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Preparing for the American Board of Pathology (ABPath) Examination of Fundamental Knowledge and Skills

Neuropathology

Content Specifications

Overview:

Neuropathology Content Specifications

This guide outlines the content that may appear on the American Board of Pathology's Neuropathology Subspecialty exam. It provides a framework based on the knowledge and skills typically covered in Fellow-level training, along with applicable Core and Advanced Resident topics from residency training that the trainee is expected to know or be able to perform.

Key to Designations:

C = Core/Foundational Knowledge

AR = Advanced Resident Knowledge

F = Fellow/Advanced Practitioner Knowledge

The exam assesses the knowledge, judgment, skills, and abilities necessary to identify specific entities, properly process specimens, and diagnose and monitor diseases using methods common in the practice of Neuropathology. The specific diseases, tests, and concepts listed in this document are important for candidates to know, but it is not possible to create a fully comprehensive list of all the material needed for certification and effective practice. Candidates should use this guide as a reference when preparing for certification and professional practice.

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iv.	Periventricular hemorrhagic infarct	F
v.	Cerebellar hemorrhage	F
vi.	Choroid and Intraventricular hemorrhage	F
c. Chronic Lesions		
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ii.	Post-hemorrhagic lesions	F
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i.	Defects of Neural Tube Closure	
	1. Anencephaly	AR
	2. Myelomeningocele	F
	3. Rachischisis	F
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	2. Meningocele	AR
	3. Occult Spina Bifida	AR
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7. Cerebellar Heterotopias	F
8. Cerebellar Cortical Dysplasia	F
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iii. Neurofibromatosis Type 1 (NF1)	AR
iv. Neurofibromatosis Type 2 (NF2)	AR
v. Schwannomatosis	F
g. Hydrocephalus	AR
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ii. Canavan Disease	F
iii. Alexander Disease	F
j. Cerebellum	
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ii. Ataxia-Telangiectasia	F
k. Spinal Muscular Atrophy	F
l. Pediatric Trauma	F
m. Sudden Infant Death Syndrome	F

3. Epilepsy

a. Hippocampal (Mesial Temporal) Sclerosis	AR
b. Rasmussen encephalitis	F

4. Vascular Disorders

a. Adult Hypoxic and Ischemic Lesions		
	i. Cerebral Blood Flow	C
	ii. Hypoxic Insult	AR
	iii. Ischemic Insult	AR
	iv. Hypoxic-Ischemic Encephalopathy (Acute/Subacute/Chronic)	AR
	v. Borderzone Hypoxic-Ischemic Damage	AR
	vi. Laminar Necrosis	AR
	vii. Hippocampal Ischemic Injury	AR
b. Vascular Disease and Infarcts		
	i. Atherosclerosis	C
	ii. Arteriolosclerosis	C
	iii. Arterial Dissection	AR
	iv. Hypertensive Vascular Changes	AR
	v. Moyamoya Disease	F
	vi. Ischemic Leukoencephalopathy	F
	vii. Siderocalcinosis/Ferrugination of Microvessels (Fahr Disease)	F
	viii. Binswanger Disease	F
	ix. CADASIL	F
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	i. Giant Cell/Temporal Arteritis	AR
	ii. Primary Angiitis of the CNS	F
	iii. Secondary Angiitis due to Systemic Vasculitides	F
	iv. Vasculitis of the Peripheral Nervous System	F
	v. A-beta-related Angiitis (ABRA)	F
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	ii. Infectious	AR
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	ii. Watershed or Borderzone Infarcts	AR
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	iv. Hemorrhagic Infarcts	AR
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ii.	Brain Hemorrhage	F
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iv.	Inherited Amyloidoses (Non-A-beta)	F
v.	Systemic Amyloidoses	F
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i.	Berry (Saccular) Aneurysms	AR
ii.	Infective Aneurysms	F
j.	Vascular Malformations	
i.	Arteriovenous Malformations	AR
ii.	Cavernous Hemangioma	AR
iii.	Venous Angioma	F
iv.	Capillary Telangiectasia	F
v.	Arteriovenous Fistula	F
vi.	Vein of Galen Malformation	F
k.	Miscellaneous Vascular Disorders	
i.	Vascular Dementia	F

