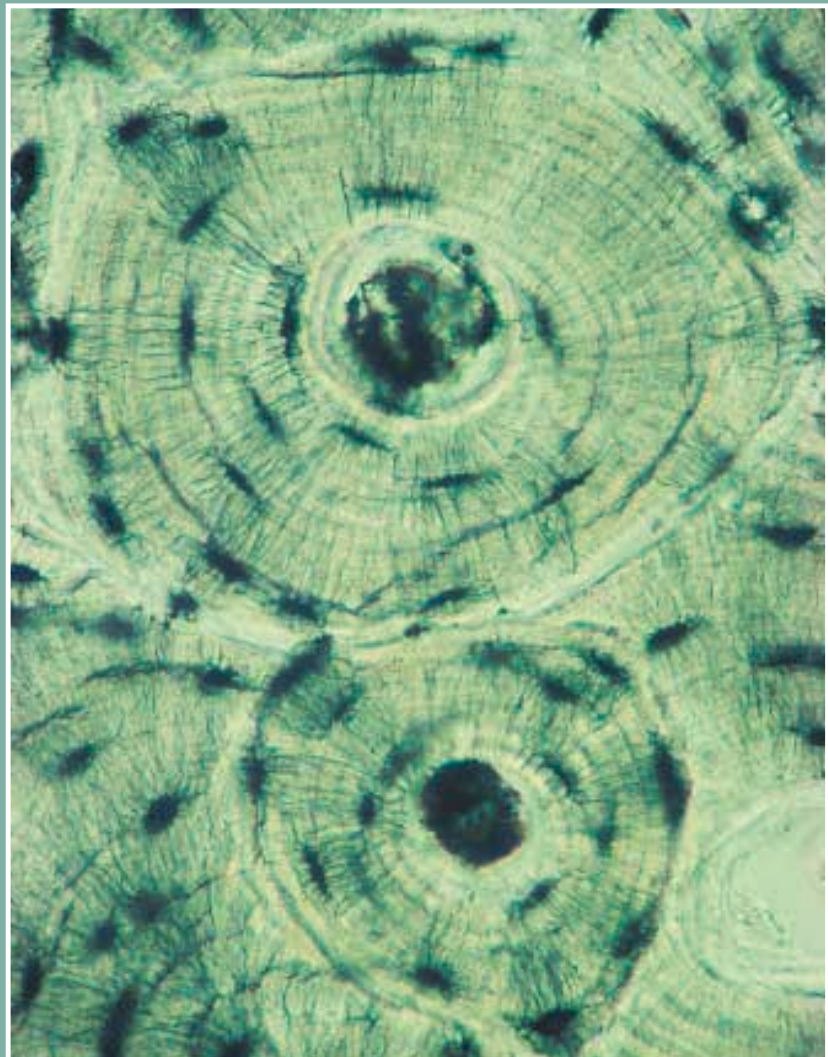




Human Skeletal Anatomy



Detail of Compact Bone

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Figure 2-1
Skull: Face

BONE

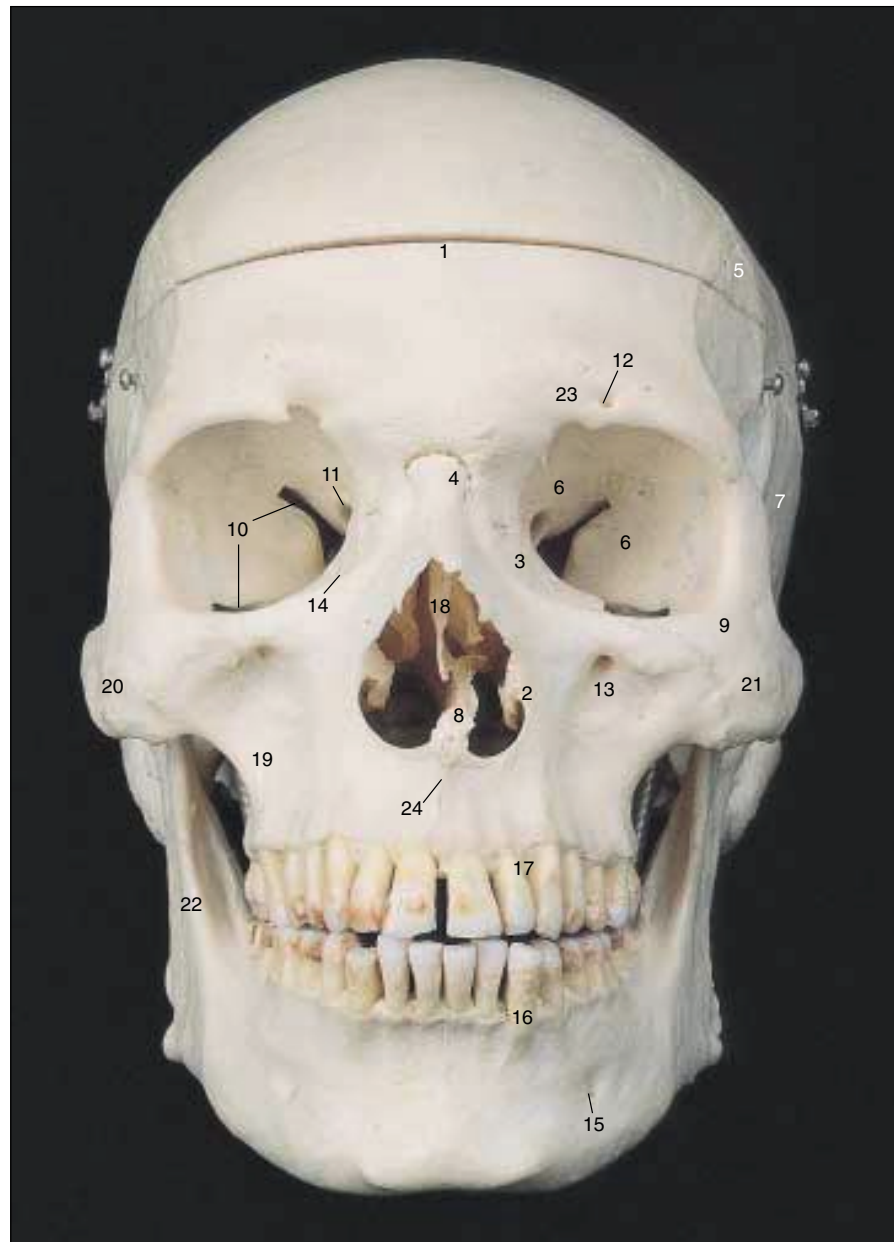
1. Frontal
2. Inferior concha
3. Lacrimal
4. Nasal
5. Parietal
6. Sphenoid
7. Temporal
8. Vomer
9. Zygomatic (malar)
19. Maxilla

FORAMINA

10. Orbital fissure
11. Optic
12. Supraorbital
13. Infraorbital
14. Lacrimal
15. Mental

PROCESSES

16. Mandibular alveolus
17. Maxillary alveolus
18. Perpendicular plate of ethmoid
20. Temporal process of malar
21. Zygomatic process of maxilla
22. Mandibular ramus
23. Frontal notch
24. Anterior nasal spine



