

# Netter's Histology Flash Cards – Section 1 – List Updated Edition

<https://community-courses.memrise.com/community/course/1578421/netters-histology-flash-cards-section-1/>

<b>Section 1</b>	<b>Cells and Tissues (74 cards)</b>
<b>1</b>	<b>The Cell (11 cards)</b>
<b>Plate 1-1</b>	<b>The Cell</b>
1-1.1	Centrioles
1-1.2	Microvillus
1-1.3	Rough endoplasmic reticulum
1-1.4	Smooth endoplasmic reticulum
1-1.5	Mitochondrion
1-1.6	Nucleus
1-1.7	Golgi complex
<b>Plate 1-2</b>	<b>Cell Junctions</b>
1-2.1	Plasma (cell) membrane
1-2.2	Gap (communicating) junction
1-2.3	Connexin monomer
1-2.4	Hydrophilic channel (pore)
1-2.5	Connexon (hexamer)
<b>Plate 1-3</b>	<b>Nucleus</b>
1-3.1	Heterochromatin
1-3.2	Nuclear envelope
1-3.3	Euchromatin
<b>Plate 1-4</b>	<b>Nucleus</b>
1-4.1	Nuclear envelope
1-4.2	Nuclear pore (complex)
1-4.3	Perinuclear space
1-4.4	Nucleus (with heterochromatin)
1-4.5	Cytoplasm (Cytosol)
1-4.6	Rough endoplasmic reticulum (RER)
<b>Plate 1-5</b>	<b>Mitochondria</b>
1-5.1	Rough endoplasmic reticulum (RER)
1-5.2	Cristae
1-5.3	Mitochondrial matrix
1-5.4	Outer mitochondrial membrane
<b>Plate 1-6</b>	<b>Ribosomes</b>
1-6.1	Cisterna of rough endoplasmic reticulum (RER)
1-6.2	Ribosome
1-6.3	Polyribosome
<b>Plate 1-7</b>	<b>Golgi Complex</b>
1-7.1	Trans-surface of Golgi complex
1-7.2	Saccule of medial compartment
1-7.3	Cis-surface of Golgi complex
1-7.4	Golgi vesicles
<b>Plate 1-8</b>	<b>Cytoplasm</b>
1-8.1	Nucleus
1-8.2	Golgi complex
1-8.3	Mitochondria
1-8.4	Glycogen
1-8.5	Peroxisome
<b>Plate 1-9</b>	<b>Inclusions</b>
1-9.1	Glycogen rosettes
1-9.2	Rough endoplasmic reticulum (RER)
1-9.3	Mitochondria
<b>Plate 1-10</b>	<b>Cytoplasmic Vesicles</b>
1-10.1	Caveolae
1-10.2	Cytoplasmic vesicle
1-10.3	Plasma membrane

1-10.4	Basement membrane
<b>Plate 1-11</b>	<b>Cytoskeleton</b>
1-11.1	Microtubules
1-11.2	Mitochondrion
<b>2</b>	<b>Epithelium and Exocrine Glands (11 cards)</b>
<b>Plate 2-1</b>	<b>Classification of Epithelia</b>
2-1.1	Simple squamous
2-1.2	Simple cuboidal
2-1.3	Simple columnar
2-1.4	Pseudostratified columnar
2-1.5	Stratified squamous nonkeratinized
2-1.6	Stratified squamous keratinized
2-1.7	Stratified cuboidal
2-1.8	Stratified columnar
2-1.9	Transitional (Urothelium)
<b>Plate 2-2</b>	<b>Simple Squamous Epithelium</b>
2-2.1	Mesothelium
2-2.2	Connective tissue
2-2.3	Lumen of venule
2-2.4	Endothelial cell (endothelium)
2-2.5	Mitochondrion
2-2.6	Basal lamina
<b>Plate 2-3</b>	<b>Simple Columnar and Pseudostratified Epithelia</b>
2-3.1	Simple columnar epithelium
2-3.2	Nucleus of columnar epithelial cell
2-3.3	Lumen of venule
2-3.4	Ciliated border
2-3.5	Pseudostratified ciliated columnar (respiratory) epithelium
2-3.6	Goblet cell
2-3.7	Basement membrane
<b>Plate 2-4</b>	<b>Simple Columnar Epithelium</b>
2-4.1	Nucleus of columnar epithelial cell
2-4.2	Microvillus
2-4.3	Glycocalyx
2-4.4	Tight junction
2-4.5	Intermediate junction
2-4.6	Desmosome
2-4.7	Lysosome
2-4.8	Mitochondrion
<b>Plate 2-5</b>	<b>Stratified Squamous Keratinized Epithelium</b>
2-5.1	Basal cell
2-5.2	Dermis (collagen)
2-5.3	Nucleus of keratinocyte
2-5.4	Keratin
<b>Plate 2-6</b>	<b>Stratified Epithelium</b>
2-6.1	Stratified cuboidal epithelium (duct of mucous gland)
2-6.2	Connective tissue (stroma)
2-6.3	Stratified columnar epithelium (of male urethra)
2-6.4	Capillary
2-6.5	Basement membrane
<b>Plate 2-7</b>	<b>Transitional Epithelium</b>
2-7.1	Umbrella cell
2-7.2	Nucleus of basal cell
2-7.3	Lamina propria (loose connective tissue)
2-7.4	Apical plasma membrane
2-7.5	Junctional complex (tight junction)
2-7.6	Nucleus
2-7.7	Nucleolus
<b>Plate 2-8</b>	<b>Classification of Exocrine Glands</b>
2-8.1	Simple tubular

