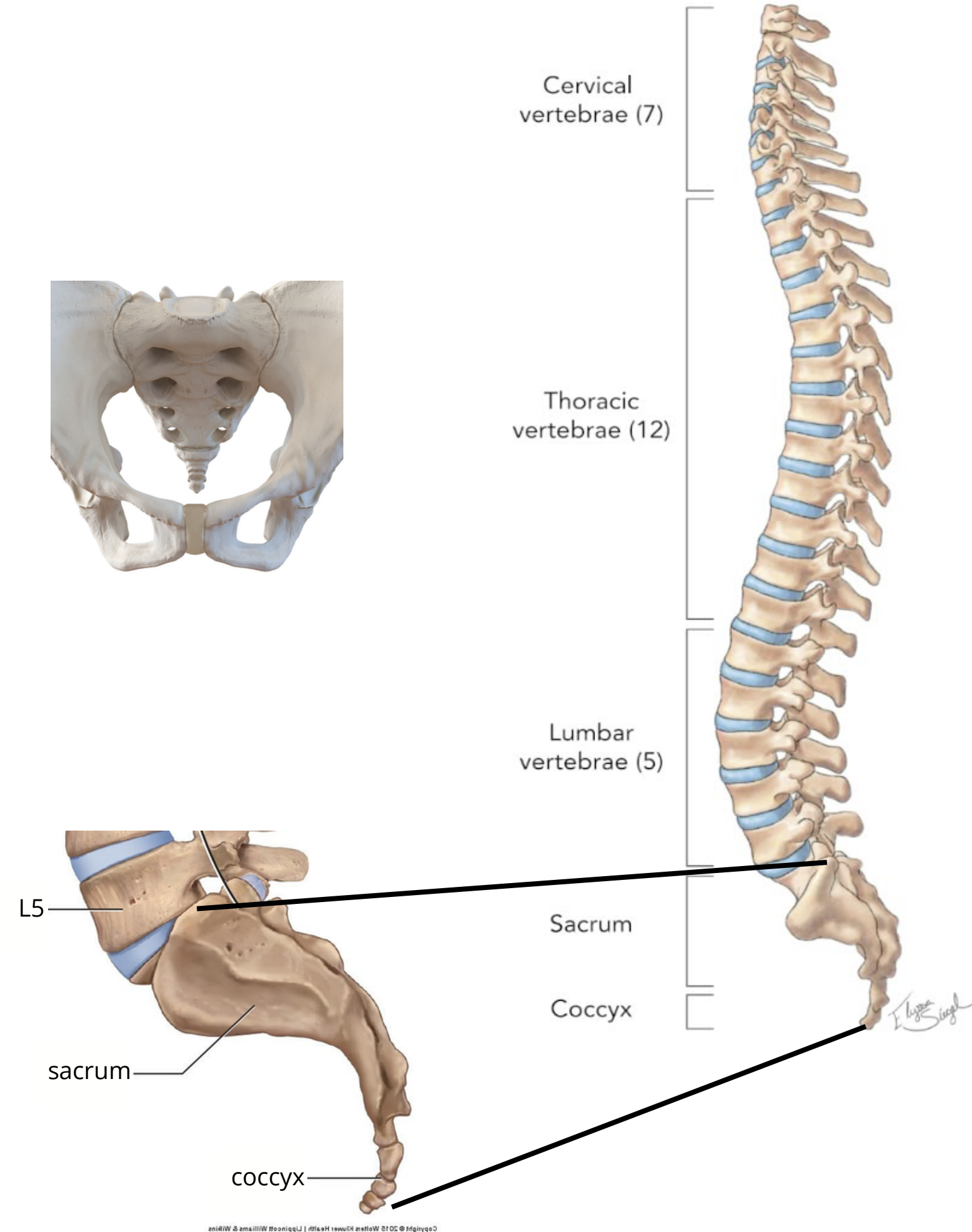
The most common
site for low back
issues