5. Trauma

a.	Fractures, Skull, and Spine	F
b.	Craniocerebral Trauma	
i.	Coup Lesion	AR
ii.	Contra-Coup Lesion	AR
iii.	Traumatic Epidural Hematoma	AR
iv.	Traumatic Subdural Hematoma	AR
v.	Contusion	F
vi.	Laceration	F
vii.	Traumatic Subarachnoid Hemorrhage	F
viii.	Intraparenchymal (Ball/Streak) Hemorrhages	F
c.	Traumatic Axonal Injury	
i.	Brain Swelling and Raised Intracranial Pressure	AR
ii.	Diffuse Axonal Injury	F
iii.	Diffuse Vascular Injury	F
iv.	Missile Head Injury	F
v.	Blast Head Injury	F
d.	Sequelae of Head Injury	
i.	Chronic Traumatic Encephalopathy (CTE-MND)	F
ii.	Ischemic Damage	F
e.	Traumatic Spinal Cord Injury	F

6. Infections and Inflammatory Diseases

a.	Acute Viral Infections	
i.	Herpes Simplex Virus Infections	AR
ii.	Rabies	AR
iii.	Aseptic Meningitis	F
iv.	Poliomyelitis	F
v.	Enteroviral Encephalitis	F
vi.	Other Herpes Viral Infections (VZV, EBV, CMV)	F
vii.	Adenovirus Infections	F
viii.	Paramyxovirus Infections	F
ix.	Rubella Encephalitis	F
x.	Arbovirus Infections	F
xi.	West Nile Encephalitis	F
b.	Chronic and Subacute Viral Infections of the CNS	
i.	Measles Inclusion Body Encephalitis	F
ii.	Subacute Sclerosing Panencephalitis	F
iii.	Progressive Multifocal Leukoencephalopathy	
	-Includes PML and PML-IRIS associated with MS therapy	F
c.	Human Immunodeficiency Virus Infection (HIV)	
i.	HIV encephalitis/leukoencephalitis	F
ii.	HIV-associated Neurologic Disease (HAND)	F
iii.	Neurological and other Disorders Increased in HIV	F
iv.	Therapy-Associated Disorders in Patients with HIV	F
d.	Bacterial Infections	
i.	Acute Bacterial Meningitis	AR
ii.	Brain Abscess	AR
iii.	Tuberculosis	AR
iv.	Subdural Empyema	F
v.	Epidural Abscess	F
vi.	Syphilis	F
vii.	Lyme Neuroborreliosis	F
viii.	Whipple Disease	F
ix.	Nocardia	F
e.	Fungal Infections	
i.	Aspergillosis	AR
ii.	Mucorales Infections	AR
iii.	Fusarium and Other Hyaline Molds	AR
iv.	Cryptococcosis	AR
v.	Candidiasis	AR
vi.	Blastomycosis	AR
vii.	Coccidioidomycosis	AR
viii.	Histoplasmosis	AR
ix.	Phaeohyphomycosis	F
f.	Parasitic Infections	
i.	Amebic Infections	

1. Primary Amebic Meningoencephalitis AR
2. Granulomatous Amebic Encephalitis AR

ii. Cysticercosis and Other Cestodes AR
iii. Cerebral Malaria F
iv. Cerebral Toxoplasmosis F

g. Other Inflammatory Diseases

i. Neurosarcoidosis AR
ii. Rasmussen Encephalitis F
iii. Autoimmune Encephalitis F
iv. Paraneoplastic Disorders

1. Paraneoplastic Encephalomyelitis F
2. Paraneoplastic Cerebellar Degeneration F
3. Paraneoplastic Opsoclonus-Myoclonus F
4. Paraneoplastic Myositis F
5. Paraneoplastic Neuropathy F

v. Idiopathic Hypertrophic Pachymeningitis F
vi. IgG4-Related Disease F
vii. Autoimmune (i.e., Lymphocytic) Hypophysitis F
viii. Non-Neoplastic Pituitary Disorders

