

Cognitive Core

Category A – Neuroanatomy

The structure of:

Embryology

Cerebrum

Cerebellum

Basal Ganglia

Hypothalamus & Pituitary

Brain Stem

Cranial Nerves

Spinal Cord

Nerve Root

Plexi

Peripheral Nerve

Muscle and Peripheral Receptor

Vascular, including BBB

Cytoarchitecture & Subcellular Anatomy

CSF Pathway

Skeletal (including skull)

Meninges

Autonomic

Thalamus

Other, including Structures Related to the Nervous System

Category B – Neurobiology

Neurons & Axons

01.A Electrical Properties

01.B Synapses

01.C Channels & pumps

01.D Structure

01.E Transmitters

01.F Cell biology

01.G Molecular biology & genetics

Muscles

02.A Smooth Muscle

02.B Striated muscle

02.C Structure

02.D Synapses, transmitters & receptors

02.E Mechanisms of functions

02.F Molecular biology & genetics

Gross Topographic & Relational Anatomy

03.A Cerebrum

03.B Cerebellum

03.C Brain stem

03.D Spinal cord

03.E Ventricular system

03.F Cranial nerves

03.G Skull

03.H Vertebrae

03.I Peripheral nerves

03.J Vascular system

Functional Neuroanatomy

04.A Cerebrum

04.B Basal ganglia

04.C Thalamus

04.D Hypothalamus & pituitary

04.E Brain stem

04.F Spinal cord

04.G Cranial nerves

04.H Spinal nerves

04.I Cerebellum

Functional Systems

05.A Motor

05.B Somatosensory

05.C Visual

05.D Auditory/vestibular

05.E Taste & smell

05.F Memory

05.G Emotional

05.H Language & other higher cognitive functions

05.I Pain

05.J Autonomic

Glia

06.A Function

06.B Cell biology

06.C Genetic control

06.D Molecular oncology

Cerebral Vascular System

07.A Anatomy

07.B Physiology of CBF

07.B.1 Endothelial cells

07.B.2 Glia

07.B.3 Smooth muscle

07.C Factors controlling vascular functions

07.D Pathophysiology of CBF in SAH & Head Injury

07.E Blood-brain barrier

Responses to injury

08.A Neurons

08.B Glia

08.C Injury cascades

Nervous System Development & Plasticity

09.A Brain

09.B Spinal cord

09.C Peripheral nerves

09.D Genetic determinants of development

09.E Neurons

09.F Glia

Cerebrospinal Fluid

10.A Anatomy

10.B Physiology

10.C Biochemistry

Spine

11.A Anatomy

11.B Bone physiology & molecular biology

11.C Response to injury

11.D Genetics

11.E Biomechanics

Cell & Viral Biology

12.A Control of cell fate

12.B Viral vectors

12.C Mechanisms of neoplasia

Pharmacology

Category C – Pathology

Lesions that are:

Developmental & Hereditary

Vascular

Neoplastic

Traumatic

Infection

Metabolic

Demyelinating

Degenerative

Neuromuscular

Toxic
Other

Category D – Imaging

Study by:
Plain film
Angiography
Myelography
CT Scan
MR Scans
Nuclear Scan
Therapeutic Radiology
Ultrasonography
Other
PET Scans

Implicit in each group in this category is distribution among cranial, spinal and extremity studies, as well as infections, trauma, tumors and vascular lesions in the major categories like CAT scans, angiograms, myelograms and radiograms.

Category E – Neurology

Epilepsy
Demelinating
Degenerative
Behavioral
Developmental
Infection
Metabolic
Endocrine
Electrical Studies, including EMG, NCV, & EEG etc.
Muscle & Nerve
Pain
Pharmacology
Toxic
Neuro-ophthalmology
Neurologic Signs & Examinations
Vascular
Movement Disorders
Genetic
Other

Category F – Neurosurgery

Cranial – Abscess & infection
Cranial – Congenital
Cranial – Trauma
Cranial – Tumor
Cranial – Vascular
Cranial – Other
Extracranial Vascular
Spinal – Congenital
Spinal – Degenerative
Spinal – Infection
Spinal – Trauma
Spinal – Tumor
Spinal – Vascular
Spinal – Other
Complications – Cranial & Spinal
Cranial Nerves
Peripheral Nerve
Pain
Endocrine
Surgical Technique
Autonomic
Pharmacology
Other

Category G – Fundamental Clinical Skills/Critical Care

Fluid & Electrolytes
Shock
Cardiovascular
Multiple Trauma
Hematology & Coagulopathies
Nutrition
Pulmonary
Endocrine
Gastrointestinal
Genito-urinary
Pharmacologic
Infection & Immunologic
Toxicology
Wound Healing
Anesthesia
Other

Category H – Basic & Clinical Biostatistics, Research Design