Mission College
Biology Department

Anatomy and Physiology
Model Key

Do Not Remove From Lab

Anatomy & Physiology Model Key Index

C: Cell

C1	Animal Cell, large
C2	Animal Cell, small
C3	Mitosis chart
C4a	Meiosis model
C4b	meiosis model
C5	muscle model
C6	muscle model
C7	muscle model

CS: Circulatory System

CS1a	Vascular tree
CS1b	circulatory system
CS2	Heart, lg, without diaphragm
CS3	Heart, large with diaphragm
CS4	Circulatory Sys Blue Chart
CS5	heart, Small
CS6	Heart sections, plastic mount
Cs7	Heart sheep, plastic mount
Cs8	Heart of America
CS9	Artery and Vein

DS: Digestive System

DS1	Tongue
DS2	Digestive sys. Blue chart
DS3	Spleen, Duodenum, pancreas
DS4	Liver
DS5	Stomach
DS6	Teeth plaque
DS7	Human digestive system
DS8	Stomach without pancreas
DS9	Micro digestive system
DS10	Liver
DS11	Pancreas w/ Spleen and part of Duodenum
DS12	Intestinal Villi
DS13	Colon : Common Pathologies
DS14	Liver (Gall Bladder, Pancreas, Duodenum

ES: Endocrine System

ES1	Endocrine system
ES2	Thyroid gland
ES3	Organs of endocrine system

S: Integumentary System (Labeled IS or S)

S1a	Skin Model
S1b	Skin Model
S2	10X Skin Model

M: Muscular System

M1	Leg, small
M2	Arm, small
M3	Head with muscles
M4	Arm, large
M5a	Leg, large
M5b	Leg, large
M6	Small muscle figure (muscle man)
M7	Arm
M8	Leg
M9	Muscle fiber

NS: Nervous System

NS1a	Small Brain
NS1b	Small Brain
NS1c	Small Brain
NS2	Neuron Model
NS3	Lumbar Vertebra (L-II)
NS4a	Large Brain
NS4b	Large Brain
NS6	5th Cervical Vertebra
NS7a	Brain ventricles
NS7b	Brain Ventricles
NS8	Long vertebral column
NS9	Spinal cord section
NS10	Hanging Vertebral Column
NS11	Cat Nervous system in solution
NS12	Brain Sections/Liquid
NS13	Sheep brain/plasitc mount
NS14	Half brain/ plastinated
NS15	Medulla oblongata
NS16	Proportions of the Dura Mater
NS17	Sympathetic
NS18	C-spine
NS19	Human Brain
NS20	Removable Neuron
NS21	Spinal Cord
NS22	Brain Ventricles

REP: Reproductive System

Blue Charts

Rep1	Female Repro. System
Rep2	male Repro. System
Rep3	Mentrual cycle
Rep4	Cell to embryo
Rep5	Four-month fetus
Rep6	Full term fetus
Rep7	Birth model

Models

Rep8	Embryo Series (13 models)
Rep9	Pregnancy series (8 models)
Rep10	Female Genitalia
Rep11	Male genitalia
Rep12	Male pelvic section
Rep13	Female pelvic section
REP 14	Uterus-Ovary Common Pathologies
REP15	Frontal C.S. of Ovary and Uterus

RS: Respiratory System

RS1	larynx Model
RS2	Respiratory Sys. Blue Chart
RS3	Lung Model
RS4	Larynx, Lungs & Heart
RS5	Inflated lung (preserved)
RS6	Lung Model with Heart, Larynx, and Diaphragm
RS7	Resp sys. With alveolus
RS8	Functional Larynx
RS9	Nasal Cavity

SK: Skeletal System

SK1a	Skull, Beauchene
Sk1b	Skull, disarticulated
Sk1c	Skull, color coded
Sk1d	Skull, with nerves
Sk1e	Skull
Sk1f	Skull
Sk1g	Skull with disease
SK1h	Skull, fetal
Sk2	Right knee ligament
SK3	Hip ligament
SK4	Elbow
SK5	Shoulder Ligament

Skeletons on Stands

SK6	Skeleton, whole, painted
SK6b	Skeleton, whole
SK6c	Skeleton, whole with muscles

Models

Sk7	Pelvis, male and female
SK8	Animal humerus
SK9	Auditory Ossicles (3)
SK10	Hang. Vertebral column with pelvis
SK 11	Vertebrae Sets (5/set)
	Human Skeleton survey
SK12	Shoulder Joint
Sk 13	Elbow Joint
SK 14	Knee Joint
SK 15	Hip Joint

SS: Special Senses

SS1	Ear Model Blue Chart
SS2	Eye model Blue Chart
SS3	Middle and Inner ear
SS4	Eye
SS5	large ear model
SS6	Eye in bony orbit
SS7	Ear Model Blue Chart
SS8	3 part ear
SS9	Giant eye
SS10	Spiral Organ of Corti

US: Urinary System

US1	Kidney Pair model
US2	Kidney model, 3 part
US3	Kidney (neph & coll duct)
US4	Urinary organs
US5	Kidney, nephron, & glomerulus

WB: Whole Body

WB1	Torso, red, with Head
WB2	Torso, pink
WB3	Head with neck and shoulder
WB4	Head, sagittal section

ANIMAL CELL: SMALL MODEL C-1

1. Nucleus
2. Nuclear membrane
3. Chromatin (chromosomes)
4. Nucleoli
5. Rough endoplasmic reticulum (rER)
6. Smooth endoplasmic reticulum (sER)
7. Polyribosomes (free ribosomes)
8. Mitochondria
9. Golgi apparatus or body
10. Centrioles
11. Cytoplasm
12. Cell membrane (plasmalemma)

ANIMAL CELL: LARGE MODEL C-2

1. Nucleus
2. Nuclear membrane
3. Chromatin (chromosomes)
4. Nucleoli
5. Rough endoplasmic reticulum (rER)
6. Smooth endoplasmic reticulum (sER)
7. Polyribosomes (free ribosomes)
8. Mitochondria
9. Golgi apparatus or body
10. Golgi vesicle
11. Contents released from Golgi vesicle
12. Centrioles
13. Lysosomes
14. Fat vacuole
15. Pinocytotic vesicle
16. Pinocytotic passage of ingested material
17. Cytoplasm
18. Cell membrane (plasmalemma)

Mitosis Model Key

Cell Division

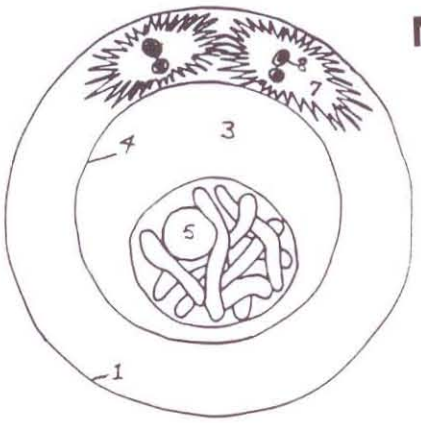
Step 1. Early prophase
2. Middle prophase
3. Late prophase
4. Metaphase
5. Early anaphase
6. Late anaphase
7. Telophase
8. Interphase

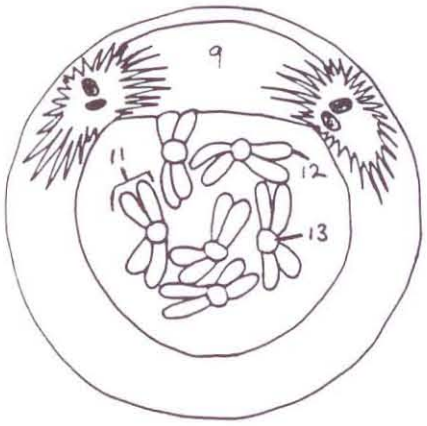
Cell Structures

1. Outer cell membrane
2. Cytoplasm
3. Nucleus
4. Nuclear membrane
5. Nucleolus
6. Centrioles (dark double structures)
7. Aster
8. Chromatin threads
9. Spindle
10. Spindle fibril
11. Chromosome
12. Chromatid
13. Centromere

MITOSIS MODEL KEY

1





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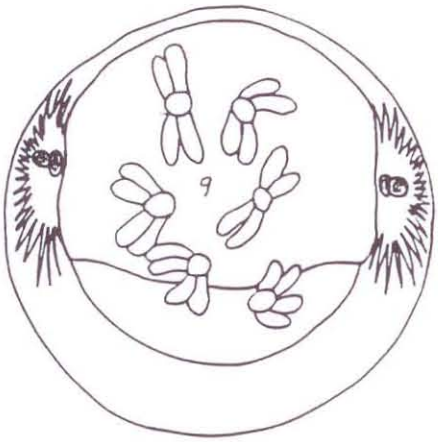

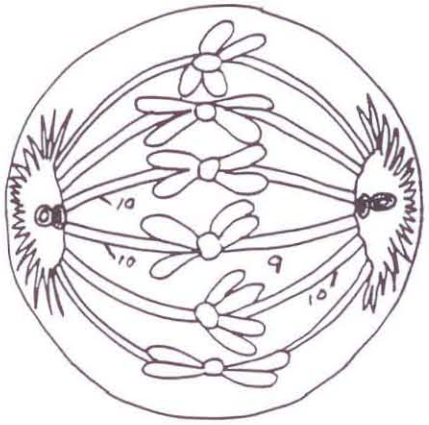

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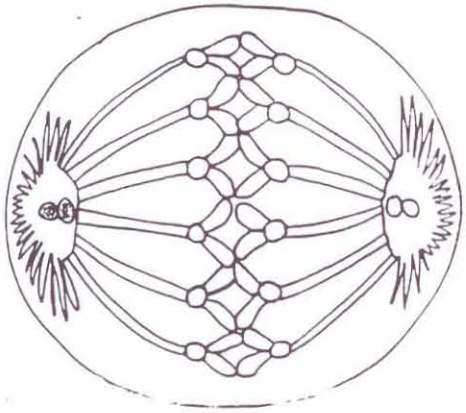

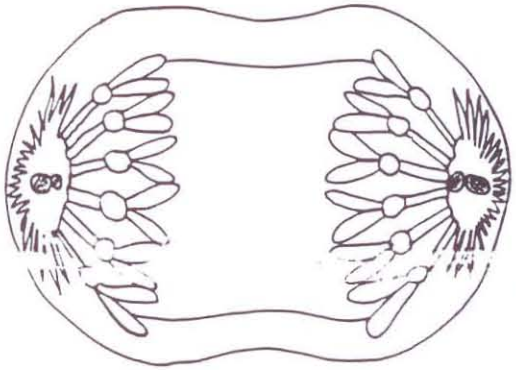

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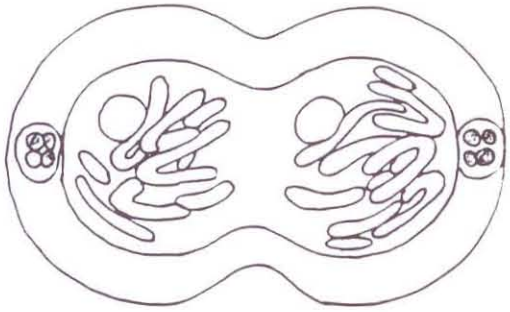

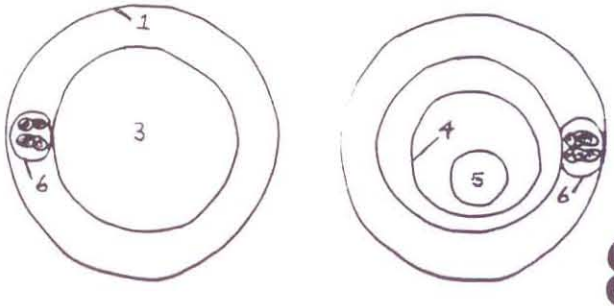

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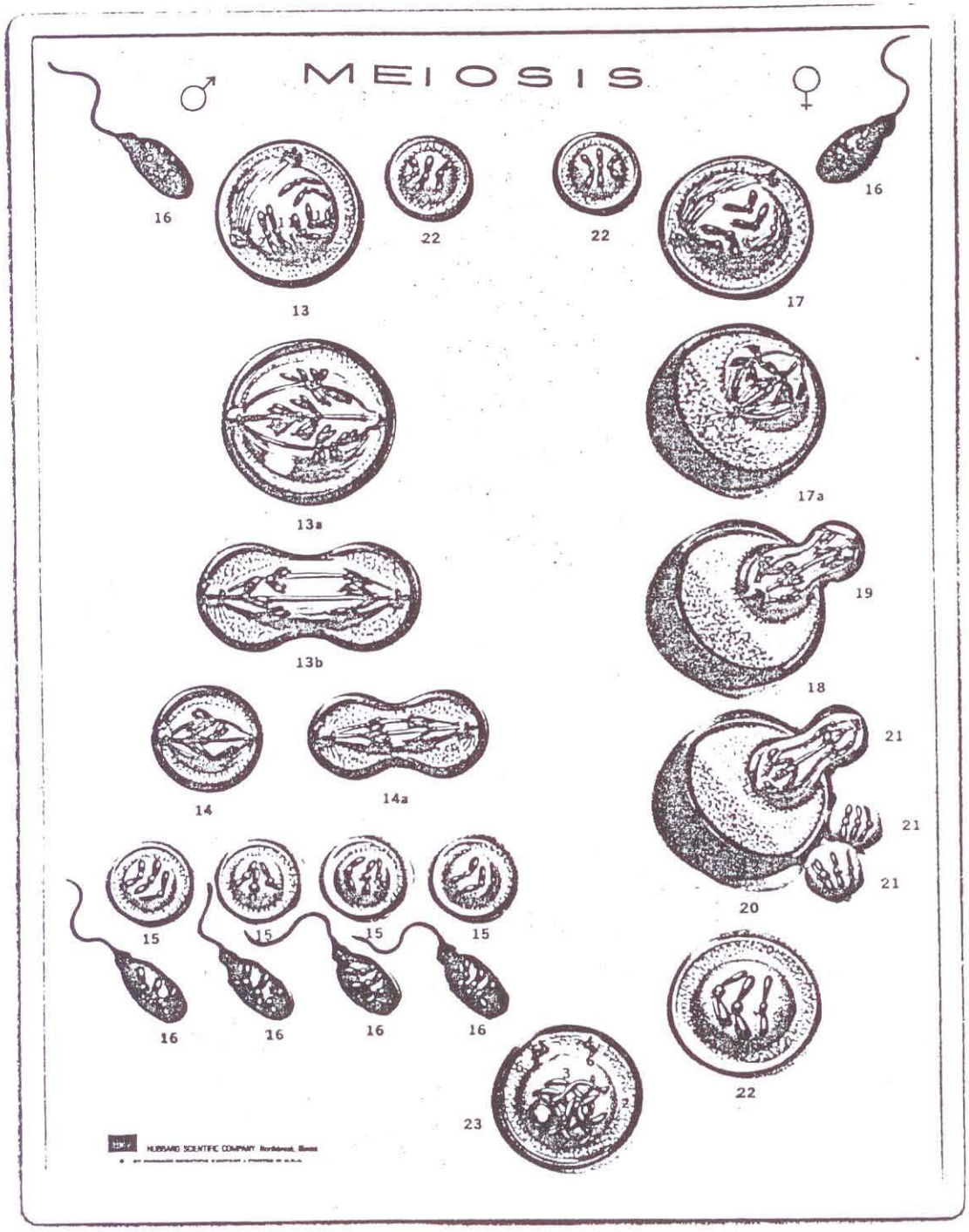
MEIOSIS MODEL

C-4

INTRODUCTION

The Hubbard *Meiosis Model* (MEI-2068) is part of a coordinated program, *Sex Education/Family Living.* The model is generalized and simplified with the structures clearly shown in the same symbolic language (color, form, detail, and sequential arrangement) as the Hubbard *Mitosis Model* (MIT-2067). The process of meiosis (my-OH-sis) is a special type of cell division occurring during the formation of *gametes,* or sex cells. After meiosis, sperm cells or ova have only half the number of chromosomes in the nucleus as do other body cells. Another name for meiosis is appropriately enough, *reduction division.* The number of homologous chromosome pairs on the *Meiosis Model* (three) is an arbitrary selection made for the purpose of keeping the arithmetic simple; for example, three chromosome pairs by reduction division become three single chromosomes in each new gamete. The model is typical of the meiosis of animal cells and is valuable in teaching the processes of human spermatogenesis and oogenesis and fertilization.



KEY

Parts and structures of cells associated with meiosis

1. Outer cell membrane
2. Cytoplasm
3. Nucleus
4. Nucleolus
5. Centrioles
6. Aster
7. Chromatin threads (in No. 23 only on the model)
8. Spindle in process of formation
9. Spindle fibril
10. Chromosome
11. Chromatid
12. Centromere

Parts and structures unique to the meiotic process

13. Primary spermatocyte
13a. Early metaphase of cell division
13b. Anaphase of cell division
14. Secondary spermatocyte
14a. Secondary spermatocyte in process of reduction division
15. Spermatids
16. Spermatozoa
17. Primary oocyte
17a. Metaphase of cell division
18. Secondary oocyte (forming)
19. First polar body (forming)
20. Ootid (forming)
21. Second polar bodies (one in process of dividing; two complete)
22. Ovum
23. Diploid cell (result of the union of sperm and ovum)

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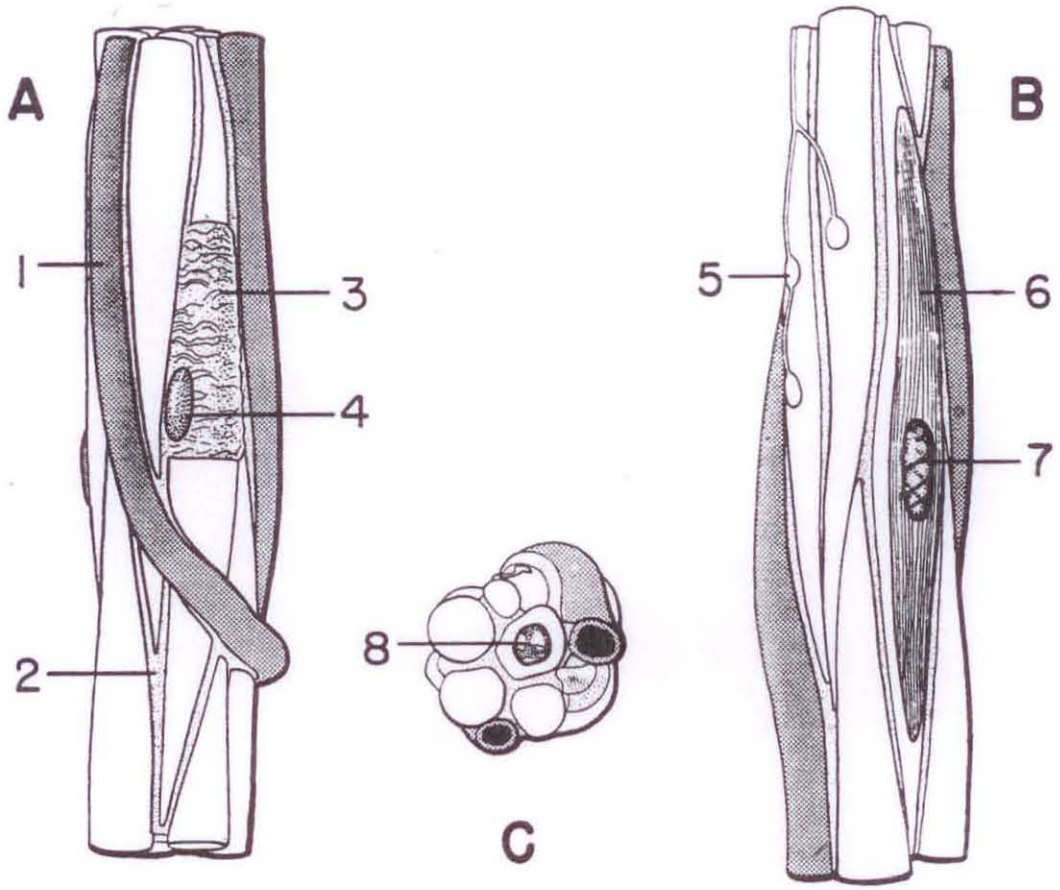
Key to Mueller-Ward Model of Smooth Muscle

(approximate magnification 2500x)

C 5



A, B. Surface views of model from opposite sides, showing spindle-shaped smooth muscle cells separated by connective tissue. For structural reasons the relative length of the cells has been somewhat reduced in the model.

C. End view, showing cells in cross section.

1. Capillary. The blood supply of smooth muscle is scanty compared to that of skeletal and cardiac muscle. The prominence of the vessels on the model is due to the selection of a location near a capillary junction to show the manner of branching. The capillaries appear larger in this than in the other two models because of the difference in magnification.
2. Connective tissue, here seen between the muscle cells. This consists of elastic and reticular fibers. Its quantity varies greatly in different organs.
3. Connective tissue, seen here partly ensheathing a cell. The connective tissue actually encloses all the muscle cells throughout their length, binding them into a tissue.
4. Nucleus of a connective tissue cell. In some layers of smooth muscle connective tissue cells are either lacking or difficult to demonstrate.
5. Motor end-plate of autonomic nerve fiber.
6. Smooth muscle cell, cut away longitudinally to show myofibrils. A sarcolemma is lacking.
7. Nucleus of a smooth muscle cell
8. The same in transverse section

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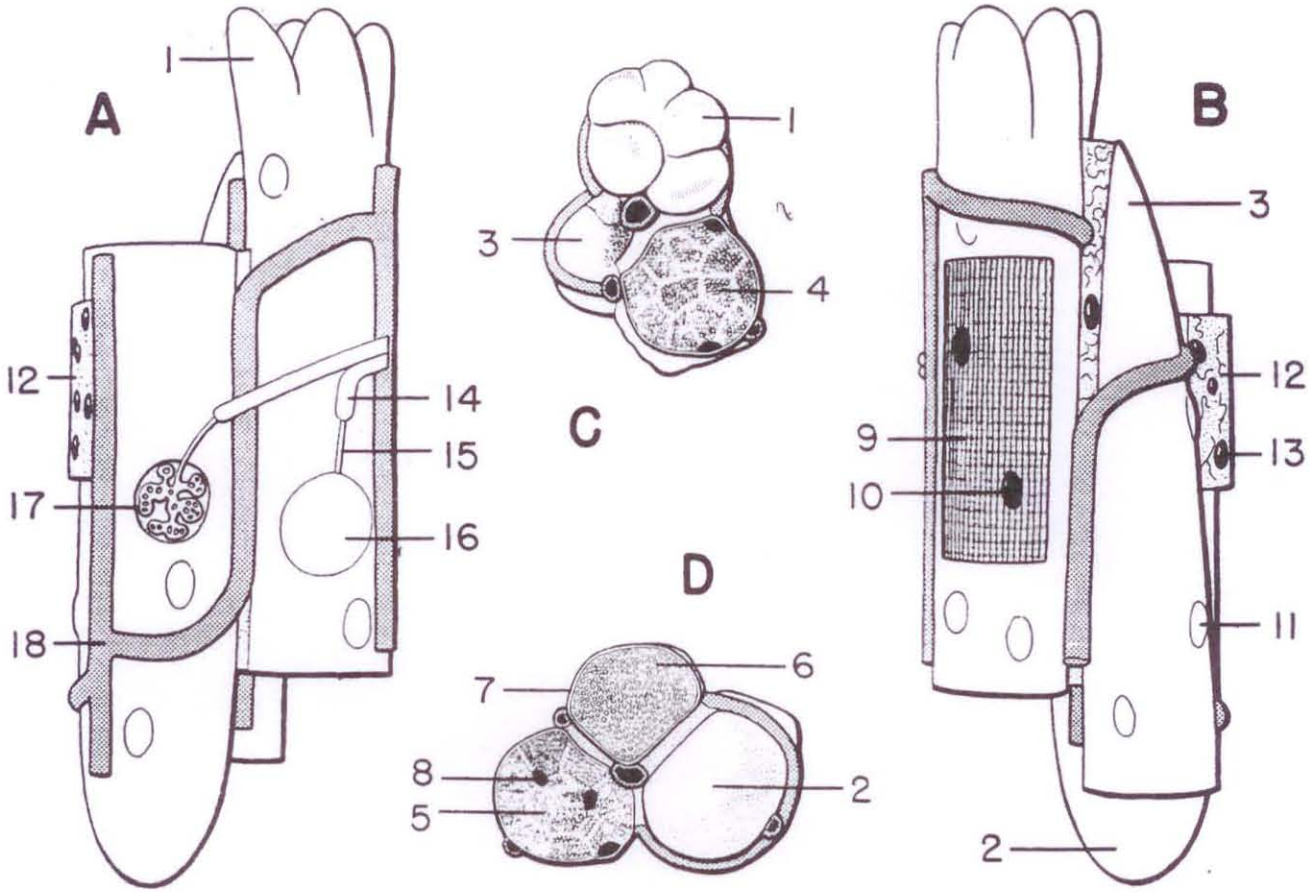
Key to Mueller-Ward Model of Skeletal Muscle—highly diagrammatic

C 6

(approximate magnification 1000x)



A, B. Model seen from opposite sides. Portions of three fibers are represented, showing different types of endings. On this scale of magnification an entire fiber would be several meters long.

C, D. Upper and lower ends of model. Cross-sections of fibers show three different arrangements of the structural elements.

1. Notched ending of the type commonly arising from periosteum
2. Rounded ending of the type usually seen in union with a tendon
3. Tapered ending, characteristic of terminations within the body of the muscle
4. Cross-section of a fiber, showing peripheral nuclei and myofibrils grouped in Cohnheim's fields
5. Cross-section of fiber with peripheral and central nuclei and myofibrils arranged in Cohnheim's fields
6. Cross-section of fiber showing myofibrils uniformly distributed throughout sarcoplasm
7. Sarcolemma
8. Central nucleus
9. Sarcolemma removed to show the myofibrils
10. Peripheral nucleus
11. Peripheral nucleus underlying sarcolemma
12. Connective tissue (endomysium). This ensheaths all fibers of the muscle and serves as a pathway for nerves and blood vessels
13. Nucleus of a connective tissue cell
14. Myelinated nerve fiber
15. Non-myelinated nerve fiber
16. Motor end-plate underlying sarcolemma (hill of Doyere)
17. Sarcolemma and sarcoplasm removed to expose motor end-plate
18. Capillary net. Skeletal muscle is highly vascular.

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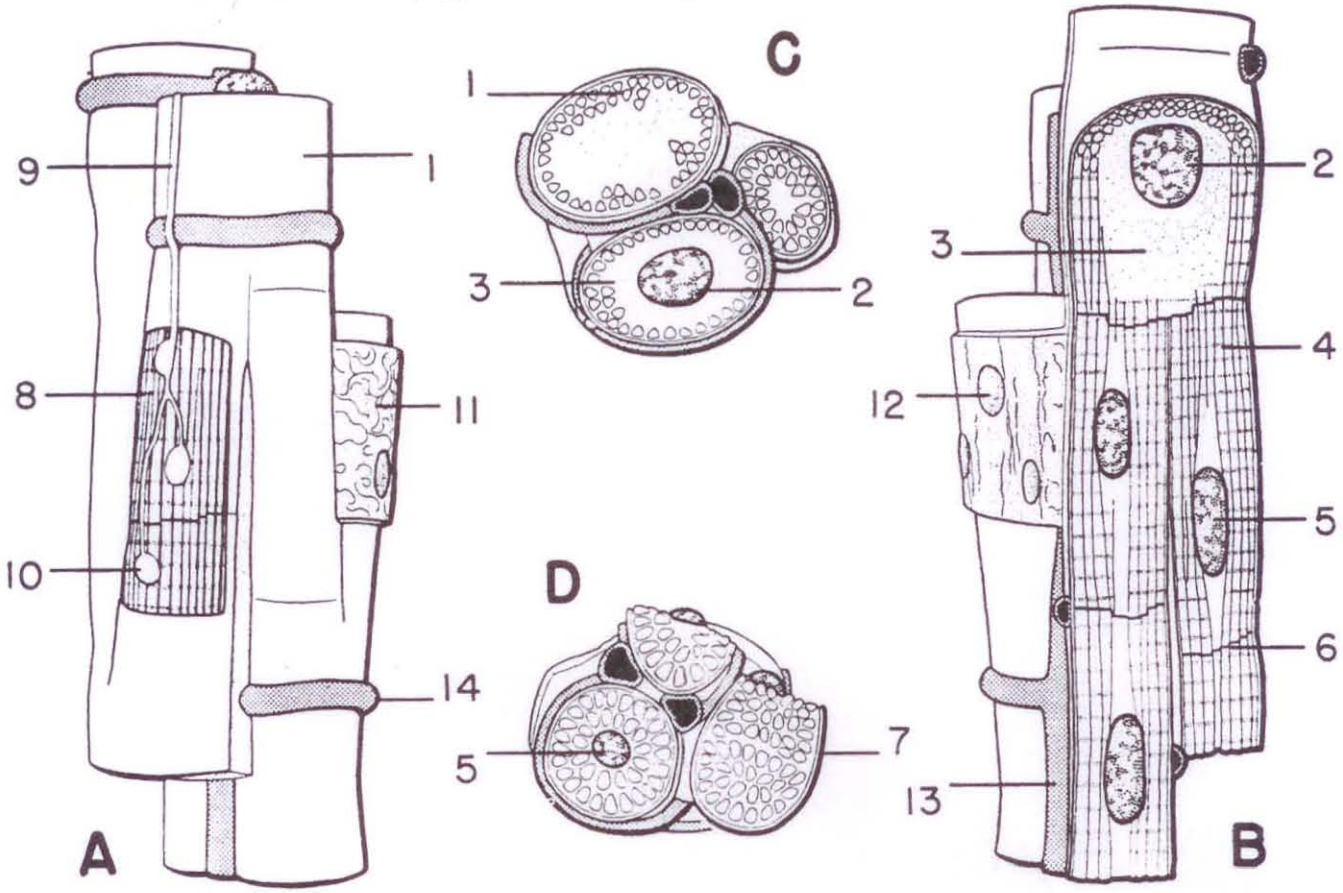
Key to Mueller-Ward Model of Cardiac Muscle C 7

(approximate magnification 1500x)



A, B. Surface views of model from opposite sides, showing syncytial arrangement of fibers. Sarcolemma partly removed in A. Purkinje cell and three heart muscle cells cut away to level of nuclei in B.

C. View of model from upper end, showing cross section of two Purkinje cells and one heart muscle cell.

D. Lower end of model, showing cross sections of three heart muscle cells, one passing through nucleus.

1. Purkinje cell, showing superficial arrangement of fibrils in B and C
2. Nucleus of Purkinje cell
3. Sarcoplasm (abundant in Purkinje cells, scant in heart muscle cells)
4. Myofibriis (evenly distributed in heart muscle ceils, peripheral in Purkinje cells)
5. Nucleus of heart muscle cell
6. Intercalated disks
7. Sarcolemma
8. Area of heart muscle cell with sarcolemma removed to show myofibrils
9. Sympathetic nerve fiber
10. Nerve ending on myofibrils
11. Connective tissue, envelops all fibers and serves as a matrix for the nerves and blood vessels.
12. Nucleus of a connective tissue cell
13. Longitudinal vessel of capillary network
14. Capillary loop

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Bone Structure Model Key

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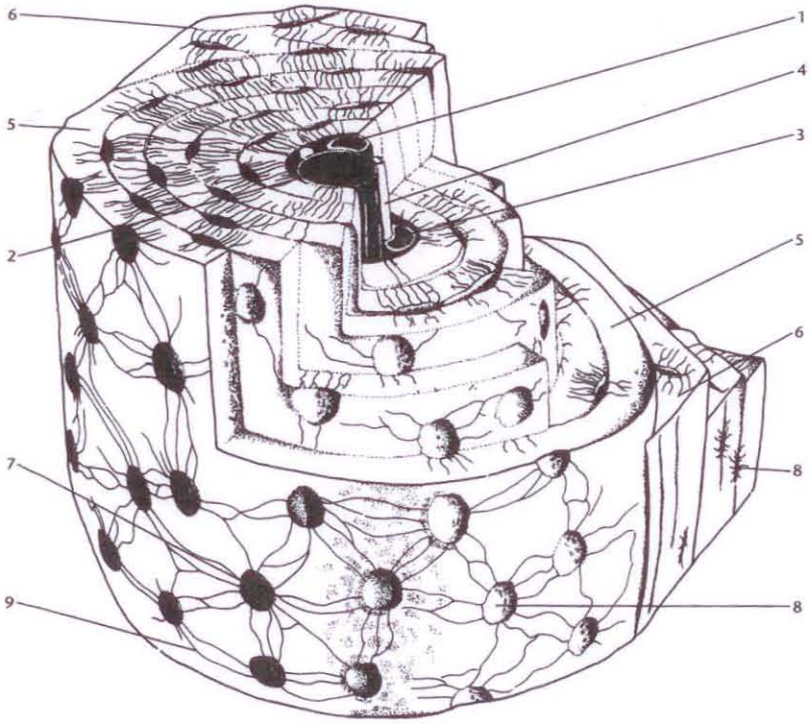

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WARD'S Natural Science
5100 West Henrietta Road
P.O. Box 92912
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2

1. Artery
2. Vein
3. Lymph vessel
4. Nerve

These structures all lie in the Haversian canal.

5. Haversian lamellae
6. Interstitial lamellae
7. Osteocytes
8. Lacunae
9. Canaliculi (through which adjacent osteocytes are joined by fine processes)

The model is a representation of a bone fragment about the size of a pinhead; it has been magnified approximately 500 times. The model displays one complete Haversian system in cross section; portions of two others and a number of inter-Haversian lamellae can easily be seen. The lamellae have been cut away in steps to reveal the structural detail more clearly.

Some inter-Haversian bone is not lamellar and has irregularly arranged lacunae. The inter-Haversian bone is also penetrated by canals, known as Volkmann canals (not shown), which are similar to but somewhat larger than the Haversian canals.

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C8

VASCULAR TREE

CS-1a

HEART

1 Right atrium
2 Right auricle
3 Right ventricle
4 Left atrium
5 Left auricle
6 Left ventricle

ARTERIES

11 Aorta
12 Pulmonary artery
13 Brachiocephalic trunk
14 Right common carotid
15 Right subclavian artery
16 Left common carotid
17 Left subclavian artery
18 Left internal carotid
19 Left external carotid
20 Left vertebral artery
21 Basilar artery
22 Left axillary artery
23 Left brachial artery
24 Left radial artery
25 Left ulnar artery
26 Intercostal arteries
27 Internal thoracic artery
28 Celiac artery
29 Superior mesenteric artery
30 Renal artery
31 Inferior mesenteric artery
32 Testicular or ovarian artery
33 Left common iliac artery
34 Left internal iliac artery
35 Left external iliac artery
36 Femoral artery
37 Anterior tibial artery
38 Posterior tibial artery
39 Peroneal artery
40 Left popliteal artery
42 Left suprarenal artery

VEINS

50 Superior vena cava
51 Inferior vena cave
52 Right cephalic vein
53 Right basilic vein
54 Right median cubital vein
55 External jugular vein
56 Internal jugular vein
57 Great saphenous vein
59 Right brachiocephalic vein
60 Right subclavian vein
61 Right axillary vein
62 Right brachial vein
63 Right radial vein
64 Right ulnar vein
71 Right renal vein
73 Right common iliac vein
74 Right external iliac vein
74b Right internal iliac vein
75 Right femoral vein
76 Right popliteal vein
77 Right anterior tibial vein
77b Right posterior tibial vein

CIRCULATORY SYSTEM

White Labels

A. Heart	**A. Cor**
1. Right Atrium	1. Atrium dcxtrum
2. Right Auricle	2. Auricula dextra
3. Right Ventricle	3. Ventriculus dexter
4. Left Atrium	4. Atrium sinistrum
5. Left Auricle	5. Auricula sinistra
6. Left Ventricle	6. Ventriculus sinister
B. Diaphragm	**B. Diaphragma**
C. Liver	**C. Hepar**
D. Gall Bladder	**D. Vesica fellea**
E. Spleen	**E. Lien**
F. Right Kidney	**F. Ren dexter**
G. Left Kidney	**G. Ren sinister**

Blue Labels

Arteries	**Arteriae**
1. Pulmonary Trunk	1. Truncus pulmonalis
2. Right Pulmonary Artery	2. A. pulmonalis dextra
3. Left Pulmonary Artery	3. A. plumonalis sinistra
4. Ligamentum Arteriosum	4. Lig. arteriosum
5. Ascending Aorta	5. Aorta ascendens
6. Arch of the Aorta	6. Arcus aortae
7. Descending Aorta	7. Aorta descendens
8. Right Coronary Artery	8. A. coronaria dextra
9. Left Coronary Artery	9. A. coronaria sinistra
10. Brachiocephalic Artery	10. Truncus brachiocepoalicus
11. Common Carotid Artery	11. A. carotis communis
12. External Carotid Artery	12. A. carotis externa
13. Superior Thyroid Artery	13. A. thyreoidea superior
14. Ascending Pharyngeal Artery	14. A. pharyngea ascendens
15. Lingual Artery	15. A. lingualis
16. Facial Artery	16. A. facialis
17. Occipital Artery	17. A. occipitalis
18. Posterior Auricular Artery	18. A. auricularis posterior
19. Superficial Temporal Artery	19. A. temporalis superficialis

20. Maxillary Artery	20. A. maxillaris
21. Inferior Alveolar (Dental) Artery	21. A. alveolaris inferior
22. Middle Meningeal Artery	22. A. meningea media
23. Posterior Superior Alveolar (Dental) Artery	23. A. alveolaris superior posterior
24. Infraorbital Artery	24. A. infraorbitalis
25. Anterior Superior Alveolar Arteries	25. Aa. alveolaris superiores anteriores
26. Internal Carotid Artery	26. A. carotis interna
27. Ophthalmic Artery	27. A. ophthalmica
28. Anterior Cerebral Artery	28. A. cerebri anterior
29. Middle Cerebral Artery	29. A. cerebri media
30. Vertebral Artery	30. A. vertebralis
31. Posterior Inferior Cerebellar Artery	31. A. cerebelli inferior posterior
32. Basilar Artery	32. A. basilaris
33. Anterior Inferior Cerebellar Artery	33. A. cerebelli inferior anterior
34. Internal Auditory Artery	34. A. labyrinthi
35. Superior Cerebellar Artery	35. A. cerebelli superior
36. Posterior Cerebral Artery	36. A. cerebri posterior
37. Subclavian Artery	37. A. subclavia
38. Internal Thoracic (Mammary) Artery	38. A. thoracica interna
39. Superior Epigastric Artery	39. A. epigastrica superior
40. Thyrocervical Trunk	40. Truncus thyreocervicalis
41. Costocervical Trunk	41. Truncus costocervicalis
42. Superior Intercostal Artery	42. A. intercostalis suprema
43. Deep Cervical Artery	43. A. cervicalis profunda
44. Transverse Cervical Artery	44. A. transversa colli
45. Axillary Artery	45. A. axillaris
46. Superior Thoracic Artery	46. A. thoracica suprema
47. Thoracoacromial Artery	47. A. thoracoacromialis
48. Lateral Thoracic Artery	48. A. thoracica lateralis
49. Subscapular Artery	49. A. subscapularis
50. Thoracodorsal Artery	50. A. thoracodorsalis
51. Scapular Circumflex Artery	51. A. circumflexa scapulae
52. Anterior Circumflex Humeral Artery	52. A. circumflexa humeri anterior
53. Posterior Circumflex Humeral Artery	53. A. circumflexa humeri posterior
54. Brachial Artery	54. A. brachialis
55. Profunda Brachii Artery	55. A. profunda brachii
56. Middle Collateral Artery	56. A. collaterals media
57. Radial Collateral Artery	57. A. collateralis radialis
58. Superior Ulnar Collateral Artery	58. A. collateralis ulnaris superior
59. Inferior Ulnar Collateral Artery	59. A. collateralis ulnaris inferior
60. Radial Artery	60. A. radialis
61. Radial Recurrent Artery	61. A. recurrens radialis

62. Superficial Palmar (Volar) Branch
63. Dorsal Metacarpal Arteries
64. Dorsal Digital Arteries
65. Deep Palmar (Volar) Arch
66. Palmar (Volar) Metacarpal Arteries
67. Ulnar Artery
68. Ulnar Recurrent Artery
69. Common Interosseous Artery
70. Posterior Interosseous Artery
71. Anterior Interosseous Artery
72. Median Artery
73. Superficial Palmar (Volar) Arch
74. Common palmar (Volar) Digital Arteries
75. Proper Palmar (Volar) Digital Arteries
76. Thoracic Aorta
77. Intercostal Arteries
78. Abdominal Aorta
79. Inferior Phrenic Artery
80. Superior Suprarenal Artery
81. Lumbar Arteries
82. Median Sacral Artery
83. Celiac Artery
84. Left Gastric Artery
85. Common Hepatic Artery
86. Right Gastric Artery
87. Hepatic Proper Artery
88. Gastroduodenal Artery
89. Right Gastroepiploic Artery
90. Lienal or Splenic Artery
91. Left Gastroepiploic Artery
92. Short Gastric Arteries
93. Superior Mesenteric Artery
94. Inferior Mesenteric Artery
95. Left Colic Artery
96. Superior Rectal Artery
97. Middle Suprarenal Artery
98. Renal Artery
99. Inferior Suprarenal Artery
100. Testicular (Ovarian) Artery
101. Common Iliac Artery
102. Internal Iliac (Hypogastric) Artery

62. Ramus palmaris (volaris) superficialis
63. Aa. metacarpeae dorsales
64. Aa. digitales dorsales
65. Arcus palmaris (volaris) profundus
66. Aa. metacarpeae palmares (Volares)
67. A. ulnaris
68. A. recurrens ulnaris
69. A. interossea communis
70. A. interossea posterior
71. A. interossea anterior
72. A. mediana
73. Arcus palmaris (volaris) superficialis
74. Aa. digitales palmares (volares) communes
75. Aa. digitales palmares (volares) propriae
76. Aorta thoracica
77. Aa. intercostales
78. Aorta abdominalis
79. A. phrenica abdominalis
80. A. suprarenalis superior
81. Aa. lumbales
82. A. sacralis mediana
83. Truncus celiacus
84. A. gastrica sinistra
85. A. hepatica communis
86. A. gastrica dextra
87. A. hepatica propria
88. A. gastroduodenalis
89. A. gastroepiploica dextra
90. A. lienalis
91. A. gastroepiploica sinistra
92. Aa. gastricae breves
93. A. mesenterica superior
94. A. mesenterica inferior
95. A. colica sinistra
96. A. rectalis superior
97. A. suprarenalis media
98. A. renalis
99. A. suprarenalis inferior
100. A. testicularis (ovarica)
101. A. iliaca communis
102. A. iliaca interna

103. Iliolumbar Artery	103. A. iliolumbalis
104. Lateral Sacral Arteries	104. Aa. sacralaes laterales
105. Obturator Artery	105. A. obturatoria
106. Superior Gluteal Artery	106. A. glutea superior
107. Inferior Gluteal Artery	107. A. glutea inferior
108. Umbilical Artery	108. A. umbilicalis
109. Artery to Ductus Deferens or Vas Deferens	109. A. ductus diferentis
110. Internal Pudendal Artery	110. A. pudenda interna
111. Posterior Scrotal Arteries	111. Aa. scrotales posteriores
112. Artery of Penis	112. A. penis
113. External Iliac Artery	113. A. iliaca externa
114. Inferior Epigastric Artery	114. A. epigastrica inferior
115. Femoral Attery	115. A. femoralis
116. Superficial Epigastric Artery	116. A. epigastrica superficialis
117. External Pudendal Arteries	117. Aa. pudendae externae
118. Deep Femoral Artery	118. A. profunda femoris
119. Medial Circumflex Femoral Artery	119. A. circumflexa femoris medialis
120. Lateral Circumflex Femoral Artery	120. A. circumflexa femoris lateralis
121. Descending Genicular Artery	121. A. genu descendens
122. Popliteal Artery	122. A. poplitea
123. Lateral Superior Genicular Artery	123. A. genu superior lateralis
124. Medial Superior Genicular Artery	124. A. genu superior medialis
125. Lateral Inferior Genicular Artery	125. A. genu inferior lateralis
126. Medial Inferior Genicular Artery	126. A. genu inferior medialis
127. Anterior Tibial Artery	127. A. tibialis anterior
128. Posterior Tibial Recurrent Artery	128. A. recurrens tibialis posterior
129. Anterior Tibial Recurrent Artery	129. A. recurrens tibialis anterior
130. Anterior Lateral or External Malleolar Artery	130. A. malleolaris anterior lateralis
131. Anterior Medial or Internal Malleolar Artery	131. A. malleolaris anterior medialis
132. Dorsal Artery of Foot	132. A. dorsalis pedis
133. Arcuate Artery	133. A. arcuata
134. Dorsal Metatarsal Arteries	134. Aa. metatarseae dorsales
135. Dorsal Digital Arteries	135. Aa. digitales dorsales
136. Posterior Tibial Artery	136. A. tibialis posterior
137. Peroneal Artery	137. A. peronea
138. Communicating Branch	138. Ramus communicans
139. Lateral Posterior Malleolar Artery	139. A. malleolaris lateralis posterior
140. Lateral Calcaneal Branches	140. Rami calcaneares laterales
141. Posterior Medial Malleolar Artery	141. A. malleolaris medialis posterior
142. Medial Calcaneal Branches	142. Rami calcaneares mediales
143. Medial Plantar Artery	143. A. plantaris medialis

144. Lateral Plantar Artery
145. Plantar Metatarsal Arteries
146. Plantar Arch
147. Plantar Digital Branches

144. A. plantaris lateralis
145. Aa. metatalseae plantares
146. Arcus plantaris
147. Aa. digitales plantares

Pink Labels

Veins

1. Right Pulmonary Veins
2. Left Pulmonary Veins
3. Coronary Sinus
4. Great Cardiac Vein
5. Inferior Vein of Left Ventricle
6. Middle Cardiac Vein
7. Superior Vena Cava
8. Right and Left Brachiocephalic Veins
9. Inferior Thyroid Vein
10. Vertebral Vein
11. Internal Thoracic (Mammary) Vein
12. Superior Intercostal Vein
13. Internal Jugular Vein
14. Superior Thyroid Vein
15. Lingual Vein
16. Facial Vein
17. Anterior Facial Vein
18. Angular Vein
19. Posterior Facial Vein
20. Superficial Temporal Veins
21. External Jugular Vein
22. Occipital Vein
23. Subclavian Vein
24. Axillary Vein
25. Long Thoracic Vein
26. Costoaxillary Veins
27. Brachial Veins
28. Radial Veins
29. Ulnar Veins
30. Cephalic Vein
31. Basilic Vein
32. Median Antebrachial Vein
33. Median Basilic Vein
34. Median Cephalic Vein
35. Deep Communicating Vein
36. Dorsal Venous Network of Hand
37. Dorsal Metacarpal Veins
38. Dorsal Digital Veins
39. Azygos Vein

Venae

1. Vv. pulmonales dextrae
2. Vv. pulmonales sinistrae
3. Sinus coronarius
4. V. Cordis magna
5. V. posterior ventriculi sinistri
6. V. cordis media
7. Vena cava superior
8. Vv. brachiocephalica dextra et sinistra
9. V. thyroidea inferior
10. V. vertebralis
11. V. thoracica interna
12. V. intercostalis suprema
13. V. jugularis interna
14. V. thyroidea superior
15. V. lingualis
16. V. facialis
17. V. facialis anterior
18. V. angularis
19. V. retromandibularis
20. Vv. temporales superficiales
21. V. jugularis externa
22. V. occipitalis
23. V. subclavia
24. V. axillaris
25. V. thoracaica lateralis
26. Vv. costoaxillares
27. Vv. brachiales
28. Vv. radiales
29. Vv. ulnares
30. V. cephalica
31. V. basilica
32. V. medina antebrachii
33. V. mediana basilica
34. V. mediana cephalica
35. V. mediana profunda
36. Rete venosum dorsale manus
37. Vv. metacarpeae dorsales
38. Vv. digitales dorsales
39. V. azygos (thoracica longitudinalis dextra)

40. Hemiazygos Vein	40. V. hemiazygos (thoracica longitudinalis sinistra)
41. Accessory Hemiazygos Vein	41. V. hemiazygos accessoria (thoracica longitudinalis sinistra accessoria)
42. Ascending Lumbar Vein	42. V. lumbalis ascendens
43. Inferior Vena Cava	43. Vena cava inferior
44. Lumbar Veins	44. Vv. lumbales
45. Hepatic Veins	45. Vv. hepaticae
46. Renal Veins	46. Vv. renales
47. Testicular (Ovarian) Vein	47. V. testicularis (ovaris)
48. Portal Vein	48. V. portae
49. Right and Left Gastric Vein	49. V. gastrica dextra et sinistra (coronaria ventriculi)
50. Superior Mesenteric Vein	50. V. mesenterica superior
51. Right Gastroepiploic Vein	51. V. gastroepiploica dextra
52. Inferior Mesenteric Vein	52. V. mesenterica inferior
53. Left Colic Vein	53. V. colica sinistra
54. Superior Rectal Vein	54. V. rectalis superior
55. Splenic Vein	55. V. lienalis
56. Short Gastric Veins	56. Vv. gastricae breves
57. Left Gastroepiploic Vein	57. V. gastroepiploica sinistra
58. Common Iliac Vein	58. V. iliaca communis
59. Internal Iliac Vein	59. V. iliaca interna
60. Superior Gluteal Veins	60. Vv. gluteae supriores
61. Inferior Gluteal (Sciatic) Veins	61. Vv. gluteae inferiores
62. Obturator Veins	62. Vv. obturatoriae
63. Lateral Sacral Veins	63. Vv. sacrales laterales
64. Iliolumbar Vein	64. V. iliolumbalis
65. Dorsal Vein of Penis	65. V. dorsalis penis
66. Posterior Scrotal Veins	66. Vv. scrotales prosteriores
67. External Iliac Vein	67. V. iliaca externa
68. Inferior Epigastric Vein	68. V. epigastrica inferior
69. Superficial Epigastric Vein	69. V. epigastrica superficialis
70. Great Saphenous Vein	70. V. saphena magna
71. Medial Circumflex Femoral Veins	71. Vv. circumflexae femoris mediales
72. Lateral Circumflex Femoral Veins	72. Vv. circumflexae femoris laterales
73. Profunda femoris Vein	73. V. profunda femoris
74. Small Saphenous Vein	74. V. saphena parva
75. Femoropopliteal Vein	75. V. femoropoplitea
76. Peroneal Veins	76. Vv. peroneae
77. Popliteal Vein	77. V. poplitea
78. Posterior Tibial Veins	78. Vv. tibiales posteriores
79. Anterior Tibial Veins	79. Vv. tibiales anteriores
80. Dorsal Digital Veins	80. Vv. digitales dorsales pedis
81. Dorsal Venous Network of Foot (Planter Cutaneous Venous Network)	81. Rete venosum dorsale pedis

HEART MODEL, LARGE, WITHOUT DIAPHRAGM CS-2

Know these structures:

1. Aorta
2. Brachiocephalic (innominate) artery
3. Left common carotid artery
4. Left subclavian artery
8. Ligamentum arteriosus
9. Left pulmonary artery
10. Left bronchus
13. Intercostal arteries
16. Esophagus
19. Trachea
20. Right main bronchus
21. Right pulmonary artery
23. Right ventricle
24. Left ventricle
25. Left atrium
26. Right atrium
27. Right auricle
29. Left auricle
30. Apex
31. Pulmonary artery
32. Aorta
33. Pericardium
34. Superior vena cava
35. Right coronary artery
37. Left coronary artery
43. Coronary sinus
46. Inferior vena cava
48. Left pulmonary veins
49. Right pulmonary veins
52. Anterior interventricular sulcus

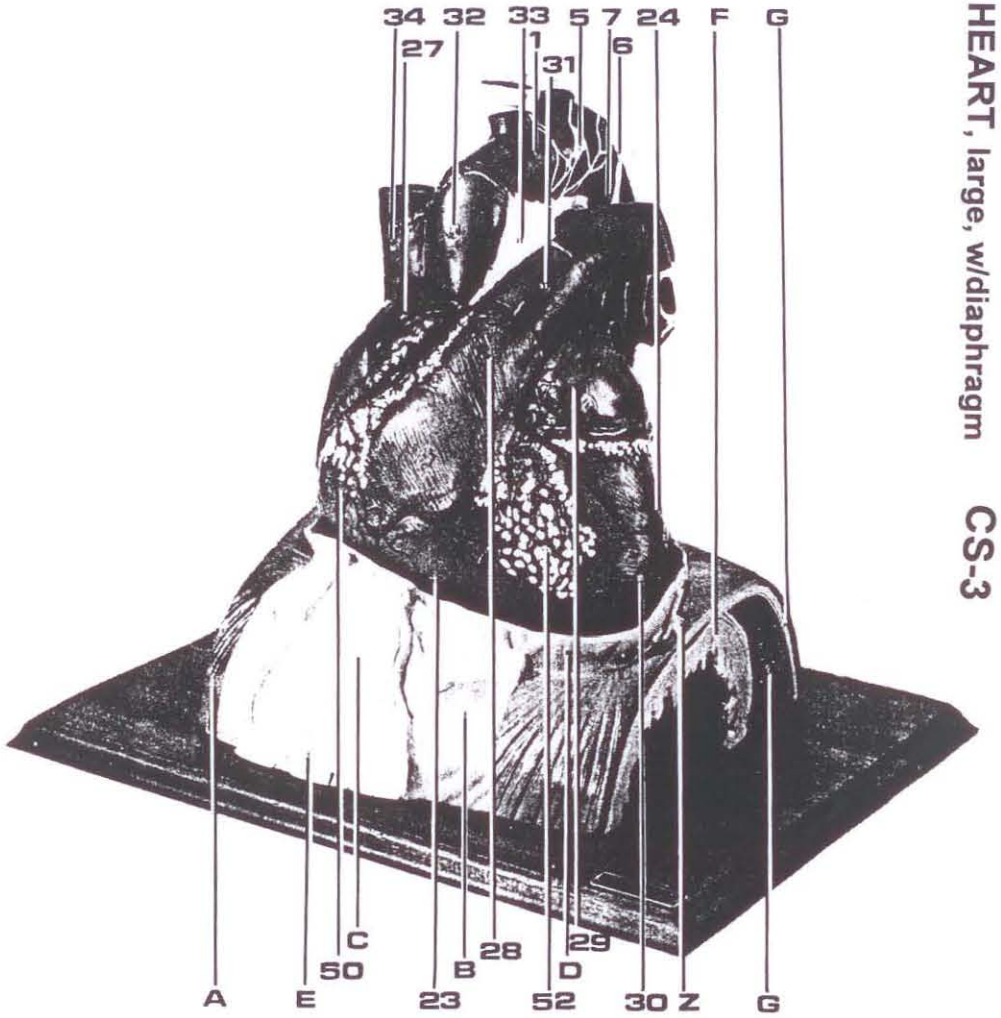
CS-3 Human Heart, Mediastinum, and Diaphragm. Five times life size. This is a highly detailed model which shows the external anatomy of the heart and many of the related structures found in the thoracic and abdominal cavities. The great vessels of the heart are accurately demonstrated as are the major veins and arteries of the pulmonary and coronary circulation. Some elements of the mediastinum are molded separately so that the intricate detail of the region may be accurately demonstrated. The diaphragm and parts of the contiguous visceral organs such as liver, stomach, and spleen are shown. The heart measures 12" from its apex to the aortic arch and stands about 10" high in its normal position. The model stands 14" high when assembled, and is mounted on a 15" x 18" mahogany finish base.