1. Infectious Hypophysitis AR
2. Pituitary Apoplexy AR
3. Pituitary Hyperplasia F
4. Autoimmune (Lymphocytic) Hypophysitis F

7. Demyelinating Diseases

a. Multiple Sclerosis

i. Classic (Charcot-Type) MS AR
ii. Acute (Marburg-Type) MS F
iii. Concentric Sclerosis (Balo) F
iv. Neuromyelitis Optica (Devic Disease) F

1. Aquaporin-4 in NMO F

b. Other Demyelinating Diseases

i. Acute Disseminated Encephalomyelitis (ADEM) F
ii. Acute Hemorrhagic Leukoencephalopathy F
iii. Guillain-Barré Syndrome (AIDP) F
iv. Chronic Inflammatory Demyelinating Polyneuropathy (CIDP) F
v. Central Pontine Myelinolysis F

8. Complications of Systemic Disorders

a. Vitamin Deficiencies

i. Thiamine Deficiency and Wernicke Encephalopathy F
ii. Vitamin B12 Deficiency and Subacute Combined Degeneration F

iii. Folic Acid Deficiency		F
b. Systemic Metabolic Disease		
i. Hypoglycemia		F
ii. Hyperglycemia		F
c. Disorders of Serum Electrolytes		
i. Central Pontine and Extrapontine Myelinolysis		F
ii. Calcium Disturbances		F
– Siderocalcinosis/Ferrugination Microvessel (Fahr Disease)		F
d. Liver Disease		
i. Acquired Hepatic Encephalopathy		F
ii. Hepatolenticular Degeneration (Wilson Disease)		F
e. Lysosomal and Peroxisomal Disorders		
i. Lysosomal Disorders		
1. GM2 Gangliosidosis		F
2. GM1 Gangliosidosis		F
3. Ceroid Lipofuscinosis (Batten Disease)		F
4. Niemann-Pick Disease, including Type C		F
5. Gaucher Disease		F
6. Acid Beta-Glucosidase-Associated Parkinson Disease		F
7. Mannosidosis		F
8. Mucopolysaccharidosis		F
9. Fabry Disease		F
10. Type II Glycogenesis (Pompe Disease)		F
11. Farber Disease		F
12. Krabbe Disease		F
13. Metachromatic Leukodystrophy		F
ii. Peroxisomal Disorders		
1. Zellweger Cerebroheptorenal Syndrome		F
2. Adrenoleukodystrophy		F
f. Mitochondrial Disorders		
i. Mitochondrial myopathy, encephalopathy, lactic acidosis, and stroke-like symptoms (MELAS)		F
ii. Mycoclonic Epilepsy with Ragged-Red Fibers (MERRF)		F
iii. Leber Hereditary Optic Neuropathy, Bilateral Striatial Necrosis, and Multiple Sclerosis-Like Mitochondrial Disease (LHON)		F
iv. Neuropathy, Ataxia, and Retinitis Pigmentosa (NARP)		F
v. Kearns-Sayre Syndrome (KSS) and Chronic Progressive External Ophthalmoplegia		F
vi. Myoneurogastrointestinal Encephalopathy (MNGIE)		F
vii. Leigh Disease		F
g. Toxicity		
i. Ethylene Glycol		F
ii. Methanol		F
iii. Toluene		F
iv. Carbon Monoxide		F

v. Calcineurin Inhibitors (e.g., Cyclosporin A and Tacrolimus)	F
vi. Nucleoside Analogs	F
vii. Phenytoin	F
viii. Chloroquine/Hydroxychloroquine	F
ix. Statin	F
x. Cocaine	F
xi. Heroin	F
xii. 1-Methyl-4-Phenyl Tetrahydropyridine (MPTP)	F
xiii. Inhaled Solvents	F
h. Toxicity/Secondary Effect due to Radiation Therapy	
i. Radionecrosis	F
ii. Radiation-Induced Neoplasia	F

