

2a Kinesiology: Names and Locations of Bones and Posterior Muscles





2a Kinesiology:

Names and Locations of Bones and Posterior Muscles

Class Outline

Reminders (10 minutes before class display the reminders slide)

5 minutes	Attendance and Breath of Arrival
15 minutes	AOIs: Trapezius
25 minutes	Lecture: Axial versus Appendicular (Packet E-17)
<u>15 minutes</u>	<u>Muscles of the Posterior Upper and Lower Body</u>
60 minutes	Total Class Time



2a Kinesiology:

Names and Locations of Bones and Posterior Muscles

Class Reminders

Assignments:

- 3a Student Handbook Review Questions (A: 115-118)
- 4a Autobiography and Photo (B-4) – *email to your instructor AND tims@tlcschool.com*
- 7a Review Questions (A: 119-130)

Quizzes:

- 6a Kinesiology Quiz (A: 73, and 75-80)
 - 20 multiple-choice questions in 20 minutes
 - Study terms on packet page A-51
 - AOIs for deltoid, traps, lats, teres major, rhomboids, triceps, and erectors

Preparation for upcoming classes:

- 3a Self-Care: Health, Wellness, Nutrition, and Stress Reduction
 - Trail Guide: latissimus dorsi and teres major
 - Salvo: Chapter 4
 - Packet H: 1-6
 - Packet A: 123-124
- 3b Body Mechanics, Client Positioning, and Draping
 - Salvo: Chapter 7, Packet F: 17-24, and Packet A: 125-126
 - Wear close-fitting clothing to allow for better draping practice
 - Bring a twin sheet set including 2 pillow cases and a blanket



Classroom Rules

Punctuality - everybody's time is precious

- Be ready to learn at the start of class; we'll have you out of here on time
- Tardiness: arriving late, returning late after breaks, leaving during class, leaving early

The following are not allowed:

- Bare feet
- Side talking
- Lying down
- Inappropriate clothing
- Food or drink except water
- Phones that are visible in the classroom, bathrooms, or internship

You will receive one verbal warning, then you'll have to leave the room.

Classroom Rules

Cell Phones – Turn it off!



And put it away!



Bony Landmarks – Introduction to Terminology

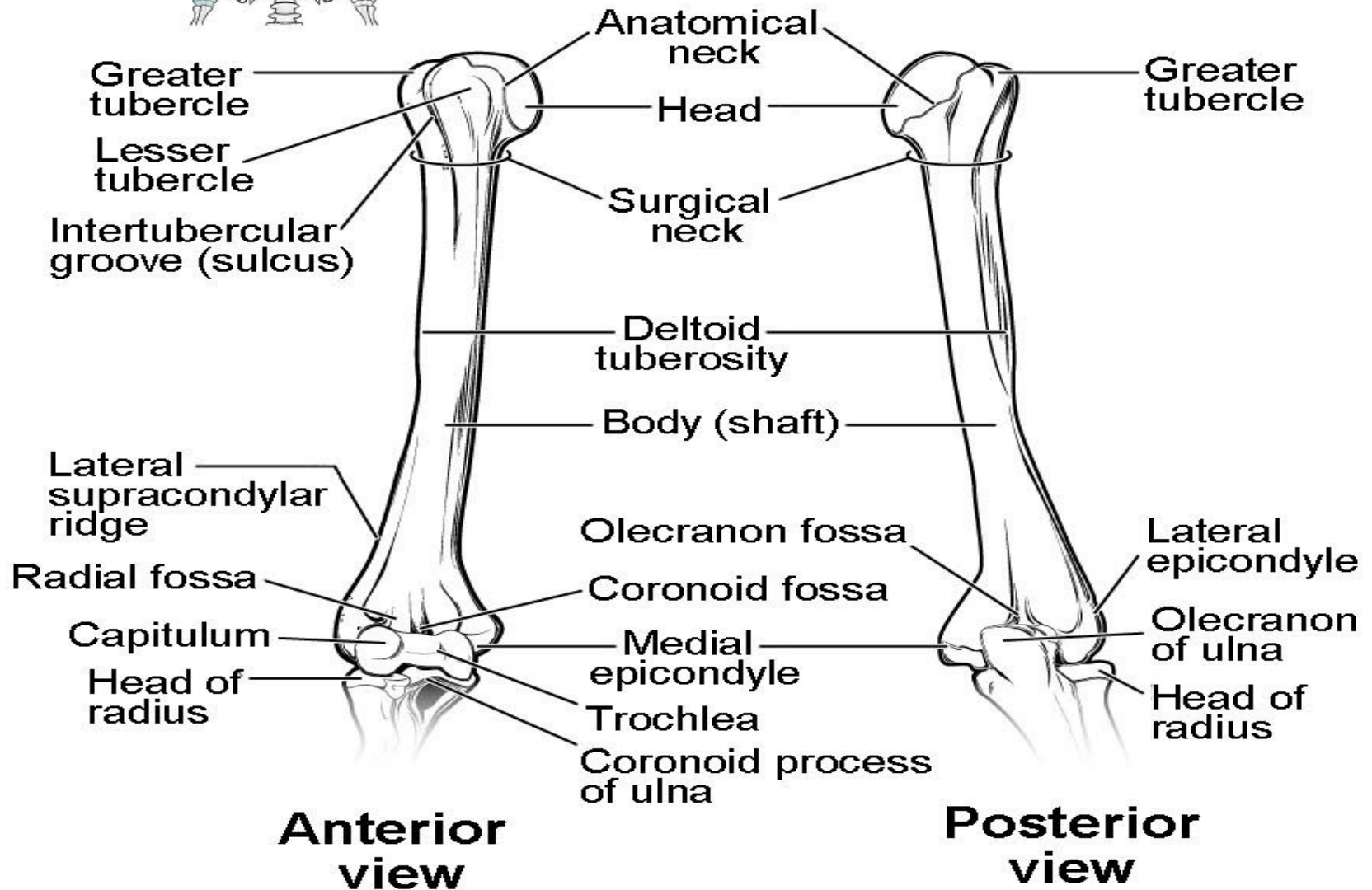
Helpful terms to become acquainted with as we get started learning muscle attachments and actions:

- **Condyle**
Rounded projection that forms a joint.
- **Fossa**
Shallow depression in a bone.
- **Head**
Rounded end of a bone. Example: head of the humerus.
- **Process**
General term for any prominence or prolongation from a bone.
- **Tuberosity**
Large, rounded rough projection.

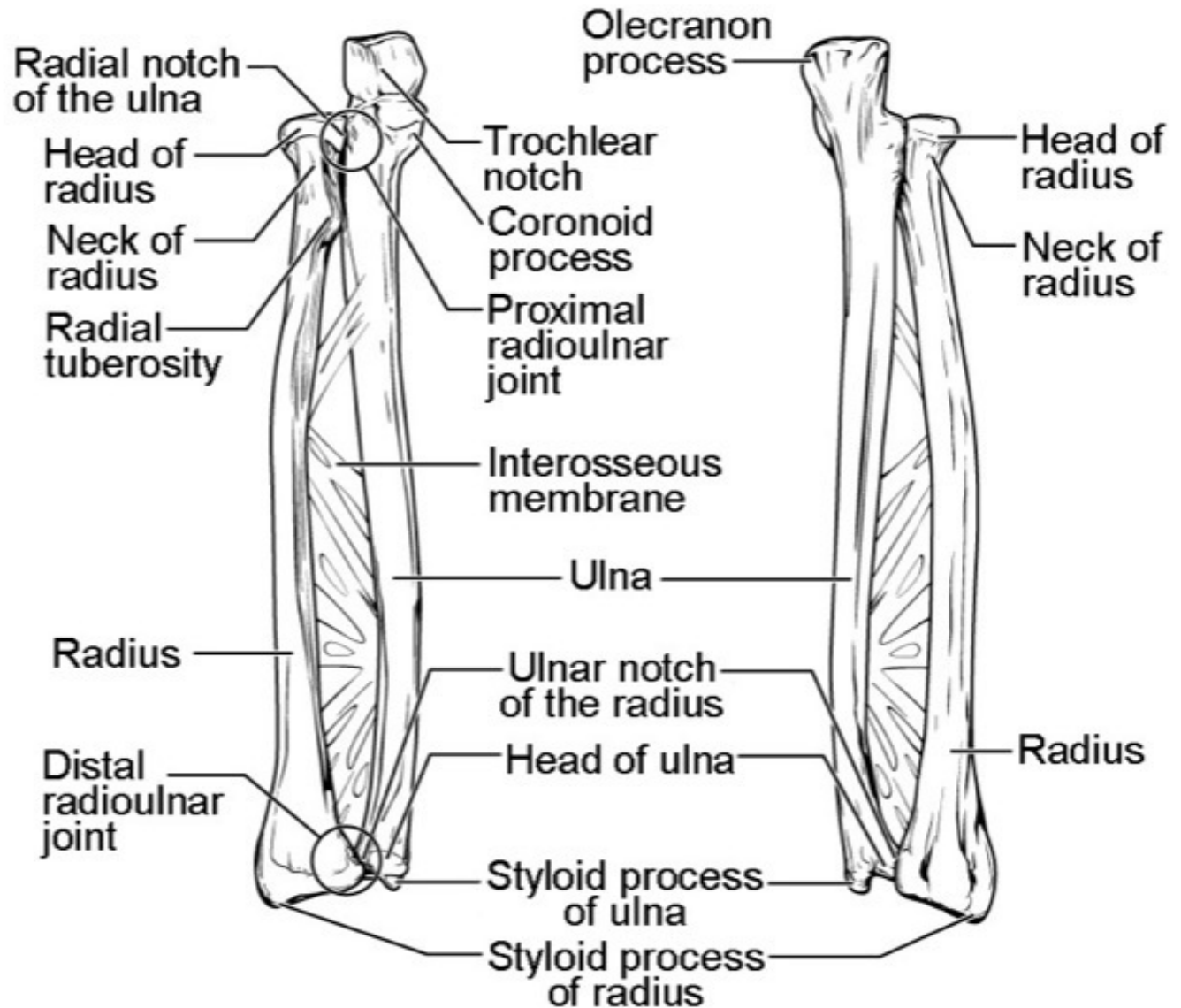
Bony Landmarks – Introduction to Terminology



Humerus



Bony Landmarks – Introduction to Terminology



Trapezius

Trail Guide, Page 68



Posterior View

Trapezius is a superficial muscle of the upper back and neck.

It comes from a Greek word meaning “little table” or “trapezoid shape”.

When do you use trapezius?

Trapezius

Trail Guide, Page 68



Posterior View

Trapezius is used to:

- Extend your neck over the handlebars of a bicycle
- Hold a phone between your ear and shoulder
- Carry articles strapped over your shoulder
- Pull your shoulders back in a military fashion

What actions are performed by the upper fibers of trapezius?

Actions of trapezius upper fibers



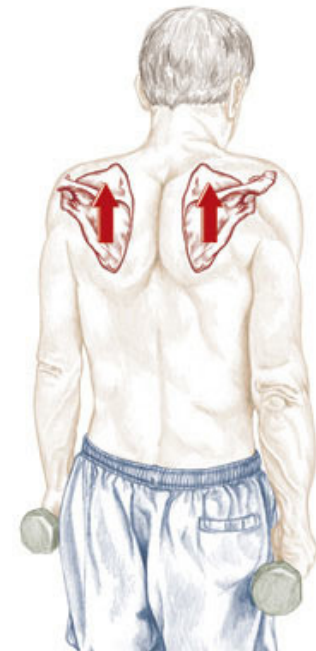
Extension of the head and neck



Lateral flexion of the head and neck

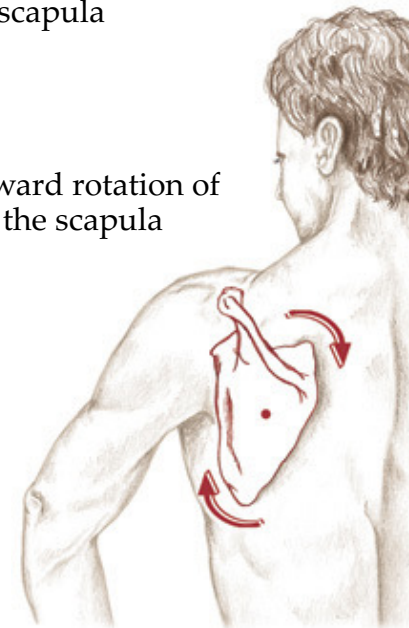


Rotation of the head and neck to the **opposite** side

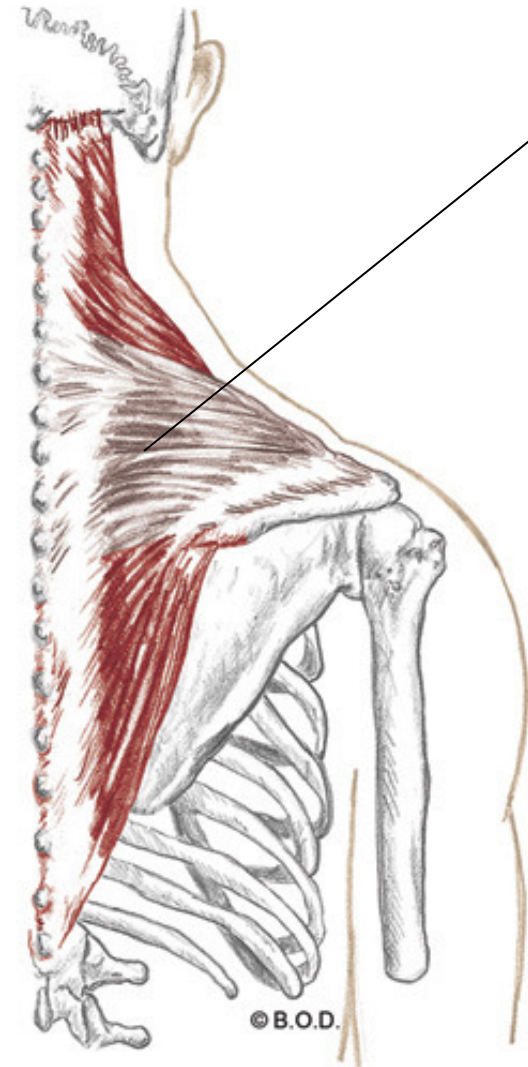


Elevation of the scapula

Upward rotation of the scapula

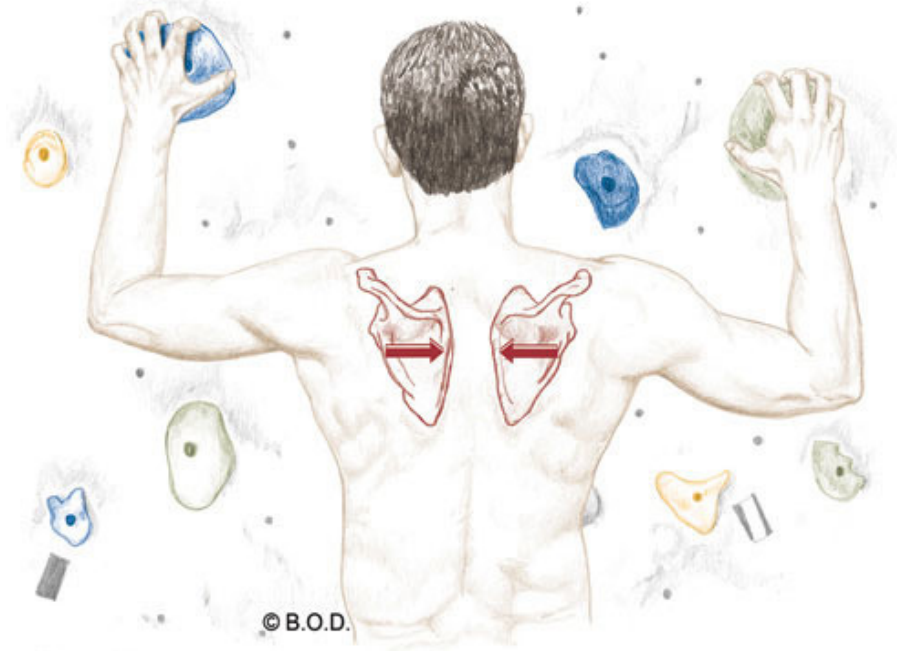


Actions of trapezius middle fibers



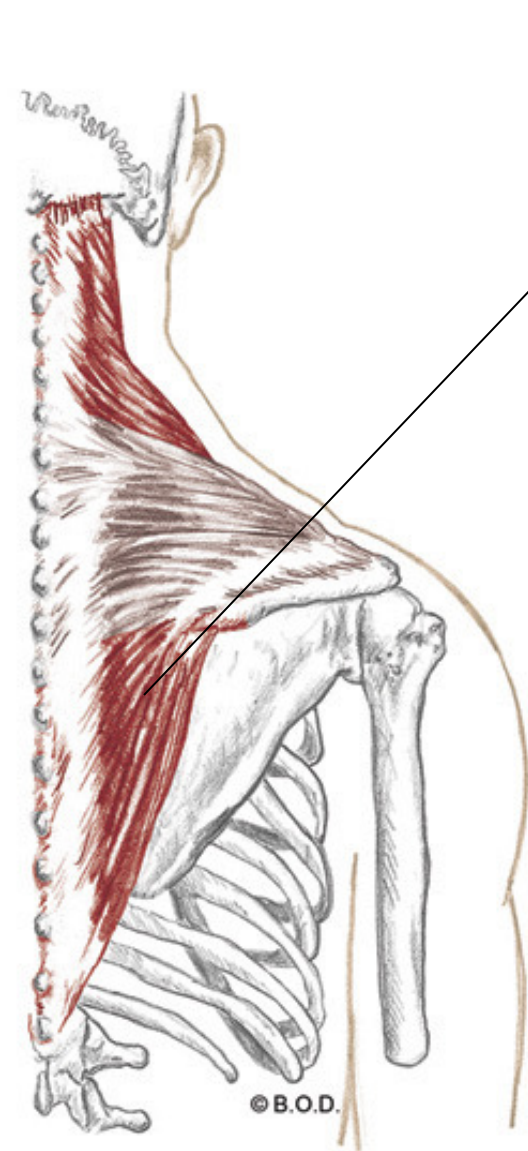
Adduction of
the scapula.

Also called
retraction of
the scapula!

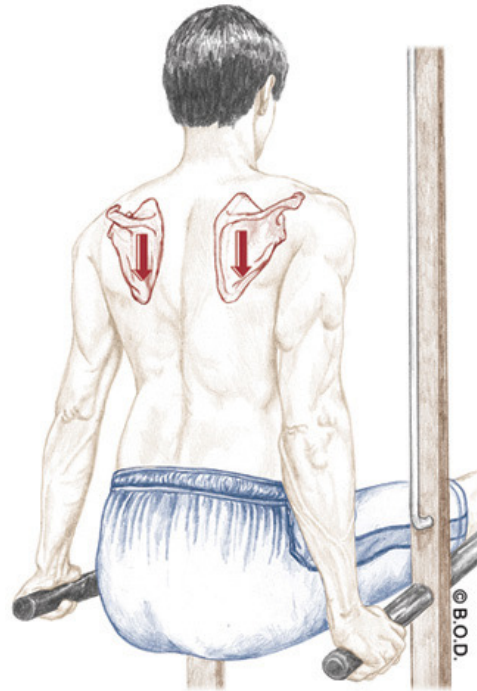


Middle fibers of trapezius
are also responsible for
stabilizing the scapula so
that it remains in a fixed
position.