MODEL KEY

A Diaphragm
B Diaphragmatic pleura
C Mediastinal adipose tissue
D Parietal pericardium
E Sternum and costal cartilage
F Stomach
G Spleen
H Visceral and parietal peritoneum
I Liver
J Portal vein
K Hepatic artery
L Hepatic duct
M Esophagus
N Thoracic aorta
O Azygos vein
P Thoracic duct
Q Intercostal artery and vein
R Prevertebral adipose tissue
S Eighth thoracic vertebra
T Intervertebral disc
U Hemiazygos vein
V Posterior mediastinal lymph nodes
W Esophageal artery
X Right vagus nerve
Y Left vagus nerve
Z Phrenic nerve, artery, and vein

1 Aorta
2 Brachiocephalic (innominate) artery
3 Left common carotid artery
4 Left subclavian artery
5 Superficial cardiac plexus with entering cardiac nerves and ganglion
6 Left vagus nerve
7 Recurrent laryngeal nerve
8 Ligamentum arteriosus
9 Right pulmonary artery
10 Left bronchus
11 Left bronchial artery
12 Pulmonary nerve plexus
13 Intercostal arteries
14 Thoracic duct
15 Azygos vein
16 Esophagus
17 Right vagus nerve
18 Right bronchial artery
19 Trachea
20 Right main bronchus
21 Right pulmonary artery
22 Tracheobronchial lymph nodes
23 Right ventricle
24 Left ventricle
25 Left atrium
26 Right atrium
27 Right auricle
28 Conus arteriosus
29 Left auricle
30 Apex
31 Pulmonary artery
32 Aorta
33 Pericardium
34 Superior vena cava
35 Right coronary artery
36 Anterior cardiac veins
37 Left coronary artery
38 Anterior interventricular artery
39 Circumflex artery
40 Great cardiac vein
41 Marginal branch of left coronary artery
42 Oblique vein of left atrium
43 Coronary sinus
44 Dorsal interventricular vein
45 Left dorsal ventricular vein
46 Inferior vena cava
47 Azygos vein
48 Left pulmonary veins
49 Right pulmonary veins
50 Marginal branch of right coronary artery

51 Coronary sulcus
52 Anterior interventricular sulcus
53 Crista terminalis
54 Sinoatrial node
55 Atrioventricular node
56 Opening of coronary sinus
57 Limbus fossa ovalis
58 Fossa ovalis
59 Valvula venae cavae
60 Musculus pectinatus
61 Tricuspid valve, anterior cusp
62 Tricuspid valve, medial cusp
63 Tricuspid valve, posterior cusp
64 Crista supraventricularis
65 Tricuspid valve, anterior cusp
66 Tricuspid valve, posterior cusp
67 Tricuspid valve, medial cusp
68 Anterior papillary muscle
69 Posterior papillary muscle
70 Septal papillary muscle
71 Trabeculae carneae
72 Right branch of bundle of His
73 Moderator band
74 Pulmonary conus
75 Pulmonary semilunar valve, posterior cusp
76 Pulmonary semilunar valve, right anterior cusp
77 Pulmonary semilunar valve, left anterior cusp
78 Foramen ovale, left atrial side
79 Opening of pulmonary vein
80 Bicuspid valve, anterior cusp
81 Bicuspid valve, posterior cusp
82 Anterior papillary muscle
83 Chordae tendineae
84 Posterior papillary muscle
85 Trabeculae carneae
86 Aortic semilunar valve, right anterior cusp
87 Aortic semilunar valve, left anterior cusp
88 Aortic semilunar valve, posterior cusp

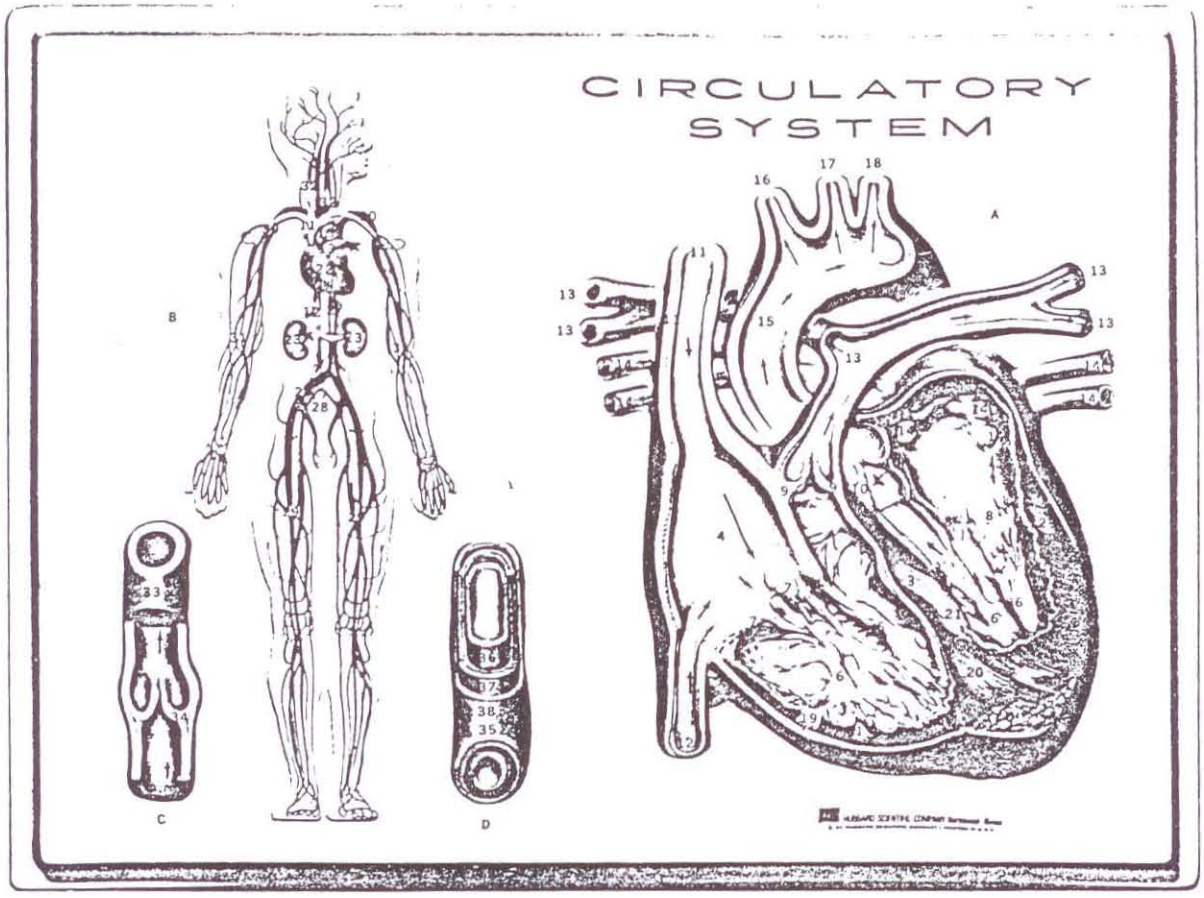


HEART, large, w/diaphragm CS-3

CIRCULATORY SYSTEM MODEL CS-4

INTRODUCTION

The Hubbard Circulatory System Model is one of a series of models that make up a coordinated program in *Biology/Life Science*. The model features a cutaway view of the interior structures of the heart. The circulatory system is shown upon a silhouette figure. To the left of that figure is a length of vein and a valve. An artery is shown on the right, depicting structural layers of the wall.



KEY

The major parts of the circulatory system

A. The heart
B. The human circulatory system (cardio-vascular-renal system)
C. A typical vein
D. A typical artery

Principal structures of the heart

1. Muscle wall of right ventricle
2. Muscle wall of left ventricle
3. Intraventricular septum
4. Right atrium
5. Left atrial wall
6. Papillary muscles
7. Tricuspid valve of right ventricle
8. Bicuspid valve of left ventricle
9. Pulmonary semilunar valve
10. Aortic semilunar valve
11. Superior vena cava (to heart from head and arms)
12. Inferior vena cava (to heart from body and legs)
13. Pulmonary artery (to the lungs)
14. Pulmonary veins (to left atrium)
15. Aorta
16. Inominate artery (to head and right arm)
17. Left common carotid artery (to the head)
18. Subclavian artery (to the left arm)
19. Epicardium (outside covering tissue)
20. Myocardium (muscle layers of the heart)
21. Endocardium (membrane lining of heart chamber)

Principal structures of circulatory system

22. Heart
23. Kidneys
27. Abdominal aorta (red)
28. Femoral arteries (red), veins (blue)
29. Arteries (red) to legs and veins (blue) from legs
30. Subclavian arteries (red) and veins (blue)
31. Arteries (red) to arms and veins (blue) from arms
32. Arteries (red) to head and veins (blue) from head
33. Wall of vein
34. Valve in vein (allowing blood flow in only one direction)
35. Typical artery (3-layer structure)
36. Tunica interna (internal lining tissues of artery)
37. Tunica media (middle muscle layer of artery)
38. Tunica externa (outer covering of connective tissue)

The Human Heart *(Cor)*

The thymus gland is removable. The heart is divisible in three sections to demonstrate the corona cordis and the heart basis. The pericardial relationships can be demonstrated on the several lines of intersection, the relationship of the plane of the heart valves with cuspid and semilunar valves and the course of the coronary vessels is shown. Both ventricles contain small doors which allow a view into the interior.

The versatile, detachable combination model of the human heart in its normal size and natural position on the diaphragm which is mounted on a pedestal, is of special interest to the radiologist and cardiologist for obtaining a rapid spatial orientation over the position of the individual heart sections, the valvular mechanisms of the vessels, and the different radiological positions.

A. *Sulcus coronarius,* **Auriculo-ventricular groove**
B. *Sulcus interventricularis anterior,* **Anterior longitudinal groove**
C. *Sulcus interventricularis posterior,* **Posterior longitudinal groove**
I. *Atrium dextrum,* **Right atrium**
1. *Fossa ovalis interatriale,* **Oval depression in the atrial septum**
2. *Septum atriorum,* **Atrial septum**
3. *Valvula venae cavae caudalis* (Eustachii), **Valve of the inferior vena cava**
4. *Ostium venosum ventriculi dextri,* **Right atrioventricular orifice** (Tricuspid orifice)
5. *Vena cava superior,* **Superior vena cava**
6. *Vena cava inferior,* **Inferior vena cava**
7. *Valvula sinus coronarii* (Thebesii), **Valve of the coronary sinus**

II. *Ventriculus dexter,* **Right ventricle**
8. *Valvula tricuspidalis,* **Tricuspid valve**
9. *Mm. papillares,* **Papillary muscles**
10. *Valvula arteriae pulmonalis,* **Pulmonary semilunar valves**
11. *Arteria pulmonalis,* **Pulmonary artery**
12. *Septum ventriculorum,* **Ventricular septum**

III. *Atrium sinistrum,* **Left atrium**
13. *Venae pulmonales,* **Pulmonary veins**
14. *Ostium venosum ventriculi sinistri,* **Left atrioventricular orifice** (Mitral orifice)

IV. *Ventriculus sinister,* **Left ventricle**
15. *Valvula mitralis,* **Bicuspid or mitral valve**
16. *Valvula aortae,* **Aortic semilunar valves**
17. *Aorta*
18. *Arteria coronaria dextra,* **Right coronary artery**
19. *Arteria coronaria sinistra,* **Left coronary artery**
20. *Vena cordis magna,* **Great cardiac vein**
21. *Vv. cordis ventrales,* **Anterior cardiac veins**
22. *Vena interventricularis dorsalis cordis,* **Middle cardiac vein**
23. *Truncus brachiocephalicus,* **Brachiocephalic trunk**
24. *A. carotis communis sinistra,* **Left common carotid artery**
25. *Vena azygos,* **Unpaired vein**
26. *Lig. Botalli,* **Ligamentum arteriosum**
27. *Auricula dextra,* **Right auricular appendix**
28. *Auricula sinistra,* **Left auricular appendix**
29. *Transverse sinus*
30. **Fibrous rings of the atrioventricular and arterial orifice**
31. *Pericard,* **Pericardium**
32. *Pleura*

Nerves:
33. *N. recurrens,* **Recurrent nerve,** not for HS 1/1

Glands:
34. **Thymus,** not for HS 1/1
35. **Trachea,** not for HS 22
36. **Esophagus,** not for HS 22

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Human Heart Sections

CS-6

1. Aortic valve
2. Left ventricle
3. Right ventricle
4. Brachiocephelic artery
5. Left common carotid artery
6. Left subclavian
7. Aortic arch
8. Pulmonary artery
9. Left atrium
10. Biscuspid valve
11. Chordae tendinae
12. Papillary muscle
13. Myocardium
14. Interventricular septum
15. Tricuspid valve
16. Right atrium
17. Aorta

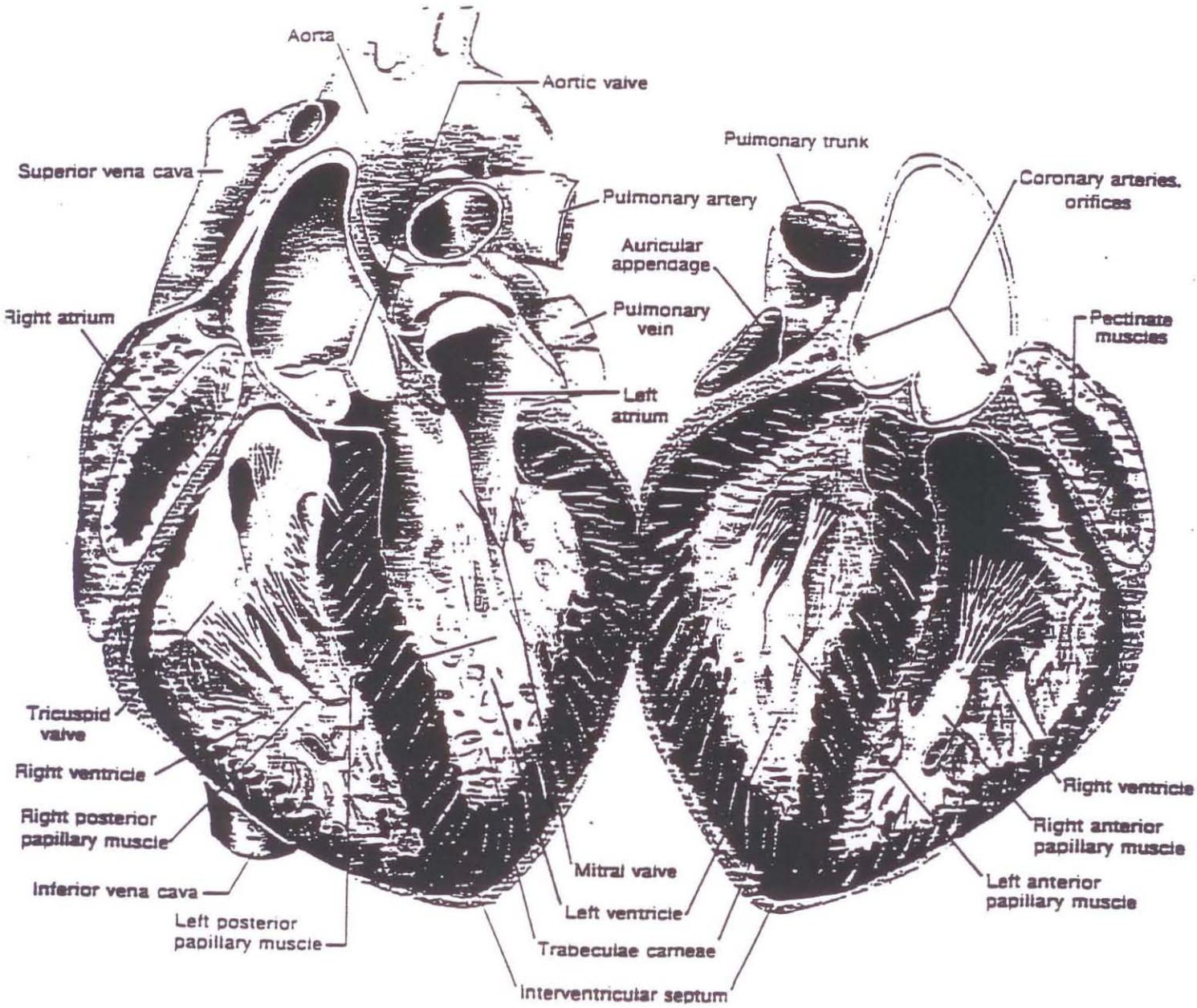

Illustration by Sandra H. Shomaker

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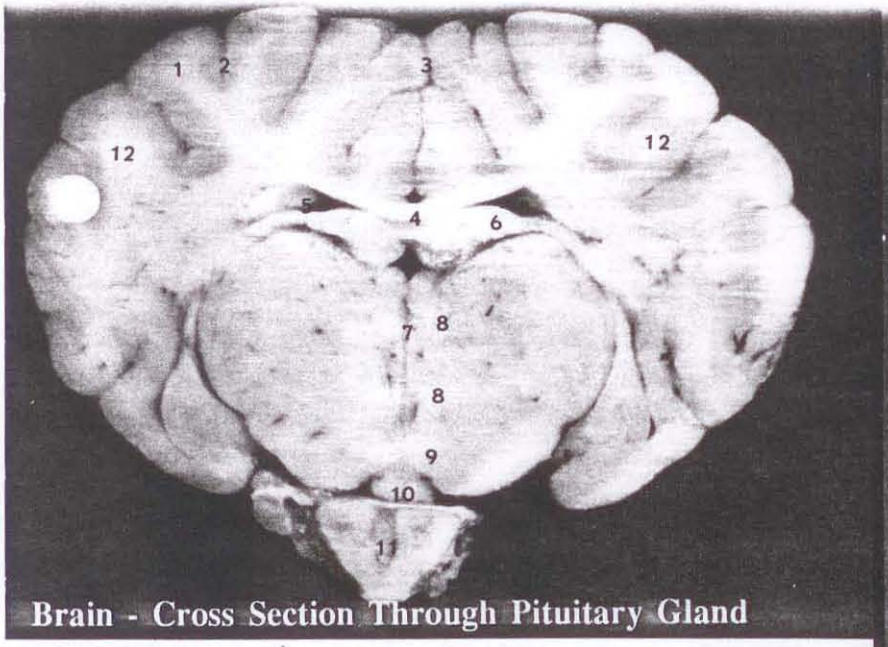
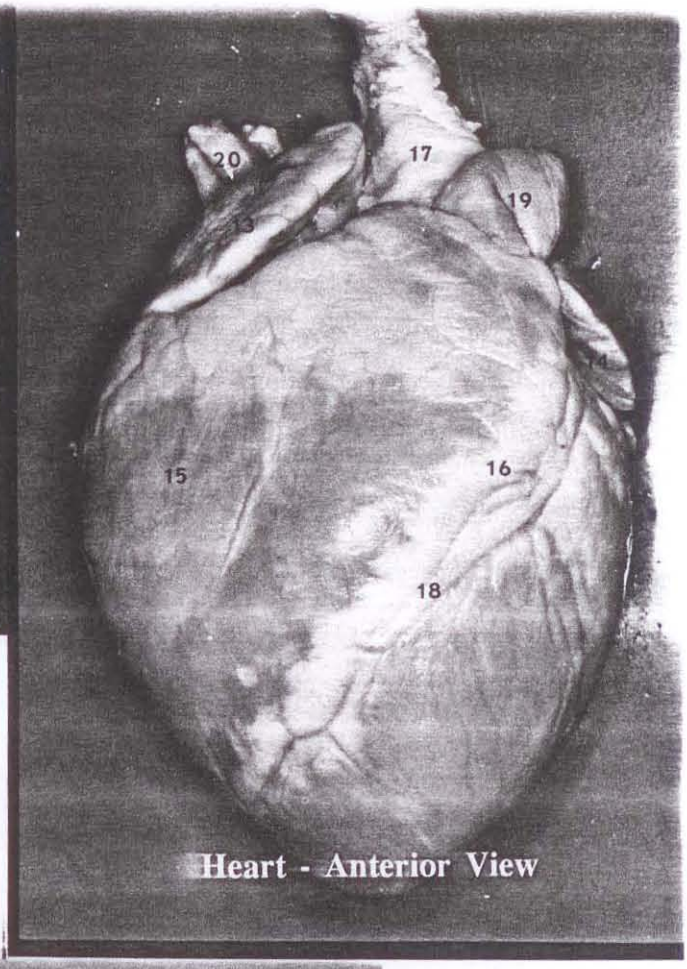


Brain - Cross Section Through Pituitary Gland



Heart - Anterior View

The Concise

Sheep Brain/Heart Pig

CS-7

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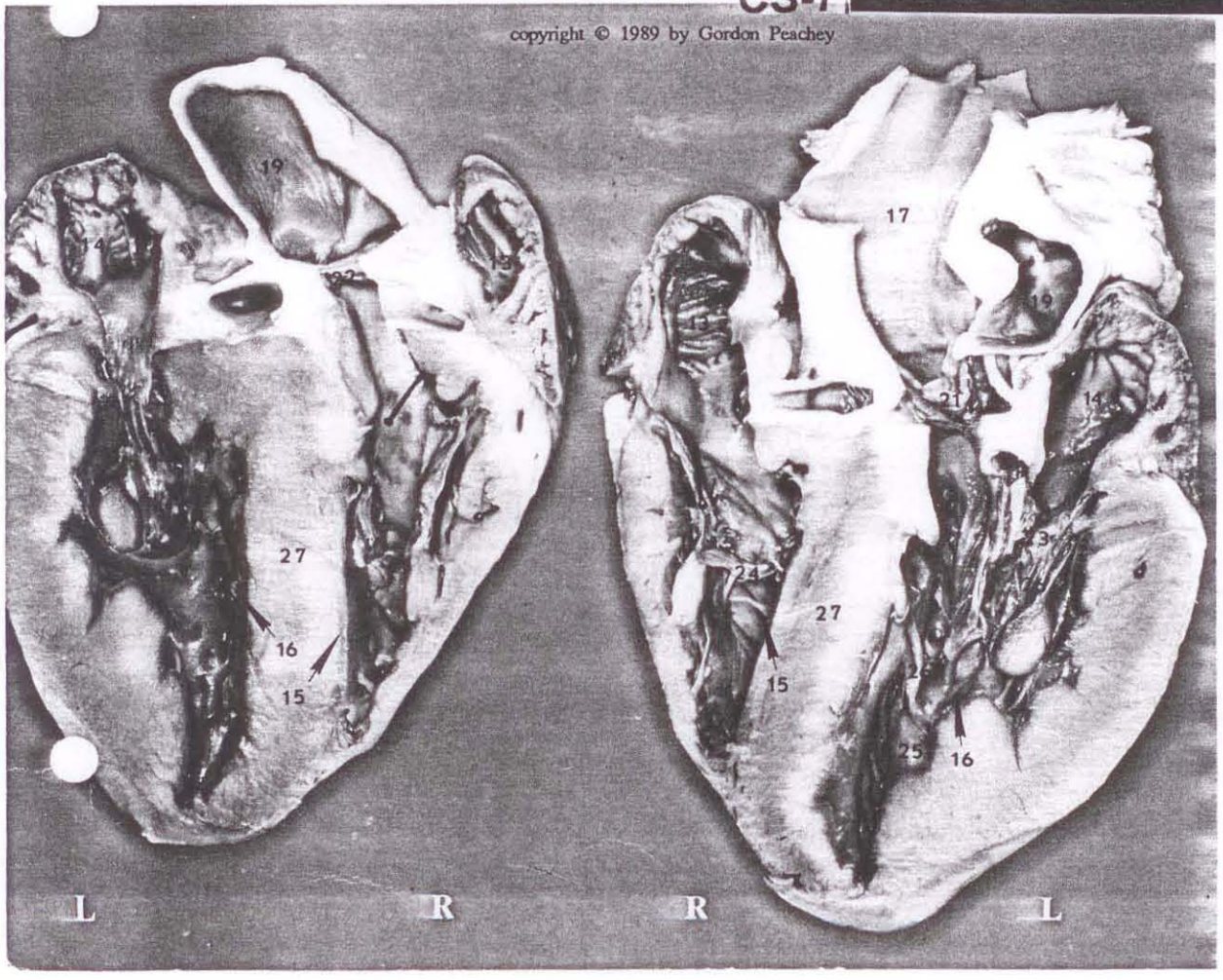


BRAIN

1. gyrus
2. sulcus
3. longitudinal fissure
4. corpus callosum
5. lateral ventricle
6. hippocampus
7. third ventricle
8. thalamus
9. hypothalamus
10. mamillary body
11. pituitary gland
12. cerebrum

HEART

13. right atrium
14. left atrium
15. right ventricle
16. left ventricle
17. aorta
18. left coronary artery
19. pulmonary artery
20. superior vena cava
21. aortic semilunar valve
22. pulmonary semi-lunar valve
23. bicuspid (mitral) valve
24. tricuspid valve
25. papillary muscle
26. chordae tendineae
27. interventricular septum

Heart of America

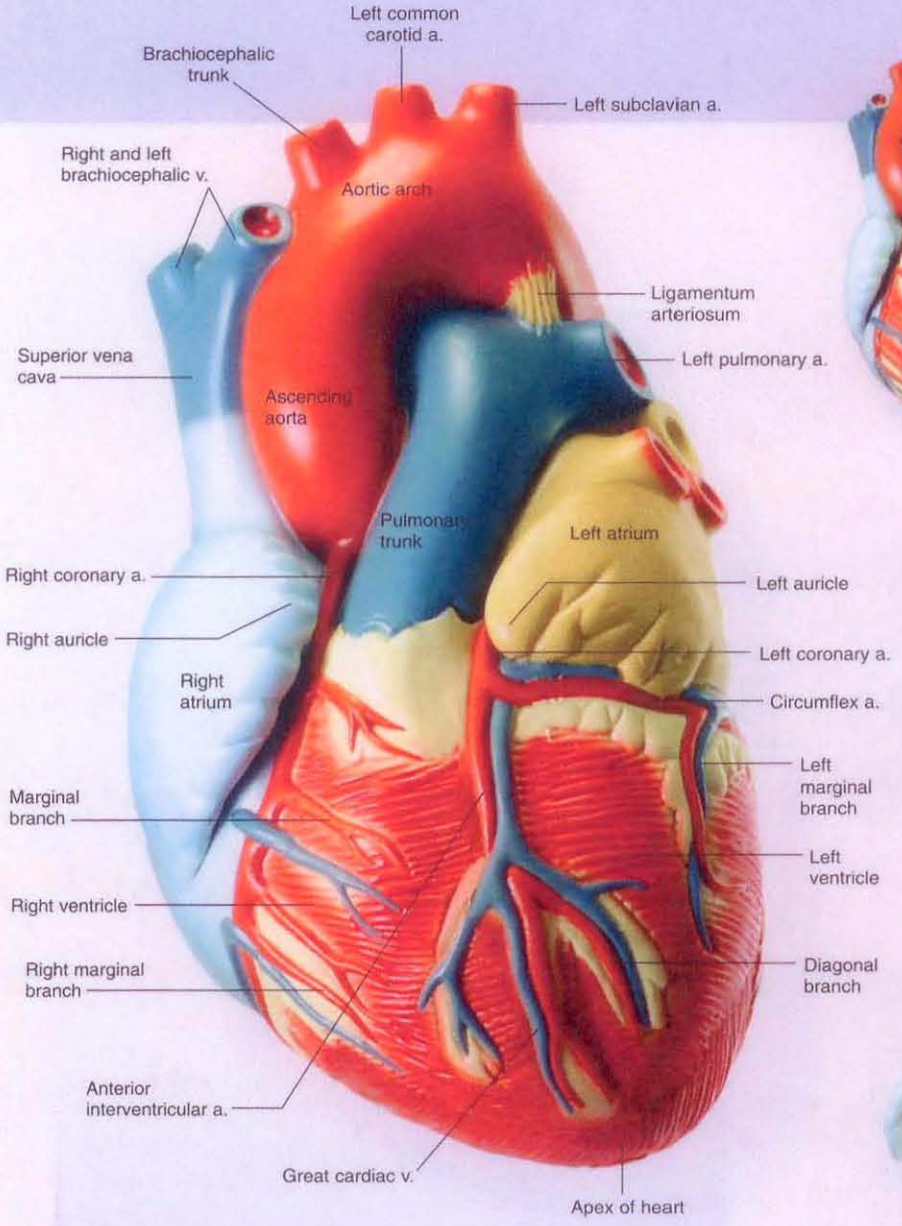
DG A 40

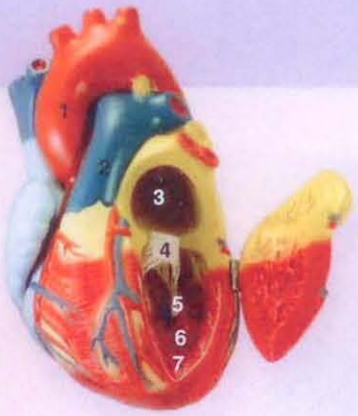
1 Right atrium
2 right auricle
3 coronary sulcus
4 right ventricule
5 anterior internentricular sulcus
6 left ventricle
7 left atrium
8 pulmonary veins
9 pulmonary trunk
  a right branch of pulmonary artery
  b left branch of pulmonary artery
10 ligamentum arteriosum (ductus arteriosus*)
11 ascending aorta
12 aortic arch
13 brachiocephalic trunk
14 left common carotid artery
15 left csubclavian artery
16 superior vena cava
17 right brachiocephalic vein
18 left brachiocephalic vein
19 descending aorta
20 esophagus
21 trachea
22 annular ligament
23 tracheal cartilages
24 left bronchus
25 right bronchus
26 inferior vena cava
27 coronary sinus
28 great cardia vein
29 left coronary artery
30 fatty tissue
31 right coronary artery
32 sinoatrial node
33 orifice of inferior vena cava
34 valve of inferior vena cava
35 tricuspid valve
36 atrioventricular node
37 pulmonary valve (Semilunar valve of pulmonary artery)
38 right branch of Bundle of His
39 Purkinje fibers
40 septal papillary muscle
41 Bucuspid (bitral) valve
42 posterior papillar muscle
43 left branch of Bundle of His
44 interventricular septum
45 Aortic valve (semilunar valve of aorta)
46 small cardia vein
47 posterior vein of left ventricule
48 apex of heart
49 circumflex branch of left coronary artery
50 anterior interventricular branch of left coronary artery
51 left auricle
52 pectinate muscle
53 crista terminalis
54 posterior left ventricular branch
55 Fossa ovalis (foramen ovale**)
56 limbus of fossa ovalis
57 valve of coronary sinus
58 opening of coronary sinus
59 azygous vein
60 middle cardia vein
61 posterior interventricular branch
62 anterior papillary muscle
63 marginal branches on right coronary artery

** The ductus arteriosus normally closes at birth and thereafter is referred to as the ligamentum areteriosum*

*** The foramen ovale normally closes at birth and thereafter is referred to as the fossa ovalis*

Anatomy of the HEART

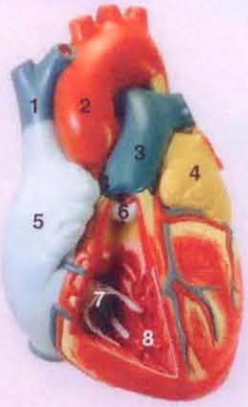




Anterior View

(Left atrium & ventricle opened)

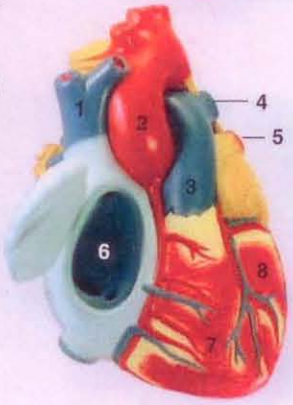
1. Ascending aorta
2. Pulmonary trunk
3. Left atrium
4. Mitral (bicuspid) valve
5. Chordae tendineae
6. Papillary muscles
7. Left ventricle



Anterior View

(Right ventricle opened)

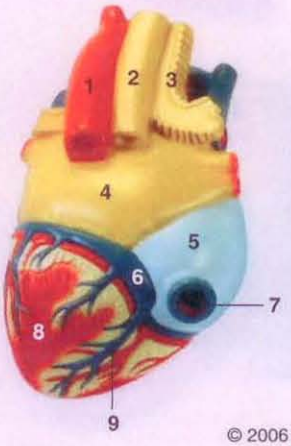
1. Superior vena cava
2. Ascending aorta
3. Pulmonary trunk
4. Left atrium
5. Right atrium
6. Pulmonary valve
7. Tricuspid valve
8. Right ventricle



Lateral View

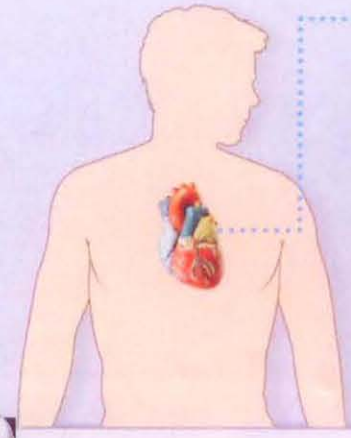
(Right atrium opened)

1. Superior vena cava
2. Ascending aorta
3. Pulmonary trunk
4. Left pulmonary a.
5. Left pulmonary v.
6. Right atrium
7. Right ventricle
8. Left venticle



Posterior View

1. Descending aorta
2. Esophagus
3. Trachea
4. Left atrium
5. Right atrium
6. Coronary sinus
7. Inferior vena cava
8. Left venticle
9. Middle cardiac v.



Location of Heart

The heart is a muscular pump which sits in the middle of your chest. Even though it is about the size of your closed fist, this small muscle is able to pump 5 to 7 liters of blood per minute.

The heart is divded into two halves, each of which contain an upper chamber (atrium) and a lower chamber (ventricle). The atria collect blood that enter the heart and pushes it to the ventricles while the ventricles push blood out of the heart and into the arteries.

DGi Photography of Denoyer-Geppert models

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MicroAnatomy Artery and Vein
3B Scientific G42

A. VEIN

Tunica intima

1 Endothelium

2 subendothelial layer of connective tissue and basal lamina

3 internal elastic lamina

4 Tunica media

5 tunical externa and vasa vasorum

6 venous valve

B. ARTERY

Tunica intima

7 Endothelium

8 Subendothelial layer of connective tissue and basal lamina

9 internal elastic lamina

10. Tunica media

Tunica externa

11 External elastic lamina

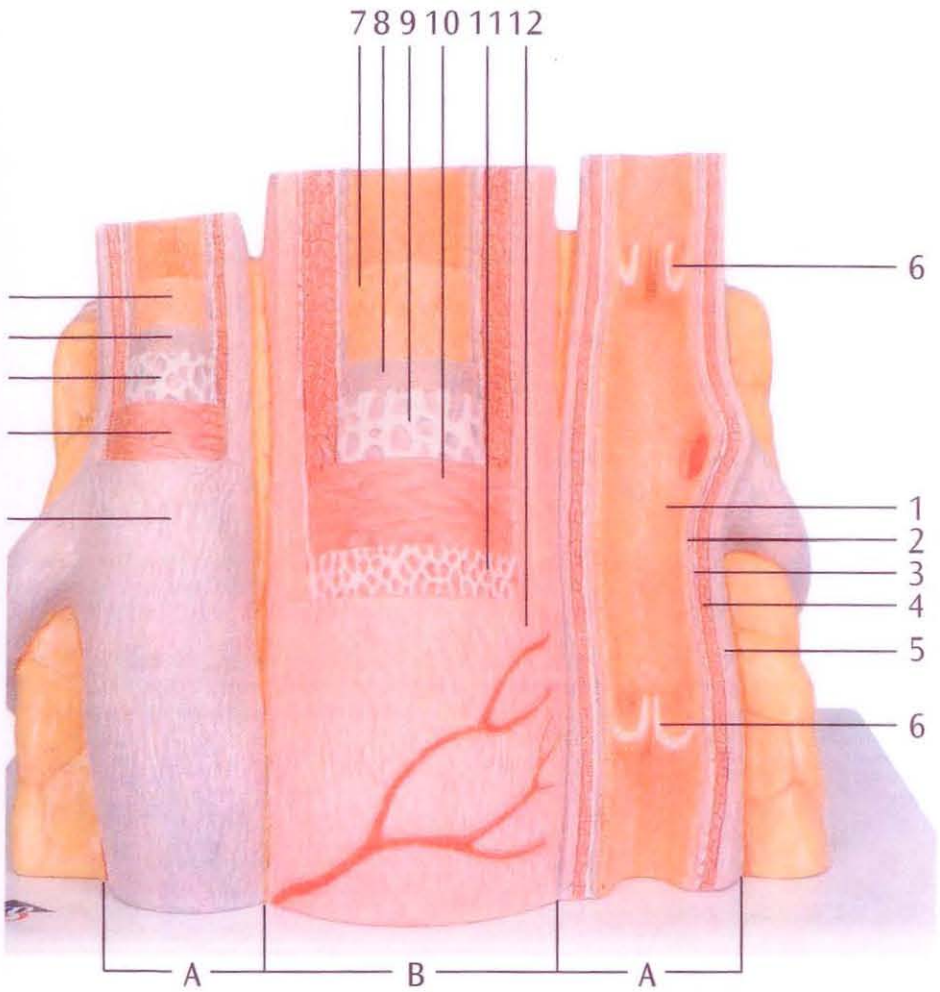
12 connective tissue with layer of elastic fibers and vasa vasorum

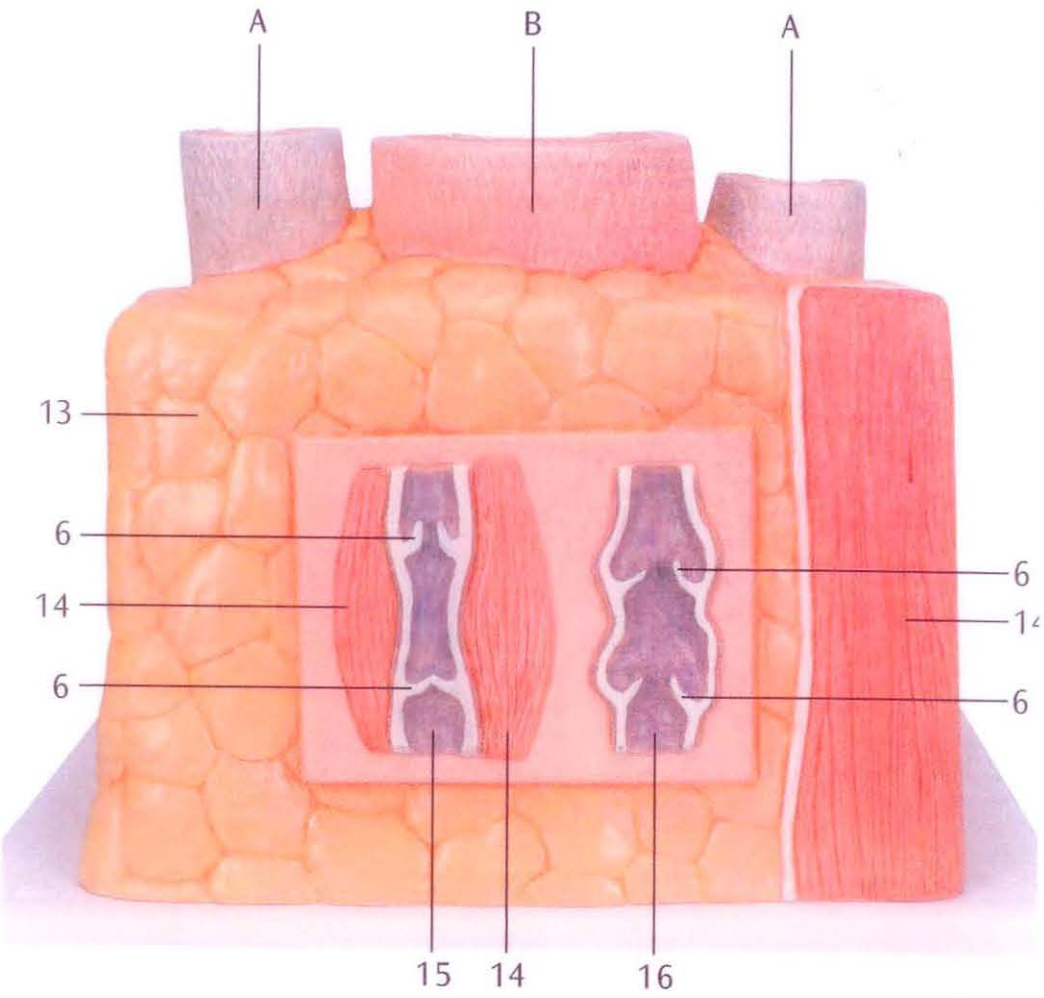
13 fat pad

14 muscle

15 sectional view of a vein with physiological valve function

16 sectional view of a vein with insufficient valve function (Varaicose vein)





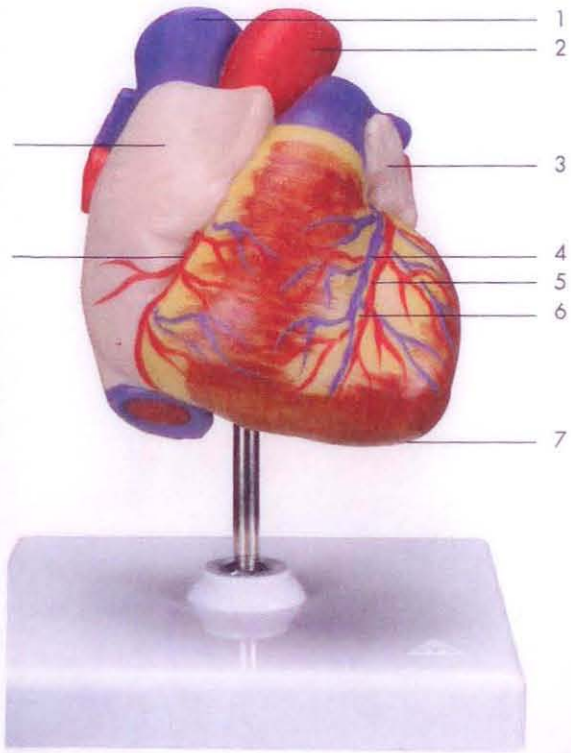
CS 9

Heart, small (on white stand)

(Model No. G10) 3B Scientific Products

1. Oval fossa of heart
2. Left semilunar cusp of pulmonary trunc
3. Left atrium
4. Mitral valva (left av-valve)
5. Left semilunar cusp of aortic valve
6. Left ventricle
7. Muscular part of interventricular septum
8. Right ventricle
9. Tricuspid valve (right av-avalve)
10. Right atrium
11. Right pulmonary artery
12. Membranous part of interventricular septum
13. Apex of heart
14. Superior vena cava
15. Ascending aorta
16. Left pulmonary artery
17. Pulmonary trunk
18. Left auricle
19. Anterior interventricular sulcus
20. Anterior interventricular branch of left coronary artey
21. Anterior interventricular vein
22. Apex of heart
23. Right coronary artery of heart
24. Right auricle
25. Ascending aorta
26. Superior vena cava
27. Right pulmonary artery
28. Superior right pulmonary vein
29. Inferior right pulmonary vein
30. Inferior vena cava
31. Posterior interventricular vein
32. Coronary sinus
33. Circumflex branch of left coronary artery
34. Left coronary vein
35. Inferior left pulmonary vein
36. Superior left pulmonary vein
37. Left pulmonary artery

CS 10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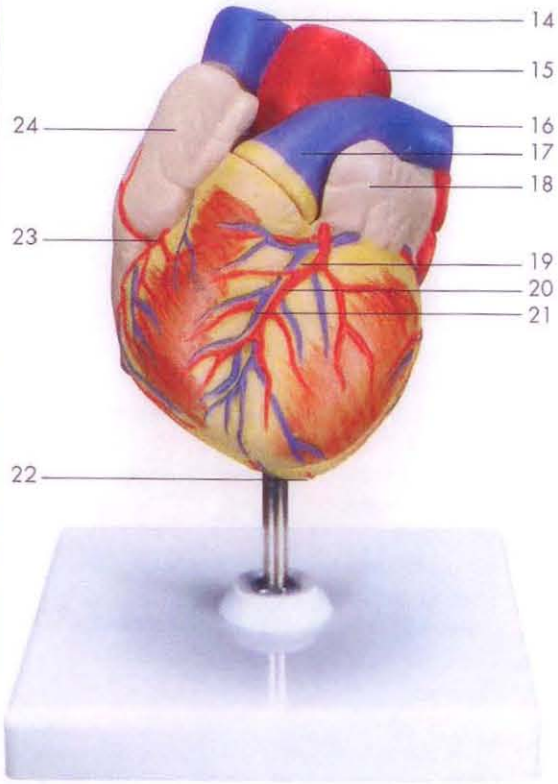
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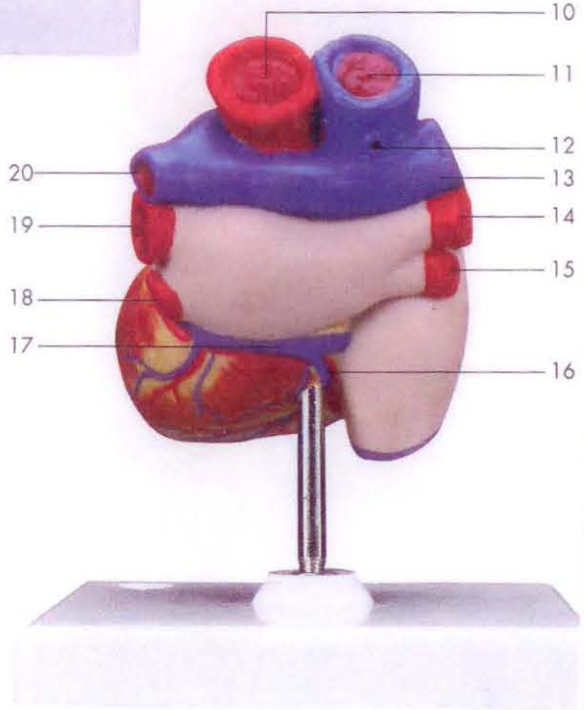
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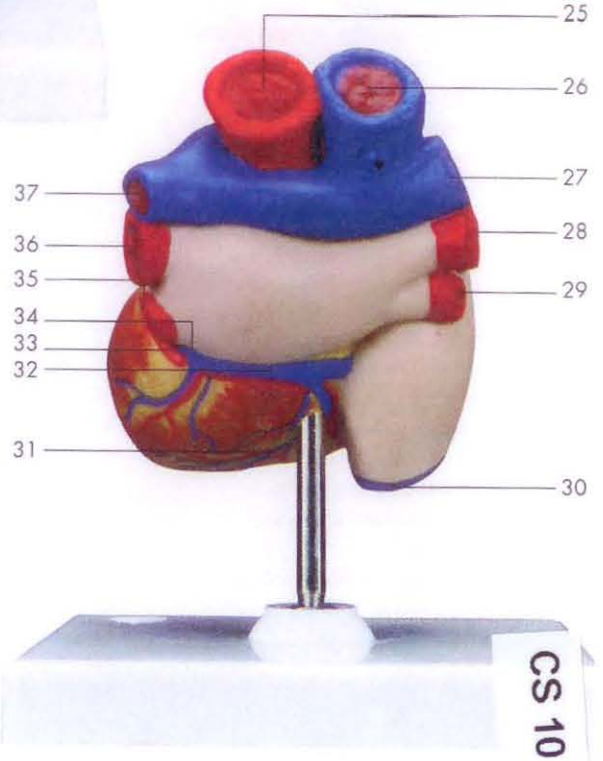
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CS 10

Tongue

The tongue can be taken to pieces and the mucous membrane is on one side drawn off.

1. The tongue-tip, *Apex linguae*
2. Superior longitudinal muscle, *M. longitudinalis superior*
3. Filiform papillas, *Papillae filiformes*
4. Fungiform papillas, *Papillae fungiformes*
5. Vallate papillas, *Papillae vallatae*
6. Foramen caecum of the tongue, *Foramen caecum linguae*
7. Styloglossus muscle, *M. styloglossus*
8. Hyoglossus muscle, *M. hyoglossus*
9. Geniohyoid muscle, *M. geniohyoideus*
10. Genioglossus muscle, *M. genioglossus*
11. Glossopharyngeal nerve, *N. glossopharyngeus*
12. Hypoglossal nerve, *N. hypoglossus*
13. Lingual nerve, *N. lingualis*
14. Lingual artery, *A. lingualis*
15. Submandibular gland, *Gl. submandibularis*
16. Sublingual gland, *Gl. sublingualis*
17. Muscles of the tongue, *Musculi linguae*
18. Septum of the tongue, *Septum linguae*

TONGUE MODEL

KNOW THESE STRUCTURES ON THIS MODEL

15. Submandibular gland (salivary gland)

16. Sublingual gland (salivary gland)

19. Lingual tonsil (lymphoid tissue)

NOTE - KNOW - The Parotid salivary gland on the manikin model

DIGESTIVE SYSTEM MODEL DS-2

INTRODUCTION

The Hubbard **Digestive System Model** is one of a series of models that make up a coordinated program in *Biology/Life Science*. The model first shows all of the organs of the digestive system as they relate to one another in the body. The stomach is dissected to show details of structure. A small part of the intestine is enlarged to show the villi that line the intestinal wall. Finally, a single villus is further enlarged to show the blood and lymph vessels through which food is absorbed by the digestive process.