9. Aging and Neurodegenerative Diseases

i. Aging	
i. Normal Aging	F
ii. Pathologic Aging	F
j. Alzheimer Disease (AD)	
i. AD Posterior Variant	F
ii. AD with Hippocampal Sparing	F
iii. AD with Cotton Wool Plaques	F
iv. AD Familial Forms	
k. Tauopathies, including Frontotemporal Lobar Degeneration-Tau	
i. Frontotemporal Dementia-Parkinsonism Linked to Chromosome 17	F
ii. Progressive Supranuclear Palsy (Steele-Richardson-Olszewski)	F
iii. Corticobasal Degeneration	F
iv. Argyrophilic Grain Disease	F
v. Pick Disease	F
vi. Parkinsonism-Dementia Complex of Guam	F
vii. Postencephalitic Parkinsonism	F
viii. Tangle-Only Dementia	F
ix. Diffuse Neurofibrillary Tangles with Calcification	F
x. Hippocampal Sclerosis Demential Tauopathy	F
xi. Chronic Traumatic Encephalopathy (CTE-MND)	F
l. Synucleinopathies	
i. Lewy-Body Disease (LBD) Spectrum Disorders	
1. LBD, Brainstem Type (Parkinson Disease)	F
2. LBD, Limbic Type	F
3. LBD, Neocortical Type (Dementia with Lewy Bodies)	F
4. Parkinson Disease-Dementia (PD-D)	F
ii. Multiple System Atrophy	F
m. Hippocampal Sclerosis	F
n. Trinucleotide Repeat Disorders	
i. Huntington Disease	F

ii.	Spinocerebellar Ataxia	F
iii.	Friedreich Ataxia	F
iv.	Dentatorubral Pallidoluysian Atrophy	F
v.	Spinal-Bulbar Muscular Atrophy/ X-linked Bulbospinal Neuronopathy (Kennedy Disease)	F
vi.	Myotonic Dystrophy	F
vii.	Oculopharyngeal Muscular Dystrophy	F
viii.	Machado-Joseph Disease	F
o. Frontotemporal Lobar Degeneration (FLD) with/without ALS		
i.	FLD with TDP-43-Immunoreactive Lesions	F
ii.	FLD with Neuronal Intermediate Filament Inclusions	F
iii.	FLD with FUS-Immunoreactive Lesions	F
iv.	FLD with Motor Neuron Disease	F
v.	Valosin-containing Protein (IBMPFD)	F
p. Motor Neuron Disease		
i.	SMA Type I (Werdnig Hoffman)	F
ii.	SMA Type II (Intermediate)	F
iii.	SMA Type III (Kugelberg-Welander)	F
iv.	Hereditary Spastic Paraparesis	F
v.	Primary Lateral Sclerosis	F
vi.	Amyltrophic Lateral Sclerosis (ALS)	
1.	ALS with TDP-43	F
2.	ALS with TDP-Tau	F
3.	ALS with SOD	F
q. Neuroaxonal Dystrophy		
i.	Neurodegeneration with Brain Iron Accumulation	F
ii.	Sporadic Adult-Onset Leukoencephalopathy with Neuroaxonal Spheroids (Neuroaxonal Leukodystrophy)	F

10. Prion Disease

a. Sporadic Creutzfeld-Jakob Disease	AR
b. Inherited Creutzfeld-Jakob Disease	F
i. Gerstmann-Sträussler-Scheinker Disease	F
ii. Fatal Familial/Sporadic Insomnia	F
iii. Other Inherited Creutzfeld-Jakob Disease	F
c. Iatrogenic Creutzfeld-Jakob Disease	F
d. Protease-Sensitive Prionopathy	F
e. Variant Creutzfeldt-Jakob Disease	F

