

Common details: blood vessels, nerve trunks, ganglions, adipose tissue, lymphocytes

Outer lining of the organs: **ADVENTITIA** (connective tissue) or
SEROSA (thin layer of connective tissue lined by simple squamous epithelium-mesothelium)

EPITHELIAL TISSUE

46. Thyroid gland (H/E)

Details:

1. Stroma: loose connective tissue
2. Parenchyma: follicles – **simple cuboidal epithelium**
3. Capillaries
 - endothelium - **simple squamous epithelium**

13. Cornea (H/E)

Details:

1. **Stratified squamous epithelium**
2. Bowman's membrane (lamina limitans anterior)
3. corneal stroma composed of collagen fibers
4. Descemet's membrane (lamina limitans posterior)
5. Corneal endothelium - **simple squamous epithelium**

63. Duodenum (H/E)

Details:

1. Mucosa: villi & crypts
 - simple columnar epithelium (enterocytes)
 - goblet cells
 - lymphocytes
2. Submucosa: mucus secreting Brunner's glands
3. Muscular membrane - 2 smooth muscle layers (circular & longitudinal)
 - Auerbach's plexus- ganglion cells between two muscle layers
4. Adventitia/serosa

74. Urinary bladder (H/E)

Details:

1. Mucosa
 - **transitional epithelium with umbrella cells**
 - lamina propria of the mucosa
2. Muscularis
3. Adventitia/serosa

100. Main bronchi - pseudostratified ciliated columnar epithelium with goblet cells (H/E)

Details:

1. Main bronchi
 - mucosa: pseudostratified ciliated columnar epithelium with goblet cells
lamina propria of the mucosa
 - submucosa- hyaline cartilage and glands
2. Esophagus
 - mucosa: stratified squamous keratinized epithelium
lamina propria of the mucosa
muscularis mucosae
 - submucosa
 - muscularis: skeletal muscle
3. Adventitia

CONNECTIVE TISSUE

18b. White & brown adipose tissue (H/E)

Details:

1. White & brown adipose cells
2. Blood vessels
3. Skeletal muscle

100. Main bronchi - pseudostratified ciliated columnar epithelium with goblet cells (H/E)

Details:

1. Main bronchi
 - mucosa: pseudostratified ciliated columnar epithelium with goblet cells
lamina propria of the mucosa
 - submucosa- hyaline cartilage and glands
perichondrium
chondrocytes in the lacunae- isogenous groups
 - smooth muscle cells
2. Esophagus
 - mucosa: stratified squamous keratinized epithelium
lamina propria of the mucosa
muscularis mucosae
 - submucosa
 - muscularis: skeletal muscle
3. Adventitia

23b. Connective tissue ossification (H/E)

Details:

1. Mesenchymal tissue with mesenchymal cells
2. Bone trabeculae
3. Osteoblasts
4. Osteocytes
5. Osteoclasts

25b. Growing epiphyseal cartilage (H/E)

Details:

1. Epiphyses (bone trabeculae , hemopoetic bone marrow)
2. Growing epiphyseal cartilage:
 - zone of resting cartilage,
 - zone of proliferating cartilage,
 - zone of maturing (hypertrophic) cartilage,
 - zone of degenerative and calcifying cartilage
 - bone trabeculae
3. Diaphyses- bone trabeculae and bone marrow
4. Periosteum
5. Skeletal muscle

23a. Compact lamellar bone: a cross-section of a long bone (H/E)

Details:

1. Periosteum
2. Endosteum
3. Marrow cavity (white adipose tissue)
4. Outer circumferential lamellae
5. Inner circumferential lamellae
6. Osteon- Haversian canal and concentric lamellae
7. Interstitial lamellae
8. Volkmann canal
9. Osteocytes in the lacunae

MUSCLE TISSUE

29M. Tongue (Masson-Lillie)

Details:

1. Filiform papillae
2. Connective tissue (blue color)
3. **Skeletal muscle**- cross and longitudinal section
4. Endomysium and perimysium
5. Ebner's gland (serous)
6. Mucus gland

29a. Striated skeletal muscle and Muscle spindle (H/E)

Details:

1. **Striated skeletal muscle** – longitudinal and cross-section
2. Endomysium and perimysium
3. **Muscle spindle**
 - connective tissue capsule
 - intrafusal muscle fibers
 - extrafusal muscle fibers

32a. Cardiac muscle: section including the cardiac conduction system (H/E)

Details:

1. **Cardiac muscle cells** - longitudinal and cross-section
 - intercalated discs
2. **Purkinje fibers**

63. Duodenum (H/E)

Details:

5. Mucosa: villi & crypts
 - simple columnar epithelium (enterocytes)
 - goblet cells
 - lymphocytes
6. Submucosa: mucus secreting Brunner's glands
7. Muscular membrane - **2 smooth muscle layers** (circular & longitudinal)
 - Auerbach's plexus- ganglion cells between two muscle layers
8. Adventitia/serosa

CIRCULATORY SYSTEM

40. Elastic artery (orcein staining)

Details:

1. Tunica intima- internal elastic lamina
2. Tunica media- concentrically arranged elastic membranes
3. Tunica adventitia
 - vasa vasorum