Anatomy of the digestive system

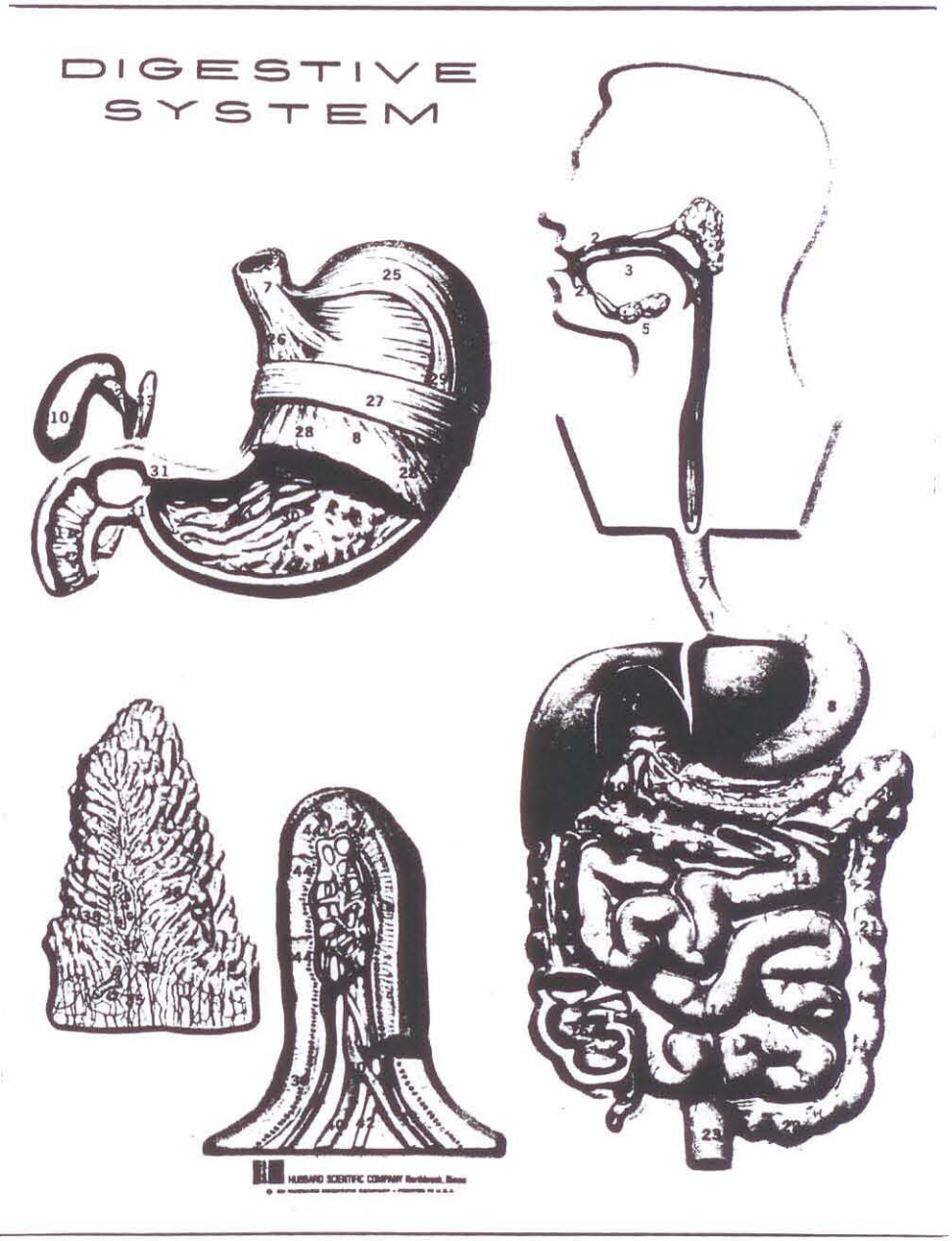
1. Mouth
2. Teeth
3. Tongue
4. Parotid salivary gland
5. Submandibular and sublingual salivary glands
6. Pharynx
7. Esophagus (partly cut away)
8. Stomach
9. Liver (partly cut away)
10. Gall bladder
11. Duodenum (partly cut away)
12. Pancreas (partly cut away)
13. Jejunum
14. Ileum
15. Ileocecal valve
16. Cecum
17. Ascending colon
18. Right colic flexure
19. Transverse colon
20. Left colic flexure
21. Descending colon
22. Sigmoid colon
23. Rectum
24. Vermiform appendix
25. Fundus of stomach
26. Longitudinal muscle layer of stomach
27. Circular muscle layer of stomach
28. Oblique muscle layer of stomach
29. Tunica serosa
30. Folded mucous membrane (rugae) of stomach
31. Pylorus (sphincter muscle)
32. Cystic duct (from gall bladder to common bile duct)
33. Hepatic duct (from liver to common bile duct)
34. Common bile duct

The interior wall of the intestine

35. Part of a fold in interior wall of the intestine (enlarged)
36. Vascular network (red and blue)
37. Intestinal lymph drainage (green)
38. Villi

The structure of a villus

39. Villus of small intestine
40. Lymphatic vessel (green)
41. Arteriole (small artery – red)
42. Venule (small vein – blue)
43. Capillary network (violet)
44. Secretory goblet cells



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HUMAN SPLEEN, DUODENUM AND PANCREAS MODEL **DS-3**

Know these structures:

2. main pancreatic duct
3. duodenal papilla
4. duodenum
6. pancreas
7. superior mesenteric vein
8. superior mesenteric artery
9. spleen
15. inferior vena cava
16. common bile duct

Not responsible for the following structures:

1. accessory pancreatic duct
5. right colic artery
10. gastroduodenal artery
11. hepatic artery
12. left gastric artery
13. splenic artery
14. splenic vein

LIVER MODEL

KEY

1. *Right lobe*
2. *Left lobe*
3. *Quadrate lobe*
4. *Caudate or spigelian lobe*
5. *Papillary process*
6. *Caudate process*
7. *Inferior vena cava*
8. *Hepatic veins*
9. *Ramification of hepatic veins in liver*
10. *Portal vein*
11. *Ramification of portal vein*
12. *Hepatic artery*
13. *Ramification of hepatic artery*
14. *Hepatic duct*
15. *Ramification of hepatic duct*
16. *Cystic duct*
17. *Gall bladder*
18. *Round ligament*
19. *Falciform ligament*
20. *Coronary ligament, superior leaf*
21. *Coronary ligament, posterior leaf*
22. *Ligament of ductus venosus (Arantii)*
23. *Hepatic veins, branching off from inferior vena cava*
24. *Pyloric impression*
25. *Duodenal impression*
26. *Renal impression*
27. *Colic impression*
28. *Esophageal impression*

1. *Lobus hepaticus dexter*
2. *Lobus hepatis sinister*
3. *Lobus quadratus*
4. *Lobus caudatus (Spigeli)*
5. *Processus papillaris*
6. *Processus caudatus*
7. *Vena cava inferior*
8. *Vv. hepaticae*
9. *Rami Vv. hepaticae*
10. *V. portae*
11. *Rami v. portae*
12. *A. hepatica*
13. *Rami a. hepaticae*
14. *Ductus hepaticus*
15. *Rami ducti hepatici*
16. *Ductus cysticus*
17. *Vesica fellea*
18. *Lig. teres hepatis*
19. *Lig. falciforme*
20. *Lig. coronarium, lamina superior*
21. *Lig. coronarium, lamina posterior*
22. *Lig. ducti venosi hepatis (Arantii)*
23. *Vv. hepaticae*
24. *Impressio gastrica (pylori)*
25. *Impressio duodenalis*
26. *Impressio renalis*
27. *Impressio colica*
28. *Impressio oesophagea*

Model of the Stomach

DS-5

1. Stomach
   a. small curvature of the stomach
   b. great curvature of the stomach
2. gullet
3. cardiac orifice
4. fundus of stomach
5. main part of the stomach
6. pylorus
7. ruga gastrica
8. mucous coat of the stomach
9. muscular coat of the stomach
10. left artery of the stomach
11. right artery of the stomach
12. superior part of duodenum
13. descending part of duodenum
14. transversal part of duodenum
15. pancreas
    a. head of pancreas
    b. end part of pancreas
16. ductus of pancreas
17. vena portae
18. bile duct

Human Digestive System , 3 parts
Altay Scientific

A. Oral Cavity
- 1 Lips
- 2 Hard palate
- 3 Soft palate
- 4 Uvula
- 5 Teeth
- 6 tongue
- 7 Parotid gland
- 8 Parotid duct
- 9 Submandibular gland
- 10 Submandibular duct
- 11 Sublingual gland
- 12 Sublingual caruncle

B. Pharynx
- 13 Nasopharynx
- 14 Faryngeal opening of auditory tube
- 15 Pharyngeal tonsil
- 16 Oropharynx
- 17 Palatine tonsil
- 18 Laryngopharynx

C. Oseophagus

D. Stomach
- 19 Cardia
- 20 Pylorus
- 21 Fundus of stomach
- 22 Body of stomach
- 23 Pyloric antrum (pyloric canal)

E. Small intestine
- 24 Duodenum
- 25 Major duodenal papilla
- 26 Minor duodenal papilla
- 27 jejunum
- 28 Illeum

F. Large intestine
- 29 Caecum
- 30 Ileocecal Valve
- 31 Vermiform appendix
- 32 ascending colon
- 33 transverse colon
- 34 descending colon
- 35 sigmoid colon
- 36 rectum
- 37 anal canal
- 38 anocutaneous line
- 39 internal anal sphincter muscle
- 40 external anal sphincter muscle

G. Liver
- 41 faciform ligament
- 42 left love of liver
- 43 rigt love of liver
- 44 round ligament of the liver
- 45 quadrate lobe
- 46 caudate lobe
- 47 gallbaldder
- 48 cystic duct
- 49 common hepatic duct
- 50 common bile duct
- 51 proper hepatic artery
- 52 hepatic portal vein

Stomach without Pancreas
3B K15

1	Stomach
a	small curvature of the stomach
b	great curvature of the stomach
2	gullet
3	cardia orifice
4	fundus of stomach
5	main part of the stomach
6	pylorus
7	ruga gastrica
8	mucous coat of the stomach
9	muscular coat of the stomach
10	left artery of the stomach
11	right artery of the stomach
12	superior part of the duodenum

MicroAnatomy Digestive System
3B Scientific K23

A. Esophagus (gullet)

Mucous Membrane

1 Outer mucous tissue (nonkeratinized squamous epithelium)

2 Actual mucous membrane

3 Muscle layer in the mucous membrane

4 Sub-muscous tissue

5 Esophagal gland

Tunica muscularis:

6 Circularlayer

7 longitudinal layer

8 External Coat

B. Fundus of stomach

Mucous membrane:

1 Outer mucous tissue (small depression in the mucous membrane of the stomach)

2 Actual mucous membrane

3 Mucous gland of the fundus of stomach

4 Muscle layer in the mucous membrane

5 Sub-muscous tissue

Muscular tunic:

6. Circular layer

7 longitudinal layer

8 External coat

9 Serous tunic

10 Peptc cell

11 Parietal cell

12 mucous neck cell

C. Jejunum (small intestine)

Mucous membrane:

1 Outer mucous tissue

2 crypt

3 actual mucous membrane

4 Muscle layer in the mucous membrane

5 Sub-mucous tissue

Mucouse tunic:

6 Circular alyer

7 Longitudinal layer

8 External coat

9 Serous tunic

10 endocrine cell

11 Paneth's granular cell

D. Colon

Mucous membrane

1 Outer mucous tissue

2 crypt

3 actual mucous membrane

4 Muscle layer in the mucous membrane

5. Sub-mucous tissue

Muscular tunic

6. Circular layer

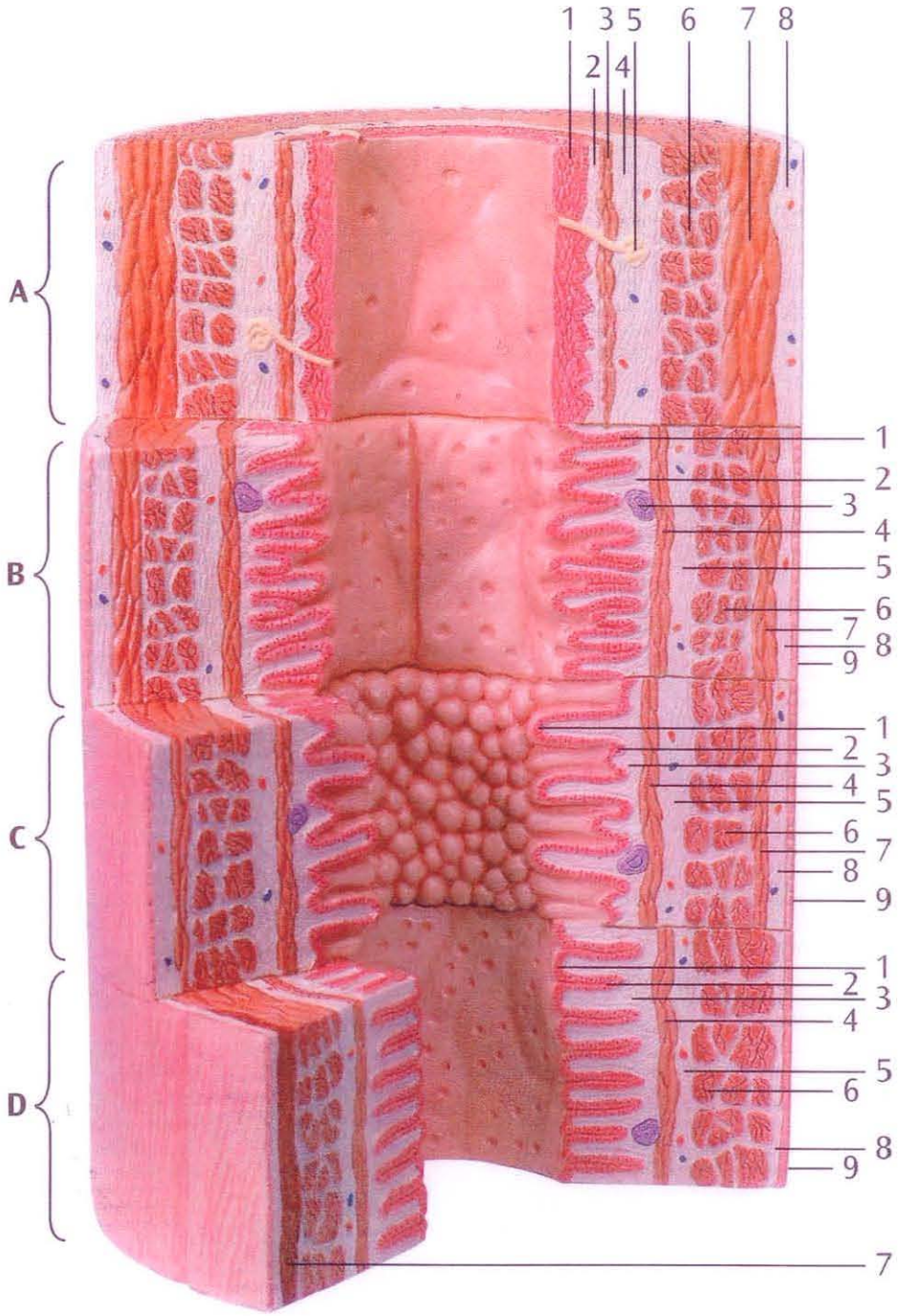
7. Longitudinal layer

8 External coat

9 Serous tunic

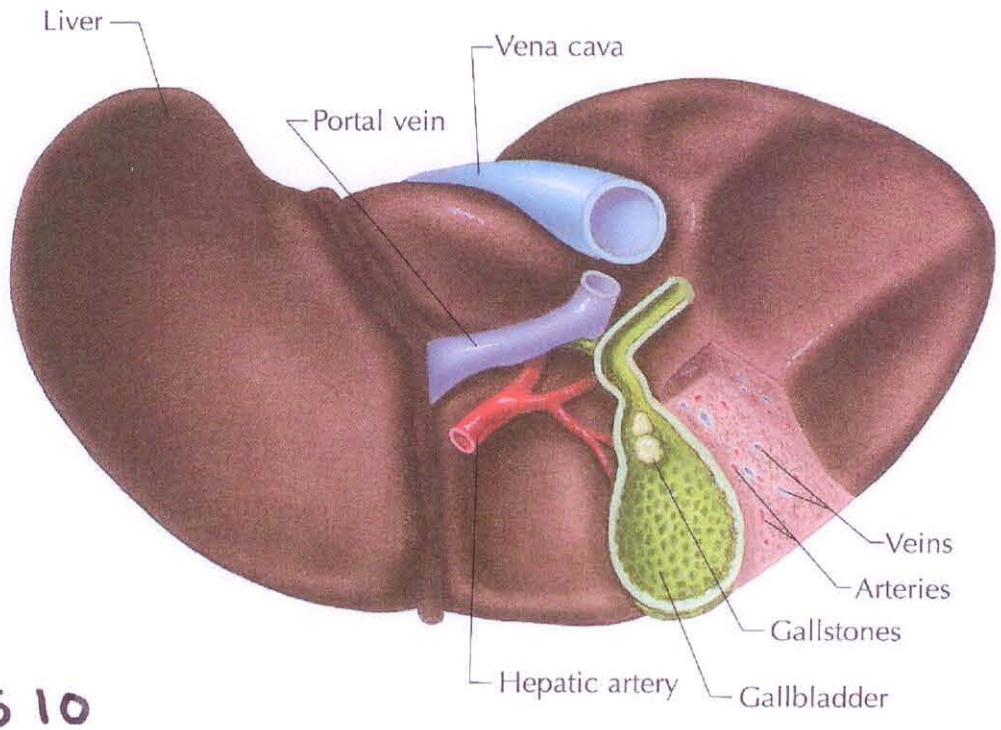
10 goblet cell

11. Enterocyte



DS 9

LIVER/GALLBLADDER



DS 10

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Pancreas with Spleen and Part of the Duodenum

Somso JS 11

A. Pancreas
B. Spleen
C. Duodenum
   1 Pancreatic duct
   2 Duct of Santorini
   3 Choledochous duct
   4 Longitudinal fold of the duodenum
   5 Portal Vein
   6 Splenic vein
   7 Superior mesenteric vein
   8 Celiac trunk
   9 Hepatic artery
  10 Splenic artery
  11 gastric artery
  12 gastroduodenal artery
  13 Superior mesenteric artery
  14 Inferior pancreaticoduodenal artery

Intestinal Villi

Denoyer Geppert

1 Villus
2 Intestinal Epithelium
3 Capillary network
4 Venule
5 Arteriole
6 Crypt of Lieberkuhn
7 Central lacteal
8 lamina propria
9 Muscle fibers

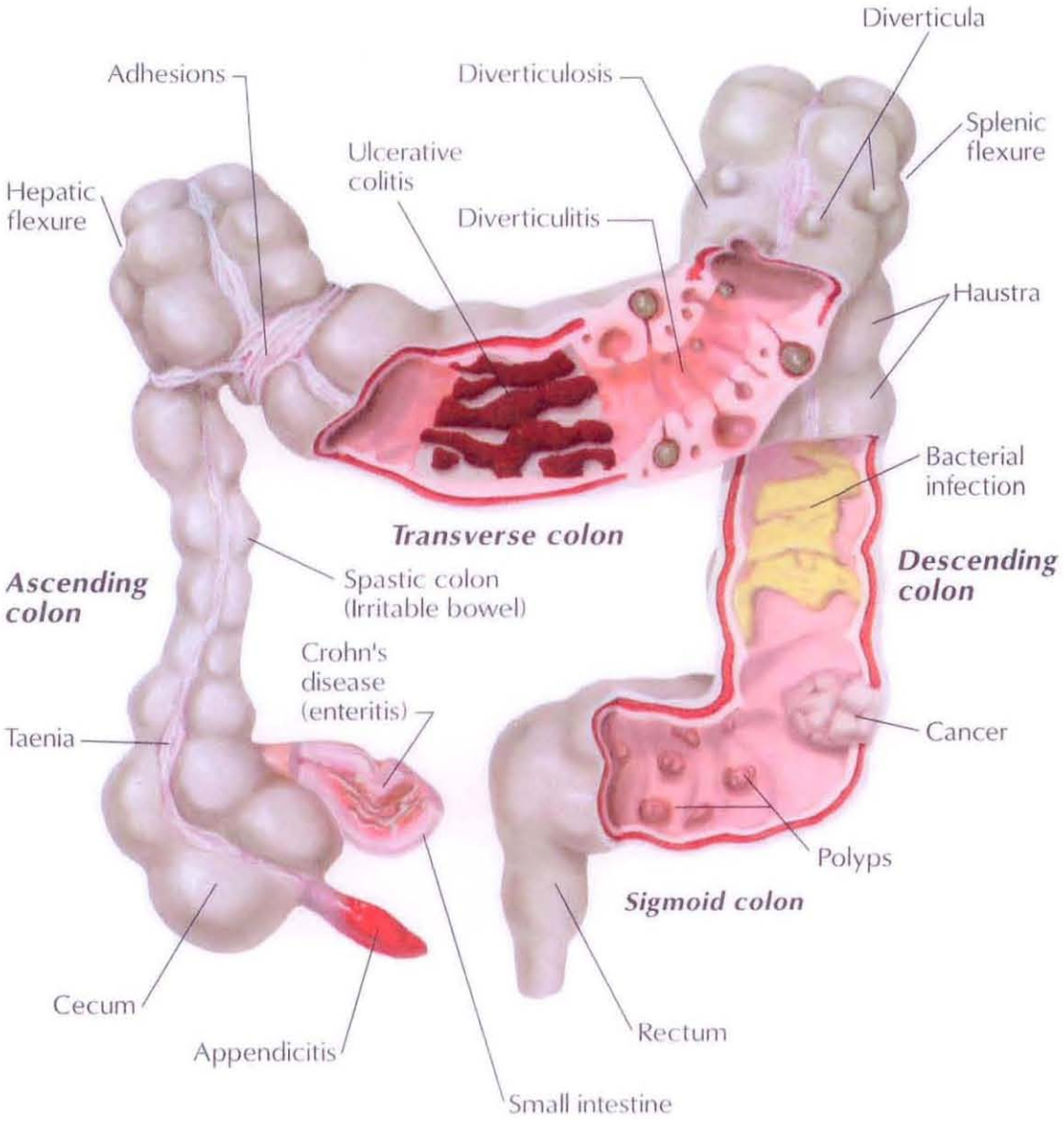
Muscularis Mucosae
10 Circular muscle layer
11 Longitudinal muscle layer

12 arteriole X.S. (re blood corpuscles in lumen)
13 submucosa

Muscularis Externa
14 circular muscle layer
15 Longitudinal muscle layer

16 Serosa
17 Adipose Tissue (fat)
18 Auerbach's nerve Plexus
19 Meissner's Nerve Plexus
20 Columnar Epithelium (with striated border)
21 Goblet Cell
22 Paneth Cell
23 Lymphocyte

COLON
Common Pathologies



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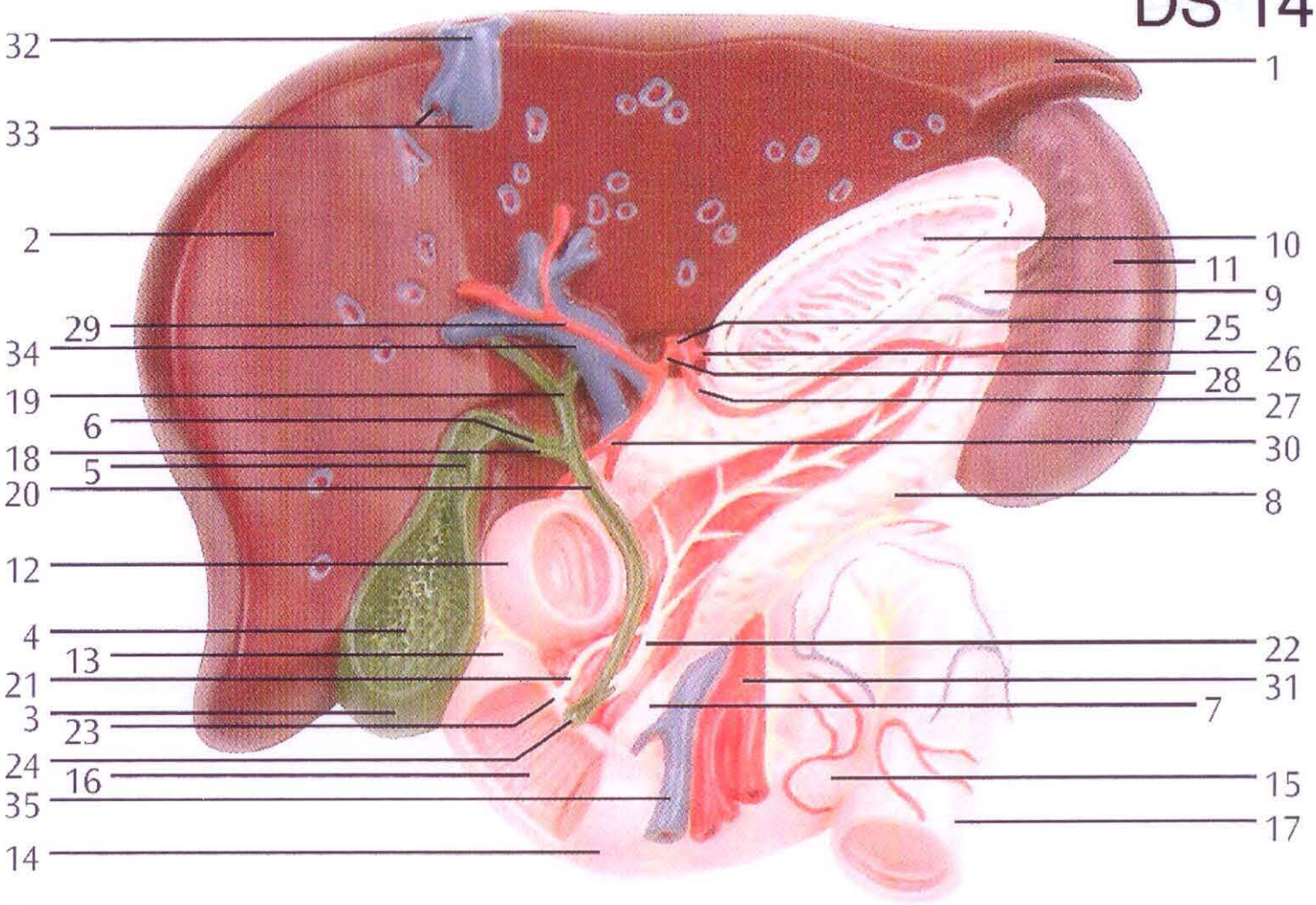


Liver Gall Bladder - Pancreas - Duodenum

1 Left lobe of liver
2 Right lobe of liver
3 Fundus of gallbladder
4 Body of gallbladder
5 Neck of gallbladder
6 Spiral fold
7 Head of pancreas
8 Body of pancreas
9 Tail of pancreas
10 Stomach
11 Spleen
12 Superior part of duodenum
13 Inferior part of duodenum
14 Horizontal part of duodenum
15 Ascending part of duodenum
16 Circular folds
17 Jejunum
18 Cystic duct
19 Common hepatic duct
20 Bile duct
21 Accessory pancreatic duct
22 Pancreatic duct
23 Minor duodenal papilla
24 Major duodenal papilla
25 Coeliac trunk
26 Left gastric artery
27 Splenic artery
28 Common hepatic artery
29 Hepatic artery proper
30 Gastroduodenal artery
31 Superior mesenteric artery
32 Inferior vena cava
33 Hepatic veins
34 Hepatic portal vein
35 Superior mesenteric vein

ENDOCRINE SYSTEM MODEL

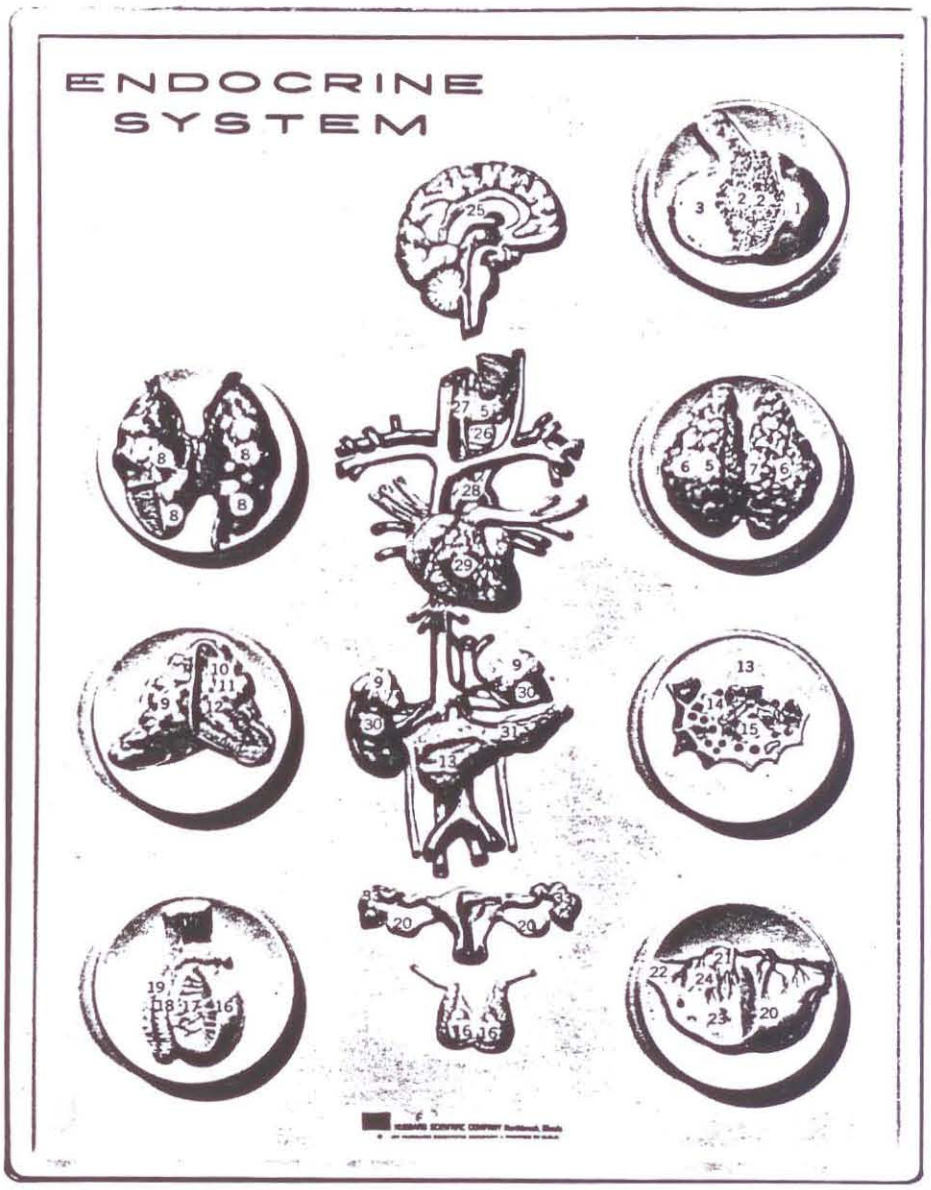
ES-1

Endocrine glands and their parts

1. Pituitary gland or hypophysis
2. Adenohypophysis
3. Neurohypophysis
4. Infundibulum
5. Thyroid gland
6. Lateral lobe of thyroid
7. Isthmus of thyroid
8. Parathyroid gland
9. Suprarenal or adrenal gland
10. Capsule of suprarenal gland
11. Cortex of suprarenal gland
12. Medulla of suprarenal gland
13. Pancreatic islets of Langerhans
14. Alpha cells of pancreatic islets
15. Beta cells of pancreatic islets
16. Testis or testicle (male)
17. Seminiferous tubules
18. Epididymis
19. Ductus deferens
20. Ovary (female)
21. Blood vessels to ovary
22. Medulla or inner portion of ovary
23. Developing follicles in ovary
24. Corpus luteum

Body organs and structures closely associated with endocrine glands

25. Diencephalon or interbrain
26. Trachea or windpipe
27. Carotid artery
28. Arch of aorta
29. Heart
30. Kidney
31. Pancreas
32. Uterus or womb
33. Oviduct or fallopian tube



How to Use the Model

AS A LESSON IN ITSELF The endocrine system and its role in the chemical regulation of body processes may be taught directly from this Lesson Plan, using the Hubbard model as the principal visual aid.

WITH CORRELATED TRANSPARENCIES For improved reinforcement, the model may be used together with transparencies from the *Advanced Human Reproduction II series (SAR-1780).* Let the transparencies introduce basic concepts, then refer to the model for three-dimensional substantiation.

WITH FILMS AND TEXTBOOKS If the model is used with related films and texts, student comprehension and retention will be greatly improved. The Hubbard *Endocrine System Model* is suited to classes in general biology, sex education, human physiology, and health education.

FOR DETAILED STUDY Individual students or small groups may easily study details of the model on their own. It may also be used in follow-up or review lessons.

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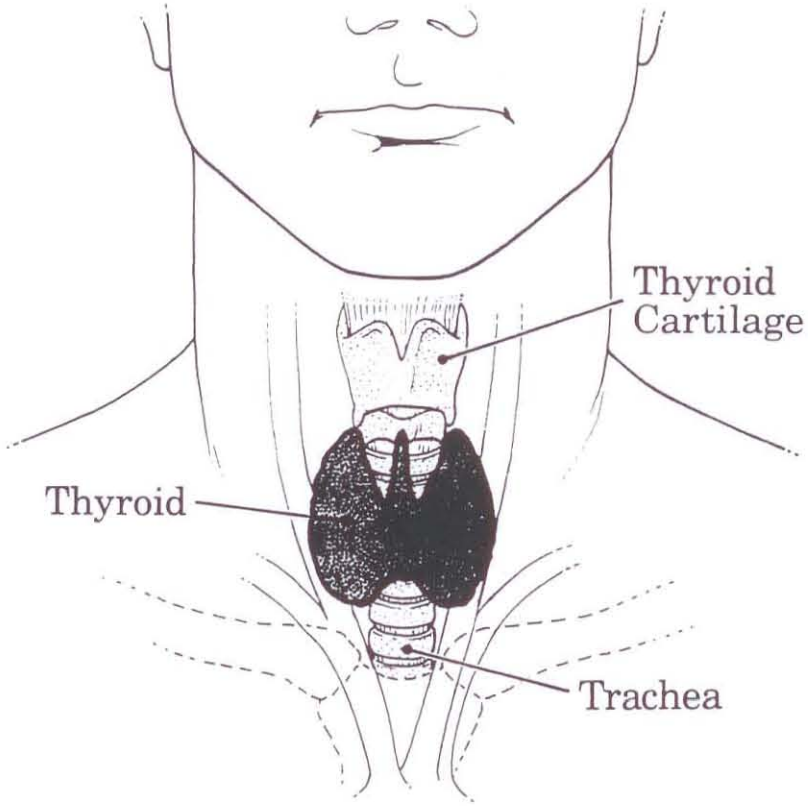
The Thyroid Gland

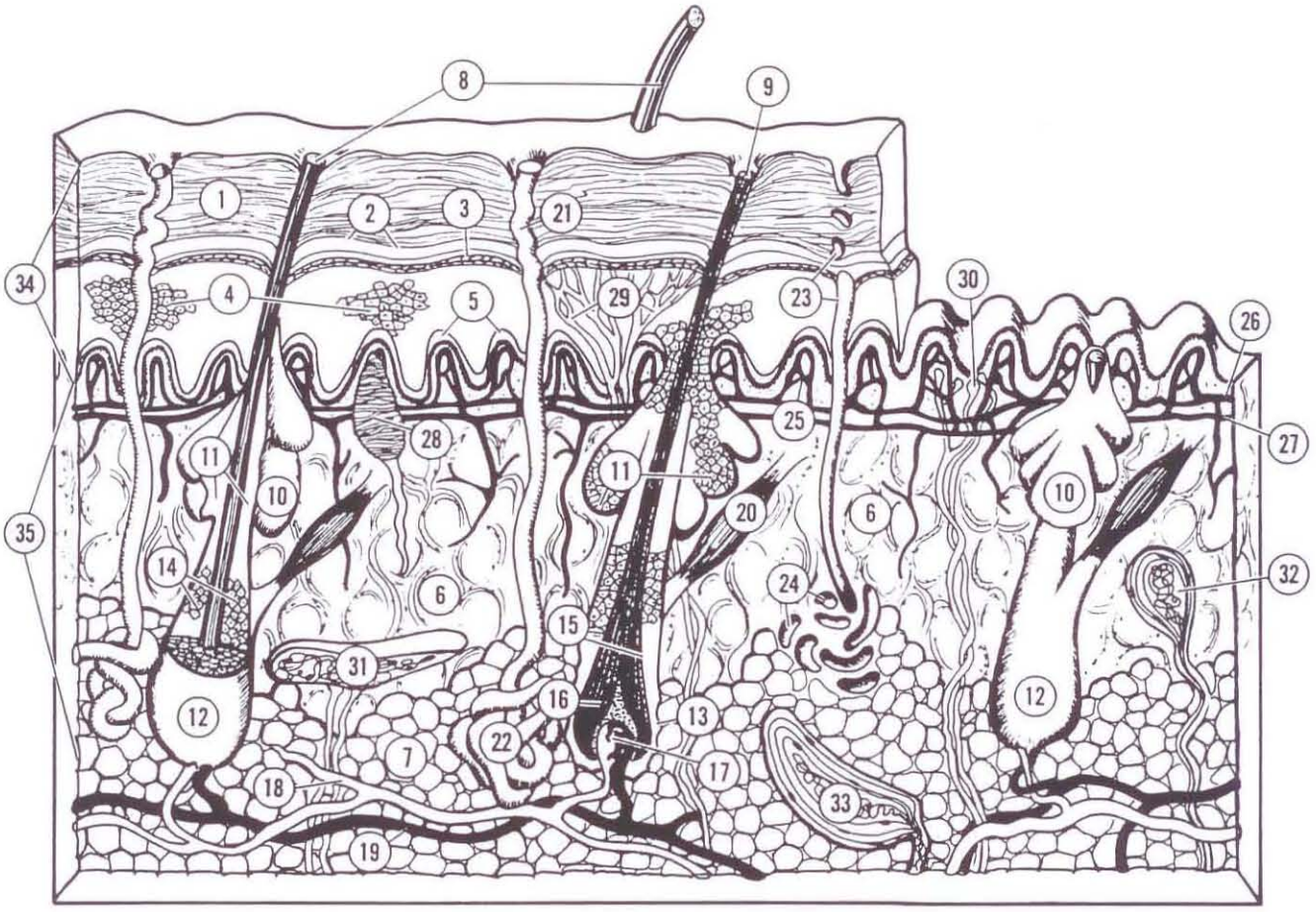


Organs of the Endocrine System
Altay Scientific.

1 Pituitary gland
2 Thyroid gland
3 Adrenal glands
4 testis
5 Pancreas
6 Parathyroid gland
7 Ovary

SKIN MODEL

S-1a,b



KEY

1. Stratum Corneum
2. Stratum Lucidum
3. Stratum Granulosum
4. Stratum Mucosum
5. Stratum Germinativum
6. Corium Layer
7. Fatty Layer
8. Hair Shaft
9. Longitudinal Section of Hair
10. Sebaceous Oil Gland
11. Longitudinal Section of Oil Gland
12. Hair Root
13. Longitudinal Section of Hair Root
14. External Root Sheath
15. Internal Root Sheath
16. Zone of Growth and Differentiation
17. Papilla of Hair
18. Vein — Blood Supply to Hair
19. Artery
20. Hair Arrector Muscle
21. Sweat Gland
22. Glomerulus (Tubular Ball) of Sweat Gland
23. Longitudinal Section of Sweat Gland
24. Longitudinal Section of Glomerolus of Sweat Gland
25. Vascular Papilla of Corium (Typical)
26. Vein — Blood Supply to Corium
27. Artery — Blood Supply to Corium
28. Nervous Papilla of Corium (Sense of Touch)
29. Free Nerve Endings (General Sense of Pain)
30. Tactile Disks (Sense of Touch)
31. Corpuscle of Ruffini (Sense of Warmth)
32. Bulb of Krause (Sense of Cold)
33. Pacinian Corpuscle (Sense of Deep Pressure)
34. Epidermis
35. Dermis

Skin Model (70X full-size)
3B Scientific J10

I Epidermis

Ii Derma

III Subcutaneous Tissue (Hypodermis)

1 Sebacous gland

2 Root of hair

3 Hair shaft

4 Arrector pili muscle of hair

5 Meissner's tactile corpuscle

6 Sweat/Sudoriferous pore

7 Pacinian corpuscle

8 outer root sheath

9 Inner root sheath

10 hair cuticle

11 hair bulb

12 medulla of hair

13 cortex of hair

14 adipose cell

15 hair papilla

16 Sweat/sudoriferous gland

17 reticular layer of dermis

18 Sweat/Sudoriferous duct

19 papillary layer of dermis

20 Stratum basale/Stratum germanitivum

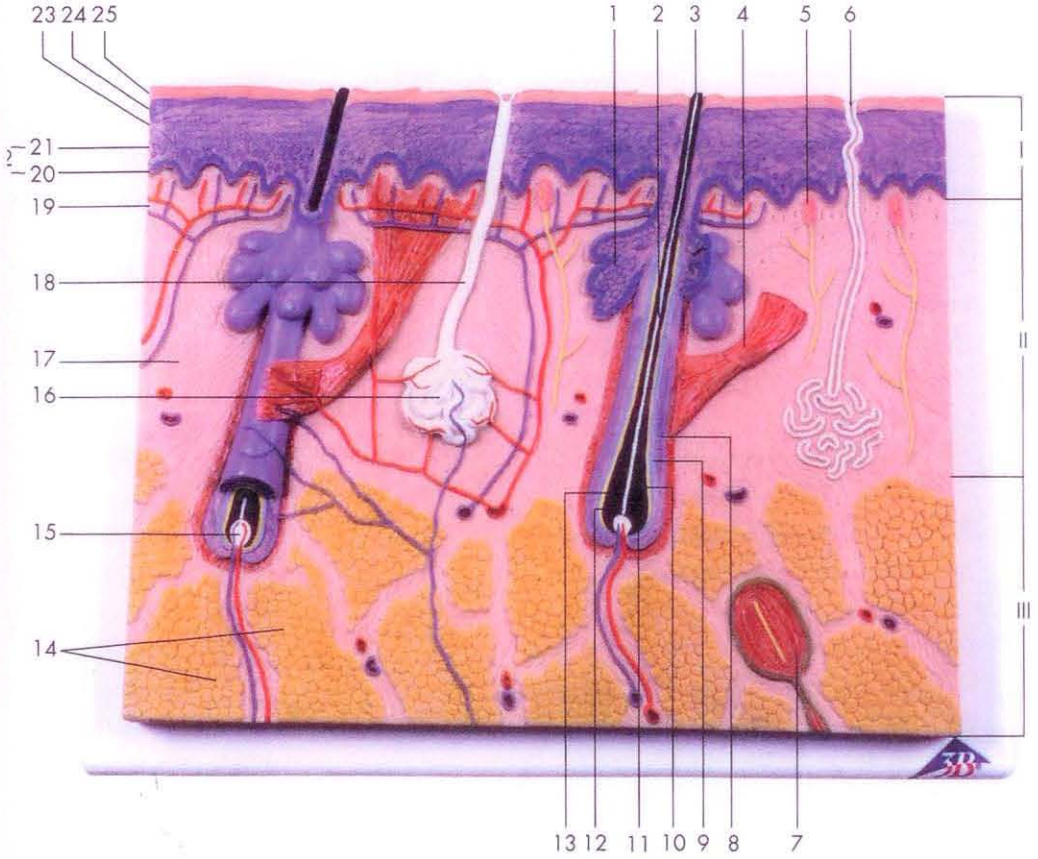
21 Stratum spinosum

22 Stratum germinativum

23 Stratum granulosum

24 Stratum lucidum

25 Stratum corneum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15
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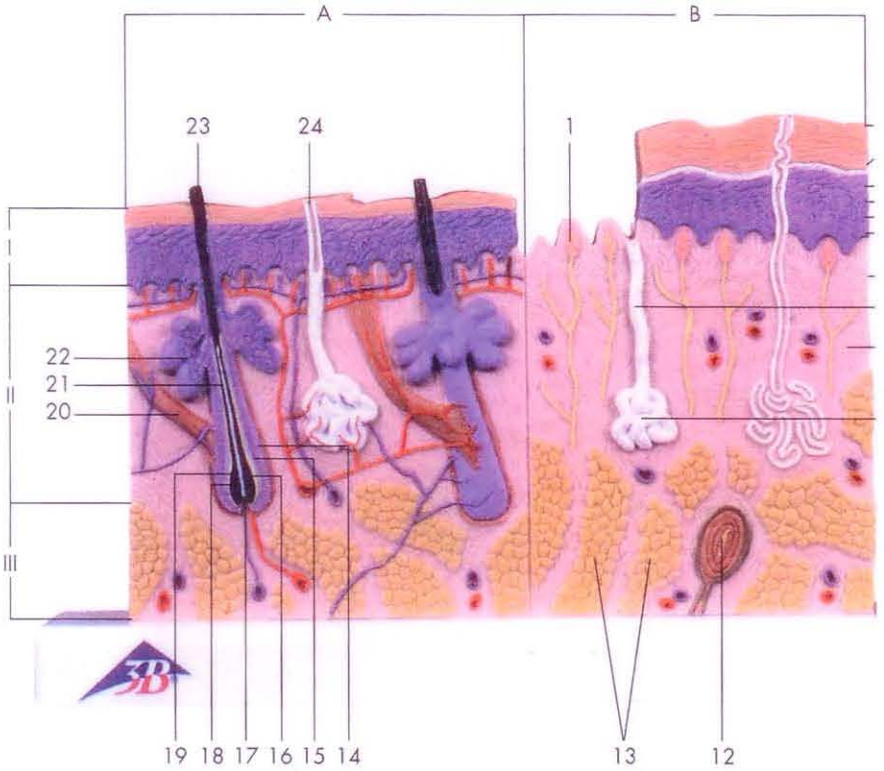
I
II
III
13 12 11 10 9 8 7


A
B
23
24
1
22
21
20
II
III
19 18 17 16 15 14
13
12

VESSELS

44 A. glutea superior
45 A. glutea inferior
46 A. circumflexa femoris medialis, Ramus profundus
47 Aa. perforantes
48 A. femoralis
48a V. femoralis
48b A. profunda femoris
48c A. circumflexa femoris lateralis, Ramus descendens
48d A. cercumflexa femoris lateralis, Ramus descendens
49 A. poplitea
49a V. poplitea
50 A. superior medialis genus
51 A. superior lateralis genus
52 A. inferior midialis genus
53 A. inferior lateralis genus
54 A. tibialis posterior
55 V. tibialis posterior
56 A. tibialis anterior
57 A. peronea
58 A. malleolaris anterior lateralis

BONES

59 Caput ossis femoris
60 Trochanter minor
61 Crista iliaca
62 Patella
63 Tibia
64 Fibula
65 Calcaneus
66 Mallleolus medialis
67 Malleolus lateralis
68 Os metatarsi I

TENDINES

70 Tendo m. recti femoris
71 Tendo m. sartorii
72 Retinaculum mm. extensorum inferius
73 Tendo m. extensor hallucis longus
74 Tendines m. extensores digitorum longi
75 Retinaculum mm. peroneorum inferius
76 Tendo m. peronei longus
77 Tendo m. peronei brevis
78 Aponeurosis plantaris
79 Retinaculum mm. peroneorum superius

MUSCLES

1	M. glutteus maximus
1a	M. gluteus medius
2	M. piriformis
3	M. gemellus superior
4	M. obturator internus
5	M. gemellus inferor
6	M. quadratus femoris
7	M. tensor fasciae latae
8	M. sartorius
9	Tractus iliotibialis fasciae latae
10	M. vastus medialis
11	M. vastus lateralis
12	M. retus femoris
12a	M. vastus intermedius
13	M. gracilis
14	M. adductor longus
14a	M. iliopsoas
15	M. adductor magnus
16	M. semitendinosus
17	M. semimembranosus
18	M. biceps femoris (caput longum)
19	M. biceps femoris (caput breve)
20	M. tibialis anterior
21	M. extensor digitorum longus
22	M. peroneus longus
23	M. peroneus brevis
24	M. gastrocnemius, caput mediale
25	M. gastrocnemius, caput laterale
26	Tendo calcaneus
27	M. soleus
28	M. popliteus
29	M. flexor digitorum longus
30	M. flexor hallucis longus
31	M. tibialis posterior
32	M. extensor digitorum brevis
33	M. abductor digiti minimi
34	M. flexor digitorum brevis
35	M. abductor hallucis
36	M. flexor hallucis brevis
37	Mm. lumbricales
38	M. extensor hallucis brevis
38a	M. extensor hallucis longus
39	M. flexor digiti minimi brevis
40	Mm. interossei dorsales

NERVES

41	N. ischiadicus
41a	N. femoralis
42	N. tibialis
43	N. fibularis peroneus communis
43a	N. fibularis peroneus profundus
43b	N. fibularis peroneus superficialis

VESSELS

46 A. radialis
47 A. ulnaris
48 A. interossea anterior
49 A. interossea anterior
50 Arcus palmaris superficialis, a. radialis
51 Arcus palmaris superficialis
52 Aa. digitales palmares communes
53 Aa. digitales palmares communes
54 A. princeps pollicis
55 Aa. metacarparles dorsales
56 Ramus carpalis dorsalis

NERVES

57 N. thoracodorsalis
58 N. ulnaris
59 N. medianus
60 N. musculocutaneus
61 N. axillaris
62 N. radialis
62a R. profundus n. radialis
63 N. interosseus anterior
64 Nn. digitales palmares proprii
65 R. superficialis n. radialis

BONES

66 Humerus
67 Clavicula
68 Acromion
69 Spina scapulae

TENDINES

70 Tendo m. palmaris longi
71 Tendines m. flexoris digitorum profundus
72 Tendines m. extensoris digitorum
73 Connexus intertendinei
74 Aponeurosis m. bicipitis brachii
75 Tendo m. tricipitis brachii

MUSCLES

1 M. subscapularis
2 M. supraspinatus
3 M. infraspinatus
4 M. teres minor
5 M. teris major
6 M. deltoideius
7 M. biceps brachii
7a Caput longum
7b Caput breve
8 M. brachialis
9 M. coracobrachialis
10 M. triceps brachii , caput longum
11 M. triceps brachii , caput laterale
12 M. triceps brachii, caput mediale
13 M. brachioradialis
14 M. extensor carpi radialis longus
15 M. extensor carpi radialis brevis
16 M. pronator teres
17 M. flexor carpi radialis
18 M. palmaris longus
19 M. flexor carpi ulnaris
20 M. flexor digitorum superficialis caput humeroulnare
caput radiale
21 M. flexor digitorum profundus
22 M. flexor pollicis longus
23 M. pronator quadratus
24 M. extensor digitorum, connexus intertendineus
25 M. extensor dididi minimi
26 M. extensor carpi ulnaris
27 M. anconens
28 M. supinator
29 M. abductor pollicis longus
30 M. extensor pollicis longus
31 M. extensor indicis
32 Retinaculum musculorum extensorum superius et inferius
33 Tendo m. extensoris pollicis longi
34 M. abductor pollicis brevis
35 M. opponens pollicis
36 M. flexor pollicis brevis
37 M. abductor digiti minimi
38 Retinaculum musculorum flexorum
39 M. adductor pollicis
40 Mm. interossei dorsales
41 Mm. lumbricales
42 Tendo m. flexoris pollicis

VESSELS

43 A. axillaris
44 A. circumflexa anterior humeri
45 A. brachialis
45a A. collateralis ulnaris superior

HEAD WITH MUSCLES

Muscles of Head and Neck

1 muscle frontalis
2 muscle temporalis
3 muscle auricularis anterior
4 muscle auricularis posterior
5 venter occipitalis
6 muscle orbicularis oculi part of pebrum
7 muscle orbicularis oculi part of orbital
8 minor zygomatic muscle
9 muscle levator superior alaeque nasi
10 muscle nasalis
11 muscle orbicularis oris
12 muscle zygomaticus
13 muscle buccinator
14 muscle masseter
15 muscle risorius
16 muscle depressor anguli oris
17 muscle depressor labii inferioris
18 muscle levator menti
19 muscle sternocleidomastoideus
20 muscle splenius capitis
21 muscle levator scapulae
22 muscle scalenus anterior
23 muscle scalenus posterior
24 muscle scalenus medius
25 muscle stylohyoid
26 muscle biventer, posterior
27 muscle biventer, anterior
28 muscle mylohyoideus
29 muscle geniohyoid
30 muscle hyoglossus
31 omonyoid muscle, superior venter
32 omonyoid muscle , inferior venter
33 muscle sternonyoideus
34 muscle sternothyroideus
35 muscle cricothyroideus
36 thyronyoid muscle
136 muscle trapezius

BONES OF SKULL

71 frontal bone
72 parietal bone
73 occipital bone
74 mastoid process
75 jugal bone
76 nasal bone
77 lacrimal bone
78 arcus zygomaticus
79 porus acusticus externus
80 coronal suture
81 sagittal suture
82 lambdoid suture
83 processus muscularis

84 condyloid process
85 mandibular notch
86 angle of mandibula
87 corpus mandibulae
88 hyoid bone

Muscles of the Arm

A. Muscles, Ligaments, and Tendons

1. Supraspinatus muscle, *M. supraspinatus*
2. Infraspinatus muscle, M *infraspinatus*
3. Teres major muscle, *M. teres major*
4. Teres minor muscle, *M. teres minor*
5. Latissimus dorsi muscle, *M. latissimus dorsi*
6. Subscapularis muscle, M *subscapularis*
7. Deltoid muscle, *M. deltoideus*
8. Pectoralis major muscle, *M. pectoralis major*
9. Biceps (brachii), *M. biceps brachii*
10. Brachialis muscle, M *brachialis*
11. Triceps muscle, *M. triceps brachii*
12. Pronator teres muscle, *M. pronator teres*
13. Flexor carpi radialis, *M. flexor carpi radialis*
14. Palmaris longus muscle, *M. palmaris longus*
15. Flexor carpi ulnaris, *M. flexor carpi ulnaris*
16. Extensor carpi ulnaris muscle, *M. extensor carpi ulnaris*
17. Extensor digitorum muscle, *M. extensor digitorum*
18. Extensor carpi radialis brevis muscle, *M. extensor carpi radialis brevis*
19. Extensor carpi radialis longus muscle, *M. extensor carpi radialis longus*
20. Brachio-radialis muscle, M *brachioradialis*
21. Tendon of the extensor pollicis longus muscle, *Tendo m. extensoris pollicis longi*
22. Extensor pollicis brevis muscle, *M. extensor pollicis brevis*
23. Abductor pollicis longus muscle, *M. abductor pollicis longus*
24. Flexor digitorum sublimis, *M. flexor digitorum superficialis*
25. Supinator muscle, *M. supinator*
26. Volar fascia, *Fascia antebrachii*
27. Extensor retinaculum, *Retinaculum extensorum*
28. Flexor pollicis brevis, *M. flexor pollicis brevis*
29. Abductor pollicis brevis muscle, *M. abductor pollicis brevis*
30. Adductor pollicis muscle, *M. adductor pollicis*
31. Opponens pollicis muscle, *M. opponens pollicis*
32. Opponens digiti minimi muscle, *M. opponens digiti minimi*
33. Flexor digiti minimi, *M. flexor digiti minimi brevis*
34. Abductor digiti minimi muscle, *M. abductor digiti minimi*
35. Lumbrical muscles, *Mm. lumbricales*

36. Dorsal interosseous muscles of the hand, *Mm. interossei dorsales*
37. Flexor retinaculum of upper limb, *Lig. carpi transversum*
38. Tendon sheath, *Vagina fibrosa*
39. Crucial strings of the tendon sheath,
    Pars crucformis vaginae fibrosae
40. Annular strings of the tendon sheath,
    Pars anularis vaginae fibrosae
41. Tendon of the flexor pollicis longus,
    Tendo m. flexoris pollicis longi
42. Tendons of the flexor digitorum sublimis,
    Tendines m. flexoris digitoris superficialis
43. Tendons of the flexor digitorum profundus,
    Tendines m. flexoris digitoris profundi
44. Chiasma tendinum

MUSCLES OF THE LEG WITH BASE OF PELVIS

A Muscles

1. Psoas major muscle, *M. psoas major*
2. Jliacus muscle, *M. iliacus*
3. Gluteus maximus muscle, *M. gluteus maximus*
4. Gluteus medius muscle, *M. gluteus medius*
5. Piriformis muscle, *M. piriformis*
6. Obturator internus muscle, *M. obturatorius internus*
7. a) Superior gemellus muscle, *M gemellus superior"'*
7. b) Inferior gemellus muscle, *M. gemellus inferior'*
8 Quadratus femoris muscle, *M. quadratus femoris'*
9. Tensor fasciae latae muscle, *M. tensor fasciae latae*
10 Sartorius muscle, *M. sartorius*
11. a-b-c-d) Quadriceps femoris, *M. quadriceps femoris*
   a) rectus femoris muscle, *M. rectus femoris*
   b)vastus medialis muscle, *M. vastus medialis*
   c) vastus lateralis muscle, *M. vastus lateralis*
   d) vastus intermedius muscle, *M. vastus intermedius'*
   e) common tendon of the muscles
   lla-d, *Ligamentum patellae*
12. Pectineus muscle, *M. pectineus*
13. Adductor longus muscle, *M. adductor longus*
14. Adductor magnus muscle, *M. adductor magnus*
15. Gracilis muscle, *M. gracilis*
16. Semitendinosus muscle, *M semitendinosus*
17. Semimembranosus muscle, *M. semimembranosus*
18. a-b) Biceps femoris, *M. bicepsfemoris*
   a) *Caput longum*
   b) *Caput breve*
19. Tibialis anterior muscle, *M. tibialis anterior*
20. Extensor hallucis longus muscle, *M. extensor hallucis longus*
21. Extensor digitorum longus muscle, *M. extensor digitorum longus*
22. Peroneus longus muscle, *M. peroneus (fibularis) longus*
23. Peroneus brevis muscle, *M. peroneus (fibularis) brevis*
24. a-b-c) Triceps surae muscle, *M. triceps surae*
   a and b) Gastrocnemius muscle, *M. gastrocnemius*
   (a=Caput mediale, b=Caput laterale)
   c) Soleus muscle, *M. soleus*
   d) Achilles tendon, *Tendo calcaneus*
   (Achillis)

25. Plantaris muscle, *M. plantaris*
26. Popliteus muscle, *M. popliteus'*
27. Flexor digitorum longus, *M.flexor digitorum longus*
28. Tibialis posterior muscle, *M. tibialis posterior'*
29. Flexor hallucis longus, *M. flexor hallucls longus'*
30. Extensor hallucis brevis muscle, *M. extensor hallucis brevis*
31. Extensor digitorum brevis muscle. *M. extensor digitorum brevls*
32. Abductor hallucis muscle, *M. abductor hallucis*
33. Flexor hallucis brevis, *M. flexor hallucis brevis*
34. Abductor digiti minimi muscle, *M. abductor digiti minimi*
35. Flexor digiti minimi brevis, *M. flexor digiti minimi brevis*
36. Flexor digitorum brevis, *M. flexor digitorum brevis*
37. Lumbrical muscles, *Mm. lumbricales*
38. Dorsal interosseous muscles of the foot, *Mm. interossei dorsales*

SMALL MUSCLE FIGURE

M-6

1. Pectoralis major
2. Sternocleidomastoid
3. Rectus abdominus
4. External oblique
5. Serratus anterior
6. Deltoid
7. Biceps brachii
8. Brachialis
9. Brachioradialis
10. Pronator teres
11. Flexor tendons
12. Trapezius
13. Latissimus dorsi
14. Teres major
15. Triceps brachii
16. Extensor tendons
17. Gluteus maximus
18. Gluteus medius
19. Biceps femoris
20. Semitendinosus
21. Semimembranosus
22. Gastrocnemius
23. Soleus
24. Sartorius
24. Rectus femoris
26. Vastus lateralis
27. Vastus medialis
28. Tibialis anterior
29. Adductors
30. Inguinal canal
31. Frontalis
32. Temporalis
33. Masseter
34. Orbicularis oris
35. Orbicularis oculi
36. Achilles' tendon

SMALL MUSCLE FIGURE **M-6**

Muscled Arm
3B M10 M 7

SUPERIOR EXTERMITY	
1	clavicle
2	acromion (acromial bone)
3	scapular spine
4	humerus
	Muscles
5	subscapularis
6	supraspinatus
7	infraspinatus
8	teres minor
9	teres major
10	deltoid
11	biceps brachii
12	long head of biceps brachii
13	short head of biceps brachii
14	brachialis
15	coracobrachialis
16	lateral head of triceps brachii
17	long head of triceps brachii
18	medial head of triceps brachii
19	brachioradialis
20	extensor carpi radialis longus
21	extensor carpi radialis brevis
22	pronator teres
23	flexor carpi radialis
24	palmaris longus
25	flexor carpi ulnaris
26	flexor digitorum superficialis
27	flexor digitorum profundus
28	flexor pollicis longus
29	pronator quadratus
30	extensor digitorum
31	extensor digiti minimi
32	extensor carpi ulnaris
33	anconeus
34	supinator
35	abductor pollicis longus
36	extensor pollicis
37	extensor indicis
38	extensor retinaculum
39	dorsal interosseous
40	opponens pollicis
41	abductor pollicis brevis
42	flexor pollicis brevis
43	adductor pollicis
44	lumbrical muscles of hand
45	abductor digiti minimi
46	flexor retinaculum
47	tendon of palmaris longus
48	tendon of flexor digitorium superficialis
49	Tendon of flexor pollicis longus muscle
50	tendon of extensor pollicis longus muscle
51	tendinous junction
52	tendon of extensor digitorium
53	tendon of triceps brachii muscle
	Vessels
54	Axillary artery
55	anterior circumflex humeral artery
56	brachial artery
57	superior collateral ulnar artery
58	radial artery
59	ulnar artery
60	posterior interosseous artery
61	anterior interosseous artery
62	superficial palmar branch of radial artery
63	superficial palmar arch
64	common palmar digital arteries
65	proper palmar digital arteries
66	dorsal metacarpal arteries
67	dorsal carpal branch of ulnar artery
	Nerves
68	thoracodorsal nerve
69	ulnar nerve
70	median nerve
71	musculocutaneous nerve
72	axillary nerve
73	radial nerve
74	deep branch of radial nerve
75	anterior interosseous nerve of forearm
76	proper palmar digital nerves of ulnar nerve
77	superficial branch of radia nerve