11. Neoplasms

a. Adult-Type Diffuse Astrocytomas	
i. Astrocytoma IDH-Mutant, CNS WHO Grade 2	AR
ii. Diffuse Astrocytoma, NOS	AR
iii. Astrocytoma, IDH-Mutant, CNS WHO Grade 3	AR
iv. Astrocytoma, IDH-Mutant, CNS WHO Grade 4	AR

	v.	Glioblastoma, IDH-Wildtype	AR
	vi.	Giant Cell Glioblastoma	F
	vii.	Small Cell Glioblastoma	F
	viii.	Gliosarcoma	F
	ix.	Glioblastoma, Epithelioid Type	F
b.	Circumscribed Astrocytic Gliomas		
	i.	Pilocytic Astrocytoma	AR
	ii.	Pleomorphic Xanthoastrocytoma, CNS WHO Grade 2 or 3	AR
	iii.	High-Grade Astrocytoma with Piloid Features	F
	iv.	Pilomyxoid Astrocytoma with	F
	v.	Chordoid Glioma	F
	vi.	Subependymal Giant Cell Astrocytoma	F
	vii.	Astroblastoma, MN1-Altered	F
c.	Oligodendroglial Tumors		
	i.	Oligodendroglioma, IDH-Mutant and 1p/19q Co-Deleted, WHO Grade 2	AR
d.	Ependymal Tumors (General Considerations)		
	i.	Subependymoma	F
	ii.	Myxopapillary Ependymoma	F
	iii.	Supratentorial Ependymoma, ZFTA-Fusion Positive	F
	iv.	Supratentorial Ependymoma, YAP1-Fusiong Positive	F
	v.	Supratentorial Ependymoma, NOS	F
	vi.	Posterior Fossa, Group A (PFA) Ependymoma	F
	vii.	Posterior Fossa, Group B (PFB) Ependymoma	F
	viii.	Posterior Fossa Ependymoma, NOS	F
	ix.	Spinal Ependymoma, NOS	F
	x.	Spinal Ependymoma, MYCN Amplified	F
e.	Choroid Plexus Tumors		
	i.	Choroid Plexus Papilloma	F
	ii.	Atypical Choroid Plexus Papilloma	F
	iii.	Choroid Plexus Carcinoma	F
f.	Glioneuronal and Neuronal Tumors		
	i.	Ganglioglioma	AR
	ii.	Dysplastic Gangliocytoma of the Cerebellum (Lhermitte-Duclos)	F
	iii.	Desmoplastic Infantile Astrocytoma/Ganglioglioma	F
	iv.	Dysembryoplastic Neuroepithelial Tumor	F
	v.	Gangliocytoma/Multinodular Vacuolating Neuronal Tumor	F
	vi.	Central Neurocytoma	F
	vii.	Extraventricular Neurocytoma	F
	viii.	Cerebellar Liponeurocytoma	F
	ix.	Papillary Glioneuronal Tumor (PGNT)	F
	x.	Rosette-Forming Glioneuronal Tumor (RGNT)	F
	xi.	Cauda equina Neuroendocrine Tumor	F
	xii.	Myxoid Glioneuronal Tumor	F
	xiii.	Diffuse Glioneuronal Tumor with Oligodendroglial Features	F