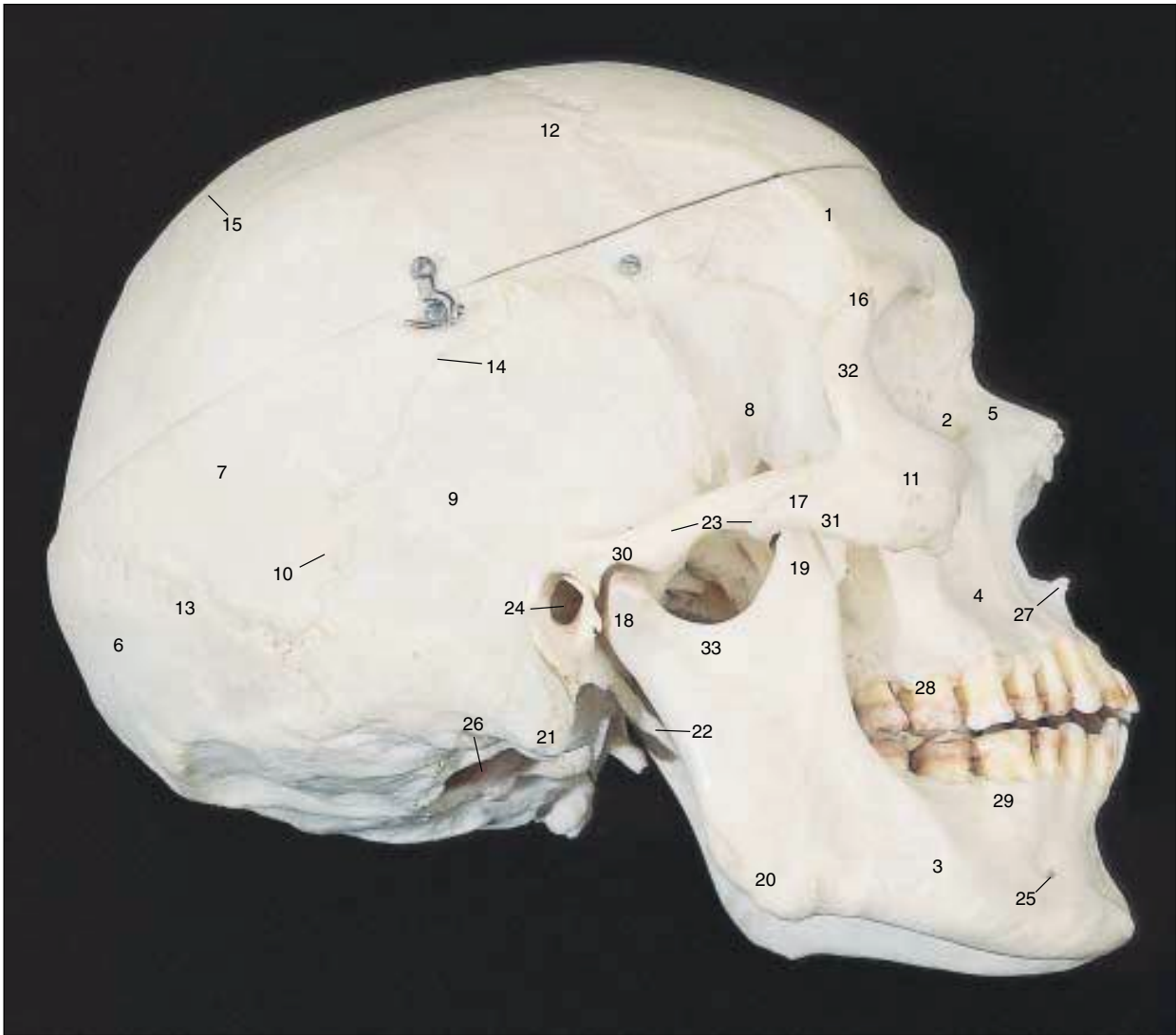


Figure 2-2
Skull: View from Right Side

BONE

1. Frontal
2. Lacrimal
3. Mandible
4. Maxilla
5. Nasal
6. Occipital
7. Parietal
8. Sphenoid (greater wing)
9. Temporal
10. Wormian
11. Zygomatic (malar)

SUTURES

12. Coronal
13. Lambdoidal
14. Squamosal
15. Sagittal
16. Frontozygomatic
17. Temporozygomatic

FORAMINA & PROCESSES

18. Mandibular condyloid process
19. Mandibular coronoid process
21. Mastoid process
22. Styloid process
23. Zygomatic arch

24. External auditory meatus
25. Mental foramen
2. Lacrimal foramen
20. Mandibular angle
26. Foramen magnum
27. Anterior nasal spine
28. Maxillary alveolus
29. Mandibular alveolus
30. Zygomatic process of temporal bone
31. Temporal process of malar
32. Frontal process of malar
33. Mandibular notch

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Figure 2-3

Skull: Calvarium, Superior Aspect

BONE

1. Frontal
2. Parietal
3. Occipital

SUTURES

4. Coronal
5. Occipital
6. Sagittal
7. Bregma
8. Lambda

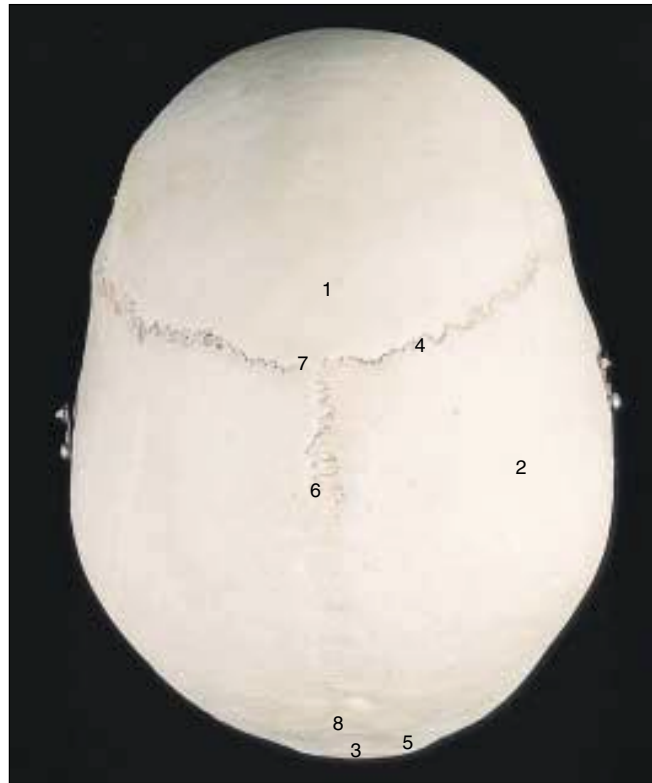


Figure 2-4

Skull: Floor of Cranium, Internal View

BONE

1. Frontal
2. Occipital
3. Parietal
4. Temporal
5. Ethmoid
6. Sphenoid
- Incus } *not shown*
- Malleus } *not shown*
- Stapes } *not shown*

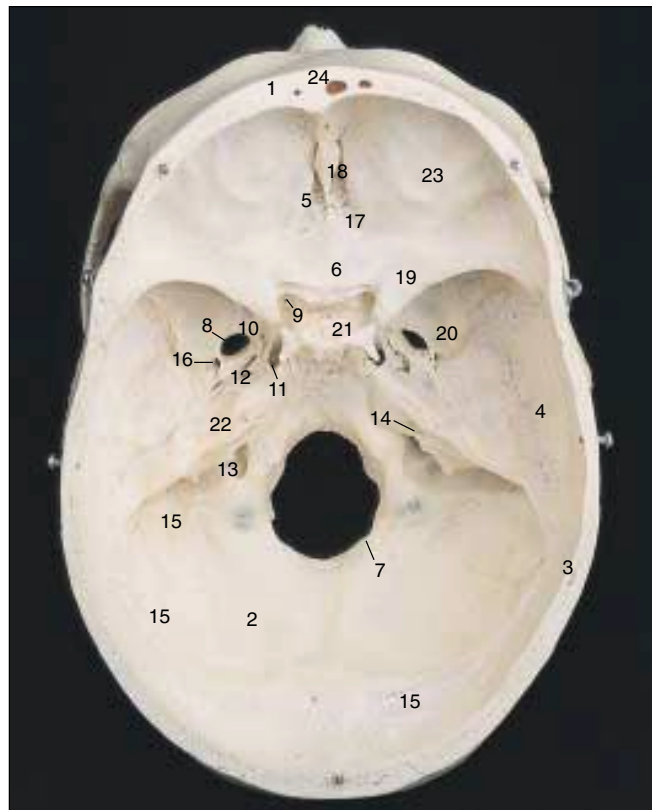
FORAMINA

7. Foramen magnum
8. Foramen ovale
9. Optic foramen
10. Foramen rotundum
11. Foramen lacerum
12. Carotid canal
13. Jugular fossa and foramen

14. Internal auditory meatus
15. Grooves for transverse and sigmoid sinuses
16. Foramen spinosum

PROCESSES

17. Cribriform plate of ethmoid
18. Crista galli
19. Lesser wing of sphenoid
20. Greater wing of sphenoid
21. Sella turcica
22. Petrous portion of temporal bone
23. Orbital plate of frontal bone
24. Frontal sinus



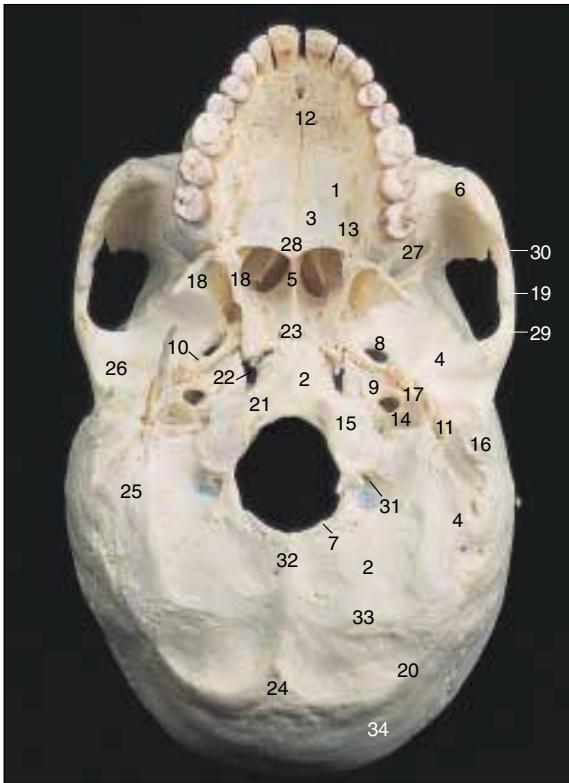


Figure 2-5

Skull: Base, Viewed from Below

BONE

1. Maxilla (palatine process)
2. Occipital
3. Palatine
4. Temporal
5. Vomer
6. Zygomatic (malar)

FORAMINA

7. Foramen magnum
8. Foramen ovale
9. Carotid canal
10. Foramen spinosum
11. Stylomastoid
12. Incisive
13. Palatine
14. Jugular
21. Hypoglossal canal
22. Foramen lacerum
27. Inferior orbital fissure
29. Zygomatic process of temporal bone
30. Temporal process of malar
31. Condylar fossa and canal