Muscular Leg
Somso M20

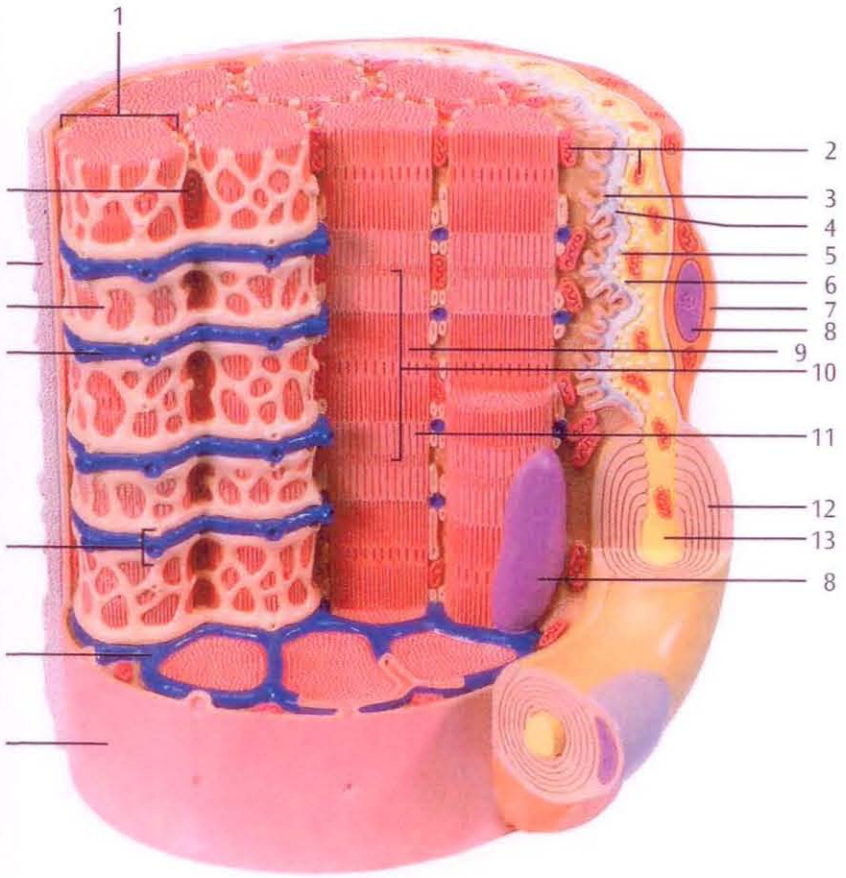
	INFERIOR EXTREMITY
1	Head of femur (femoral head)
2	greater trochanter
3	Patella
4	Tibia (shin bone)
5	fibula
6	medial malleolus
7	lateral malleolus
8	metatarsal bone I
9	Calcaneus (heel bone)
10	Achilles tendon
	Muscles
11	Gluteus maximus
12	Gluteus medius
13	piriformis
14	gemellus superior
15	obturator internus
16	gemellus inferior
17	Quadratus femoris
18	tensor fasciae latae
19	iliotibial tract
20	rectus femoris
21	vastus lateralis
22	vastus intermedius
23	vastus medialis
24	sartorius
25	iliopsoas
26	adductor longus
27	gracilis
28	adductor magnus
29	semimembranosus
30	semitendinosus
31	long head of biceps femoris
32	short head of biceps femoris
33	tibialis anterior
34	extensor digitorum longus muscle
35	peroneus (fibularis) longus
36	peroneus (fibularis) brevis
37	lateral head of gastrocnemius
38	medial head of gastrocnemius
39	soleus
40	tibialis posterior
41	popliteus
42	flexor digitorum longus
43	flexor hallucis longus
44	extensor hallucis longus
45	extensor hallucis brevis
46	extensor digitorum brevis
47	abductor digiti minimi
48	flexor digiti minimi brevis
49	flexor digitorum brevis
50	lumbrical muscle of foot
51	flexor hallucis brevis
52	abductor hallucis
53	dorsal interosseous muscles of foot
54	tendon of rectus femoris muscle
55	tendon of sartorius muscle
56	cruciate ligament of ankle
57	superior peronela retinaculum
58	inferior peroneal retinaculum
59	tendon of extensor hallucis longus muscle
60	tendons of extensor digitorum longus pedis muscle
61	tendon of peroneus (fibularis) brevis muscle
62	tendon of peroneus (fibularis) longus muscle
63	plantar aponeurosis
	Vessels
64	superior gluteal artery
65	inferior gluteal artery
66	medial circumflex femoral artery
67	femoral aretery
68	femoral vein
69	ascending branch of medial circumflex femoral artery
70	descending branch of lateral circumflex femoral artery
71	deep femoral artery
72	popliteal artery
73	popliteal vein
74	medial superior artery of knee
75	lateral superior artery of knee
76	medial inferior artery of knee
77	lateral inferior artery of knee
78	posterior tibial artery
79	posterior tibial vein
80	anterior tibial artery
81	fibular artery (peroneal artery)
82	lateral anterior malleolar artery
	Nerves
83	Sciatic nerve
84	femoral nerve
85	tibial nerve
86	common fibular nerve
87	deep peroneal nerve
88	superficial fibular nerve

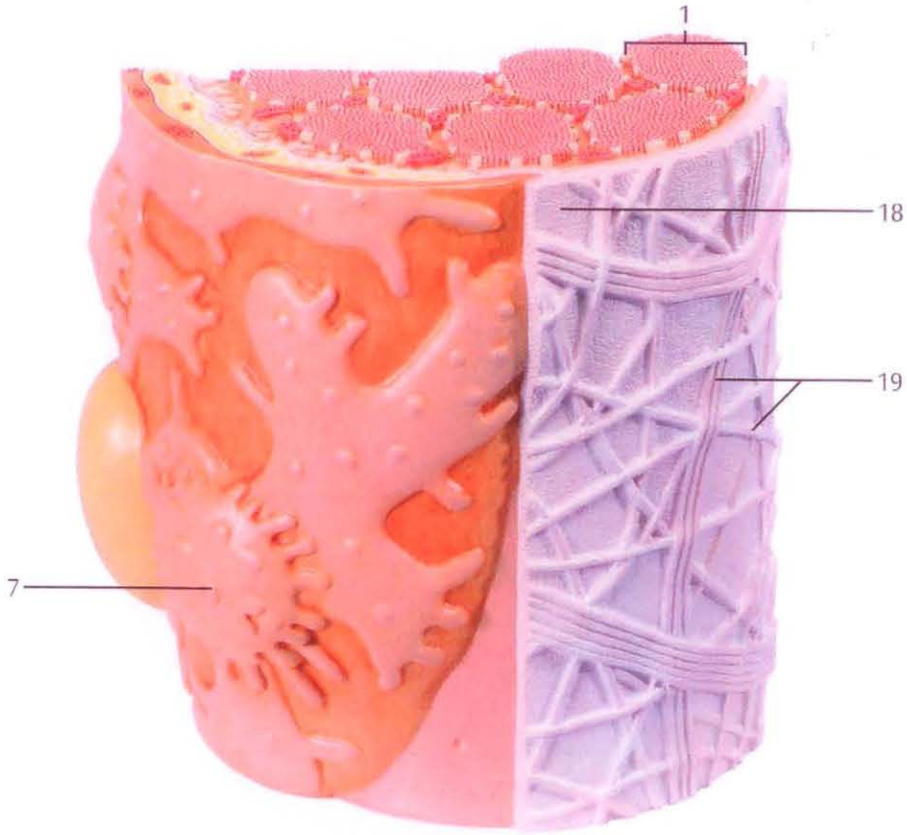
Microanatomy Muscle Fiber
3B B 60

1 myofibrils
2 mitochondrion
3 postsynaptic membrane
4 synaptic gap with basal lamina
5 presynaptic membrane
6 presynaptic vesicle
7 schwann cell
8 nucleus
9 actin filament
10 sarcomere
11 myosin filament
12 myelin sheath
13 neurofibrils
14 sarcolemma
15 transverse tubule (t-tubule)
16 triad
17 sarcoplasmic reticulum
18 basal lamina
19 reticular fibers

Kp 4/28/08

M9





M 9

SMALL BRAIN

NS-1a,b,c

Left Half

A. cerebrum
B. cerebellum
C. thalamus (only on sagittal section)
D.,a pons
E. medulla oblongata
d. 4th ventricle
g. hypothalamus
1. corpus callosum

Parts of corpus callosum (o,p,q,s)

o: body q: rostrum
p: genu s: splanum

e. cerebral aqueduct
i. corpora quadrigeminal bodies (superior & inferior colliculus)
L. fornix
z. pineal body (just dorsal to letter "k")
5. pituitary gland
28. olfactory nerve and tract
30. optic nerve and tract
32. occulomotor nerve

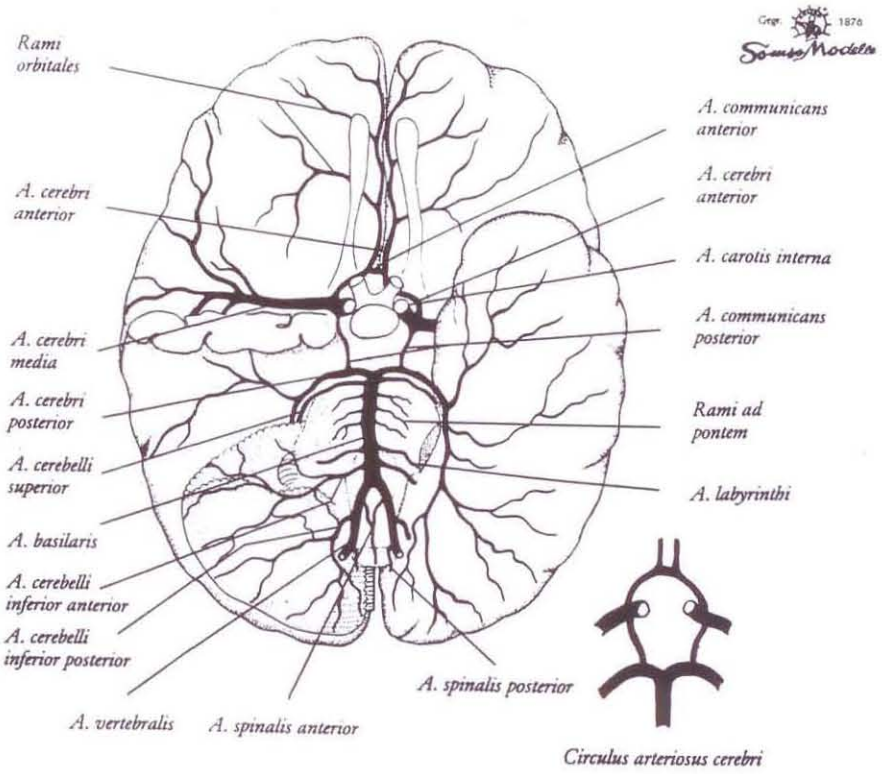
Right Half

G. parietal lobe
H. temporal lobe
I. occipital laobe
F. frontal lobe
1. corpus callosum
2.-5. lateral ventricles
7. cerebellum

Parts of cerebellum (8,10,11,12,13,g)

8: Vermis
10: Horizontal fissure
11: the tonsil (tonsilla cerebelli)
12: the flocculus (Flocculus)
13: the peduncle of the flocculus (pedunculus flocculi)
g: hypothalamus

37. optic chiasm
45. thalamus
46. pituitary gland



Circulus arteriosus cerebri

NEURON MODEL

A Neuron cell body with dendrites

B Peripheral nerve with myelin sheath

1 Axon hillock

2 Nucleus with nucleolus inside

3 Nissl bodies (rough endoplasmic reticulum)

4 Neurofibrils

5 Synaptic terminals (from other neurons)

6 Axon

7 Schwann cell (with nucleus)

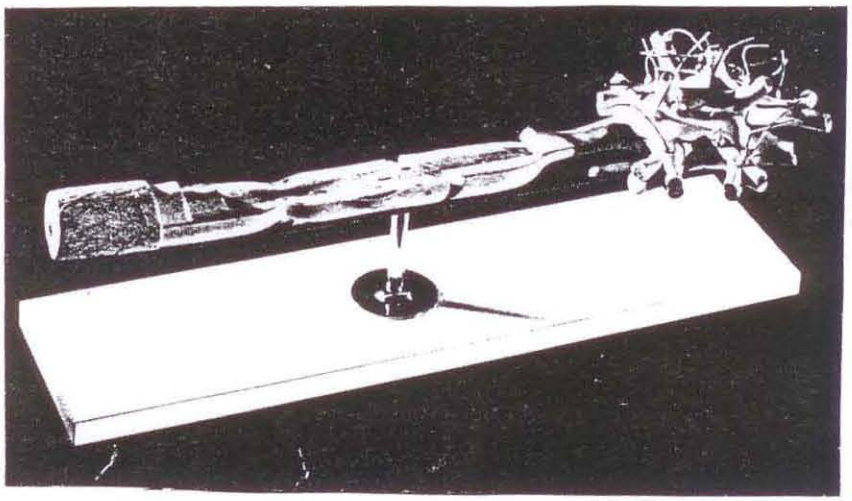
8 Neurolemma (neurolemmal sheath)

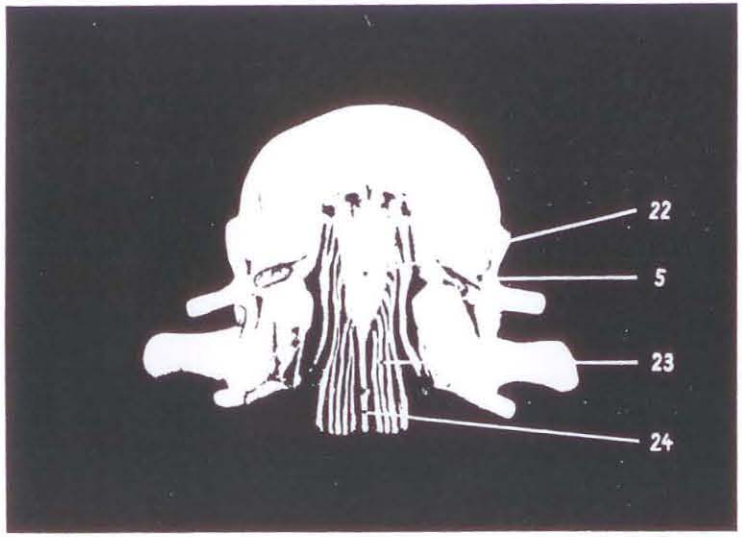
9 Nodes of Ranvier

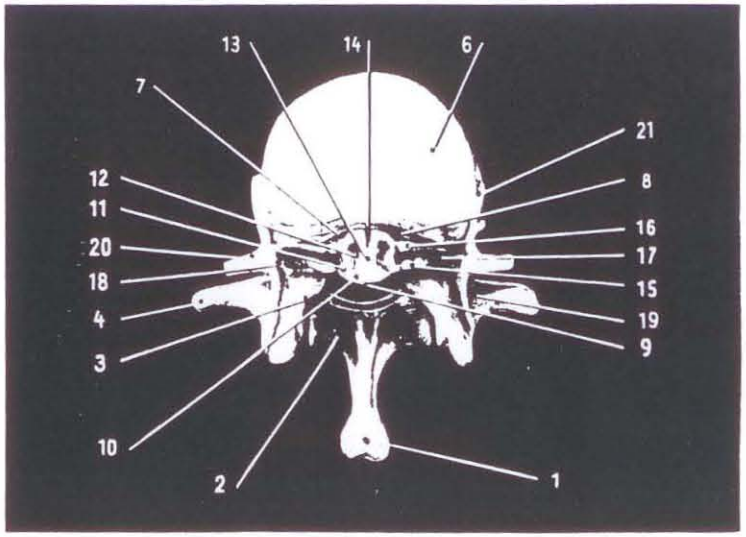
10 Mitochondria

11 Myelin sheath

14 Dendrites







Lumbar Vertebra (L II) with Spinal Cord and Spinal Nerves

natural size, made of SOMSO-PLAST

spinous process with posterior vertebral arch and inferior zygapophysis detachable to show the medullary cone and the cauda equina.

1. Spinous process, *Proc. spinosus*
2. Vertebral arch, *Arc. vertebrae*
3. Superior zygapophysis, *Proc. articularis superior*
4. Transverse process with carotid tubercle (first aid), *Proc. transversus with tuberculum caroticum*
5. Intervertebral notch
6. Vertebral body, *Corpus vertebrae*
7. Dura mater
8. Arachnoides with cavum leptomenigicum, *Arachnoid membrane with cavum leptomenigicum*
9. Posterior longitudinal cleft
10. Dorsal columns, *Fasciculi dorsales*
11. Posterior horn, *Cornu posterior*
12. Anterior horn, *Cornu anterius*
13. Central canal of the spinal cord, *Canalis centralis*
14. Fissura mediana
15. Posterior root, *Radix posterior*
16. Anterior root, *Radix anterior*
17. Spinal ganglion, *Ganglion spinale*
18. Spinal nerve
19. Posterior branch of the spinal nerve, *Ramus posterior*
20. Anterior branch of the spinal nerve, *Ramus anterior*
21. Ramus communicans albus
22. Medullary cone, *Conus medullaris*
23. Cauda equina
24. Filum terminale

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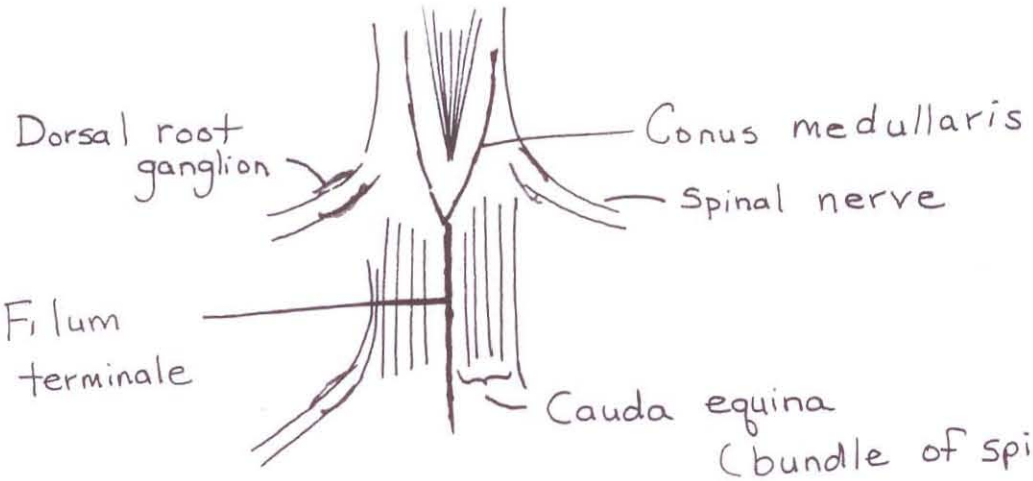
LUMBAR VERTEBRA
(L II)

Know these structures



LARGE BRAIN FIND THESE STRUCTURES AND BE ABLE TO IDENTIFY THEM

Left Half

3 Temporal lobe
4 Parietal lobe
5 Occipital lobe
8 Frontal lobe
1a, 10 precentral gyrus - the primary motor cortex (orange color)
1b, 20 postcentral gyrus - the primary sensory cortex (blue)
longitudinal fissure - between left and right hemispheres
28 lateral fissure
41, 42, 43 corpus callosum
45 fornix
47, 49 thalamus
54 pineal body
56 corpora quadrigeminal bodies (superior and inferior colliculus)
61 cerebellum
63 medulla oblongata
65 pons
71, 72 hypothalamus

I olfactory nerve and tract
II optic nerve and optic tract
III occulomotor nerve

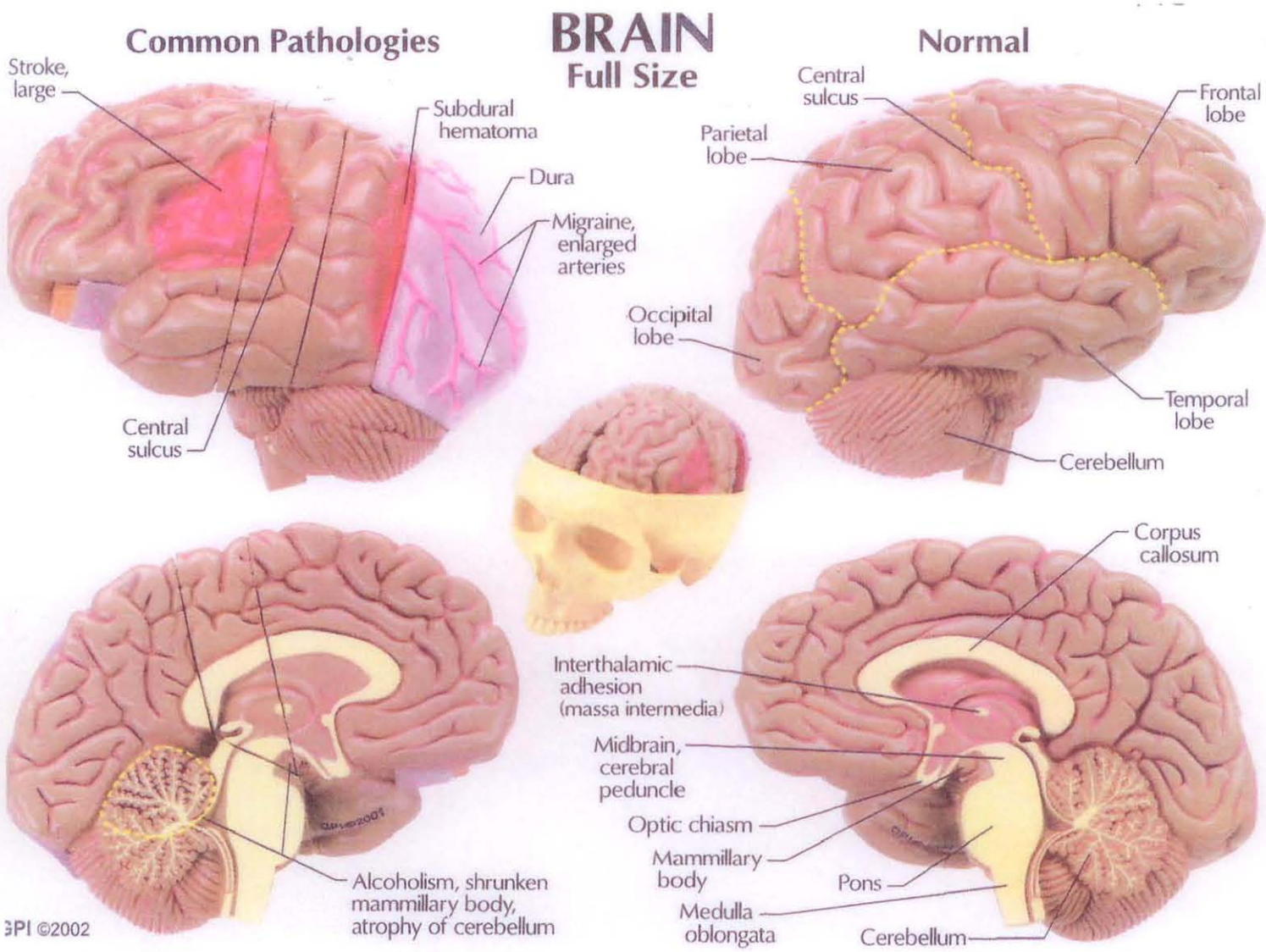
57 cerebral aqueduct
59 4th ventricle

Right Half

92 olfactory nerve and tract
112 optic nerve and optic tract
114 occulomotor nerve

115 pituitary

88, 89 lateral ventricles


Common Pathologies
BRAIN
Full Size
Normal
Stroke, large
Subdural hematoma
Dura
Migraine, enlarged arteries
Central sulcus
Central sulcus
Frontal lobe
Parietal lobe
Occipital lobe
Temporal lobe
Cerebellum
Corpus callosum
Interthalamic adhesion (massa intermedia)
Midbrain, cerebral peduncle
Optic chiasm
Mammillary body
Pons
Medulla oblongata
Cerebellum
Alcoholism, shrunken mammillary body, atrophy of cerebellum
3PI ©2002

SMALL MODEL OF SPINAL CORD SECTIONS NS-5

Two models after drawings of Prof. D. Spalteholz

The origin of the nerves in the spinal cord

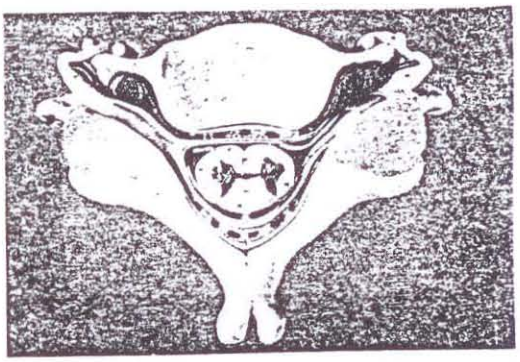
A. Section through the spinal cord

1.	**Gray matter**	Substantia grisea
2.	**Anterior column**	Columna anterior
3.	**Lateral column**	Columna lateralis
4.	**Connection of the gray matter**	
5.	**Anterior nerveroot**	Fila radicularia
6.	**Posterior nerveroot**	Fila radicularia
7.	**White matter**	Substantia alba
8.	**Anterior fissure of the spinal cord**	Fissura mediana anterior
9.	**Posterior fissure of the spinal cord**	Sulcus medianus posterior
10a.	**Lateral grooves of the spinal cord**	(anterior) Sulcus lateralis anterior
10b.	**Lateral grooves of the spinal cord**	(posterior) Sulcus lateralis posterior
11.	**Exit of nervebundles**	

B. A piece of the spinal cord with nerves

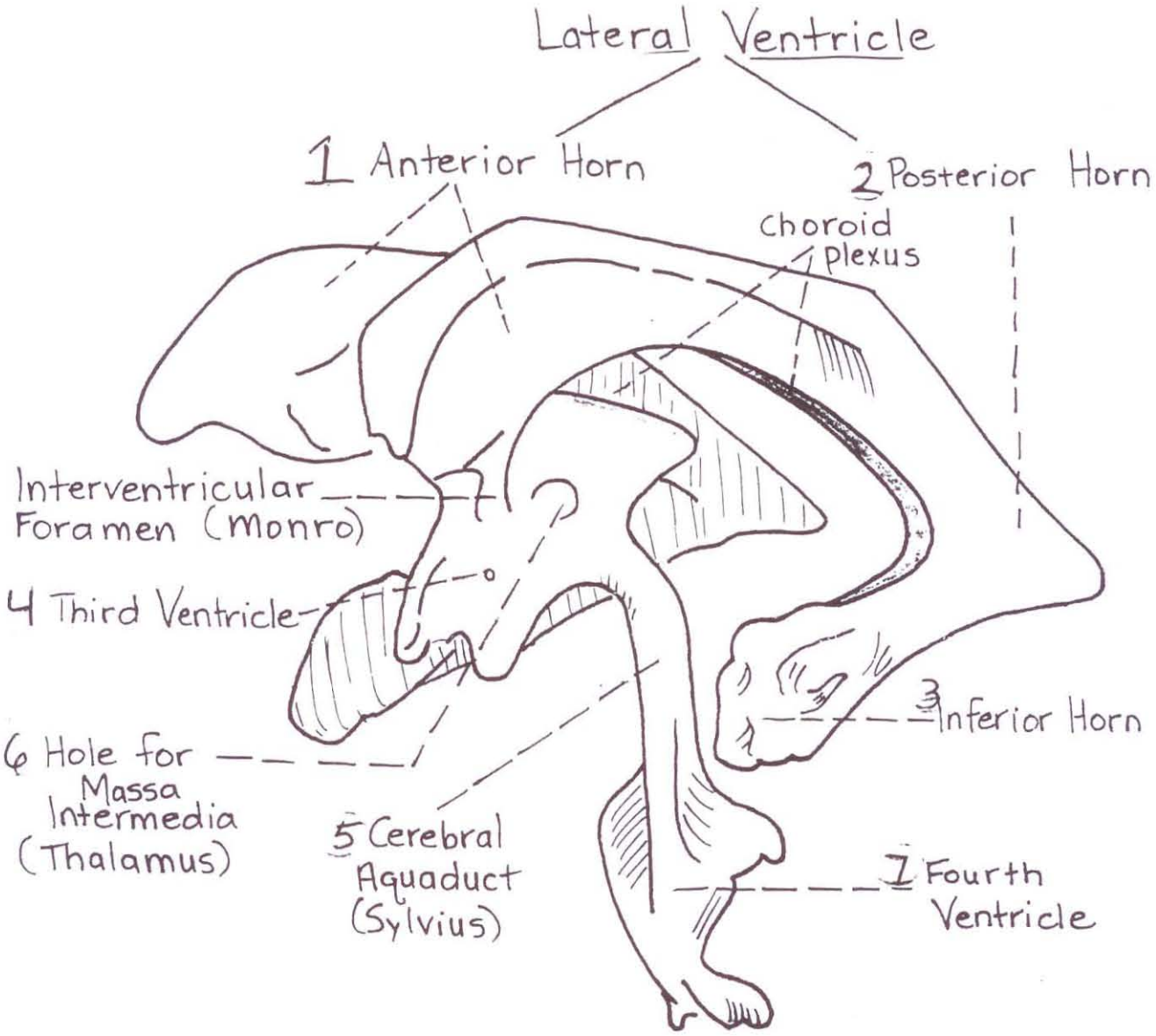
12.	**Gray matter**	Substanatia grisea
13.	**Roots of the nerves**	Fila radicularia
14.	**Connection of the gray matter**	
15.	**Central canal**	Canalis centralis
16.	**White matter**	Substantia alba
17.	**Anterior column of the spinal cord**	Columna anterior
18.	**Lateral column of the spinal cord**	Columna lateralis
19.	**Anterior fissure of the spinal cord**	Fissure mediana anterior
20.	**Posterior fissure of the spinal cord**	Sulcus medianus posterior
21.	**Dorsal root ganglion**	Ganglion
22.	**Anterior tract of the spinal cord**	Funiculus anterior
23.	**Lateral tract of the spinal cord**	Funiculus lateralis
24.	**Posterior tract of the spinal cord**	Funiculus posterior

Fifth Cervical Vertebra with Spinal Cord and Origin of Nerves



1. **Body of the vertebra,** Corpus vertebrae
2. **Transverse process,** Processus transversus
3. **Vertebral arch,** Arcus vertebralis
4. **Spinose process,** Processus spinosus
5. **Yellow ligament,** Ligamentum flavum
6. **Posterior longitudinal ligament,** Ligamentum longitudinale posterius
7. **Vertebral artery,** Arteria vertebralis
8. **Vertebral vein,** Vena vertebralis
9. **Dura mater of the spinal cord,** Dura mater spinalis
10. **Epidural cavity,** Cavum epidurale
11. **Subdural cavity,** Cavum subdurale
12. **Arachnoid of the spinal cord,** Arachnoidea spinalis
13. **Subarachnoid cavity,** Cavum subarachnoidale **(filled with spinal fluid)**
14. **Internal vertebral venous plexus,** Plexus venosi vertebrales interni (anterior et posterior)
15. **Denticulate ligament (anterior and posterior),** Ligamentum denticulatum
16. **Subarachnoid septum of spinal cord,** Septum subarachnoidale
17. **Ventral root of cervical nerve,** Radix ventralis nervi cervicalis
18. **Dorsal root of cervical nerve,** Radix dorsalis nervi cervicalis
19. **Spinal ganglion,** Ganglion spinale
20. **Anterior ramus of nerve,** Ramus nervi cervicalis anterior

21. **Posterior ramus of nerve,** Ramus nervi cervicalis posterior
22. **Sympathetic trunk,** Truncus sympathicus
23. **Ramus communicans between sympathetic trunk and spinal nerve,** Ramus communicans
24. **Pia mater of the spinal cord,** Pia mater spinalis
25. **Anterior median fissure,** Fissura mediana anterior
26. **Anterior lateral sulcus,** Sulcus lateralis anterior
27. **Posterior lateral sulcus,** Sulcus lateralis posterior
28. **Posterior median fissure,** Fissura medanus posterior
29. **Posterior glial septum,** Septum gliae dorsale
30. **Anterior funicle,** Funiculus anterior/anterior column
31. **Lateral funicle,** Funiculus lateralis/lateral column
32. **Posterior funicle,** Funiculus posterior/posterior column
33. **White substance,** Substantia alba (example of white matter)
34. **Gray substance,** Substantia grisea (example of gray matter)
35. **Central canal,** Canalis centralis
36. **Anterior horn (moter)**
37. **Lateral horn**
38. **Posterior horn or dorsal horn**



BRAIN VENTRICLES

LONG VERTEBRAL COLUMN MODEL

Vertebral Column

1. Cervical Vertebrae 1-7
2. Thoracic Vertebrae 1-12
3. Lumbar Vertebrae 1-5
4. Sacral Vertebrae 1-5
5. Coccygeal Vertebrae 1-4
6. Intervertebral Disks

A. Medulla oblongata

Spinal Cord

C. Cervical Enlargement

D. Lumbar Enlargement

E. Cauda Equina

F. Dura mater of Spinal cord

Spinal Nerves

7. Anterior or Ventral Root
8. Posterior or Dorsal Root
9. Dorsal Root Ganglion

G. Cervical plexus

H. Brachial plexus

Thoracic Nerves

38. Intercostal nerves

Lumbar Nerves

I. Lumbar Plexus

J. Sacral Plexus

Sympathetic Nervous System

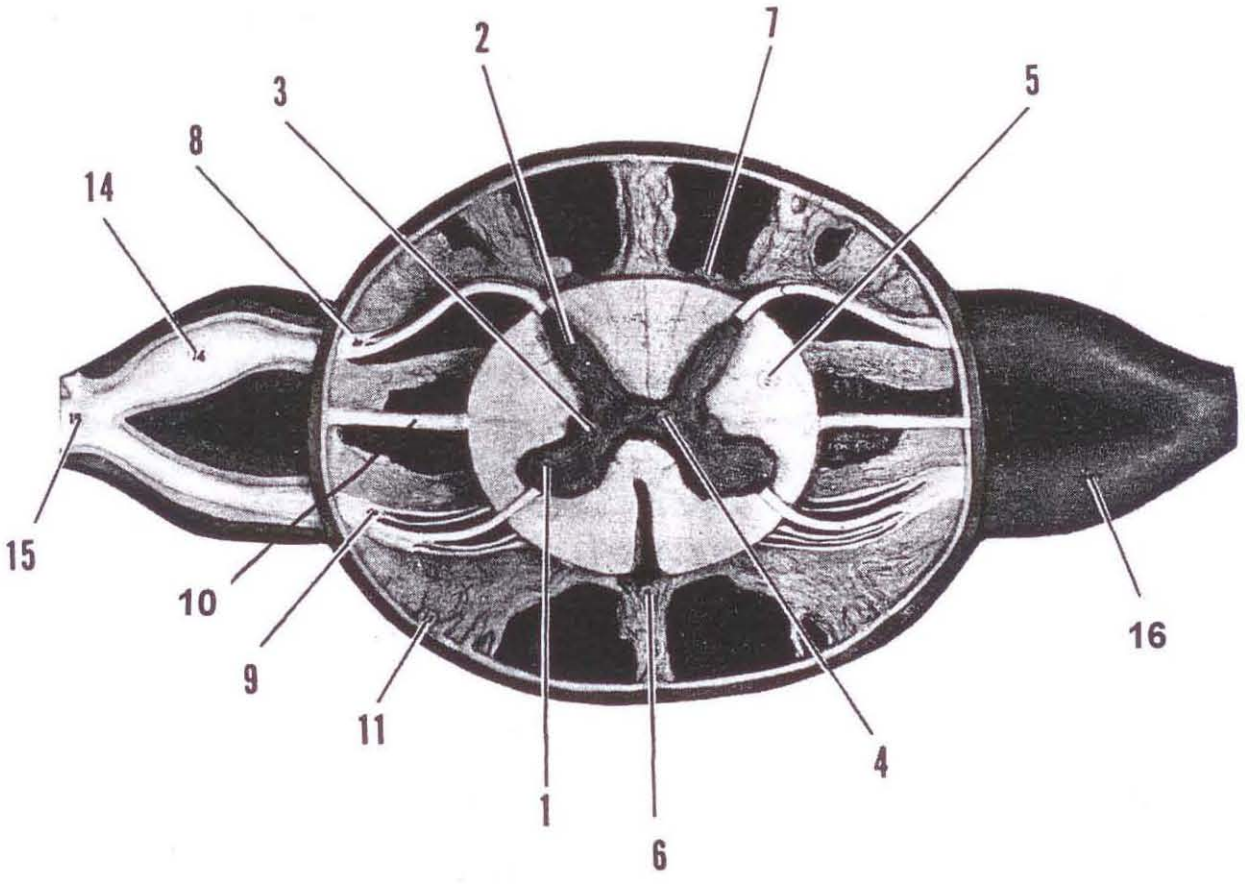
a. Sympathetic Trunk

h. Sympathetic ganglion

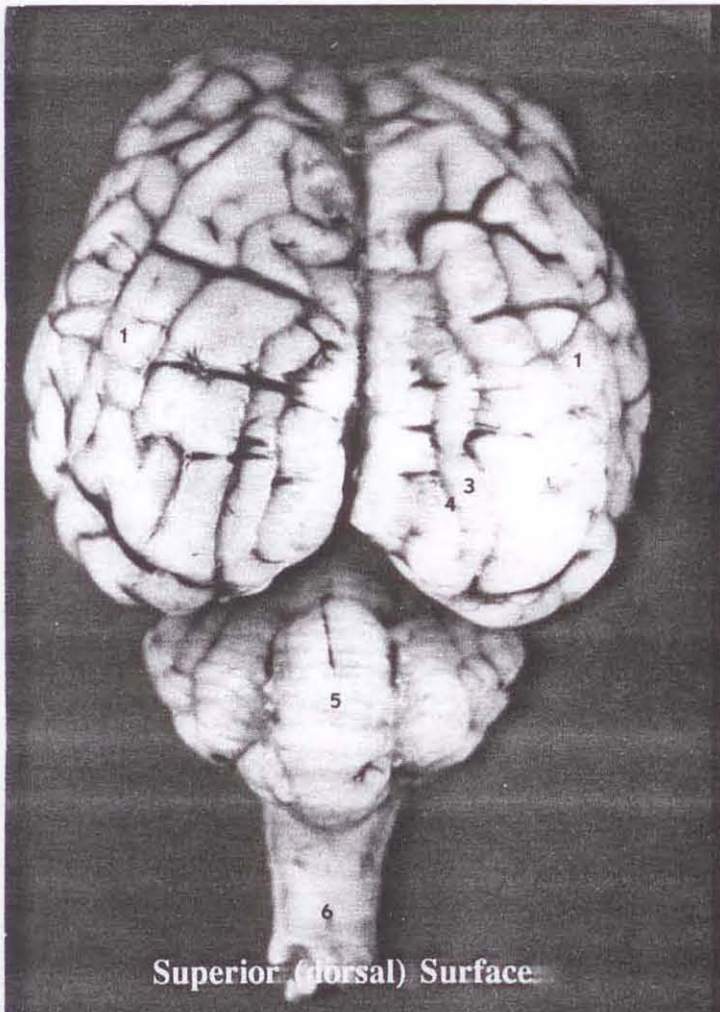
HUMAN SPINAL CORD SECTION

NS-9

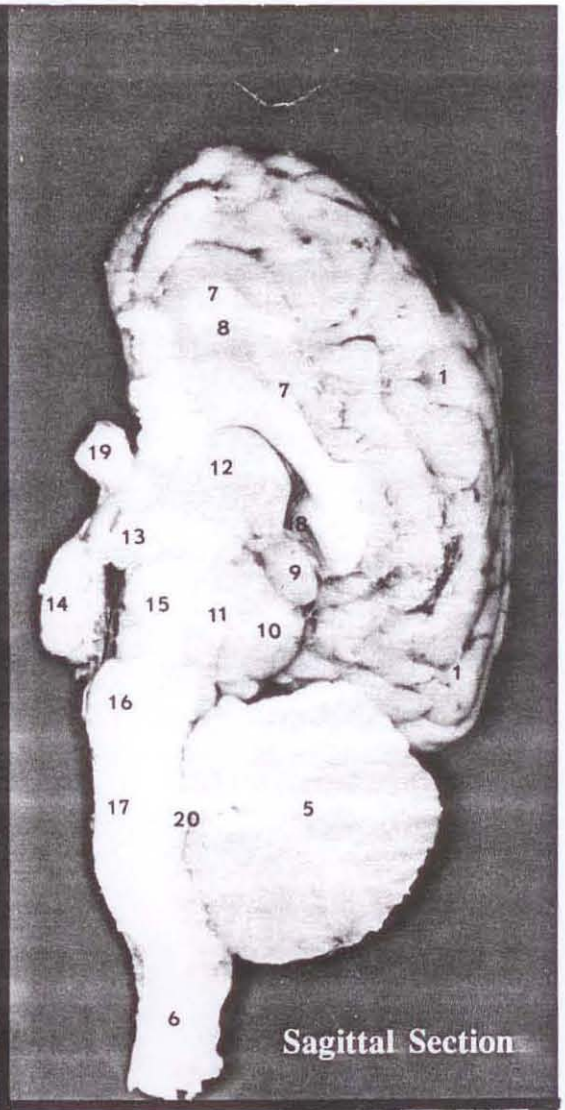
1. Ventral horn (Gray Column)
2. Dorsal horn (Gray column)
3. Lateral horn
4. Gray commissure with central canal
5. White substance
6. Anterior spinal artery
7. Dorsal spinal artery
8. Dorsal root
9. Ventral root
10. Denticulate ligament
11. Arachnoid
12. Dura mater
13. Pia mater
14. Dorsal root ganglion
15. Spinal nerve with ventral and dorsal primary divisions
16. Sleeve of meninges following dorsal and ventral roots as they form the spinal nerves



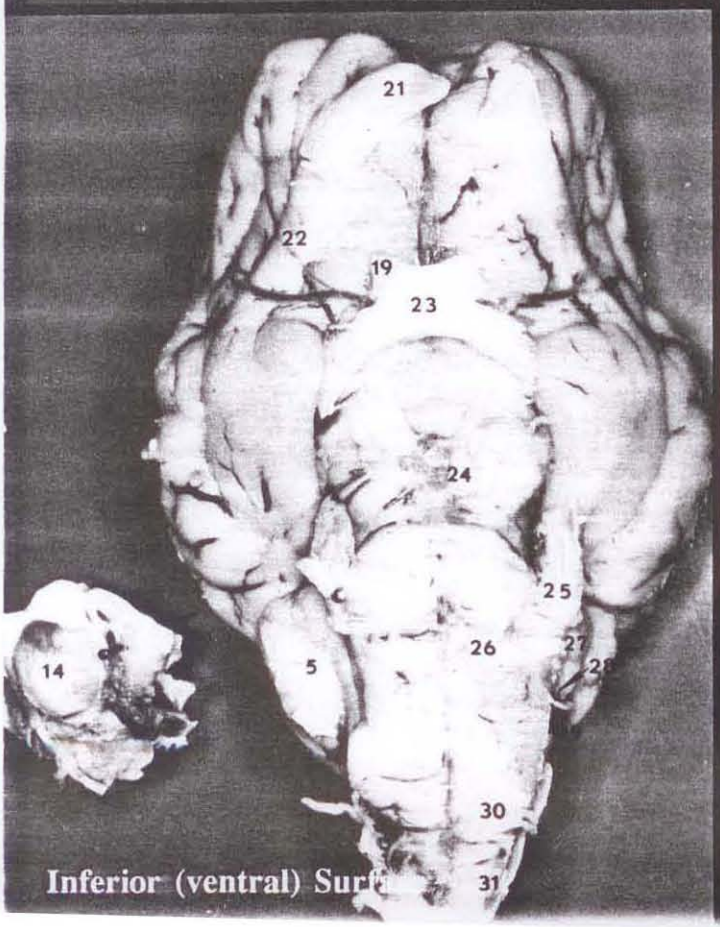
NS-13



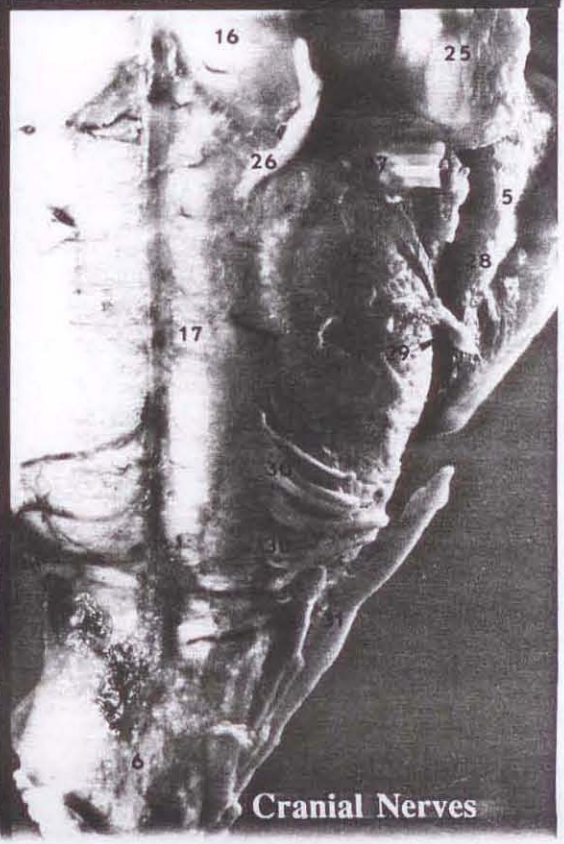
Superior (dorsal) Surface



Sagittal Section



Inferior (ventral) Surf



Cranial Nerves

BRAIN

1. cerebral cortex
2. longitudinal fissure
3. gyrus
4. sulcus
5. cerebellum
6. spinal cord
7. corpus callosum
8. septum pellucidum (lateral ventricle is behind this)
9. pineal gland
10. superior colliculus
11. cerebral aqueduct
12. thalamus
13. hypothalamus
14. pituitary gland
15. midbrain
16. pons
17. medulla oblongata
18. third ventricle
19. optic nerve
20. fourth ventricle
21. olfactory bulb
22. olfactory tract I
23. optic chiasma II
24. oculomotor n. III
25. trigeminal n. V
26. abducens n. VI
27. facial n. VII
28. glossopharyngeal n. IX
29. vagus n. X
30. hypoglossal n. XII
31. spinal accessory n. XI

BioCam Communications Inc.

Box 417, Sta. A.
Kelowna, B.C.
Canada V1Y 7N8

Box 8110-12
Blaine, WA 98230
U.S.A.

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Medulla Oblongata
Somso BS23/2

C Mid-brain
D Pons
E Medulla Oblongata

6 Interventricular foramen

14 dorsal **tectum** of mid-brain
15 ventral **cerebral peduncles**

16 median longitudinal groove
17 middle cerebellar peduncles

18 fourth ventricle with the rhomboid fossa
19 median longitudinal fossa
20 pyramids
21 olive
22 decussation of pyramids
23 posterior longitudeinal fissure
24 fasciculus gracilis
25 tuberculum nuclei gracilis
26 posterior intermediate sulcus
27 fasciculus cuneatus

a grey substance of the pons
b central canal of the spinal cord
c arbor vitae
d fourth ventricle
e aqueduct of mid-brain
f anterior medullary velum
g thrid ventricule
h anterior commissure
i tectum of mid-brain
k posterior commissure
l fornix
m mammillary body
n interventricular foramen
o corpus callosum
p knee of the corpus callosum
q rostrum of te corpus callosum
r septum lucidum
s splenium of the corpus callosum

29 Olfactory nerves
30 Optic nerve
31 optic chiasm
32 oculomotor nerve
33 trochlear nerve
34 trigeminal nerve
35 abducens nerve
36 facial nerve
37 auditory nerve
38 glossopharyngeal nerve
39 vagus nerve
40 accesssory nerve
41 hypoglossal nerve
42 1st and 2nd cervicla nerves
43 Optic tract
44 internal geniculate body
45 thalamus
46 hypophysis
47 tuber cinereum
48 mammillary body
49 external geniculate body

Base of the Head
Dura Mater of the Brain

Somso BS 2

Dura mater of the brain

I. Falx of the cerebrum
II. Falx of the cerebellum
III Tentorium of the cerebellum
IV Diaphragm of the sella turcica

Base of the Skull

1 Transverse sinus
   a. straight sinus
   b. superior sagittal sinus
   c. great vein of the cerebrum
2 Sigmoid sinus
3 Superior petrous sinus
4 Inferior petrous sinus
5 Cavernous sinus
6 Intercavernous sinuses
7 Occipital sinus
8 Internal carotid artery
9 Ophthalmic artery
11 Posterior communicating artery
12 Posterior cerebral artery
13 Basilar artery
14 Superior artery of the cerebellum
15 Artery of the labyrinth
16 Inferior anterior artery of the cerebellum
17 Vertebral artery
18 Anterior spinal artery
19 Inferior posterior artery of the cerebellum
20 Middle meningeal artery
21 Diploic veins
22 Diploë

Vegetative or Autonomic Nervous System

Somso BS26/1

1	frontal nerve
2	ciliary ganglion
3	pterygopalatine ganglion
4	infraorbital nerve
5	greater petrosal nerve
6	otic ganglion
7	chorda tympani
8	lingual nerve
9	inferior ganglion of the bagus nerve
10	internal carotid plexus
11	glossopharyngeal nerve (N. IX)
12	hypoglossal nerve (N.XII)
13	first sympathetic trunk nerve
14	submandibular ganglion
15	superior laryngeal nerve
16	middle cervical ganglion
17	vagus nerve (N,X)
18	superior cervical cardia branches
19	recurrent laryngeal nerve
20	cervicothoracic (stellate) ganglion
21	bronchial branches of the vagus nerve
22	aortic thoracic plexus (of the sympathetic trunk)
23	thoracic ganglia (of the sympathetic trunk)
24	(of the sympathetic trunk)
25	cardiac ganglia
26	cardiac plexus
27	communicating branch (grey)
28	oesophageal plexus
29	greater splanchnic nerve
30	anterior vagal trunk
31	celiac branches (of vagus nerve)
32	gastric plexus
33	celiac plexus
34	celiac ganglia
35	superior mesenteric ganglion
36	aorticorenal ganglion
37	renal plexus

38	lesser splanchnic nerve
39	abdominal aortic plexus
40	superior mesenteric ganglion
41	inferior mesenteric ganglion
42	inferior mesenteric plexus
43	lumbar ganglia
44	right iliac plexus
45	superior hypogastic plexus
46	sacral ganglia
47	right hypogastric plexus
48	pelvic splanchnic nerves
49	inferior hypogastric plexus
50	pelvic ganglia
51	right vesical plexus
52	prostatic plexus
53	inferior rectal plexus

Cervical Vertebra (C VI) with Spinal Cord & Spinal Neves

(natural size)

Somso BS 29

1 Spinous Process

2 Vertebral arch

3 Spuperior zygapophysis

4 transverse process with carotide tubercle (first aid)

5 transverse foramen

6 Vertebral body

7 Dura mater

8 Arachnoid membrane with cavum leptomenigicum

9 Vertebral artery

10 Dorsal columns

11 Posterior horn

12 Anterior horn

13 Central canal of the spinal cord

14 median fissure

15 Posterior root

16 Anterior root

17 Spinal ganglion

18 Spinal nerve

19 Posterior branch of the spinal nerve

20 Anterior branch of the spinal nerve

21 White ramus communicans

KP 4/27/08

The Human Brain
3B C18

	Telencephalon
1	frontal lobe
2	parietal lobe
3	occipital lobe
4	temporal lobe
5	central sulcus
6	precentral gyrus
7	postcentral gyrus
8	olfactory bulb
9	anterior commissure
10	corpus callosum
a	genu
b	trunk
c	splenium
d	rostrum
11	septum
12	fornix
13	posterior commissure
14	insula
15	internal capsule
16	lateral ventricule
e	frontal horn
f	central part
17	choroid plexus
g	occipital horn
h	temporal horn
18	hippocampus
	Diencephalon
19	thalamus
20	hypothalamic sulcus
21	hypothalamus
22	interthalamic adhesion (intermediate mass)
23	pineal gland
24	left mammillary body
25	pituitary galnd
26	choroid plexus of 3rd ventricle
27	caudate nucleus
28	pulvinar
29	medial geniculate body
30	lateral geniculate body

	Mesencephalon
31	tectal plate
32	tegmentum of midbrain
33	cerebral crus
34	aqueduct of midbrain
	Metencephalon
35	Cerebellum
a	vermis
b	tonsil
c	flocculus
d	arbor vitae
e	fourth ventricle
36	pons
f	superior cerebellar peduncle
g	middle cerebellar peduncle
h	inferior cerevellar peduncle
	Myelencephalon
37	medulla oblongata
38	inferior olive
39	pyramid
40	first cervical nerve (C1)
	Cranial Nerves
I	olfactory nerve
II	optic nerve
III	oculomotor nerve
IV	trochlear nerve
V	trigeminal nerve
VI	abducens nerve
VII	facial nerve
VIII	vestibulocochlear nerve
IX	glossopharyngeal nerve
X	vagus nerve
XI	accessory nerve
XII	hypoglossal nerve

Neuron
Somso BS 35

A. NERVE CELL

A. Cell body of the nerve cell with dendrites

B. NERVE FIBER

B. Peripheral nerve with sheaths

1 Axon hillock

2 nucleus of nerve cell with nucleolus

3 endoplasmic reticulum

4 Neurofibrils

5 Axon (synaptic) terminals

6 Axon

7 Schwann cell with nucleus

8 Myelin sheath

9 Node of Ranvier

10 mitochondria

11 Myelin sheath

12 perineural sheath of connective tissue

13 Axon

14 dendrites

15 lysosomes

16 neurotubules

17 Golgi apparatus

Origin of Nerves
(The Origin of the Nerves in the Spinal Cord)

A. Section through the spinal cord, enlarged approx. 10 times

1 Dorsal (posterior) horn
2 Ventral (anterior) horn
3 Ventral (anterior) horn
4 Gray matter
5 Ventral (anterior) rootlets
6 Dorsal (posterior) rootlets
7 Lateral horn
8 Ventral (anterior) median fissure
9 Dorsal (posterior) median sulcus
10a Ventral (posterior) rootlets
10b Dorsal (posterior) rootlets
11 outlet of nerve bundles

B. A piece of the spinal cord with nerves, enlarged approx. 5 times

12 Ventral (anterior) horn
13 Rootlets
14 Gray matter
15 Gray matter
16 White matter
17 Ventral (anterior) horn
18 Dorsal (posterior) horn
19 Ventral (anterior) median fissure
20 Dorsal (posterior) meian sulcus
21 Dorsal root ganglion
22 Ventral (anterior) white column (funiculus)
23 Lateral white column (funiculus)
24 Dorsal (posterior) white column (funiculus)

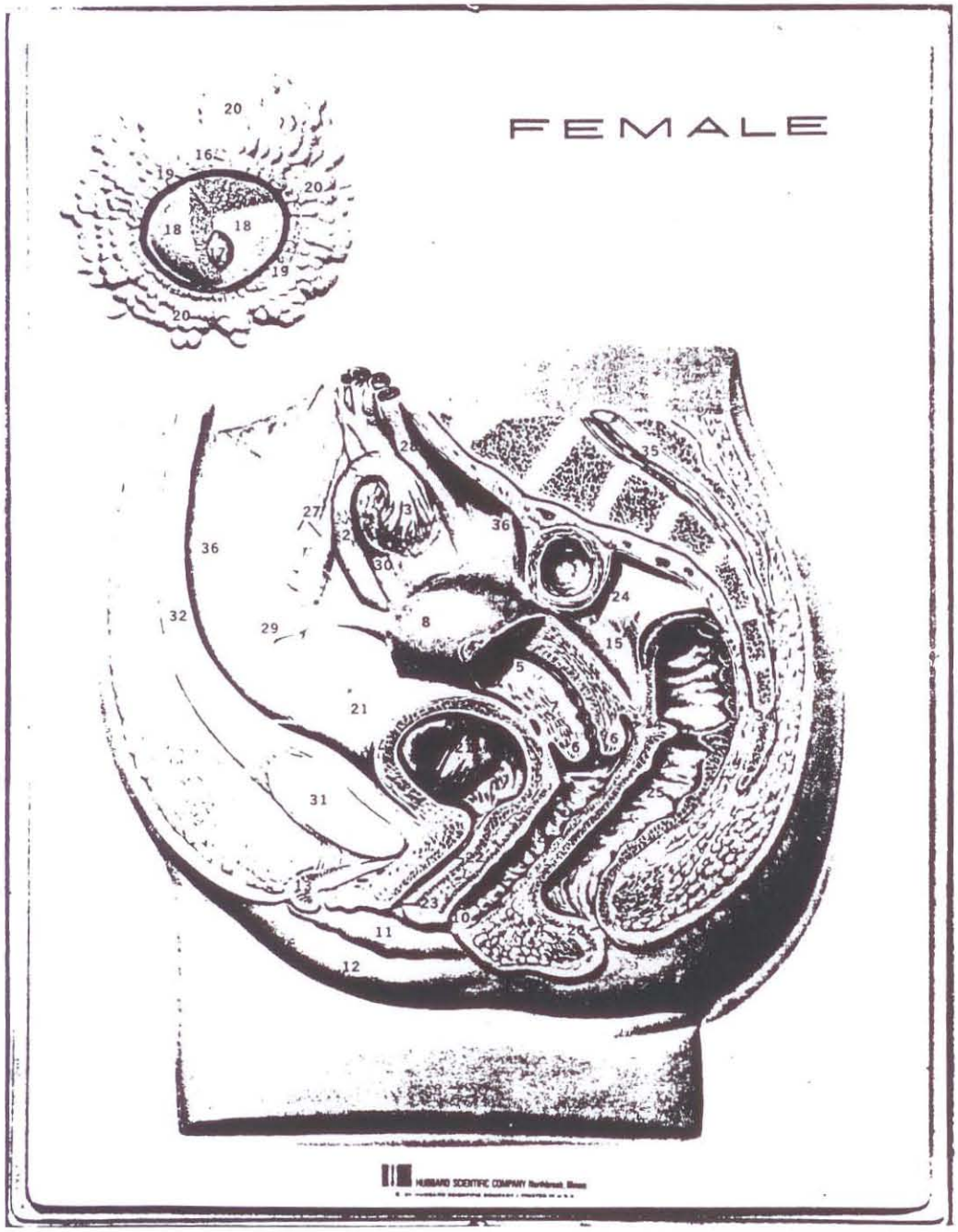
KP edit 3/20/08 *varies from the manufacturer's key*

FEMALE REPRODUCTIVE SYSTEM Rep-1

INTRODUCTION

The Hubbard Female Reproductive System Model is part of a coordinated program, *Sex Education/Family Living*. The model is derived from anatomical sources. Dimensions and spatial relationships are anatomically accurate, and reproduced 1½ times life-size. The model shows not only the pelvic area of the human female, but also a greatly enlarged human ovum, or egg, sectioned so that its interior may be studied.