xiv.	Diffuse Leptomeningeal Glioneuronal Tumor	F
g.	Tumors of the Pinal Region	
i.	Pineal Parenchymal Tumors	F
ii.	Pineocytoma	F
iii.	Pineal Parenchymal Tumor of Intermediate Differentiation	F
iv.	Pineoblastoma	F
v.	Papillary Tumor of the Pineal Region	F
vi.	Desmoplastic Myxoid Tumor of the Pineal Region, SMARCB1-Deficient	F
h.	Embryonal Tumors	
i.	Medulloblastoma, Classic Type	AR
ii.	Atypical Teratoid/Rhabdoid Tumor	AR
iii.	Medulloblastoma, Desmoplastic/Nodular Type	F
iv.	Medulloblastoma with Extensive Nodularity	F
v.	Medulloblastoma, Large Cell/Anaplastic Type	F
vi.	CNS Neuroblastoma, FOXR2-Activated	F
vii.	Embryonal Tumors with Multilayered Rosettes	F
viii.	CNS Tumor BCOR Internal Tandem Duplication	F
ix.	Embryonal Tumors with Multilayered Rosettes, C19MC-Altered	F
x.	Medulloblastoma, WNT-Activated	F
xi.	Medulloblastoma, SHH-Activated & TP53 Wild Type	F
xii.	Medulloblastoma, SHH-Activated & TP53 Mutant	F
xiii.	Medulloblastoma, Non-WHT/Non-SHH	F
i.	Tumors of the Cranial and Paraspinal Nerves	
i.	Schwannoma (Cellular and Plexiform Types)	AR
ii.	Neurofibroma	
	1. Plexiform Neurofibroma	AR
	2. Atypical Neurofibromatous Neoplasm of Uncertain Biologic Potential (ANNUBP)	AR
iii.	Ganglioneuroma	AR
iv.	Malignant Peripheral Nerve Sheath Tumor (MPNST)	AR
v.	Perineurioma	F
vi.	Hybrid Nerve Sheath Tumors	F
vii.	Epithelioid Malignant Peripheral Nerve Sheath Tumor	F
viii.	MPNST with Divergent Mesenchymal and/or Epithelial Differentiation or Perineural Differentiation	F
j.	Meningothelial Tumors	
i.	Meningioma, NOS	AR
ii.	Atypical Meningioma	AR
iii.	Anaplastic Meningioma	AR
iv.	Meningioma, Meningothelial Type	F
v.	Meningioma, Fibrous (Fibroblastic)	F
vi.	Meningioma, Transitional (Mixed)	F
vii.	Meningioma, Psammomatous	F
viii.	Meningioma, Angiomatous	F

ix.	Meningioma, Microcystic	F
x.	Meningioma, Secretory	F
xi.	Meningioma, Lymphoplasmacyte-Rich	F
xii.	Meningioma, Metaplastic	F
xiii.	Meningioma, Clear Cell Type	F
xiv.	Meningioma, Chordoid Type	F
xv.	Meningioma, Papillary Type	F
xvi.	Meningioma, Rhabdoid Type	F
xvii.	Meningioma, Other Types	F
xviii.	Meningoangiomatomatosis	F
k. Mesenchymal (Non-Meningothelial) Tumors		
i.	Chordoma	AR
ii.	Hemangioblastoma	AR
iii.	Lipoma	F
iv.	Solitary Fibrous Tumor	F
v.	Chondrosarcoma	F
vi.	Mesenchymal Chondrosarcoma	F
vii.	Hemangioma	F
viii.	Intracranial Mesenchymal Tumor FET::CREB Fusion-Positive	F
ix.	CIC Rearranged Sarcoma	F
x.	Primary Intracranial Sarcoma DICER1-Mutant	F
xi.	Ewing Sarcoma	F
l. Primary Melanocytic Tumors		
i.	Melanocytosis	F
ii.	Melanocytoma	F
iii.	Melanoma	F
iv.	Melanomatosis	F
m. Lymphoma and Hematopoietic Tumors of the Central Nervous System		
i.	Diffuse Large B-cell Lymphoma of the CNS	F
ii.	Langerhans Histiocytosis	F
iii.	Non-Langerhans Histiocytosis (Rosai-Dorfman)	F
iv.	Immunodeficiency-Associated CNS Lymphomas	F
v.	Intravascular Large B-cell Lymphoma	F
vi.	MALT Lymphomas of the Dura	F
n. Tumors of the Sellar Region		
i.	Rathke Cleft Cyst	AR
ii.	Craniopharyngioma, Adamantinomatous Type	AR
iii.	Craniopharyngioma, Papillary Type	AR
iv.	Pituitary Adenoma/Pituitary Neuroendocrine Tumor (PitNET)	AR
1.	Densely Granulated Corticotroph Adenoma	F
2.	Sparsely Granulated Corticotroph Adenoma	F
3.	Crooke Cell Adenoma	F
4.	Densely Granulated Somatotroph Adenoma	F
5.	Sparsely Granulated Somatotroph Adenoma	F
6.	Mammosomatotroph Adenoma	F