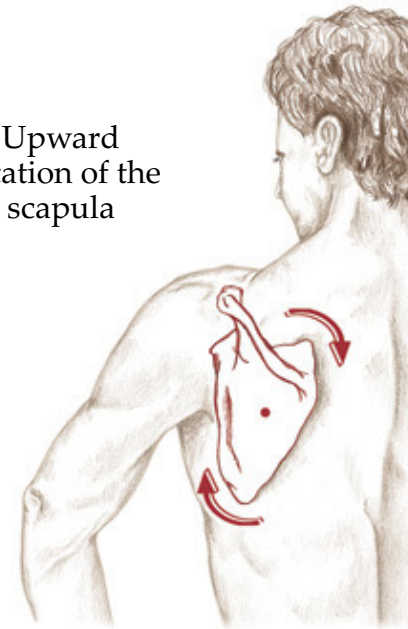
Actions of trapezius lower fibers



Depression of
the scapula



Upward
rotation of the
scapula



Trapezius

A Upper fibers:

Bilaterally

Extend the head and neck

Unilaterally

Laterally flex the head and neck to the same side

Rotate the head and neck to the opposite side

Elevate the scapula (scapulothoracic joint)

Upwardly rotate the scapula (S/T joint)

Middle fibers:

Adduct the scapula (S/T joint)

Stabilize the scapula (S/T joint)

Lower fibers:

Depress the scapula (S/T joint)

Upwardly rotate the scapula (S/T joint)

O External occipital protuberance

Medial portion of superior nuchal line

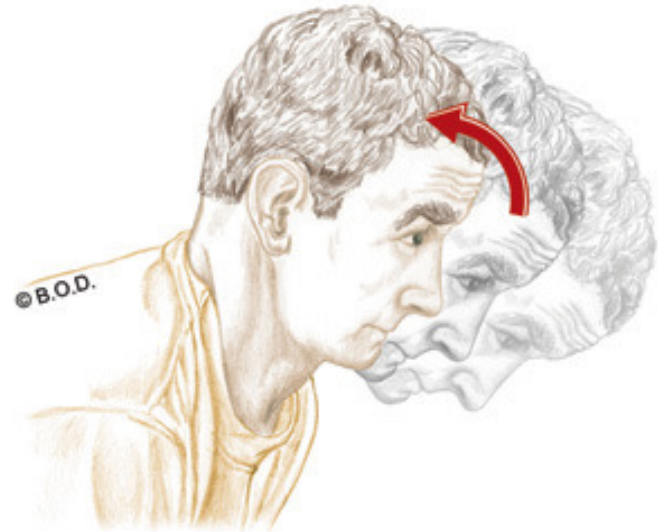
Ligamentum nuchae

Spinous processes of C-7 through T-12

I Lateral one-third of clavicle

Acromion

Spine of scapula



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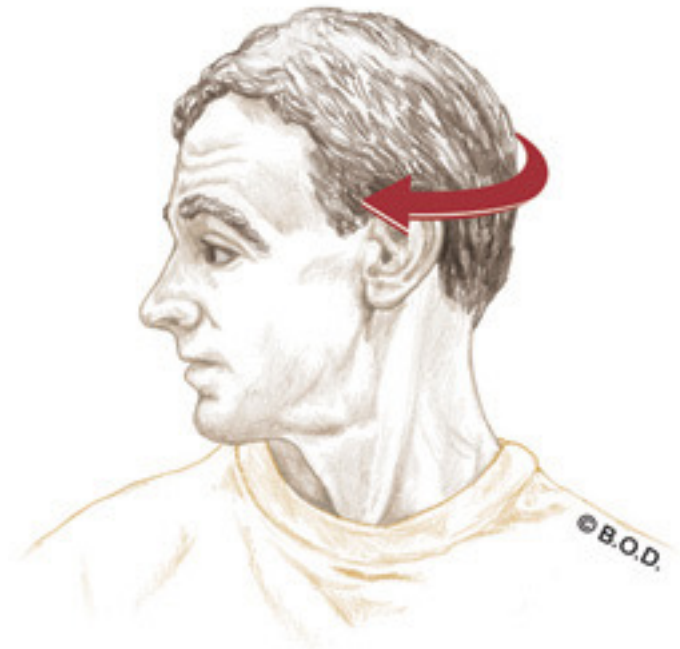
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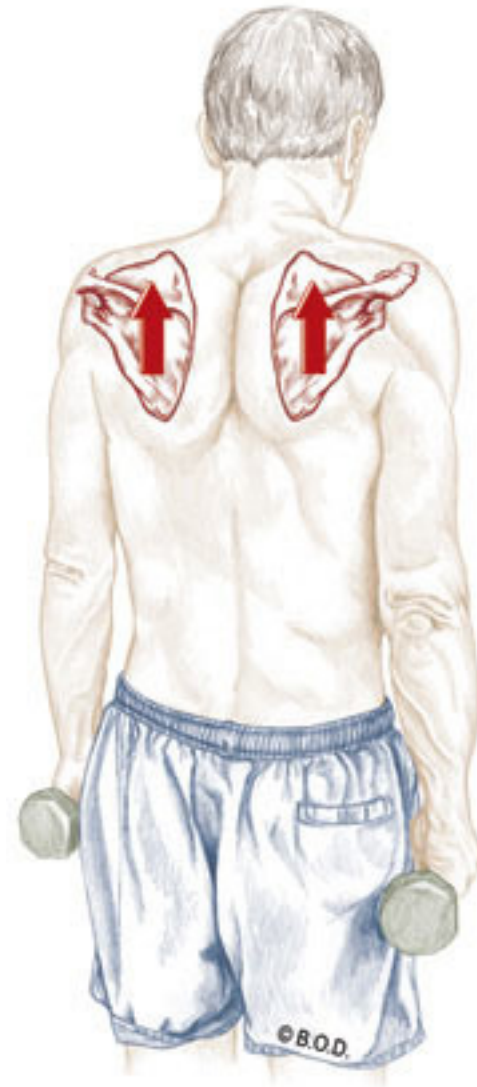
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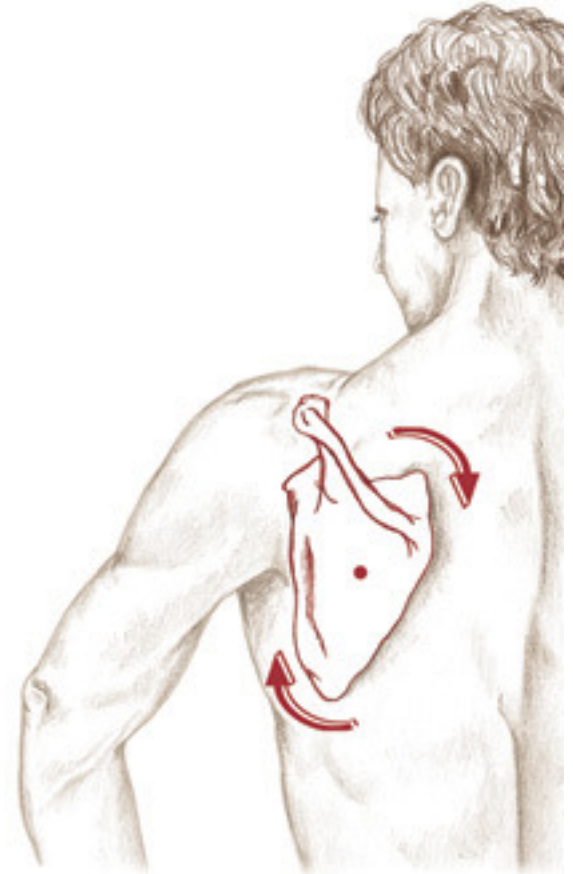
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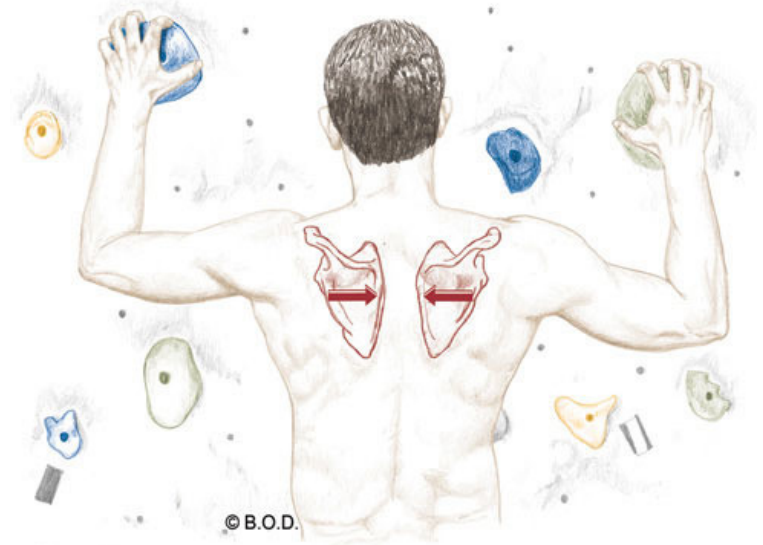
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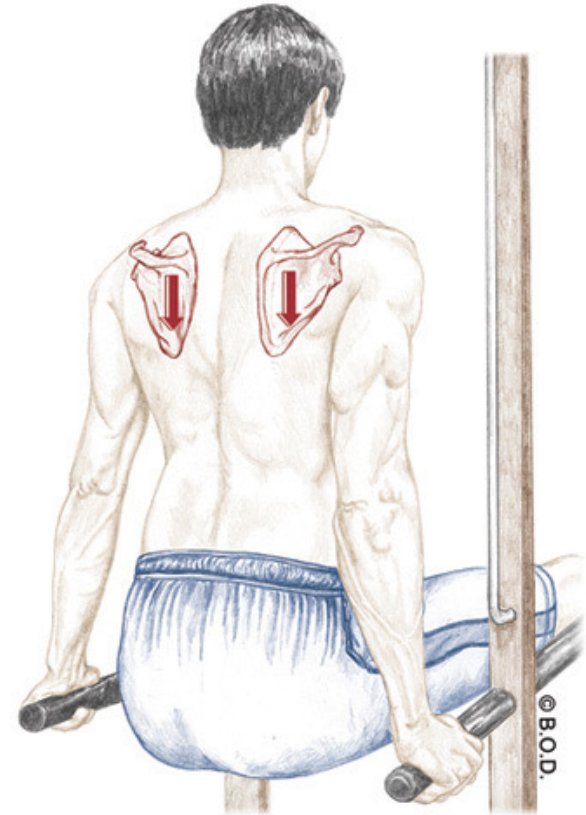
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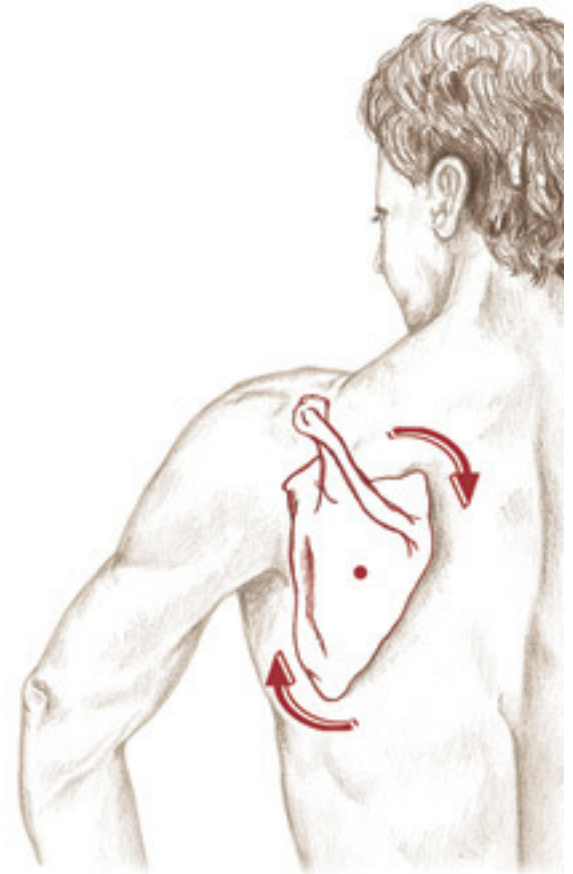
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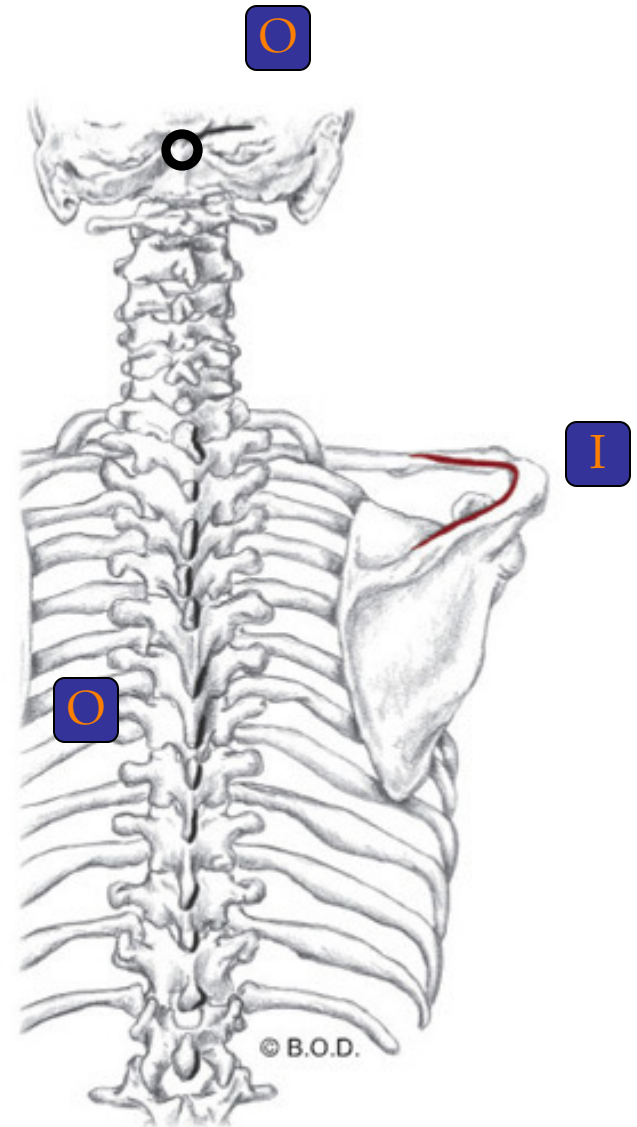
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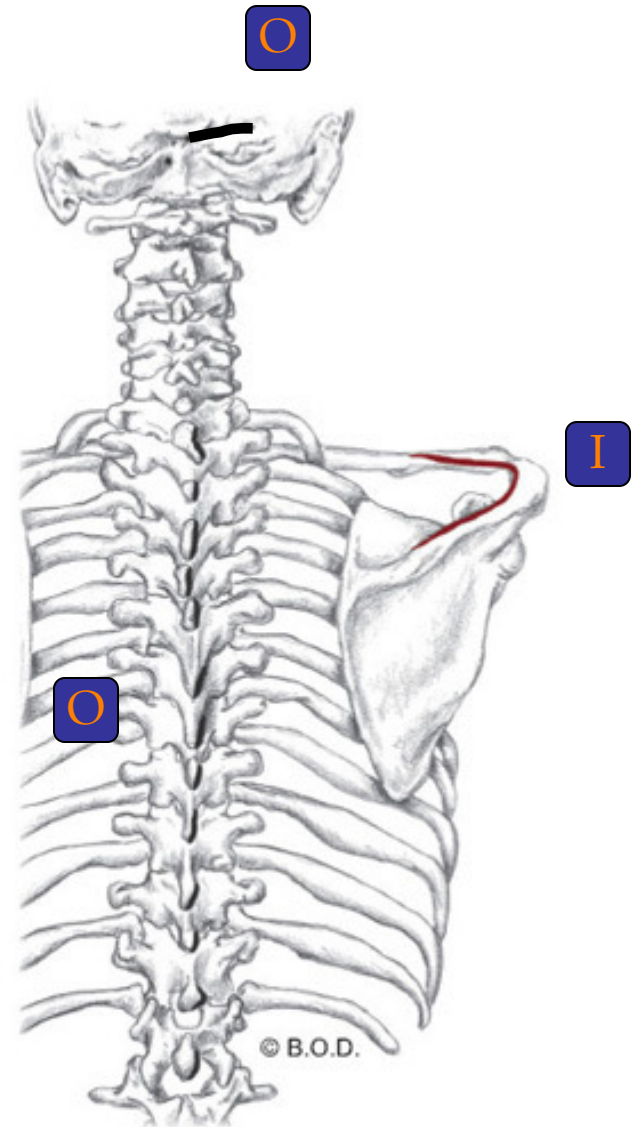
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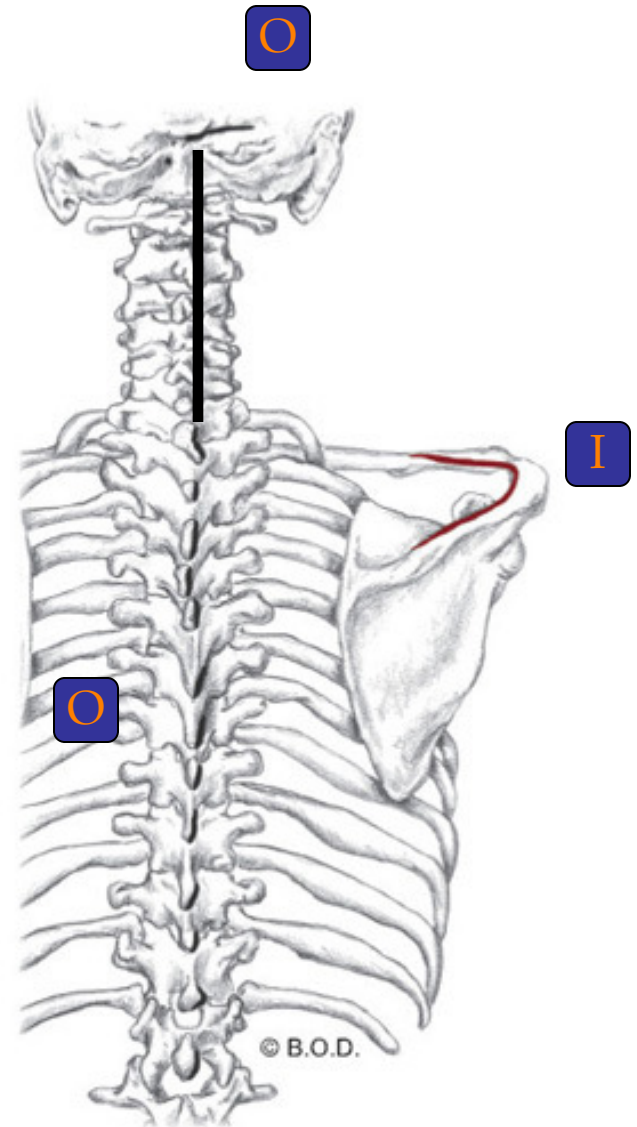
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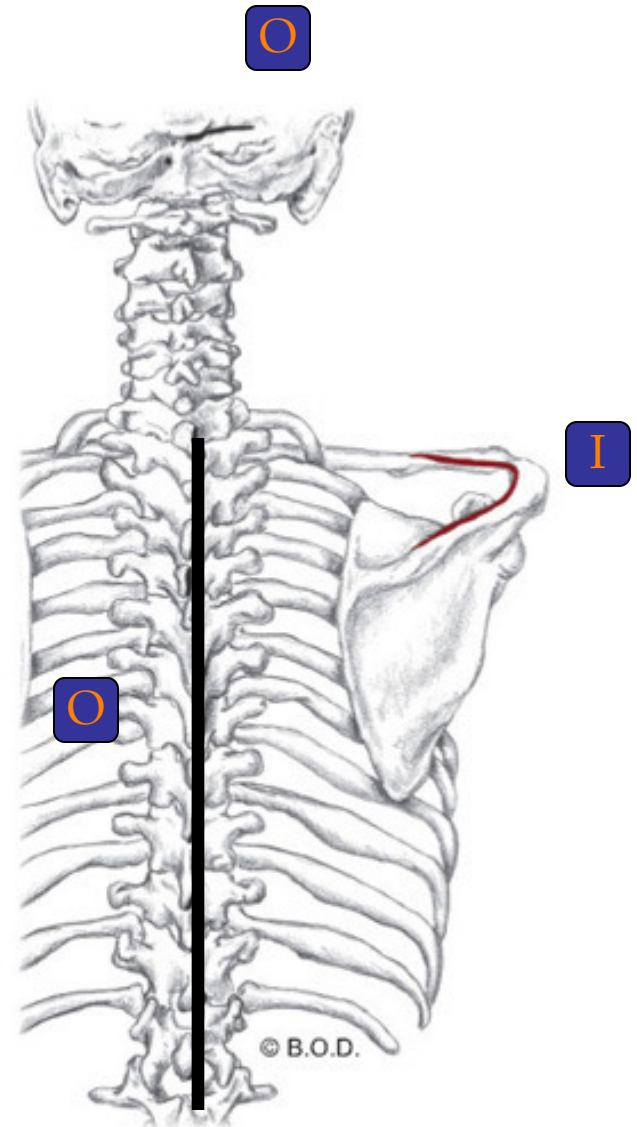
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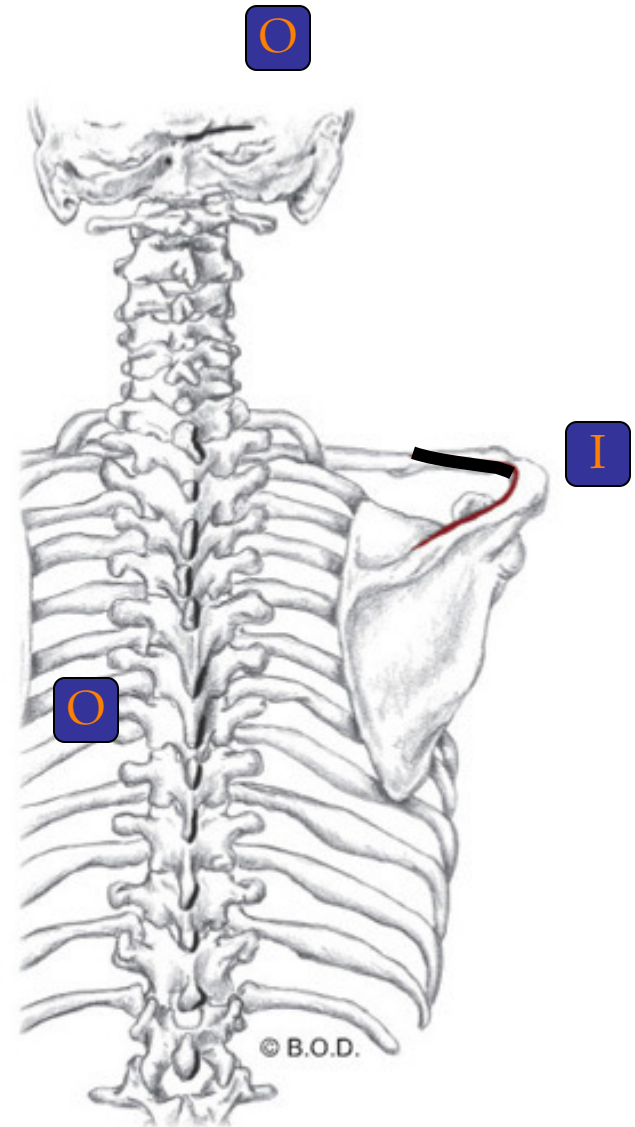
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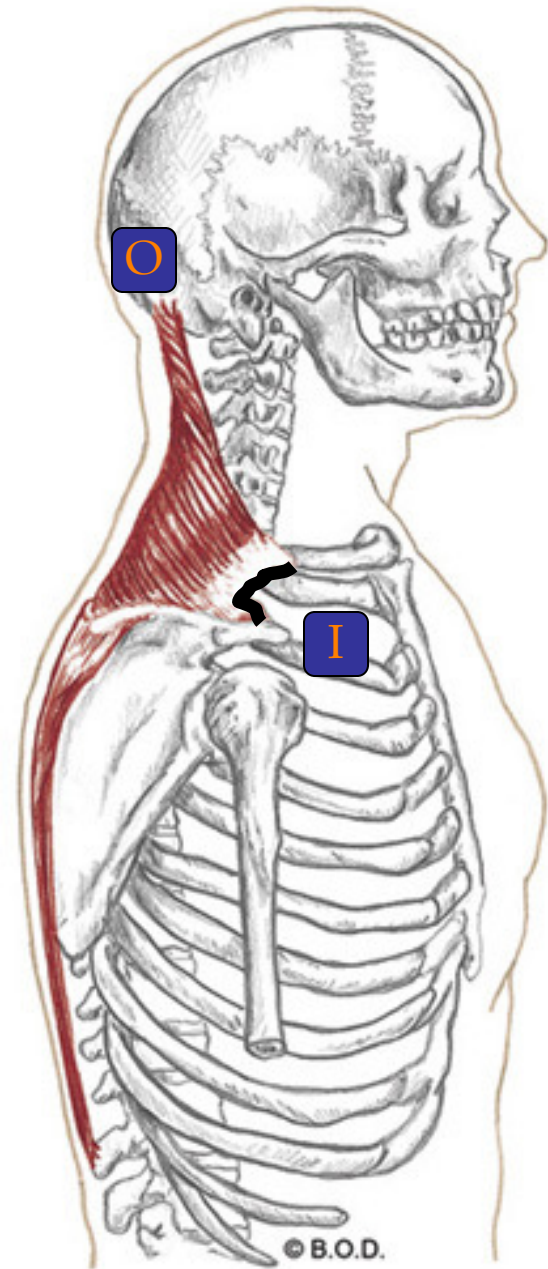
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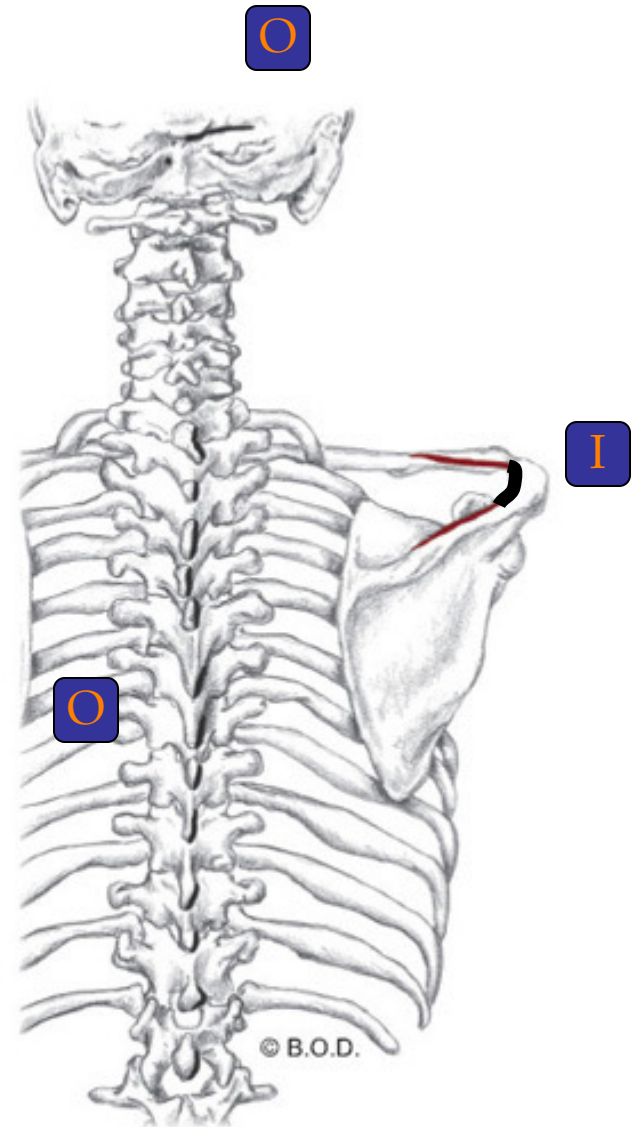
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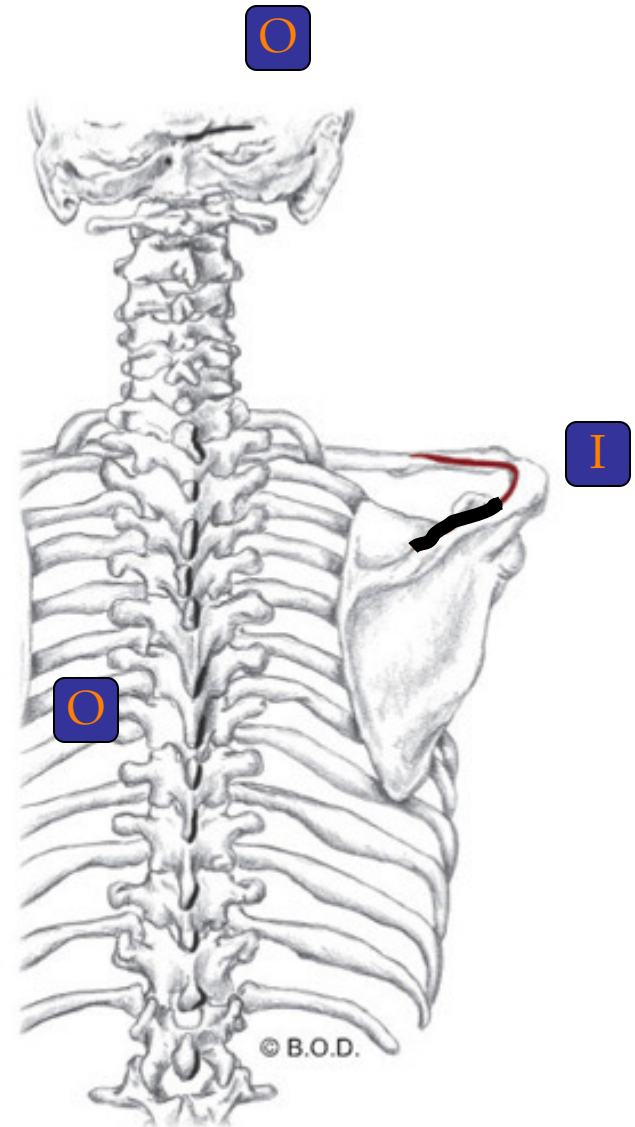
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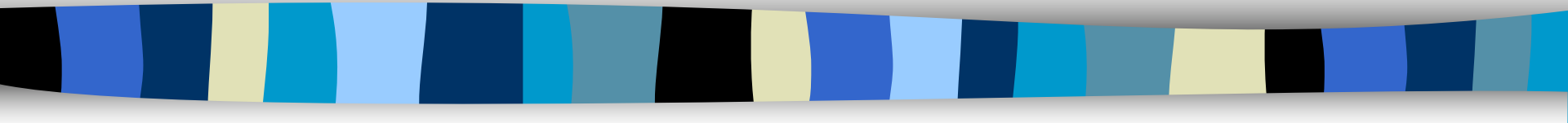
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2a Kinesiology:
Names and Locations of Bones and Posterior Muscles
E – 17 (part of Class 22a)