ORGANS AND STRUCTURES



KEY

Organs and structures primarily associated with reproduction

1. Ovary (one of two in body)
2. Fallopian tube (one of two in body)
3. Fimbria of the Fallopian tube
4. Juncture of lefthand Fallopian tube with uterus
5. Uterus, partly sectioned
6. Cervix or neck of the uterus
7. *Isthmus of the uterus*
8. *Fundus of the uterus*
9. Vagina
10. Vaginal opening or orifice
11. *Labium minus (lesser lip of vulva)*
12. *Labium majus (greater lip of vulva)*
13. *Clitoris*
14. *Fornix of the uterus*
15. *Recto-uterine pouch of peritoneum*

The ovum

16. Entire mature ovum
17. Nucleus
18. *Cytoplasm of ovum*
19. *Zona pellucida*
20. *Granulosal cells of corona radiata*

Other pelvic organs and structures

21. Urinary bladder
22. Urethra
23. Urethral opening or orifice
24. Colon (sigmoid)
25. Rectum
26. Anus
27. *External iliac artery and vein*
28. *Hypogastric artery*
29. *Round ligament (sacro-uterine)*
30. *Ovarian ligament*
31. *Pubic symphysis*
32. *Linea alba (ligament/fascia between rectus abdominalis muscle)*
33. *Sacrum (vertebral bones)*
34. *Coccyx bone*
35. *Cauda equina (sacral nerve bundle)*
36. *Peritoneal cavity*

Organs and structures delineated in *italic type* are suggested for advanced classes or optional treatment.

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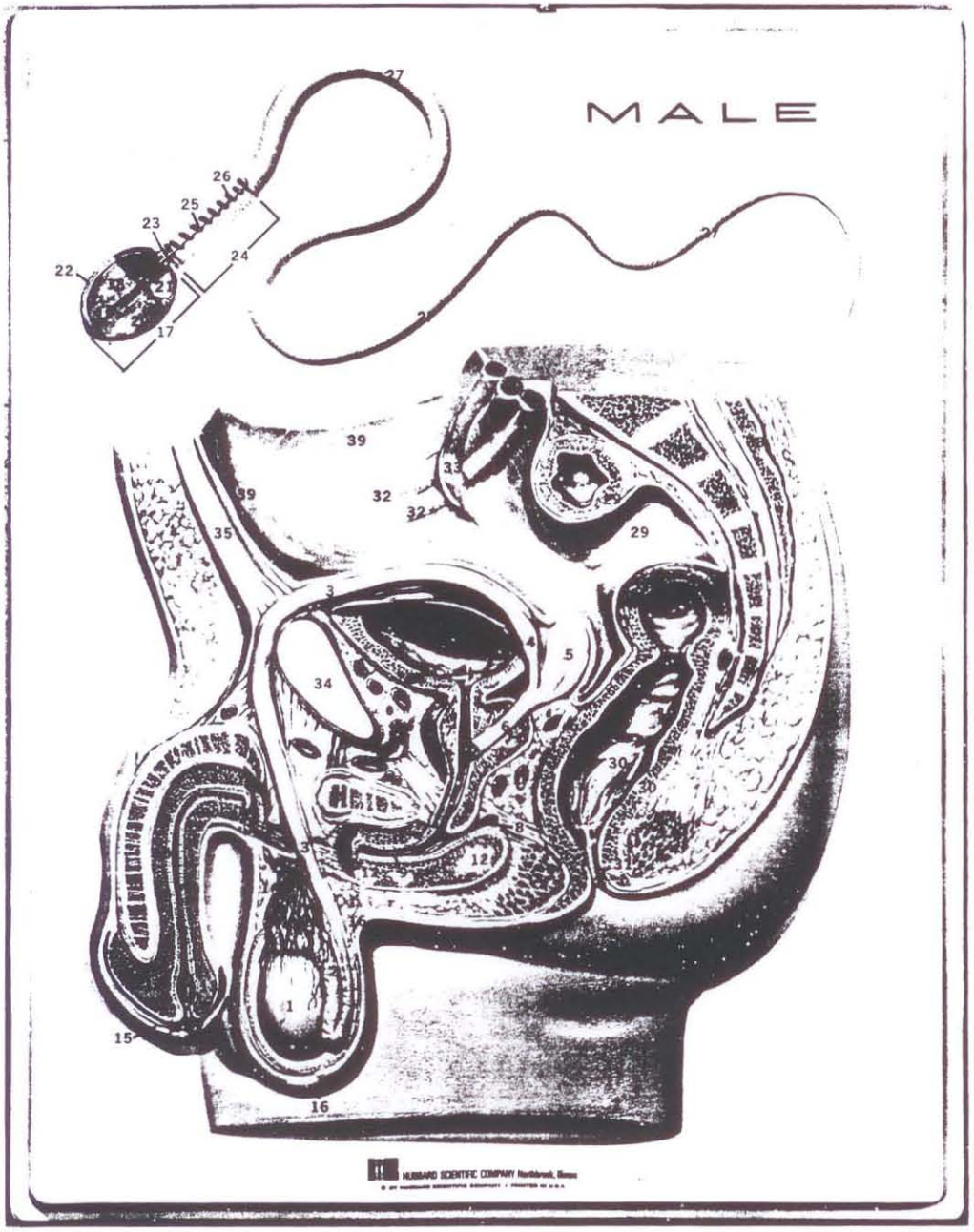
MALE REPRODUCTIVE SYSTEM

Rep-2

INTRODUCTION

The Hubbard Male Reproductive System Model is part of a coordinated program, *Sex Education/Family Living*. The model, derived from anatomical sources, is completely authentic, and is reproduced 1½ times life-size. Dimensions and spatial relationships are anatomically accurate. The model shows not only the pelvic area of the human male, but also a greatly enlarged human male sex cell, or spermatozoon, sectioned so that its interior may be studied. The spermatozoon is magnified over 16,000 times.

ORGANS AND STRUCTURES



KEY

Organs and structures primarily associated with reproduction

1. Testis (one of two in body)
2. Epididymis (one of two in body)
3. Ductus deferens (one of two in body)
4. *Ampulla of ductus deferens*
5. Seminal vesicle (one of two in body)
6. *Ejaculatory duct*
7. Prostate gland
8. *Bulbourethral gland* (one of two in body)
9. Urethra
10. Penis
11. *Corpus cavernosum of penis*
12. *Corpus spongiosum of urethra*
13. *Glans of penis*
14. *Fossa navicularis of urethra*
15. Prepuce or foreskin of penis
16. Scrotum

The spermatozoon

17. Head of sperm
18. Nucleus
19. *Vacuole*
20. *Anterior head cap*
21. *Posterior head cap*
22. *Surface membrane*
23. Neck
24. Body or middle piece
25. Axial filament
26. Mitochondria
27. Tail

Other pelvic organs and structures

28. Urinary bladder
29. Colon (sigmoid)
30. Rectum
31. Anus
32. *External iliac artery and vein*
33. *Hypogastric artery*
34. *Pubic symphysis*
35. *Linea alba (ligament/fascia between rectus abdominalis muscle)*
36. *Sacrum (vertebral bones)*
37. *Coccyx bone*
38. *Cauda equina (sacral nerve bundle)*
39. *Peritoneal cavity*

Organs and structures delineated in *italic type* are suggested for advanced classes or optional treatment.

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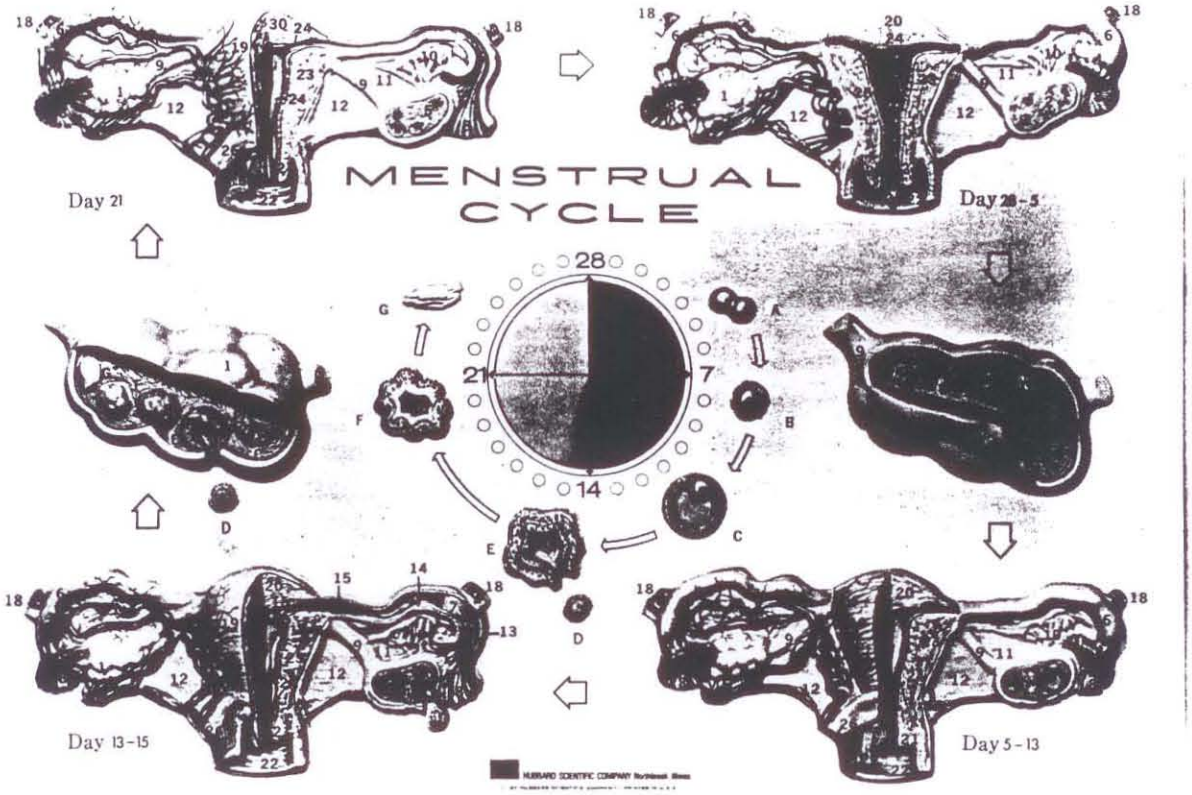
MENSTRUAL CYCLE

Rep-3

INTRODUCTION

The Hubbard Menstrual Cycle Model is part of a coordinated program, *Sex Education/Family Living*. The model is derived from anatomical sources and is completely authentic. The models of the uterus and associated organs and structures are life-size, but the ova extruded from the ovaries have been magnified so that they will be clearly visible. The two enlarged ovaries, central on the model are three times life-size. The sequence on the model shows the average 28-day reproductive cycle of the human female, with details of ovulation. In the middle of the model is a diagram of changes in the uterus compared to ovulation.



KEY

Anatomy of the ovary and fallopian tubes (posterior aspect)

1. Ovary
2. Coronal section of ovary—corpus luteum to corpus albicans shown generalized (upper righthand model)
3. Coronal section of ovary—developing vesicular follicle shown generalized (lower righthand model)
4. Coronal section of ovary—ovulation shown generalized (lower lefthand model)
5. Coronal section of ovary—mature corpus luteum shown generalized (upper lefthand model)
6. Fallopian tube or oviduct with number at the ampulla, or wide upper portion
7. Fallopian tube—longitudinal section
8. Fimbriated end of fallopian tube
9. Ovarian ligament (connects to uterus)
10. *Epoophoron or parovarium (vestigial and nonfunctioning)*
11. *Mesosalpinx portion of broad ligament*
12. *Broad ligament*
13. Ovum moving into fallopian tube (lower lefthand model) **First Day**
14. Ovum moving toward uterus (lower lefthand model) **Second Day**
15. Ovum nearing uterus (lower lefthand model) **Third Day**
16. Fertilized ovum within uterus (lower lefthand model) **Fourth Through Seventh Day**
17. Fertilized ovum implanting itself in uterine lining (lower lefthand model) **After Seventh Day**
18. *Suspensory ligament of ovary and ovarian artery and vein (above ampulla of fallopian tubes)*

Anatomical features of the uterus (posterior aspect)

19. Corpus (body) of uterus
20. Fundus of uterus
21. Cervix or neck of uterus
22. Interior wall of vagina
23. Myometrium (muscular wall of uterus)
24. Endometrium (lining of uterus)
25. Menstruation or bleeding phase of endometrium (upper righthand model)
26. *Sacro-uterine ligament*

The ovulation process or oogenesis

A. Primary oocyte or ripening egg (exaggerated scale)
B. Oocyte with corona radiata (exaggerated scale)
C. Developing, fluid-filled vesicular follicle (exaggerated scale)
D. Mature ovum or gamete after rupture of follicle
E. Ovulating follicle showing ruptured stigma
F. Corpus luteum or "yellow body"
G. Corpus albicans or "white body"

Organs and structures delineated in *italic type* are suggested for advanced classes or optional treatment.

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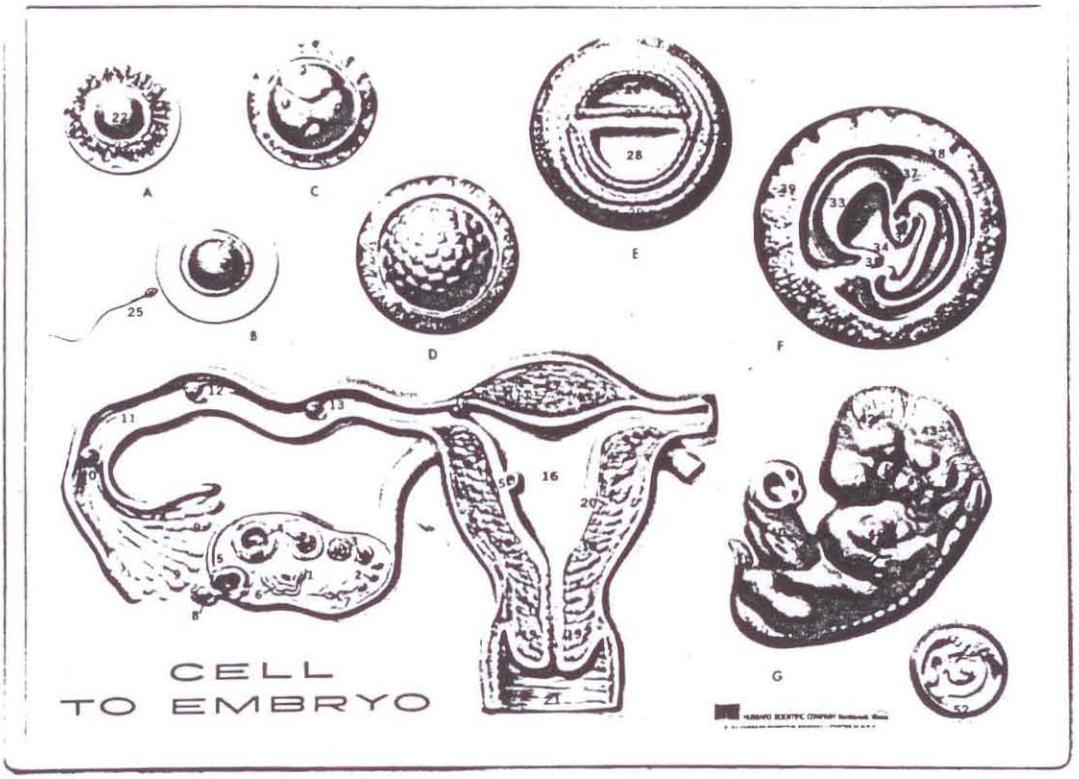
CELL TO EMBRYO MODEL

Rep-4

INTRODUCTION

The Hubbard Cell to Embryo Model is part of a coordinated program, *Sex Education/Family Living*. The model is derived from anatomical sources and is completely authentic. The model of the ovary and uterus is twice life-size, but it should be noted that the ovum traveling within the oviduct (numbers *8, 10, 12, 13, 14, 15*) has been considerably exaggerated in size. Models A-G are greatly magnified for the purpose of observing and studying details. The sequence on the model illustrates the successive development of the baby from ovulation to fertilization and implantation and on into the fifth week of embryonic life.



KEY

Development of the embryo

A Mature ovum
B Fertilization of ovum by sperm cell
C Cleavage (cell division at the four-cell stage)
D Morula (multi-cell stage of development)
E Embryonic vesicle (highly schematic)
F Developing embryo at about 21 days
G Much enlarged embryo at about the fifth week

Maternal and embryonic structures

1. Ovary (coronal section — stroma and associated components)
2. Primary oocyte (developing ovum)
3. Oocyte with corona radiata
4. Developing fluid-filled vesicular follicles
5. Ovulating follicle
6. Corpus luteum
7. Corpus albicans (degenerative product of corpus luteum)
8. Mature ovum discharged from follicle (cf. **A**)
9. Fimbriated end of oviduct or fallopian tube
10. Ovum in oviduct with sperm ready to penetrate (fertilization, first day: cf. **B**)
11. Oviduct or fallopian tube (section)
12. Cleavage of fertile ovum (second day: cf. **C**)
13. Morula or multi-celled stage (third day: cf. **D**)
14. Embryonic vesicle enters uterus (fourth-fifth day)
15. Implantation of vesicle begins in the wall of the uterus or endometrial epithelium (seventh day)
16. Corpus of uterus (frontal mid-line section)
17. Fundus of uterus
18. Myometrium or muscle layers of uterus
19. Cervix or neck of uterus
20. Endometrium (highly vascular mucous membrane)
21. Vagina (frontal section)
22. Nucleus of ovum
23. Zona pellucida of ovum
24. Corona radiata of ovum
25. Sperm cell or spermatozoon
26. Yolk sac of developing embryo
27. Embryonic disk or plate
28. Amnion of developing embryo
29. Embryonic placenta (trophoblast tissue)
30. Body of embryo
31. Amnion and amniotic cavity
32. Developing heart
33. Yolk sac
34. Yolk sac stalk
35. Allantoic diverticulum (allantois — origins of tissues of urinary bladder)
36. Body stalk
37. Extra-embryonic coelum (cavity)
38. Chorion
39. Placental villi
40. Belly stalk (developing umbilical cord)
41. Forebrain area
42. Midbrain area
43. Hindbrain area
44. Eye
45. Developing outer ear
46. Heart prominence
47. Liver prominence
48. Differentiating somites
49. Tail
50. Notches between digital rays of hand
51. Toe rays (may be in evidence)
52. Embryo with membranes **in situ**

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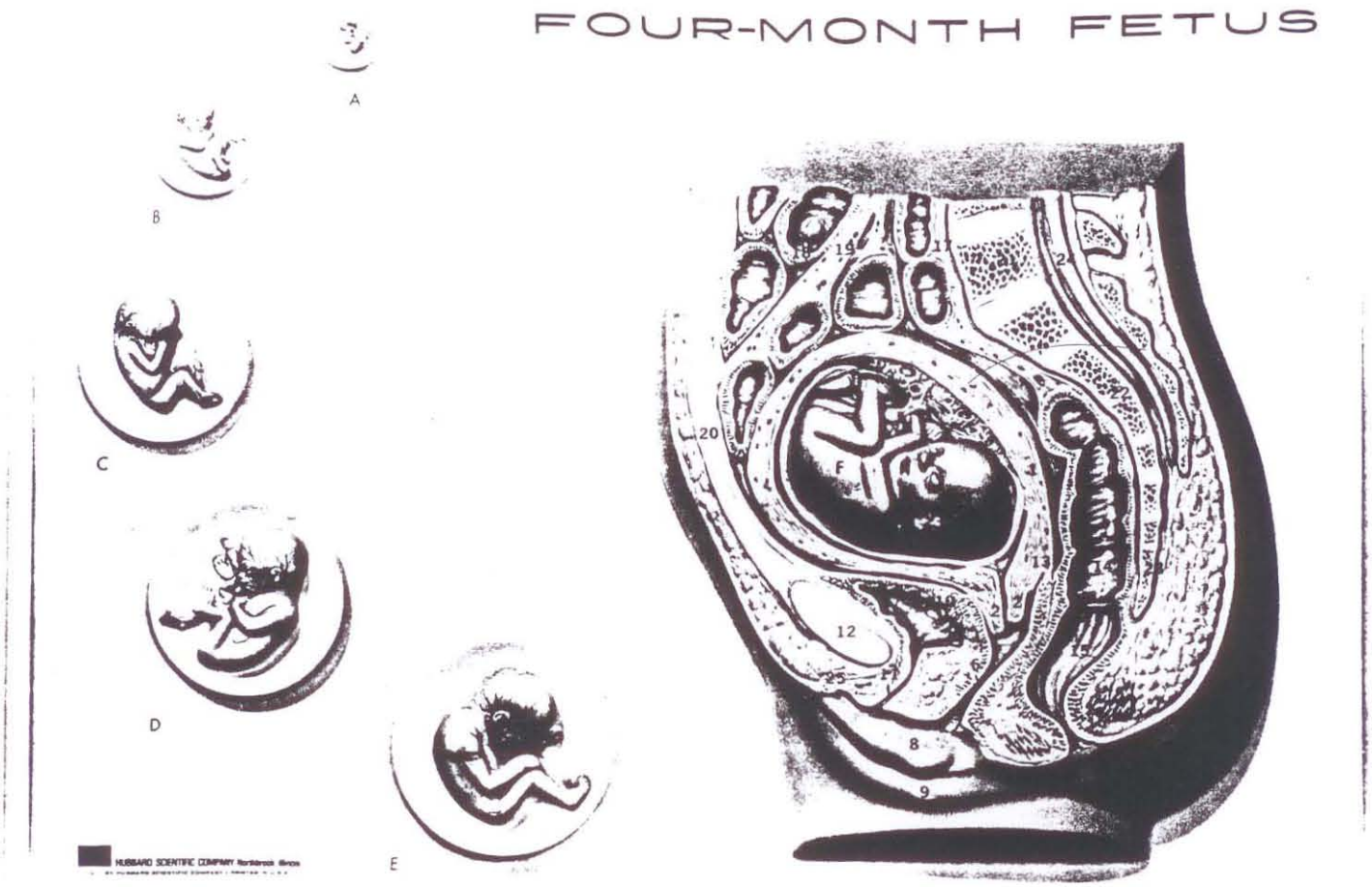
FOUR-MONTH FETUS MODEL

Rep-5

INTRODUCTION

The Hubbard Four-Month Fetus Model is part of a coordinated program, *Sex Education/Family Living.* The model is derived from anatomical sources and is completely authentic. Dimensions and spatial relationships are anatomically accurate, and are reproduced here as life-size. The sequence on the model illustrates the successive development of the baby from the sixth week after conception to the 16th week.

ORGANS AND STRUCTURES



KEY

The Development of the Baby

A. Embryo at 6 weeks
B. Fetus at 8 weeks
C. Fetus at 10 weeks
D. Fetus at 12 weeks
E. Fetus at 14 weeks
F. Fetus at 16 weeks

Maternal Anatomy and Fetal Membranes

1. Gravid uterus (mid-line sagittal section)
2. Cervix or neck of the uterus (section)
3. Amnion (section) or "bag of waters"
4. Placenta (section)
5. Umbilical cord
6. Vagina
7. Vaginal orifice
8. Labia minus or lesser lip of vulva (righthand)
9. Labia majus or greater lip of vulva (righthand)
10. Urinary bladder
11. Urethra
12. *Pubic symphysis*
13. *Fornix of the vagina*
14. Colon (sigmoid)
15. Rectum
16. Anus
17. Colon (descending)
18. Ileum or small intestine
19. *Mesentery*
20. *Linea alba (ligament/fascia between rectus abdominalis muscle)*
21. *Fifth lumbar vertebra (section)*
22. *Sacrum (vertebral bones)*
23. *Coccyx bone*
24. *Cauda equina (sacral nerve bundle)*
25. *Clitoris*

Organs and structures delineated in *italic type* are suggested for advanced classes or optional treatment.

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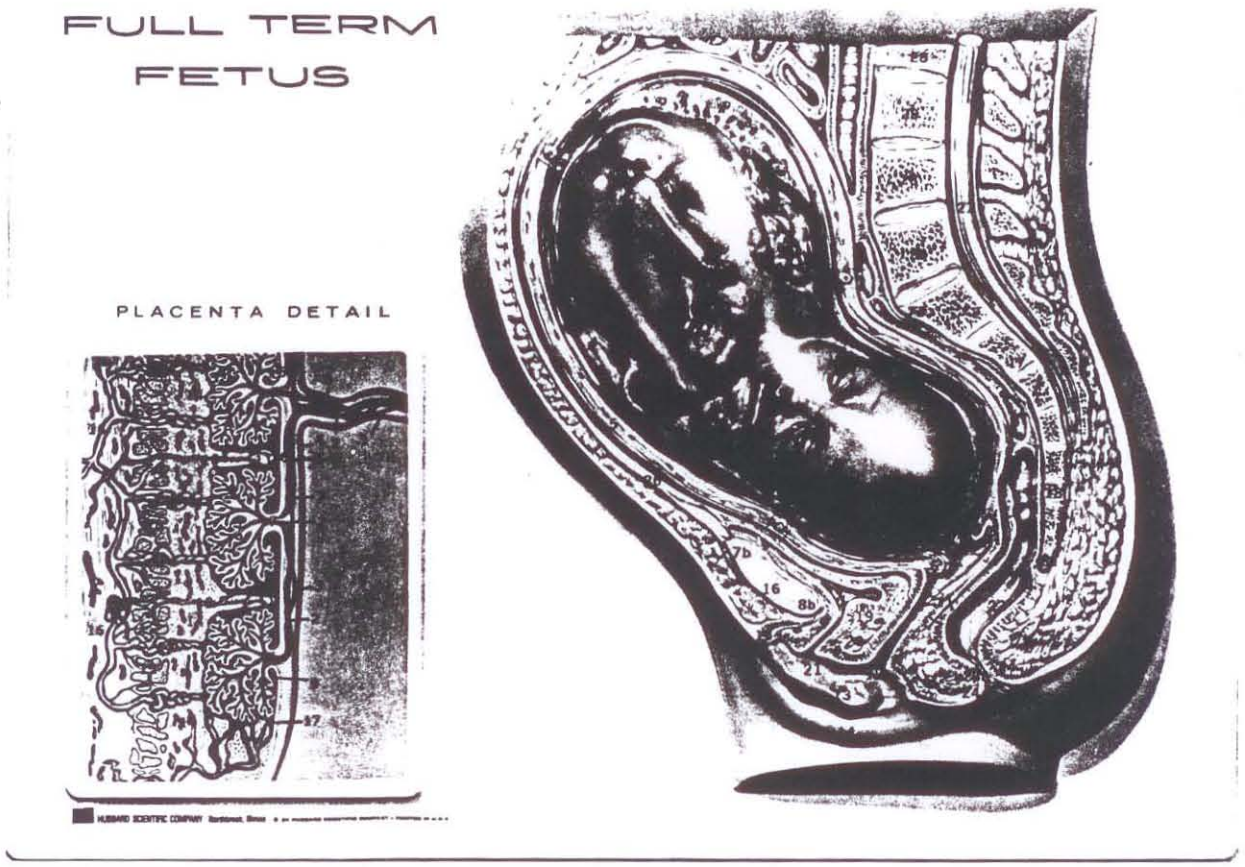
FULL-TERM FETUS

Rep-6

INTRODUCTION

The Hubbard Full-Term Fetus Model is part of a coordinated program, *Sex Education/Family Living*. The model, derived from anatomical sources, is completely authentic, and dimensions and spatial relationships are anatomically accurate. The model shows a full-term fetus positioned within the maternal body. A removable transparent plastic shell illustrates the amnion (or "bag of waters") in which the fetus rests. The model also contains a detailed enlargement of the placenta in semi-diagrammatic form.



KEY

Organs and structures primarily associated with fetus

1. Fetus at full-term
2. Umbilical cord
3. Placenta (cut surface)
4. Amniotic sac (filled with amniotic fluid)
5. Wall of uterus (cut surface)
6. Cervix or neck of uterus
7. *Plane of inlet of birth canal or upper opening of true pelvis: 7a located on pubic symphysis (16) and 7b located on vertebral column (28)*
8. *Plane of outlet of birth canal or lower opening of true pelvis: 8a located at tip of coccyx (18) and 8b located on pubic symphysis (16)*
9. *Tissues of the pelvic floor*
10. *Fornix of the vagina*
11. Vagina
12. Vaginal opening
13. *Labium minus (lesser lip of vulva)*
14. *Labium majus (greater lip of vulva)*
15. *Clitoris*
16. *Pubic symphysis (joins anterior ends of bones of true pelvis)*

Ancillary organs and structures

17. *Sacrum (cut surface)*
18. *Coccyx (cut surface) with sacrum*
19. Urinary bladder
20. Urethra
21. Urethral orifice
22. Colon (sigmoid)
23. Rectum
24. *External anal sphincter (muscle)*
25. Anus
26. *Linea alba (ligament/fascia of rectus abdominalis muscle)*
27. *Cauda equina (sacral nerve bundle)*
28. *Lumbar vertebrae*

The Placenta

1. Umbilical cord
2. Umbilical vein
3. Umbilical arteries
4. Amnion
5. *Chorionic plate*
6. *Chorion (trophoblast)*
7. Villous stem (containing fetal arteriole and venule)
8. Villus (containing fetal arteriole and venule and a capillary network)
9. Intervillous cavity (surrounding villi and filled with maternal blood)
10. Maternal venule
11. *Septum (deciduous septum)*
12. Coiled or spiral maternal arteriole
13. *Marginal sinus*
14. *Decidua basalis compacta (compact deciduous layer containing blood vessels)*
15. *Decidua basalis spongiosa (spongy deciduous layer)*
16. *Myometrium (muscle wall of uterus)*
17. Dotted line indicating division between maternal and fetal blood
18. Amniotic fluid

Organs and structures delineated in *italic type* are suggested for advanced classes or optional treatment.

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BIRTH MODEL

Rep-7

INTRODUCTION

The Hubbard Birth Model is part of a coordinated program, *Sex Education/Family Living*. The model is derived from anatomical sources and is completely authentic, with dimensions and spatial relationships that are anatomically accurate. The scale of the Birth Model is life-size. The model shows the delivery of a full-term fetus with the hands of the doctor assisting in the birth process.

KEY

1. Full-term fetus in beginning stages of birth
2. Umbilical cord
3. Placenta
4. Amnion or amniotic sac
5. Uterus (cross-section)
6. Cervix or neck of the uterus
7. Vagina
8. *Pubic symphysis (joins anterior ends of bones of the true pelvis to form anterior limit of birth canal)*
9. *Coccyx (cut surface) with sacrum defines posterior limit of birth canal*
10. *Sacrum*
11. Hands of doctor or birth attendant
12. Urinary bladder
13. *Linea alba (ligament/fascia of rectus abdominalis muscle)*
14. Small intestine (sections)
15. Colon (sigmoid)
16. Rectum
17. *External anal sphincter (muscle)*
18. Anus
19. *Third lumbar vertebra*
20. *Fourth lumbar vertebra*
21. *Fifth lumbar vertebra*
22. *Vertebral foramen with spinal nerves*

Organs and structures delineated in *italic type* are suggested for advanced classes or optional treatment.

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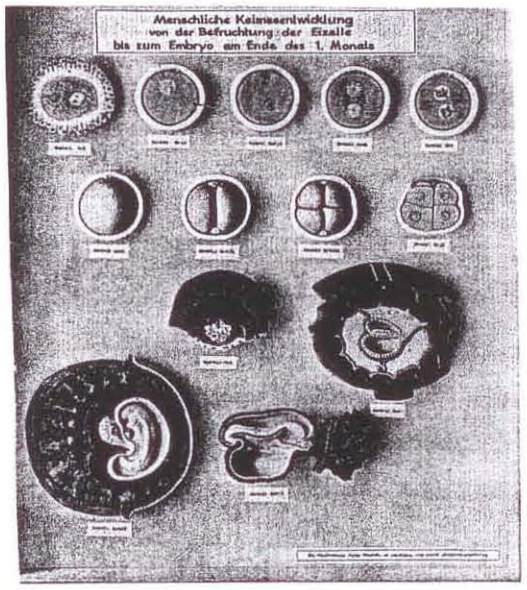
EMBRYO SERIES (13 models)



MS 15/1

Model 1: **Human Ovum**
1. Corona radiata
2. Zona pellucida
3. Egg-plasma with yolk
4. Female pronucleus
5. Spermatozoid

Model 2: **Entering of the Spermatozoid**
1. Zona pellucida
2. Fertilization membrane
   Between 1. and 2. the perivitelline space.
3. Protoplasm
4. Female pronucleus

Model 3: **Formation of the Second Polocyte**
1. Chromosomes
2. Spindle
3. Sperm nucleus
4. First polar body

Model 4: **Female Pronucleus moves towards the Center**
1. Female pronucleus
2. Sperm nucleus
3. First and second polar body

Model 5: **Nuclear Copulation**
1. Female pronucleus with female chromosomes
2. Sperm nucleus with male chromosomes
3. Centrosome
4. First and second polar body

Model 6: **Unicellular stage**
1. First and second polar body

Model 7: **Bicellular stage**
1. First and second polar body

Model 8: **Four-cell stage**
1. First and second polar body

Model 9: **Sixteen-cell stage**
1. Centriole (spindle centrosome)
2. Resting nucleus
3. First and second polar body

Model 10: **Human Germ when entering the Mucous Coat of Uterus seven Days in the Beginning of Implantation**
1. Primary wall of the blastula
2. Cavity of the blastula
3. Primary entoderm
4. Ectoderm of the germ plate
5. Cavity of amnion
6. Trophoblast
7. Propria of the mucous coat of uterus
8. Uterine epithelium

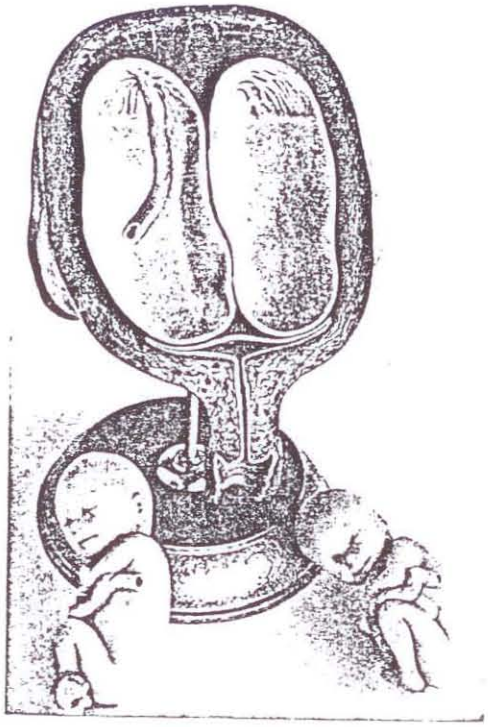
Model 11: **Human Embryo from the 15th Day**
1. Ectoderm of the germ plate
2. Cavity of amnion
3. Entoderm
4. Vitelline sac
5. Clinging peduncle
6. Mesenchymo
7. Exocoel cysts
8. Magma reticulare
9. Trophoblast
10. Female blood sinus
11. Sinus like uterine vein
12. Coil artery
13. Decidua capsularis
14. Terminal coagulum

Model 12: **Longitudinal Section through a Human Embryo from the End of the third Week (4 Somites)**
1. Nervous plate
2. Chorda
3. Entoderm
4. Mesoderm
5. Cavity of amnion
6. Vitelline sac
7. Rudiment of heart
8. Blood islands
9. Clinging peduncle
10. Chorionic villous

Model 13: **Human Embryo from the end of the first month**
1. Vitelline sac
2. Clinging peduncle
3. Cavity of amnion
4. Amnion
5. Exocoel
6. Decidua capsularis
7. Decidua basilaris
8. Villous
9. Female blood vessels
10. Embryonic blood vessels

12/1-8

Rep-9



MS 12/8
(dissected)

Series Showing Pregnancy

Eight Models Showing the Uterus with Embryo and Foetus in Various Stages of Pregnancy.

MS 12/1: Uterus with Embryo in first month, umbilical vesicle, Vesicula umbilicalis, visible.

1. Uterus (Womb)
2. Placenta (After birth)
3. Umbilical cord, Funiculus umbilicalis
4. Neck of the uterus, Cervix uteri, with external os of uterus, Ostium uteri
5. Vagina, Vagina
6. Oviduct (Fallopian tube), Tuba uterina
7. End of tube, with finger-shaped fringes, Fimbriae tubae
8. Ovary, Ovarium
9. Broad ligament of the uterus, Lig. latum uteri
10. Embryo
11. Egg-membranes, Membrana decidua, Chorion and Amnion
12. Inner wall of the opened amniotic sac, Amnion
13. Uterine cavity, Cavum uteri

MS 12/2: Uterus with embryo in second month, same as model MS 12/1, but
5 = Sectional edge of the vagina which has been removed.

MS 12/3: Uterus with embryo in third month, same as model MS 12/1, but
4 = Neck of the uterus, Cervix uteri, with cervical canal, as well as external and internal os of uterus.

MS 12/4: Foetus in fourth to fifth month, in prone position

MS 12/5: Foetus in fifth month, breech presentation

MS 12/6: Foetus in fifth month, dorsal position

MS 12/7: Foetus in seventh month, in normal position, placenta with umbilical cord visible.

1. Uterus (Womb)
2. Placenta (After birth)
   a Fetal part
   b Maternal part
3. Umbilical cord, Funiculus umbilicalis, with vessels
4. Neck of the uterus, Cervix uteri, with external os of uterus, Ostium uteri
5. Sectional edge of the vagina, Vagina
6. Oviduct (Fallopian tube), Tuba uterina
7. End of tube with fringes
8. Ovary, Ovarium
9. Amniotic sac, Amnion, opened

MS 12/8: Uterus with twin foetus in the fifth month, in normal position; Models II to IX of the pregnancy series MS 14

PREGNANCY SERIES (8 models)

Rep-9

3000 / 3 / 75 / Bl.

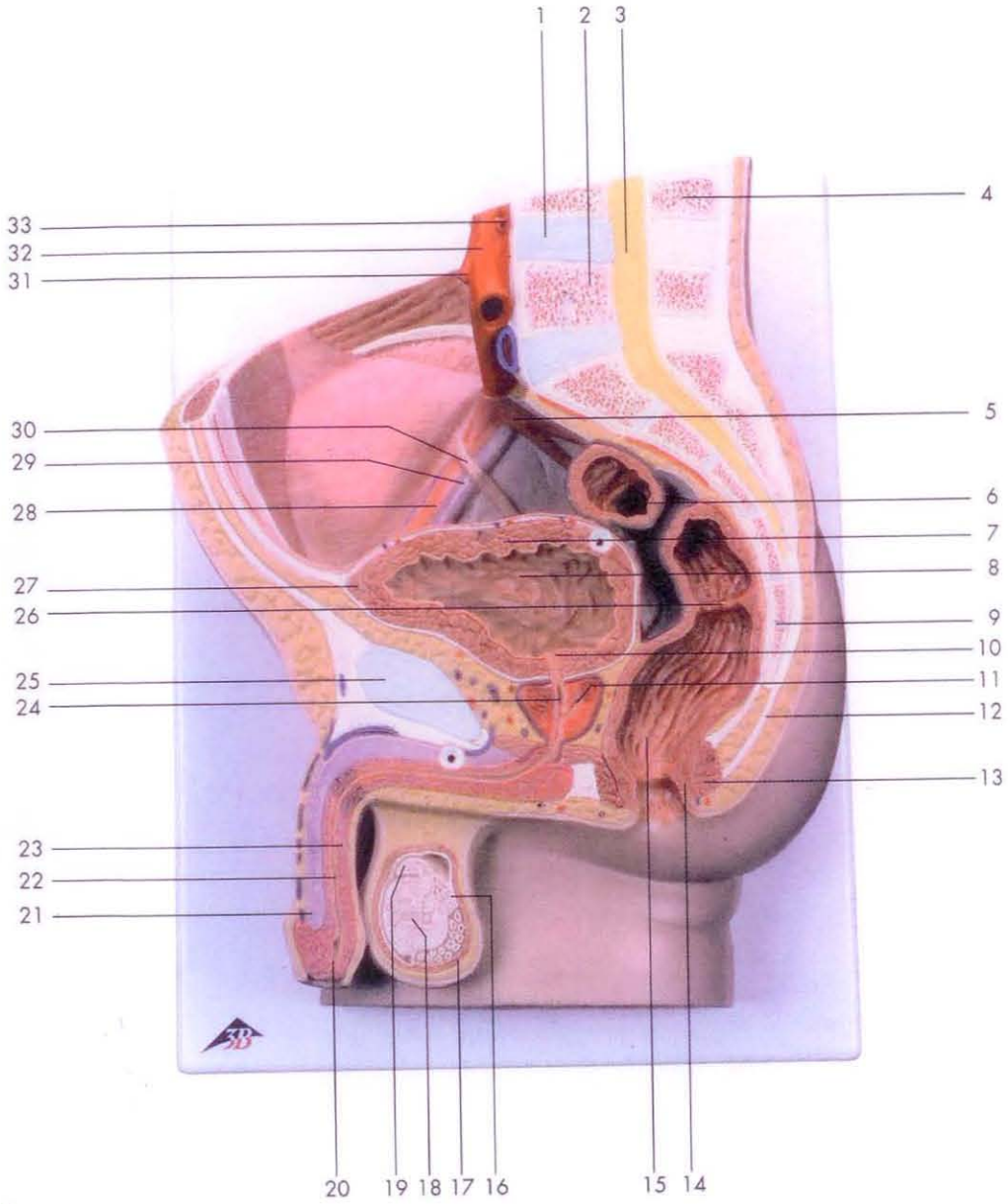
REP 12

Male Pelvis , 2-part

3B Scientific H11

1	Intervertebral disc
2	lumbar vertebra
3	spinal marrow
4	spinous process
5	internal iliac artery
6	sigmoid colon (pelvic colon)
7	muscular coat of bladder
8	fundus of bladder (vortex of bladder)
9	coccygeal bone
10	internal urethral orifice
11	prostatic utricle
12	anococcygeal ligament
13	sphincter ani externus muscle
14	Sphincter ani internus muscle
15	rectal ampulla
16	cauda of epididymis
17	cremaster muscle
18	testis
19	head of epididymis
20	external opening of masculine urethra
21	caevernous body of penis
22	spongy part of masacuine urethra
23	spongy body of penis
24	mascuine urethra, prostatic part
25	pubic symphysis
26	transverse rectal fold
27	apex of urinary bladder
28	external iliac artery
29	external iliac vein
30	right ureter
31	inferior mesenteric artery
32	abdominal aorta
33	renal artery
34	crest of ilium

35	bladder
36	deferent duct (spermatic duct)
37	left ureter
38	seminal vesicle
39	muscular coat of bladder
40	prostate
41	bulbospongiosus muscle
42	head of epididymis
43	cauda of epididymis
44	scrotum
45	testis
46	glans of penis
47	penis
48	spermatic plexus
49	testicular artery
50	pubic bone
51	visceral peritoneum
52	rectus abdominis muscle
53	bladder
54	deferent duct (spermatic duct)
55	right ureter
56	right testicular artery
57	right testicular vein
58	rectus abdominis muscle
59	aponeurosis of obliquus externus abdominus muscle
60	obliquus internus abdominis muscle
61	transversus abdominis muscle
62	renal pelvis
63	renal cortex
64	quadratus lumborum muscle
65	latissimus dorsi muscle
66	erector spinae muscle
67	psoas major muscle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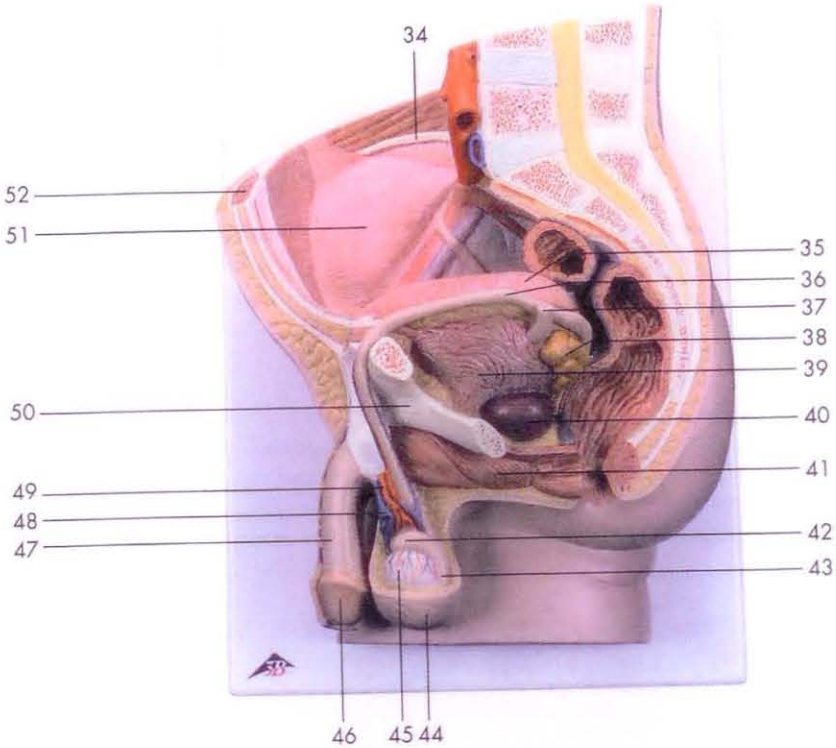
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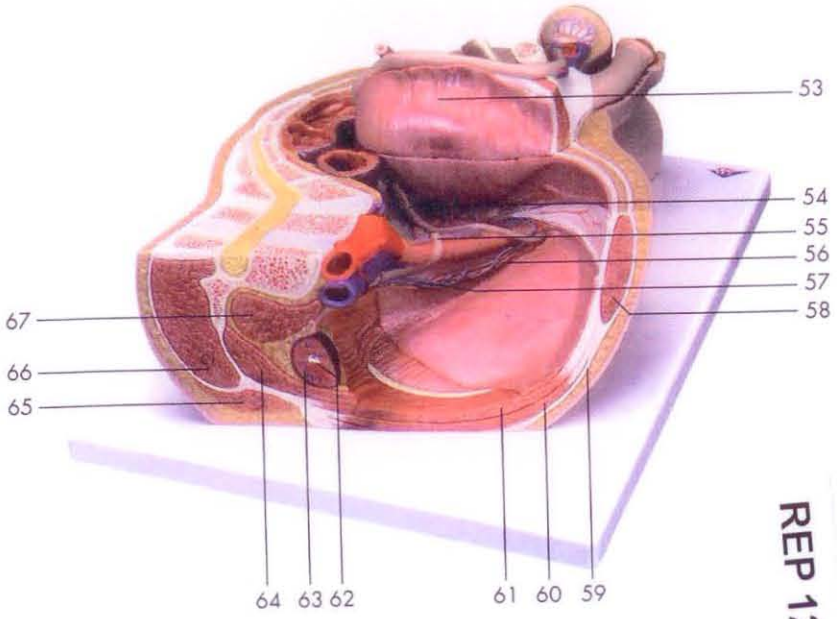
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REP-12

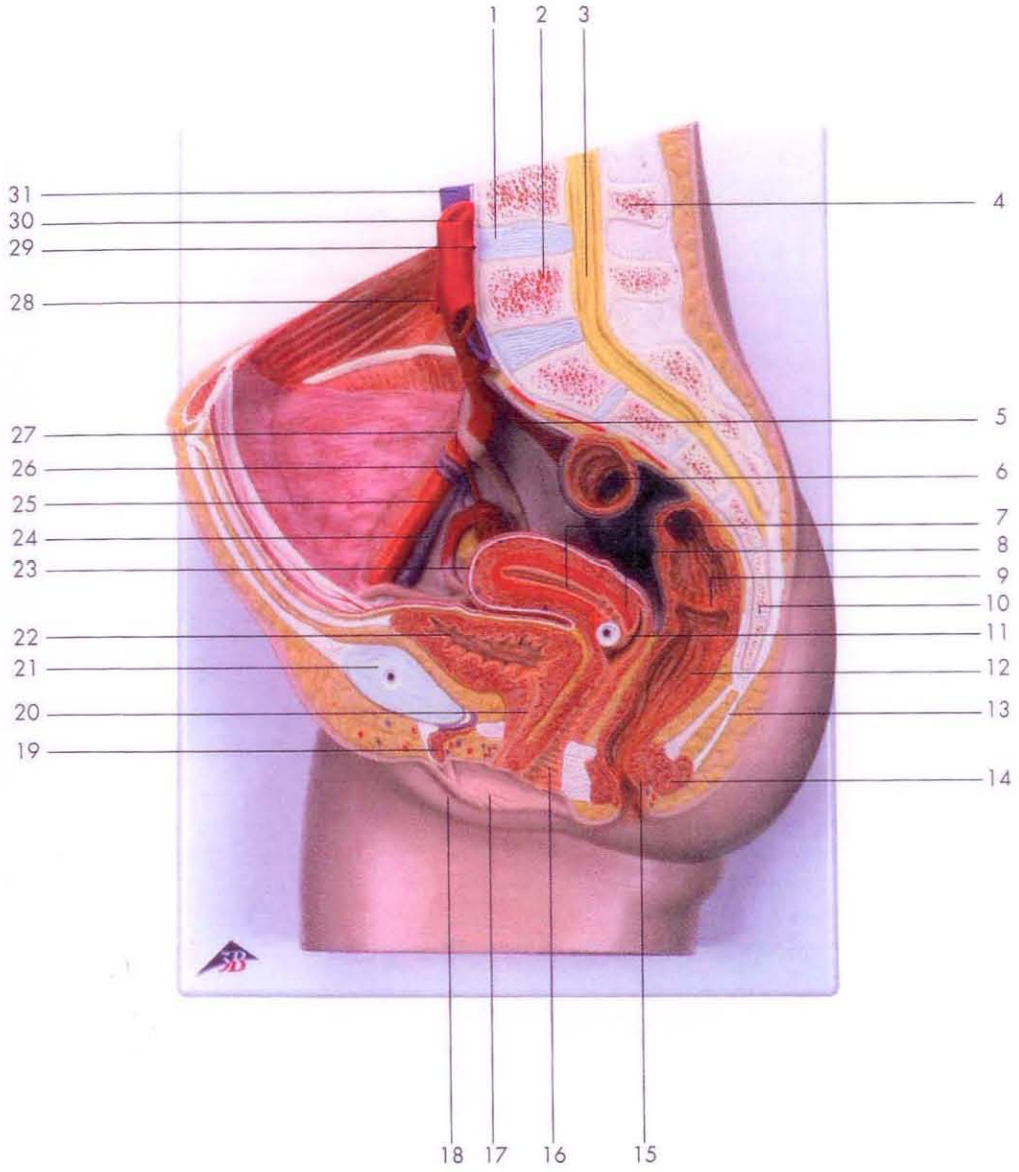
REP 12

Female Pelvis , 2-part

3B Scientific H10

1	intervertebal disc
2	lumbar vertebra
3	spinal marrow
4	spinous process
5	internal iliac artery
6	sigmoid colon (pelvic colon)
7	uterine cavity
8	supravaginal part of cervix uteri
9	transverse rectal fold
10	coccygeal bone
11	opening of uterus
12	tectal ampulla
13	anococcygeal ligament
14	sphincter ani externus muscle
15	spincter ani internus muscle
16	vagina
17	lesser pudendal lip
18	greater pudendal lip
19	cavernous body of clitoris
20	feminine urethra
21	pubic symphysis
22	bladder
23	fundus of uterus
24	external iliac vein
25	external iliac artery
26	ovarian vein
27	ovarian artery
28	inferior mesenteric artery
29	renal artery
30	abdominal aota
31	inferior vena cava
32	crest of ilium
33	ovary
34	intestinal surface of uterus

35	left ureter
36	vagina
37	sphincter ani externus muscle
38	greater vestibular gland (bartholini)
39	vestibula of vagina
40	clitoris
41	pubic bone
42	bladder
43	round ligament of uterus
44	external iliac vein
45	external iliac artery
46	visceral peritoneum
47	right ureter
48	rectus abdominis muscle
49	rectus abdominis muscle
50	Ovarian canal (uterine tube)
51	uterus
52	ampulla of uterine tube
53	ovarian ligament
54	round ligament of uterus
55	rectus abdominis muscle
56	ureter
57	obliquus externus abdominis muscle
58	obliquus internus abdominis muscle
59	renal pelvis
60	renal cortex
61	latissimus dorsi muscle
62	quadratus lumborum muscle
63	Psoas major muscle
64	erector spinae muscle
65	psoas minor muscle
66	ovarian ligament
67	Ovary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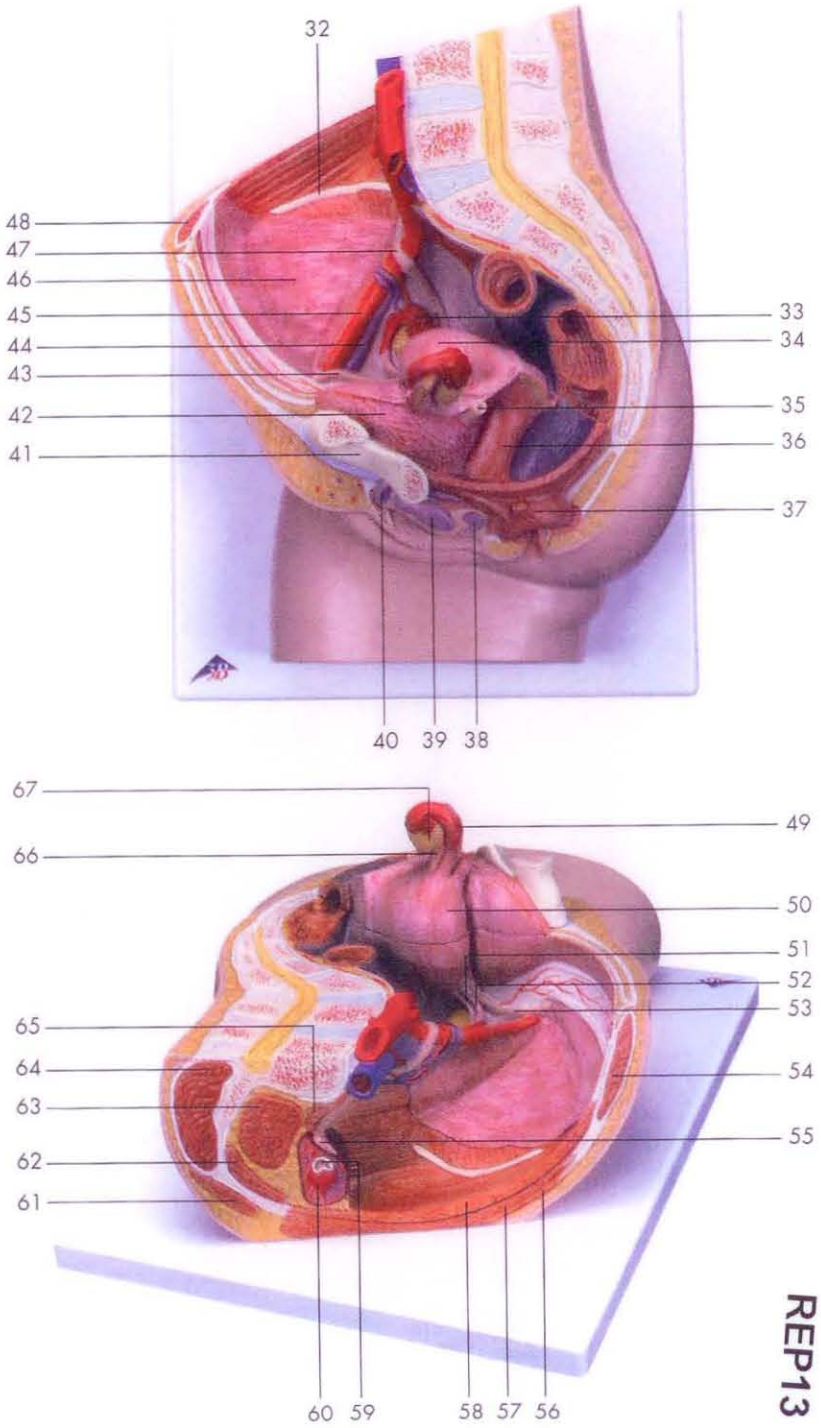
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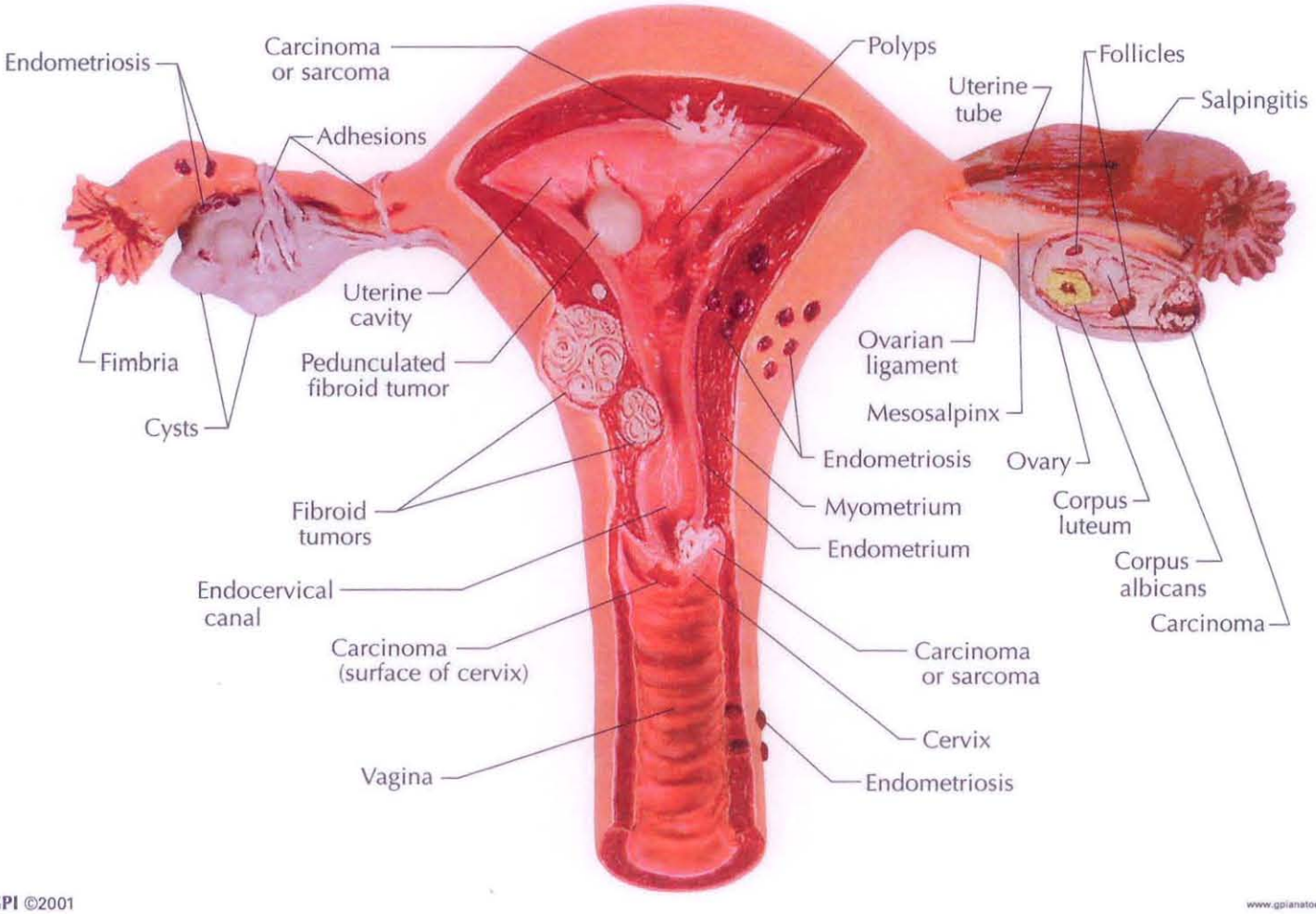
REP 14

UTERUS - OVARY

Common Pathologies



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Frontal C.S. of Ovary and Uterus

REP 15

Somso

Model A: Fertilization in the Fallopian Tube

1 Vagina
2 Spermatozoid
3 Uterine Cervix
4 Endometrium
5 Uterine cavity
6 Fallopian tube
7 Ovary
8 Ovarian follicles
9 Graafian follicle
10 Ovum
11 Fimbriae of the Fallopian tube

Model A represents the union of the female egg with a male sperm.