7. Mixed Somatotroph-Lactotroph Adenoma		F
8. Sparsely Granulated Lactotroph Adenoma		F
9. Densely Granulated Lactotroph Adenoma		F
10. Acidophil Stem Cell Adenoma		F
11. Thyrotroph Adenoma		F
12. Gonadotroph Adenoma		F
13. Null Cell Adenoma		F
14. Plurihormonal PIT1-Positive Adenoma		F
v. Pituitary Carcinoma/ Metastatic PitNET		F
vi. Pituitary Hyperplasia		F
vii. Hypothalamic Hamartoma		F
viii. Granular Cell Tumor		F
ix. Pituicytoma		F
x. Spindle Cell Oncocytoma		F
o. Germ Cell Tumors		
i. Germinoma		AR
ii. Embryonal Carcinoma		AR
iii. Yolk Sac Tumor		AR
iv. Choriocarcinoma		AR
v. Teratoma, Mature		AR
vi. Teratoma, Immature		AR
vii. Teratoma with Malignant Transformation		AR
viii. Malignant Mixed Germ Cell Tumor (Specify Components: Germinoma, Embryonal, etc.)		AR
p. Cysts		
i. Epidermoid and Dermoid Cysts		AR
ii. Colloid Cyst of the Third Ventricle		AR
iii. Endodermal/Enterogenous Cyst		AR
iv. Arachnoid Cyst		AR
v. Ependymal Cyst		F
vi. Pineal Cyst		F
q. Metastatic Tumors		
i. Neoplasms in Tissues Surrounding the CNS		AR
ii. Secondary Neoplasms in the Meninges		AR
iii. Secondary Neoplasms in the Brain and Spinal Cord		AR
r. Paraneoplastic Disorders		
i. Paraneoplastic Encephalomyelitis		F
ii. Paraneoplastic Cerebellar Degeneration		F
iii. Paraneoplastic Opsoclonus-Myoclonus-Ataxia		F
s. Familial Tumor Predisposition Syndromes		
i. Tuberous Sclerosis		AR
ii. Neurofibromatosis, Type 1 (NF1)		AR
iii. Neurofibromatosis, Type 2 (NF2)		AR
iv. von Hippel-Lindau Disease		AR
v. Li-Fraumini Syndrome		AR

vi.	Cowden Disease	AR
vii.	Lynch Syndrome	AR
viii.	Nevoid Basal Carcinoma Syndrome	AR
ix.	Rhabdoid Tumor Predisposition Syndrome	AR
x.	Carney Complex	AR
xi.	Familial Adenomatous Polyposis	AR
xii.	DICER1 Syndrome	AR
xiii.	Familial Retinoblastoma	AR
xiv.	BAP1 Tumor Predisposition Syndrome	AR
xv.	Constitutional Mismatch Repair Deficiency (CMMRD) Syndrome	F
xvi.	Melanoma Astrocytoma Syndrome	F
xvii.	Fanconi Anemia	F
xviii.	ELP1 Medulloblastoma Syndrome	F
t. Pediatric-Type Diffuse Low-Grade Gliomas		
i.	Diffuse Astrocytoma, MYB or MYB-1 altered	F
ii.	Angiocentric Glioma	F
iii.	Polymorphous Low-Grade Neuroepithelial Tumor of the Young	F
iv.	Diffuse Low-Grade Glioma, MAPK Pathway Altered	F
u. Pediatric-Type Diffuse High-Grade Gliomas		
i.	Diffuse Midline Glioma, H3 K27-Altered	F
ii.	Diffuse Hemispheric Glioma, H3 G34-Mutant	F
iii.	Diffuse Pediatric-Type High-Grade Glioma, H3-Wild Type and	
	1. IDH-Wildtype	F
iv.	Infant-Type Hemispheric Glioma	F