PROCESSES

15. Occipital condyle
16. Mastoid
17. Styloid
18. Medial and lateral pterygoid processes
19. Zygomatic arch
20. Superior nuchal line
23. Occipitospheoid suture
24. External occipital protuberance
25. Occipitotemporal suture
26. Mandibular fossa
28. Posteriornasal spine
32. External occipital crest
33. Inferior nuchal line
34. Highest nuchal line

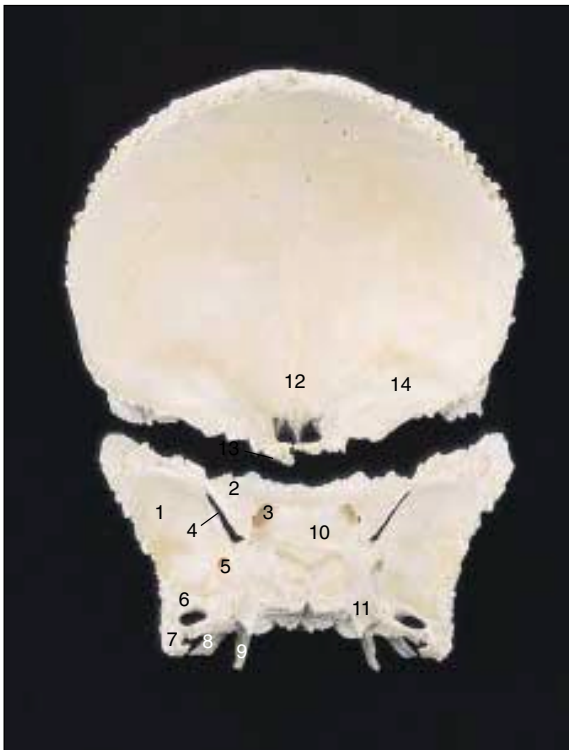


Figure 2-6

Frontal and Sphenoid Bones: Internal Aspect, Frontosphenoidal Suture Separated

PROCESSES

1. Greater wing
2. Lesser wing
8. Lateral pterygoid
9. Medial pterygoid
10. Sella turcica
11. Carotid groove
12. Frontal crest
14. Orbital plate

FORAMINA

3. Optic foramen
4. Superior orbital fissure
5. Foramen rotundum
6. Foramen ovale
7. Foramen spinosum
13. Ethmoidal notch



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Figure 2-7
Sphenoid: From the Front

PROCESSES

1. Orbital surface
2. Rostrum
7. Medial pterygoid
8. Lateral pterygoid
11. Temporal surface

FORAMINA

3. Optic
4. Superior orbital fissure
5. Foramen rotundum
6. Pterygoid canal
9. Foramen ovale
10. Foramen spinosum

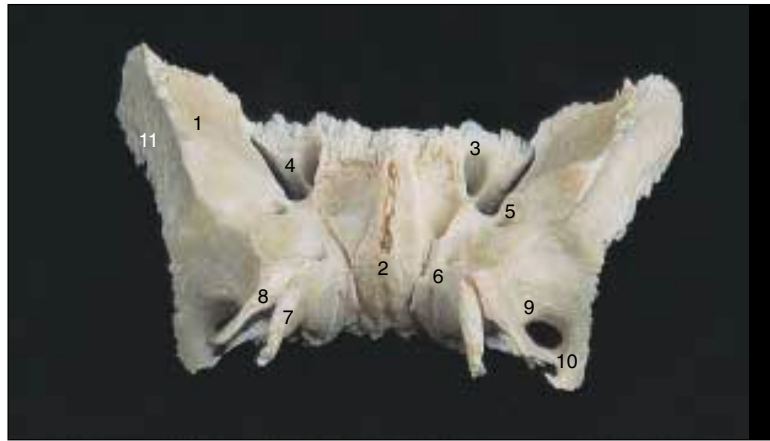


Figure 2-8
Frontal and Zygomatic Bones:
From the Front

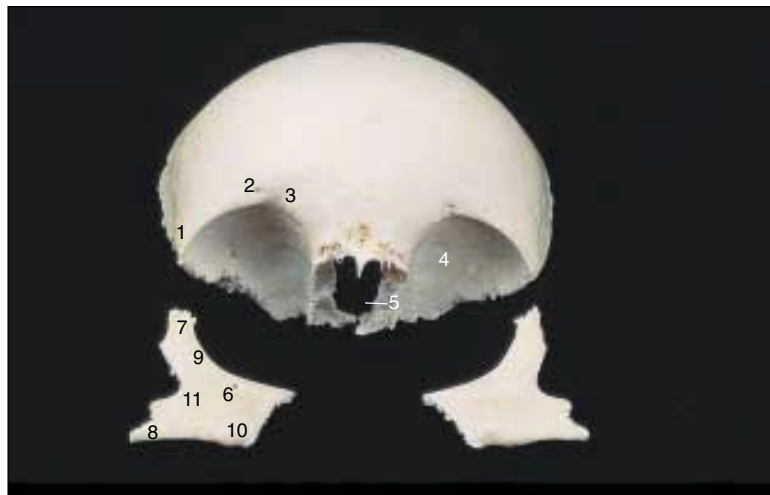
PROCESSES

1. Zygomatic process
4. Orbit
7. Frontal process
8. Temporal process
9. Orbital border
10. Maxillary border
11. Temporal border

NOTE: Supraorbital foramen and notch on right side are separate; on left they are superimposed.

FORAMINA

2. Supraorbital foramen
3. Supraorbital notch
5. Ethmoidal notch
6. Infraorbital foramen



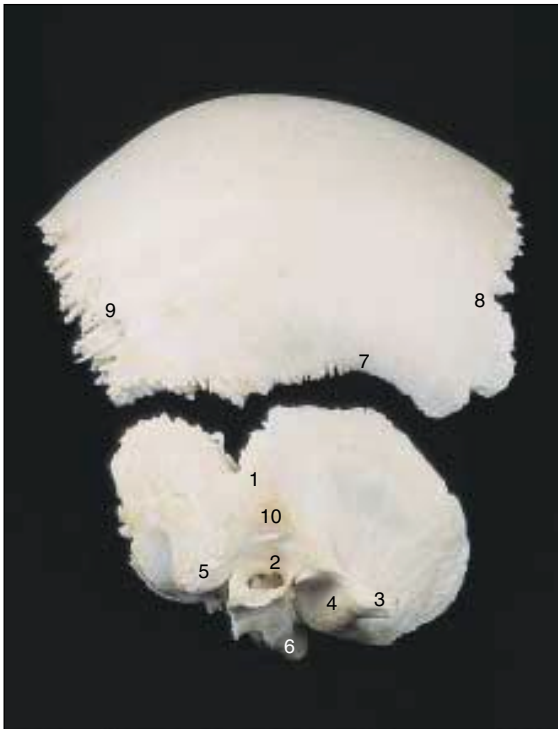


Figure 2-9
Right Temporal and Parietal
Bones: Exterior Aspect,
Squamosal Suture Separated

PROCESSES

1. Parietal notch
2. External auditory meatus
3. Zygomatic process
4. Mandibular fossa
5. Mastoid process
6. Styloid process
7. Squamosal border
8. Frontal border
9. Occipital border
10. Suprameatal triangle

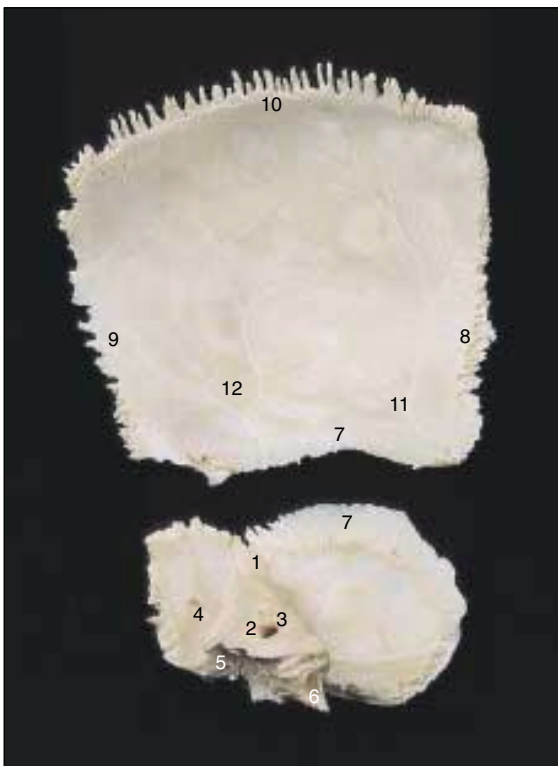


Figure 2-10
Left Temporal and Parietal
Bones: Interior Aspect,
Squamosal Suture Separated

PROCESSES

1. Parietal notch
2. Internal auditory meatus
3. Petrous portion
4. Groove for sigmoid sinus
5. Mastoid process
6. Styloid process
7. Squamosal border
8. Frontal border
9. Occipital border
10. Sagittal border
11. Furrows for frontal branch
of middle meningeal
vessels
12. Furrows for parietal
branch of middle
meningeal vessels

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Figure 2-11
Occipital Bone: Interior Aspect

PROCESSES

1. Foramen magnum
2. Condylar fossa and canal
3. Jugular notch
4. Groove for sigmoid sinus
5. Jugular tubercle
6. Mastoid margin
7. Internal occipital crest
8. Internal occipital protuberance
9. Groove for transverse sinus
10. Groove for superior sagittal sinus
11. Lambdoidal margin
12. Cerebellar fossa
13. Cerebral fossa