The model shows the egg on its way to the uterine cavity. The Graafian follicle of the ovary is open, - the egg is already in the Fallopian tube. The spermatozoids, which have penetrated from the vagina through the uterine cervix and uterine cavity into the Fallopian tube through their own spontaneous movement have reached the ripe egg, which is capable of being fertilized. The sperm penetrates into the ovum and the two nuclei fuse.

Model B: Nidation of the fertilized egg in the uterus
(Corpus luteum in the ovary: mucous plug in the uterine cervix)

1 vagina
2 Mucous plug
3 Uterine cervix
4 Endometrium
5 Uterine cavity
6 Fallopian tube
7 Ovarian follicles
8 Ovary
9 Corpus luteum
10 Nidated egg
11 Fimbriae of the fallopian tube

Model B shows the already nidated and fertilized egg in the endometrium.

The Graafian follicle has been transformed into the corpus luteum, which continues to exist right up to the fourth month of pregnancy. During this time it produces hormones which are responsible for the transformation and preservation of the endometrium. (If fertilization did not take place the corpus luteum would be destroyed after about two weeks and a new egg would ripen in the Graafian follicle in the ovary. At the same time the endometrium would be decomposed in the form of menstruation). After the nidation of the ferilized egg in the uterus a mucous plug is formed in the uterine cervix, which closes this off from the outside.

LARYNX MODEL RS-1

1 Hyoid bone (a: body, b: greater cornu, c: lesser cornu)
2 Thyroid cartilage
3 Cricoid cartilage
4 Arytenoid cartilage
5 Corniculate cartilage
6 Cuneiform cartilage
7 Trachea cartilages
15 Thyrohyoid muscle
16 Crico-thyroid muscle
17 posterior arytenoid muscle
18 Transverse arytenoid muscle
19 Transverse arytenoid muscle
20 Oblique arytenoid muscle
21 Superior laryngeal artery
22 Superior laryngeal nerve

The mucous membrane and the interior space of the larynx

23 Epiglottis
27 False vocal cord (ventricular folds)
28 True vocal cord (vocal folds)
31 Thyroid gland (endocrine system)

RESPIRATORY SYSTEM MODEL RS-2

INTRODUCTION

The Hubbard Respiratory System Model is one of a series of models that make up a coordinated program in *Biology/Life Science*. The model features the entire respiratory system as it would appear actual size in an adolescent boy. An enlarged depiction of the "bronchial tree" is shown above and to the right on the model. In addition, the air sacs or alveoli at the micro-terminus of each "branch" of the tree are depicted in the lower right corner of the model, greatly enlarged to reveal details of their structure.

KEY

Anatomy of the respiratory system

1 Nose
2 Nostril
3 Nasal cavity
4 Pharynx (nasal part)
5 Pharynx (oral part)
6 Pharynx (laryngeal part)
7 Upper lip
8 Lower lip
9 Hard palate
9a Uvula
10 Mandible (mandibula)
11 Teeth
12 Tongue (Corpus linguae)
13 Oral cavity
14 Epiglottis
15 Larynx (between arrows)
16 Thyroid cartilage of larynx
17 Cricoid cartilage of larynx
18 Vocal cords (plica vocalis)
19 Trachea ("windpipe")
20 Left main bronchus
21 Bronchus (upper left lobe)
22 Bronchus (lower left lobe)
23 Right main bronchus
24 Bronchus (upper right lobe)
25 Bronchus (lower right lobe)
26 Left lung (partly cut away)
27 Right lung
28 Rib cage
29 Diaphragm
30 Heart
31 Pulmonary arteries (parts cut away)
32 Aortic arch (part cut away)
33 Superior vena cava (cut end)
34 Bronchioles (enlarged)
35 Air sacs or alveoli (enlarged)
36 Air sacs (parts cut away)
37 Pulmonary venule
38 Pulmonary arteriole
39 Cerebrum
40 Cerebellum
41 Pons
42 Spinal cord
43 Frontal sinus
44 Sphenoid sinus
45 Cervical vertebrae
46 Pulmonary veins

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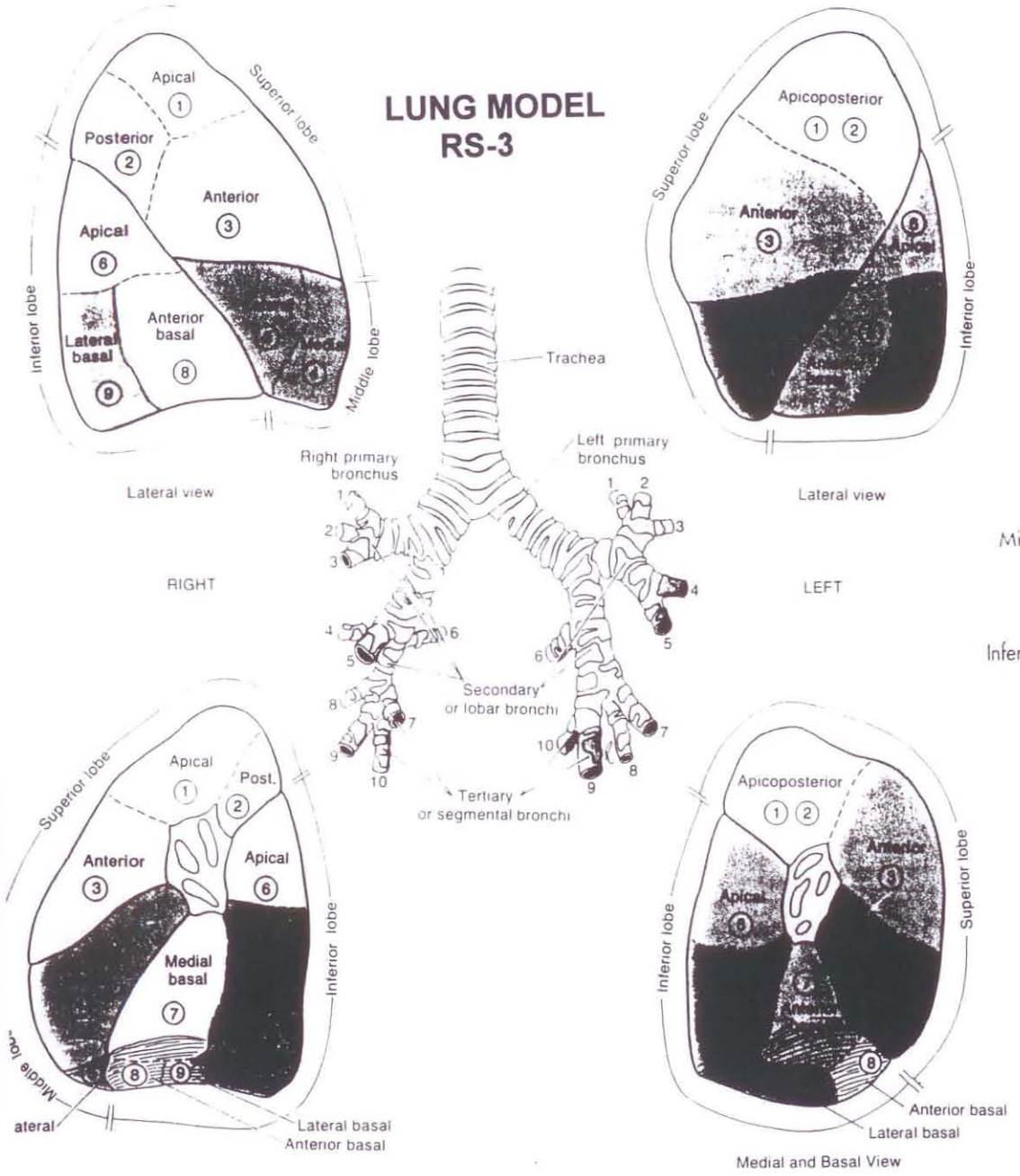
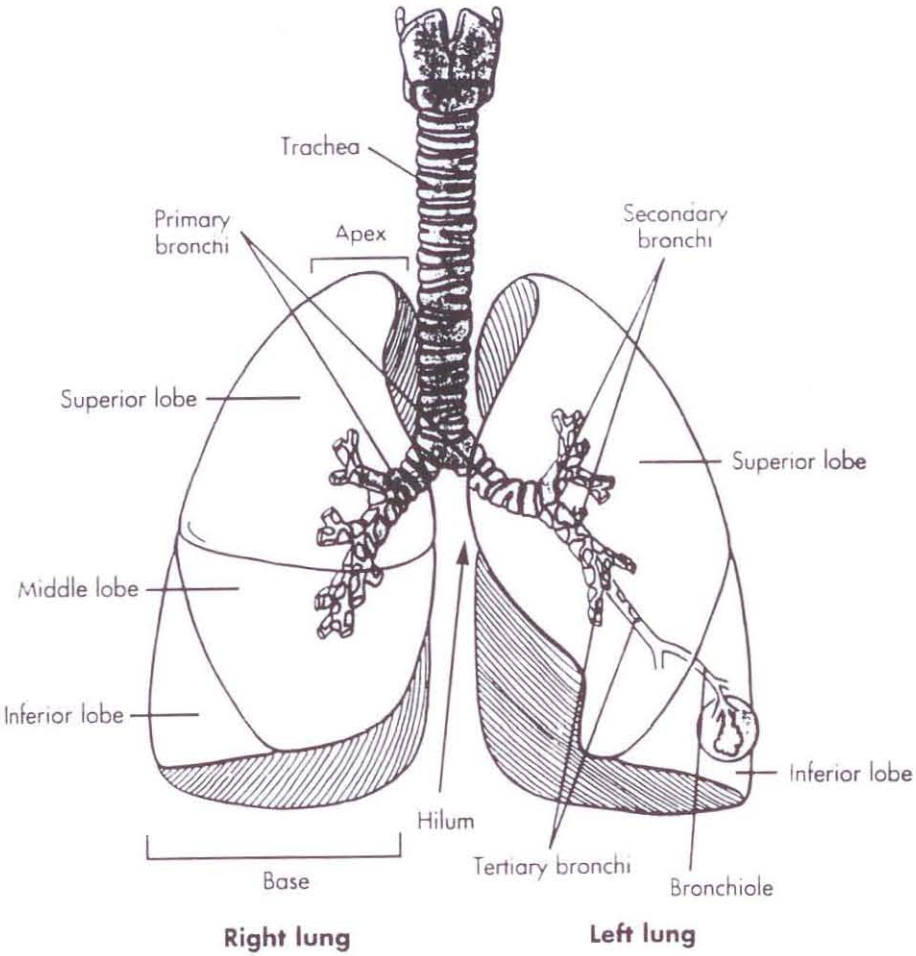
LUNG MODEL
RS-3





Bronchopulmonary segments of the lungs. The bronchial branches are shown in the center of the figure.

1 Hyoid Bone
2 Thyroid cartilage
3 Cricoid cartilage
4 Trachea, windpipe
5 Thyroid gland
6 Median thyrohyoid ligament

I **Lung**
a Upper lobe
b Right middle lobe
c Lower lobe

II **Lung**
d Upper lobe
e Lower lobe
f Right bronchus
g Left bronchus

III **Heart with arteries**
1 Right atrium
2 Right ventricle
3 Left atrium
4 Left ventricle
a Right auricle of the heart
b Left auricle of the heart
c Bicuspid valve
d Tricuspid valve
e Valve of the pulmonary artery
f Papillary muscle
g Aortic valve
5 Aorta
6 Common carotid artery
7 Common carotid artery
8 Subclavian artery
9 Thoracic aorta
10 Superior vena cava
11 Internal jugular vein
12 Subclavian vein
13 Pulmonary veins
14 Pulmonary artery
15 Inferior vena cava
16 Great cardiac vein
17 Left coronary artery
18 Esophagus
19 Thoracic vertebrae

Lung Model with Heart, Larynx, and Diaphragm

3B Scientific G 15

1 hyoid bone

A. LARYNX

2 thyroid cartilage
3 annular cartilage
4 epiglottis
5 arytenoid cartilage
6 thyrohyoid membrane
7 thyrohyoid muscle
8 M. cricothyroideus
9 M. arytaenoideus transversus
10 M. arytaenoideus obliquus
11 posterior crycoarytenoid muscle
12 laryngeal pouch
13 superior laryngeal artery
14 inferior thyroid vein

B. THYROID GLAND

C. WINDPIPE / Trachea

1 bifurcation of the windpipe
2 right principal bronchus
3 right vena subclavia
3a right subclavian artery
4 right common carotid artery
5 right vena jugularis interna
6 right vena brachiocephalica
7 trunk of brachiocephalica artery
8 left pulmonary artery

D. GULLET/ Esophagus

E. LUNG

right lung
a superior lobe
b middle lobe
c inferior lobe
left lung
d superior lobe
e inferior lobe

F. HEART

9 left ventricle
10 ascending aorta
11 aortic valve
13 left atrium
14 left auricula cordis
15 mitral valve

G. Diaphragm

4/28/08 KP Edit (from Diane)

Human respiratory System with magnified Alveolus
Altay Scientific.

1 Nasal cavity
2 nasopharynx
3 Oropharynx
4 Laringopharynx
5 Laryngeal cavity
6 Trachea
7 Left main bronchus
8 right main bronchus
9 Lobar bronchus
10 Superior lobe
11 Inferior lobe
12 Terminal bronchiole
13 Respiratory bronchiole
14 Alveolar ducts
15 Alveolar sacs
16 pulmonary alveoli
17 Pulmonary artery
18 Pulmonary vein
19 Capillary plexuses

RS 8

Functional Larynx
2.5 times full size
3-B G20

1 Hyoid Bone
2 Thyroid cartilage
3 Cricoid cartilage
4 Epiglottis
5 Arytenoid cartilage
6 Thyroid gland
7 Parathyroid glands

kP 4/27/08

Nasal Cavity
Somso FS6

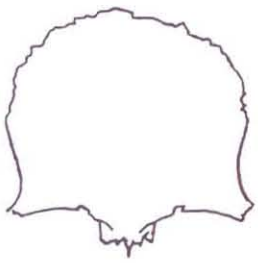
Model on the left

a	frontal sinus
h	ethmoid sinus
m	maxillary sinus
p	sphenoid sinus
1	frontal bone
2	ethmoid bone
3	inferior nasal concha
5	nasal bone
6	maxillary bone
7	palatine bone
8	sphenoid bone

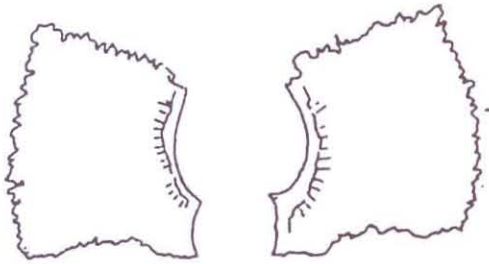
Model on the right

s	perpendicular plate
t	vomer
10	septal cartilage
11	superior nasal concha (turbinate)
12	middle nasal concha (turbinate)
13	inferior nasal concha (turbinate)
14	superior nasal meatus
15	middle nasal meatus
16	inferior nasal meatus
17	opening to auditory (eustachian) tube
18	nasopharynx
19	hard palate
20	soft palate/uvula
22	pharyngeal tonsil
23	palatine tonsil
24	olfactory nerve

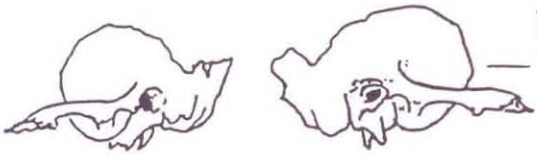
BEAUCHENE SKULL
(disarticulated skull)



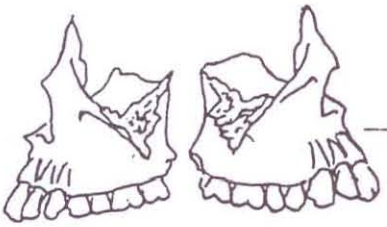
Frontal Bone



Right & Left
Parietal Bone

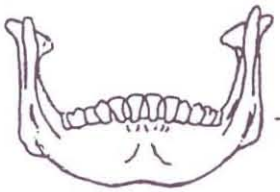


Right & Left
Temporal Bone

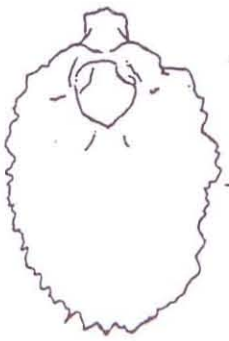


Right & Left
Maxilla

Sphenoid Bone



Mandible

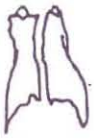


Occipital Bone

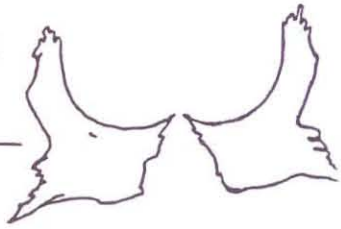
Ethmoid Bone

Vomer (Nasal Septum)

Right & Left
Nasal Bone



Right & Left
Zygomatc
Bone



Right & Left
Palatine Bone

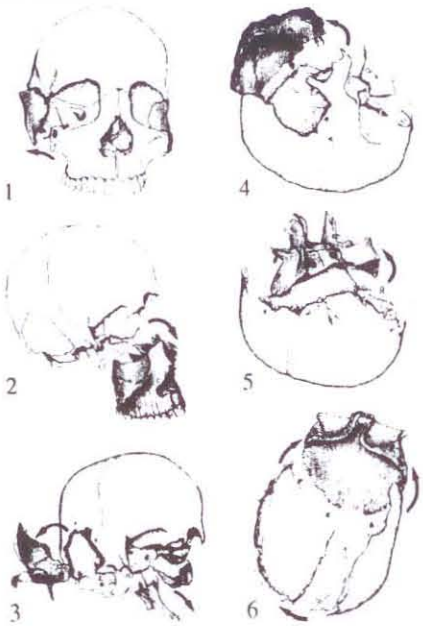
Right & Left
Middle Nasal Concha

Right & Left
Inferior Nasal Concha

SKULL, COLOR CODED SK-1c

I. To dismantle the model

1. Release mandible from sockets.
2. Remove left and right zygomatic bones (fig. 1).
3. Place fingers in the eye cavities and gently pull downwards until maxilla comes away (fig. 2).
4. Remove ethmoidal and vomer bones (fig. 3).
5. Unplug the temporal bones from the parietal bones and release downwards (fig. 3).
6. Unplug occipital bone from sphenoidal bone and remove (fig. 4).
7. Remove sphenoidal bone (fig. 5)
8. Remove frontal bone (fig. 6).
9. Separate parietal bones (fig. 6).



II. To construct the model

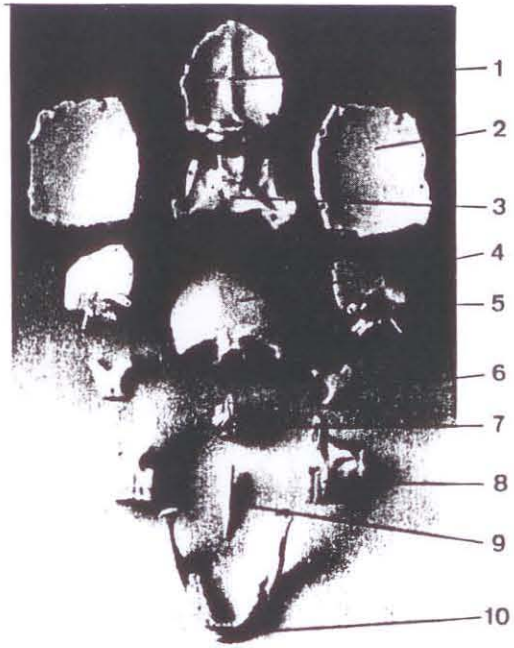
Push all parts firmly together.

1. Join parietal bones together (fig. 6).
2. Attach frontal bone to parietal bones – making sure that the lower anterior edges of the parietal bones – *angulus sphenoidalis* – lie on top of the frontal bone (fig. 6).
3. Attach occipital bone to parietal bones (fig. 4).
4. Plug sphenoid bone firmly into frontal and occipital bones (fig. 5).
5. Push the temporal bones firstly into the lower plugs and then push the upper pegs into the parietal bones (fig. 3).
6. Plug the ethmoidal bone into both sphenoidal and frontal bones and the vomer into the sphenoidal bone (fig. 3).
7. Attach each maxilla one at a time. Plug firstly into the pterygoid process of the sphenoid bone – *processus pterygoideus* – and then into the frontal bone. Plug the two maxillae together at the median line (fig. 2).
8. Attach the zygomatic bones – firstly to the maxilla and then pin to the zygomatic curve of the temporal bone (fig. 1).
9. Push the ends of the mandible into the sockets on both sides of the skull.

It is also possible to dismantle and to construct the model in any order.

III. Bones of the skull

1. **Occipital bone,** *Os occipitale*
2. **Parietal bone,** *Os parietale*
3. **Sphenoid bone,** *Os sphenoidale*
4. **Frontal bone,** *Os frontale*
5. **Temporal bone,** *Os temporale*
6. **Zygomatic bone,** *Os zygomaticum*
7. **Ethmoidal bone,** *Os ethmoidale*
8. **Maxilla**
9. **Vomer**
10. **Mandible,** *Mandibula*



Individual parts for QS 8/2

QS 8/2-10 **Sphenoid bone,** *Os sphenoidale*
QS 8/2-11 **Occipital bone,** *Os occipitale*
QS 8/2-12 **Right temporal bone,** *Os temporale dext.*
QS 8/2-13 **Left temporal bone,** *Os temporale sin.*
QS 8/2-14 **Right parietal bone,** *Os parietale dext.*
QS 8/2-15 **Left parietal bone,** *Os parietale sin.*
QS 8/2-16 **Frontal bone,** *Os frontale*
QS 8/2-17 **Ethmoidal bone,** *Os ethmoidale*
QS 8/2-18 **Vomer,** *Vomer*
QS 8/2-25 **Right superior maxilla,** *Maxilla dext.*
QS 8/2-26 **Left superior maxilla,** *Maxilla sin.*
QS 8/2-29 **Right zygomatic bone,** *Os zygomaticum dext.*
QS 8/2-30 **Left zygomatic bone,** *Os zygomaticum sin.*
QS 8/2-31 **Mandible,** *Mandibula*

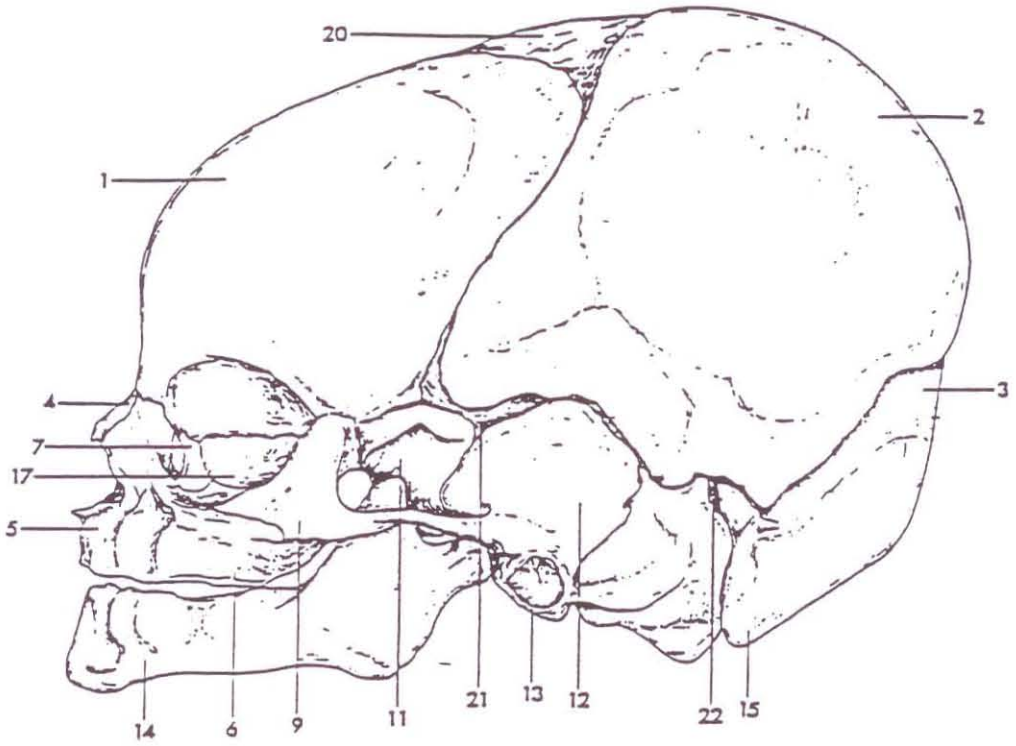
QS 8/4 Transparent box suitable for QS 8/2 and QS 8/3

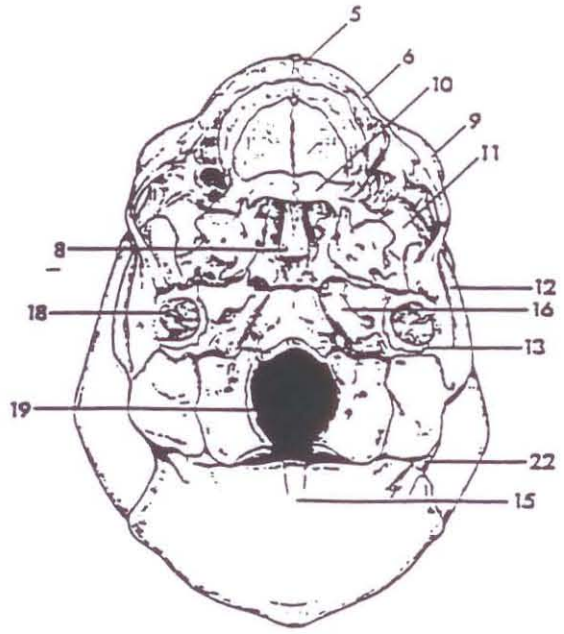
Individual parts for QS 8/3

QS 8/3-10 **Sphenoid bone,** *Os sphenoidale,* red
QS 8/3-11 **Occipital bone,** *Os occipitale,* blue
QS 8/3-12 **Right temporal bone,** *Os temporale dext.,* brown
QS 8/3-13 **Left temporal bone,** *Os temporale sin.,* brown
QS 8/3-14 **Right parietal bone,** *Os parietale dext.,* green
QS 8/3-15 **Left parietal bone,** *Os parietale sin.,* green
QS 8/3-16 **Frontal bone,** *Os frontale,* ochre
QS 8/3-17 **Ethmoidal bone,** *Os ethmoidale,* real yellow
QS 8/3-18 **Vomer,** *Vomer,* chrome-orange
QS 8/3-25 **Right superior maxilla,** *Maxilla dext.,* violet, coloured at the superior maxilla:
nasal bone, *Os nasale,* bone-coloured-natural
lacrimal bone, *Os lacrimale,* orange
inferior nasal concha, *Concha nasalis inferior,* light ochre
palatine bone, *Os palatinum,* vermillion
QS 8/3-26 **Left superior maxilla,** *Maxilla sin.,* violet
QS 8/3-29 **Right zygomatic bone,** *Os zygomaticum dext.,* brilliant yellow
QS 8/3-30 **Left zygomatic bone,** *Os zygomaticum sin.,* brilliant yellow
QS 8/3-31 **Mandible,** *Mandibula,* bone-coloured-natural

HUMAN SKELETON
Fetal Skull

SK-1h





MEMBRANOUS BONES
1. Frontal
2. Parietal
3. Occipital (interparietal)
4. Nasal
5. Premaxilla
6. Maxilla
7. Lacrimal
8. Vomer
9. Zygomatic
10. Palatine
11. Sphenoid
12. Temporal
13. Tympanic ring
14. Mandible

CARTILAGINOUS BONES
15. Occipital
16. Temporal (petromastoid)
17. Ethmoid
18. Auditory ossicles
19. Foramen magnum
20. Anterior fontanelle
21. Sphenoidal fontanelle
22. Mastoid fontanelle

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RIGHT KNEE LIGAMENT MODEL SK-2

1 lateral collateral ligament (fibular)
2 medial collateral ligament (tibial)
3 patella ligament
4 patella tendon
5 anterior cruciate ligament
6 posterior cruciate ligament
7 medial meniscus
8 lateral meniscus
9 femur
10 tibia
11 fibula

HIP LIGAMENT MODEL SK-3

1 iliofemoral ligaments
2 ischiofemoral ligament
4 pubic symphysis
5 ilium
6 ischium
7 pubis

ELBOW
SK-4

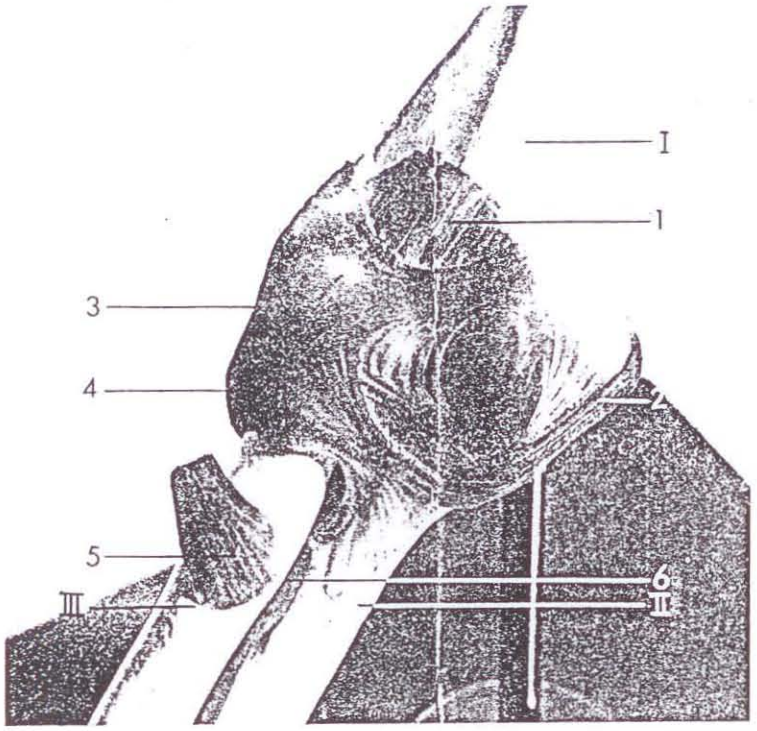


Figure 3. Elbow-joint (model) from the front (ventral)

Notes on how to use the model

On this model a) movements of flexion and extension and b) movements of rotation of the forearm can be carried out. One can satisfy oneself that for every position of flexion there is also a movement of pronation and supination possible at the same time, whereby the head of the radius is firmly held to the ulna through the ligamentum anulare. The posterior fibrous band of the ulnar lateral ligament is tensed during flexion, the anterior lateral ligament more during extension of the elbow-joint.

One should observe how the projection of the bone of the radius rotates and the tendon of the biceps muscle is displaced when the forearm is rotated. During pronation the tendon wraps itself round the radius, during supination it unwinds itself from it. The biceps muscle is, therefore, not only a flexor muscle but also a strong supinator.

Explanation of the reference numbers:

1. **Capsula articularis**, Articular capsule
2. **Ligamentum collaterale mediale (or ulnare)**, Internal or ulnar lateral ligament
3. **Ligamentum collaterale laterale (or radiale)**, External or radial lateral ligament
4. **Ligamentum anulare**, Orbicular ligament
5. **Bicipital tendon**
6. **Corda obliqua**, Oblique cord

I. **Humerus**

II. **Ulna**

III. **Radius**

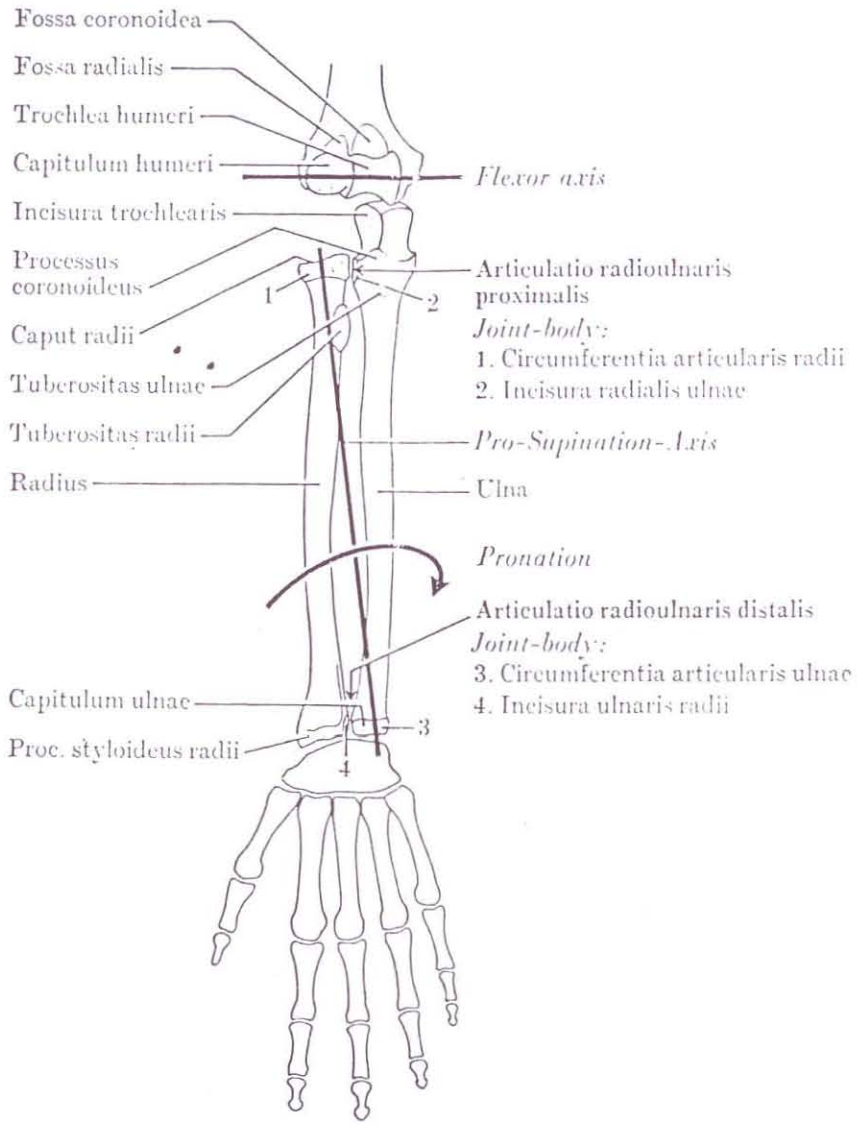


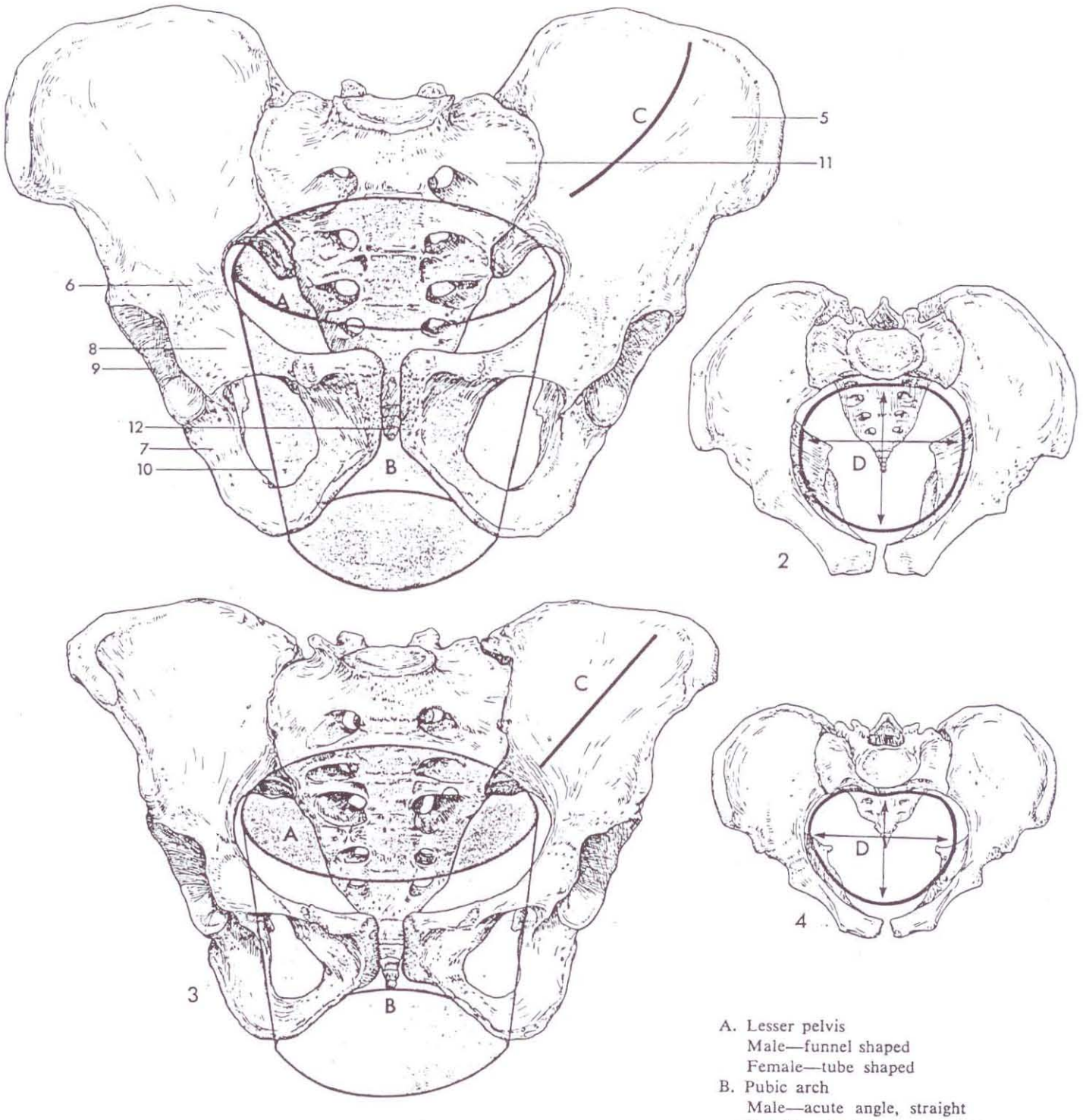
Figure 1 Elbow-joint and bone of the forearm, viewed from the front. The arrow indicates the direction of the movement of pronation.

Figures 1 and 2 are taken from the text-book „Funktionelle Anatomie des Menschen" by Johannes W. Rohen, Dr. med., Professor for Anatomy, Chairman of the Anatomical Institute of the University of Erlangen-Nuremberg.

HUMAN SKELETON

SK-7

Male and Female Pelves



1. Male, front view
2. Male, superior view
3. Female, front view
4. Female, superior view
5. Ilium, wing
6. Ilium, body
7. Ischium
8. Pubis
9. Acetabulum
10. Obturator foramen
11. Sacrum
12. Coccyx

A. Lesser pelvis
   Male—funnel shaped
   Female—tube shaped
B. Pubic arch
   Male—acute angle, straight
   Female—right angle, rounded
C. Wing of ilium
   Male—curved
   Female—straight
D. Pelvic diameters
   Male—conjugate equals transverse
   Female—conjugate less than transverse

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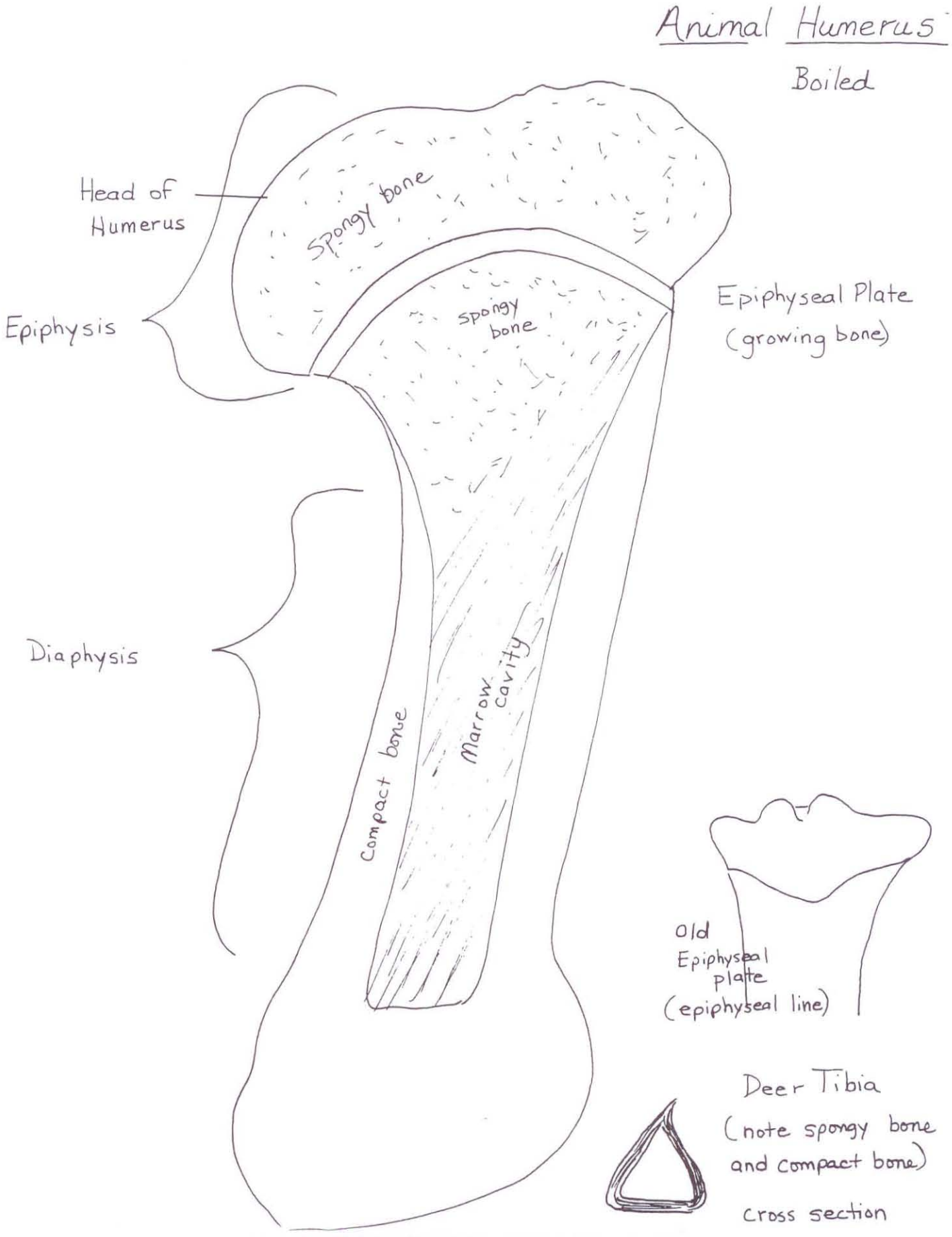

Animal Humerus
Boiled
Head of Humerus
Spongy bone
Epiphysis
spongy bone
Epiphyseal Plate (growing bone)
Diaphysis
Compact bone
Marrow cavity
Old Epiphyseal plate (epiphyseal line)
Deer Tibia
(note spongy bone and compact bone)
cross section

Shoulder Joint
Somso NS 17

1	Scapula
2	Acromion
3	Spine of the scapula
4	Coracoid process
5	Clavicle
6	Humerus
7	Articular capsule
8	Coracohumeral ligament
9	Coraco-acromial ligament
10	Conoid ligament, Coracoclavicular ligament
11	Trapezoid ligament, coracoclavicular ligament
12	Subscapularis muscle
13	Long head of the biceps
14	Supraspinatus muscle
15	Infraspinatus muscle
16	Subacromial bursa
17	Bursa of the coracobrachial muscle
18	Synovial bursa of the greatest muscles of the back

edited 4/27/08 KP

Elbow Joint
Somso NS 18

a	Humerus
b	Ulna
c	Radius
1	Articular capsule
2	Radial Collateral ligament
3	Ulnar Collateral ligament
4	Annular ligament of the radius
5	Tendon of the biceps brachii muscle
6	Oblique cord
7	Interosseous membrane of the forearm

kp edit 3//20/08

The Knee Joint

Somso NS19

1 Femur
2 Patella
3 Tibia
4 Patellar ligament
5 Medial meniscus
6 medial (tibial) collateral ligament
7 later (fibular) collateral ligament
8 Anterior cruciate ligament
9 Posterior cruciate ligament
10 Interosseous membrane
11 Ligaments of the heads of fibula
12 Posterior meniscofemoral ligament
13 Lateral meniscus

Kp 4/27/08

Hip Joint

Somso NS 20

1 Hip-bone, os coxae
- a Iliac bone
- b Pubic bone
- c Ischium

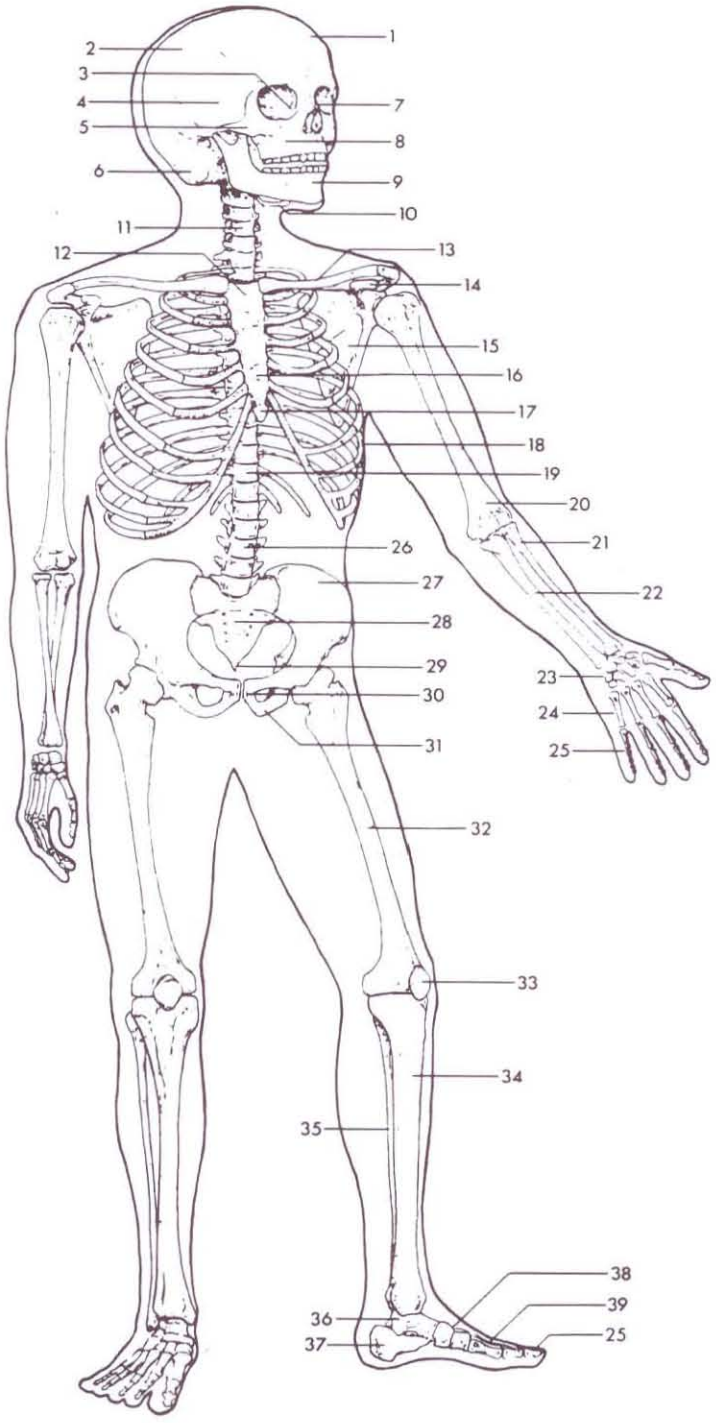
2 Femur
- d head of femur
- e greater trochanter
- f lesser trochanter

3 Ilio-femoral ligament
4 ishio-femoral ligament
5 Pubo-femoral ligament
6 Labrum glenoidale
7 Zona orbicularis
8 Ligament of the head of the femur
9 Obturator membrane

KP 4/27/08

HUMAN SKELETON 1

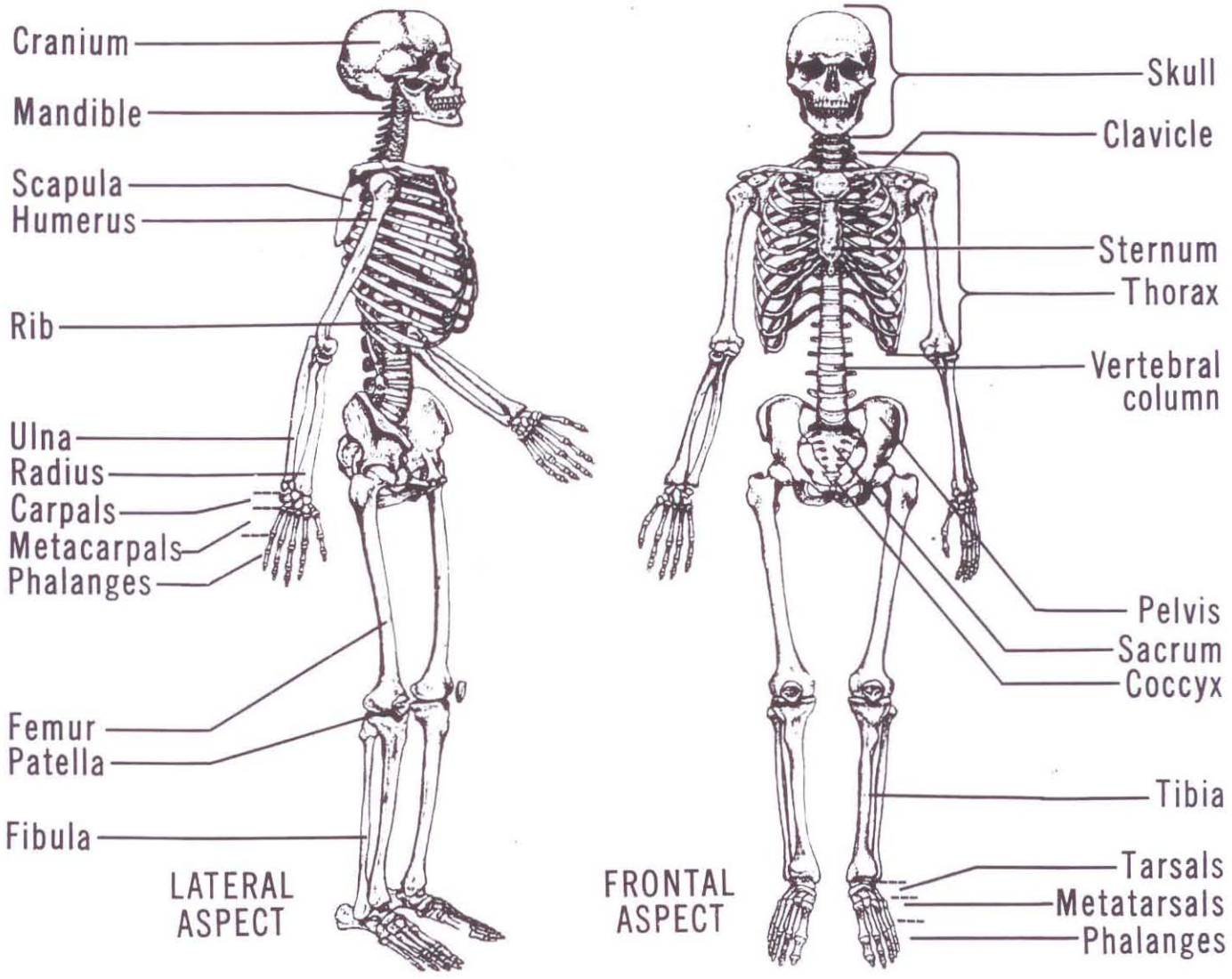
Survey



1. Frontal
2. Parietal
3. Ethmoid
4. Temporal
5. Zygomatic
6. Occipital
7. Nasal
8. Maxilla
9. Mandible
10. Hyoid
11. Cervical vertebra (7)
12. Manubrium
13. Clavicle
14. Coracoid
15. Scapula
16. Sternum
17. Xiphoid process
18. Ribs
19. Thoracic vertebra (12)
20. Humerus
21. Radius
22. Ulna
23. Carpals
24. Metacarpals
25. Phalanges
26. Lumbar vertebra (5)
27. Ilium
28. Sacrum (5)
29. Coccyx (3-5)
30. Pubis
31. Ischium
32. Femur
33. Patella
34. Tibia
35. Fibula
36. Talus
37. Calcaneus
38. Tarsals
39. Metatarsals

Reproduced from Bioreview® Sheet 42-6730 Human Skeleton 1. Survey.