39. Muscular arteries & veins (H/E)

Details:

1. Muscular arteries (intima, media, adventitia)
2. Muscular veins (intima, media, adventitia)
 - Valve
3. Small veins and arteries

80. Uterus (H/E)

Details:

1. Mucosa
 - simple columnar epithelium
 - uterine glands (simple cuboidal epithelium)
2. Muscularis – 2 smooth muscle layers (circular, longitudinal)
3. Serosa
4. **Arterioles** : 1-4 layers of smooth muscle cells
5. **Venules** : lack of smooth muscle

LYMPHATIC SYSTEM

45. Lymph node (H/E)

Details:

1. Connective tissue capsule
2. Cortex
 - marginal sinuses
 - lymphatic nodules
 - trabecular sinuses
3. HEV- high endothelial venules (paracortical zone)
4. Medulla
 - medullary sinuses
 - medullary cords
5. Stroma-reticular tissue

41. Spleen (H/E)

Details:

1. Connective tissue capsule with muscle cells
2. White pulp
 - lymphatic nodules
 - central arteries
 - marginal zone and marginal sinuses
3. Red pulp

42. Palatine tonsil (H/E)

Details:

1. Stratified squamous epithelium
2. Crypt
3. Lymphatic nodules
4. HEV- high endothelial venules
5. Mucus gland

43. Thymus (H/E)

Details:

1. Connective tissue capsule
2. Lobules
 - cortex
 - medulla (Hassall's corpuscles)
3. Stroma- epithelial cells

44. Involutory thymus (H/E)

Details:

1. Hassall's corpuscles
2. White adipose tissue
3. Blood vessels

NERVOUS SYSTEM

35. Nerve stem (H/E)

Details:

1. Epineurium
2. Perineurium
3. Endoneurium
4. Myelinated axons
5. Nuclei of Schwann cells and endothelial cells

34. Ganglion (H/E)

Details:

1. Ganglion
 - connective tissue capsule
 - neurons
 - satellite cells
2. Nerve trunks

87. Cerebral cortex (Nissl)

Details:

1. Neocortex
 - molecular layer
 - granular layers
 - pyramidal layers
2. Archicortex- hippocampal formation
 - hippocampus
 - dentate gyrus
3. White matter
4. Striatum
5. Cerebral ventricles with choroid plexus
6. Cerebellum

88. Cerebellum (H/E)

Details:

1. Cerebellar cortex
 - molecular layer
 - Purkinje (ganglionic) cells layer
 - granular layer
2. White matter
 - nucleus of cerebellum

36. Spinal cord (H/E)

Details:

1. Grey matter
 - anterior horns (motoneurons)
 - posterior horns
2. Central canal (ependymocytes)
3. White matter
4. Cerebrospinal meninges:
 - pia matter
 - arachnoid and subarachnoid space (with ligament denticulate and spinal nerves)
 - dura matter

INTEGUMENTARY SYSTEM

81. Thick skin (fingertip) (H/E)

Details:

1. Epidermis - Stratified squamous keratinizing epithelium
Layers:
 - stratum basale
 - stratum spinosum
 - stratum granulosum
 - stratum lucidum
 - stratum corneum
2. Dermis proper
 - papillary dermis
 - reticular dermis
3. Meissner's corpuscles
4. Pacinian corpuscles
5. Sweat gland (pale-staining secretory portion and dark-staining excretory ducts)
6. Arteriovenous anastomosis
7. Subcutis (white adipose tissue)

82. Thin hairy skin (H/E)

Details:

1. Epidermis - stratified squamous keratinized epithelium
2. Dermis proper
 - papillary dermis
 - reticular dermis
3. Pilosebaceous apparatus
 - hair follicle
 - sebaceous gland
 - erector pili muscle
4. Skeletal muscles

97. Eyelid (H/E)

Details:

1. Outer surface – skin
 - hair and eyelashes
 - sebaceous glands (glands of Zeiss)
 - apocrine sweat glands (glands of Moll)
2. Branched sebaceous glands (Meibomian glands)
3. Inner surface - conjunctiva (stratified squamous nonkeratinized epithelium and cuboidal epithelium)
4. Orbicularis oculi muscle (skeletal muscle)

EYE

85. Eye (H/E)

Details:

1. Cornea
 - stratified squamous epithelium
 - Bowman's membrane (lamina limitans anterior)
 - corneal stroma composed of collagen fibers and corneocytes
 - Descemet's membrane (lamina limitans posterior)
 - Corneal endothelium composed of one layer of simple squamous epithelium
3. Corneal limbus
4. Iris
 - anterior limiting membrane
 - stroma containing sphincter and the dilator muscle of the pupil
 - posterior pigmented epithelium composed of two layers
5. Ciliary body and ciliary processes
 - two simple cuboidal epithelia (outer-pigmented, inner-nonpigmented)
6. Retina
 - dark-staining pigmented epithelium
 - light-staining layer of rods and cones
 - outer nuclear layer (dark violet)
 - outer plexiform layer (light)
 - inner nuclear layer (dark violet)
 - inner plexiform layer (light)
 - ganglion cell layer
 - optic nerve fibers layer
7. Choroid
8. Sclera
9. Skeletal muscles