2-8.2	Simple acinar
2-8.3	Simple tubulo-acinar
2-8.4	Compound tubular
2-8.5	Compound acinar
2-8.6	Compound tubulo-acinar (-alveolar)
<b>Plate 2-9</b>	<b>Serous Cells</b>
2-9.1	Golgi complex
2-9.2	Nucleus
2-9.3	Mitochondrion
2-9.4	Secretory vesicle
2-9.5	Lumen of serous acinus
<b>Plate 2-10</b>	<b>Mucous Cells</b>
2-10.1	Mucous acinus
2-10.2	Serous acinus
2-10.3	Secretory vesicle or mucous droplet
2-10.4	Nucleus
2-10.5	Rough endoplasmic reticulum (RER)
<b>Plate 2-11</b>	<b>Mammary Gland</b>
2-11.1	Myoepithelial cell
2-11.2	Duct
2-11.3	Lumen of alveolus
2-11.4	Apical plasma membrane
2-11.5	Lipid droplet
2-11.6	Intercellular (tight) junction
2-11.7	Rough endoplasmic reticulum (RER)
2-11.8	Nucleus euchromatin
2-11.9	Mitochondrion
<b>3</b>	<b>Connective Tissue (10 cards)</b>
<b>Plate 3-1</b>	<b>Loose Connective Tissue</b>
3-1.1	Pericyte
3-1.2	Collagen fibers
3-1.3	Erythrocyte in capillary
3-1.4	Monocyte
3-1.5	Lymphocyte
3-1.6	Adipocyte
3-1.7	Mast cell
3-1.8	Eosinophil
3-1.9	Plasma cell
3-1.10	Fibroblast
<b>Plate 3-2</b>	<b>Dense Connective Tissue</b>
3-2.1	Collagen bundle
3-2.2	Nucleus of fibroblast
3-2.3	Capillary
3-2.4	Tendon (dense regular connective tissue)
<b>Plate 3-3</b>	<b>Fibroblasts</b>
3-3.1	Heterochromatin (of fibroblast)
3-3.2	Euchromatin (of fibroblast)
3-3.3	Cell processes (of fibroblasts)
3-3.4	Collagen
<b>Plate 3-4</b>	<b>Collagen</b>
3-4.1	Plasma membrane of fibroblast
3-4.2	Collagen fibril
3-4.3	Mitochondrion
3-4.4	Cisterna of rough endoplasmic reticulum (RER)
3-4.5	Ribosome
<b>Plate 3-5</b>	<b>Elastic Connective Tissue</b>
3-5.1	Internal elastic lamina (of arteriole)
3-5.2	Microfibrils and elastin
<b>Plate 3-6</b>	<b>Reticular Connective Tissue</b>
3-6.1	Reticular fibers