SKELETON—GENERALIZED



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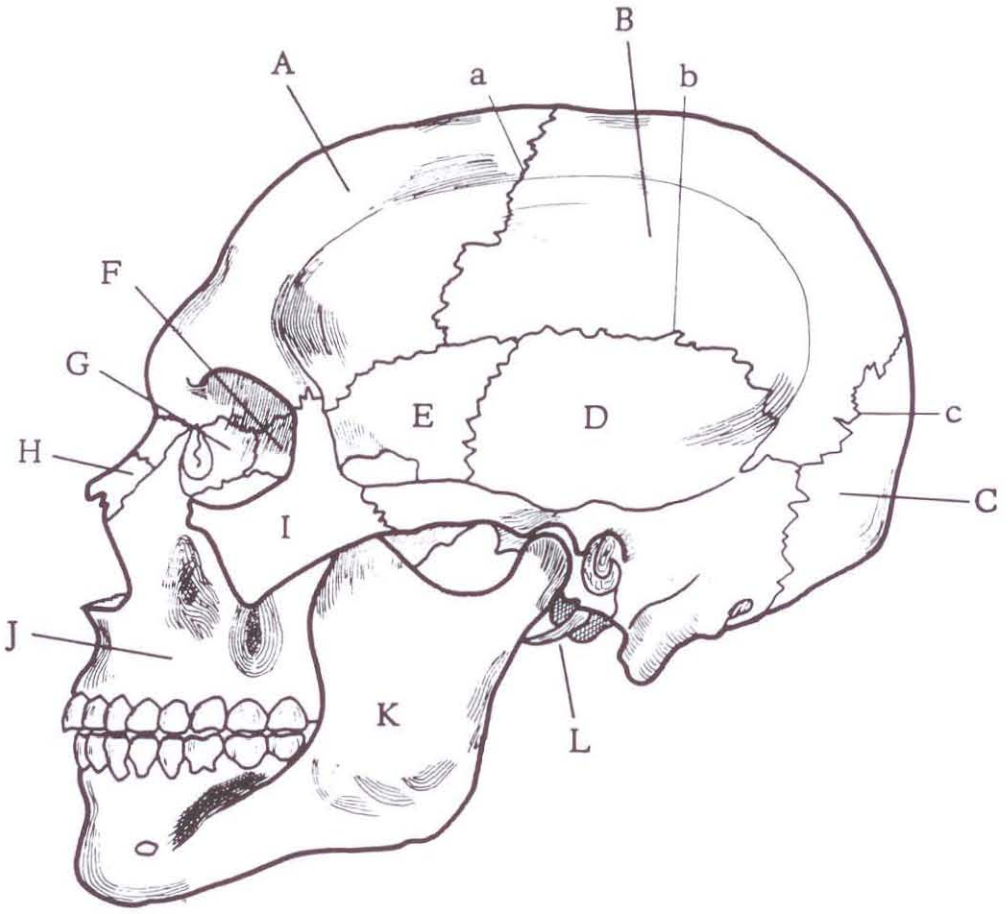
Skull

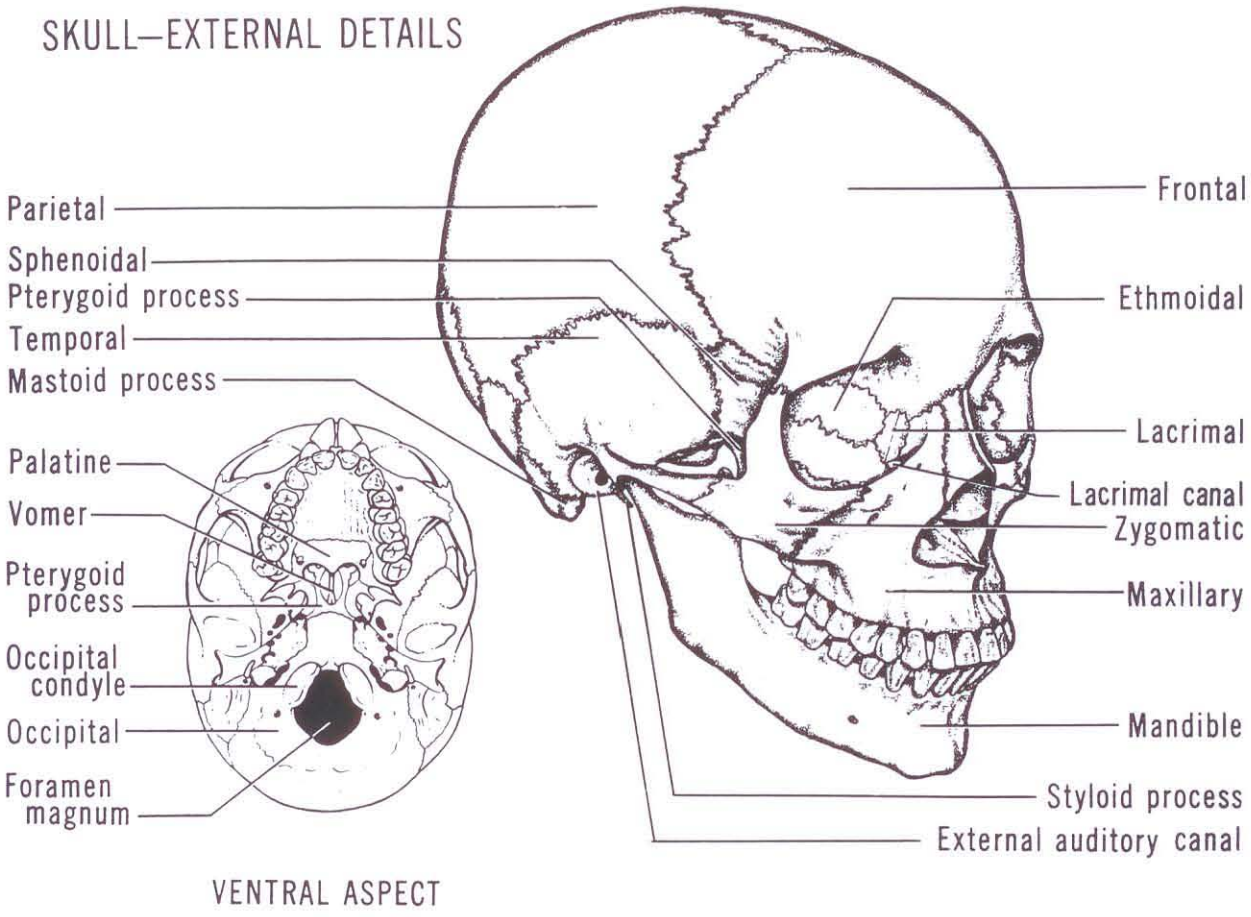


Skull (lateral view)

A. Frontal
B. Parietal
C. Occipital
D. Temporal
E. Sphenoidal
F. Ethmoid
G. Lacrimal
H. Nasal
I. Zygomatic
J. Maxilla
K. Mandible
L. Styloid process

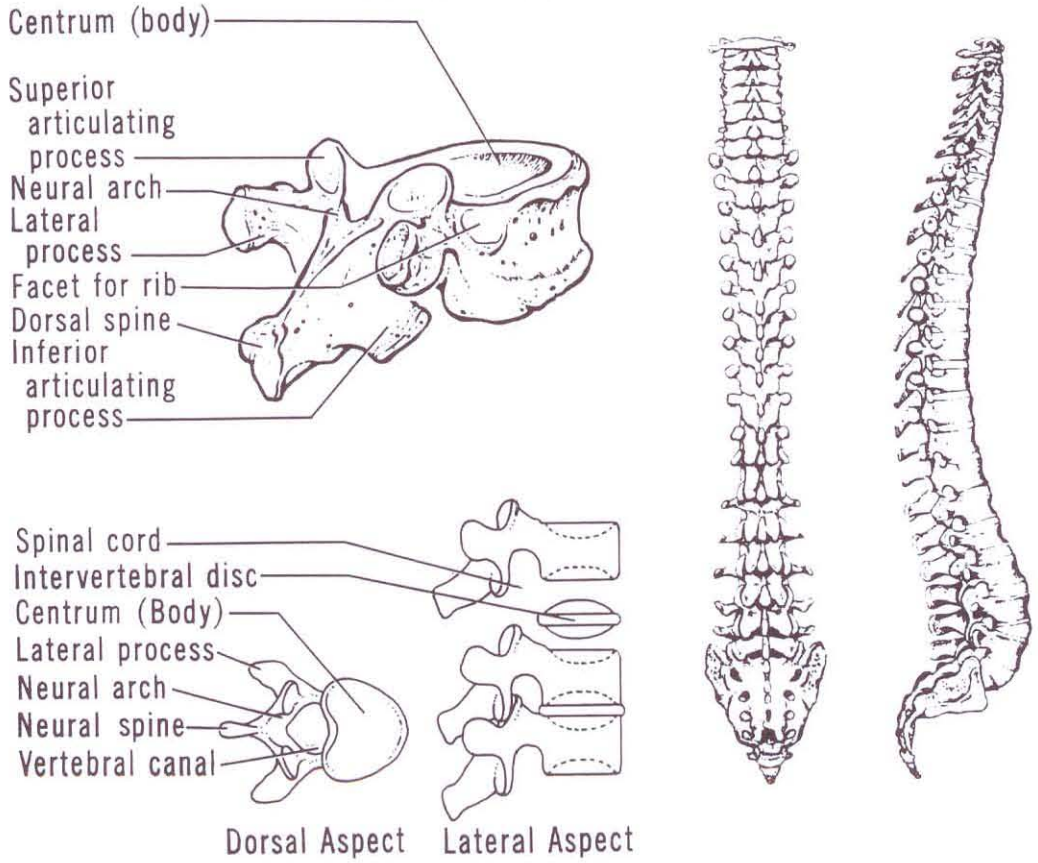
a. Coronal suture
b. Squamosal suture
c. Lamboidal suture

SKULL—EXTERNAL DETAILS



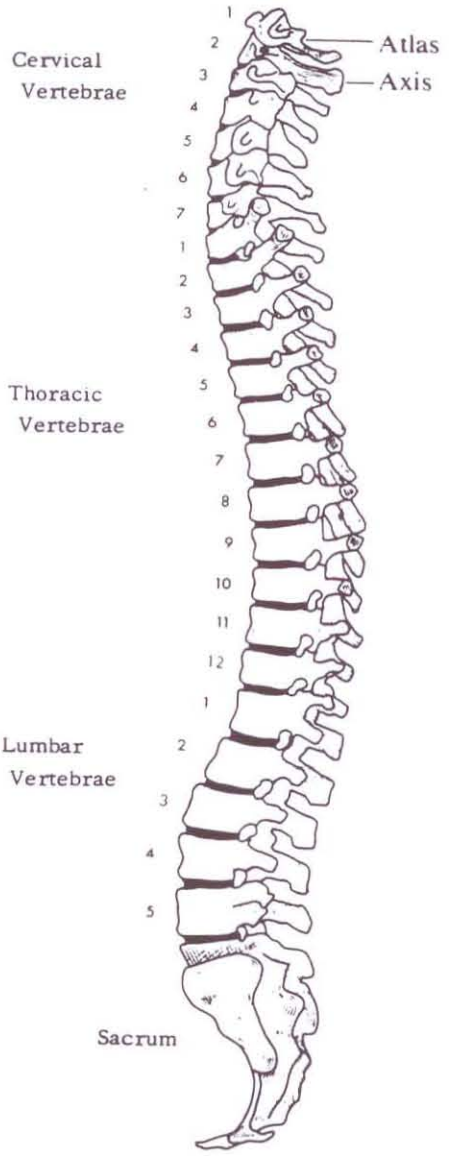
VENTRAL ASPECT

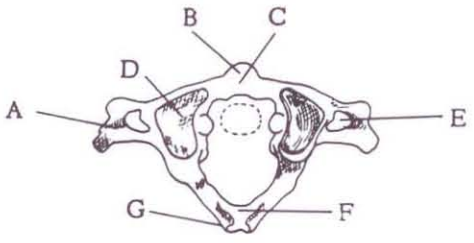
VERTEBRAE AND VERTEBRAL COLUMN



GENERALIZED VERTEBRAE

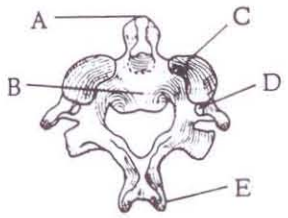
Vertebral Column and Vertebrae





Atlas (first cervical vertebra)

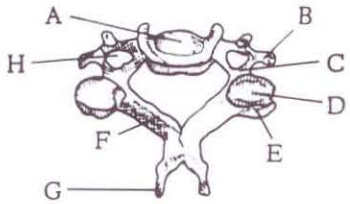
A. Transverse process
B. Anterior tubercle
C. Anterior arch
D. Superior articular surface
E. Foramen transversarium
F. Posterior arch
G. Posterior tubercle



Axis

Axis (second cervical vertebra)

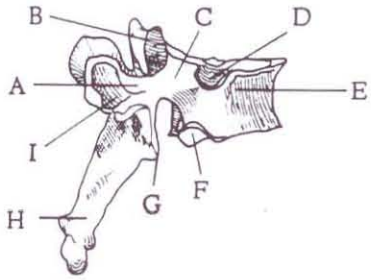
A. Odontoid process
B. Body
C. Superior articular surface
D. Foramen transversarium
E. Spinous process



Cervical Vertebra

Cervical Vertebra

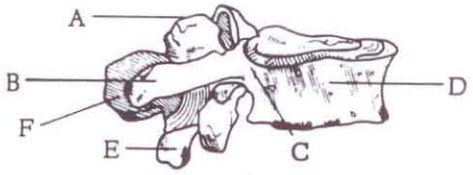
A. Body
B. Transverse process
C. Pedicle
D. Superior articular process
E. Inferior articular process
F. Lamina
G. Spinous process
H. Foramen transversarium



Thoracic Vertebra

Thoracic Vertebra

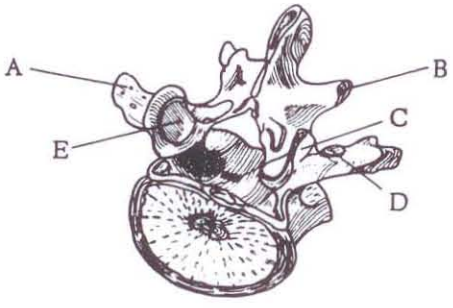
A. Transverse process
B. Superior articular process
C. Pedicle
D. Demi-facet for head of rib
E. Body
F. Demi-facet for head of rib
G. Inferior articular process
H. Spinous process
I. Facet for articular part of tubercle of rib



Lumbar Vertebra
(lateral view)

Lumbar Vertebra (lateral view)

A. Superior articular process
B. Transverse process
C. Pedicle
D. Body
E. Inferior articular process
F. Spinous process

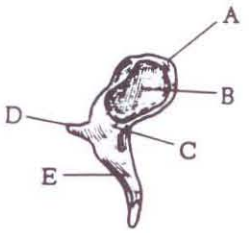


Lumbar Vertebra

Lumbar Vertebra (from above and behind)

A. Transverse process
B. Inferior articular process
C. Mammilary process
D. Accessory process
E. Superior articular process

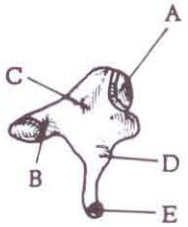
Auditory Ossicles



Left Maleus

Left Maleus (from behind)

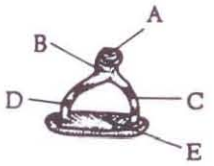
A. Head
B. Facet for incus
C. Neck
D. Lateral process
E. Manubrium



Left Incus

Left Incus (from within)

A. Facet for malleus
B. Short crus
C. Body
D. Long crus
E. Lenticular process

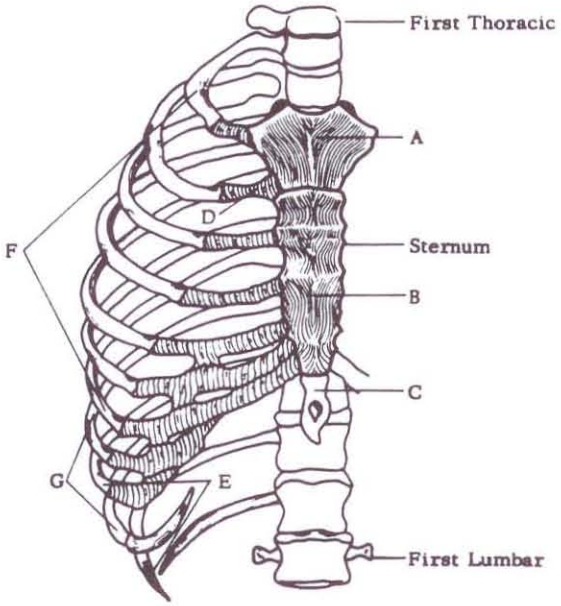


Left Stapes

Left Stapes

A. Head
B. Neck
C. Anterior crus
D. Posterior crus
E. Base

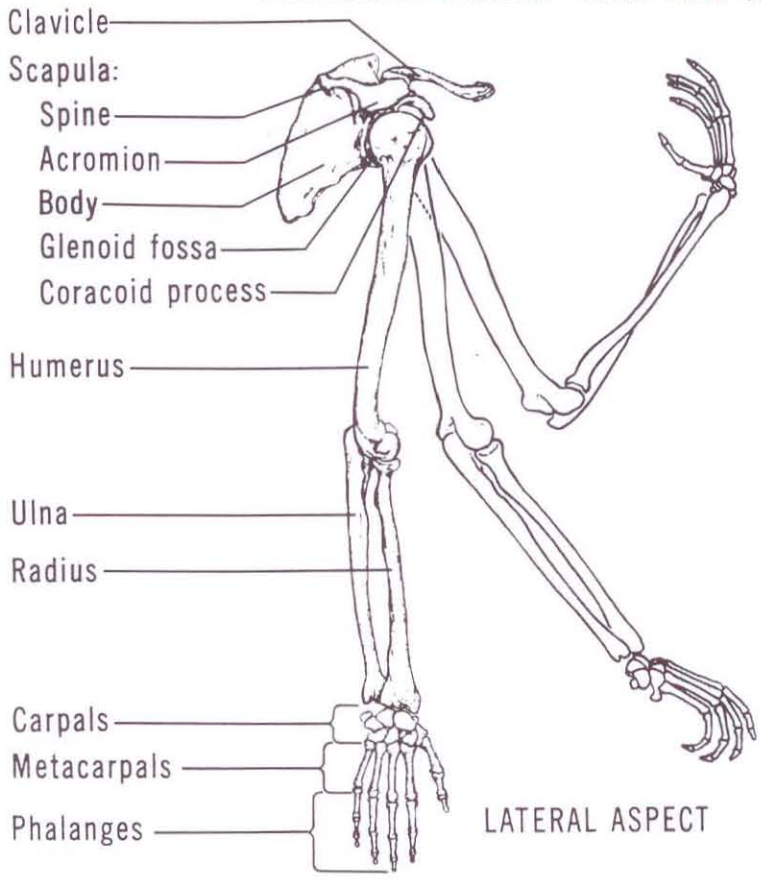
Thorax



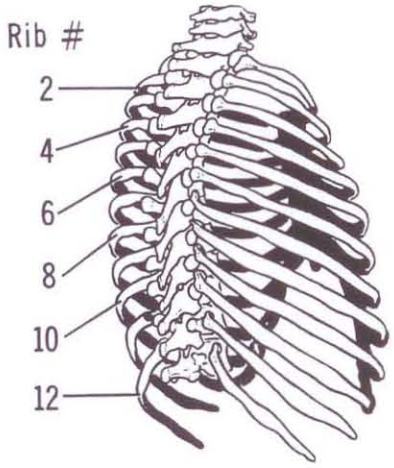
Thorax (frontal view)

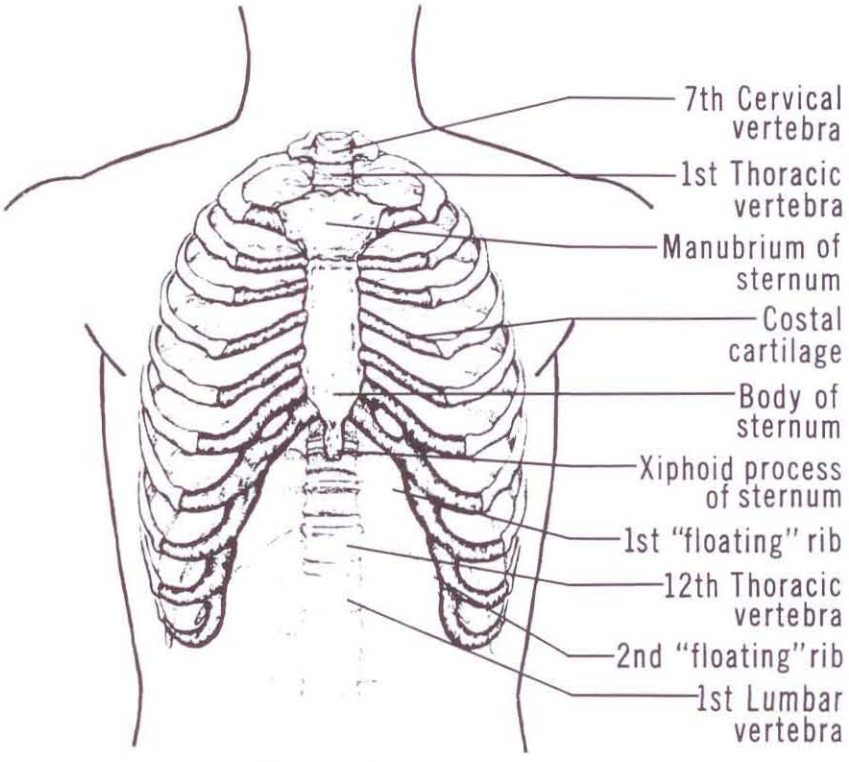
A. Manubrium
B. Body
C. Xiphoid process
D. Costal cartilage
E. False ribs
F. Vertebrosternal or true ribs
G. Vertebrocostal ribs

PECTORAL GIRDLE—ARM AND HAND

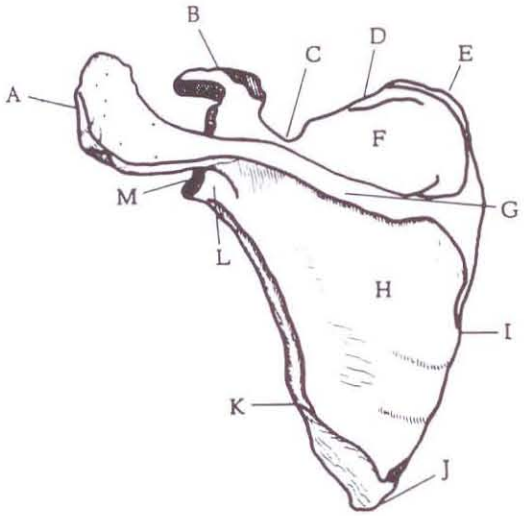


THORAX



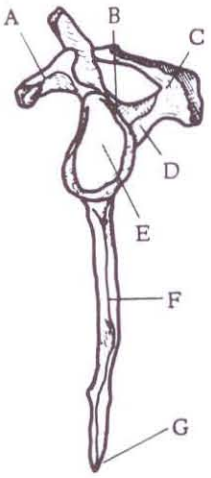


FRONTAL ASPECT



Left Scapula (dorsal view)

A. Acromion
B. Coracoid process
C. Scapular notch
D. Superior border
E. Medial angle
F. Supraspinatous fossa
G. Spine
H. Infraspinatous fossa
I. Vertebral border
J. Inferior angle
K. Auxillary border
L. Neck of scapula
M. Lateral angle

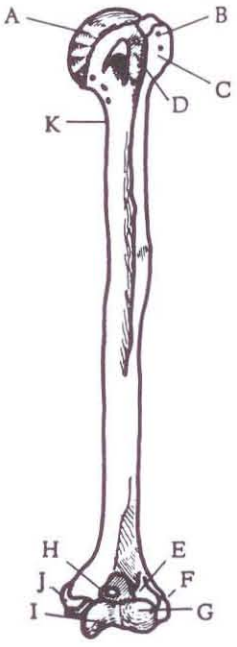


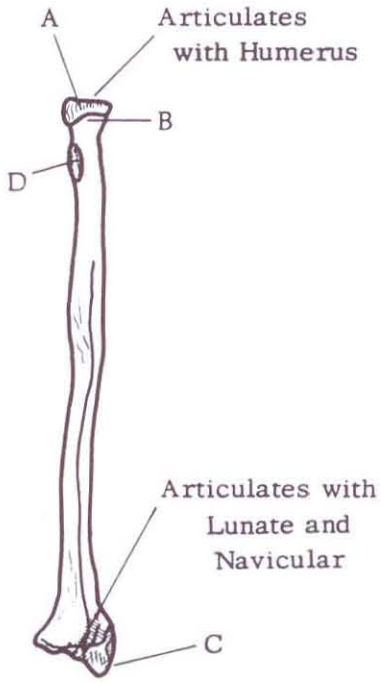
Left Scapula (lateral view)

A. Coracoid
B. Supraglenoid tubercle
C. Acromion
D. Spine
E. Glenoid cavity
F. Auxillary border
G. Inferior angle

Left Humerus (anterior view)

A. Head (articulates with glenoid cavity of scapula)
B. Greater tubercle
C. Crest of greater tubercle
D. Intertubercular groove
E. Radial fossa
F. Lateral epicondyle
G. Capitulum
H. Coronoid fossa
I. Trochlea
J. Medial epicondyle
K. Surgical neck



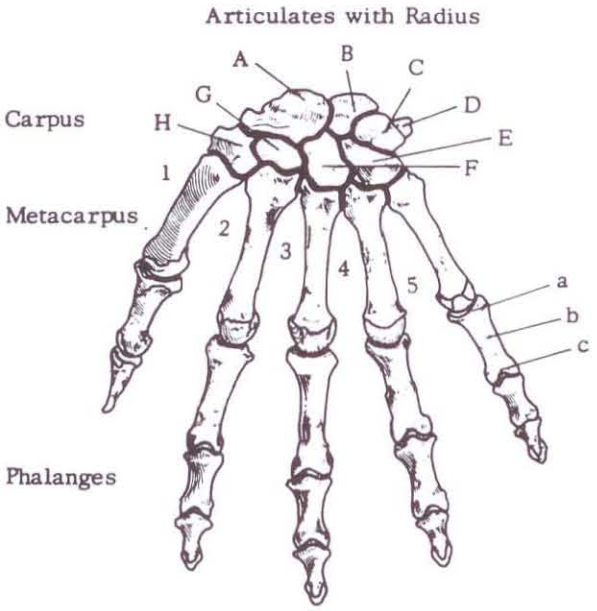


Left Radius (anterior aspect)

A. Head
B. Neck
C. Styloid process
D. Radial tuberosity

Left Ulna (anterior aspect)

A. Olecranon
B. Semilunar notch (articulates with humerus)
C. Coronoid process
D. Radial notch
E. Articulates with radius
F. Styloid process



Left Hand (dorsal surface)

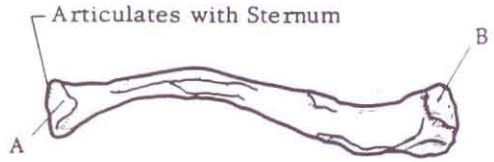
A. Navicular
B. Lunate
C. Triangular
D. Pisiform
E. Hamate
F. Capitate
G. Lesser multangular
H. Greater multangular

a. Base
b. Body
c. Head

Clavicle

Left Clavicle (superior surface)

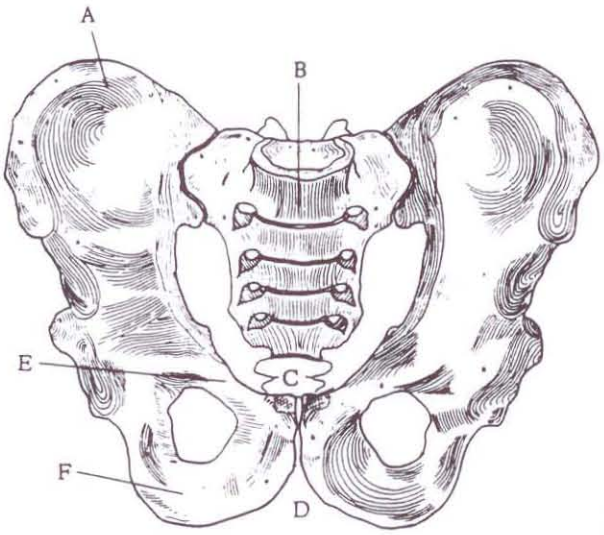
A. Sternal extremity
B. Acromial extremity



Left Clavicle (inferior surface)

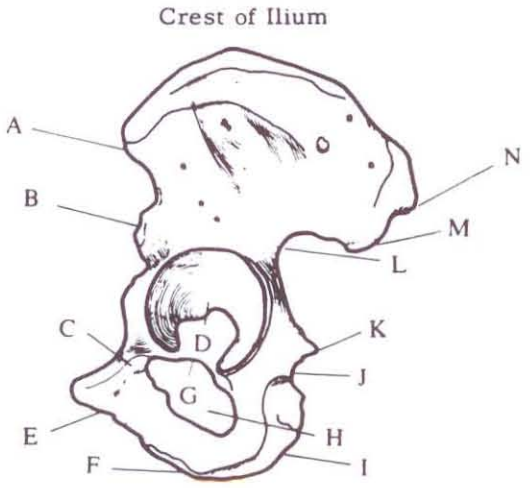
A. Articulates with cartilage of first rib
B. Articulates with acromion of scapula

Pelvis



Pelvis

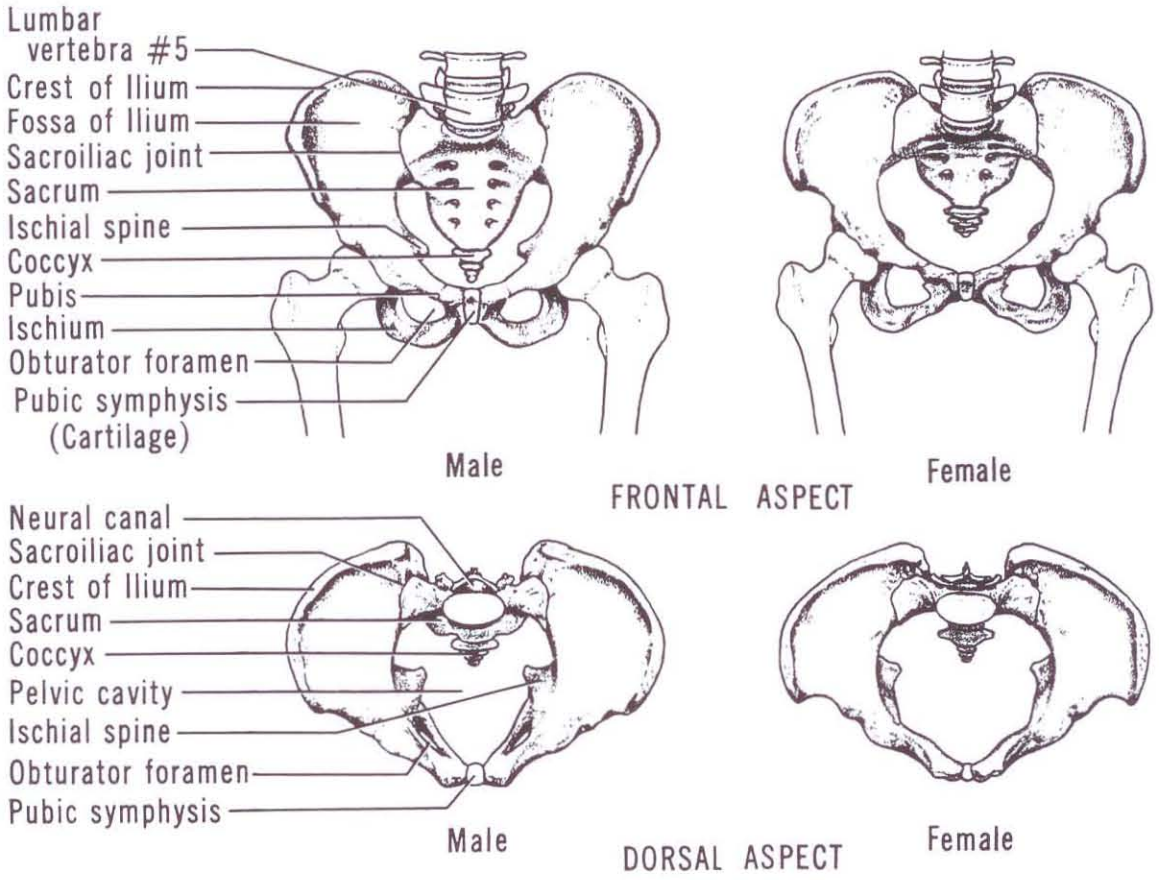
A. Ilium
B. Sacrum
C. Coccyx
D. Pubic arch
E. Pubis
F. Ischium



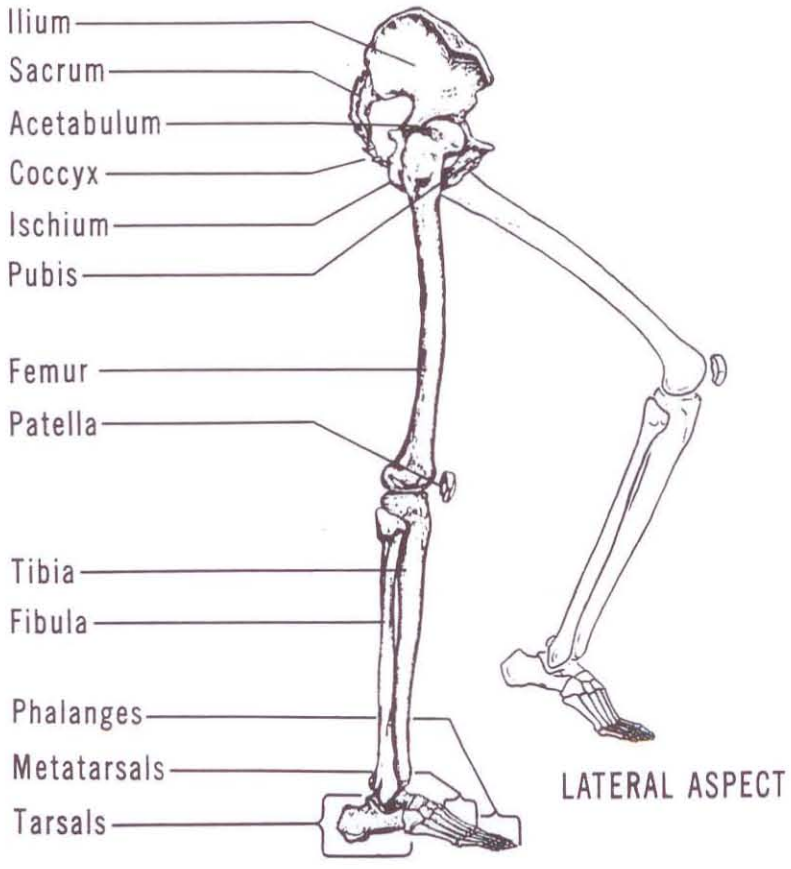
Left Innominate

A. Anterior superior spine
B. Anterior inferior spine
C. Superior ramus of pubis
D. Acetabulum
E. Inferior ramus of pubis
F. Inferior ramus of ischium
G. Acetabular notch
H. Obturator foramen
I. Tuberosity of ischium
J. Lesser sciatic notch
K. Spine of ischium
L. Greater sciatic notch
M. Posterior inferior spine
N. Posterior superior spine

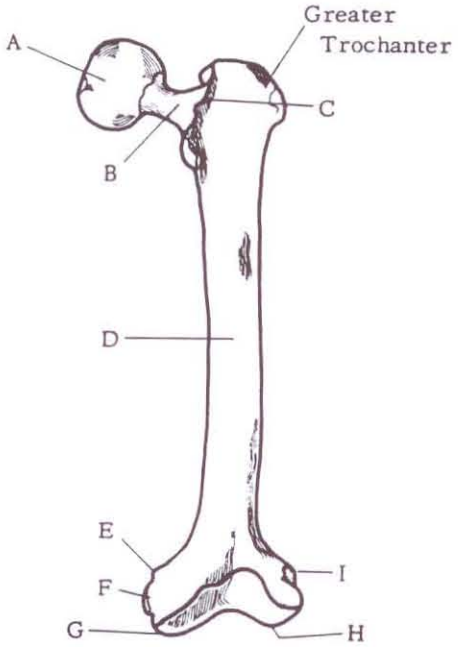
PELVIS—MALE AND FEMALE COMPARISON



PELVIC GIRDLE—LEG AND FOOT

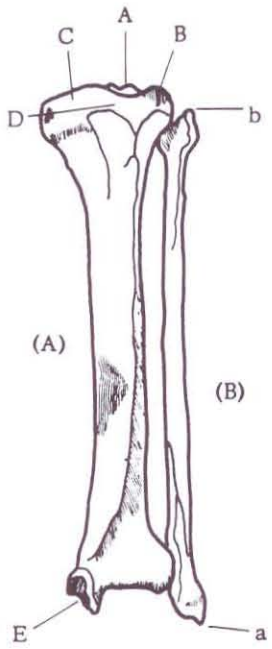


Lower Extremity



Left Femur (dorsal view)

A. Head (articulates with acetabulum)
B. Neck
C. Tubercle
D. Body
E. Adductor tubercle
F. Medial epicondyle
G. Medial condyle
H. Lateral condyle
I. Lateral epicondyle



(A) Tibia (anterior view)

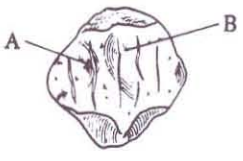
A. Intercondyloid
B. Lateral condyle
C. Medial condyle
D. Tuberosity
E. Medial malleolus

(B) Fibula (anterior view)

a. Lateral malleolus
b. Styloid process

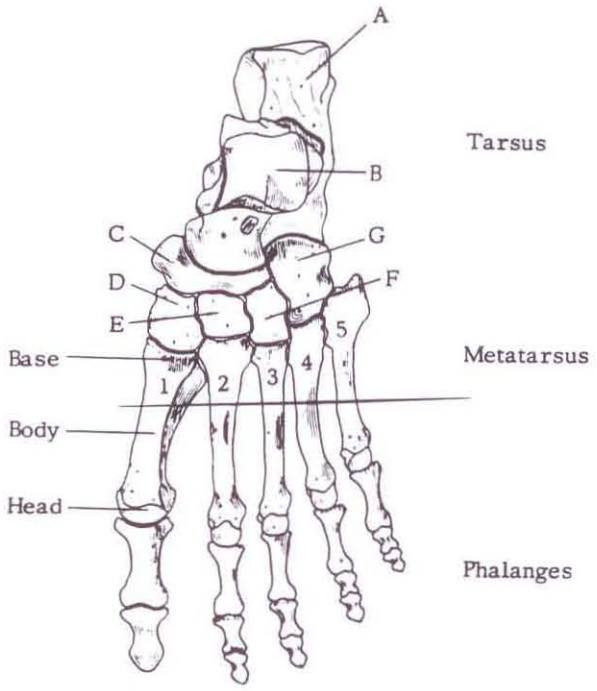
Patella (posterior view)

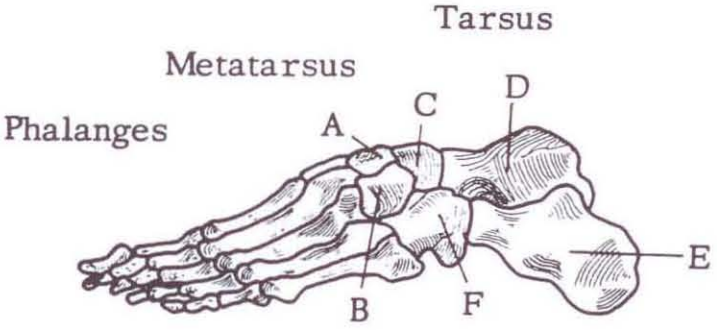
A. Facet for medial condyle
B. Facet for articulation with lateral condyle of femur



Left Foot (dorsal surface)

A. Calcaneus
B. Talus
C. Navicular
D. First cuneiform
E. Second cuneiform
F. Third cuneiform
G. Cuboid

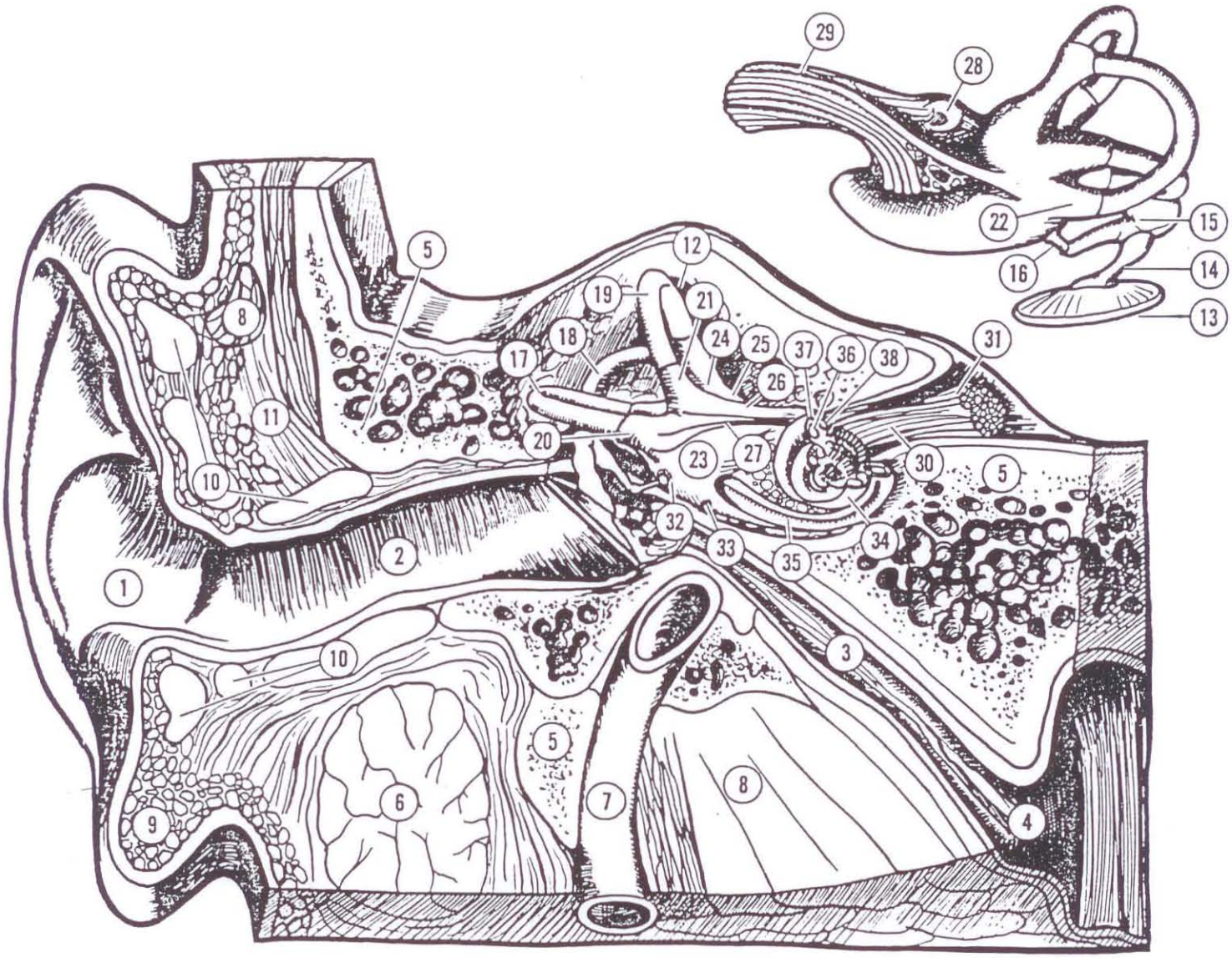




Left Foot (lateral aspect)

A. Second cuneiform
B. Third cuneiform
C. Navicular
D. Talus
E. Calcaneus
F. Cuboid

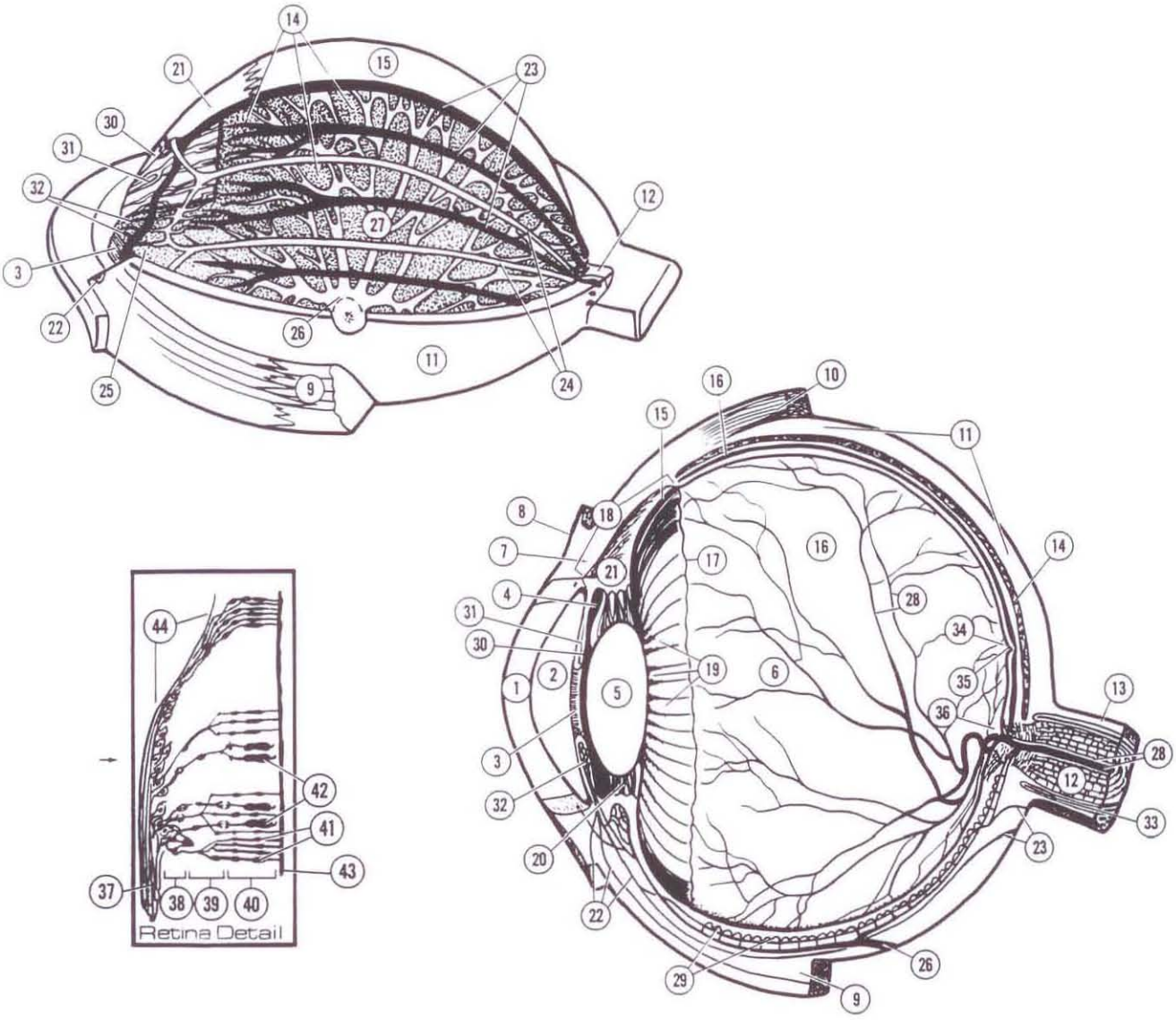
THE EAR MODEL



KEY

1. External Ear (Pinna)
2. Ear Canal (External Acoustic Meatus)
3. Eustachian Tube (You stay' kee an)
4. Opening to Pharynx
5. Right Temporal Bone (frontal section)
6. Cross Section of Salivary Gland (Parotid)
7. Internal Jugular Vein Branch
8. Muscle
9. Fat
10. Cartilage
11. Connective Tissue
12. Middle Ear Cavity (Petrous Cavity in Temporal Bone)
13. Eardrum (Tympanic (tim pan' ik) Membrane)
14. Ear bone - (ossicle) - "hammer" (malleus (mal' ee us))
15. Ear bone - (ossicle) - "anvil" (incus (ink' us))
16. Ear bone - (ossicle) - "stirrup" (stapes (stay' peas))
17. Lateral semicircular canal
18. Posterior semicircular canal
19. Superior semicircular canal
20. Lateral ampulla (am pull' ah)
21. Superior ampulla
22. Posterior ampulla
23. Vestibule
24. Utricle (You' tri kuhl)
25. Saccule (Sack' youl)
26. Superior ampullar nerve
27. Lateral ampullar nerve
28. Superior scarpa ganglion (of vestibular nerve)
29. Vestibular nerve
30. Cochlear (Cock' lee ahr) nerve (sometimes called auditory nerve)
31. Cut portion of facial nerve
32. Oval window (fenestra vestibuli (fen ess' trah ves ti' byou lee))
33. Round window (fenestra cochlea (cock' lee ah))
34. Cochlea
35. Cochlear duct (scala vestibuli and membrane cut away)
36. Scala vestibuli
37. Organ of Corti (Kor' tee) on basilar (bass' i lahr) membrane
38. Scala tympani (tim' pan ee)

THE EYE MODEL



KEY

1. Cornea
2. Anterior chamber (aqueous humor)
3. Iris
4. Posterior chamber
5. Lens (separate molded piece)
6. Vitreous humor
7. Limbus
8. Conjunctiva (Con' junk tie' vah)
9. Medial rectus muscle
10. Lateral rectus muscle
11. Sclera (Sklee' rah)
12. Optic nerve (longitudinal section)
13. Dura (Du' rah) sheath (of optic nerve)
14. Choroid layer (post. vascular coat of eye)
15. Retina (pigmented layer)
16. Optic retina
17. Ora serrata (Oh' rah suh rah' tah)
18. Ciliary (Silly' airy) body
19. Ciliary processes
20. Suspensory ligament (of the lens)
21. Ciliary muscle
22. Anterior ciliary arteries
23. Posterior ciliary arteries
24. Ciliary nerves
25. Ciliary ring
26. Vorticose vein
27. Venous rete (reet) (network of choroid)
28. Central artery & vein of retina (inferior & superior)
29. Chorio (Koh' ree oh) capillaries
30. Iridial retina
31. Sphincter (Sfink' ter) & dilator pupillae (pew' pill ee) muscles
32. Iridial arteries
33. Arachnoid (Uh rack' noid) (of optic nerve)
34. Macula lutea (Mack' you lah) (lew' tee ah)
35. Central fovea (foh' vee ah)
36. Optic disk
37. Nerve fiber layer of retina (diagram)
38. Ganglion cell layer of retina (diagram)
39. Bipolar cell layer of retina (diagram)
40. Layer of rods & cones of retina (diagram)
41. Rod cell (diagram)
42. Cone cell (diagram)
43. Pigmented layer of retina
44. Macular zone (fovea centralis) of retina

MIDDLE AND INNER EAR (the Labyrinth) SS-3

1	tympanic membrane (ear-drum)
2	bony ring around tympanic membrane
3a, 3b, 3c	Malleus
4a, 4b	Incus
5a, 5b, 5c	Stapes
8	the vestibule
9	oval window
10	round window
11, 12,13	semicircular canals
14	cochlea
15	cochlear nerve (part of the vestibulocochlear nerve)
16	scala vestibuli (vestibular duct)
17	scala tympani (tympanic duct)
18	cochlear duct (scala media)
19	(area of) the organ of Corti (a microscopic structure)

EYEBALL

SS-4

Numbers 1 through 10 do not appear on the model

11	Tendon of superior oblique muscle
12	Medial rectus muscle
13	Inferior rectus muscle
14	Lateral rectus muscle
15	Superior rectus muscle
16	Inferior oblique muscle
17	Conjunctiva
18	Cornea (clear)
19	Iris (colored)
20	Ciliary muscle
21	Ciliary body
22	Retina
23	Choroid
24	Cut section of retina folded back to expose choroid layer
25	Sclera
26	Macula lutea
27-30,32	arteries and veins
31	Lacrimal gland (on lateral surface of eye)

Numbers 33 through 43 and number 45 do not appear on the model

44	Optic nerve
46	Diagram showing the retinal layer of rods and cones
47	Vitreous body
48	Lens

NOTE - 1 means 1 on this model

A External Ear
1 Auricle (Pinna)
2 External auditory meatus
3 Tympanic membrane
4 Ring of tympanic membrane

Middle Ear

5 Tympanic cavity
7 Auditory tube (Eustachian tube)
8 Malleus
9 Incus
11 Stapes

Inner Ear

12 Vestibule
13 Oval window
14 Round window
15, 16, 17 Semicircular canals
C 17 Ampulla of semicircular canals
18 Cochlea
19 Cochlear nerve
20 Internal carotid artery
22 Vestibular nerve

(Vestibular nerve joined to Cochlear nerve = Vestibulocochlear nerve)

EYE

KEY

Bones of the Orbital and Nasal Cavity

1. Frontal bone, with frontal sinus
2. Nasal bone
3. Zygomatic bone
4. Maxilla
5. Fossa sacci lacrimalis
6. Lacrimal bone
7. Lamina papyracea of ethmoid bone
8. Sphenoid bone
9. Foramen opticum
10. Lamina cribrosa of ethmoid bone

Extrinsic Muscles of the Eyeball

11. Superior rectus muscle
12. External rectus muscle
13. Internal rectus muscle
14. Inferior rectus muscle
15. Inferior oblique muscle
16. Superior oblique muscle
17. Tendon of superior oblique
18. Trochlea of superior oblique

Structures of the Eyeball

19. Sclerotic coat
20. Cornea
21. Choroid coat
22. Ciliary disc
23. Anterior margin of retina
24. Ciliary ligament with ciliary processes
25. Ciliary muscle
26. Posterior epithelial layer of iris
27. Posterior basal membrane (Bruch's or Henle's Layer)
28. Circular muscle fibers
29. Radiating muscle fibers

30. Retina
    - a. Pigmented layer
    - b. Layer of rods and cones
    - c. External limiting membrane
    - d. Outer nuclear layer
    - e. Outer plexiform layer
    - f. Inner nuclear layer
    - g. Inner plexiform layer
    - h. Ganglionic layer or layer of nerve cells
    - i. Stratum opticum or layer of nerve fibers
    - k. Internal limiting membrane
    - l. Rods
    - m. Rod granules
    - n. Cones
    - o. Cone granules
    - p. Horizontal cells
    - q. Bipolar cells
    - r. Amacrine cells
    - s. Sustenacular fibers of Muller
    - t. Ganglionic cells
31. Vitreous body
32. Yellow spot with fovea centralis retinae