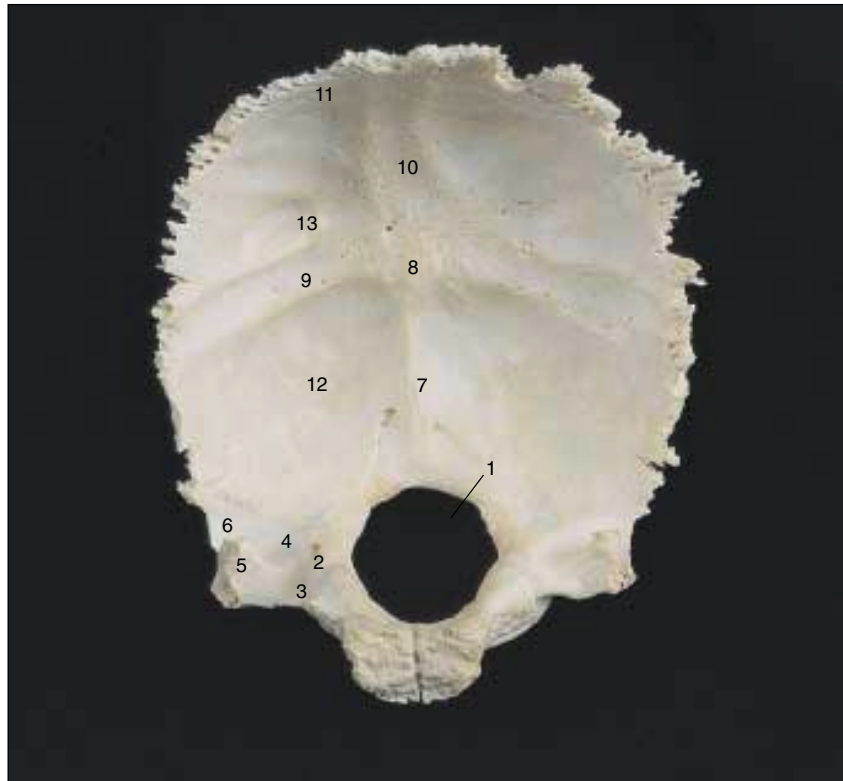
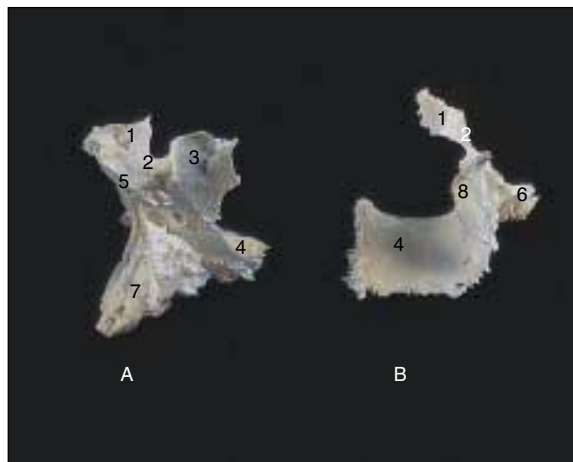


Figure 2-12
Palatine Bones: (A) Right from Anteromedial View, (B) Left from Anterosuperior View

PROCESSES

- A. Right palatine bone
- B. Left palatine bone
1. Orbital process
2. Sphenopalatine notch
3. Sphenoidal process
4. Horizontal plate
5. Ethmoidal crest
6. Pyramidal process
7. Maxillary process
8. Vertical plate



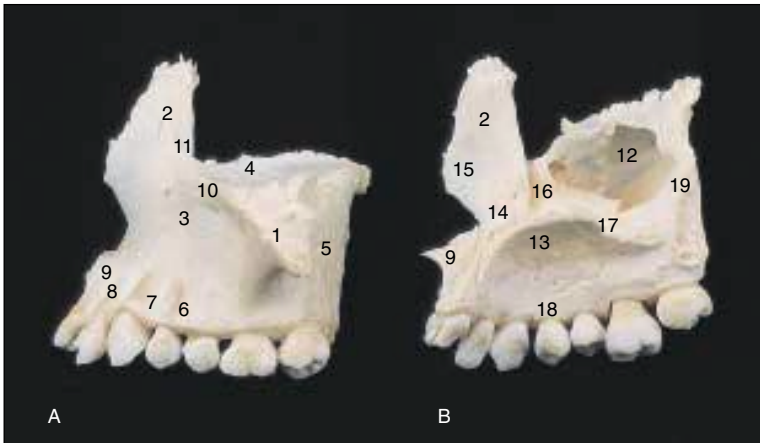


Figure 2-13
Maxillae: (A) Left from Lateral Aspect,
(B) Right from Medial Aspect

PROCESSES

- A. Left maxilla
- B. Right maxilla
- 1. Zygomatic process
- 2. Ethmoidal crest
- 3. Infraorbital foramen
- 4. Orbital surface
- 5. Infratemporal surface
- 6. Canine fossa
- 7. Canine eminence
- 8. Incisive fossa
- 9. Anterior nasal spine
- 10. Anterior lacrimal crest
- 11. Nasolacrimal groove
- 12. Maxillary hiatus and sinus
- 13. Palatine process
- 14. Nasal crest
- 15. Frontal process
- 16. Middle meatus
- 17. Inferior meatus
- 18. Alveolar process
- 19. Greater palatine canal



Figure 2-14
Mandible: Left Lateral View

PROCESSES

- 1. Mandibular condyle
- 2. Condylod process
- 3. Coronoid process
- 4. Angle
- 5. Mental foramen
- 6. Alveolar process
- 7. Body of mandible
- 8. Mental protuberance
- 9. Mandibular foramen
- 10. Lingula
- 11. Ramus



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Figure 2-15

Ethmoid Bone:

(A) from Above, Right, and Behind
(B) from Below, Right, and Behind

PROCESSES

1. Crista galli
2. Cribriform plate
3. Orbital plate
4. Ethmoidal labyrinth (with air cells)
5. Perpendicular plate
6. Middle nasal concha

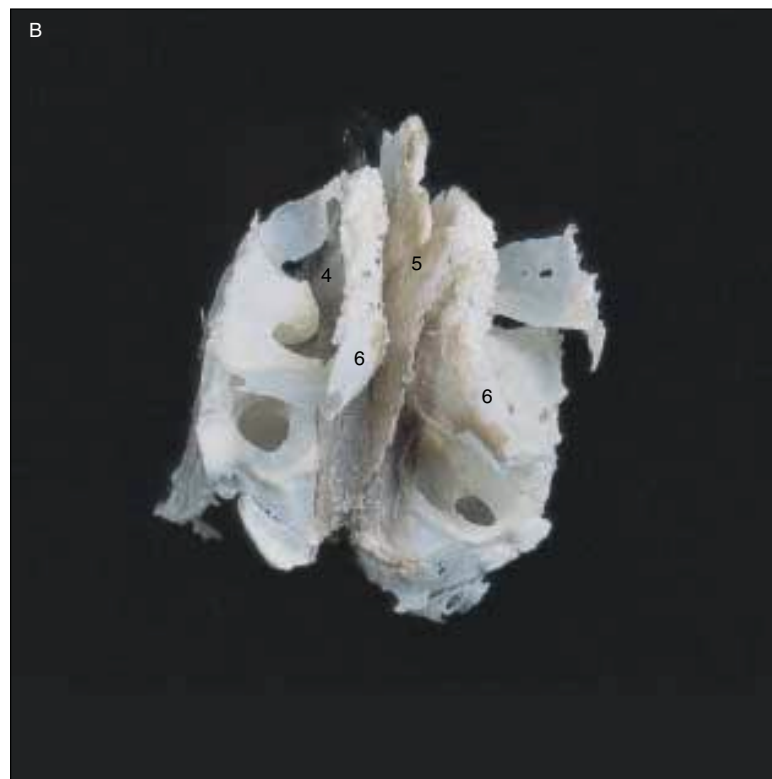
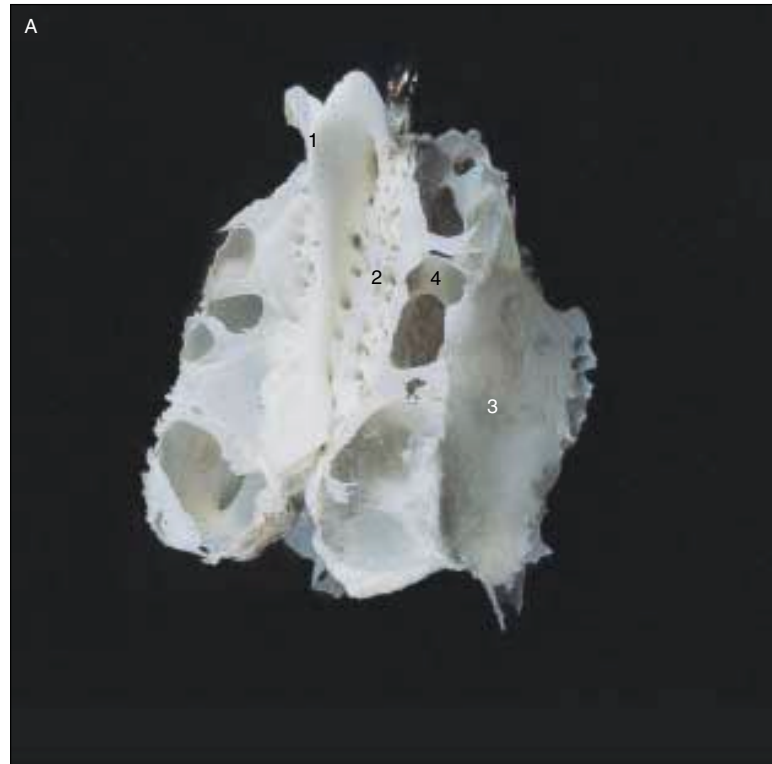




