14a A&P:

Skeletal System - Appendicular and Axial Divisions

14a A&P:

Skeletal System - Appendicular and Axial Divisions Class Outline

5 minutes	Attendance, Breath of Arrival, and Reminders
10 minutes	Lecture:
25 minutes	Lecture:
15 minutes	Active study skills:
60 minutes	Total

14a A&P:

Skeletal System - Appendicular and Axial Divisions Class Reminders

Assignments:

- 17a Review Questions (A: 131-138)

Quizzes and Written Exams:

- 17b Kinesiology Quiz
- 18a Written Exam Prep Quiz
- 19a Written Exam Prep Quiz

- 21a Written Exam

Preparation for upcoming classes:

- 15a A&P: Skeletal System - Bony Landmark Palpation
  - Trail Guide: sternocleidomastoid and levator scapula
  - Salvo: Pages 419-420 and 452-479
  - Packet E-19-20
  - Packet A-136

- 15b Swedish: Technique Demo and Practice - Chest and Arms
  - Packet F: 47-50

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

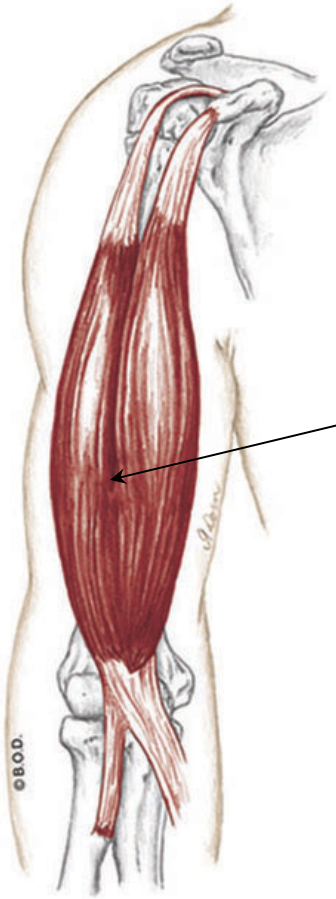
The following are not allowed:

- 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.

Biceps Brachii

Trail Guide, Page 95

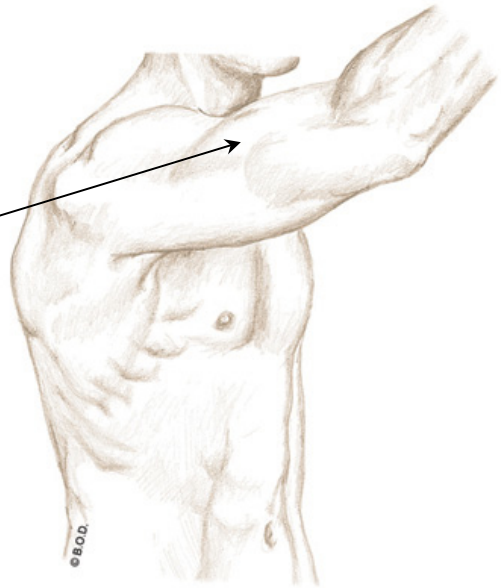


Anterior View

Biceps brachii
lies superficially on the anterior arm.

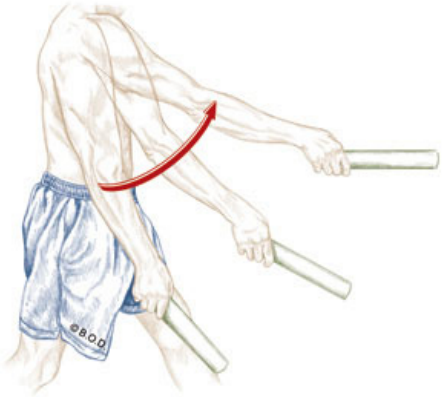
The proximal tendon of the long head of biceps brachii runs through the intertubercular groove.

When do you use your biceps brachii?

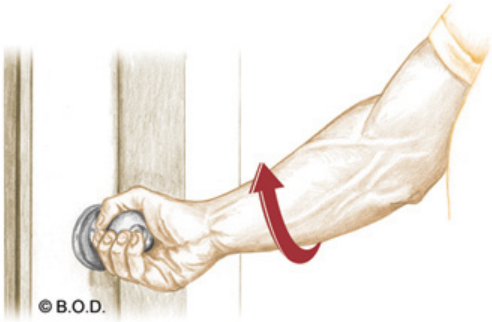


Anterolateral View

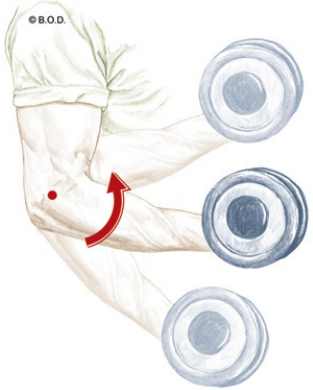
Actions of the Biceps Brachii



Glenohumeral flexion



Radioulnar supination



Humeroulnar flexion

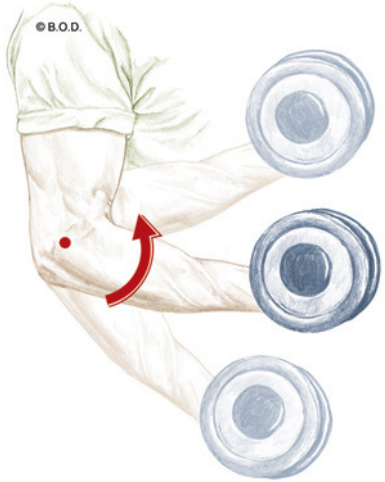
Biceps Brachii, page 95

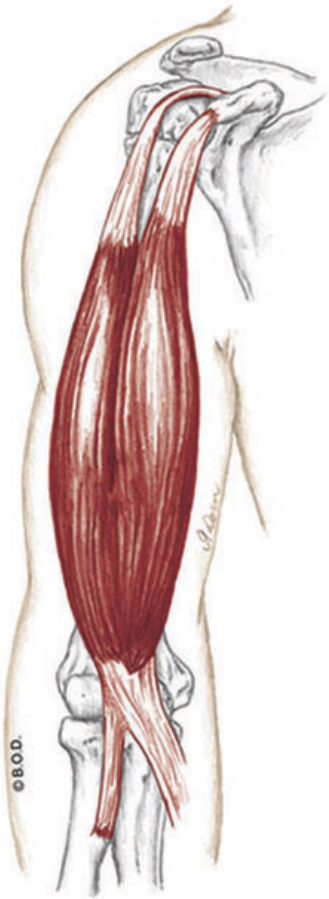
A Flex the elbow or humeroulnar joint
Supinate the forearm or radioulnar joint
Flex the shoulder or glenohumeral joint

O *Short head:*
Coracoid process of scapula

Long head:
Supraglenoid tubercle of scapula

I Tuberosity of the radius
Aponeurosis of the biceps brachii





Anterior View

Biceps Brachii, page 95

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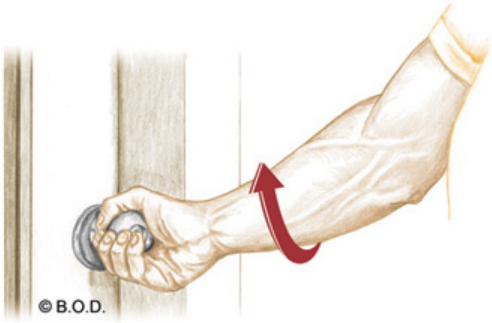
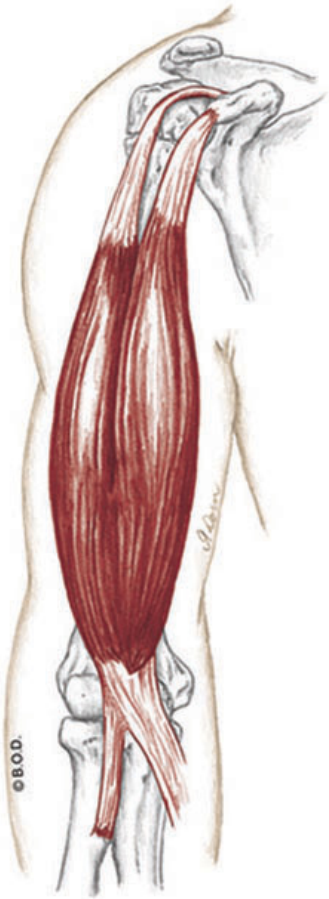
Tuberosity of the radius
Aponeurosis of the biceps brachii





Anterior View

Biceps Brachii, page 95

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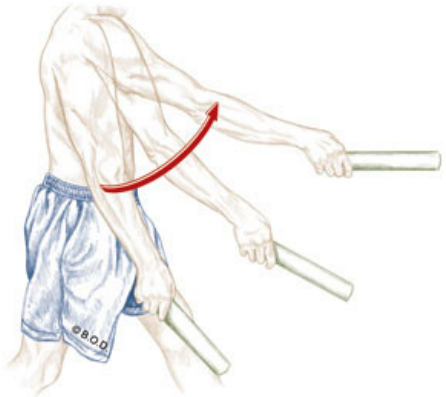

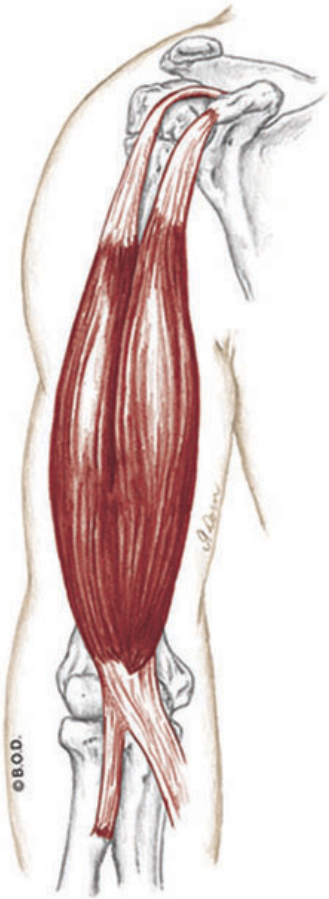

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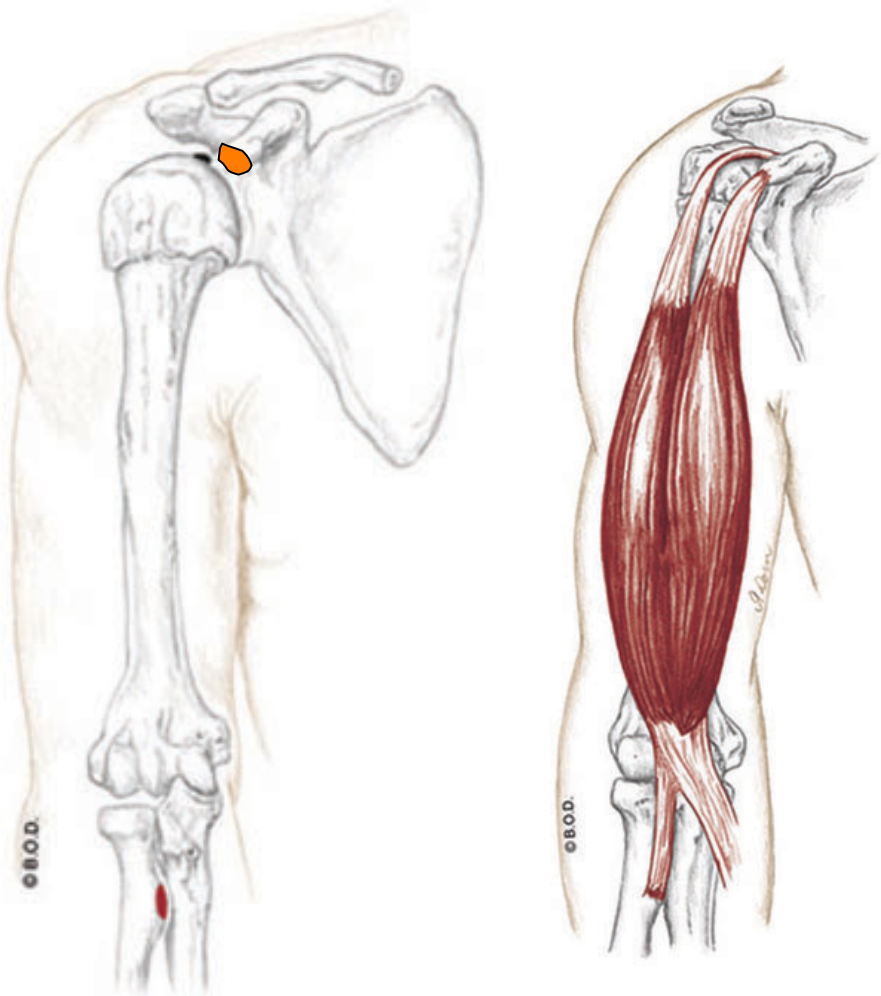

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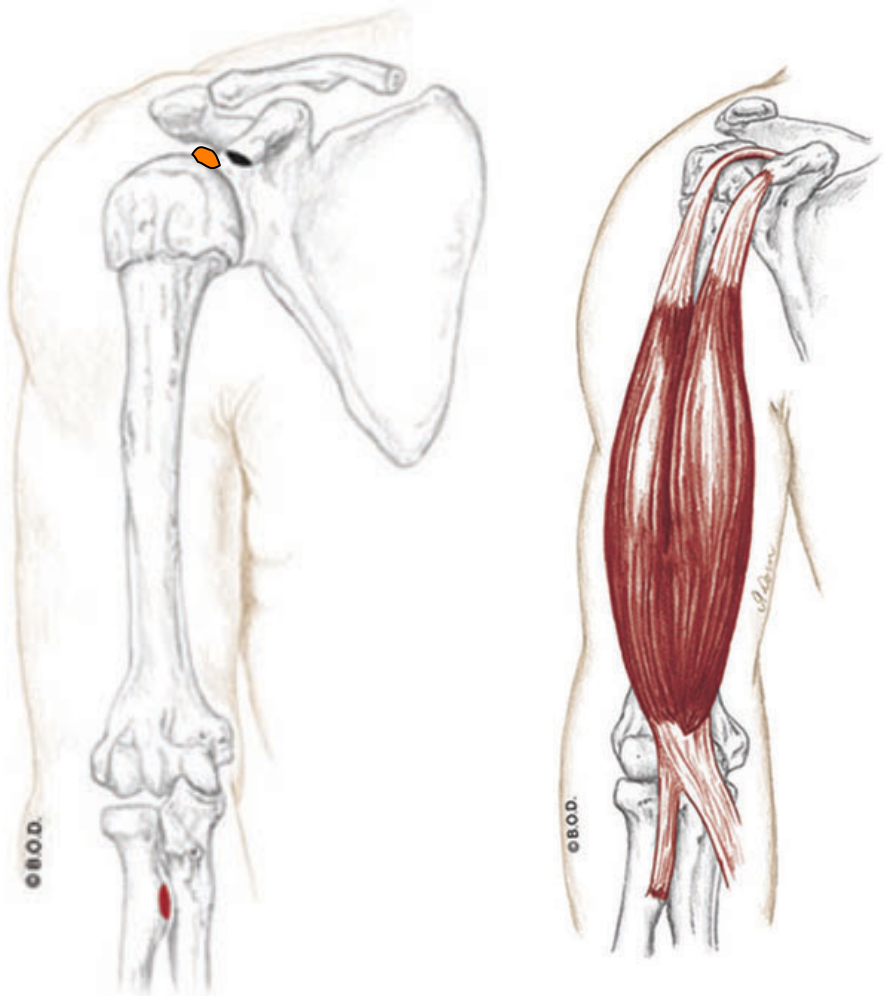