Divisions of the Skeletal System

Adult Human 206 bones total

Axial Skeleton 80 bones

Appendicular Skeleton 126 bones



Divisions of the Skeletal System

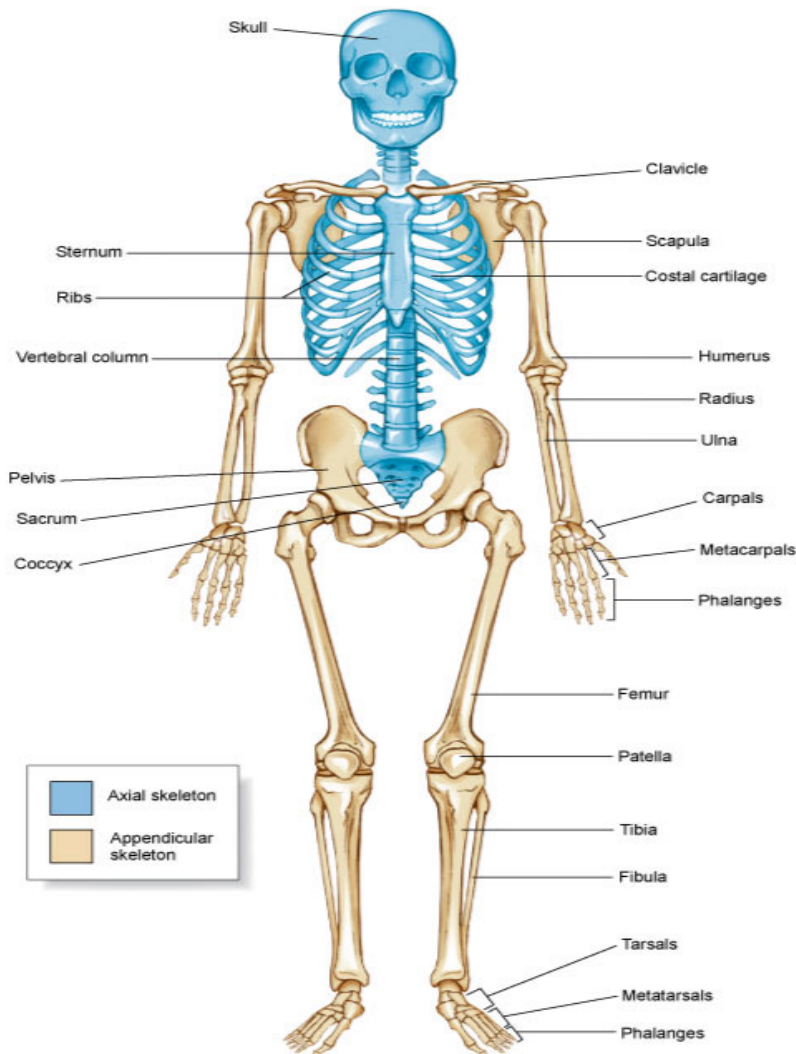
80 Axial Skeleton

- The skeleton that a snake would have
- No arms or legs

126 Appendicular Skeleton

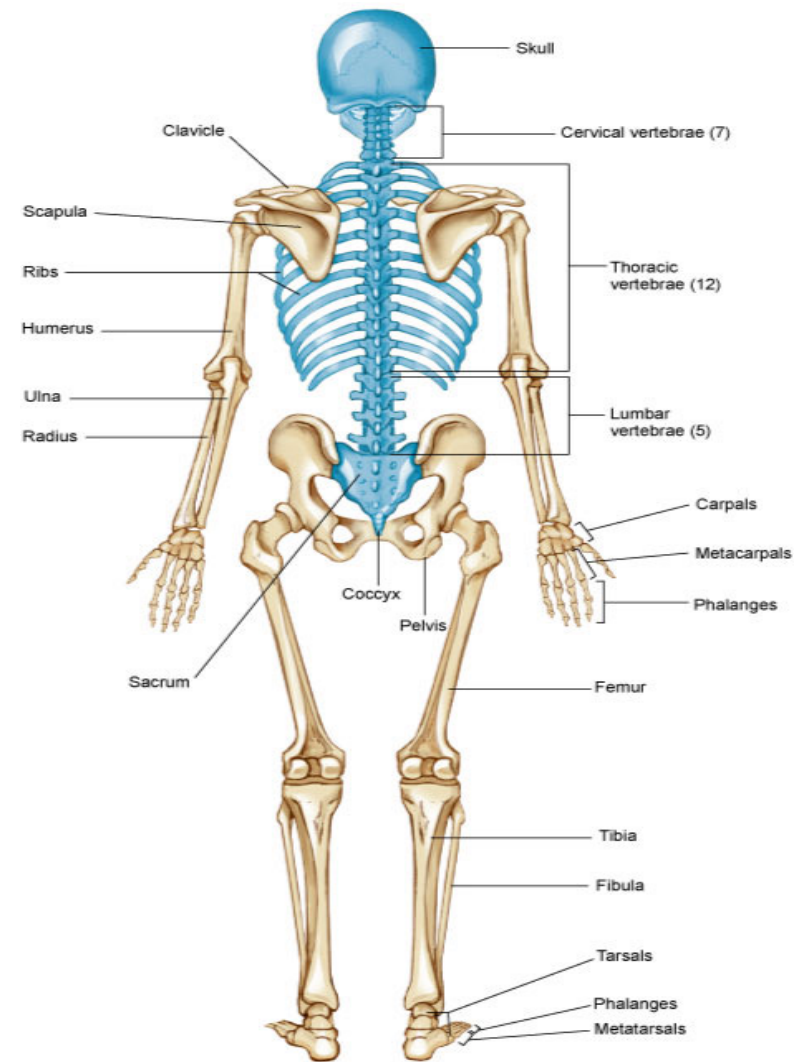
- The shoulder girdle and arms
- The pelvic girdle and legs

Axial Skelton in BLUE (80 bones)



A

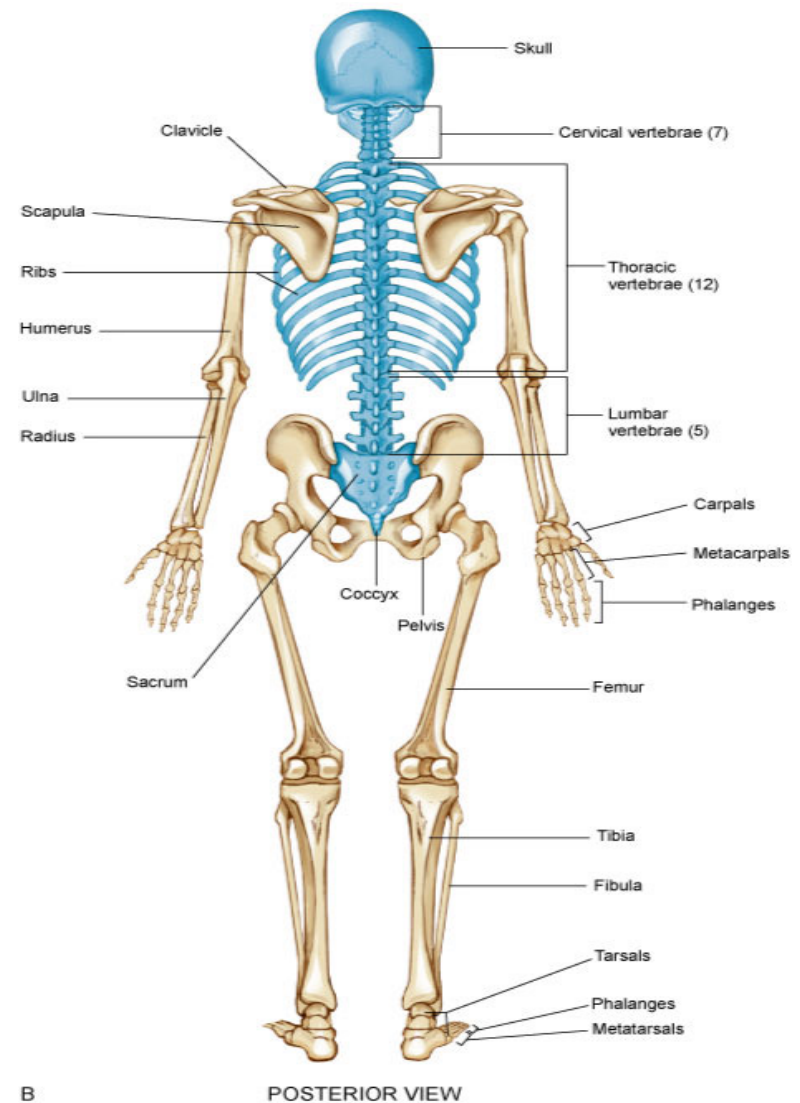
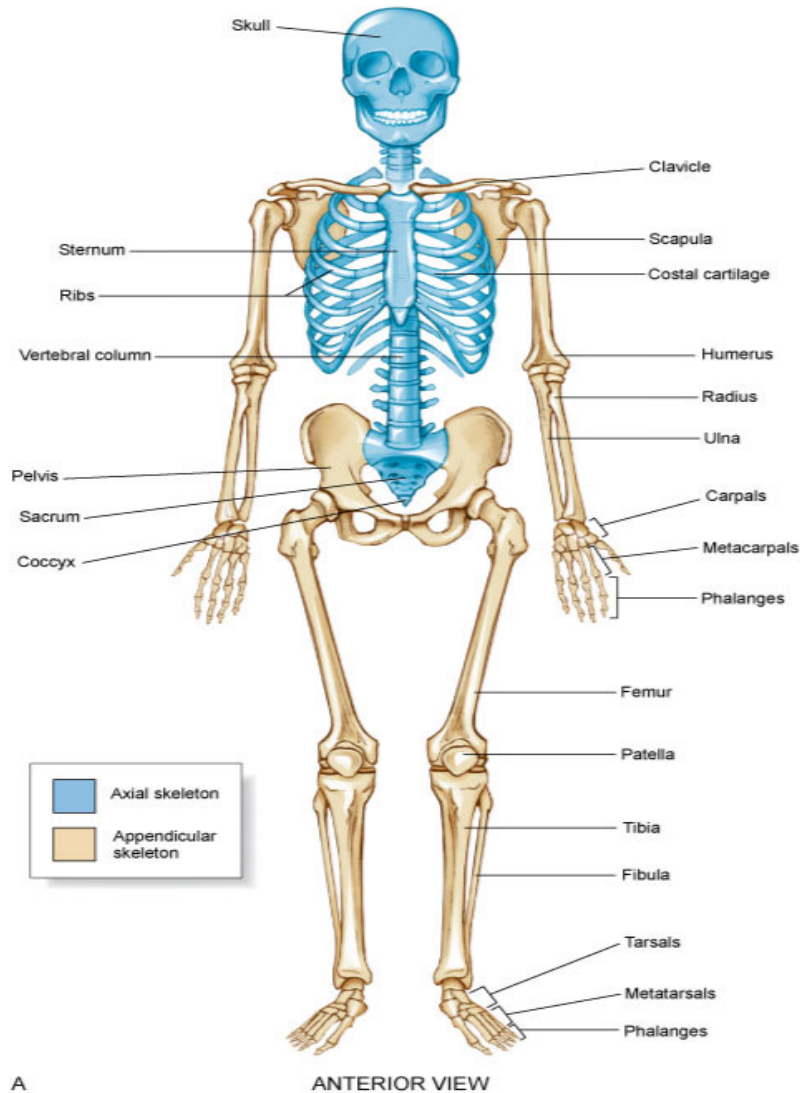
ANTERIOR VIEW



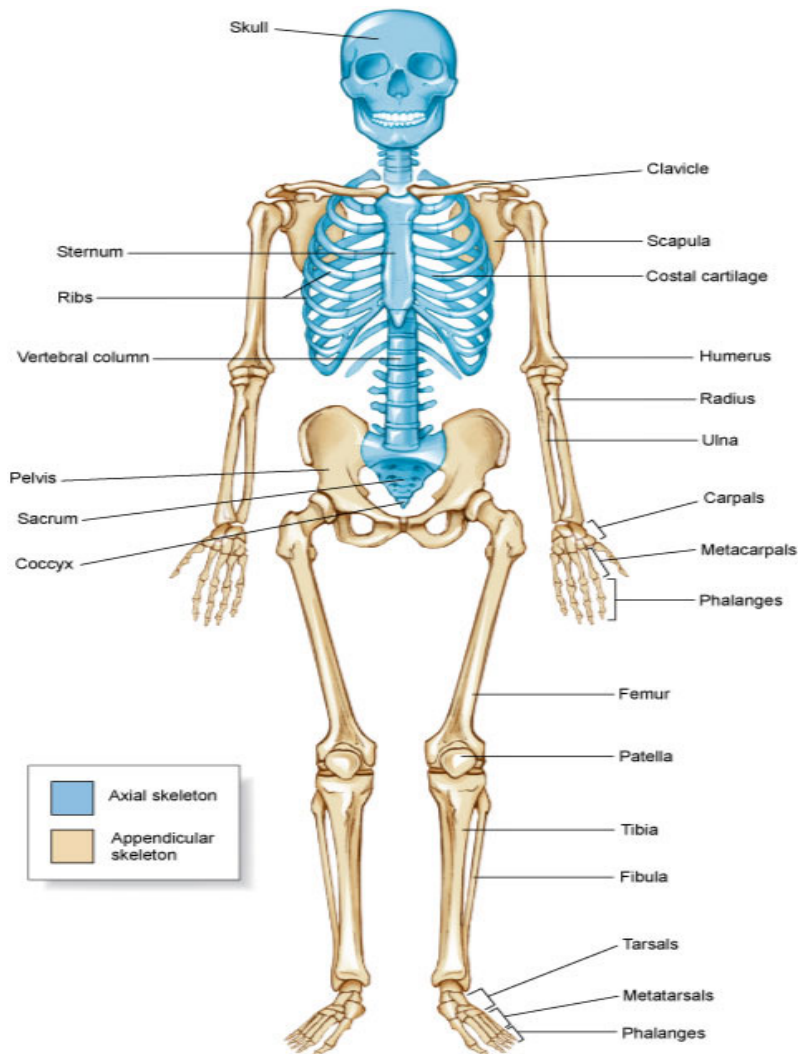
B

POSTERIOR VIEW

Appendicular Skeleton in GOLD / WHITE (126 bones)

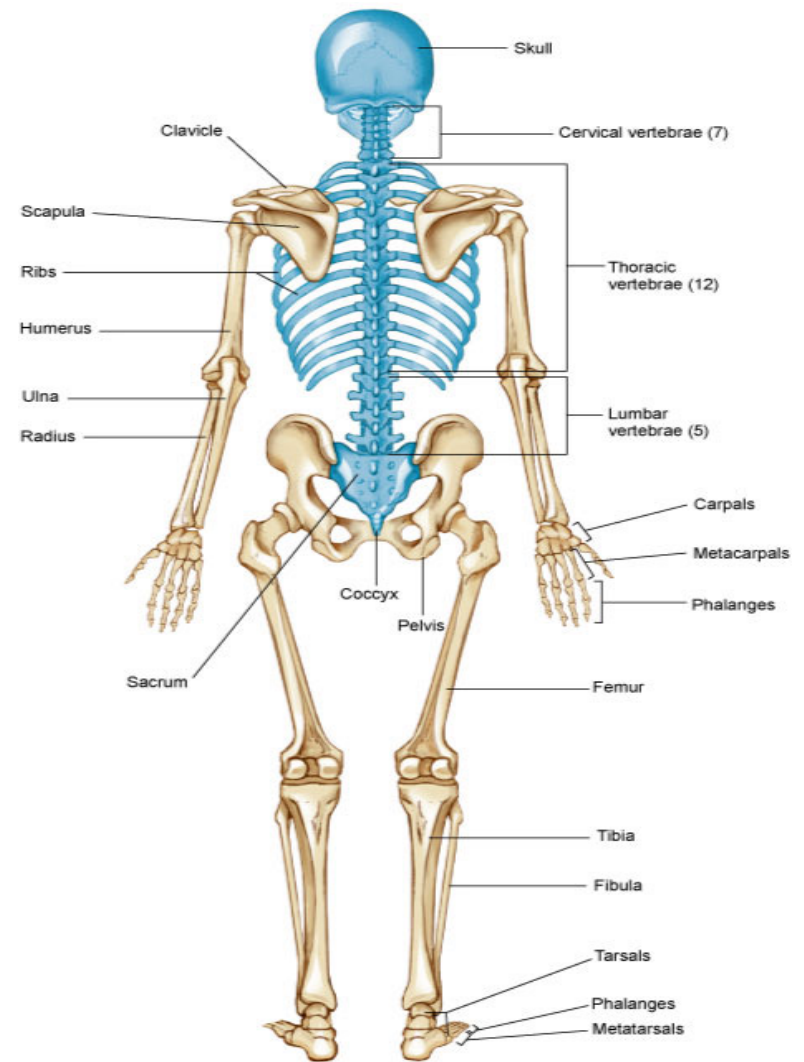


Human Skeleton (206 bones)