Figure 2-16
Vertebral Column: View from
Left and Behind

STRUCTURES

- A. Atlas
- B. Axis
- C. 7 Cervical vertebrae
(Arrow near C—Cervical curvature)
- D. Mentum nuchae
(spinous process of 7th cervical vertebra)
- E. 12 Thoracic vertebrae
(Arrow near E—Thoracic curvature)
- F. 5 Lumbar vertebrae
(Arrow near F—Lumbar curvature)
- G. 5 Fused sacral vertebrae
(Arrow near G—Sacral curvature)
(Not shown 4–5 coccyx)
- H. Intervertebral disk
- I. Spinous processes
- J. Transverse processes
- K. Intervertebral foramen

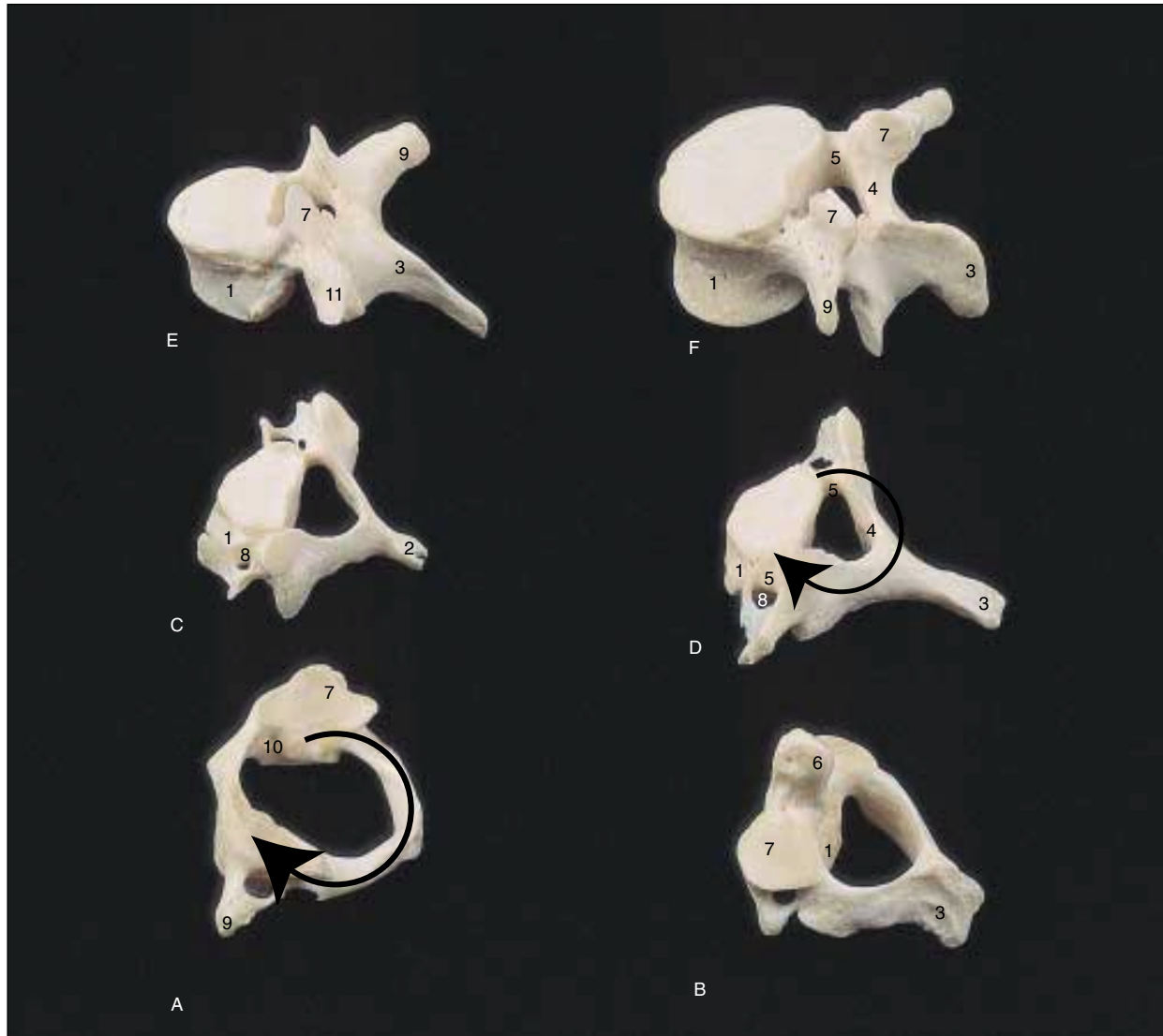


Figure 2-17
Vertebrae

PROCESSES

- A. Atlas
- B. Axis
- C. Cervical vertebra
- D. 7th cervical vertebra
- E. Thoracic vertebra
- F. Lumbar vertebra

- 1. Body
(Heavy arrows—Vertebral arches—comprised of lamina and pedicle)
- 2. Bifid spinous process
- 3. Monofid spinous process
- 4. Lamina
- 5. Pedicle
- 6. Odontoid process (dens)
- 7. Superior articular process and facet
- 8. Transverse foramen
- 9. Transverse process
- 10. Vertebral foramen
- 11. Costal facet

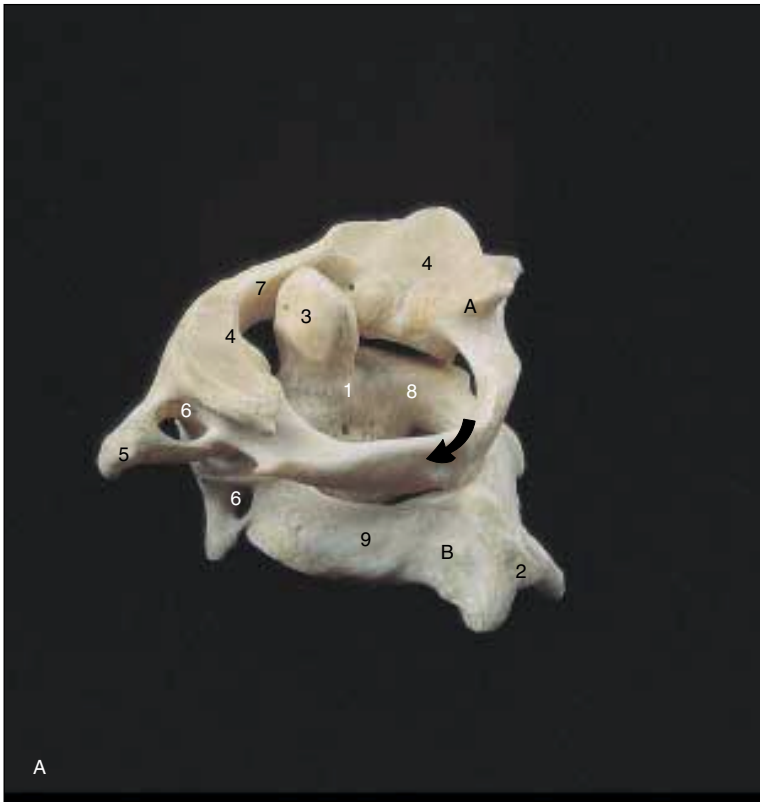


Figure 2-18
(A) Atlas and (B) Axis Articulated

PROCESSES

1. Body of axis
2. Bifid spinous process
3. Odontoid process (dens)
4. Superior articular facet
5. Transverse process
6. Transverse foramen
7. Anterior arch of atlas
(Heavy arrow—Posterior arch of atlas)
8. Pedicle of axis
9. Lamina of axis

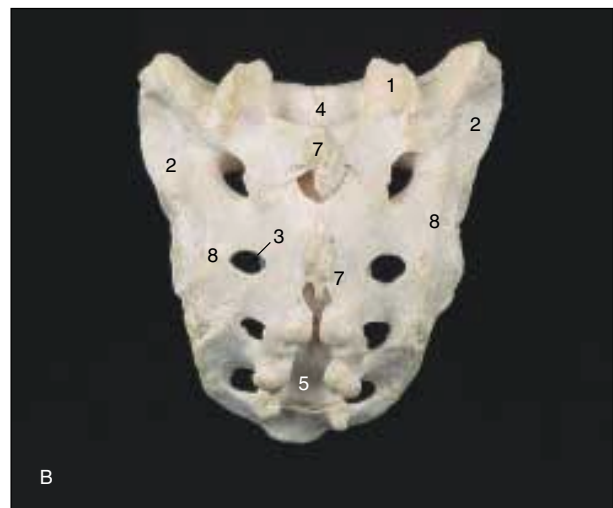


Figure 2-19
Sacrum: (A) Anterior Aspect, (B) Posterior Aspect

PROCESSES

- | | | |
|---|--|--|
| <ol style="list-style-type: none"> 1. Superior articular process and facet 2. Auricular surface | <ol style="list-style-type: none"> 3. Sacral foramen 4. Sacral canal 5. Sacral hiatus 6. Sacral promontory | <ol style="list-style-type: none"> 7. Median crest 8. Lateral crest 9. Site of fusion of 1st and 2nd sacral vertebrae |
|---|--|--|