3-6.2	Macrophage
<b>Plate 3-7</b>	<b>Mast Cells</b>
3-7.1	Nucleus of endothelial cell
3-7.2	Lumen of venule
3-7.3	Erythrocyte
3-7.4	Nucleolus
3-7.5	Collagen
3-7.6	Granule
3-7.7	Mast cell nucleus
<b>Plate 3-8</b>	<b>Plasma Cells</b>
3-8.1	Juxtannuclear halo (Golgi complex)
3-8.2	Plasma cell nucleus
3-8.3	Mitochondrion
3-8.4	Rough endoplasmic reticulum (RER)
3-8.5	Production of antibodies
<b>Plate 3-9</b>	<b>Macrophages</b>
3-9.1	Phagocytosis
3-9.1	Primary lysosome
3-9.1	Tertiary (residual) lysosome
3-9.1	Secondary lysosome
3-9.1	Kupffer cell of liver
<b>Plate 3-10</b>	<b>Adipose Tissue</b>
3-10.1	Adipocyte
3-10.2	Arteriole
3-10.3	Connective tissue
3-10.4	Venule
3-10.5	Nucleus of adipocyte
3-10.6	Lipid droplet
<b>4</b>	<b>Muscle Tissue (10 cards)</b>
<b>Plate 4-1</b>	<b>Skeletal Muscle</b>
4-1.1	Capillary
4-1.2	Mitochondria
4-1.3	Nucleus
4-1.4	Perimysium (collagen)
4-1.5	Nerve fascicle
4-1.6	Skeletal muscle fiber
<b>Plate 4-2</b>	<b>Skeletal Muscle</b>
4-2.1	Myofibril
4-2.2	T-tubule
4-2.3	Sarcoplasmic reticulum
4-2.4	Z band
4-2.5	Nucleus
4-2.6	Sarcolemma
4-2.7	I band
4-2.8	A band
4-2.9	Mitochondria
<b>Plate 4-3</b>	<b>Sarcomere</b>
4-3.1	I band
4-3.2	Z band
4-3.3	H zone
4-3.4	M band
4-3.5	A band
4-3.6	Thin filament
4-3.7	Thick filament
<b>Plate 4-4</b>	<b>Satellite Cells</b>
4-4.1	Nucleus of skeletal muscle fiber
4-4.2	Satellite cell
4-4.3	Euchromatin
4-4.4	External lamina
4-4.5	Mitochondrion

4-4.6	Ribosomes
4-4.7	Myofibril
<b>Plate 4-5</b>	<b>Neuromuscular Junction</b>
4-5.1	Myofibril
4-5.2	Synaptic vesicles
4-5.3	Schwann cell
4-5.4	Myelin sheath
4-5.5	Axoplasm
4-5.6	Synaptic cleft
4-5.7	Postsynaptic membrane (junctional fold)
4-5.8	Mitochondrion in presynaptic nerve terminal
<b>Plate 4-6</b>	<b>Cardiac Muscle</b>
4-6.1	Capillary (endothelial cell)
4-6.2	Collagen
4-6.3	Fibroblast
4-6.4	Sarcolemma
4-6.5	Intercalated disc
4-6.6	Mitochondrion
4-6.7	Z band
4-6.8	Myofibril
4-6.9	Cardiac muscle cell
<b>Plate 4-7</b>	<b>Cardiac Muscle</b>
4-7.1	Intercalated disc
4-7.2	Erythrocyte in capillary
4-7.3	Nucleus of cardiac muscle cell
4-7.4	Lipofuscin
4-7.5	A band
4-7.6	Z band
4-7.7	Mitochondrion
<b>Plate 4-8</b>	<b>Cardiac Conduction System</b>
4-8.1	Blood vessel (capillary)
4-8.2	Myocardium (cardiac muscle fibers)
4-8.3	Endocardium
4-8.4	Purkinje fibers
4-8.5	Ventricular lumen (cardiac chamber)
<b>Plate 4-9</b>	<b>Smooth muscle</b>
4-9.1	Caveolae
4-9.2	Mitochondrion
4-9.3	Dense body
4-9.4	Nucleus
4-9.5	Myosin (thick filament)
4-9.6	Actin (thin filament)
4-9.7	Centriole
<b>Plate 4-10</b>	<b>Smooth muscle</b>
4-10.1	Mitochondrion of Schwann cell
4-10.2	Unmyelinated axon
4-10.3	Axonal varicosity
4-10.4	Schwann cell
4-10.5	Mitochondrion of smooth muscle cell
4-10.6	Nucleus of smooth muscle cell
<b>5</b>	<b>Nervous Tissue (12)</b>
<b>Plate 5-1</b>	<b>Meninges</b>
5-1.1	Dura mater
5-1.2	Subarachnoid space
5-1.3	Arachnoid mater
5-1.4	Lumen of cerebral artery
5-1.5	Pia mater
5-1.6	Nervous tissue
<b>Plate 5-2</b>	<b>Cerebrum</b>
5-2.1	Gray matter

