Neuropathology CC Exam Module Study Guide

Registrants for the NP only or combined Primary/NP CC exam must take the mandatory general NP module plus any elective NP modules selected during registration.

CC NP –General Neuropathology I (Mandatory 50-Question Module)	
• A-beta–related angiitis.	• leptomeningeal opacifications
• abnormal corticospinal tracts/pyramids	• leukodystrophies
• acute hemorrhagic leukoencephalopathy	• motor cortex; smear prep
• anaplastic astrocytoma	• multicystic encephalopathy
• angiitis; vasculitis	• multiple system atrophy
• astrocytomas; chemotherapeutic resistance	• myxopapillary ependymoma
• axonal injury; IHC	• orbital plate fractures
• borderzone hypoxic-ischemic damage	• Pick disease
• cervical spinal cord tracts	• pituitary gland histology
• chordoma	• postmortem artifacts
• CNS neoplasms; loss of heterozygosity	• primary angiitis of the CNS
• deep (basal) nuclei; tracts	• ragged red fibers
• dermatomyositis	• retinal hemorrhage
• diffuse axonal injury	• retinoblastoma
• dysembryoplastic neuroepithelial tumor	• skeletal muscle ultrastructure
• fetal and neonatal hypoxic-ischemic lesions	• spinal cord anatomy
• fetal developmental; neuroanatomy	• status marmoratus
• glioblastoma	• Steele-Richardson-Olszewski syndrome
• GM1 and GM2 gangliosidoses	• substantia nigra
• hereditary sensory-motor neuropathies	• tauopathies
• Huntington disease	• TORCH infections
• hypoxic injury	• tract degeneration
• infant developmental neuropathology; cerebellum	• trinucleotide repeat disorders
• infant spinal cord; sequence of myelination	• vascular malformations
• Lafora progressive myoclonic epilepsy	

CC NP –General Neuropathology II (Elective 50-Question Module)	
• adrenoleukodystrophy	• fungal infections
• aspergillosis	• Herpesvirus infections
• auditory system; tracts	• heterotopic neurons
• axonal (Wallerian) degeneration	• HIV encephalitis/leukoencephalitis
• Binswanger disease	• holoprosencephaly; trisomies
• blood-brain barrier integrity	• hypertensive vascular changes
• blood-brain barrier; neuroanatomy	• iatrogenic cerebral injuries
• borderzone hypoxic-ischemic damage	• microglia and mononuclear cells
• brain development; weight at term	• multiple sclerosis
• CADASIL	• multiple system atrophy
• central chromatolysis	• Negri bodies
• central neurocytoma	• neural tube defects
• cerebral capillaries; ultrastructure	• paragangliomas
• cerebral malaria	• pineal gland
• cerebral toxoplasmosis	• retina and vitreous; normal histology
• cholinergic input to cerebral cortex	• sarcoidosis
• chronic hypoxic-ischemic encephalopathy	• schwannoma
• contusions	• skeletal muscle; IHC patterns of staining
• craniopharyngioma	• spinal muscular atrophy
• cysticercosis	• tauopathies; progressive supranuclear palsy
• decomposition artifacts	• vitamin B12 deficiency
• diffuse axonal injury; IHC	• Von Hippel-Lindau disease
• fat embolism	• Zebra bodies; storage products in neurometabolic diseases
• fatal familial/sporadic insomnia	• fatal familial/sporadic insomnia
• fetal cerebellum; histology	

CC NP –Degenerative I (Elective 25-Question Module)	
• Alzheimer disease	• Huntington disease; IT15 gene
• amyotrophic lateral sclerosis	• multiple system atrophy
• astrocytic plaques	• neurofibrillary tangles
• axonal degeneration	• neuronal inclusions
• Bunina bodies	• Pick disease
• chronic traumatic encephalopathy	• progressive supranuclear palsy
• Creutzfeldt-Jakob disease	• prion diseases; tissue handling
• granulovacuolar degeneration	• spinal cord; atrophy
• hepatolenticular degeneration	• spondylosis
• hereditary motor and sensory neuropathies	• synucleinopathies
• hippocampal sclerosis	• tauopathies; IHC
• Huntington disease	

CC NP –Degenerative II (Elective 25-Question Module)	
• Alzheimer disease; limbic system	• hippocampal sclerosis
• argyrophilic grain disease	• Hirano bodies
• cerebellar degeneration	• Lewy body disease spectrum disorders
• concentric sclerosis	• multiple sclerosis
• congophilic angiopathy	• multiple system atrophy
• corticobasal degeneration	• neuromyelitis optica
• Creutzfeldt-Jakob disease	• olivopontocerebellar degeneration
• cytoplasmic inclusions	• Pelizaeus-Merzbacher disease
• dystrophic calcifications	• progressive supranuclear palsy
• frontotemporal lobar degeneration	• trinucleotide repeat disorders
• hepatolenticular degeneration	• ubiquitin IHC