A

ANTERIOR VIEW



B

POSTERIOR VIEW



80 Axial Skeleton



80 Axial Skeleton

29 Skull

26 Vertebral column

1 Sternum

24 Ribs

80 Total

80 Axial Skeleton

29 Skull

8 Cranium

14 Face

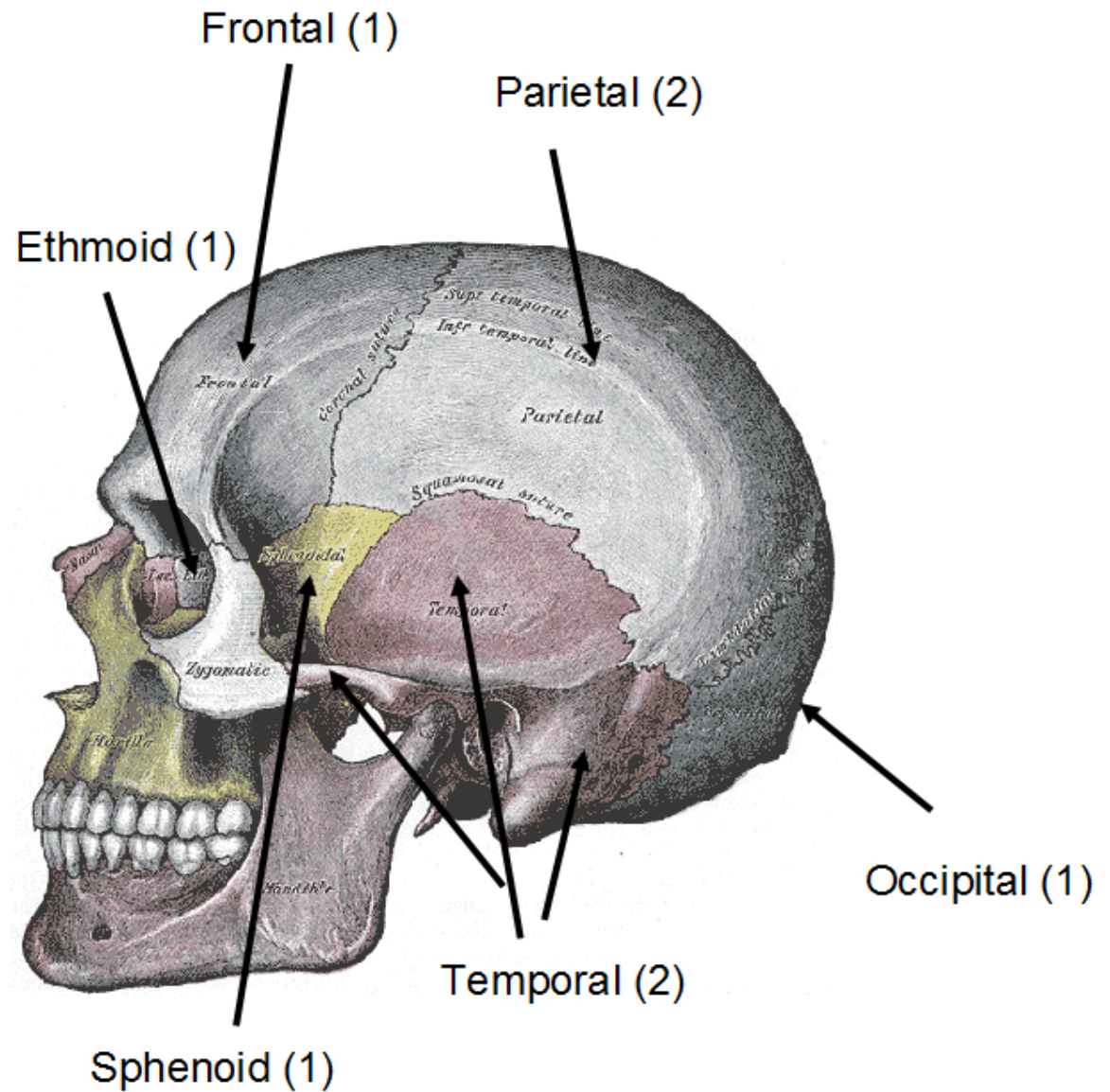
6 Ear

1 Hyoid



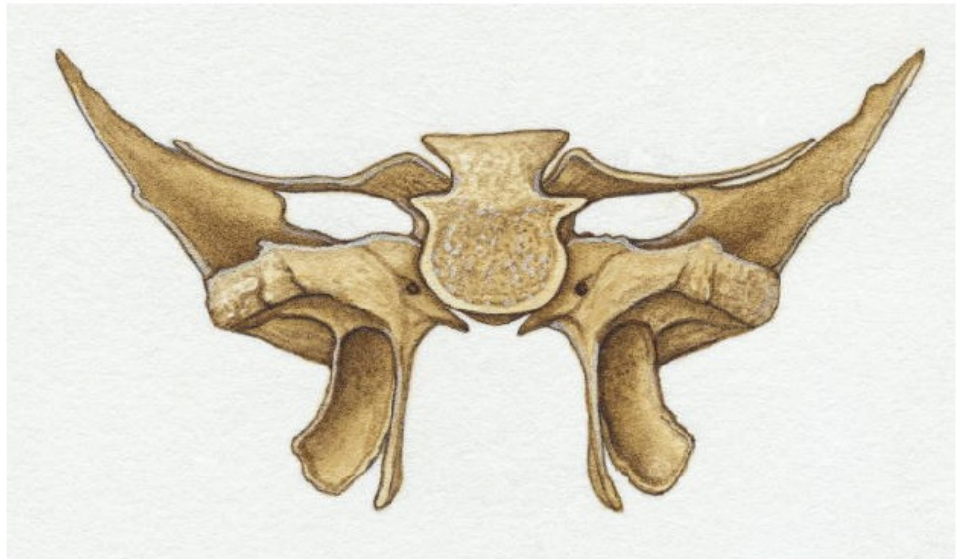
80 Axial Skeleton

8 Cranium



80 Axial Skeleton

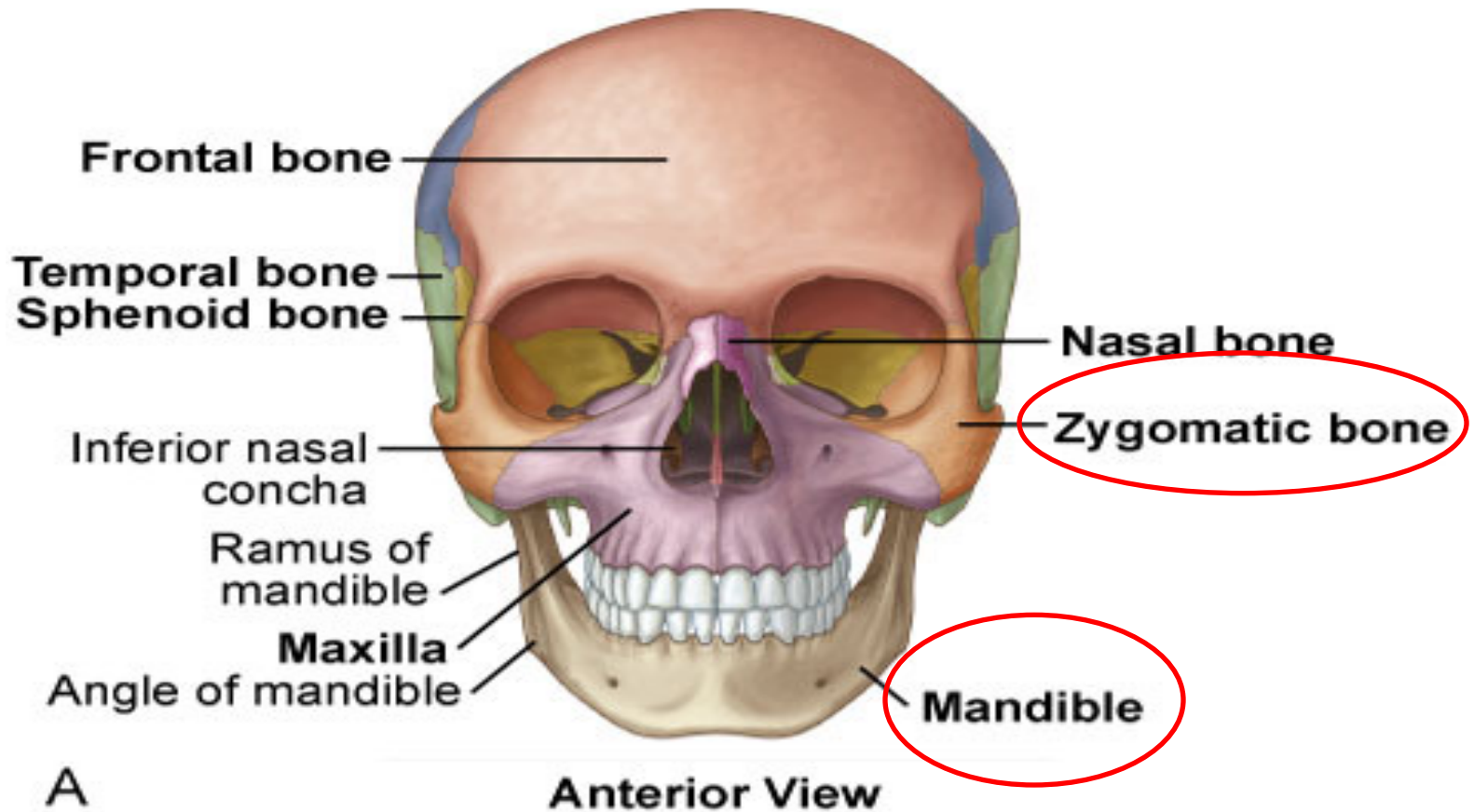
1 Sphenoid



80 Axial Skeleton

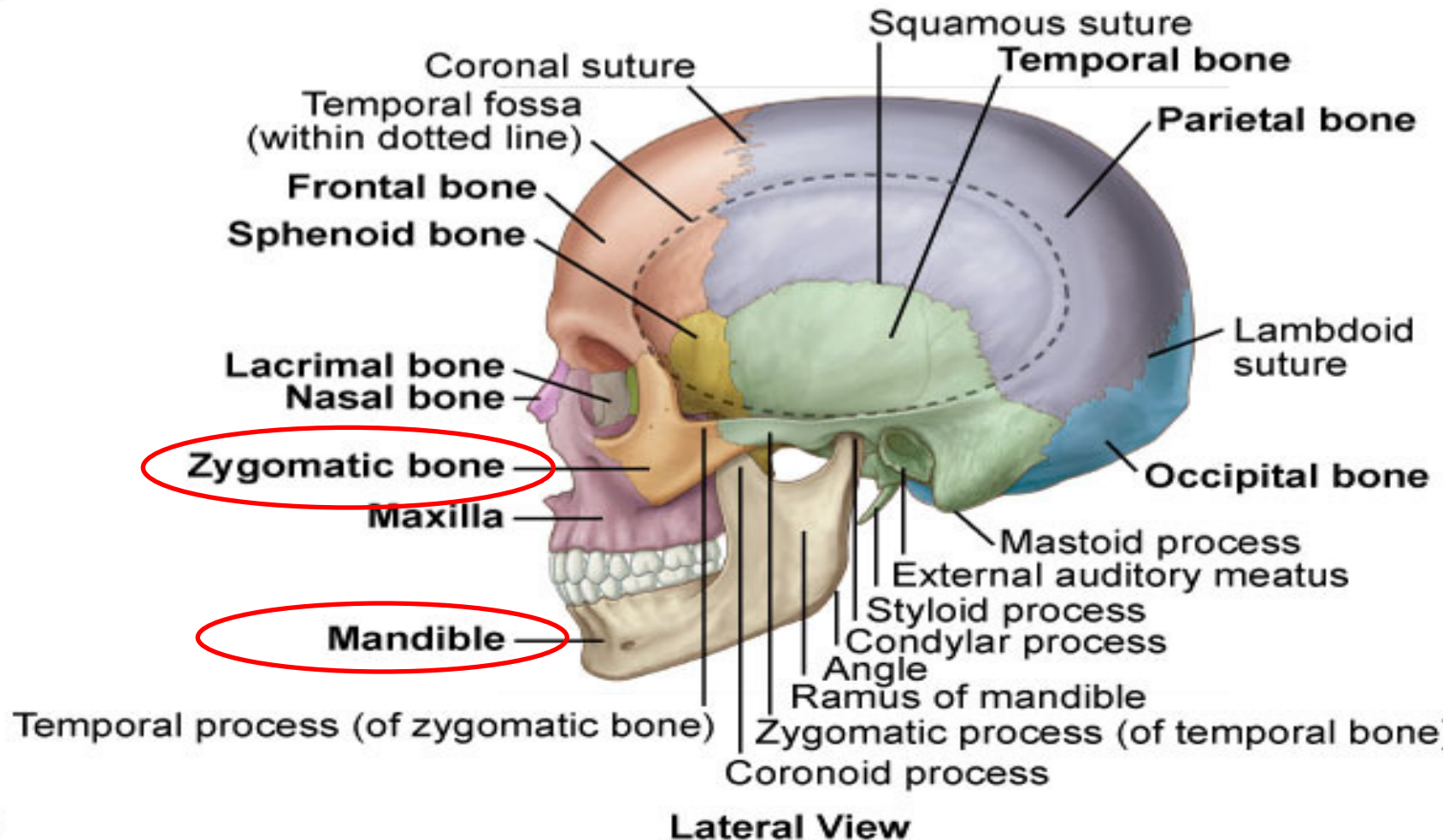
14 Face

zygomatic 2
mandible 1



80 Axial Skeleton

14 Face



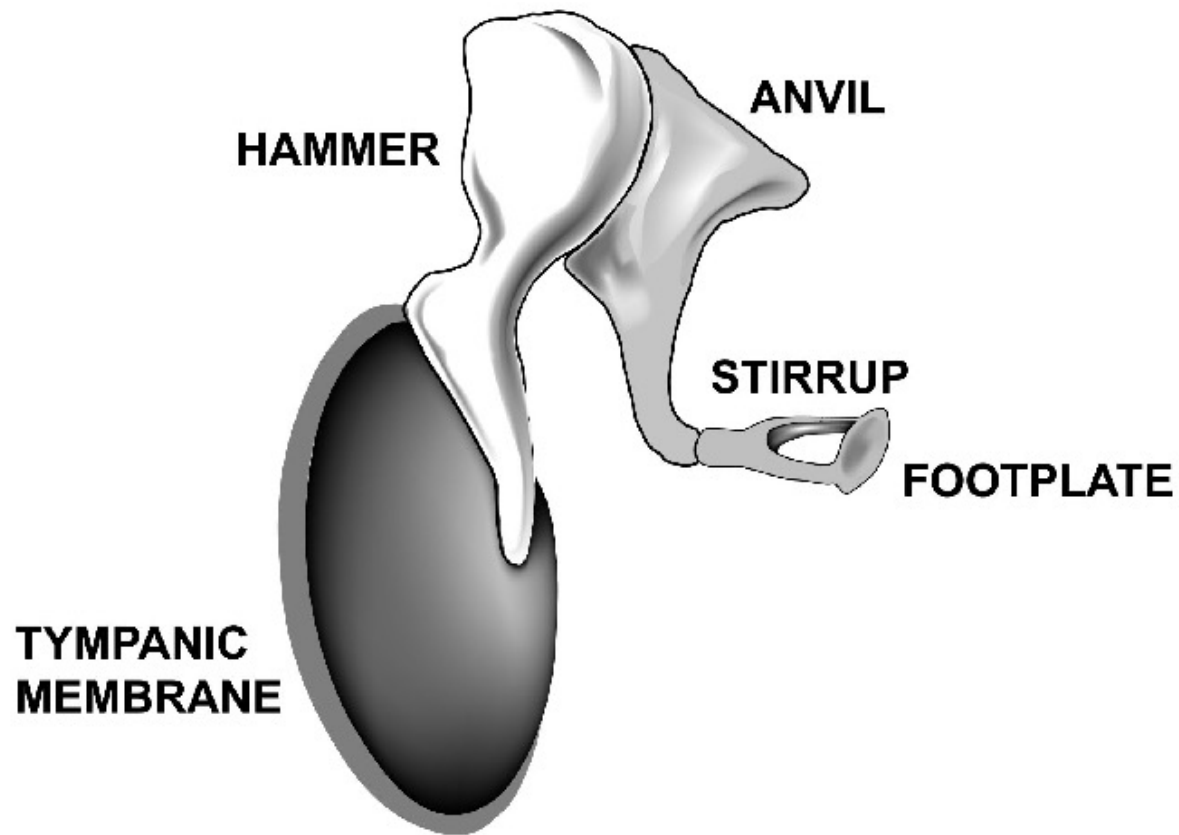
80 Axial Skeleton

6 Ear

2 malleus (hammer)

2 incus (anvil)

2 stapes (stirrup)



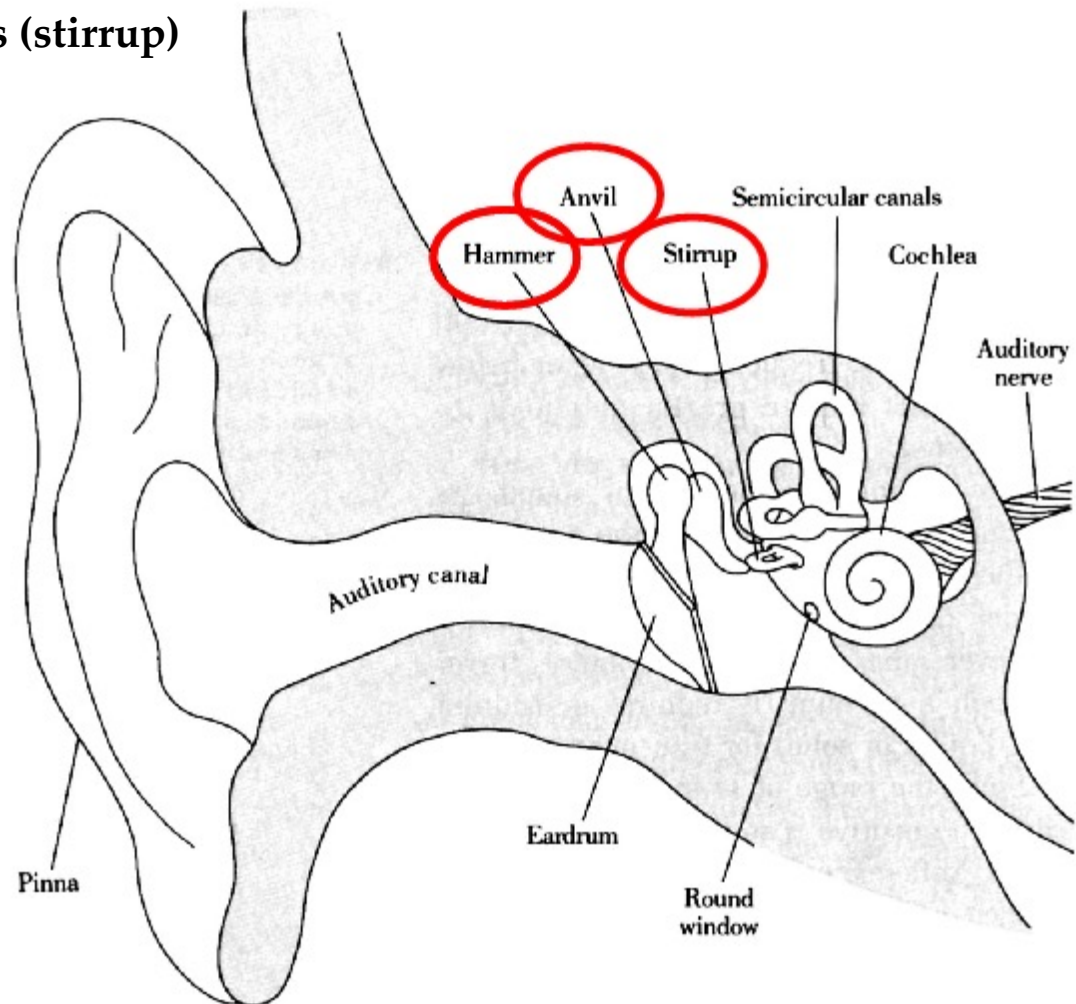
80 Axial Skeleton

6 Ear

2 malleus (hammer)

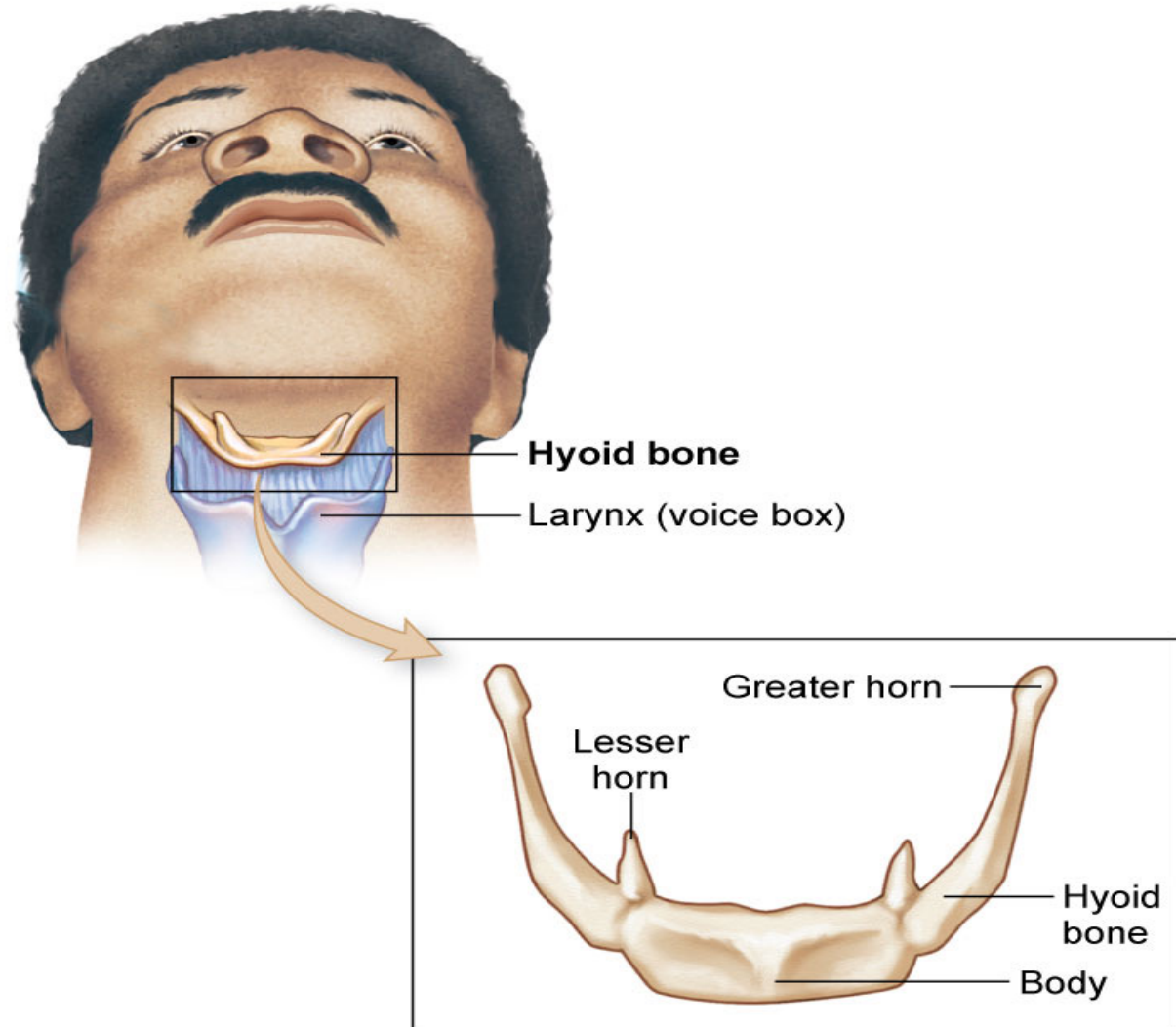
2 incus (anvil)

2 stapes (stirrup)



80 Axial Skeleton

1 Hyoid



From Patton KT, Thibodeau GA: *Anatomy & physiology*, ed 7, St. Louis, 2010, Mosby.