Anterior View

Biceps Brachii, page 95

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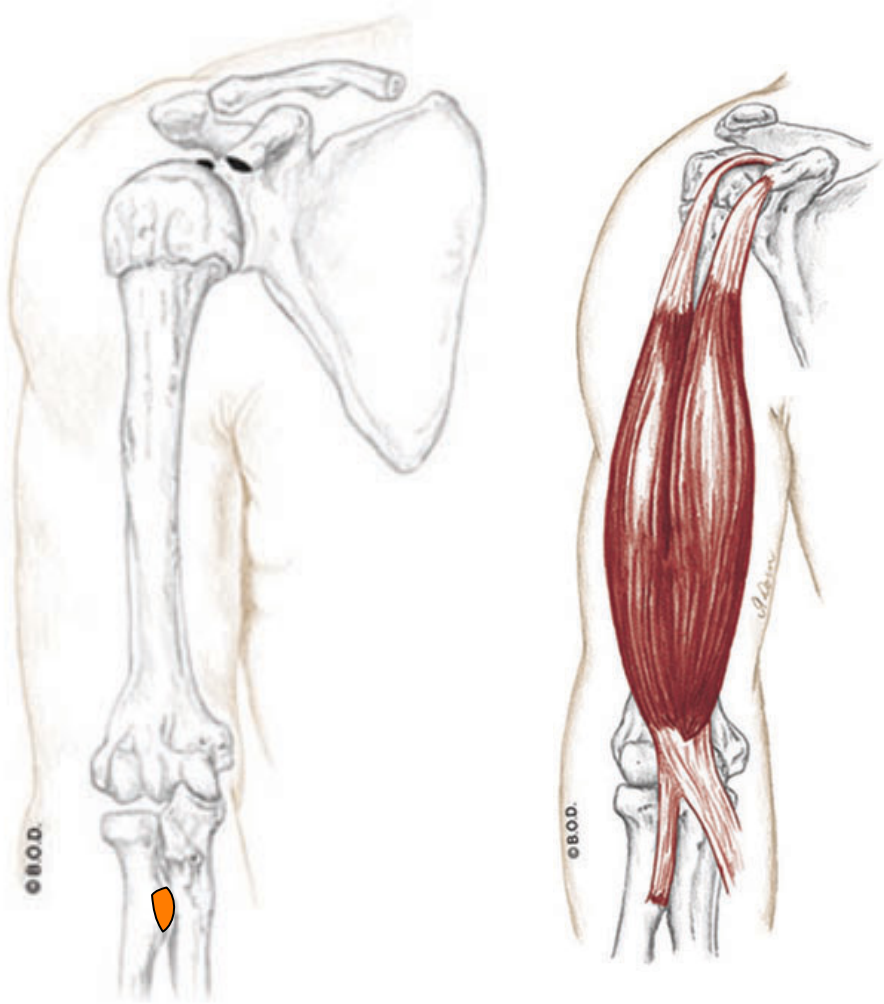

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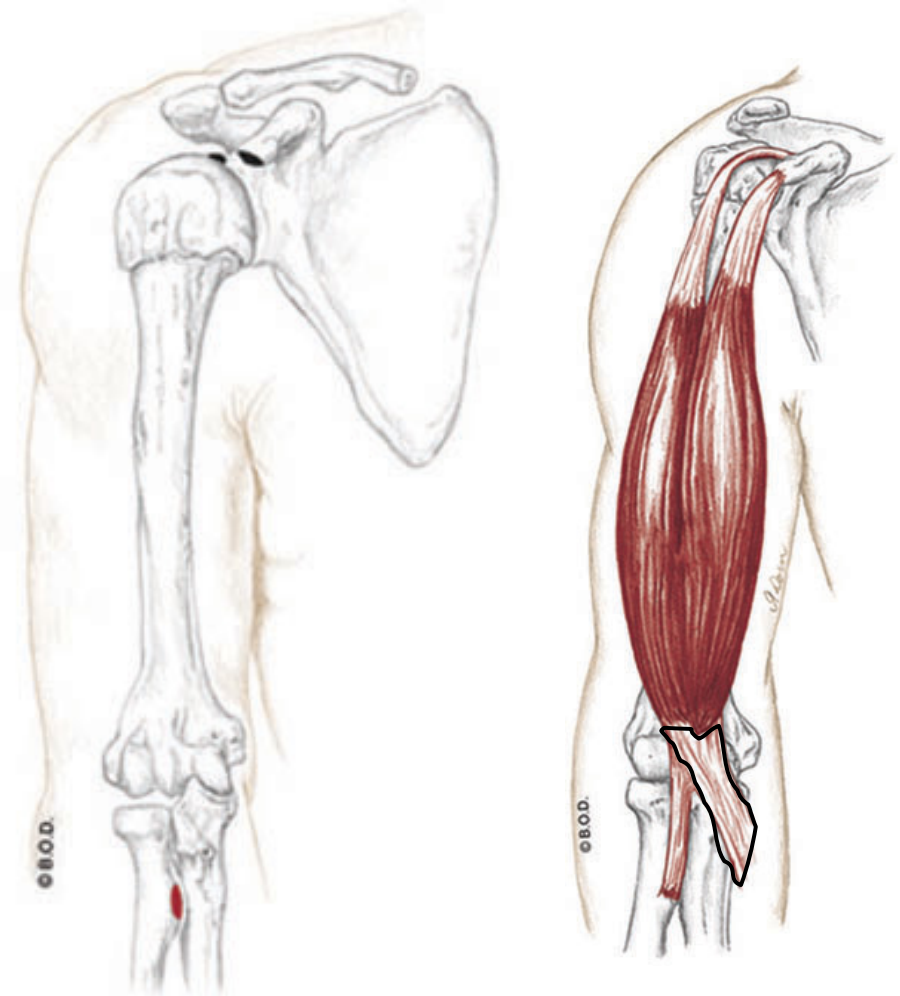
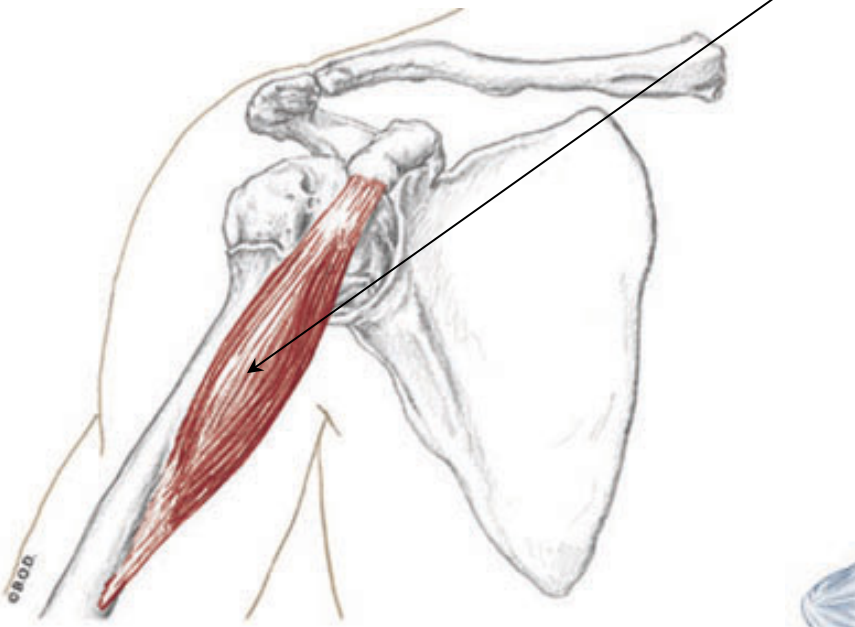


Anterior View

Coracobrachialis

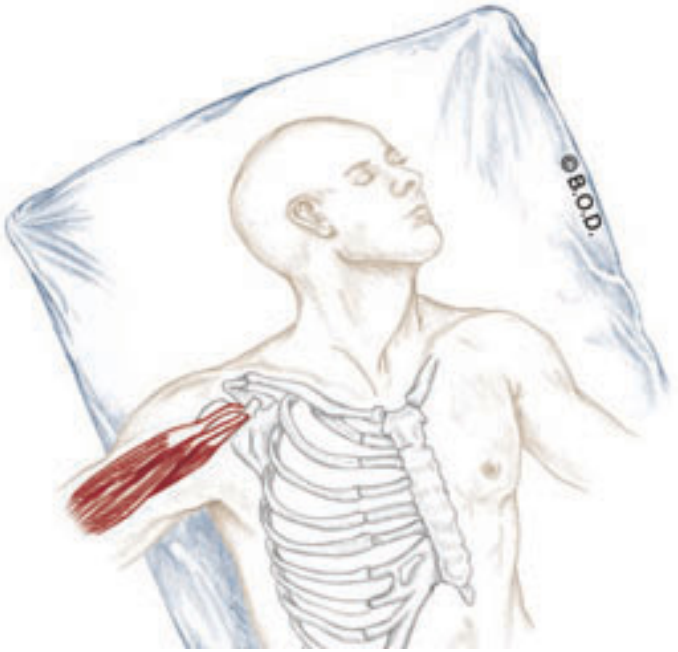
Trail Guide, Page 99



Anterior View

Coracobrachialis
is a small, tubular muscle located in the axilla, or armpit.

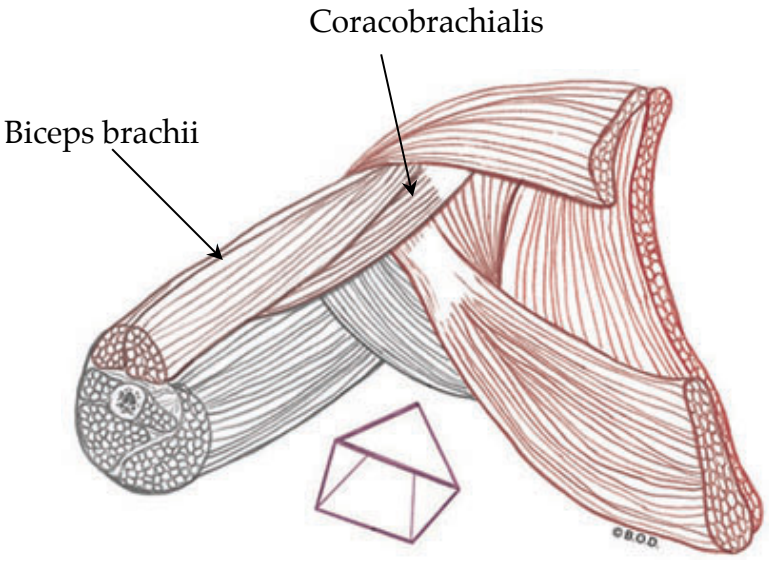
Let's take a closer look at the axilla . . .

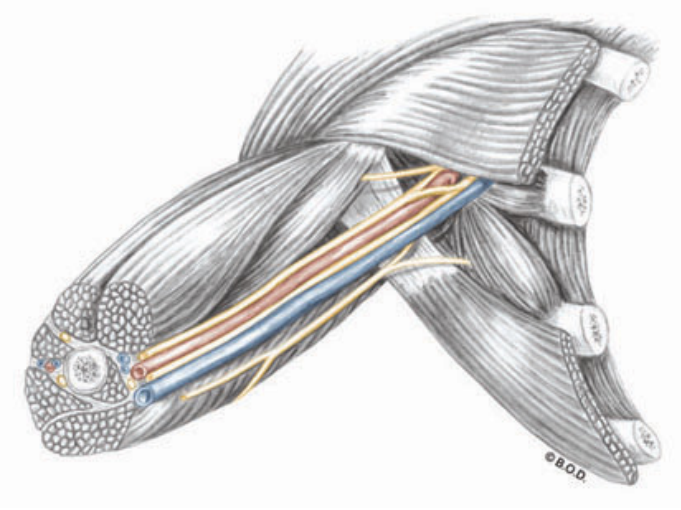


Axilla
Trail Guide, Page 100

The **axilla** is a cone-shaped area commonly called the armpit.

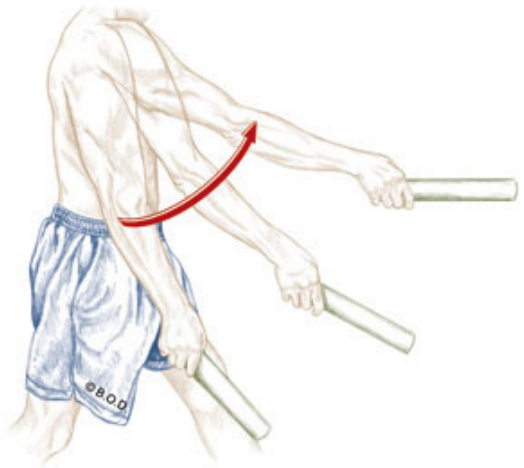
It is formed by four walls:
- Lateral wall: biceps brachii and coracobrachialis
- Posterior wall: subscapularis and latissimus dorsi/teres major
- Anterior wall: pectoralis major
- Medial wall: rib cage and serratus anterior



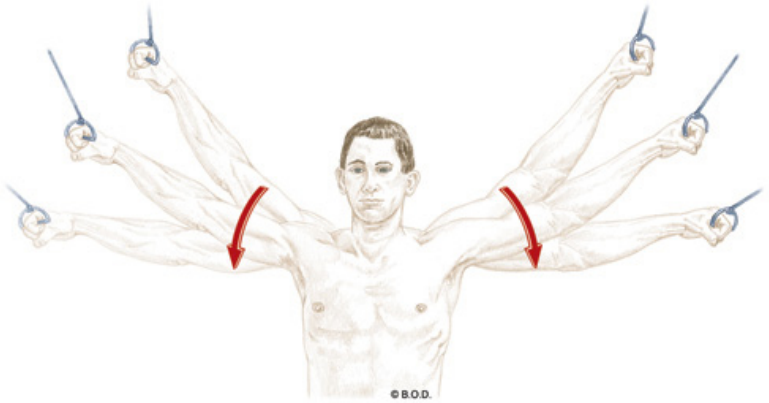


Anterolateral View

Actions of the Coracobrachialis



Glenohumeral flexion



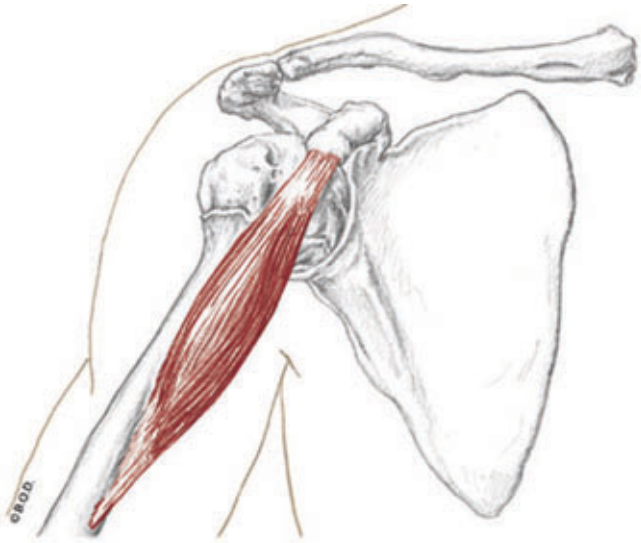
Glenohumeral adduction

Coracobrachialis, page 99

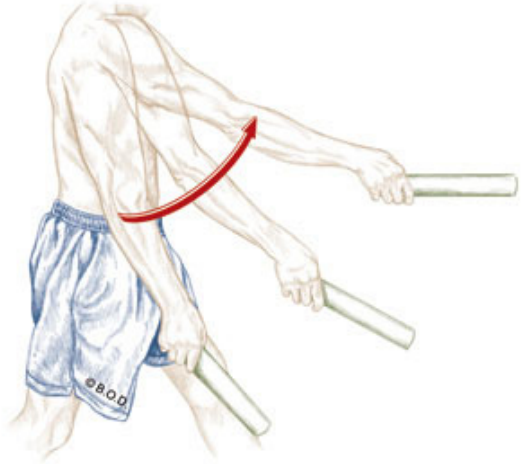
A — Flex the shoulder or glenohumeral joint
Adduct shoulder or glenohumeral joint