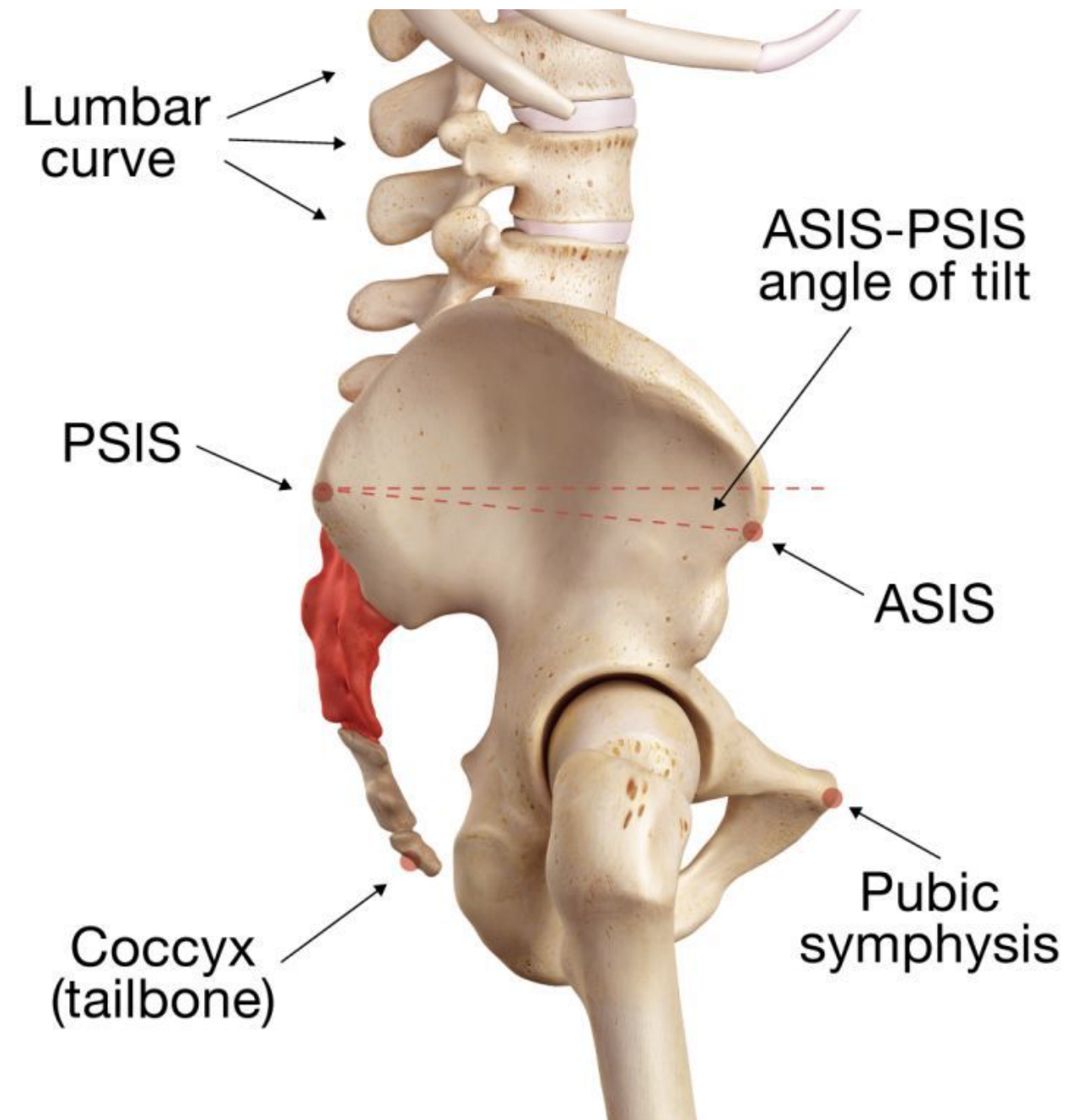
Sacrum and coccyx

Sacrum: 5 fused vertebrae connecting the spine to the pelvis

Coccyx: the tailbone



Pelvic Landmarks & Assessment



Pelvic Landmarks (Bony Landmarks):

- **ASIS** (Anterior Superior Iliac Spine)
- the "front hip bones"
- **PSIS** (Posterior Superior Iliac Spine)
- the "back hip bones"