Fig. 21-19. Hyoid bone, anterior view.

80 Axial Skeleton

29 Skull

8 Cranium

14 Face

6 Ear

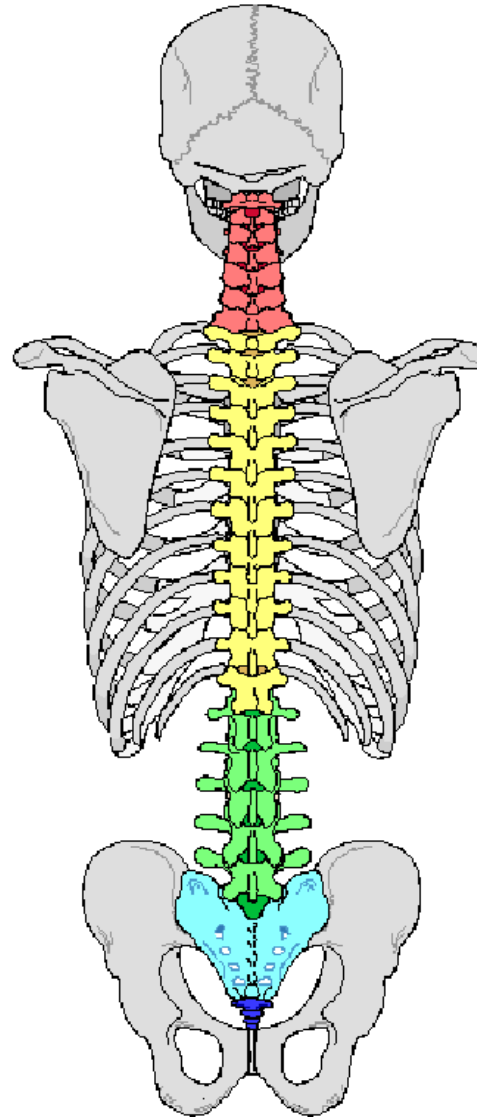
1 Hyoid



80 Axial Skeleton

26 Vertebral Column

7 Cervical
12 Thoracic
5 Lumbar
1 Sacrum
1 Coccyx



80 Axial Skeleton

26 Vertebral Column

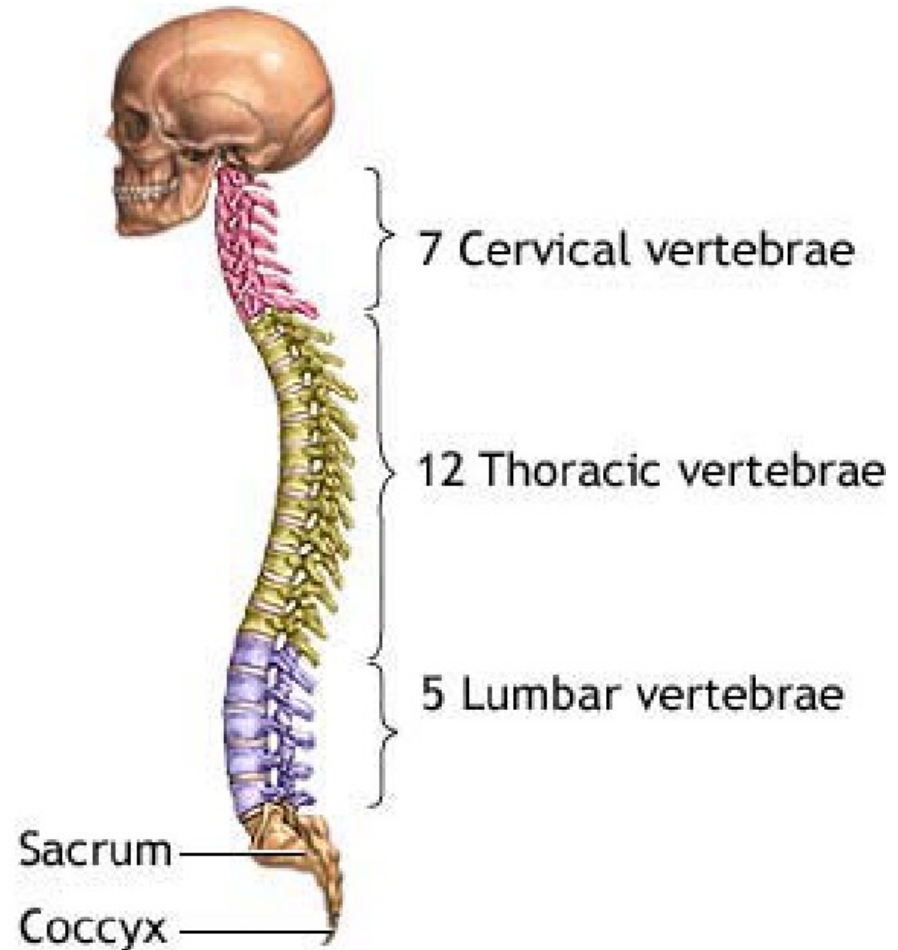
7 Cervical

12 Thoracic

5 Lumbar

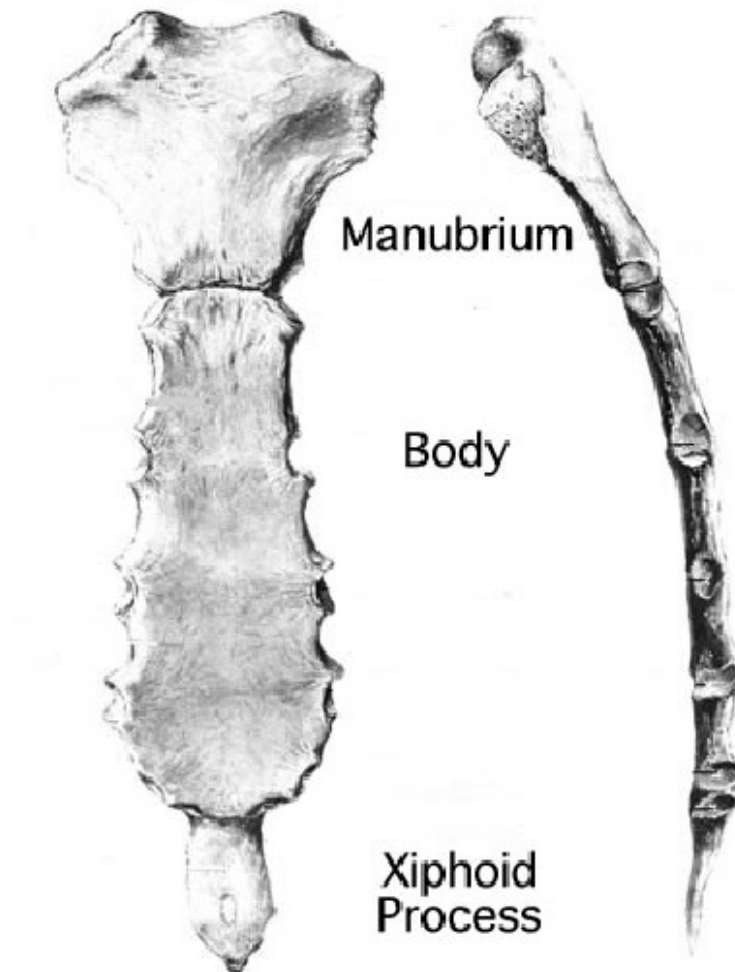
1 Sacrum

1 Coccyx



80 Axial Skeleton

1 Sternum



80 Axial Skeleton

24 Ribs

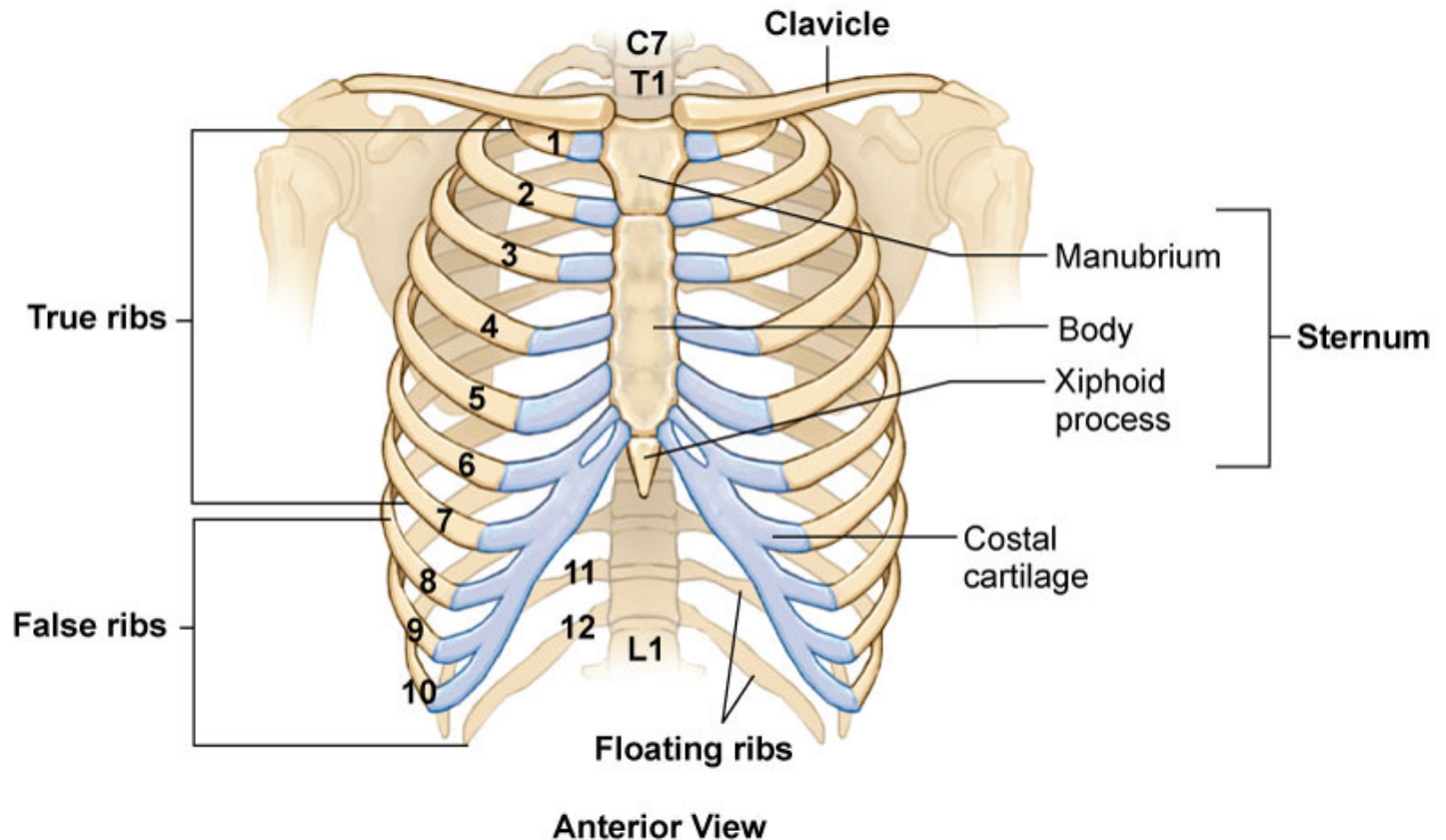
14 True ribs

Directly attaching to the sternum by way of cartilage.

10 False ribs including 4 Floating ribs

False- Not *directly* attached to the sternum.

Floating- Not attached to the sternum at *all*.