O — Coracoid process of scapula

I — Medial surface of mid-humeral shaft



Anterior View



Coracobrachialis, page 99

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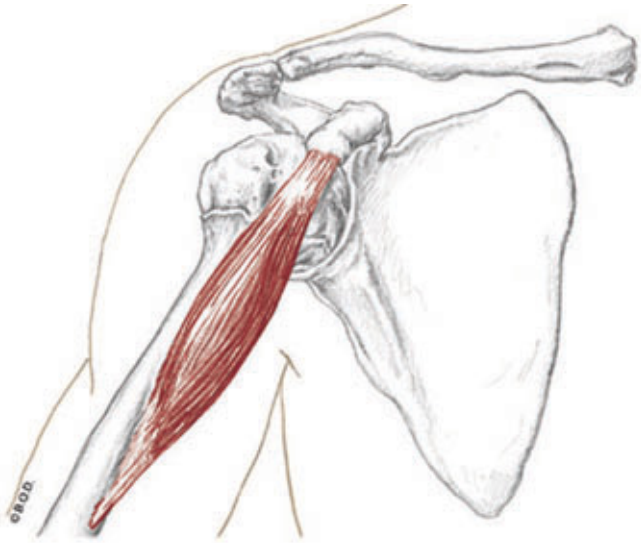
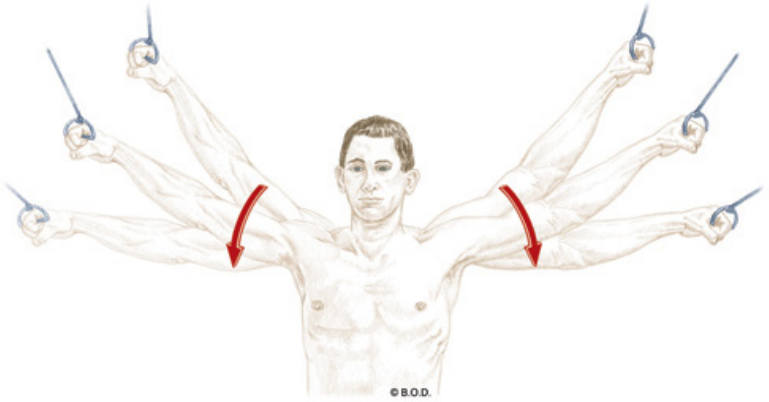


Anterior View



Coracobrachialis, page 99

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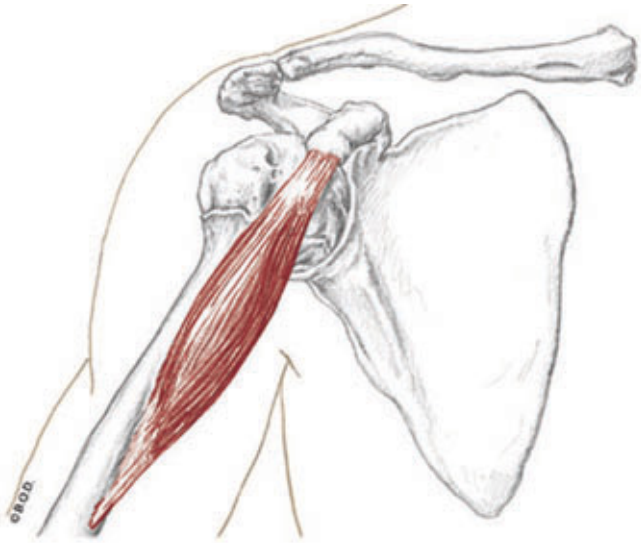
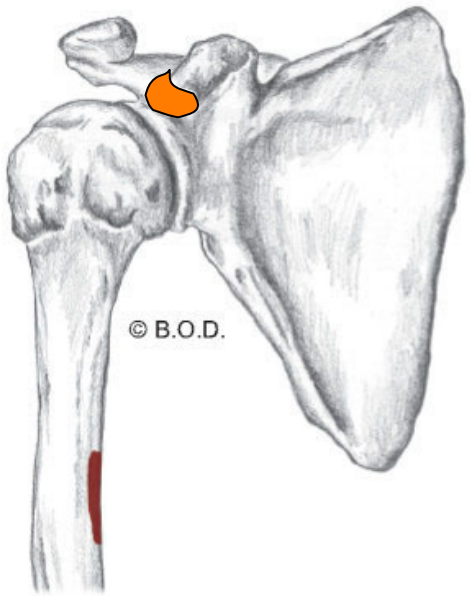


Anterior View



Coracobrachialis, page 99

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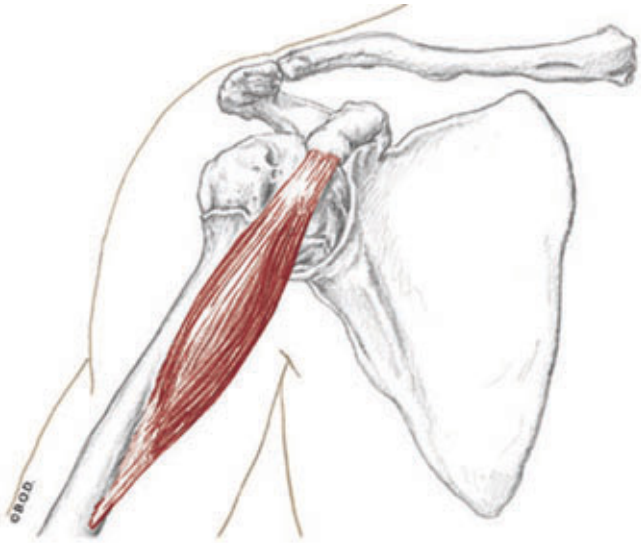
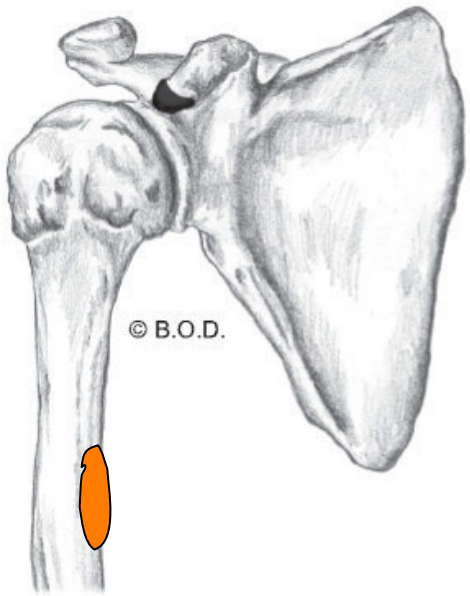


Anterior View



14a A&P:

Skeletal System - Appendicular and Axial Divisions

E-17

Divisions of the Skeletal System

Divisions of the Skeletal System

Adult Human	206 bones total
Axial Skeleton	80 bones
Appendicular Skeleton	126 bones

Divisions of the Skeletal System

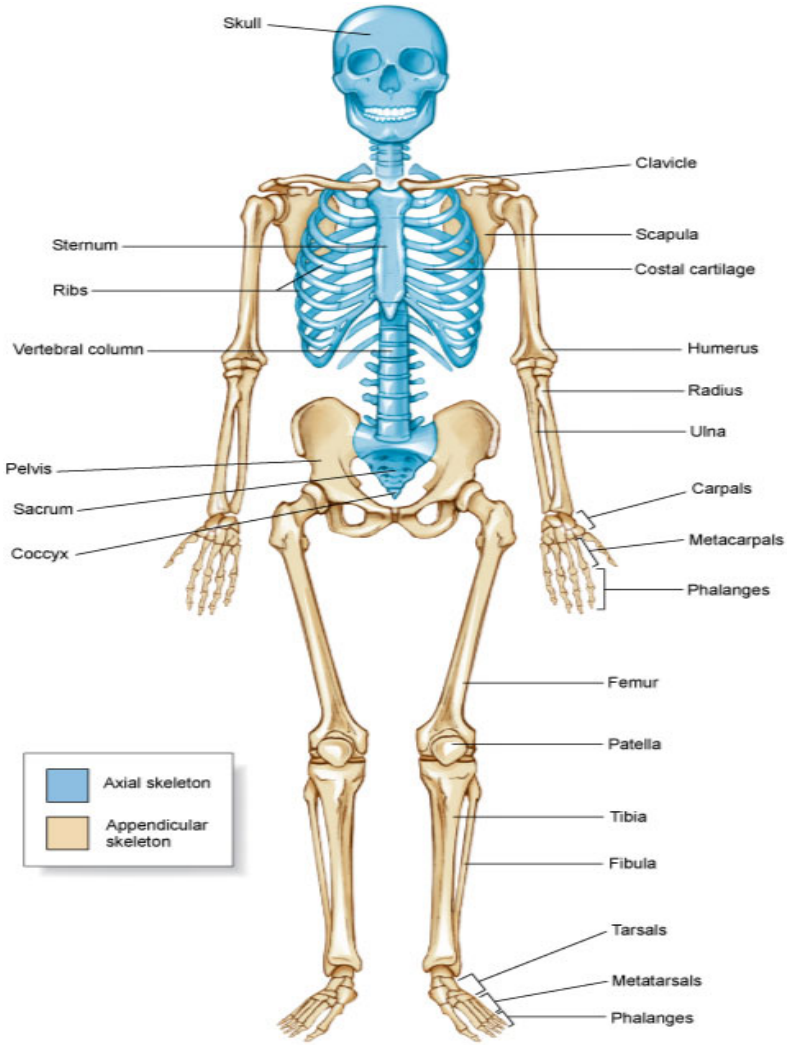
80 Axial Skeleton

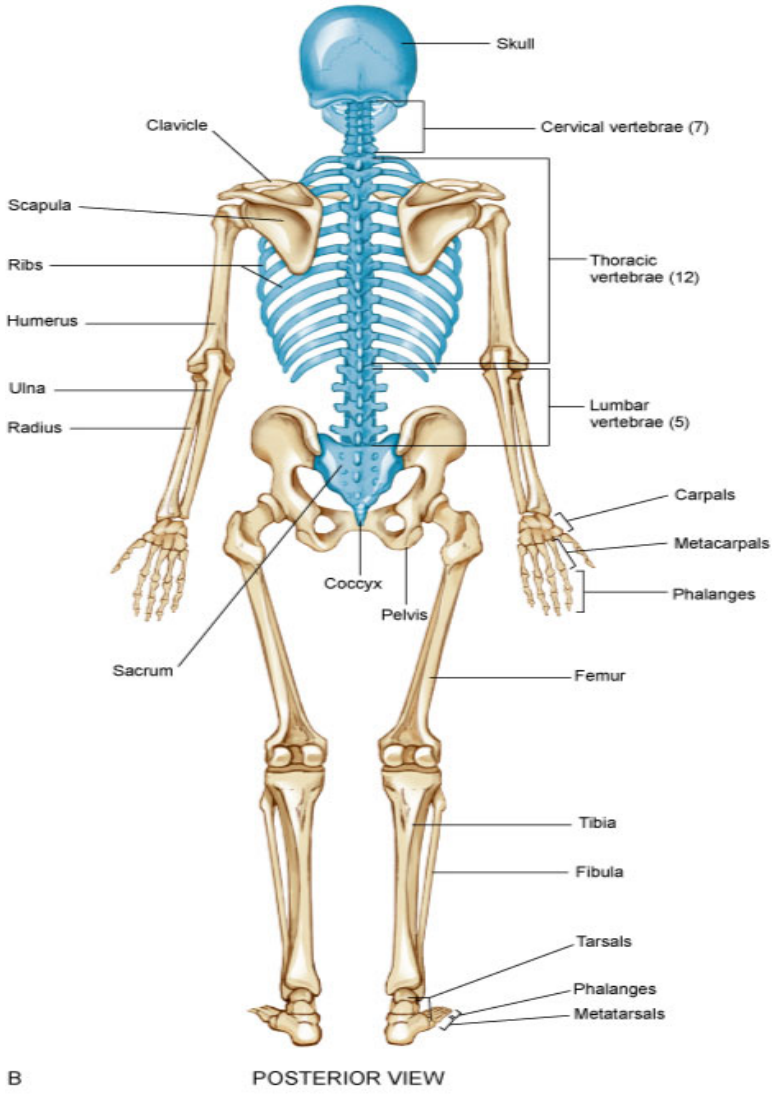
- The skeleton that a snake would have
- No arms or legs

126 Appendicular Skeleton

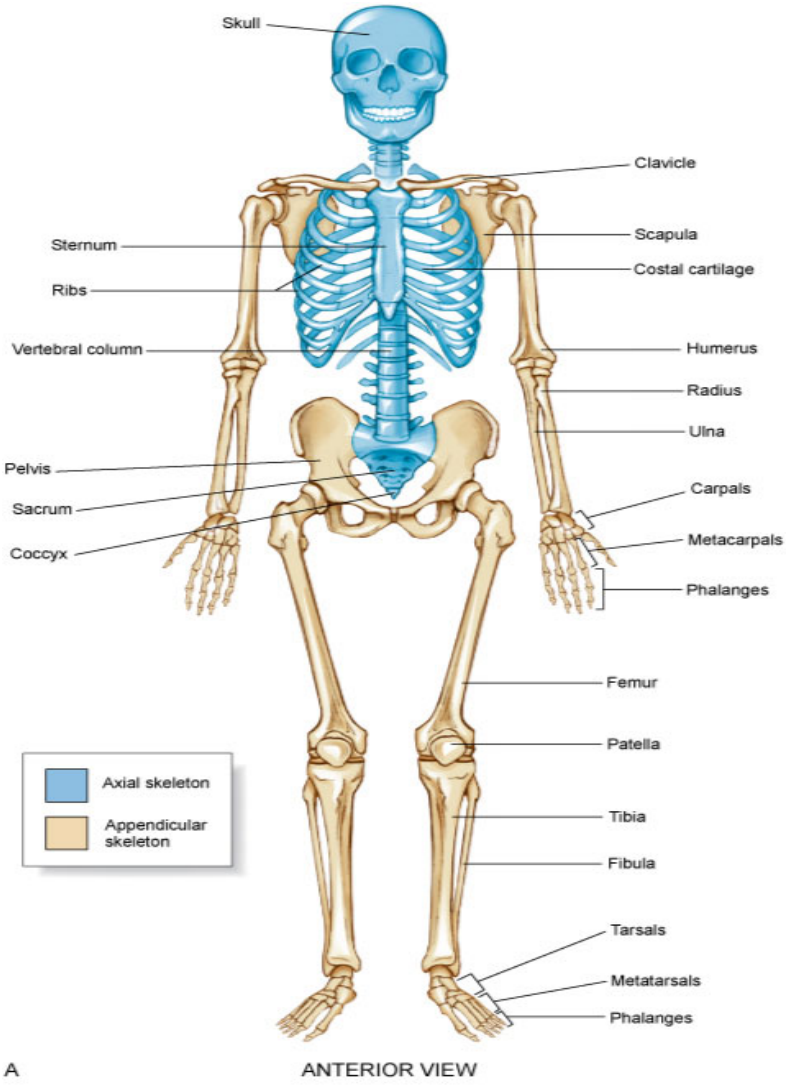
- The shoulder girdle and arms
- The pelvic girdle and legs