Figure 2-20
Sternum and Ribs

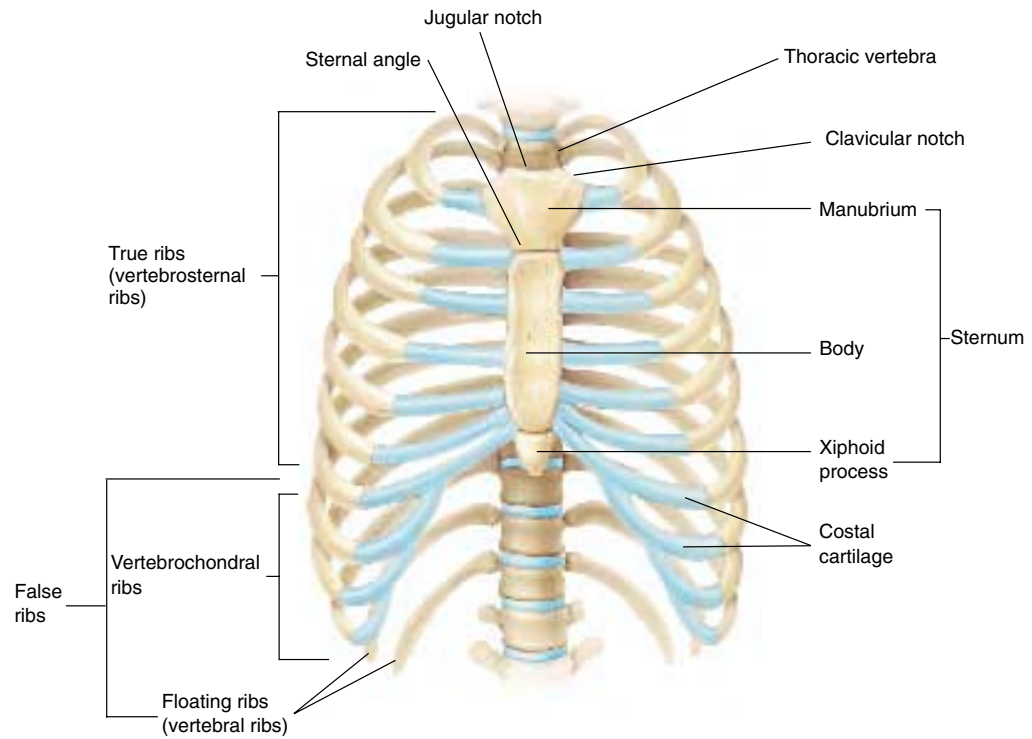
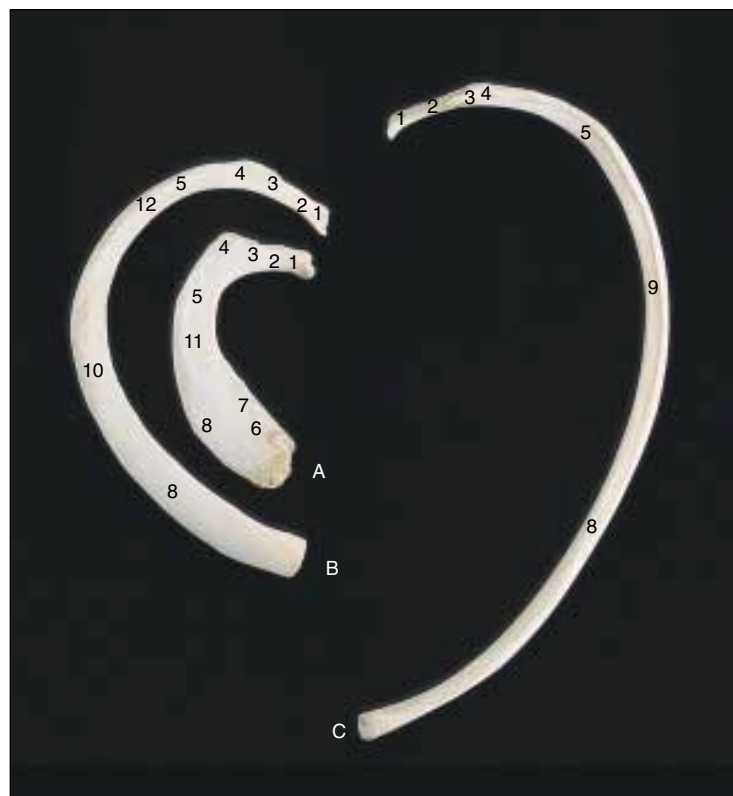


Figure 2-21
Ribs: (A) 1st, (B) 2nd, Right Side, Superior View, (C) 7th, Right Side, Inferior View

PROCESSES

1. Head
2. Neck
3. Articular facet
4. Tubercle
5. Angle
6. Subclavian groove
7. Scalene tubercle
8. Body
9. Costal groove
10. Serratus anterior tuberosity
11. Site for attachment of scalenus medius
12. Site for attachment of levator costa



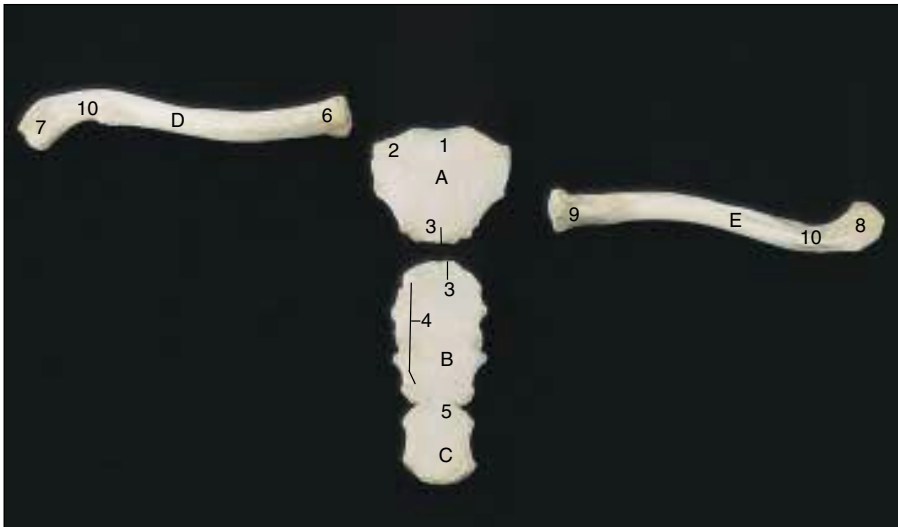


Figure 2-22

**Sternum and Clavicles:
Sternum from the Front, (D)
Right Clavicle from Above,
(E) Left Clavicle from
Below**

PROCESSES

- A. Manubrium
- B. Gladiolus (body)
- C. Xiphoid process
- 1. Jugular notch
- 2. Clavicular notch
- 3. Sternal angle and manubriosternal joint
- 4. Notches for costal cartilages (2–7)
- 5. Xiphisternal joint
- D. Right clavicle
- E. Left clavicle
- 6. Sternal end
- 7. Acromial end
- 8. Conoid tubercle
- 9. Site for costoclavicular ligament
- 10. Site for deltoid

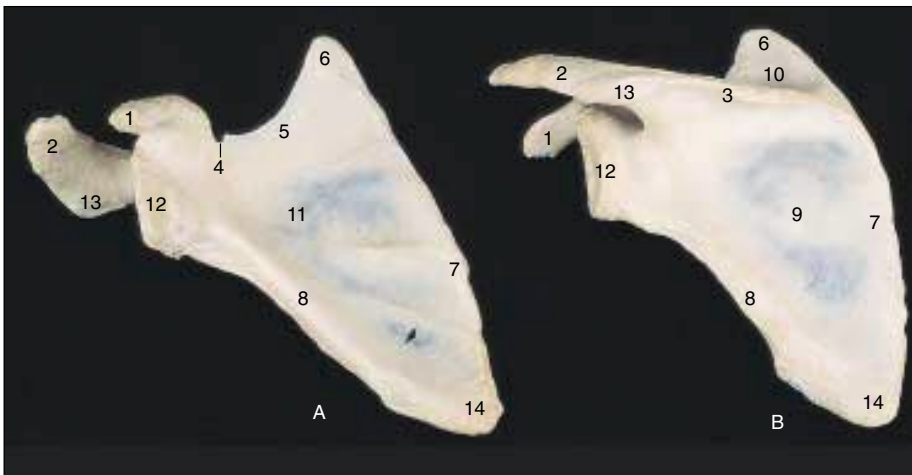


Figure 2-23

**Scapulae: (A) Right
Scapula, Anterior View
(B) Left Scapula, Posterior
View**

PROCESSES

- A. Right scapula
- B. Left scapula
- 1. Coracoid process
- 2. Acromion
- 3. Spine
- 4. Suprascapular notch
- 5. Superior border
- 6. Superior angle
- 7. Medial (vertebral) border
- 8. Lateral (axillary) border
- 9. Infraspinous fossa
- 10. Supraspinous fossa
- 11. Subscapular fossa
- 12. Glenoid fossa
- 13. Acromial angle
- 14. Inferior angle