5-2.2	Blood vessel
5-2.3	White matter
5-2.4	Medulla oblongata
5-2.5	Cerebellum
<b>Plate 5-3</b>	<b>Cerebellum</b>
5-3.1	Corpus callosum
5-3.2	Pituitary gland
5-3.3	White matter
5-3.4	Granular cell layer
5-3.5	Molecular layer
<b>Plate 5-4</b>	<b>Neuron</b>
5-4.1	Ependyma
5-4.2	Astrocyte
5-4.3	Dendrite of neuron
5-4.4	Nucleus euchromatin
5-4.5	Endothelium of capillary
5-4.6	Axon
5-4.7	Oligodendrocyte
<b>Plate 5-5</b>	<b>Neuron</b>
5-5.1	Dendrite
5-5.2	Axon
5-5.3	Axon hillock
5-5.4	Mitochondria
5-5.5	Golgi complex
5-5.6	Rough endoplasmic reticulum
5-5.7	Nucleolus
<b>Plate 5-6</b>	<b>Synapse in the CNS</b>
5-6.1	Axon
5-6.2	Synaptic vesicles
5-6.3	Presynaptic terminal
5-6.4	Postsynaptic terminal
5-6.5	Outer membrane of mitochondrion
5-6.6	Crista of mitochondrion
<b>Plate 5-7</b>	<b>Blood-brain Barrier</b>
5-7.1	Astrocyte foot process
5-7.2	Mitochondrion
5-7.3	Tight junction between endothelial cells
5-7.4	Nucleus (euchromatin) of endothelial cell
5-7.5	Nucleus of astrocyte
5-7.6	Erythrocyte in lumen of capillary
<b>Plate 5-8</b>	<b>Choroid Plexus</b>
5-8.1	Lateral ventricle
5-8.2	Third ventricle
5-8.3	Fourth ventricle
5-8.4	Ependyma (modified); simple cuboidal epithelium
5-8.5	Capillary (fenestrated)
5-8.6	Loose connective tissue
5-8.7	Cerebrospinal fluid
<b>Plate 5-9</b>	<b>Spinal Cord</b>
5-9.1	Ventral (anterior) horn
5-9.2	Pia mater
5-9.3	Nucleolus of motor neuron
5-9.4	Axon
5-9.5	White matter
5-9.6	Dorsal (posterior) horn
<b>Plate 5-10</b>	<b>Peripheral Nerve</b>
5-10.1	Schwann cell
5-10.2	Mitochondrion
5-10.3	Perineurial cell
5-10.4	Collagen fibrils of endoneurium

5-10.5	Myelin sheath
5-10.6	Neurofilaments
<b>Plate 5-11</b>	<b>Peripheral Nerve</b>
5-11.1	Unmyelinated nerve fiber
5-11.2	Schwann cell
5-11.3	Synaptic vesicles
5-11.4	Basal lamina of Schwann cell
5-11.5	Collagen fibrils
<b>Plate 5-12</b>	<b>Peripheral Ganglia</b>
5-12.1	Satellite cell
5-12.2	Lipofuscin in perikaryon
5-12.3	Nerve fiber (axon)
5-12.4	Nucleus of neuron
5-12.5	Nissl substance
<b>6</b>	<b>Cartilage and Bone (10 cards)</b>
<b>Plate 6-1</b>	<b>Articular Hyaline Cartilage</b>
6-1.1	Articular surface
6-1.2	Chondrocyte
6-1.3	Spongy bone
6-1.4	Subchondral bone
6-1.5	Calcified cartilage zone
<b>Plate 6-2</b>	<b>Hyaline Cartilage</b>
6-2.1	Perichondrium
6-2.2	Blood vessel (capillary) in perichondrium
6-2.3	Territorial matrix
6-2.4	Chondrocyte
6-2.5	Isogenous nest
6-2.6	Interterritorial matrix
<b>Plate 6-3</b>	<b>Fibrocartilage</b>
6-3.1	Spongy bone of vertebra
6-3.2	Nucleus pulposus
6-3.3	Annulus fibrosis
6-3.4	Compact bone of vertebra
<b>Plate 6-4</b>	<b>Elastic Cartilage</b>
6-4.1	Chondrocyte
6-4.2	Matrix
6-4.3	Perichondrium
<b>Plate 6-5</b>	<b>Chondrocyte</b>
6-5.1	Nucleus
6-5.2	Plasma membrane of chondrocyte
6-5.3	Matrix
6-5.4	Rough endoplasmic reticulum
6-5.5	Mitochondrion
<b>Plate 6-6</b>	<b>Growth Plate</b>
6-6.1	Reserve zone
6-6.2	Proliferative zone
6-6.3	Zone of maturation and hypertrophy
6-6.4	Zone of provisional calcification
6-6.5	Zone of ossification (primary spongiosa)
6-6.6	Zone of ossification (secondary spongiosa)
<b>Plate 6-7</b>	<b>Spongy Bone</b>
6-7.1	Osteoclast
6-7.2	Osteocyte
6-7.3	Osteoblasts
6-7.4	Blood vessel
6-7.5	Woven bone (trabecula)
6-7.6	Lamellar bone (trabecula)
6-7.7	Fat cell adipocyte
<b>Plate 6-8</b>	<b>Cells of Bone</b>
6-8.1	Trabeculae of spongy bone