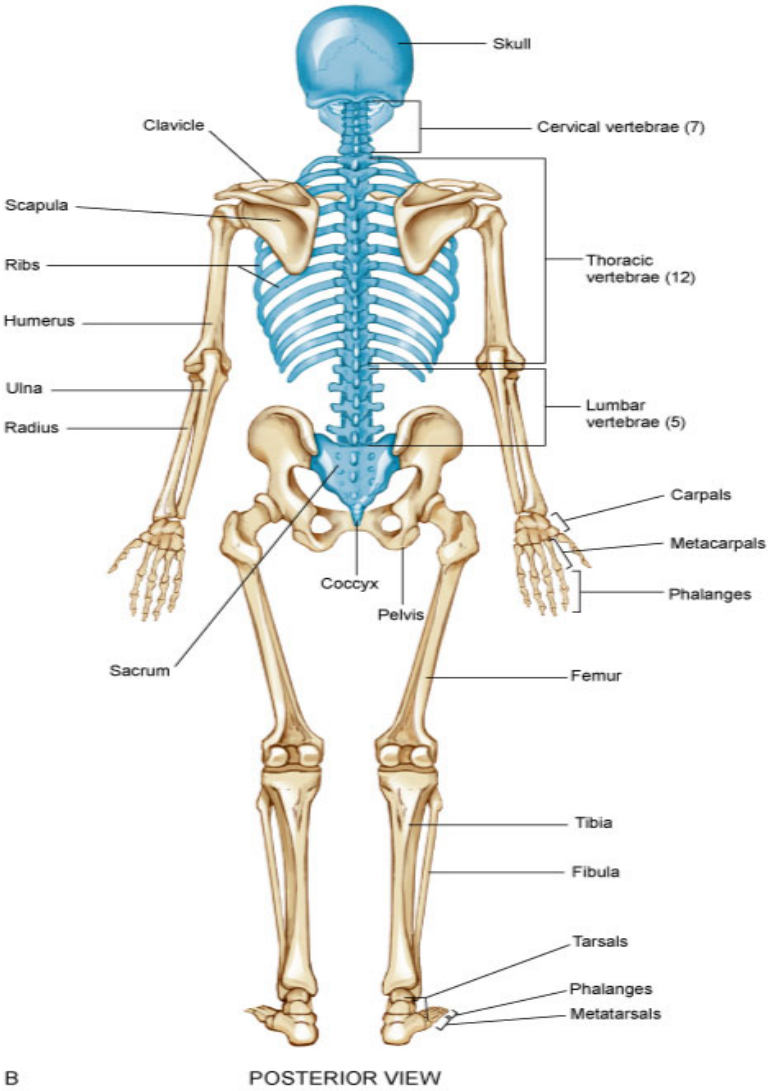
Axial Skelton in BLUE (80 bones)



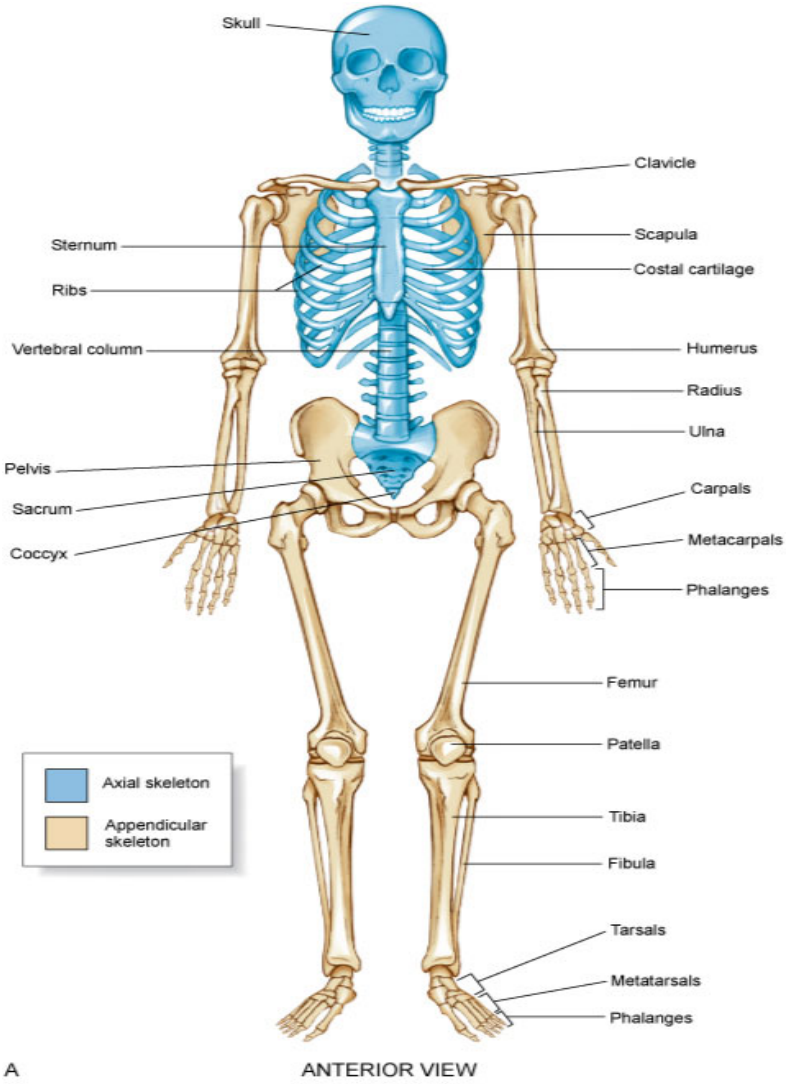


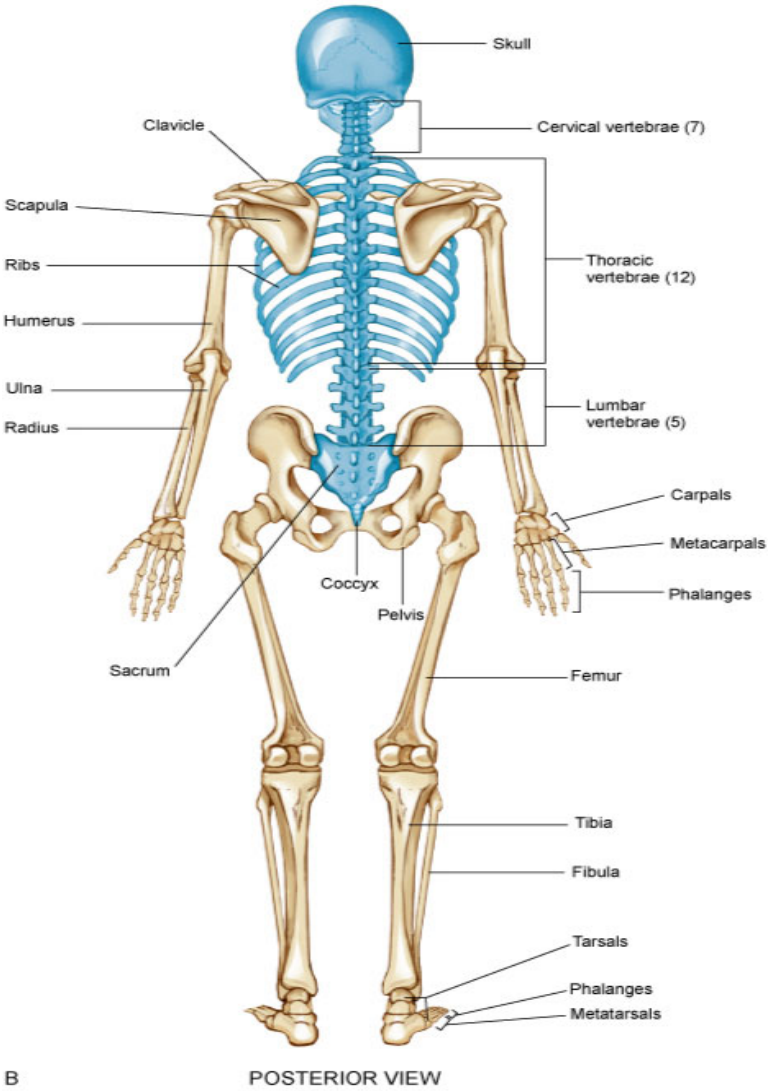
Appendicular Skeleton in WHITE (126 bones)





Human Skeleton (206 bones)