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Figure 2-24
Humerus with Scapulae:
(A) Right Humerus, Anterior View
(B) Left Humerus, Posterior View

PROCESSES

- A. Right humerus and scapula
- B. Left humerus and scapula
- 1. Proximal head (epiphysis)
- 2. Anatomical neck
- 3. Surgical neck
- 4. Shaft (diaphysis)
- 5. Lesser tubercle
- 6. Greater tubercle
- 7. Intertubercular groove
- 8. Deltoid tuberosity
- 9. Acromion
- 10. Coracoid process
- 11. Lateral epicondyle
- 12. Capitulum
- 13. Trochlea
- 14. Medial epicondyle
- 15. Coronoid fossa
- 16. Olecranon fossa
- 17. Distal head and surgical neck

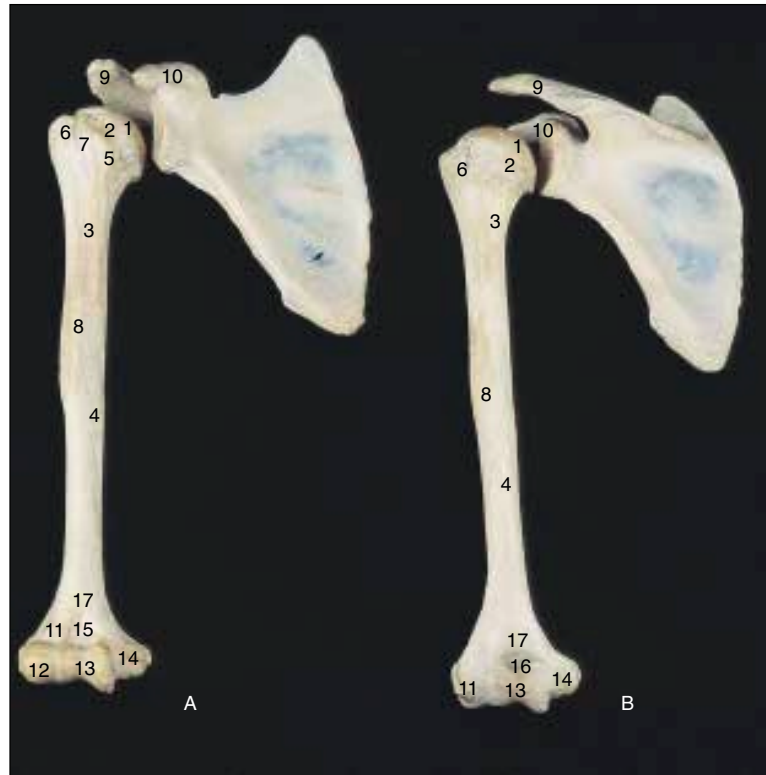


Figure 2-25
Ulna and Radius: Right, Anterior View
Left, Posterior View

PROCESSES

- A. Right radius
- B. Right ulna
- C. Left radius
- D. Left ulna
- 1. Proximal head
- 2. Neck
- 3. Radial tuberosity
- 4. Anterior oblique line
- 5. Interosseous border
- 6. Styloid process of radius
- 7. Ulnar notch
- 8. Olecranon process
- 9. Trochlear notch
- 10. Coronoid process
- 11. Ulnar tuberosity
- 12. Styloid process of ulna
- 13. Distal head
- 14. Distal neck
- 15. Radial notch

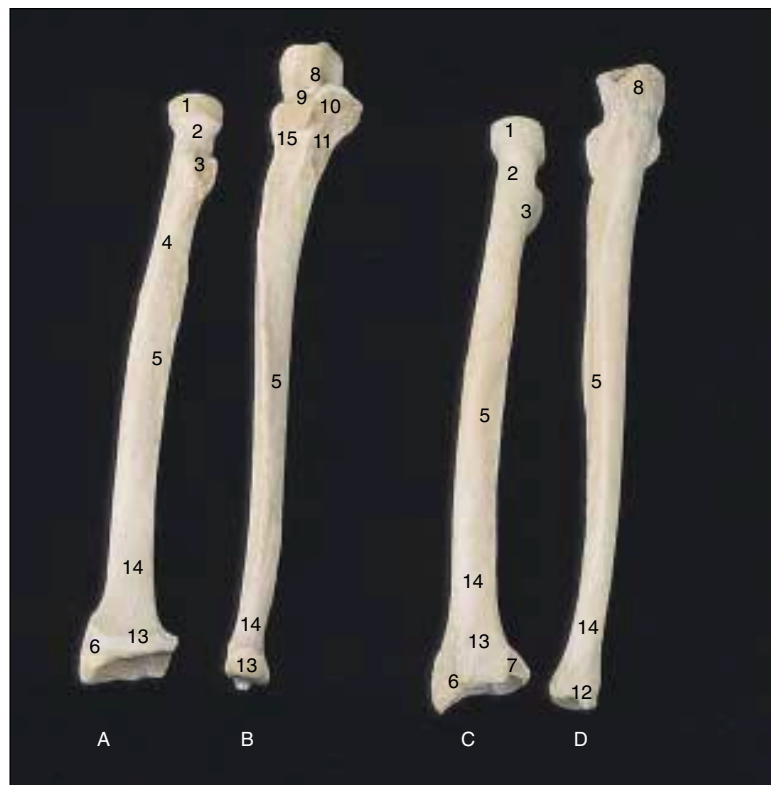




Figure 2-26
Left Hand, Dorsal View

BONES AND PROCESSES

CARPALS

1. Navicular (scaphoid)
2. Lunate
3. Triangular (triquetrum)
4. Pisiform
5. Greater multangular (trapezium)
6. Lesser multangular (trapezoid)
7. Capitate
8. Hamate
9. METACARPALS 1-5

PHALANGES

10. Proximal phalanx of thumb
11. Distal phalanx of thumb
12. Proximal phalanx of digits 2-5
13. Middle phalanx of digits 2-5
14. Distal phalanx of digits 2-5

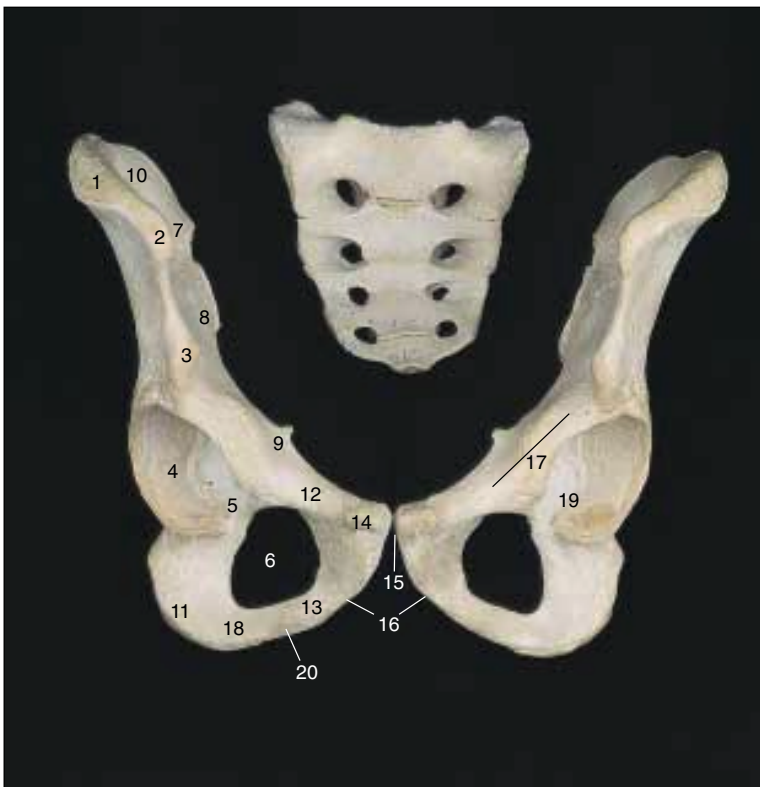


Figure 2-27
Pelvic Bones with Sacrum, Anterior View

PROCESSES

1. Iliac crest
2. Anterior superior iliac spine
3. Anterior inferior iliac spine
4. Acetabulum
5. Acetabular notch
6. Obturator foramen
7. Posterior superior iliac spine
8. Posterior inferior iliac spine
9. Ischial spine
10. Iliac fossa
11. Ischial tuberosity
12. Superior pubic ramus
13. Inferior pubic ramus
14. Pubic tubercle
15. Symphysis pubis
16. Pubic arch
17. Iliopectineal line
18. Ischial ramus
19. Iliopubic eminence
20. Fusion of ischium and pubis

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Figure 2-28

Pelvic Bones:
(A) Right Innominate, Lateral View
(B) Left Innominate, Medial View