Ossae orbitales et nasales

1. Os frontale cum sinu frontale
2. Os nasale
3. Os zygomaticum
4. Maxilla
5. Fossa sacci lacrimalis
6. Os lacrimalis
7. Lamina papyracea ossis ethmoidalis
8. Os sphenoidale
9. Foramen opticum
10. Lamina cribrosa ossis ethmoidalis

Musculi oculares

11. M. rectus oculi superior
12. M. rectus lateralis
13. M. rectus medialis
14. M. rectus inferior
15. M. obliquus inferior
16. M. obliquus superior
17. Tendo m. obliquis superioris
18. Trochlea m. obliquis superioris

Bulbus oculi

19. Sclera
20. Cornea
21. Choroidea
22. Discus ciliaris orbiculatus ciliaris
23. Ora serrata
24. Lig. ciliaris cum processo ciliare
25. M. ciliaris
26. Stratum epithelium posterior iridis
27. Membrana basilaris posterior (Membrana Bruchi et Henlei)
28. Fibrae musculares circulares
29. Fibrae musculares radiales

30. Retina
    - a. Stratum pigmenti
    - b. Stratum neuro epitheliatum (Membrana Jacobi)
    - c. Membrana limitans externa
    - d. Stratum nucleatum externum
    - e. Stratum plexiforme externum
    - f. Stratum nucleatum internum
    - g. Stratum plexiforme internum
    - h. Stratum ganglionatum
    - i. Stratum opticum
    - k. Membrana limitans interna
    - l. Granulae et
    - m. membranae
    - n. cellulae (Jacobi)
    - o.
    - p. Cellulae horizontales
    - q. Cellulae bipolares
    - r. Cellulae amacrinae
    - s. Fibrae Mulleri (fibrae perpendiculares)
    - t. Cellulae ganglionatae
31. Corpus vitreum
32. Macula lutea cum fovea centralis retinae

Nerves and Blood Vessels

33. Second cranial or optic nerve
34. Maxillary nerve
35. Ophthalmic nerve
36. Frontal nerve
37. Lacrimal nerve
38. Third cranial or oculomotor nerve
39. Sixth cranial or abducens nerve
40. Infraorbital branch of maxillary nerve
41. Zygomatic nerve
42. Zygomatico-facial branch
43. Ophthalmic artery
44. Lacrimal artery
45. Frontal artery
46. Supraorbital artery
47. Posterior ciliary arteries
48. Episcleral arteries
49. Ciliary arteries and nerves passing thru sclera to supply choroid coat
50. Vasae sanguinales of retina
51. Vorticose veins
52. Optic papilla with emergence of artery of lens
53. Nasociliary nerve
54. Ciliary ganglion
55. Superior lacrimal gland
56. Inferior lacrimal gland
57. Saccus lacrimalis
58. Caruncula lacrimalis

Nervi et Vasae sanguinales

33. N. opticus, II
34. N. maxillaris
35. N. ophthalmicus
36. N. frontalis
37. N. lacrimalis
38. N. oculomotorius, III
39. N. abducens, VI
40. Ramus infraorbitalis nervi maxillare
41. N. zygomaticus
42. Ramus zygomatico-facialis
43. A. ophthalmica
44. A. lacrimalis
45. A. frontalis
46. A. supraorbitalis
47. AA. ciliares posteriores
48. AA. episclerales
49. AA. et NN. ciliares
50. Vasa sanguinales retinae
51. VV. vorticosae
52. Papilla optica
53. N. nasociliares
54. Ganglion ciliare
55. Glandula lacrimalis superior
56. Glandula lacrimalis inferior
57. Saccus lacrimalis
58. Caruncula lacrimalis

EAR

A. External Ear

I. Auricle

1. Helix
2. Scaphoid fossa (fossa of helix)
3. Crus of helix
4. Antihelix
5. Crura of antihelix
6. Triangular fossa (fossa of antihelix)
7. Tragus
8. Supratragic tubercle
9. Intertragic incisure
10. Antitragus
11. Anterior incisure (anterior notch)
12. Posterior auricular sulcus
13. Cymba

    Concha
14. Cavum
15. Lobule
16. Greater muscle of helix
17. Smaller muscle of helix
18. Muscle of tragus
19. Muscle of antitragus
20. Oblique muscle
21. Transverse muscle
22. Rami of anterior auricular artery
23. Rami of posterior auricular artery
24. Posterior branch of great auricular nerve

II. External Acoustic Meatus

25. Cartilaginous portion
26. Osseous portion

B. Middle Ear

III. Tympanic Membrane with Tympanic Ring

27. Anterior portion of membrane
28. Posterior portion of membrane
29. Pars flaccida
30. Anterior malleolar ligament
31. Posterior maleolar ligament
32. Radiating fibers of membranous layer
33. Circular fibers of membranous layer

IV. Tympanic Cavity

34. Malleus
    a. Head
    b. Neck
    c. Manubrium
35. Incus
    d. Body
    e. Short crus
    f. Long crus
36. Stapes
    g. Anterior crus
    h. Posteror crus
    i. Base
37. Tympanic antrum
38. Entrance of Eustachian (auditory) tube
39. Facial nerve, cut across
40. Tensor tympani muscle
41. Promontory
42. Round (cochlear) window
43. Oval (vestibular) window
44. Mastoid air cells

C. Inner Ear

V. Semicircular canals

45. Cavity of semicircular canals
46. Cavity of cochlea
47. Internal auditory meatus
48. Anterior semicircular canal
49. Posterior semicircular canal
50. Lateral semicircular canal
51. Round (cochlear) window
52. Oval (vestibular) window
53. Ampulla of anterior canal
54. Ampulla of posterior canal
55. Ampulla of lateral canal
56. Common crus
57. Utriculus
58. Sacculus
59. Vestibular nerve

VI. Cochlea

60. Beginning of first turn of cochlea
61. Second turn of cochlea
62. Cupula of cochlea
63. Vestibular lip
64. Tympanic lip
65. Spiral lamina
66. Cochlear nerve to branch of auditory nerve (vestibulocochlear nerve-Cranial Nerve VIII)
67. Vestibular nerve
68. Cochlear nerve
69. Facial nerve-(Cranial Nerve VII)
70. Geniculate ganglion

VII. Structures of the Temporal Bone

71. Mastoid process
72. Eustachian (auditory) tube
73. Styloid process
74. Glenoid fossa
75. Internal carotid artery
76. Groove for sigmoid sulcus
77. Mastoid portion of temporal bone
78. Petrous portion of temporal bone
79. Orifice of aqueduct of vestibule

Three Part Ear
DG A33

1 Auricle (or pinna)
2 cartilage and skin
3 external auditory canal
4 wax-producing galnds
5 earlobe
6 cartilage of external auditory meatus
7 temporal bone
8 styloid process
9 tympanic (fibrocartilaginous) ring

10 tympanic membrane (eardrum)

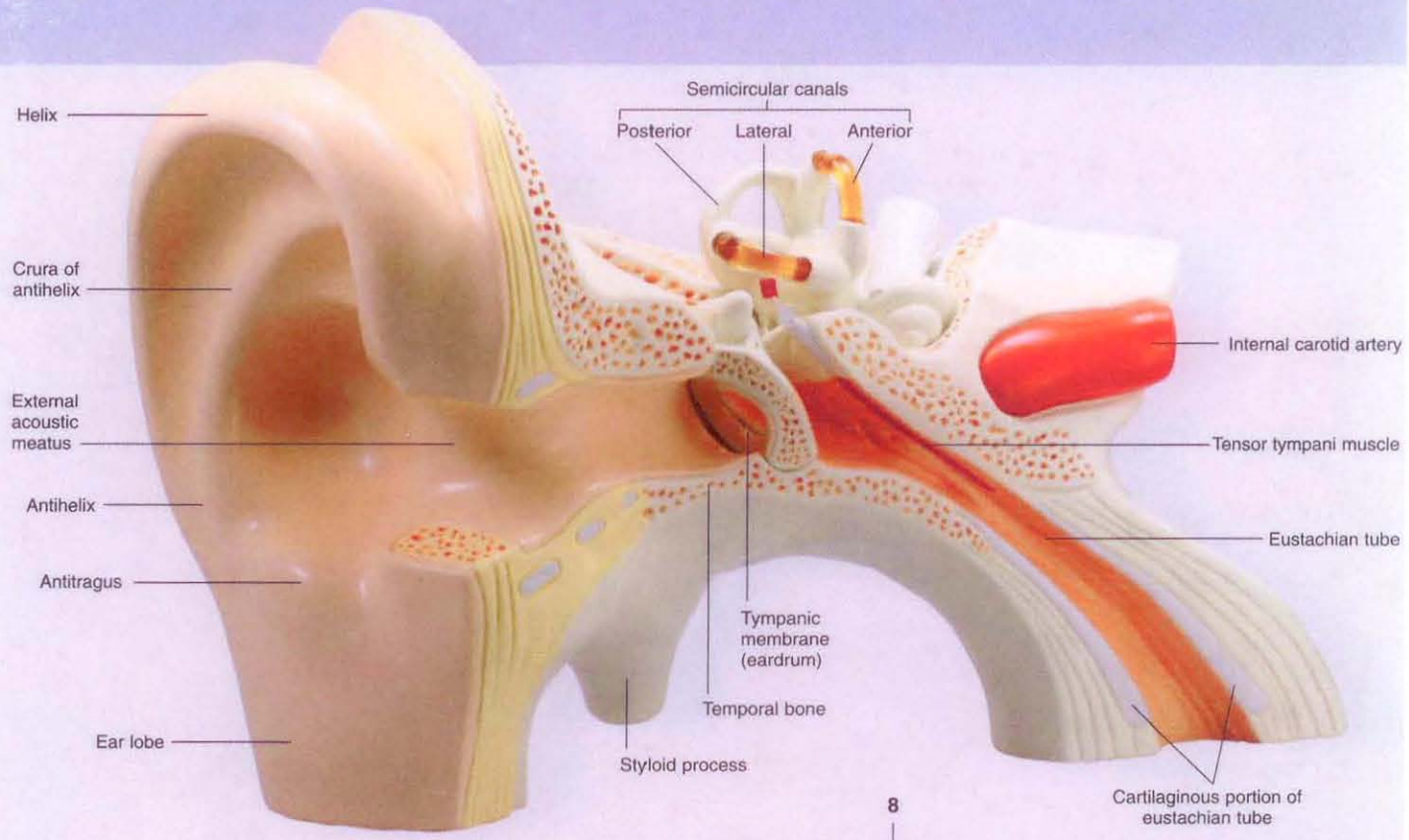
Auditory Ossicles:
11 incus (anvil)
12 malleus (hammer)
13 stapes (stirrup)

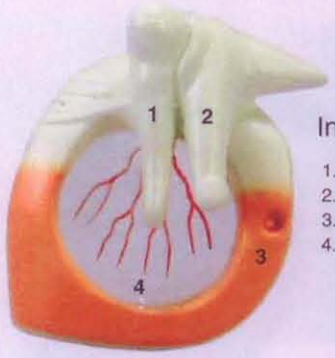
14 anterior ligament of malleus
15 posterior ligament of incus
16 tensor tympani muscle
17 stapedius muscle

18 tympanic cavity
19 eustachian tube
20 anteriro semicircular canal
21 ampulla of superior canal
22 posterior semicircular canal
23 ampulla of posterior canla
24 lateral semicircular canal
25 ampulla of laterla canal
26 vestibule

27 oval window (located under stapes) (vestibular window)
28 Round window (cochlear window)
29 Cochlea, first turn
scala vestibuli (orange)
scala media (white)
scala tympani (blue)
30 cochlea, second turn
31 cupula
32 vestibular nerve (VIII Cranial)
33 cochlear nerve (VIII Cranial)
34 Facial nerve (VII Cranial)
35 interanl carotid artery
36 cartilaginous portion of eustachian tube

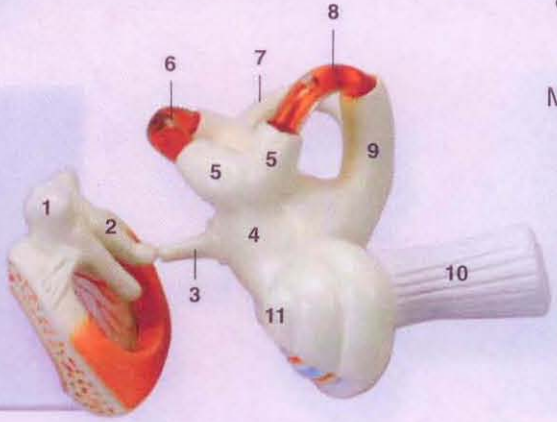
Anatomy of the EAR





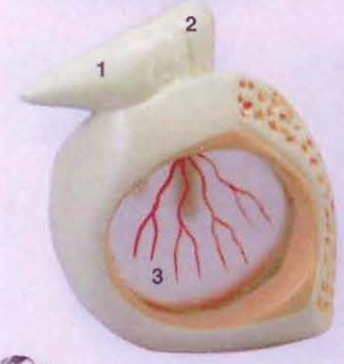
Internal View

1. Malleus (hammer)
2. Incus (anvil)
3. Tympanic ring
4. Tympanic membrane (eardrum)



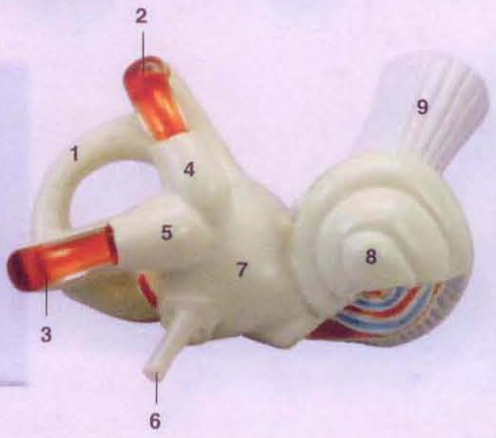
Membraneous Labyrinth

1. Malleus
2. Incus
3. Stapes in oval vestibular window
4. Vestibule
5. Ampullae
6. Lateral semicircular canal
7. Posterior semicircular canal
8. Anterior semicircular canal
9. Common bony limb
10. Cochlear nerve (VIII cranial)
11. Cupula



External View

1. Incus (anvil)
2. Malleus (hammer)
3. Tympanic membrane (eardrum)



Anterolateral View

1. Posterior semicircular canal
2. Anterior semicircular canal
3. Lateral semicircular canal
4. Ampulla of anterior canal
5. Ampulla of lateral canal
6. Stapes
7. Vestibule
8. Cupula
9. Cochlear nerve (VIII cranial)

DGi Photography of Denoyer-Geppert models

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The Human Eye
3B F10

Extra-Ocular muscles

I superior rectus
II inferior rectus
III medial rectus
IV lateral rectus
V tendon of superior oblique
VI inferior oblique

A Fibrous layer of eyeball

1 cornea
2 sclera

B Vascular layer of eyeball

3 iris with pupil
4 ciliary muscle
5 corona ciliaris
6 choroid
7 ciliary nerves
8 vorticose vein
8a ciliary arteries

C Inner layer of eyeball

9 Retina
10 ciliary part of retina
11 rretinal arterioles
12 retinal venules
13 macula and fovea centralis
14 optic disc
15 lens
16 vitreous body

SS 10

Spiral Organ of Corti
Of the human auditory apparatus

Somso DS 10

1 Bony substance of the cochlea, *Cochlea*

2 Scala of the vestibule, *Scala vestibuli* , filled with perilymph

3 Scala of the tympanum, *Scala typani* , filled with perilymph

4 Vestibular wall of the cochlear duct, *Paries vestibularis ductus cochlearis*

5 Osseous spiral lamina, *Lamina spiralis ossea*

6 Secondary spiral lamina, *Lamina spiralis secundaria*

7 Epithelium of the internal spiral sulcus, *Sulcus spiralis internus*

8 Internal hair cells, *Cellulae ciliares internae,* with the auditory hairs

9 External hair cells, *Cellulae ciliares externae* , with auditory hairs

10 Internal pillar cells, *Columnae internae*

11 External pillar cells, *Columnae externae*

12 Tunnel of Corti

13 Deiters' supporting cells, *Cellulae Deiteri*

14 Cells of Hensen, *Cellulae hensenii*

15 Claudius' cells, *Cellulae Claudiusii*

16 Nuel's space

17 Vestibular lip of the limbu, *Labium limbi vestibulare*

18 tectorial membrane, *Membrana tectoria*

19 Cochlear duct, *Ductus cochlearis* (filled with endolymph)

20 Spiral ligament of the cochlea, *Ligamentum spirale cochlea*

21 Prominent vessel, *Vas prominens*

22 Axis (central bony column of the cochlea), *Modiolus*

23 Lateral wall of the cochlea, *Paries lateralis cochleae*

24 Spiral ganglion, *ganglion spirale*

25 Cochlear nearve, *N. vestibulo-cochlearis*

26 Cochlear arteries, *rami cochlearis of the A. labyrinthi*

27 Tympanic lip of the limbus, *labium limbi tympanicum*

KIDNEY PAIR MODEL

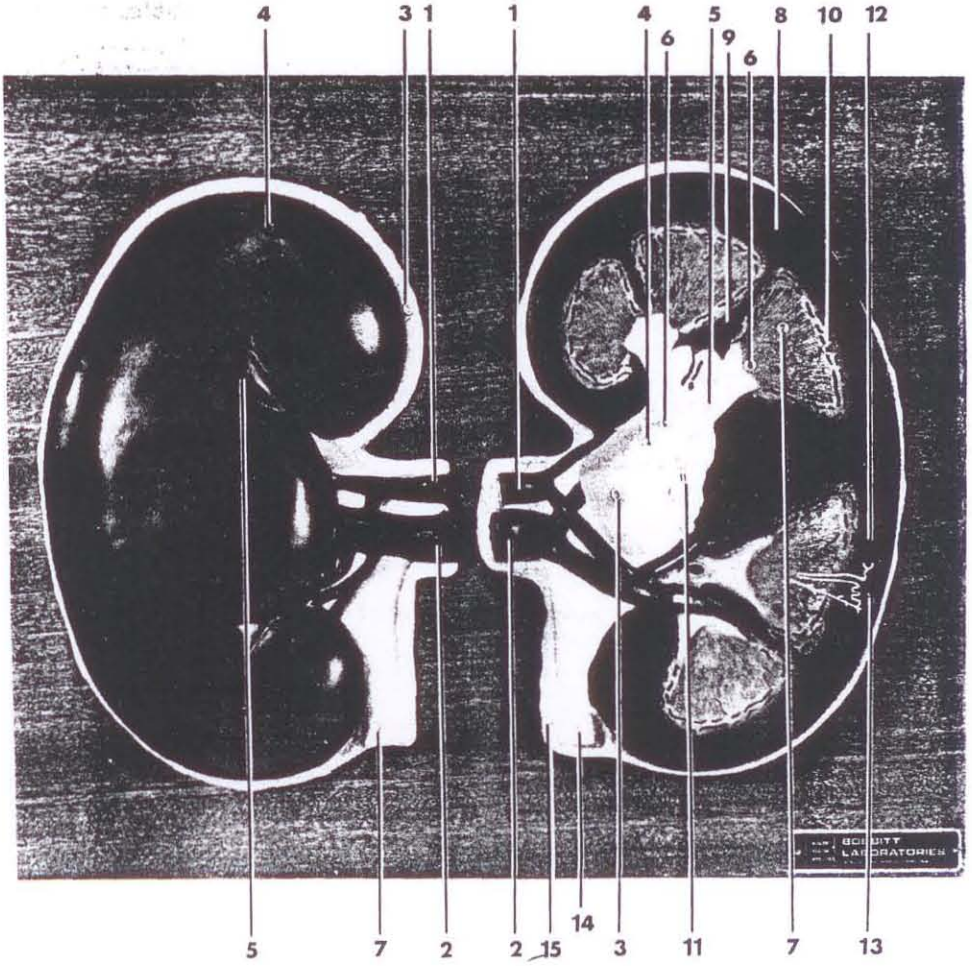
US-1

SAGGITAL SECTION ON RIGHT

1 Renal artery
2 Renal vein
3 Renal pelvis
4 Major calyx
5 Minor calyx
6 Renal papilla
7 Renal pyramid
8 Renal cortex
9 Renal columns
10 Arciform vessels (arcuate)
11 Fat in renal sinus
12 Glomerulus (diagrammatically enlarged)
13 Glomerular capsule with proximal and distal convoluted tubules (diagrammatically enlarged)
14 Ureter
15 Perirenal fat

EXTERIOR SURFACE ON LEFT

1 Renal artery
2 Renal vein
3 Perirenal fat
4 Superior extremity
5 Remnant of fetal lobulation
6 Renal sinus
7 Ureter



THREE PART KIDNEY MODEL

WHOLE KIDNEY KEY

A renal capsule
B renal cortex
C renal medulla

1 renal vein
2 renal artery
3 arciform vein
4 arciform artery
5 peritubular capillaries
6 interlobular vein
7 interlobular artery
8 ----------
9 ----------
10 ureter
11 renal pelvis
12 minor calyx
13 renal papilla
14 collecting ducts
15 collecting ducts
16 distal convoluted tubules
17 Loop of Henle (thin loop)
18 proximal convoluted tubules
19 renal corpuscles
20 renal pyramid
21 interlobar artery

LOW POWER MICROSCOPIC MODEL OF NEPHR0NS

A cortex of the kidney
B outer medulla
C inner medulla

1 renal corpuscles
2 proximal convoluted tubules
3 distal convoluted tubules
4 Loop of Henle or thin loop
5a collecting duct
5b papillary duct
6 arciform artery and vein
7 interlobular artery and vein
8 afferent arteriole
9 efferent arteriole
10 peritubular capillaries

HIGH POWER MICROSCOPIC MODEL OF RENAL CORPUSCLE

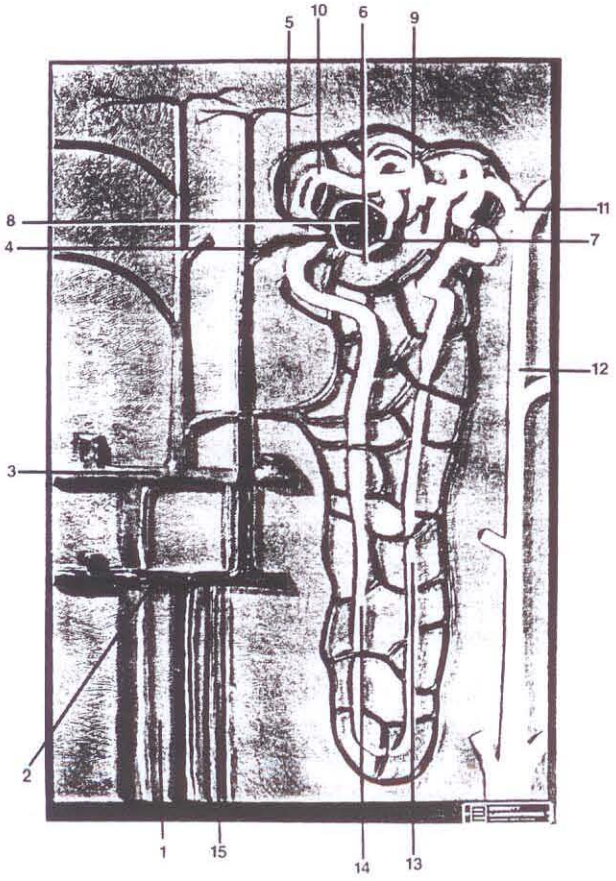
1 afferent arteriole
2 glomerulus
3 efferent arteriole
4 Bowman's capsule (visceral layer)
5 Bowman's capsule (parietal layer)
6 proximal convoluted tubule

KIDNEY (NEPHRON AND COLECTING DUCTS ONLY) US-3

Know the labeled structures, the flow of blood in the kidney, and the flow of glomerular filtrate until it leaves as urine.

RENAL STRUCTURES

1 Interlobar artery
2 Arciform (arcuate) artery
3 Arciform (arcuate) vein
3a Interlobular artery
4 Afferent arteriole
5 Efferent arteriole
6 Cortex of kidney
7 Bowman's capsule
8 Glomerulus (capillaries)
9 Proximal convoluted tubules
10 Distal convoluted tubules
12 Collecting duct
13 Descending limb of Henle's loop
14 Ascending limb of Henle's loop



FLOW OF BLOOD IN THE KIDNEY

Renal artery
1 Interlobar artery
2 Arciform artery
3a Interlobular artery
4 Afferent arteriole
8 Glomerulus
5 Efferent arteriole
15 Peritubular capillaries
3b Interlobular vein
3 Arciform vein
1 Interlobar vein
Renal vein

FLOW OF GLOMERULAR FILTRATE UNTIL IT LEAVES AS URINE

7 Bowman's capsule
9 Proximal convoluted tubule
13 Descending limb of Henle's loop
14 Ascending limb of Henle's loop
10 Distal convoluted tubule
12 Collecting duct
Minor calyx
Major calyx
Renal pelvis
Ureter
Urinary bladder
Urethra

Urinary organ

Somso LS 3

1 kidney
2 ureter
3 urinary bladder
4 urethra
5 peritoneum
6 muscular tunica
7 internal ostium of the urethra
8 longitudinal cut through the kidney
- a cortical substance
- b medullary substance
- c pelvis of the kidney
- d fat of the renal sinus
- e branch of the artery
- f renal calyces
- g renal papillae

9 suprarenal body
10 aorta
11 inferior vena cava
12 Renal artery
13 Renal vein
14 Ostium of the ureter
15 Trigone of the bladder

Kidney, Nephron, Corpuscle of the Kidney
3B K11

Kidney (approx 3X normal size)

A. Cortex
B. Medulary substance
1 renal vein
2 renal artery
3 vein arcifrom of the kidney
4 artery arciform of the kidney
5 capillary bed
6 veins interlobular of the kidney
7 arteries interlobular of the kidney
8 afferent vessel
10 renal duct
11 pelvis of ureter
12 large ranl calix
13 papillary foramina
14 renal papilla
15 papillary duct
16 curvature part of urinary tubules
17 Henle's loop
18 curvature part of urinary tubules
19 renal corpuscles
20 renal pyramid
21 small renal calices
22 renal columns

Nephron (approx 120X)

A. Cortex of the kidney
B. medulla of the kidney, outer zone
C. medulla of the kidney, inner zone
1 corpuscle of the kidney
2 proximal tubules
a. Convoluted part
b. Straigth part
c. Henle's loop
3 distal tubule
4 collecting tubule
5 papillary duct
6 arcuate artery and vein
7 interlobular artery and vein
8 afferent vessel
9 efferent vessel
10 glomerulus

Corpuscle of the Kidney

1 afferent vessel
2 glomerulus
3 efferent vessel
4 cover cells
5 Bowman's capsula
6 proximal tubule
7 distal tubule

MODEL KEY

The Head

1. Frontalis m.
2. Frontal artery, veins, and nerves
3. Orbicularis oculi m.
4. Quadratus labii superior m.
5. Nasalis m.
6. Nasal cartilage
7. Orbicularis oris m.
8. Zygomaticus m.
9. Triangularis m.
10. Mentalis m.
11. Platysma m.
12. Facial artery and veins
13. Mylohyoid m.
14. Digastric m. (anterior belly)
15. Sternohyoid m.
16. Omohyoid m.
17. Masseter m.
18. Facial nerves and branches
19. Superficial temporal arteries and veins
20. External jugular vein
21. Cervical cutaneous nerve
22. Occipital artery, vein, and nerve
23. Trapezius m.
24. Semispinalis capitis m.
25. Splenius capitis m.
26. Levator scapulae m.
27. Sternocleidomastoid m.
28. Temporal m.
29. Parotid gland and duct with accessory gland
30. Internal jugular vein
31. Submaxillary gland
32. Sublingual gland
33. Buccinator m.
34. Infraorbital artery, vein, and nerve
35. Nasal septum
36. Maxillary sinus
37. Sagittal sinus
38. Cerebral falx

The Brain

1. Frontal lobe
2. Parietal lobe
3. Occipital lobe
4. Temporal lobe
5. Middle cerebral artery and vein
6. Dura mater
7. Arachnoid mater
8. Pia mater
9. Cerebellum
10. Anterior cerebral artery and vein
11. Corpus callosum
12. Pons
13. Medulla oblongata
14. Posterior cerebral artery and vein
15. Basilar artery
16. Internal carotid artery

External Structures

1. Sternocleidomastoid m.
2. Anterior scalene m.
3. Middle scalene m.
4. Posterior scalene m.
5. Omohyoid m.
6. Brachial plexus
7. Subclavian artery and vein
8. Clavicle
9. Deltoid m.
10. Cephalic vein
11. Pectoralis m.
12. Biceps m., short head
13. Biceps m., long head
14. Coracobrachialis m.
15. Serratus anterior m.
16. External oblique m.
17. Rectus abdominis m.
18. Tendonous inscription
19. Inguinal ligament
20. Spermatic cord
21. Superficial inferior epigastric artery and vein
22. Sartorius m.
23. Great saphenous vein
24. Femoral vein and artery
25. Femoral nerve
26. Iliopsoas m.
27. Rectus femoris m.
28. Vastus lateralis m.
29. Vastus medialis m.
30. Pectineus m.
31. Adductor longus m.
32. Gracilis m.
33. Trapezius m.
34. Levator scapulae m.
35. Rhomboideus m., major and minor
36. Supraspinatus m.
37. Spine of scapula
38. Infraspinatus m.
39. Teres minor m.
40. Teres major m.
41. Triceps, long head
42. Triceps, lateral head (medial head is not shown)
43. Axillary nerve and posterior humeral circumflex artery and vein
44. Serratus posterior inferior m.
45. Latissimus dorsi m.
46. Internal oblique m.
47. Lumbodorsal fascia
48. Gluteus maximus m.
49. Tensor fasciae latae m.
50. Gluteus medius m.
51. Pyriformis m.
52. Gemellus superior m.
53. Obturator internus m.
54. Gemellus inferior m.
55. Quadratus femoris m.
56. Sciatic nerve
57. Gluteal inferior artery and vein
58. Adductor minimus m.
59. Biceps femoris tendon
60. Semitendinosus m.
61. Adductor magnus m.

The Neck and Thorax

1. Larynx
2. Thyroid gland
3. Right common carotid artery
4. Right jugular vein
5. Right brachiocephalic vein
6. Left brachiocephalic vein
7. Inferior thyroid vein
8. Superior vena cava
9. Aortic arch
10. Trachea
11. Left bronchus
12. Left pulmonary artery
13. Left pulmonary veins
14. Pericardium
15. Pleura
16. Diaphragm
17. Inferior vena cava
18. Renal vein and artery
19. Kidney
20. Suprarenal vein and artery
21. Suprarenal (adrenal) gland
22. Spleen
23. Celiac axis
24. Celiac nerve plexus
25. Superior mesenteric artery
26. Aorta
27. Left spermatic (ovarian) artery and vein
28. Ureter
29. Hypogastric nerve plexus
30. Common iliac artery

31. External iliac artery
32. Internal iliac artery
33. External iliac vein
34. Ileum
35. Cecum
36. Vermiform appendix
37. Ascending colon
38. Descending colon
39. Sigmoid colon
40. Rectum
41. Bladder, urinary

Inside the Thoracoabdominal Wall

42. Sternum
43. Costal cartilage
44. Rib #2
45. Sternohyoid m.
46. Sternothyroid m.
47. Internal thoracic artery and vein
48. Transversus thoracis m.
49. Internal intercostal m.
50. Intercostal artery, vein, and nerve
51. Pleura
52. Diaphragm
53. Transversus abdominis m.
54. Falciform ligament
55. Umbilicus
56. Rectus abdominis m.
57. Deep inferior epigastric artery and vein
58. Lateral plica, obliterated umbilical artery
59. Uracus

The Lungs

1. Superior lobe
2. Middle lobe
3. Inferior lobe
4. Pulmonary artery
5. Pulmonary vein
6. Right bronchus
7. Left superior lobe
8. Left inferior lobe

The Heart

1. Right atrium
2. Right ventricle
3. Left atrium
4. Superior vena cava
5. Inferior vena cava
6. Conus arteriosus
7. Aorta
8. Left pulmonary artery
9. Right pulmonary artery
10. Left pulmonary veins
11. Right pulmonary veins
12. Coronary sinus
13. Left ventricle
14. Tricuspid valve
15. Bicuspid valve
16. Aortic valve
17. Interventricular septum (muscular)
18. Right coronary artery
19. Interventricular left and descending coronary artery and vein
20. Circumflex artery and vein

The Kidney

1. Cortex
2. Pyramid
3. Minor calyx
4. Major calyx
5. Pelvis
6. Ureter
7. Renal veins and arteries

The Stomach

1. Esophagus
2. Vagus nerve, left
3. Vagus nerve, right
4. Fundus
5. Body
6. Pylorus
7. Duodenum
8. Gastroduodenal artery
9. Left gastroepiploic artery and vein, branches of the lienal
10. Right gastroepiploic artery and vein, branches of the hepatic

The Liver and Gall Bladder

1. Right lobe
2. Left lobe
3. Falciform ligament
4. Round ligament
5. Inferior vena cava
6. Left hepatic vein
7. Portal vein
8. Gall bladder
9. Common hepatic duct
10. Common bile duct
11. Hepatic artery, left and right branches
12. Caudate lobe
13. Quadrate lobe

The Pancreas and Duodenum

1. Body of pancreas
2. Tail of pancreas
3. Duodenum
4. Jejunum (beginning)
5. Superior mesenteric artery and vein
6. Principal pancreatic duct
7. Duodenal papilla
8. Anterior superior pancreaticoduodenal artery and vein
9. Portal vein
10. Splenic vein
11. Splenic artery
12. Transverse pancreatic artery
13. Posterior inferior pancreaticoduodenal artery
14. Common bile duct

The Intestine

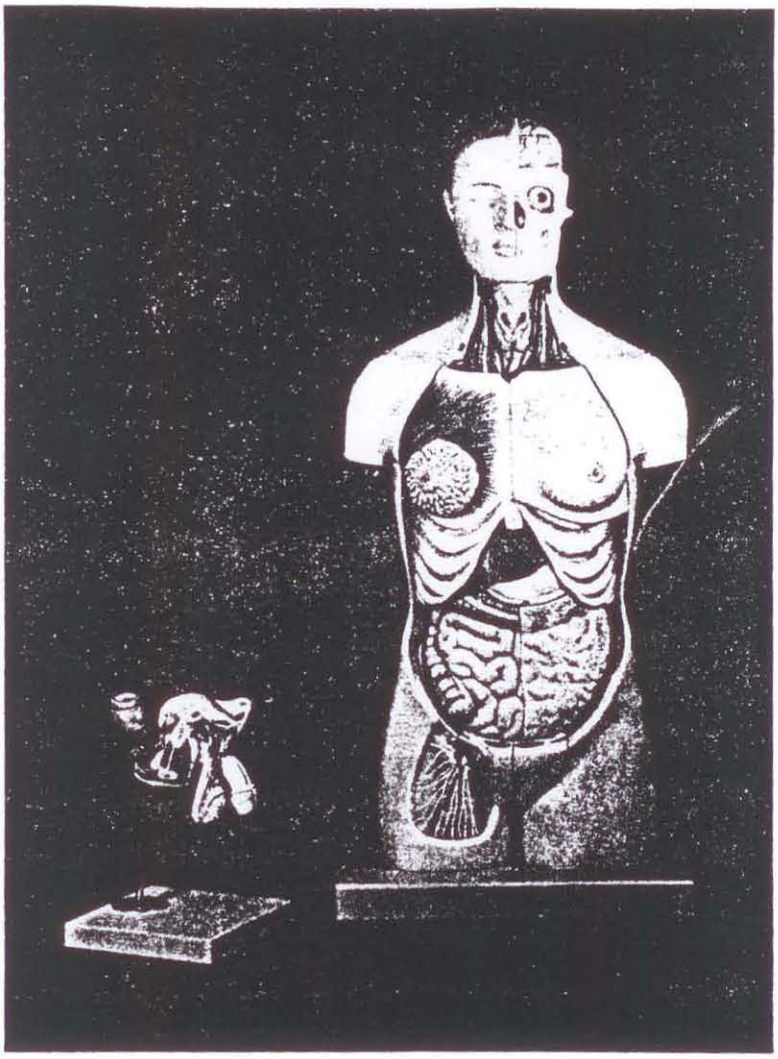
1. Transverse colon
2. Haustra of colon
3. Taenia of colon
4. Omentum (greater)
5. Transverse mesocolon
6. Jejunum
7. Superior mesenteric artery and vein
8. Mesentery
9. Ileum

The Breast

1. Areola
2. Areolar glands
3. Papilla
4. Lactiferous sinus and duct
5. Alveolar (milk) gland
6. Fat
7. Retinaculum cutis

The Female Reproductive System

1. Labium majus
2. Labium minus
3. Vagina
4. Fornix of vagina
5. Cervix
6. Uterus
7. Tunica muscularis
8. Tunica mucosa
9. Ovary
10. Ovarian ligament
11. Fallopian tube
12. Round ligament
13. Broad ligament
14. Sacrouterine ligament
15. Urinary bladder
16. Urethra
17. Clitoris



SOMSO-Torso-Model

with interchangeable male and female sexual organs.

HEAD

BONES

I frontal bone
II sphenoidal bone
III temporal bone
IV parietal bone
V occipital bone
VI upper jaw
VII palatine bone
VIII lower jaw

EYE

1 part of the upper eyelid
2 medial palpebral ligament
3 lateral palpebral ligament
4 lacrymal sac
5 superior muscle of eyelid
6 tendon of superior oblique muscl
oblique muscle
7 superior rectus
8 lateral rectus
9 inferior rectus
10 medial rectus
11 inferior muscle of eyelid
12 optic nerve

NOSE AND MOUTH REGION

13 superior nasal concha
a middle nasal concha
b inferior nasal concha
14 orifice of the ear tube
15 pharyngeal tonsil
16 tongue
17 sublingual gland
18 stuyloglossus muscle
19 stylopharyngeus muscle
20 stylohyoid muscle
21 superior oblique muscle
22 submandibular gland
23 parotid gland

CEREBRUM

1 dura mater encephali
2 tentorium cerebelli
3 frontal lobe
4 parietal lobe
5 occipital lobe
6 temporal lobe
7 cerebellum
8 cerebelli
a corpus callosum rostrum
b corpus callosum, genu
9 inferior rectus
10 fornix
11 anterior commissure
12 interthalamic connexion
13 posterior commissure
14 thalamus,
wall of 3rd ventricle
15 interventricular
foramen
16 cerebral aqueduct
17 4th vertricle
18 pineal body
19 colliculus of midbrain
20 lingula
21 arbor vitae of cerebellum
22 pons
23 medulla oblongata

24 pyramid
25 olive
26 mamillary body
27 hypophysis
28 optic chiasm

THE 12 CRANIAL NERVES

I olfactory nerve
II optique nerve
III oculomotor nerve
IV trochlear nerve
V trigeminal nerve
VI abducent nerve
VII facial nerve
VIII vestibulocochlear
IX glossopharyngeal nerve
X vagus
XI accessory nerve
XII hypoglossal nerve

FRONTAL PART

NECK REGION

1 hyoid bone
2 middle thyrohyoid membrane
3 lateral thyrohyoid membrane
4 thyroid cartilage
5 cricothyroid muscle
6 thyroid gland
7 cartilage ring
8 membrane between tracheal cartilages

BREAST COVER

1 sternum
2 clavicle
3 pectoralis muscle
4 mammary gland
5 areola
6 nipple
7 intercostal muscle
8 costal muscle
9 ribs

THORACIC CAVITY
HEART

9 left ventricle
10 aorta
11 aortic valve
12 aortic arch
a thoracic aorta
b abdominal aorta
13 left atrium
14 left auricle
15 mitral valve
16 right ventricle
17 pulmonary artery
18 pulmonary valve

19 right atrium
20 right auricle
21 superior vena cava
22 inferior vena cava
23 tricuspid valve
24 pulmonary veins
25 bifurcation of trachea
26 right principal bronchus
27 left principal bronchus
28 bronchus

A RIGHT LUNG

a right superior lobe
b right middle lobe
c right inferior lobe

B LEFT LUNG

d left superior lobe
e left inferior lobe
34 oesophagus
35 diaphragm

ABDOMINAL CAVITY

1 spleen
2 right kidney
3 cortex of the kidney
4 malpighian corpuscles
5 interlobular vessels
6 right renal artery
7 left suprarenal gland
8 left kidney
9 ureter

11 LIVER

a right lobe
b left lobe
14 quadrate lobe
15 caudate lobe
16 hepatic artery
17 postal vein
18 bile duct
19 cystic duct
20 gall bladder

22 STOMACH

23 cardiac orifice
24 fundus
25 pylorus
26 small curvature
27 great curvature
28 pancreas

SMALL GUT

29 duodenum
30 jejunum
31 ileum

LARGE INTESTINE

32 caecum
33 vermiform appendix
34 ileocaecal valve

COLON

35 ascending colon
36 transverse colon
37 descending colon
38 sigmoide colon

Rep-11

MALE SEXUAL ORGANS

9 rectum
10 exterior sphincter muscle of rectum
11 pubic bone
12 pubis symphysis
13 ureter
14 bladder
15 prostate gland
a prostatic part of urethra
b urethral crest
16 spongiose part of urethra
17 seminal vesicle
18 vas deferens
19 scrotum
a testis
20 cremasteric fascia
21 epididymis
a head of epididymis
b tail of epididymis
22 spermatic cord
23 testicular artery
24 corpus cavernosum of penis
25 corpus spongiosum
26 penis
a body
27 prepuce
28 glans

Rep-10

FEMALE SEXUAL ORGANS

9 rectum
10 exterior sphincter muscle of rectum
11 pubic bone
12 pubic symphysis
13 labium majora
14 labium minora
17 urethra
18 bladder
19 ureter
20 clitoris
21 vagina
22 uterus
23 neck of the womb
24 fornix
25 uterine tube
26 ovary
27 ovarian vein
28 fallopian tube
29 round ligament

DORSAL PART

1 cervical vertebra I (Atlas)
2 cervical vertebra II (Axis)
3 7th cervical vertebra
4 thoracic vertebra I
5 thoracic vertebra VII
a corpus vertebra
b processus spinalis
c transverse process
d intervertebral disc
6 thoracic vertebra XII
7 lumbar vertebra I
8 lumbar vertebra V
9 os sacrum
10 rib
11 pelvis
12 external intercostal muscle
13 costal pleura
14 sympathetic trunk
15 spinal marrow
a cervical part
b thoracic part
c lumbar part
d cauda equina
e terminal filament

SPINALE NERVE

A 8 pairs cervical nerves
B 12 pairs thoracic nerves
C 5 pairs lumbar nerves
D 5 pairs sacral nerves
E coccygeal nerve

16 spinal arachnoid
17 velamentum cerebri
18 vertebral artery
19 intercostal artery and vein
20 plexus venosus

Head with Neck

Exterior sides

Bones

1. Frontal bone, *Os frontale*
1a. Frontal sinuses, *Sinus frontalis*
2. Parietal bone, *Os parietale*
3. Occipital bone, *Os occipitale*
4. Temporal bone, *Os temporale*
5. Zygomatic bone, *Os zygomaticum*
6. Maxillary bone, *Maxilla*
7. Nasal bone, *Os nasale*
8. Ethmoid bone, *Os ethmoidale*
9. Sphenoid bone, *Os sphenoidale*
9a. Sphenoidal sinuses, *Sinus sphenoidalis*
10. Mandible, *Mandibula*
11. Clavicle, *Clavicula*
12. Sternum, *Sternum*
13. Ribs, *Costae*
14. Spine of the scapula, *Spina scapulae*

Connections of the Big Bones of the Skull

a) Coronal suture, *Sutura coronalis*
b) Squamous suture, *Sutura squamosa*
c) Lambdoid suture, *Sutura lambdoides*

Openings of the Skull

d) External acoustic pore, *Porus acusticus externus*
e) Nasolacrimal canal, *Canalis nasolacrimalis*
f) Infraorbital foramen, *Foramen infraorbitale*
g) Mental foramen, *Foramen mentale*

The lower jaw is represented opened, so one can see the roots of the teeth with nerves and blood-vessels.

Muscles of the Head

1. Temporal muscle, *M. temporalis*
2. Superior auricular muscle, *M. auricularis superior*
3. Posterior auricular muscle, *M. auricularis posterior*
4. Occipital venter of the occipitofrontal muscle, *Venter occipitalis (m. occipitofrontalis)*
5. Frontal venter of the occipitofrontal muscle, *Venter frontalis (m. occipitofrontalis)*
6. Orbicular muscle of the eye, *M. orbicularis oculi*
7. Palpebral part of the orbicular muscle of the eye, *Pars palpebralis (m. orbicularis oculi)*
8. Levator labii superioris, *M. quadratus labii superioris*
8a. Smaller zygomatic muscle, *M. zygomaticus minor*
9. Nasal muscle, *M. nasalis*
10. Greater zygomatic muscle, *M. zygomaticus major*
11.* Buccinator muscle, *M. buccinator* (cut off on the left)
12.* Risorius muscle, *M. risorius*
13. Masseter muscle, *M. masseter*
14.* Depressor muscle of the angle of the mouth, *M. depressor anguli oris*
15. Orbicular muscle of the mouth, *M. orbicularis oris*
16. Depressor muscle of the lower lip, *M. depressor labii inferioris*
17. Mental muscle, *M. mentalis*

Muscles of the Neck

18. Trapecial muscle, *M. trapezius*
19. Sternocleidomastoid muscle, *M. sternocleidomastoideus*
20. Digastric muscle, *M. digastricus*
21. Stylohyoid muscle, *M. stylohyoideus*
22. Splenius muscle of the head, *M. splenius capitis*
23. Levator muscle of the scapula, *M. levator scapulae*
24. Posterior scalenus muscle, *M. scalenus posterior*
25. Middle scalenus muscle, *M. scalenus medius*
26. Anterior scalenus muscle, *M. scalenus anterior*
27. Thyrohyoid muscle, *M. thyreohyoideus*
28. Sternohyoid muscle, *M. sternohyoideus*
29. Sternothyroid muscle, *M. sternothyreoideus*
30. Mylohyoid muscle, *M. mylohyoideus*

Muscles of the Shoulder

31.* Supraspinous muscle, *M. supraspinatus*
32.* Infraspinous muscle, *M. infraspinatus*
33. Smaller rhomboid muscle, *M. rhomboideus minor*
34.* Greater rhomboid muscle, *M. rhomboideus major*

Blood-Vessels

a)* Common carotid artery, *Arteria carotis communis*
a1)* External carotid artery, *Arteria carotis externa*
a2)* Internal carotid artery, *Arteria carotis interna*
b)* Superior thyroid artery, *Arteria thyreoidea superior*
c)* Lingual artery, *Arteria lingualis*
d)* Facial artery, *Arteria facialis*
e)* Transverse facial artery, *Arteria transversa faciei*
f)* Superficial temporal artery, *Arteria temporalis superficialis*
f1)* Frontal branch, *Ramus frontalis*
f2) Parietal branch, *Ramus parietalis*
g)* Posterior auricular artery, *Arteria auricularis posterior*
h) Occipital artery, *Arteria occipitalis*

Miscellaneous

I. Concha of the auricle, *Concha auriculae*
II. Parotid gland, *Glandula parotis*
III. Submandibular gland, *Glandula submandibularis*
IV. Zygomatic arch, *Arcus zygomaticus*
V. Hyoid bone, *Os hyoideum*

17a. Eyeball
17b. Muscle of the eye
17c. Optic nerve

Head with Neck

Cross-Section

a) **Superior nasal concha,** *Concha nasalis superior*
b) **Middle nasal concha,** *Concha nasalis media*
c) **Inferior nasal concha,** *Concha nasalis inferior*
d) **Pharyngeal ostium of the auditory tube,** *Ostium pharyngeum tubae auditivae*
e) **Cavity of the mouth,** *Cavum oris*
f) **Tongue,** *Lingua*
g) **Genioglossal muscle,** *Musculus genioglossus*
h) **Geniohyoid muscle,** *M. geniohyoideus*
i) **Septum of the tongue,** *Septum linguae*
k) **Epiglottis,** *Epiglottis*
l) **Median thyrohyoid ligament,** *Lig. thyreohyoideum medianum*
m) **Cuneiform cartilage,** *Cartilago cuneiformis*
n) **Corniculate cartilage,** *Cartilago corniculata*

* not for BS 18/1

o) **Transverse arytenoid muscle,** *M. arytaenoideus transversus*
p) **Ventricular fold,** *Plica ventricularis*
q) **Ventricle of the larynx,** *Ventriculus laryngis*
r) **Vocal fold,** *Plica vocalis*
s) **Thyroid cartilage,** *Cartilago thyreoidea*
t) **Cricoid cartilage,** *Cartilago cricoidea*
u) **Pharynx,** *Pharynx*
v) **Esophagus,** *Oesophagus*
w) **Trachea,** *Trachea*

Brain

A) **Cerebrum,** *Cerebrum*
B) **Cerebellum,** *Cerebellum*
C) **Mesencephalon,** *Mesencephalon*
D) **Bridge,** *Pons*
E) **Frontal lobe,** *Lobus frontalis*
F) **Parietal lobe,** *Lobus parietalis*
G) **Temporal lobe,** *Lobus temporalis*
H) **Occipital lobe,** *Lobus occipitalis*
I) **Lateral sulcus,** *Sulcus lateralis*
K) **Central sulcus,** *Sulcus centralis*
L) **Insula,** *Insula*

1. **Callous corpus,** *Corpus callosum*
2. **Knee of the corpus callosum,** *Genu corporis callosi*
3. **Rostrum of the callous corpus,** *Rostrum corporis callosi*
4. **Splenium of the callous corpus,** *Splenium corporis callosi*
5. **Translucent septum,** *Septum pellucidum*
6. **Fornix,** *Fornix*
7. **Interventricular foramen,** *Foramen interventriculare*
8. **Thalamus,** *Thalamus*
9. **Anterior commissure,** *Commissura anterior*
10. **Interthalamic adhesion,** *Adhaesio interthalamica*
11. **Posterior commissure,** *Commissura posterior*
12. **Pineal corpus,** *Corpus pineale*
13. **Lamina of the roof,** *Lamina tecti*
14. **Third ventricle,** *Ventriculus tertius*
15. **Fourth ventricle,** *Ventriculus quartus*
16. **Aqueduct of the cerebrum,** *Aquaeductus cerebri*
17. **Cerebral peduncle,** *Crus cerebri*
18. **Optic nerve,** *Nervus opticus*
19. **Hypophysis,** *Hypophysis*
20. **Mamillary corpus,** *Corpus mamillare*
21. **Medullary corpus,** *Corpus medullare*
22. **Anterior medullary velum,** *Velum medullare anterius*
23. **Flocculus,** *Flocculus*
24. **Tonsil of the cerebellum,** *Tonsilla cerebelli*
25. **Spinal cord,** *Medulla spinalis*
26. **Dura mater of the brain,** *Dura mater encephali*

The 12 Cranial Nerves

28. **Olfactory nerves,** *Nervi olfactorii*
29. **Optic nerve,** *N. opticus*
30. **Oculomotor nerve,** *N. oculomotorius*
31. **Trochlear nerve,** *N. trochlearis*
32. **Trigeminal nerve,** *N. trigeminus*
33. **Abducens nerve,** *N. abducens*
34. **Facial nerve,** *N. facialis*
35. **Stato-acoustic nerve,** *N. statoacusticus (N. octavus)*
36. **Glossopharyngeal nerve,** *N. glossopharyngeus*
37. **Vagus nerve,** *N. vagus*
38. **Accessory nerve,** *N. accessorius*
39. **Hypoglossal nerve,** *N. hypoglossus*

WB-4 Half of the HEAD

Medial Part (inside)

A EPIDERN

1 cornea
2 blastodermic layer
a disfibrious layer
b layer of heckel cells
c layer of cylindrical cell

B DERMIS

3 dermal papilla

C HYPODERM

4 hair
5 hair shaft
6 radix pill
7 hair bulb
8 hair papille
a medullary substance
b cortical layer
c periderm
9 sebaceous gland
10 hair muscle
11 sweat glands
12 paniculus adiposus

Parts of the muscles (outside)

MUSCLES OF CRANIUM

24 muscle frontalis
25 occipital m.

MUSCLES OF AURI

26 posterior auricularis m.
27 anterior auricularis m.
28 superior auricularis m.

MUSCLES OF THE EYE

29 m. dormitator
30 m. orbicularis palpebrum

MUSCLES OF THE NOSE

31 m. compressor naris
32 m. levator labis
33 m. levator nasi

MUSCLES OF THE MOUTH

35 m. sphincter oris
36 zygomatic m.
37 m. buccinator
38 santorini's muscle
39 m. dpressor angulioris
40 m. depressor labil inferioris
41 m. levator menti
42 m. masseter

MUSCLES OF THE NECK

43 m. sternocleidomastoideus
44 m. biventer

BLOOD VESSEL

ARTERIES

56 common carotid artery
57 externe facial artery
58 transverse facial artery
59 superficial temporal art.
a) ramus of perietal bone
b) ramus of frontal bone
60 posterior auricular art.
61 occipital art.

VEINS

62 vena jugularis anterior
63 vena jugularis externa
64 vena retromandibularis
65 vena facialis communis
66 vena occipitalis

NERVES

a) facial nerve
b) inferior auricular n.
c) zygomatic n.
d) buccal n.
e) exterior ramus of the jaw
f) posterior auricular n.
g) great auricular n.
h) small occipital n.
i) big occipital n.
k) principal occipital n.
l) supraclavicularis
m) accessorius n.

67 auris exterior
68 parotid gland
45 m. stylohyoid
46 m. mylohyoideus
47 m. sternohyoideus
48 thyrohyoid m.
49 omohyoid m.
50 m. cuccularius
51 m. splenius capeti
52 m. levator scapulae
53 m. scalenus posterior
54 m. scalenus medius
55 m. complexus

Head Model
3B C14

MEDIAN SECTION

Bones

A parietal
B frontal
a frontal sinus
C nasal
D ethmoid
E sphenoid
b sphenoid sinus
F coccipital bone
G maxilla
H palatine
I mandible
K hyoid
L cervical vertebra I (Atlas)
M cervical vertebra II (Axis)

BRAIN

I cerebrum
II,10 thalamus
III midbrain
IV,20 pons
V,21 medulla oblongata
1 superior longitudinal sinus
2 tentorium cerebelli
3 cerebellum
a arbor vitae of cerebellum
4 corpus callosum
a rostrum corporis callosi
b genu corporis callosi
5 septum pellucidum
6 fornix
7 anterior commissure
8 intermediate mass
9 posterior commissure
11 interventricular foramen
12 cerebral aqueduct
13 fourth ventricle
14 pineal body
15 optic chiasma
16 pituitary gland
17 mammillary body
18 corpora quadrigeminal
19 vermis
22 spinal cord

Nose, Throat, Mouth

a superior turbinate (nasal concha)
b middle turbinate (nasal concha)
c inferior turbinate (nasal concha)
d opening to auditory (eustachian) tube
e nasopharynx
f pharyngeal tonsil
g orbicularis oris m.
h incisor tooth
i uvula
k palatine tonsil
l tongue
m geniohyoid m.
n mylohyoid m.
o oropharynx
p muscle of tongue
23 larynx
I epiglottis
II thyroid cartilage
III cricoid cartilage
IV thyrohyoid ligament
V cricothyroid ligament
VI transverse arytenoid m.
VII false vocal cord (vestibular fold)
VIII true vocal cord (vocal fold)
IX ventricle of the larynx
X trachea
XI esophagus

Muscles of the skull

24 frontalis
24a galea aponeurotica
25 occipitalis
26 posterior auricularis
27 anterior auricularis
28 temporalis

Muscles of the face

29 orbicularis oculi
30 orbicularis oculi, pars palpebralis
31 nasalis
32 levator labii superioris
33 levatori nasi superioris
34 zygomatic minor
35 orbicularis oris
36 zygomatic major
37 buccinator
38 risorius
39 depressor anguli oris
40 depressor labii inferioris
41 levatory menti
42 masseter

Muscles of the neck

43 sternocleidomastoid
44 biventer
45 stylohyoid
46 mylohyoid
47 sternohyoid
48 thyrohyoid
49 omohyoid
50 cuccularius
51 spenius capitis
52 levator scapulae
53 scalenus medius