80 Axial Skeleton

80 Axial Skeleton

29 Skull
26 Vertebral column
1 Sternum
24 Ribs
80 Total

80 Axial Skeleton

29 Skull

8 Cranium

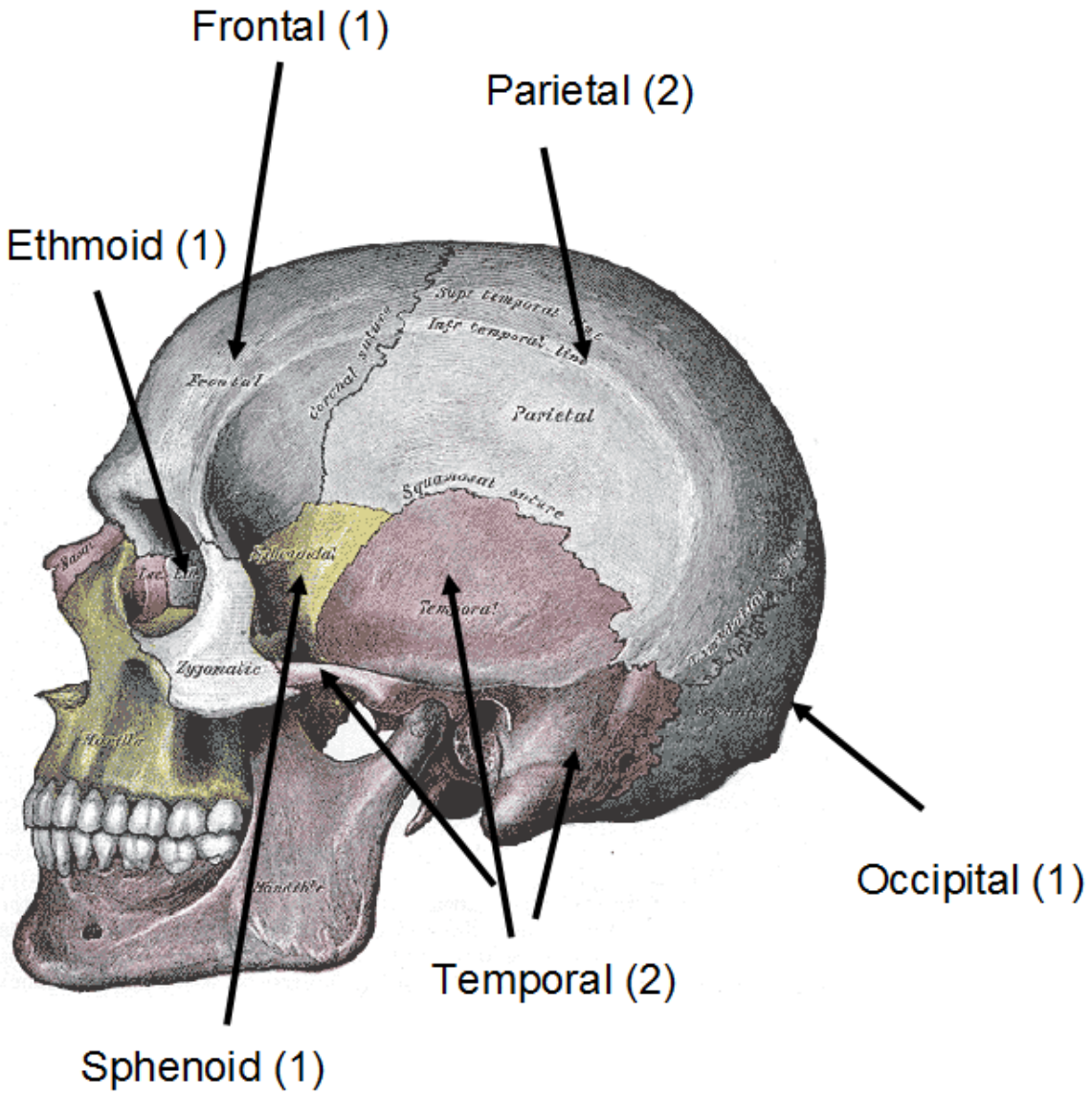
14 Face

6 Ear

1 Hyoid

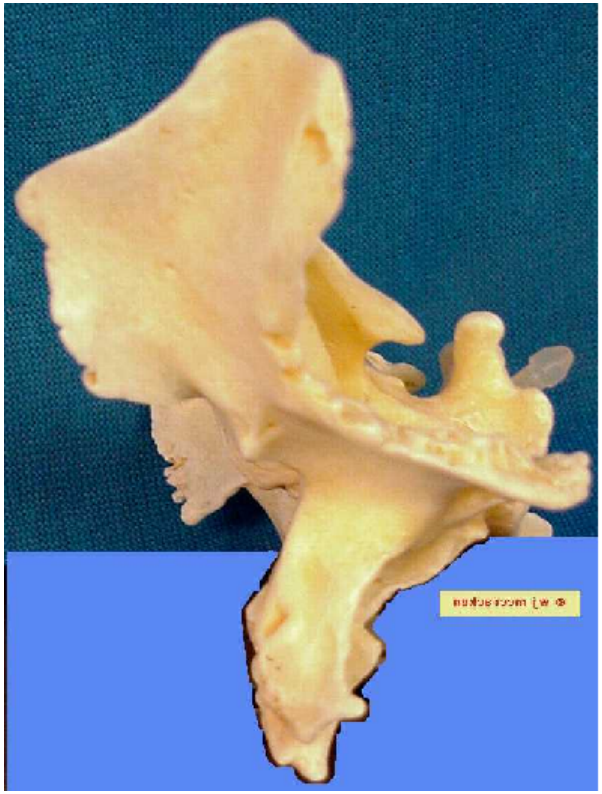
80 Axial Skeleton

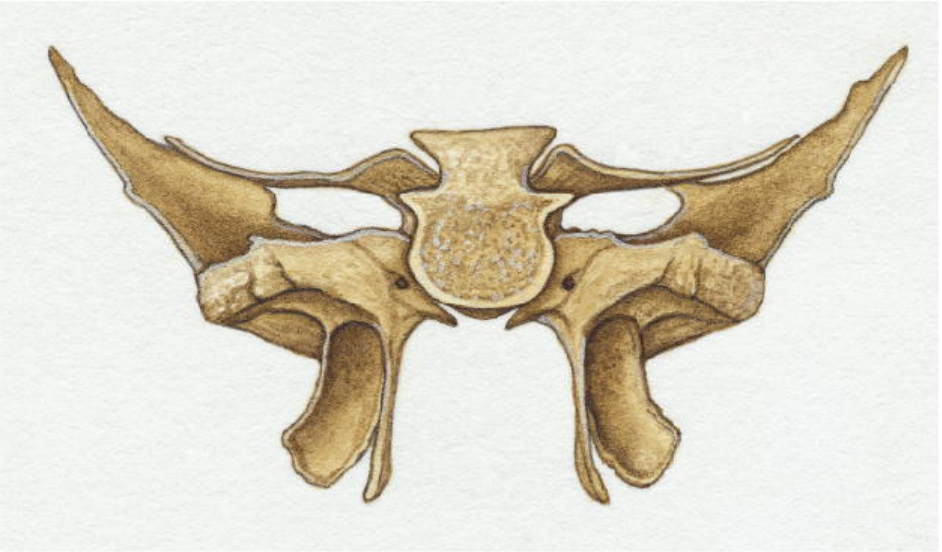
8 Cranium



80 Axial Skeleton

1 Sphenoid



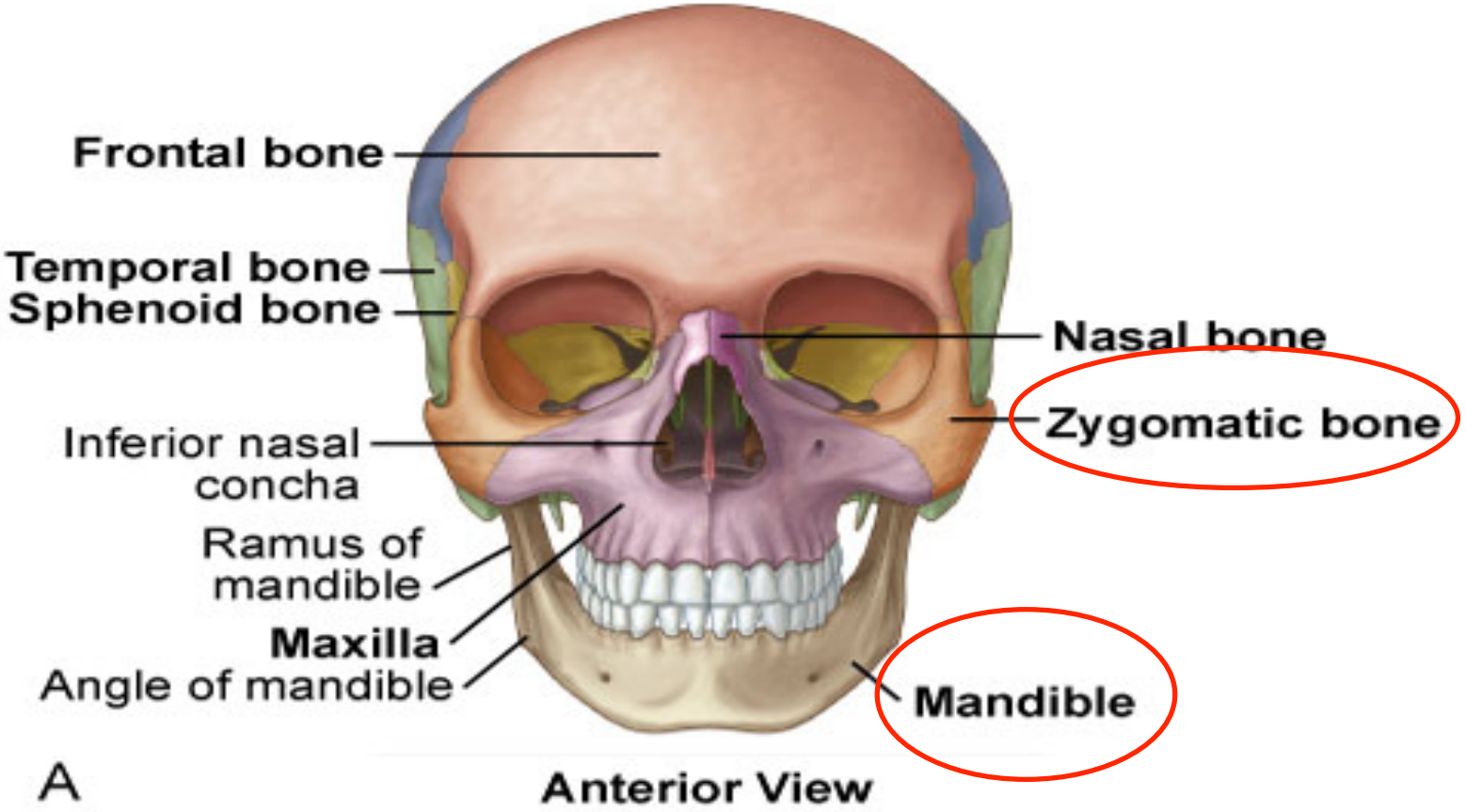


80 Axial Skeleton

14 Face

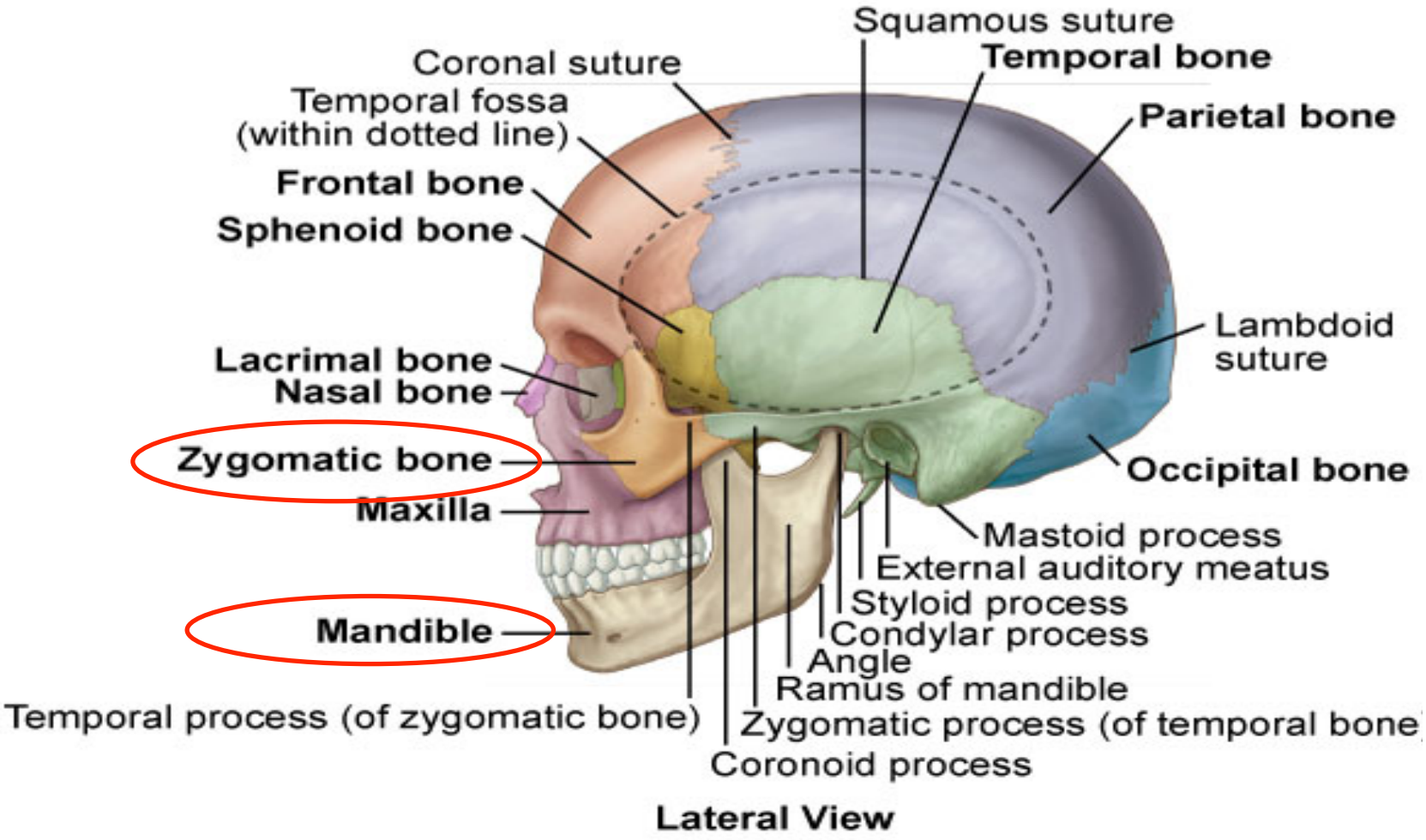
zygomatic 2

mandible 1



80 Axial Skeleton

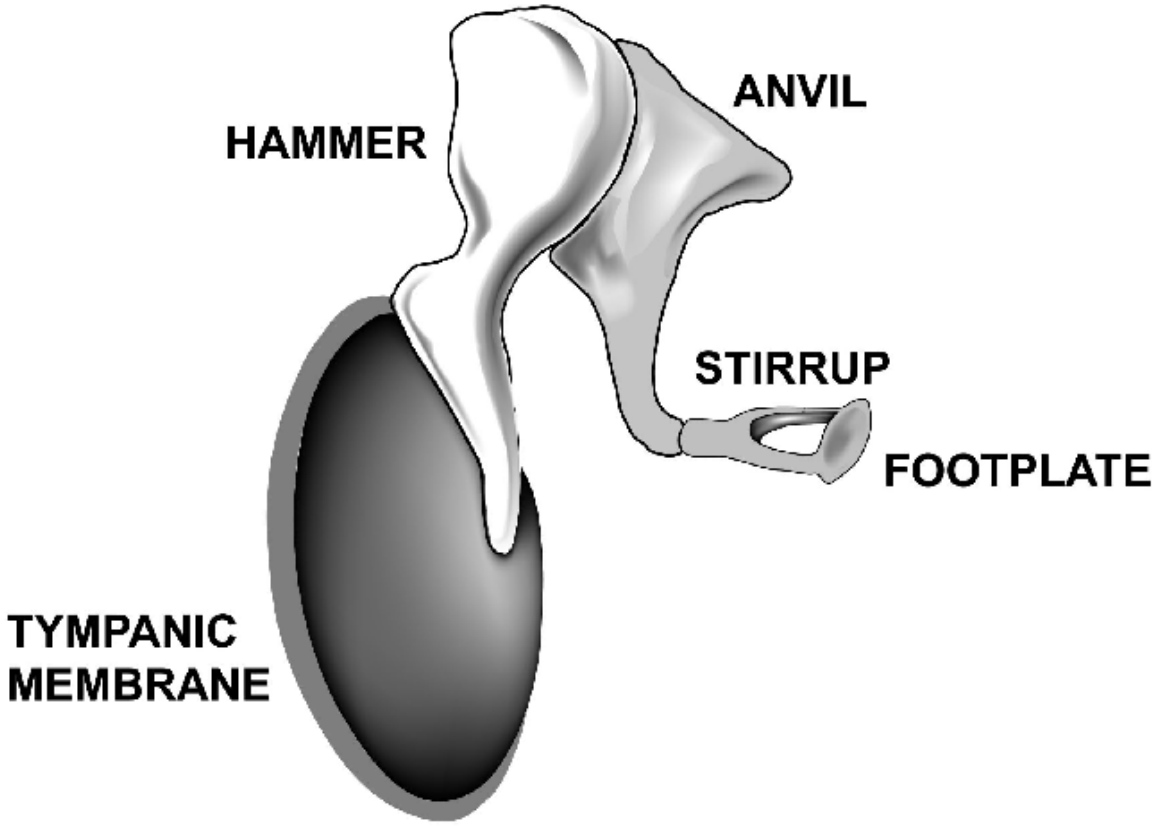
14 Face



80 Axial Skeleton

6 Ear

2 malleus (hammer)
2 incus (anvil)
2 stapes (stirrup)



80 Axial Skeleton

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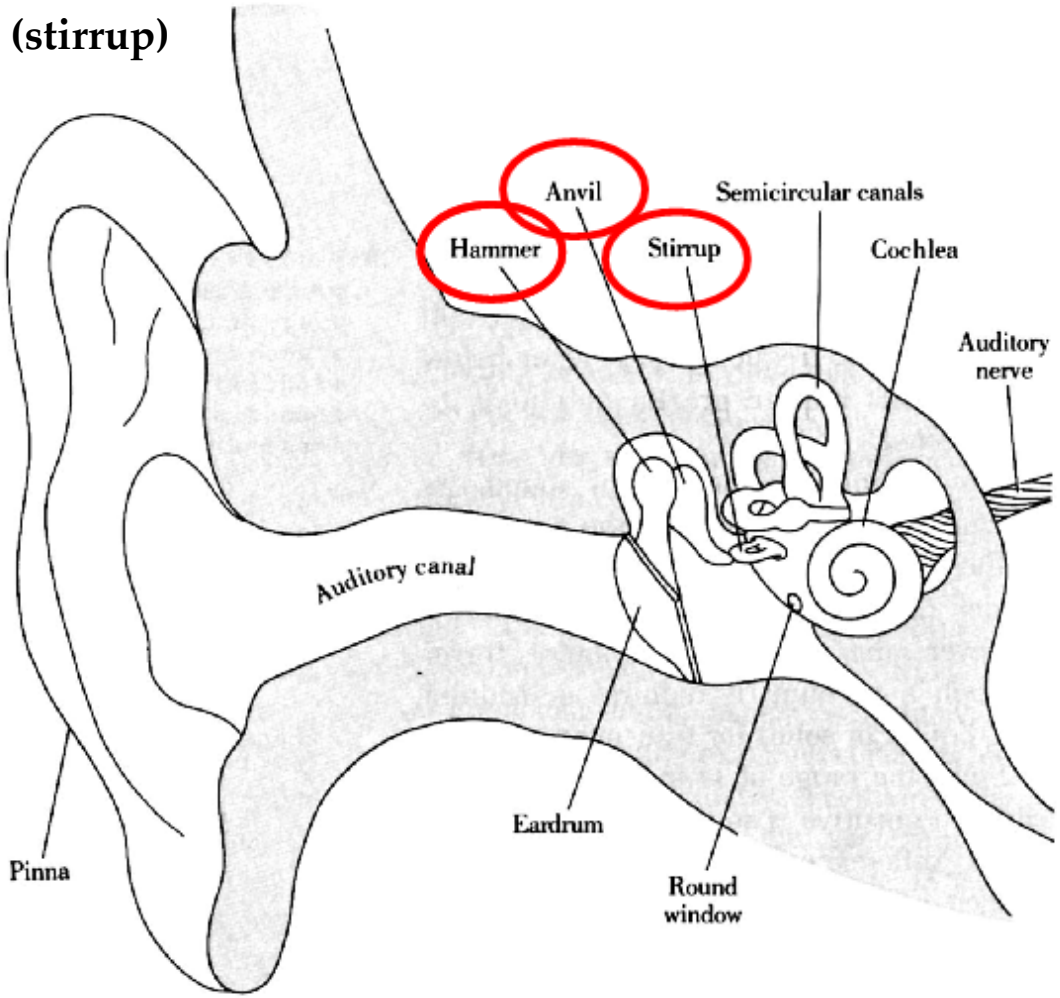
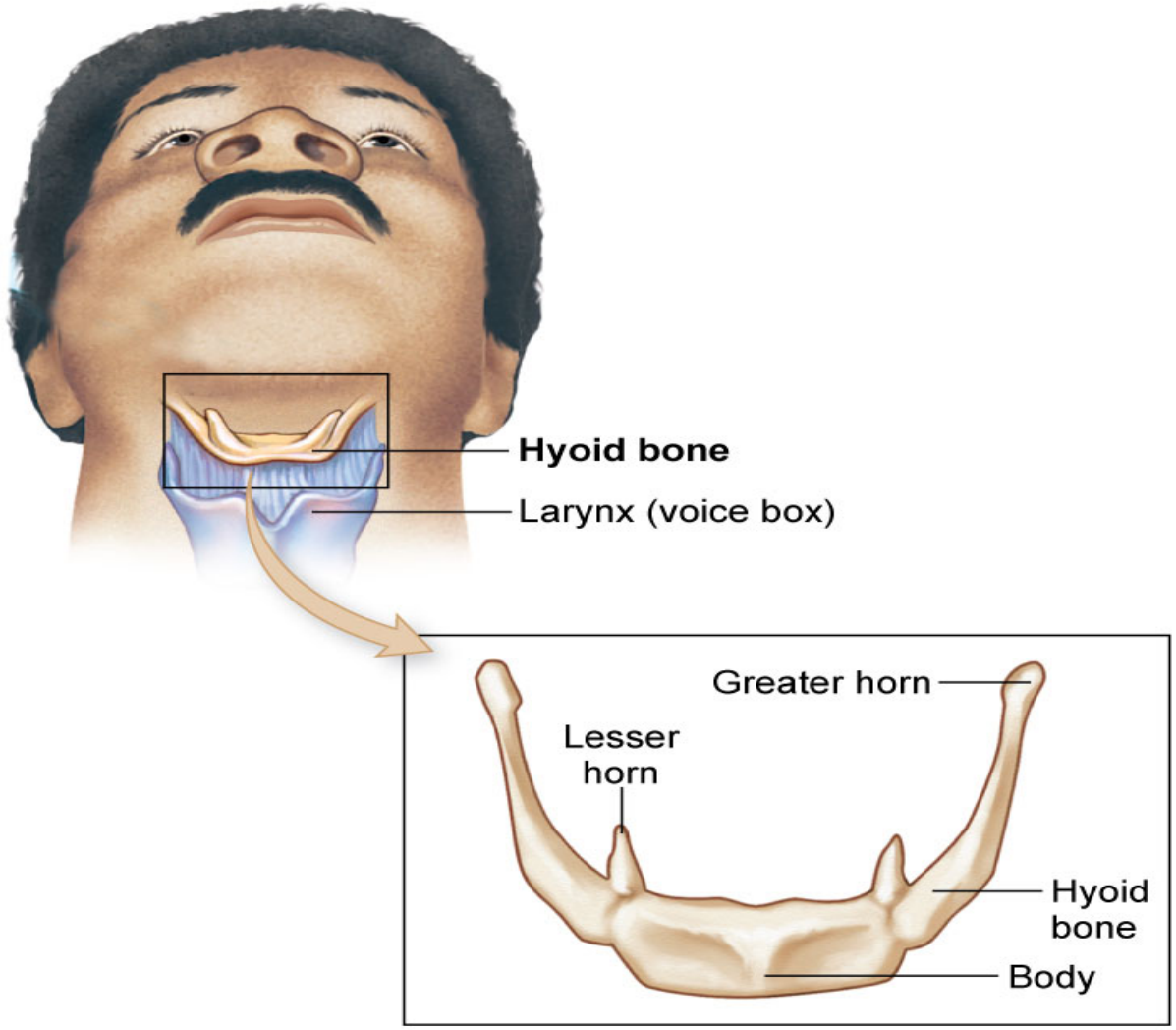