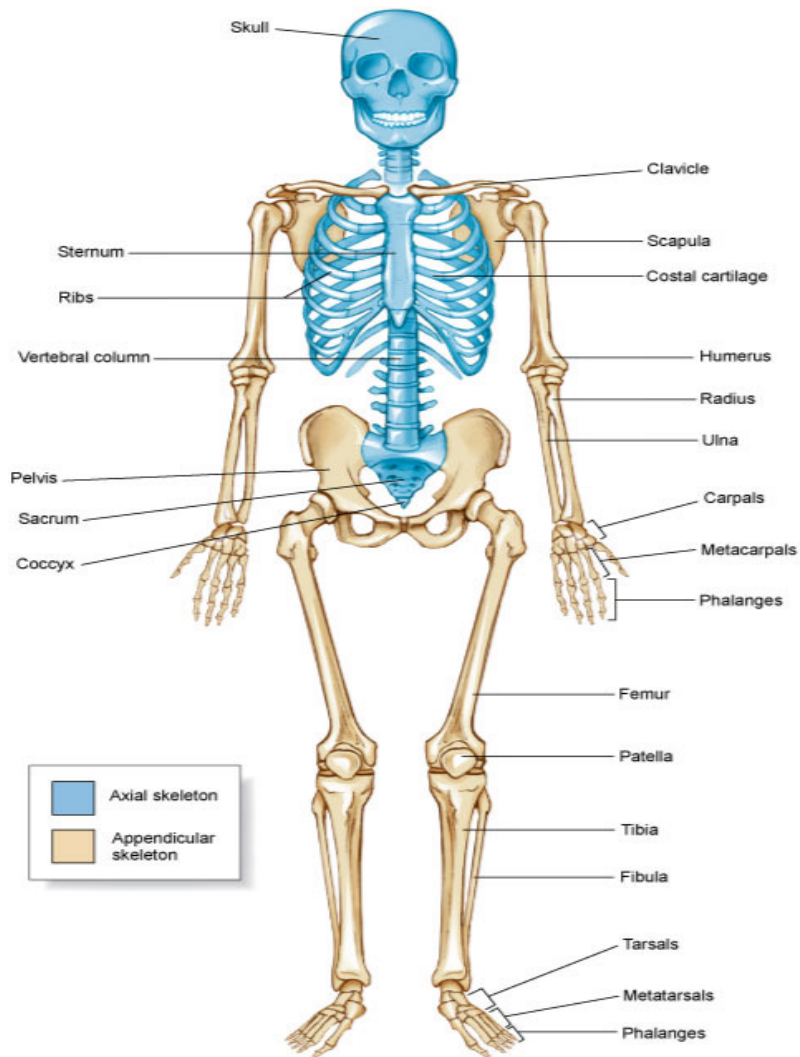




126 Appendicular Skeleton

126 Appendicular Skeleton

- 4 Shoulder Girdle
- 60 Upper Extremity
- 2 Pelvic Girdle
- 60 Lower Extremity



A

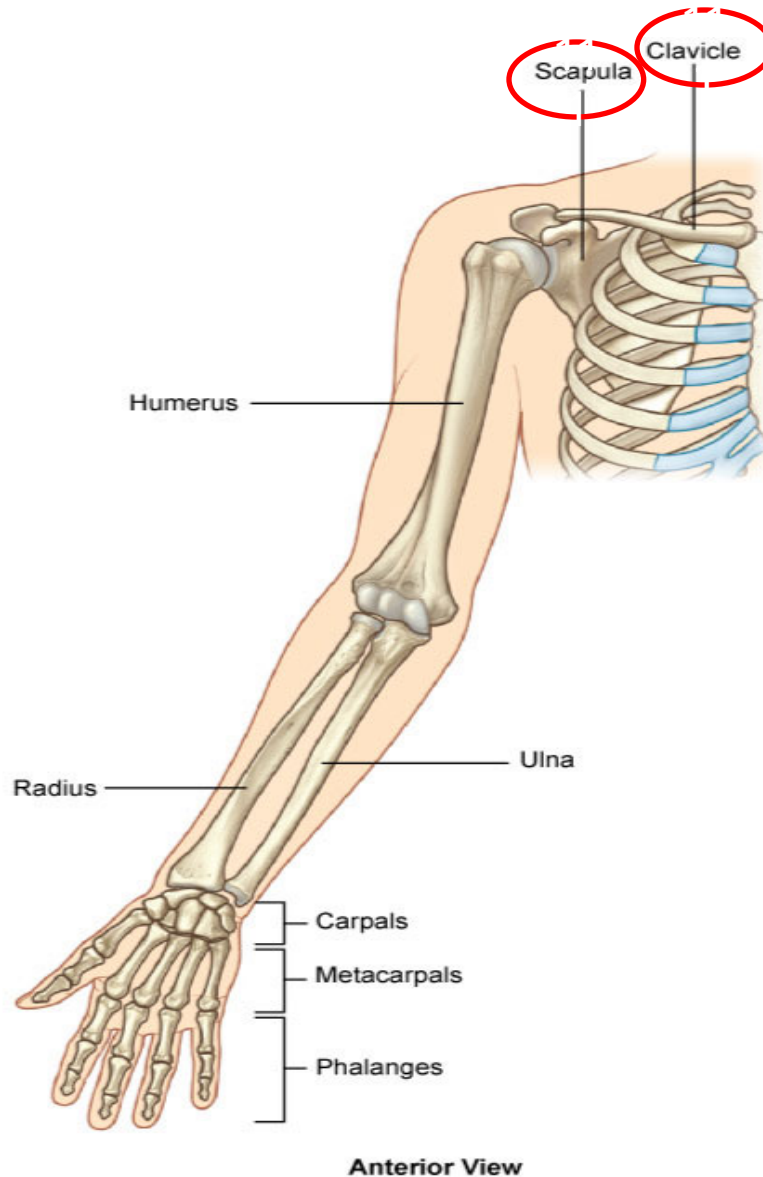
ANTERIOR VIEW

126 Appendicular Skeleton

4 Shoulder Girdle

clavicle 2

scapula 2



126 Appendicular Skeleton

60 Upper Extremity

humerus 2

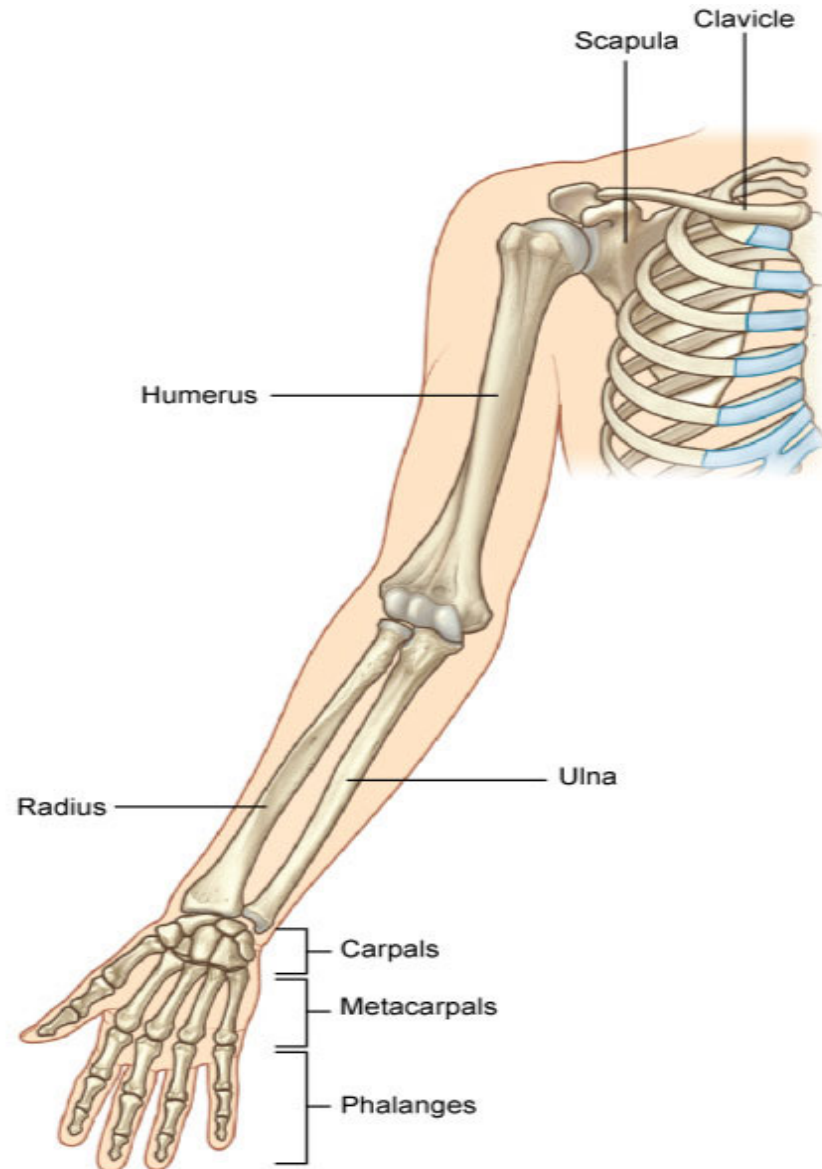
radius 2

ulna 2

carpals 16

metacarpals 10

phalanges 28



Anterior View

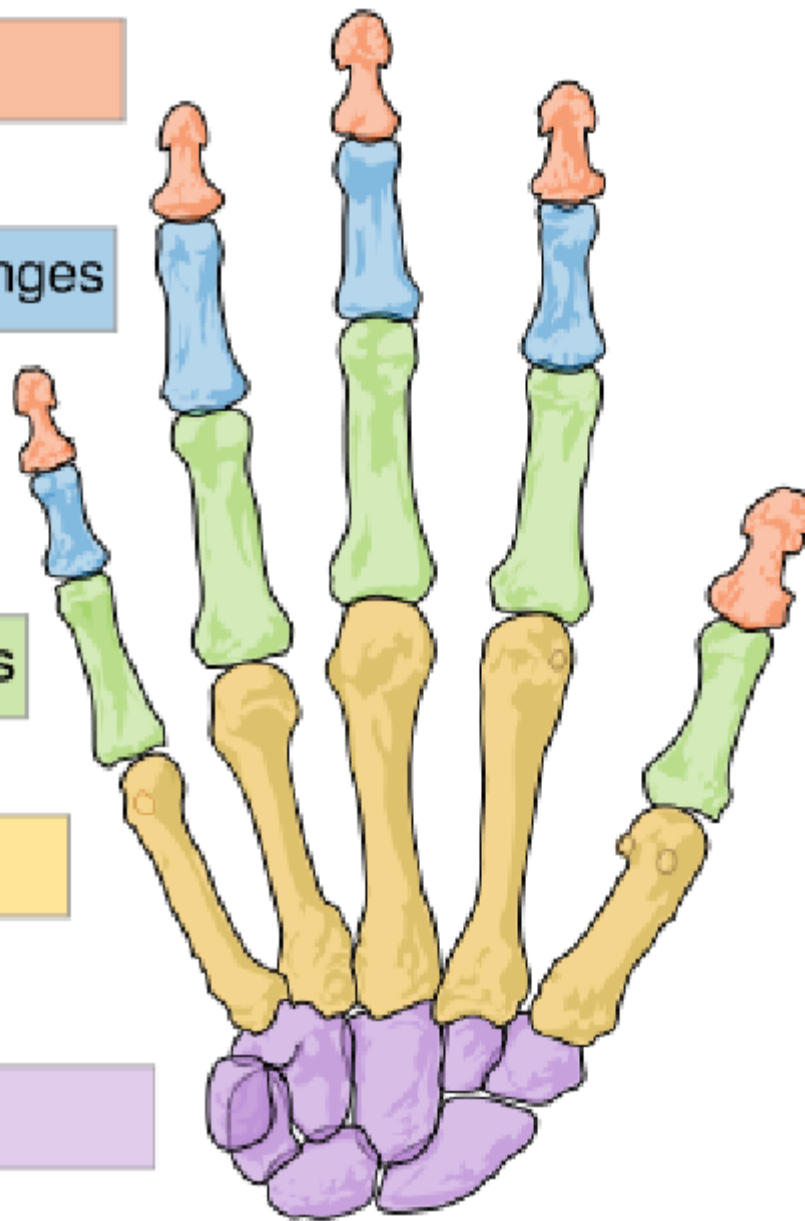
Distal phalanges

Intermediate phalanges

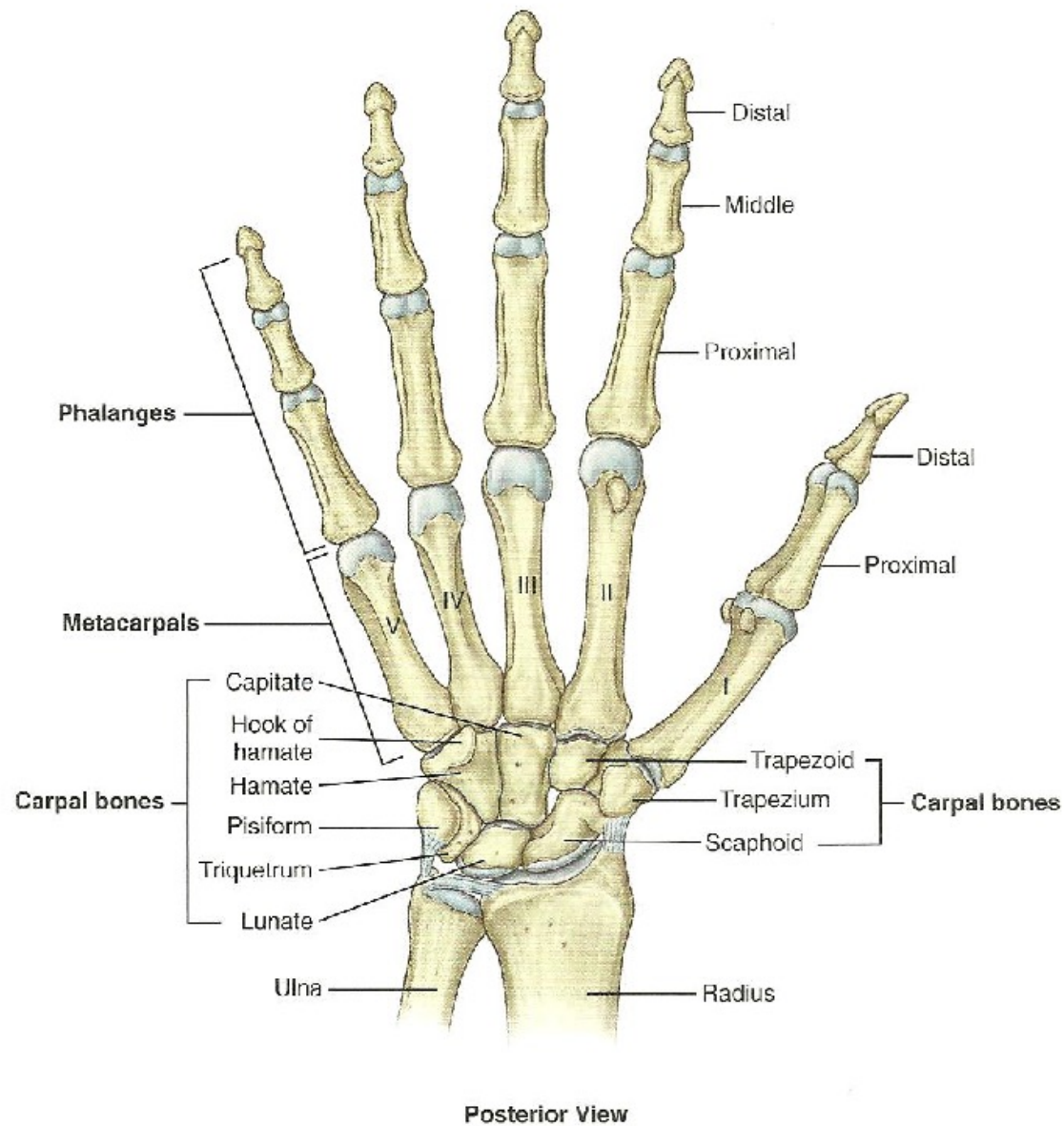
Proximal phalanges

Metacarpals

Carpals



126 Appendicular Skeleton



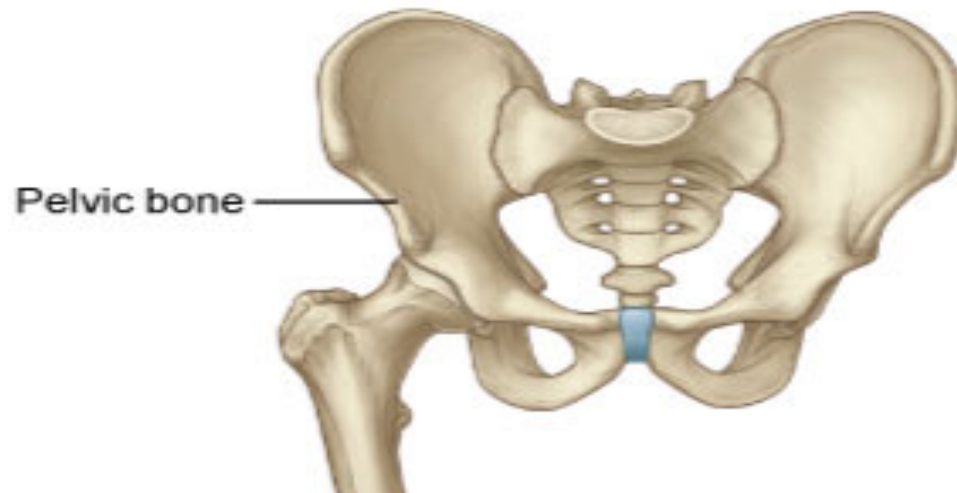
126 Appendicular Skeleton

2 Pelvic Girdle

pelvic bone

AKA: innominate bone

AKA: os coxae or coxal bone



126 Appendicular Skeleton

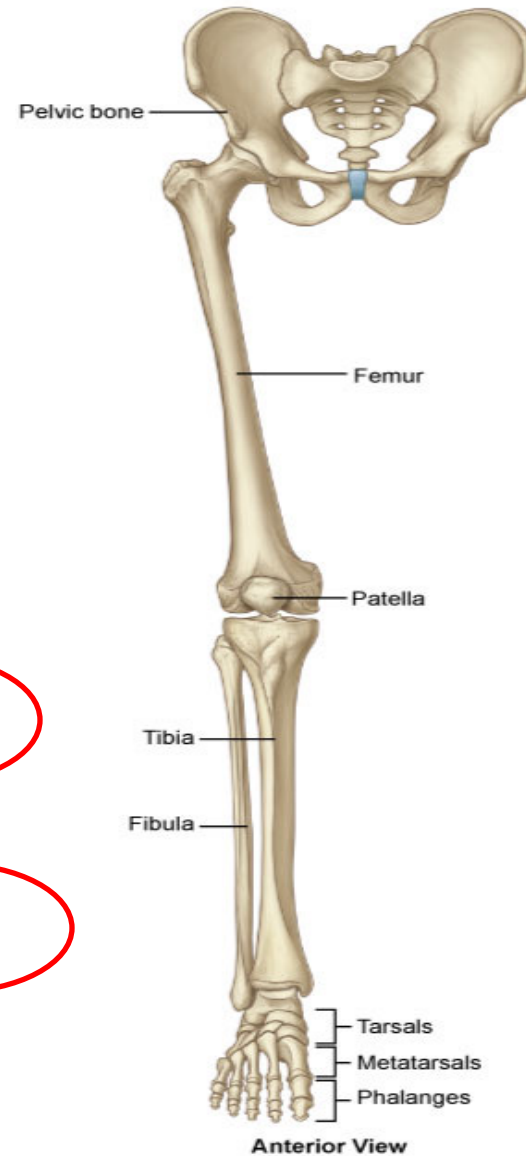
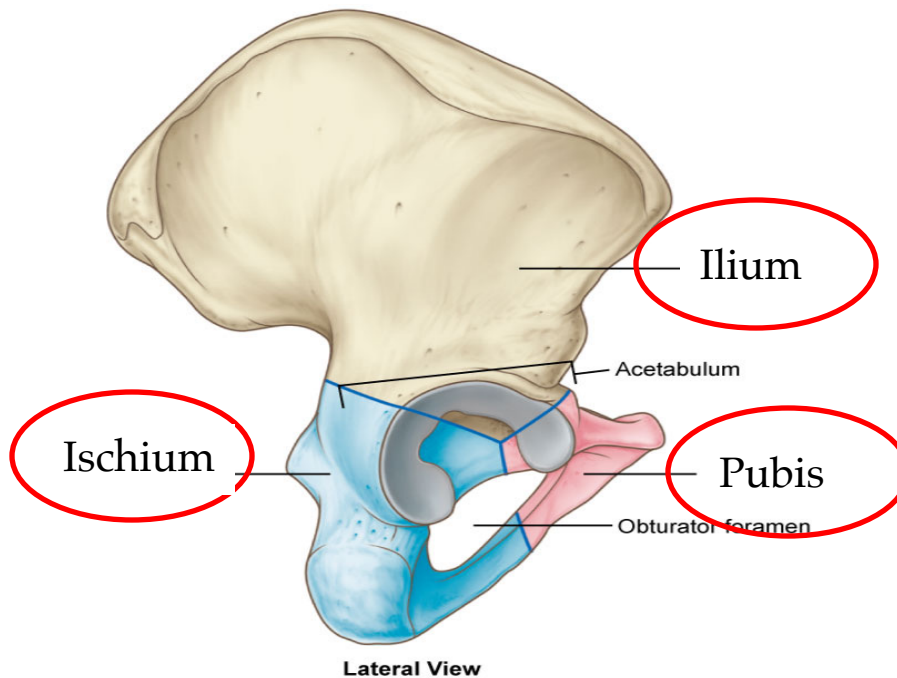
2 Pelvic Girdle