PROCESSES

1. Iliac crest
2. Anterior superior iliac spine
3. Anterior inferior iliac spine
4. Acetabulum
5. Acetabular notch
6. Obturator foramen
7. Posterior superior iliac spine
8. Posterior inferior iliac spine
9. Ischial spine
10. Iliac fossa
11. Ischial tuberosity
12. Superior pubic ramus
13. Inferior pubic ramus
14. Auricular surface (for sacroiliac joint)
15. Symphysis pubis (cartilage)
16. Greater sciatic notch
17. Ilipectineal line
18. Ischial ramus
19. Iliopubic eminence
20. Fusion of ischium and pubis
21. Lesser sciatic notch

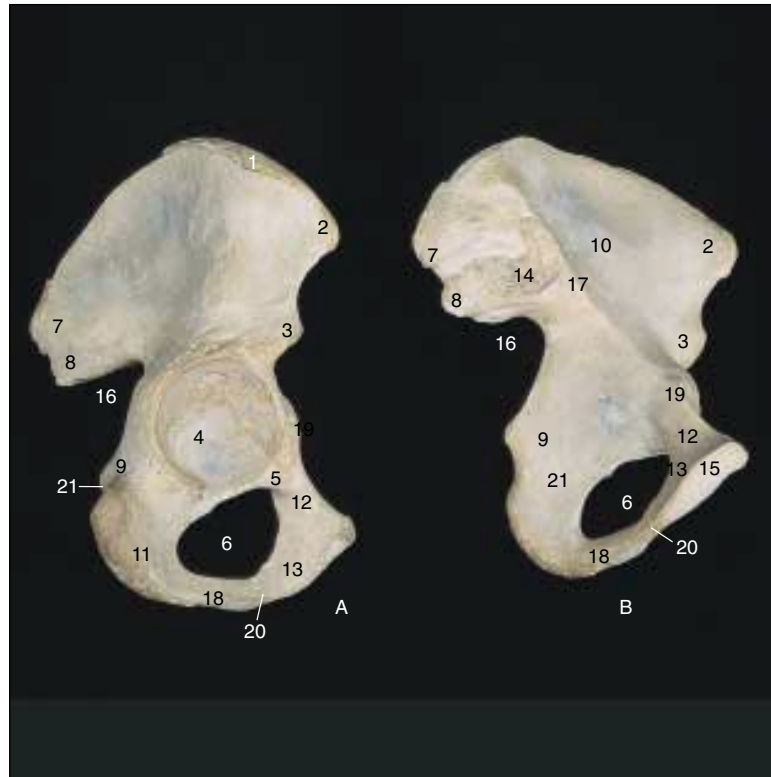


Figure 2-29

Femur: (A) Right Femur, Anterior View
(B) Left Femur, Posterior View

PROCESSES

- A. Right femur
- B. Left femur
1. Proximal head (epiphysis)
2. Anatomical neck
3. Surgical neck
4. Greater trochanter
5. Lesser trochanter
6. Intertrochanteric crest
7. Spiral line
8. Gluteal tuberosity
9. Linea aspera
10. Lateral condyle
11. Medial condyle
12. Popliteal surface
13. Intercondylar fossa
14. Patellar surface
15. Shaft (diaphysis)
16. Distal head and neck
17. Site for attachment of anterior cruciate ligament
18. Site for attachment of posterior cruciate ligament

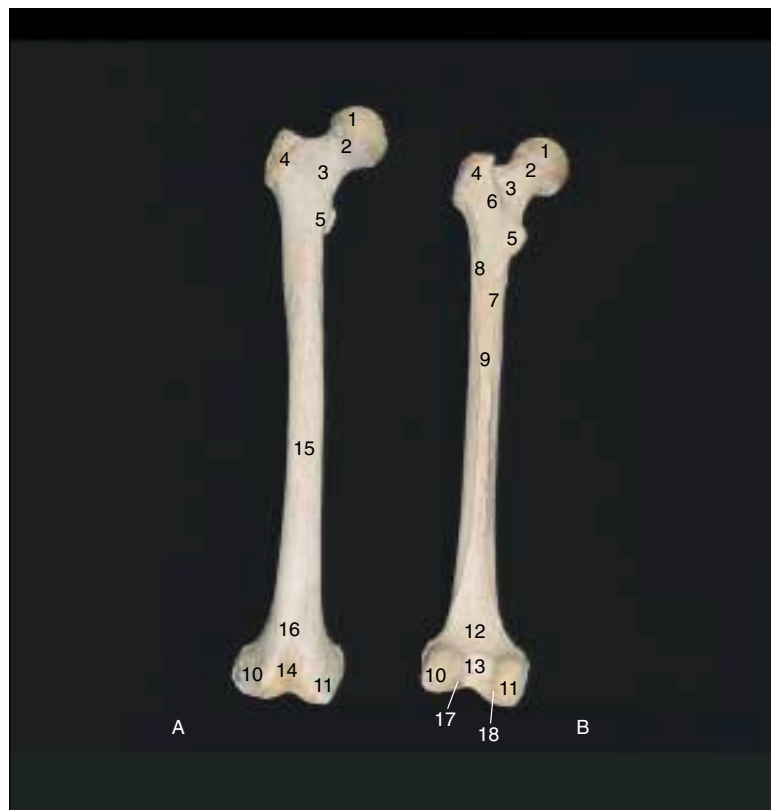




Figure 2-30

**Patellae: (A) Right Patella, Anterior Surface
(B) Left Patella, Posterior (Articular) Surface**

PROCESSES

- A. Right patella
- B. Left patella
- 1. Base
- 2. Apex (site for attachment of patellar ligament)
- 3. Facet for lateral condyle of femur
- 4. Vertical ridge
- 5. Facet for medial condyle of femur



Figure 2-31

**Tibia and Fibula: (A,B) Right Tibia and
Fibula, Anterior View
(C,D) Left Tibia and Fibula, Posterior View**

PROCESSES

- A. Right fibula
- B. Right tibia
- C. Left fibula
- D. Left tibia
- 1. Tubercles of intercondylar eminence
- 2. Tibial tuberosity
- 3. Medial condyle
- 4. Lateral condyle
- 5. Interosseous border
- 6. Soleal line
- 7. Articular facet for fibula
- 8. Site for posterior cruciate ligament
- 9. Medial malleolus
- 10. Groove for tibialis posterior
- 11. Groove for flexor hallucis longus
- 12. Lateral malleolus
- 13. Groove for peroneus brevis
- 14. Malleolar fossa
- 15. Articular facet for tibia
- 16. Apex (styloid process)

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Figure 2-32
Right Foot: Dorsal (Superior) View

BONES AND PROCESSES

TARSALS

1. Calcaneus
2. Trochlear (articular) surface of talus
3. Lateral tubercle of talus
4. Medial tubercle of talus
5. Groove for flexor hallucis longus
6. Neck of talus
7. Head of talus
8. Navicular
9. Navicular tuberosity
10. Medial cuneiform
11. Intermediate cuneiform
12. Lateral cuneiform
13. Cuboid
14. Metatarsals 1–5

PHALANGES

15. Proximal phalanx of great toe
16. Distal phalanx of great toe
17. Proximal phalanx of digits 2–5
18. Middle phalanx of digits 2–5
19. Distal phalanx of digits 2–5
20. Site for attachment of Achilles tendon

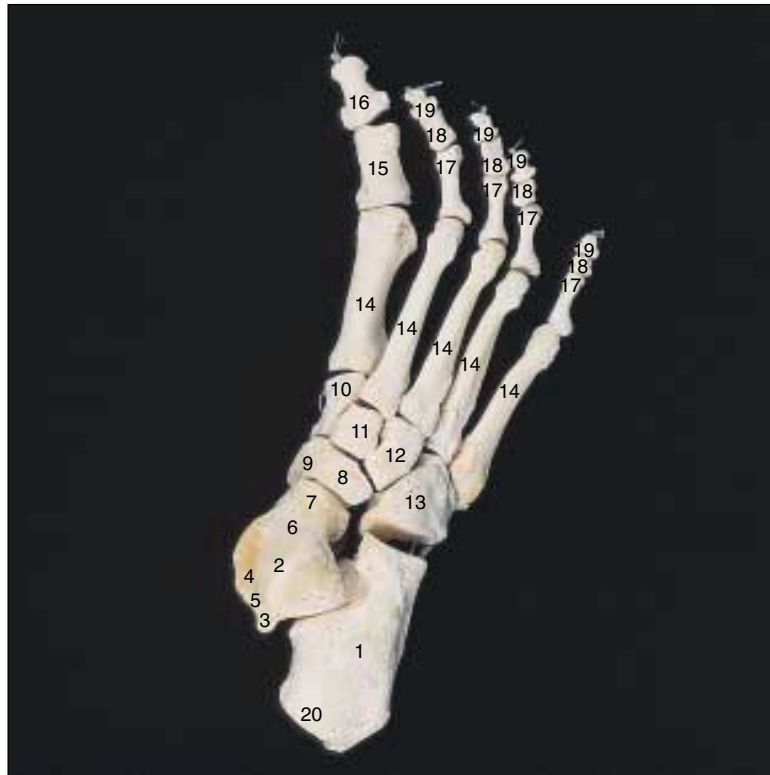


Figure 2-33
Typical Long Bone Structure

PROCESSES

1. Proximal head (epiphysis)
2. Anatomical neck (growth plate, metaphysis, epiphyseal plate)
3. Surgical neck
4. Shaft (diaphysis)
5. Compact bone
6. Cancellous (spongy) bone
7. Distal head
8. Medullary (marrow) cavity