80 Axial Skeleton

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

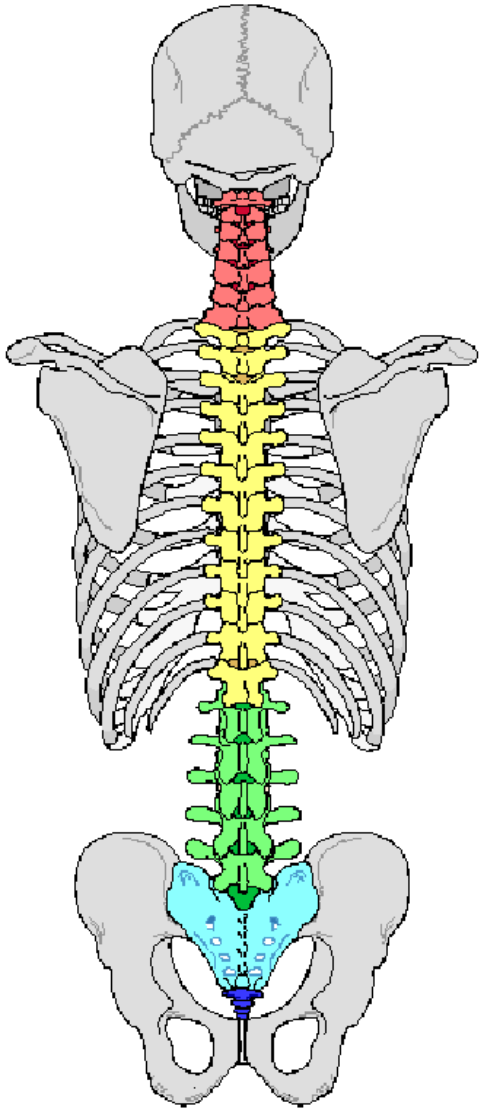
6 Ear

1 Hyoid

80 Axial Skeleton

26 Vertebral Column

- 7 Cervical
- 12 Thoracic
- 5 Lumbar
- 1 Sacrum
- 1 Coccyx



80 Axial Skeleton

<u>26 Vertebral Column</u>

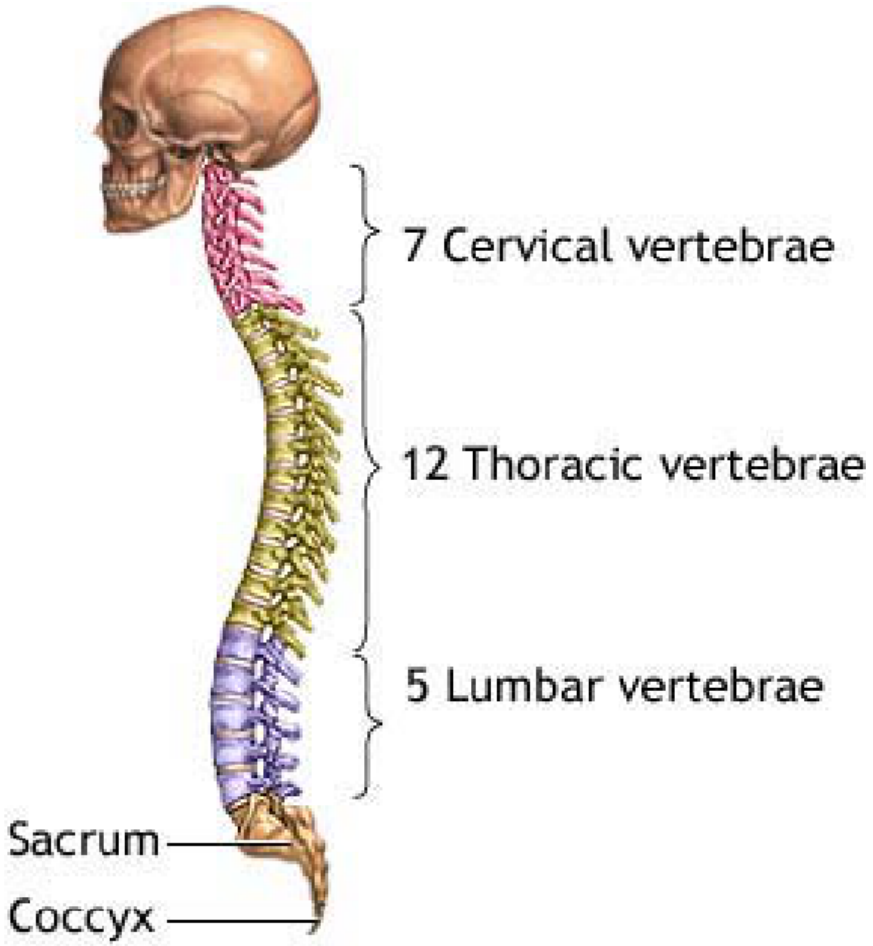
7 Cervical

12 Thoracic

5 Lumbar

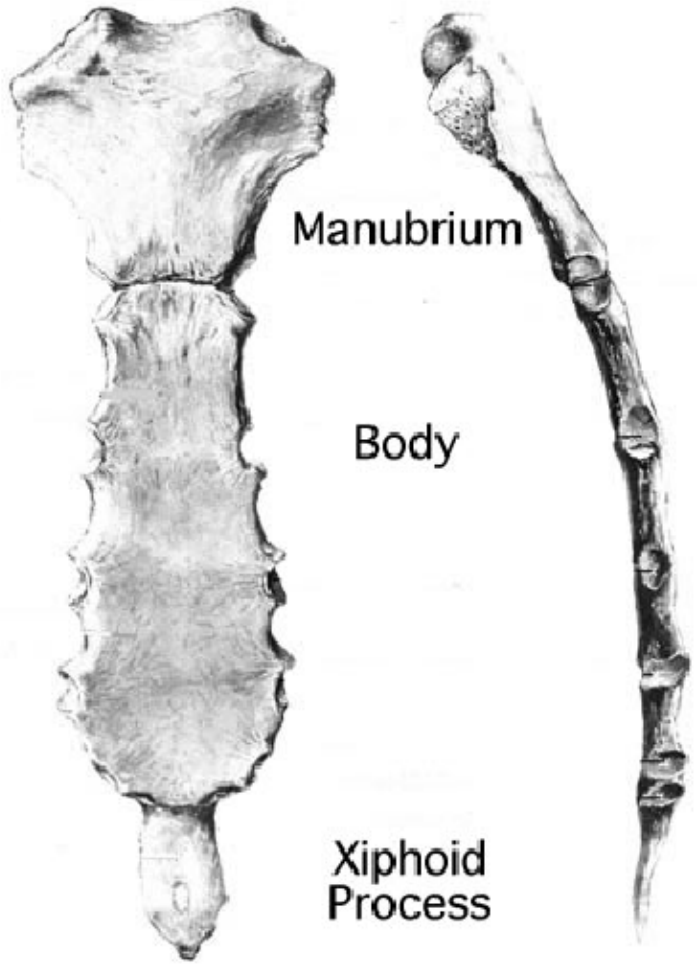
1 Sacrum

1 Coccyx



80 Axial Skeleton

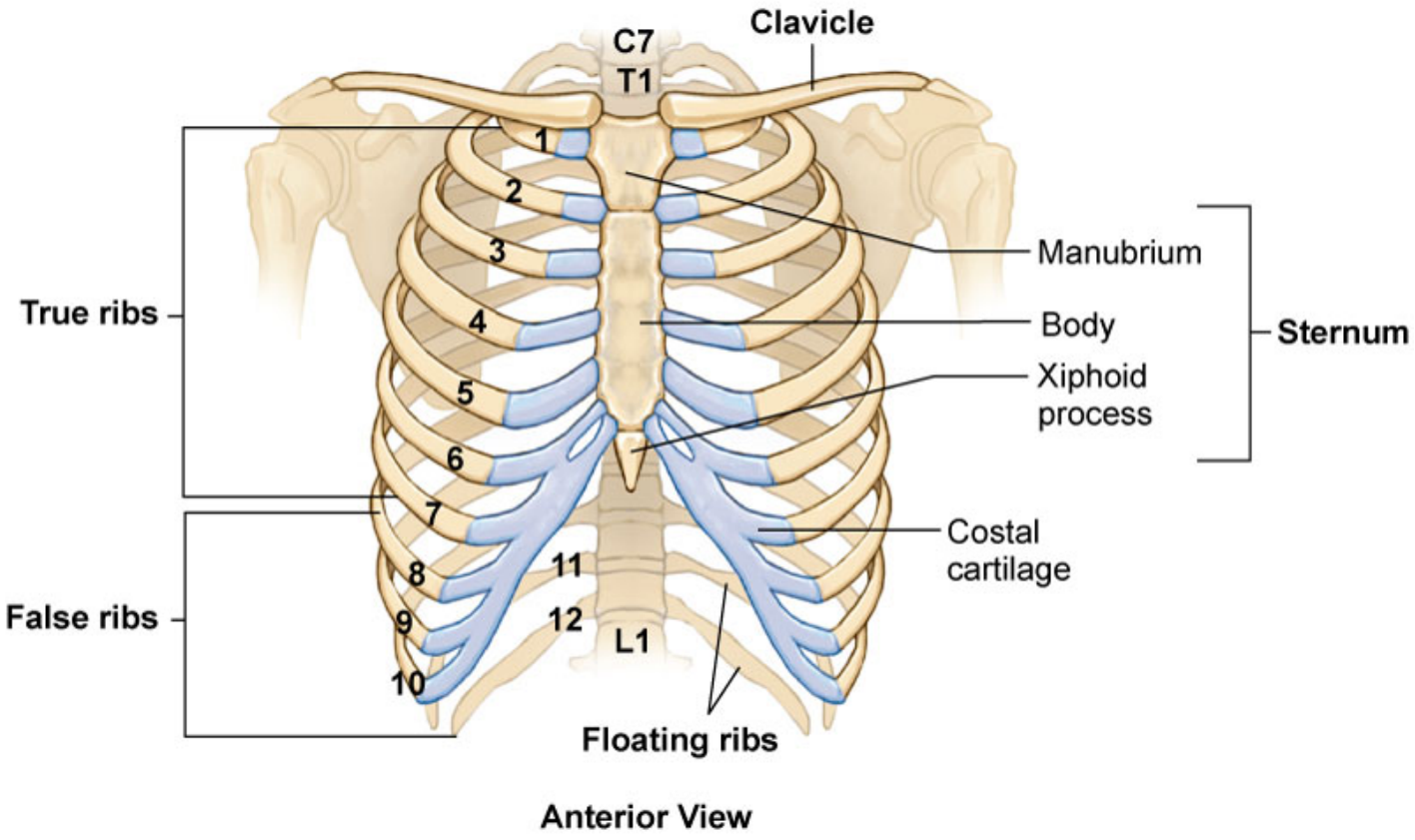
1 Sternum

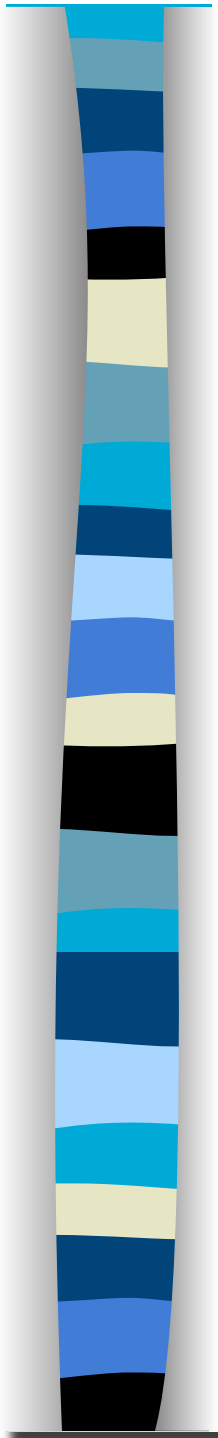


80 Axial Skeleton

<u>24 Ribs</u>

14 True ribs	Directly attaching to the sternum by way of cartilage.
6 False ribs	Not *directly* attached to the sternum.
4 Floating ribs	Not attached to the sternum at all.