12. Skeletal Muscle

v. Muscle Biopsy		
i.	Handling	AR
ii.	Muscle Biopsy Techniques, IHC/Special Stains	F
iii.	Skeletal Muscle Ultrastructure	F
w. Myopathic Processes		
i.	Myopathic Histopathologic Features	F
x. Inflammatory Myopathies		
i.	Dermatomyositis	F
ii.	Inclusion Body Myositis	F
iii.	Sarcoid Myopathy	F
iv.	Bacterial Myositis	F
v.	Viral Myositis	F
vi.	Parasitic Myositis	F
vii.	Fungal Myositis	F
viii.	Vasculitis	F
ix.	Paraneoplastic Myositis	F
y. Metabolic Diseases		
i.	Glycogenoses	F

1. Type II (Acid Maltase Deficiency/Pompe Disease) F
2. Type V (Myophosphorylase Deficiency/McArdle Disease)

ii. Mitochondrial Myopathy F
iii. Lipid Storage Myopathies F

z. Channelopathies F
aa. Toxic Myopathies
i. Steroid Myopathy/ Acute Care Myopathy F
ii. Chloroquine / Hydroxychloroquine Vacuolar Myopathy F
bb. Muscular Dystrophies
i. Dystrophinopathies F
ii. Emery-Dreifuss Muscular Dystrophy F
iii. Facioscapulohumeral Dystrophy (FSHD) F
iv. Myotonic Dystrophy F
v. Oculopharyngeal Muscular Dystrophy F
vi. Limb-Girdle Muscular Dystrophy F
vii. Congenital Muscular Dystrophy F
cc. Autophagic Vacuolar Myopathies F
dd. Myofibrillar Myopathies F
ee. Distal Myopathies, including Valsoin-Containing Protein (IBMPFD) F
ff. Congenital Myopathies
i. Nemaline Myopathies F
ii. Core Myopathies F
iii. Centronuclear Myopathies F
iv. Congenital Fiber Type Disproportion Myopathies F
gg. Neuropathic (Neurogenic) Diseases
i. Neuropathic Histopathologic Features F
ii. Motor Neuron Diseases, Spinal Muscular Atrophy F

13. Peripheral Nerve

a. Peripheral Nerve Biopsy
i. Handling AR
b. Peripheral Nerve Ultrastructure F
c. Major Pathologic Processes
ii. Axonal (Wallerian) Degeneration F
iii. Distal (“Dying Back”) Axonopathy F
iv. Demyelination (Segmental) F
d. Traumatic Neuroma AR
e. Inflammatory Neuropathies
i. Vasculitic Neuropathy AR
ii. Sarcoid Neuropathy AR
iii. Guillian-Barré Syndrome (AIDP) F
iv. Chronic Inflammatory Demyelinating Polyradiculopathy (CIDP) F
v. Paraneoplastic Neuropathy F
f. Infectious Neuropathies

	i. Leprosy	F
g.	Hereditary Motor and Sensory Neuropathies (HMSN)	F
h.	Nutritional Deficiency/Toxic Neuropathies	F
i.	Neuropathies Associated with Systemic Diseases	
	i. Diabetic Neuropathy	AR
	ii. Amyloid Neuropathy	AR

14. Ophthalmic Pathology

a.	Diseases of the Orbit	F
b.	Diseases of the Conjunctiva	F
c.	Diseases of the Cornea	F
d.	Diseases of the Anterior Segment	F
e.	Diseases of the Uvea	F
f.	Retina and Vitreous	
	i. Retinal Neoplasms	
	1. Retinoblastoma	AR
	2. Melanoma	AR
	ii. Retinal Detachment	F
	iii. Retinal Vascular Disease	F
	iv. Age-Related Macular Degeneration	F
	v. Other Retinal Degeneration	F
	vi. Retinitis	F
g.	Diseases of the Optic Nerve	F
h.	Phthisis Bulbi	F
i.	Therapeutic or Iatrogenic Complications	F