CC NP –Developmental/Pediatric/Congenital I (Elective 25-Question Module)	
• acute/subacute white matter lesions	• megalencephaly
• alobar holoprosencephaly	• neurodegeneration with brain iron accumulation; mutations
• arachnoid cyst	• neuronal heterotopias; mutations
• Chiari type II malformation	• neuronal migration defects
• chordoma	• pachygyria
• congenital fiber-type disproportion myopathies	• polymicrogyria
• Dandy-Walker syndrome	• reactive gliosis
• defects of neural tube closure	• schizencephaly
• diastematomyelia	• Sturge-Weber syndrome
• fetal neuroanatomy; gestational age	• subependymal germinal plate/matrix hemorrhage
• hypothalamic hamartoma	• traumatic spinal cord injuries
• lobar holoprosencephaly	• tuberous sclerosis

CC NP –Developmental/Pediatric/Congenital II (Elective 25-Question Module)	
• angiomatosis of meninges	• hydranencephaly
• bundle of Probst	• kernicterus
• chordoma	• Meckel-Gruber
• congenital hydrocephalus	• multicystic encephalopathy
• CSF cytopathology; leukemias and lymphomas	• myelomeningocele
• defects of neural tube closure; dysraphic state	• myotonic dystrophy, type I
• diastematomyelia	• neuroblastoma
• double cortex syndrome/x-linked lissencephaly	• pilocytic astrocytoma
• Down syndrome; neuroanatomy	• status marmoratus
• germ cell tumors	• Sturge-Weber syndrome
• glioblastoma	• syringomyelia/hydromyelia
• hippocampal sclerosis	• trauma; falls; subdural hemorrhage
• holoprosencephaly; trisomy	

CC NP –Neoplastic I (Elective 25-Question Module)	
• anaplastic oligodendroglioma	• malignant lymphoma
• central neurocytoma	• medulloblastome; IHC
• chordoma	• metastatic neoplasms
• choroid plexus papilloma	• neuroblastoma
• CNS PNET	• paraganglioma
• craniopharyngioma	• perineurioma
• cysts	• pilomyxoid astrocytoma
• diffuse astrocytomas	• pineocytoma
• ependymoma	• pituicytoma
• glioblastoma; FISH	• rosette-forming glioneuronal tumor
• hemangioblastoma	• von Hippel-Lindau disease
• intraoperative diagnosis of CNS tumors	

CC NP –Neoplastic II (Elective 25-Question Module)	
• anaplastic astrocytoma	• glioblastoma
• atheroemboli	• metastatic neoplasms
• atypical teratoid/rhabdoid tumor	• neuronal and mixed neuronal-glial tumors
• cerebellar liponeurocytoma	• pineal neoplasms; IHC
• chordoma; mutations	• primary CNS lymphoma
• choroid plexus tumors	• radiation induced neoplasms
• circumscribed astrocytomas	• schwannoma
• Cowden disease	• tumors of the meninges
• cysts of the CNS	• tumors of the meninges; recurrence
• ependymal tumors	• tumors of the sellar region

CC NP –Neuromuscular I (Elective 25-Question Module)	
• astrocytoma	• McArdle disease
• congenital muscular dystrophy; IHC	• muscle group atrophy and target fibers
• core myopathies	• myoclonic epilepsy; mitochondrial encephalomyopathy
• dermatomyositis	• myopathic histopathologic features; type 2 atrophy
• dermatomyositis; pediatric	• myopathic histopathologic features; ultrastructure
• dystrophinopathies; IHC	• nemaline myopathies
• glycogenoses	• neuropathic histopathologic features in muscle; ATPase
• inclusion body myositis	• normal muscle, MHC class I IHC
• inclusion body myositis; ultrastructure	• parasitic myositis
• lipid storage myopathies	• schwannomas
• lysosomal and peroxisomal disorders; enzyme replacement therapy	• spinal muscular atrophy; diagnosis
• macrophagic myofasciitis	• spongiform changes

CC NP –Neuromuscular II (Elective 25-Question Module)	
• amyloidosis	• mitochondrial myopathy
• autophagic vacuolar myopathies	• myofibrillar myopathies
• axonal degeneration	• myophagocytosis
• centronuclear myopathies	• neuropathic histopathologic features; acute denervation
• demyelinating diseases; optic nerve	• non 5q spinal muscular atrophy (SMA); genetics
• facioscapulohumeral dystrophy (FSHD); diagnosis	• plexiform neurofibroma
• inclusion body myositis	• schwannoma
• inflammatory myopathies	• skeletal muscle ultrastructure
• leprosy	• toxic myopathies; Type 2 atrophy
• limb-girdle muscular dystrophy	• tubular aggregate myopathy
• Lisch nodules	• type II glycogenoses; ultrastructure
• lysosomal disorders; ultrastructure	