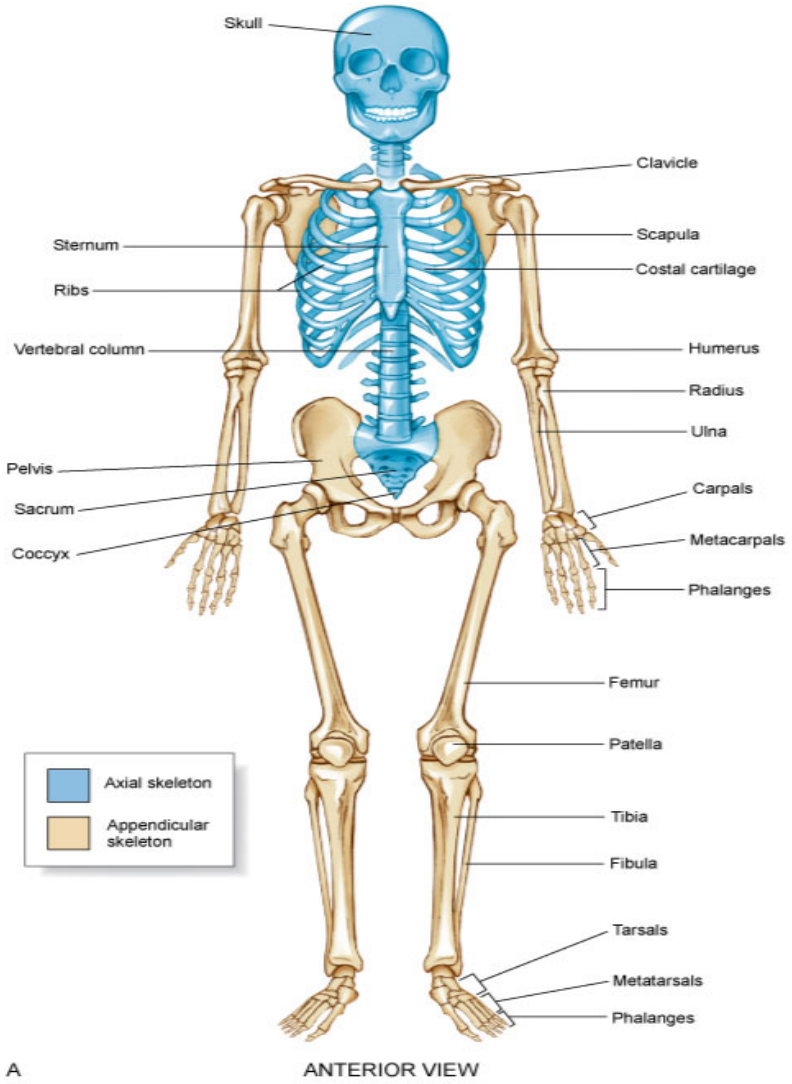




126 Appendicular Skeleton

126 Appendicular Skeleton

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

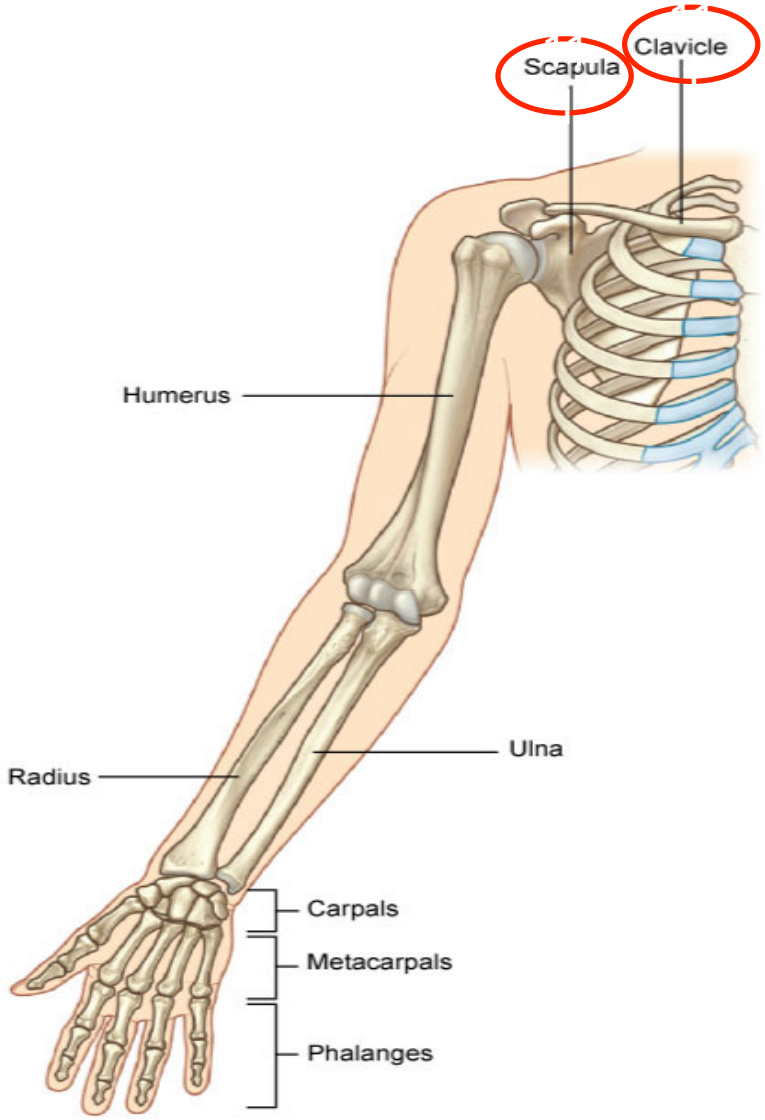


126 Appendicular Skeleton

4 Shoulder Girdle

clavicle 2

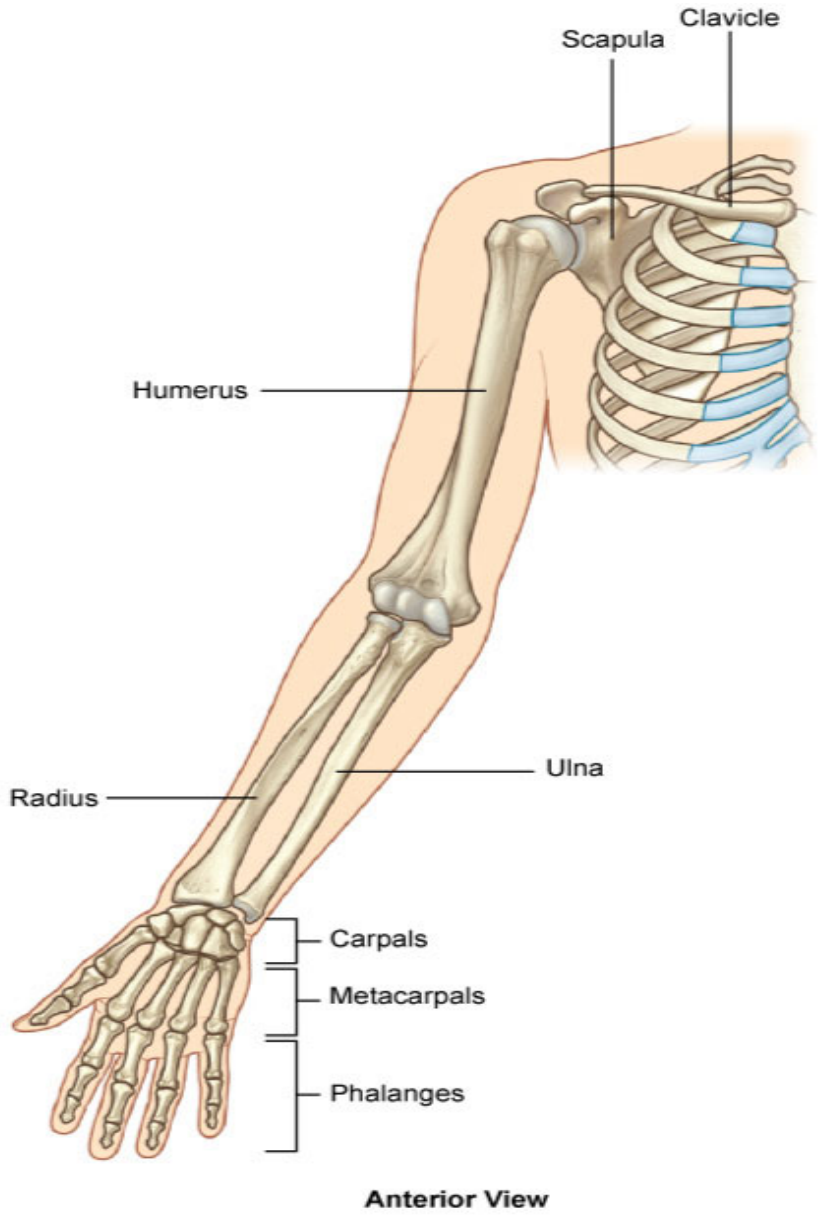
scapula 2

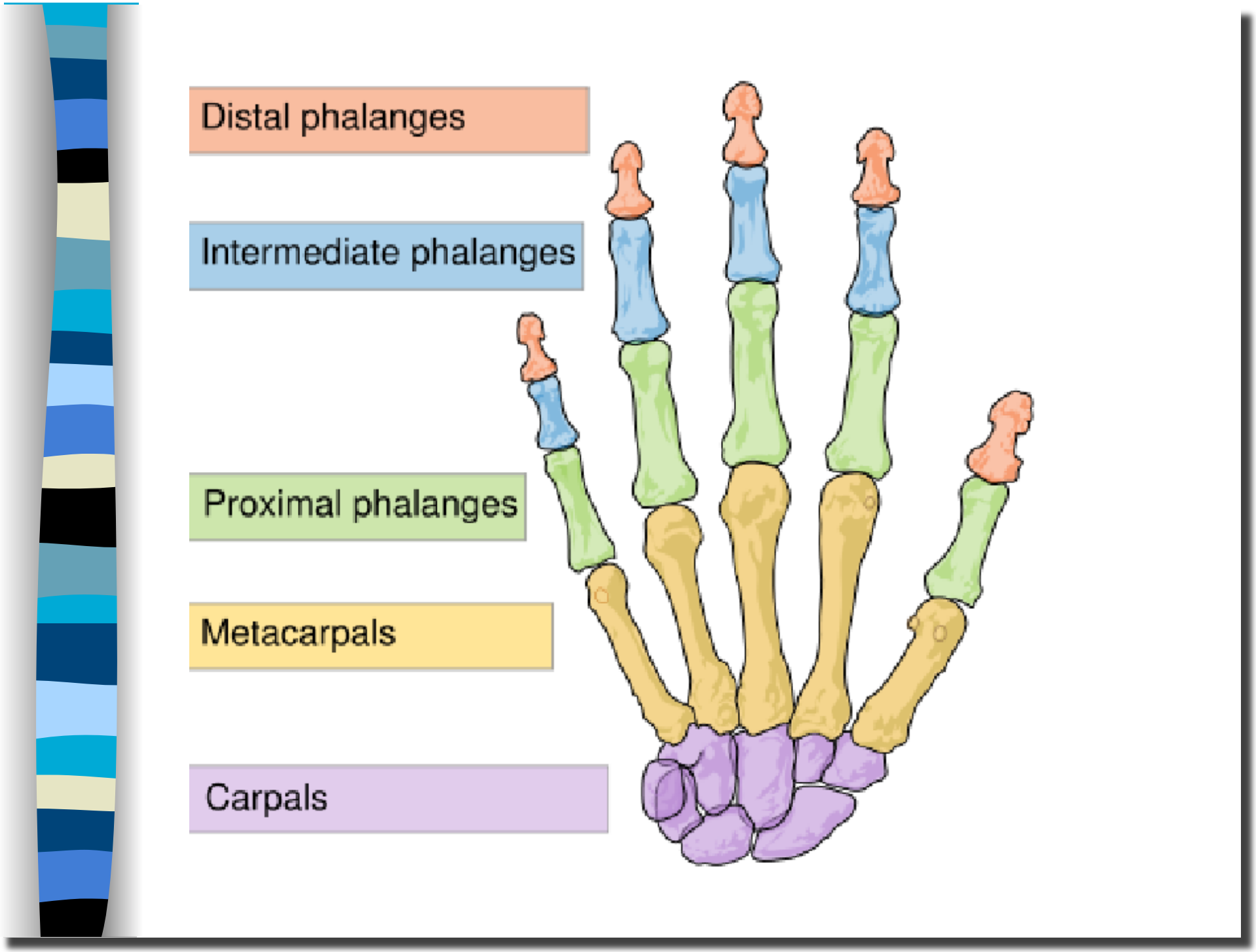


126 Appendicular Skeleton

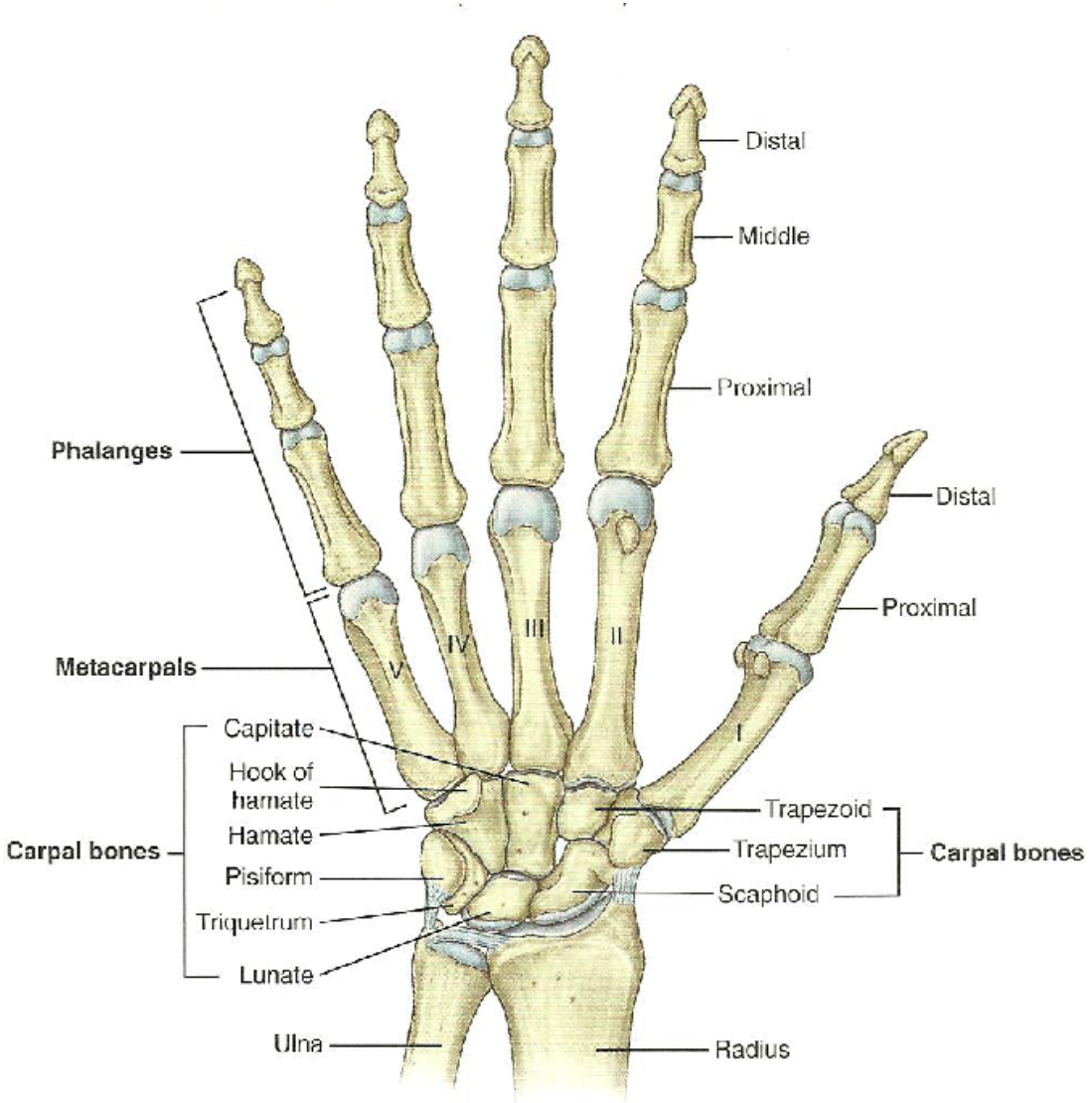
60 Upper Extremity

- **humerus 2**
- **radius 2**
- **ulna 2**
- **carpals 16**
- **metacarpals 10**
- **phalanges 28**