pelvic bone

ilium

ischium

pubis



126 Appendicular Skeleton

60 Lower Extremity

femur 2

patella 2

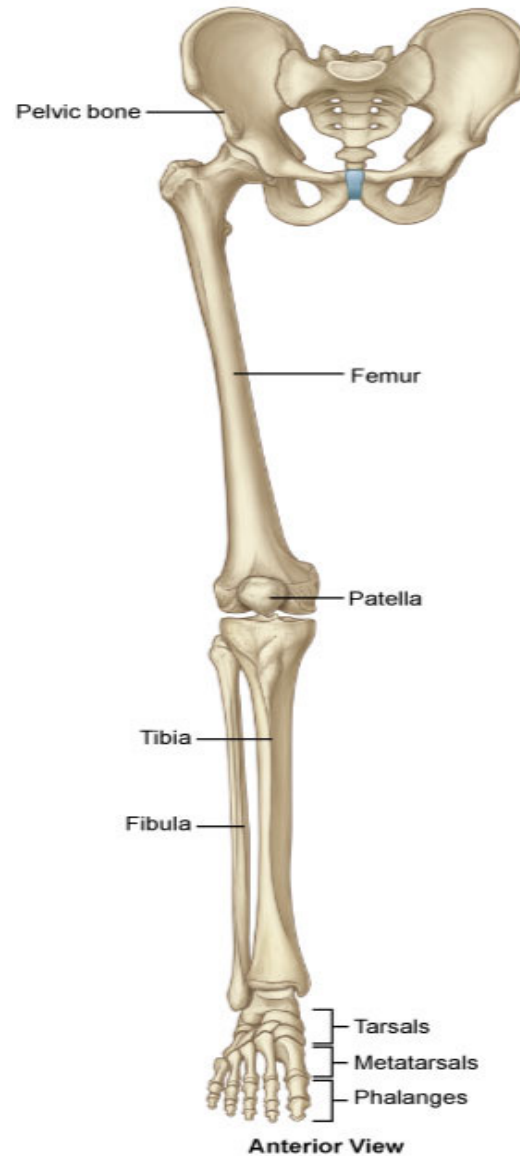
tibia 2

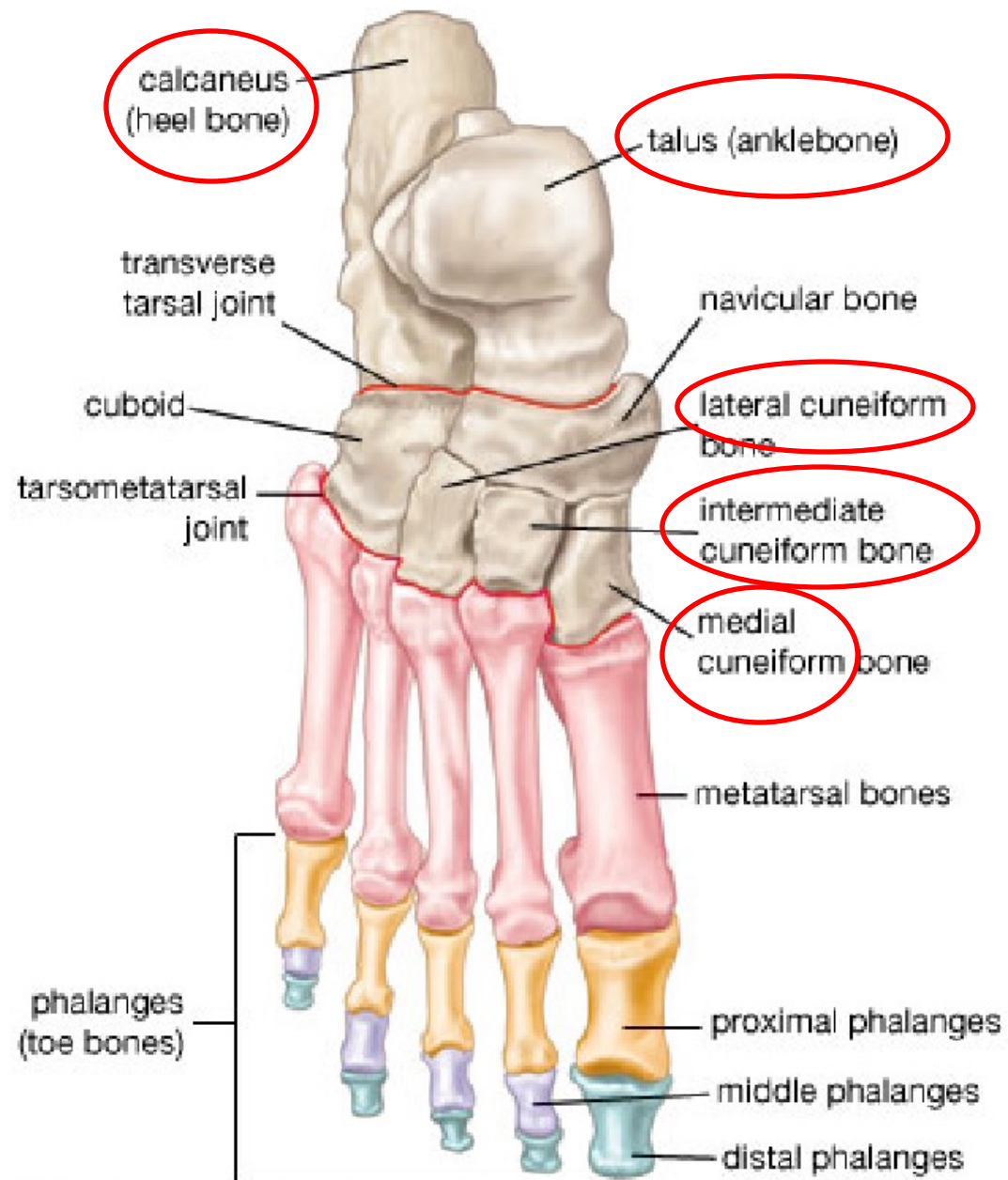
fibula 2

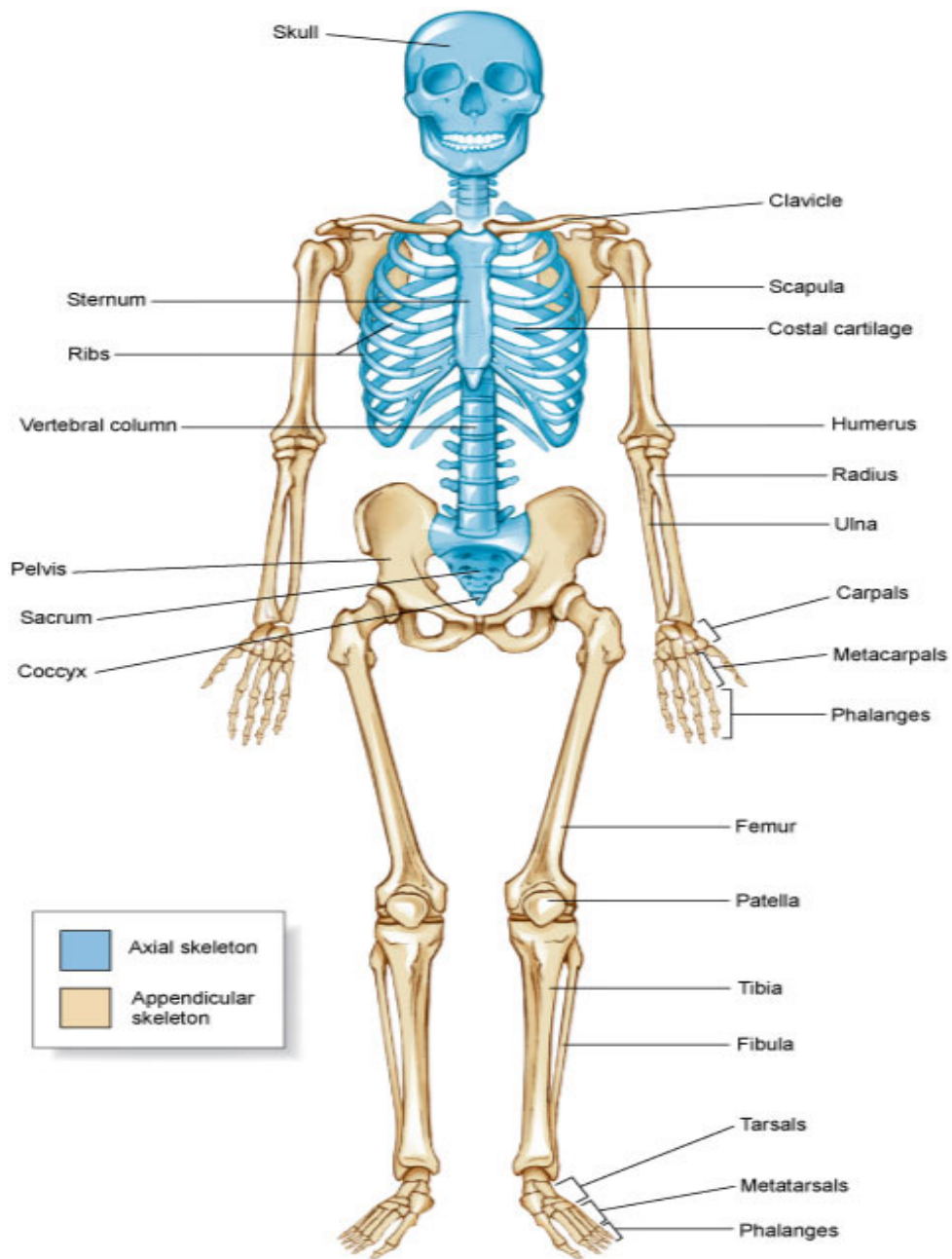
tarsals 14

metatarsals 10

phalanges 28

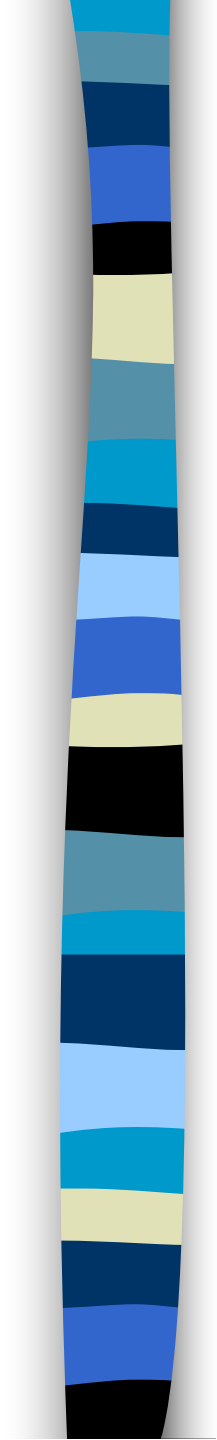




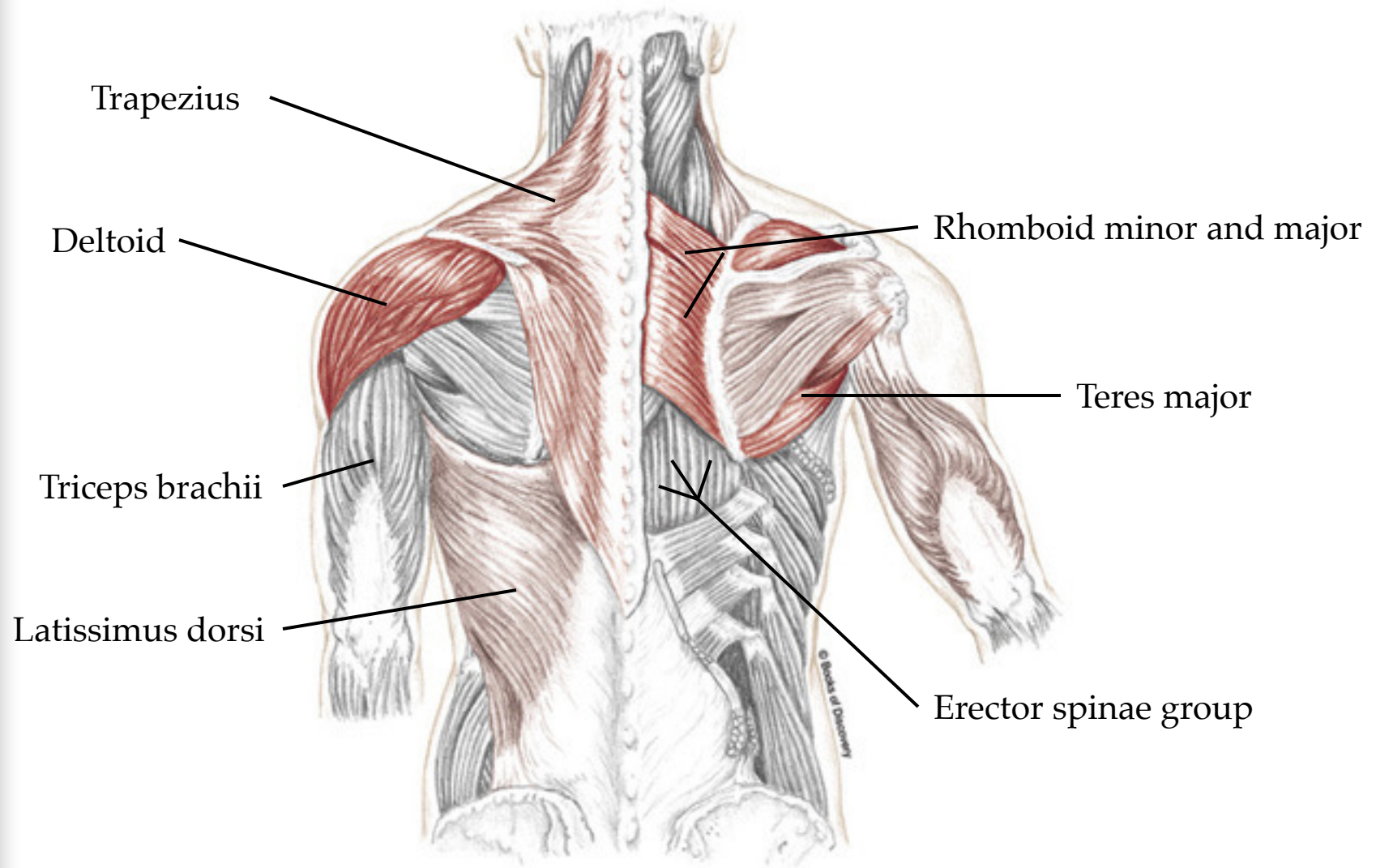


A

ANTERIOR VIEW

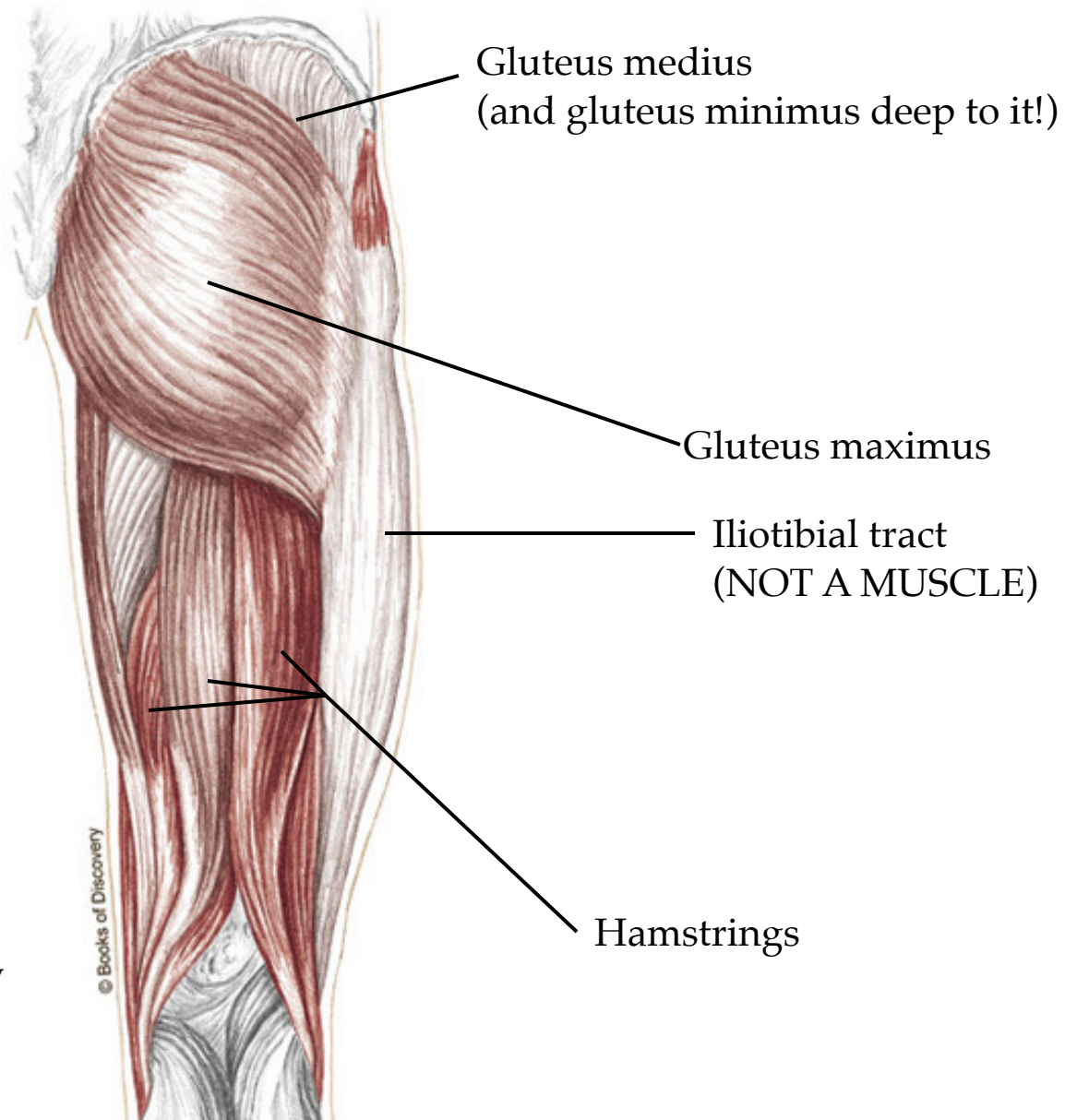


Trail Guide, Page 61



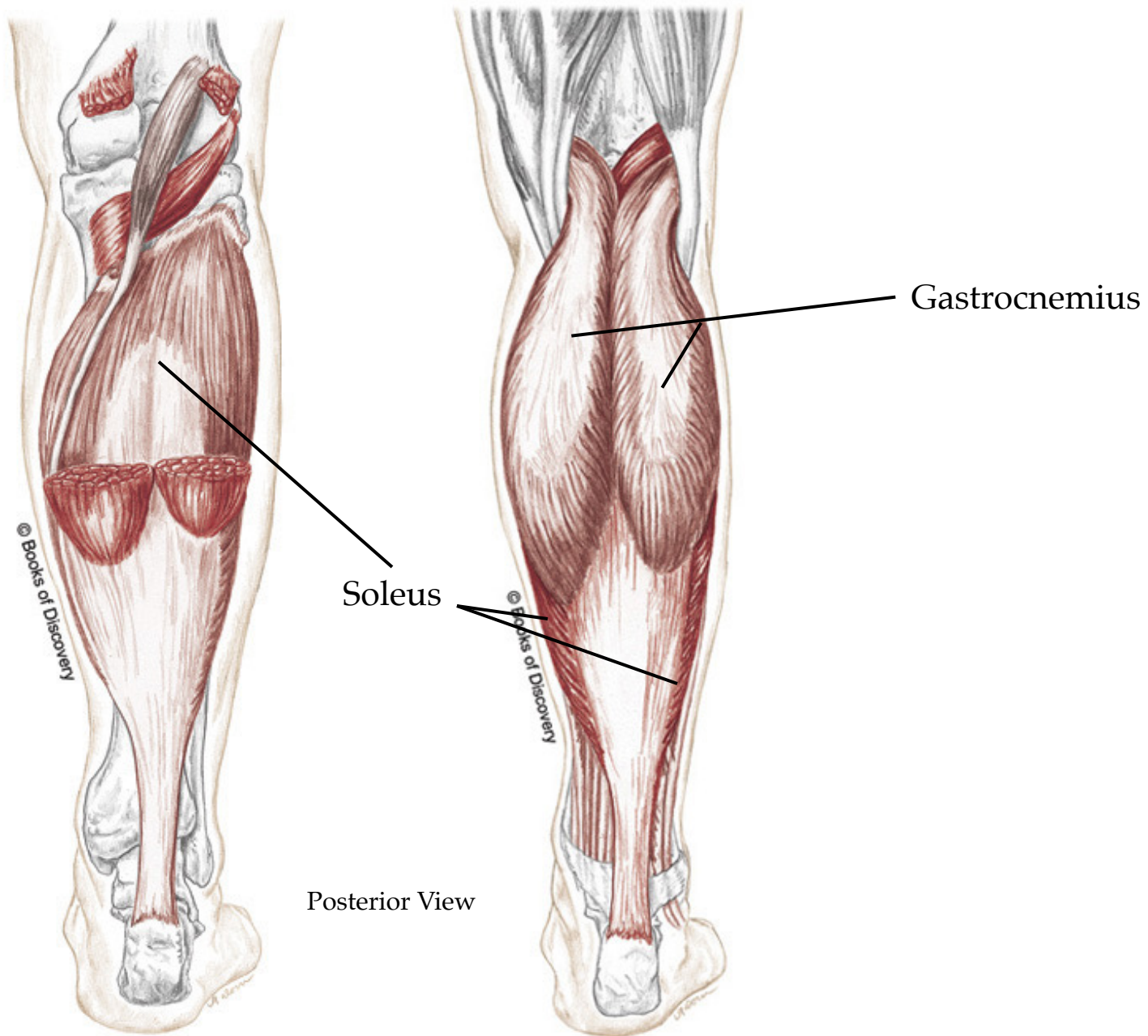
Posterior View

Trail Guide, Page 297

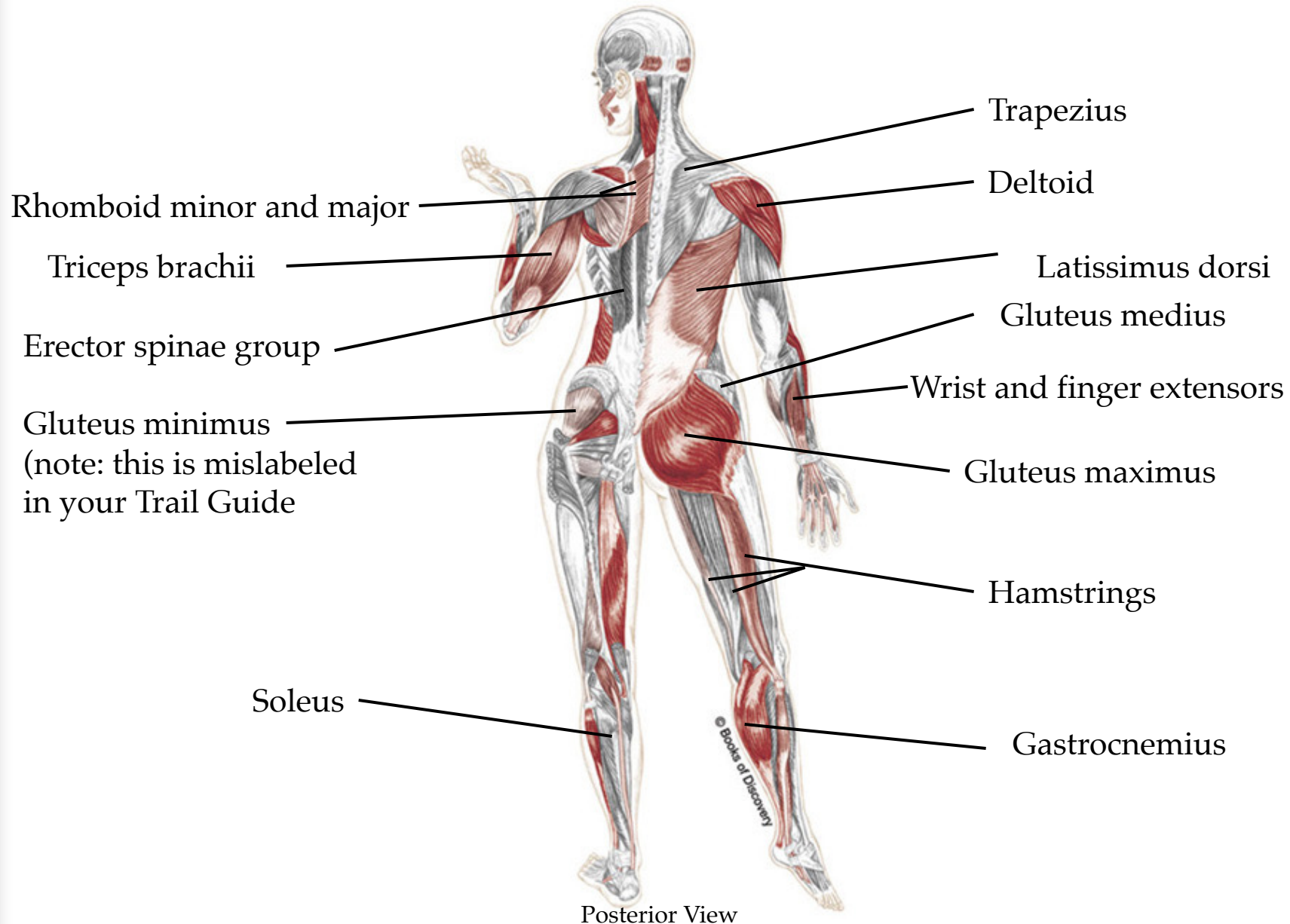


Posterior View

Trail Guide, Page 366



Trail Guide, Page 36



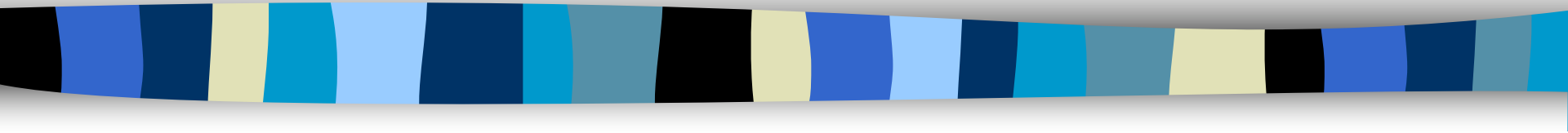
Active Study Skills



Engage in active studying of this new material using:

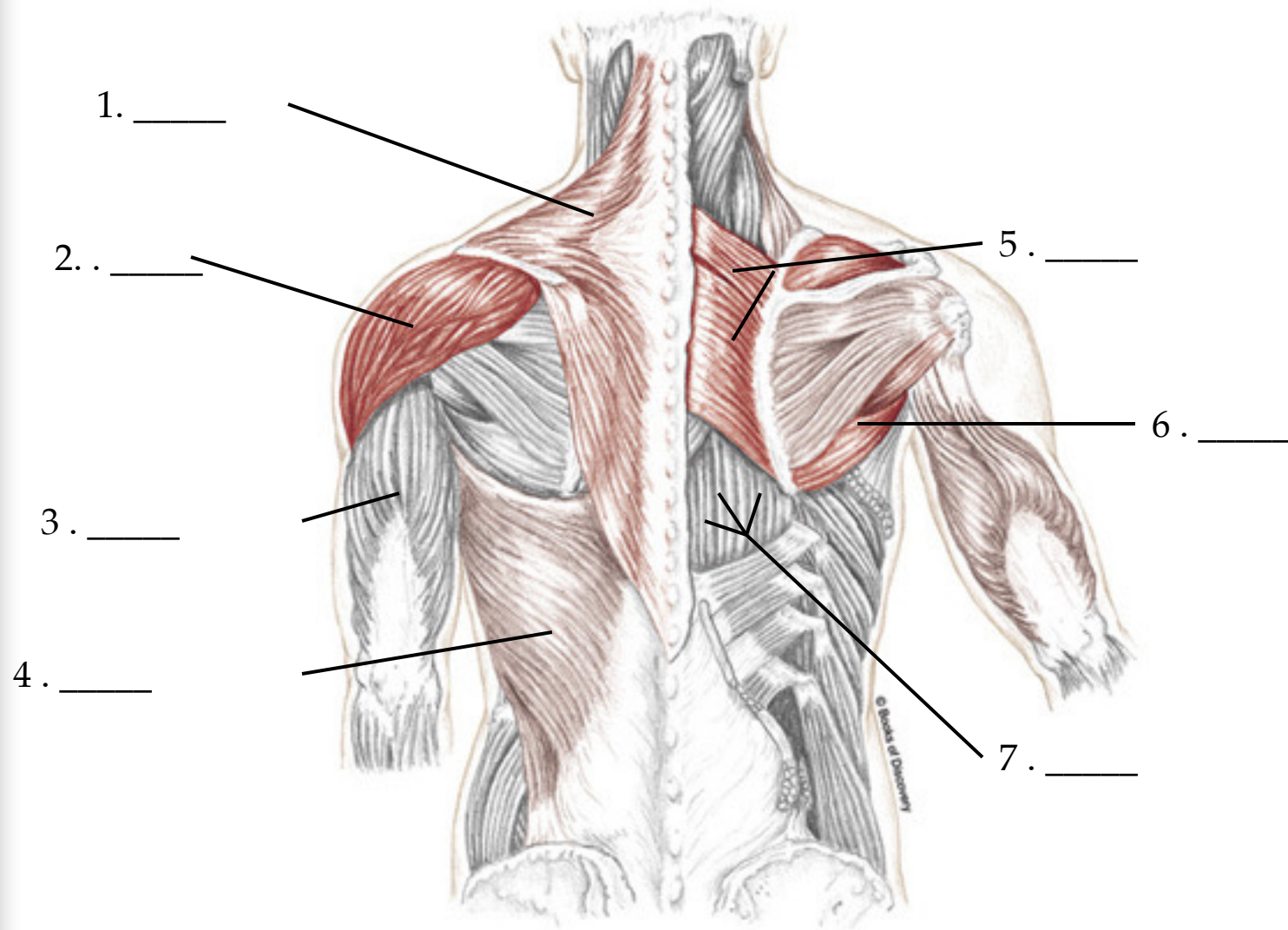
- Trail Guide (pages 36, 61, 297, 366, and any others that help you)
- Your body (link the muscles in the book with those on your body)
- Movement (touch the muscle as you contract it and say its name out loud)
- Drawings (draw the basic shapes of the muscles and label them)
- Drilling (with a partner, name or write the muscle as they point at it)
- Writing (write the names of all of the muscles)
- Speaking (name all of the muscles)