6-8.2	Osteoclast
6-8.3	Bony matrix
6-8.4	Osteoid (newly synthesized bone)
6-8.5	Osteoblasts
<b>Plate 6-9</b>	<b>Compact Bone</b>
6-9.1	Periosteum
6-9.2	Capillary in Haversian canal
6-9.3	Concentric lamella
6-9.4	Osteocyte
6-9.5	Trabecula
<b>Plate 6-10</b>	<b>Synovium</b>
6-10.1	Meniscus
6-10.2	Synovial cavity
6-10.3	Synovial villus of synovium
6-10.4	Articular cartilage
6-10.5	Subintimal layer loose connective tissue
<b>7</b>	<b>Blood and Bone Marrow (10 cards)</b>
<b>Plate 7-1</b>	<b>Formed Elements of Blood</b>
7-1.1	Eosinophil
7-1.2	Neutrophil
7-1.3	Erythrocyte
7-1.4	Lymphocyte
7-1.5	Platelets
7-1.6	Monocyte
7-1.7	Basophil
<b>Plate 7-2</b>	<b>Erythrocytes and Platelets</b>
7-2.1	Hemoglobin
7-2.2	120 days
7-2.3	Blood coagulation (clotting)
7-2.4	Megakaryocyte
7-2.5	Endothelial cell
7-2.6	Dense granules of platelet
<b>Plate 7-3</b>	<b>Neutrophil</b>
7-3.1	Chromatin strand (interconnecting lobes of nucleus)
7-3.2	Lobe of nucleus
7-3.3	Specific granules
7-3.4	Barr body (present in females only)
7-3.5	Golgi complex
<b>Plate 7-4</b>	<b>Eosinophil</b>
7-4.1	Lobe of nucleus
7-4.2	Chromatin strand
7-4.3	Specific granules
7-4.4	Golgi complex
7-4.5	Heterochromatin
7-4.6	Euchromatin
7-4.7	Rough endoplasmic reticulum
<b>Plate 7-5</b>	<b>Basophil</b>
7-5.1	Specific granules
7-5.2	Golgi complex
7-5.3	Nucleus
7-5.4	Rough endoplasmic reticulum
<b>Plate 7-6</b>	<b>Lymphocyte</b>
7-6.1	Erythrocyte
7-6.2	Nucleus
7-6.3	Microvilli
7-6.4	Mitochondria
<b>Plate 7-7</b>	<b>Monocyte</b>
7-7.1	Nucleus (horseshoe shaped)
7-7.2	Pseudopod
7-7.3	Endothelial cell



7-7.4	Rough endoplasmic reticulum
7-7.5	Membrane ruffles
<b>Plate 7-8</b>	<b>Bone Marrow</b>
7-8.1	Bone marrow smear
7-8.2	Trephine needle biopsy section
7-8.3	Venous sinusoid filled with erythrocytes
7-8.4	Hematopoietic tissue
7-8.5	Megakaryocytes
7-8.6	Fat cells (adipocytes)
7-8.7	Bone trabecula
<b>Plate 7-9</b>	<b>Megakaryocyte</b>
7-9.1	Nuclei
7-9.2	Dense granules
7-9.3	Demarcation channels between forming platelets
7-9.4	Platelets
<b>Plate 7-10</b>	<b>Erythropoiesis and Granulopoiesis</b>
7-10.1	Proerythroblast
7-10.2	Polychromatophilic erythroblast
7-10.3	Normoblast (orthochromatic erythroblast)
7-10.4	Metamyelocytes
7-10.5	Promyelocytes