Distal phalanges
Intermediate phalanges
Proximal phalanges
Metacarpals
Carpals

126 Appendicular Skeleton



Anterior/Palmar View of Right Hand

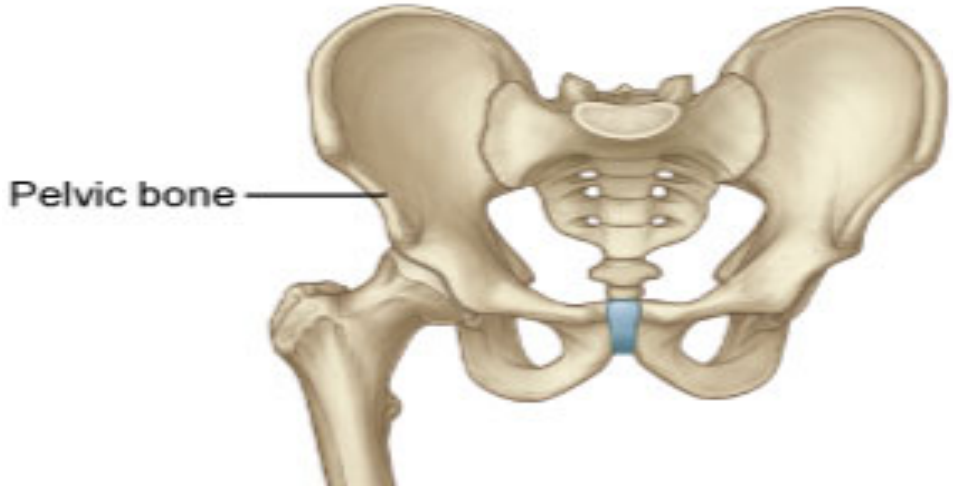
126 Appendicular Skeleton

2 Pelvic Girdle

pelvic bone

AKA: innominate bone

AKA: os coxae or coxal bone



126 Appendicular Skeleton

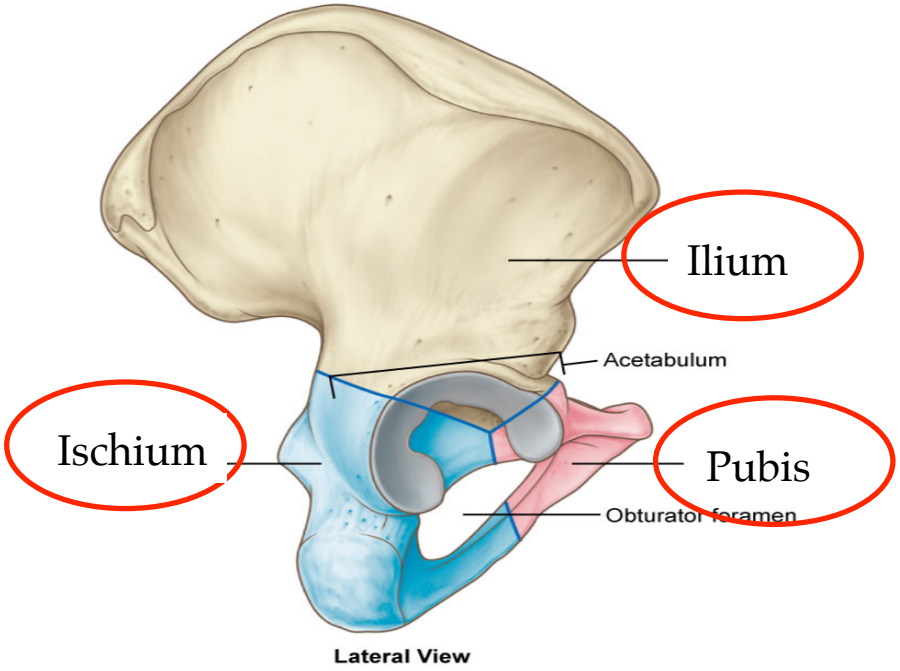
2 Pelvic Girdle

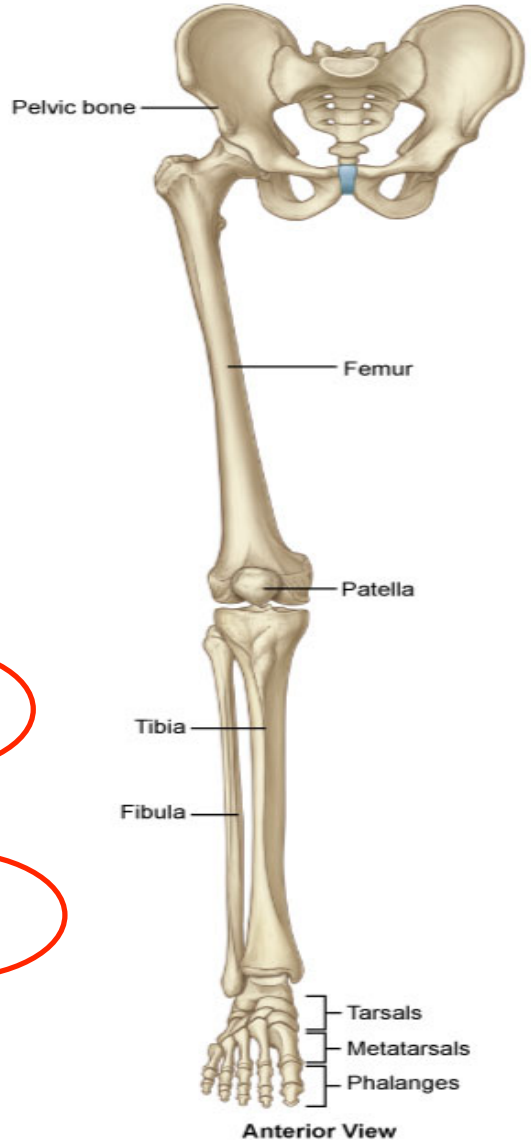
pelvic bone

ilium

ischium

pubis

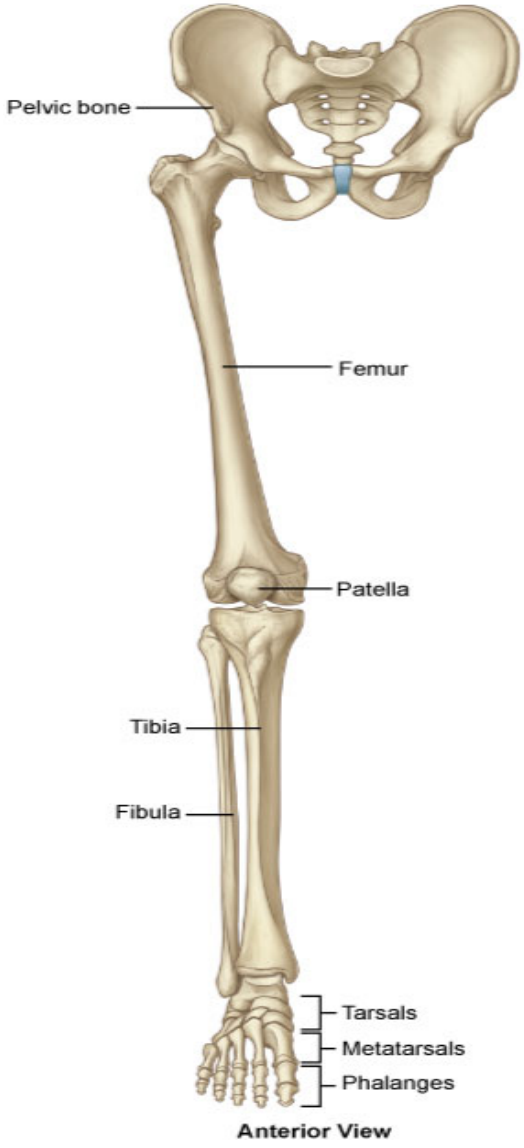


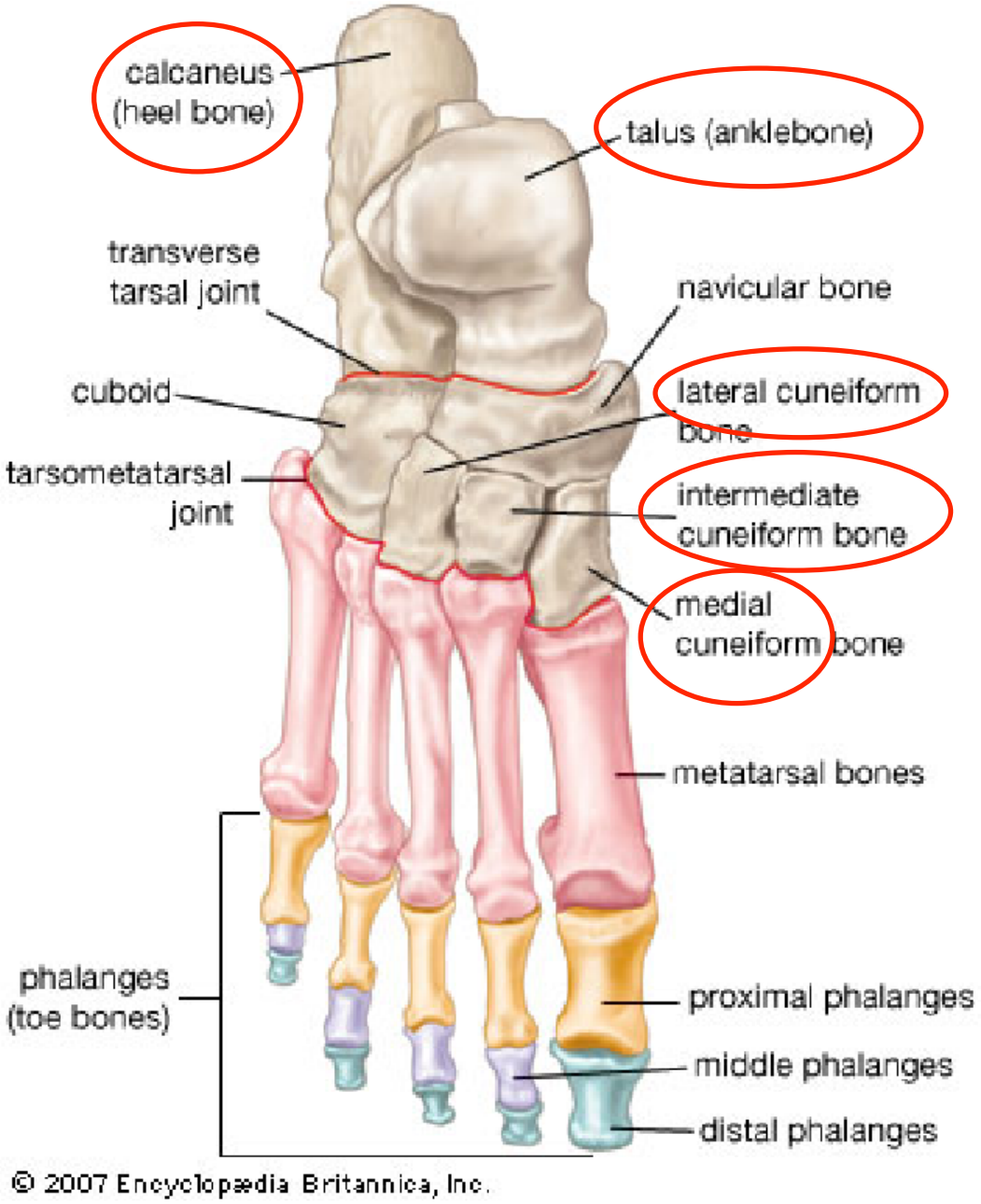


126 Appendicular Skeleton

60 Lower Extremity

- **femur 2**
- **patella 2**
- **tibia 2**
- **fibula 2**
- **tarsals 14**
- **metatarsals 10**
- **phalanges 28**




calcaneus (heel bone)
talus (anklebone)
transverse tarsal joint
navicular bone
cuboid
lateral cuneiform bone
tarsometatarsal joint
intermediate cuneiform bone
medial cuneiform bone
metatarsal bones
phalanges (toe bones)
proximal phalanges
middle phalanges
distal phalanges
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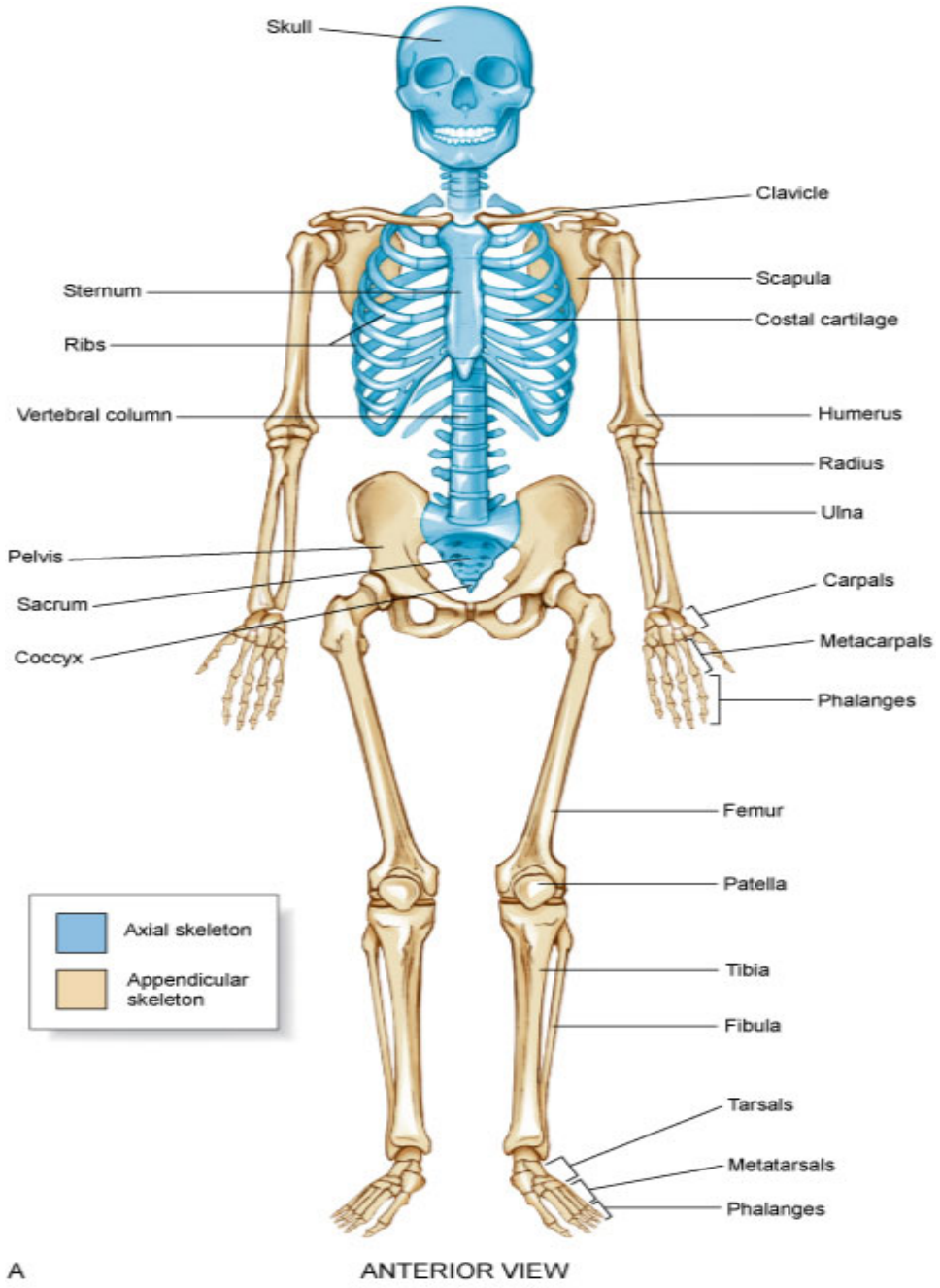
Skull
Clavicle
Sternum
Scapula
Costal cartilage
Ribs
Vertebral column
Humerus
Radius
Ulna
Pelvis
Carpals
Sacrum
Metacarpals
Coccyx
Phalanges
Femur
Patella
Axial skeleton
Appendicular skeleton
Tibia
Fibula
Tarsals
Metatarsals
Phalanges
A
ANTERIOR VIEW

14a A&P:

Skeletal System - Appendicular and Axial Divisions