Review



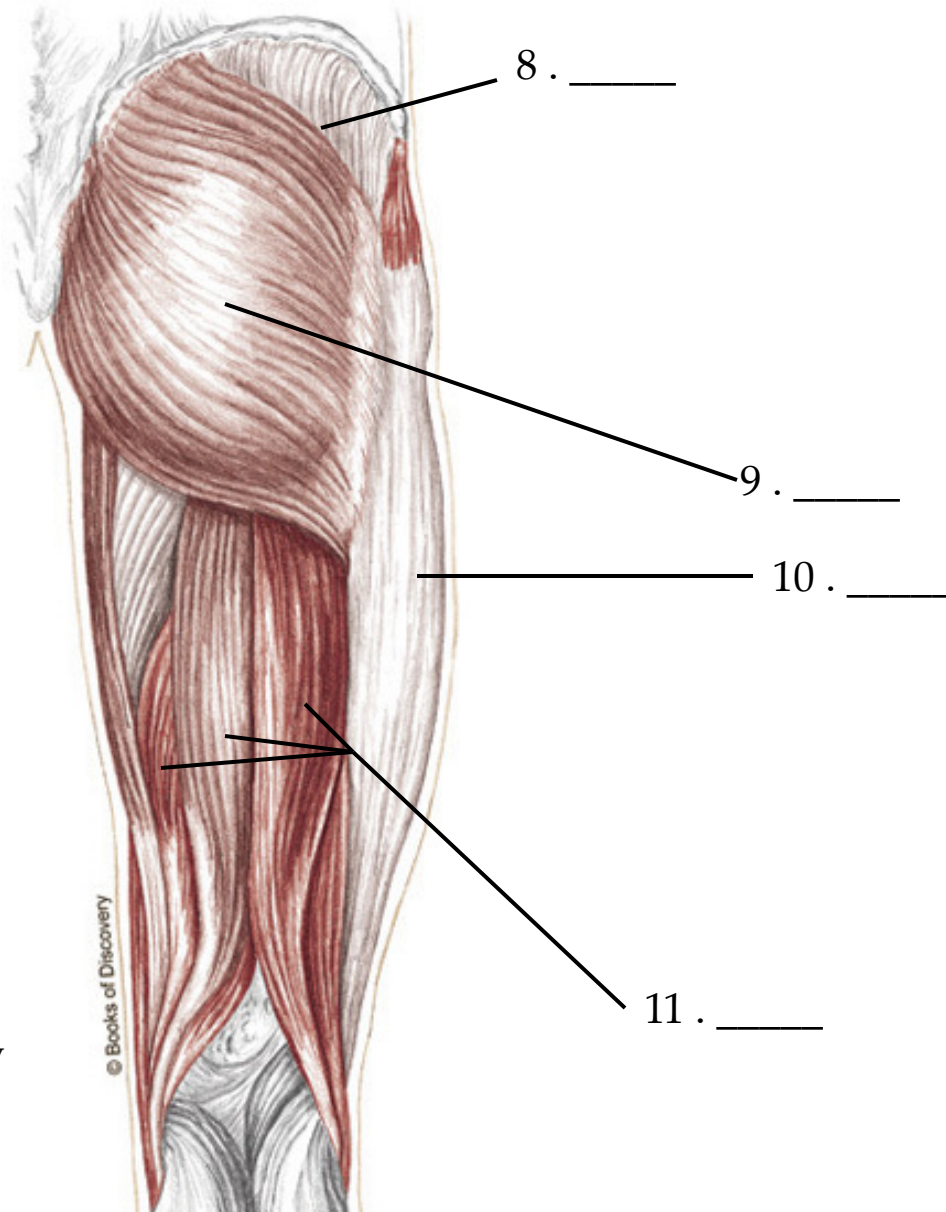
Write the name of the muscle for each number

Trail Guide, Page 61



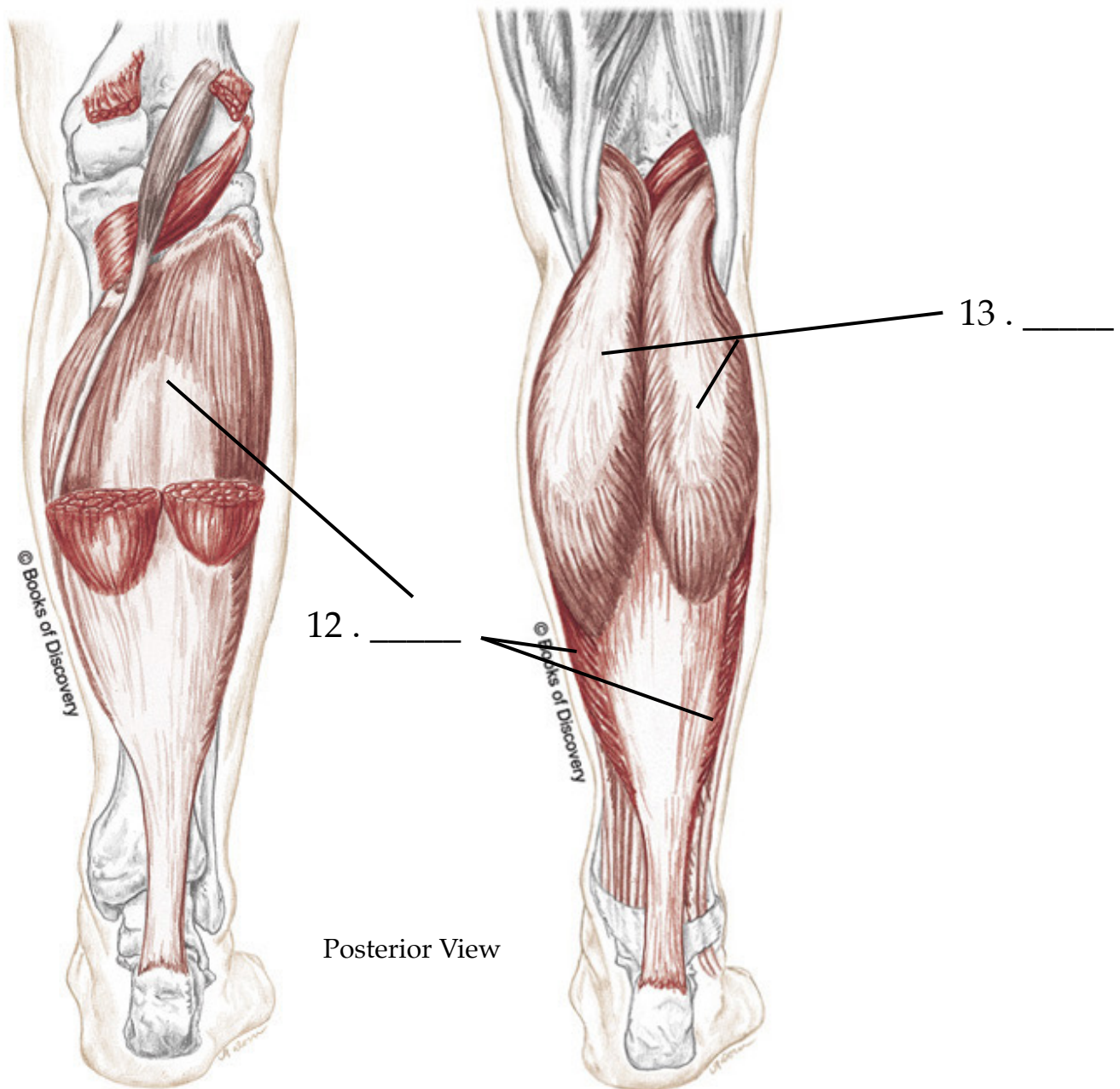
Posterior View

Trail Guide, Page 297

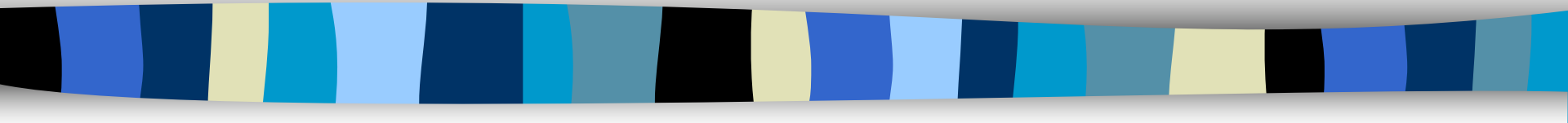


Posterior View

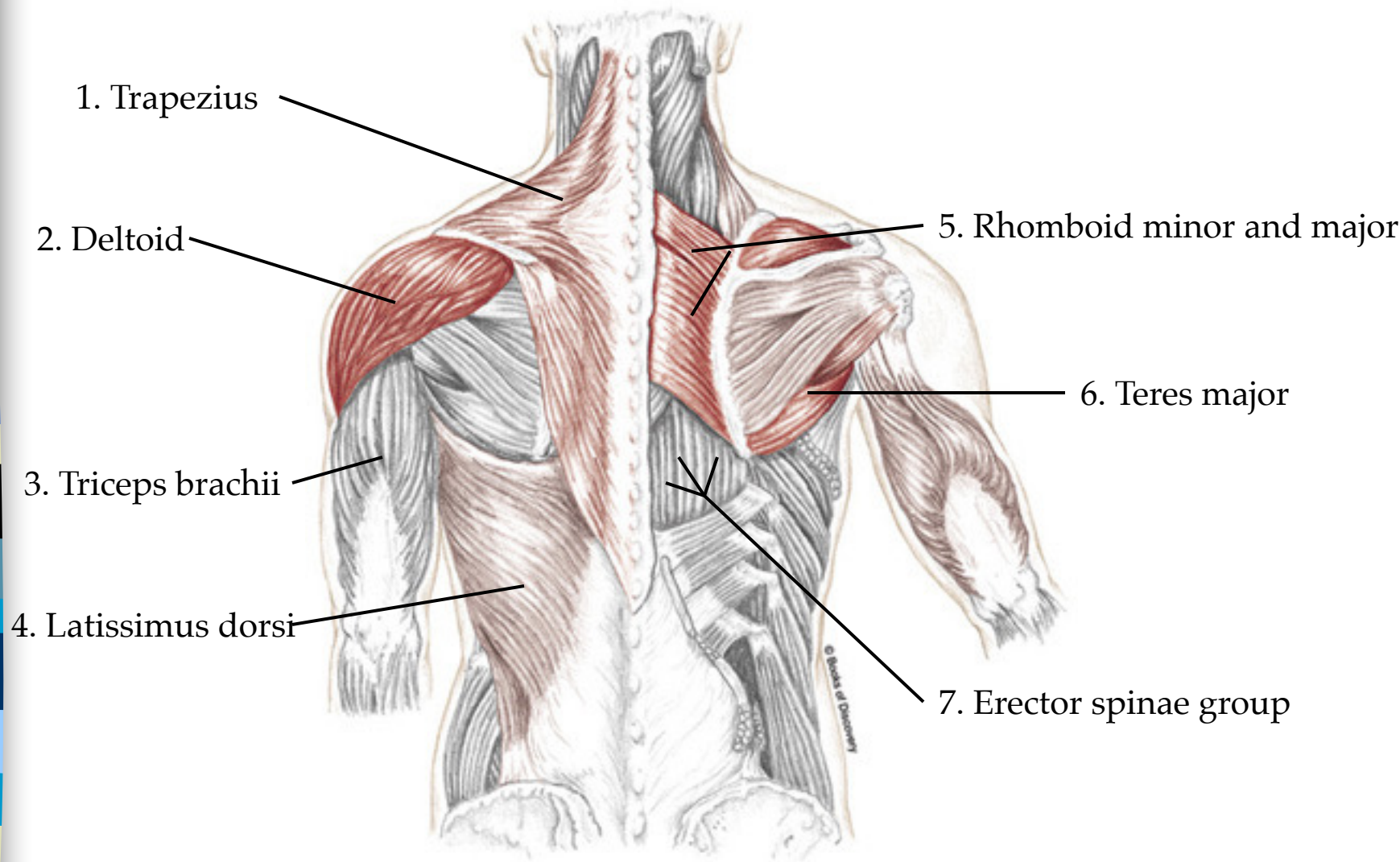
Trail Guide, Page 366



Check your answers

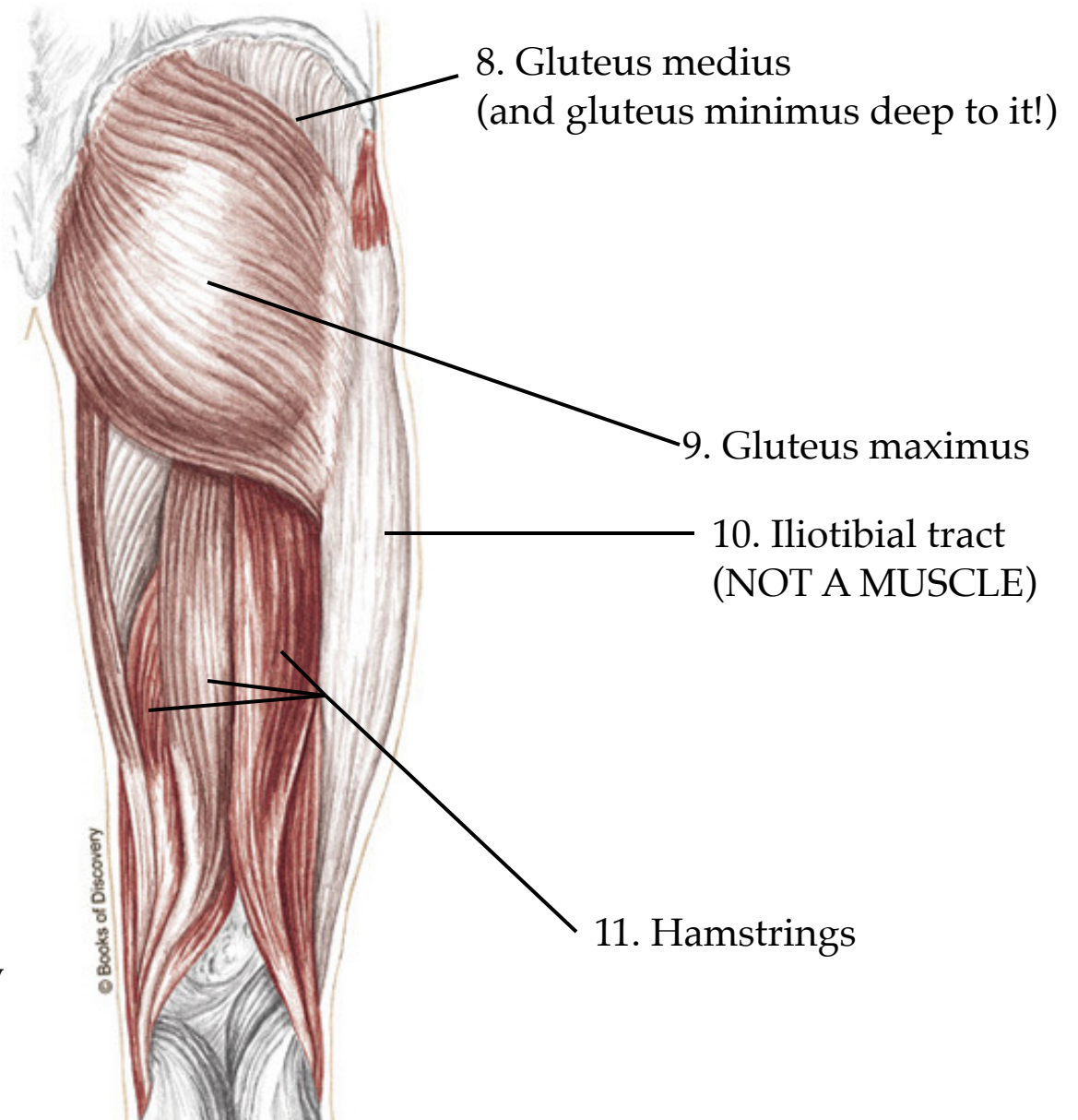


Trail Guide, Page 61



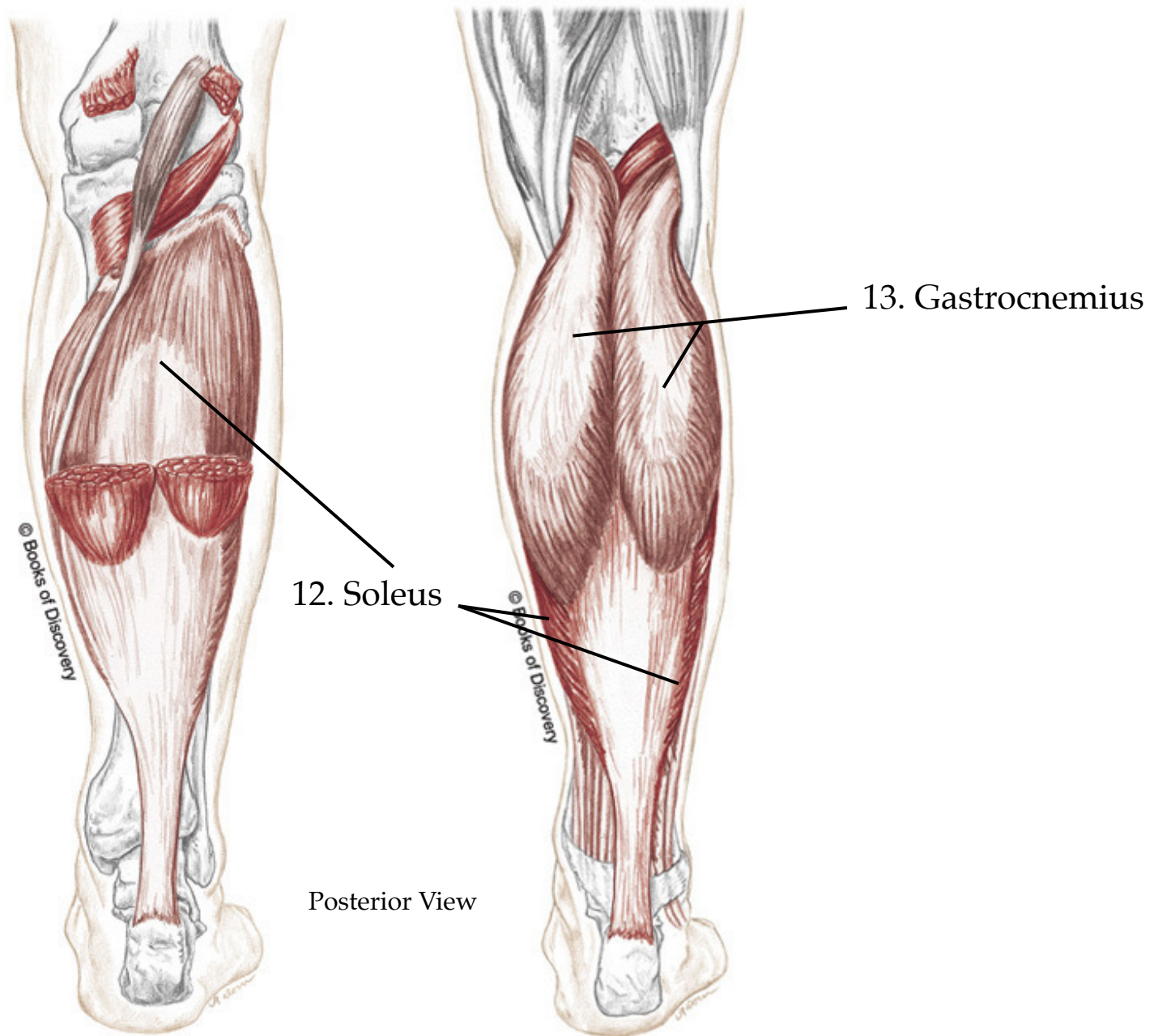
Posterior View

Trail Guide, Page 297

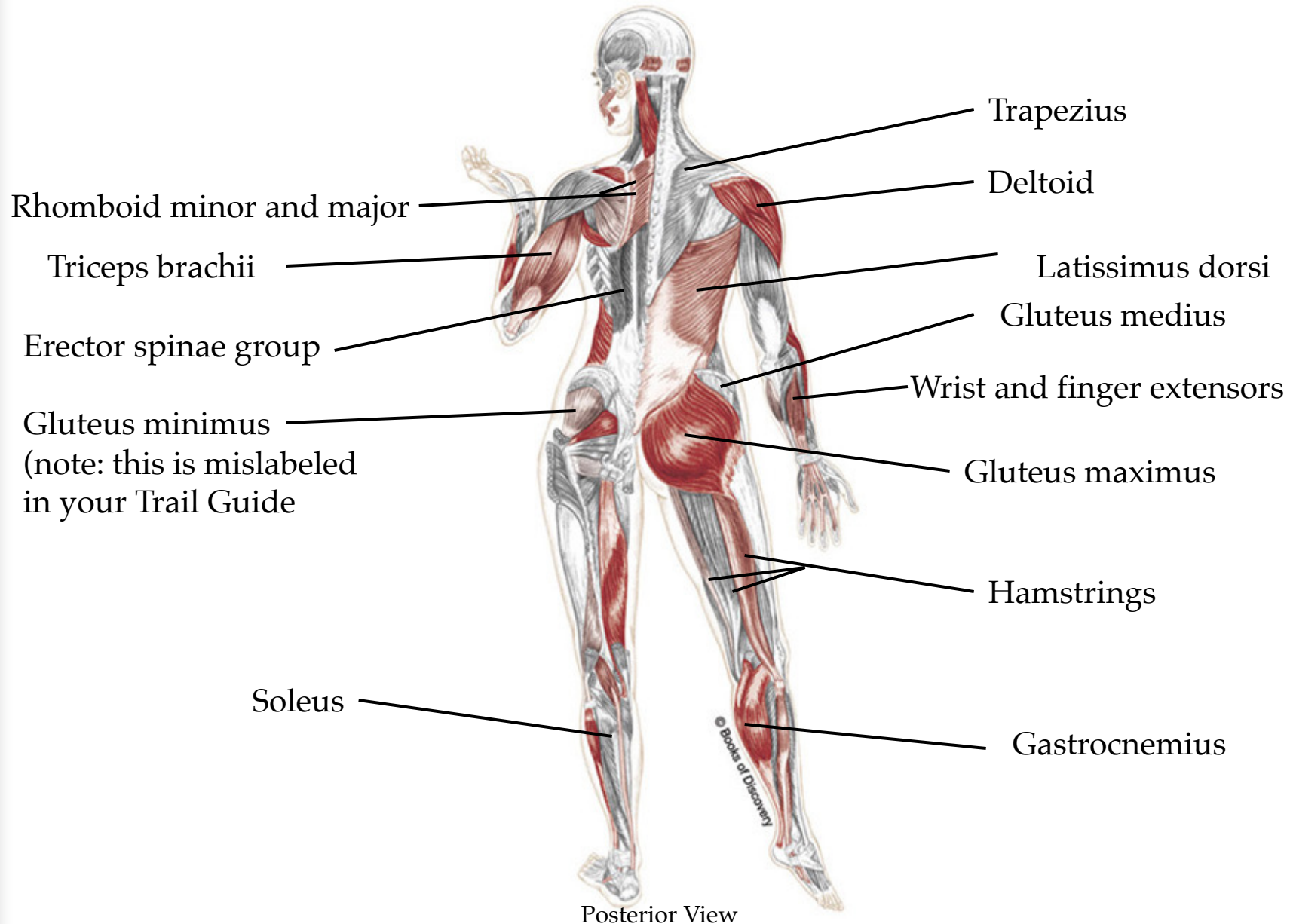


Posterior View

Trail Guide, Page 366



Trail Guide, Page 36



2a Kinesiology: Names and Locations of Bones and Posterior Muscles

