

Al Balqa Applied University

Collage of Medicine

Anatomy Lab Check List

Block: **Nervous System and Special Senses (31500311)**

Lab Title: **Neuroanatomy 1**

Lab Objectives:

- Identify major components of brain.
- Know major lobes, major gyri and sulci.
- Identify major components of brainstem, important landmarks
- Identify the main arteries of the brain including the circle of Willis.

Brain Components

- Cerebrum
- Diencephalon
 - Thalamus, hypothalamus & epithalamus (pineal gland & habenular nuclei)
- Cerebellum
- Brainstem
 - medulla, pons & midbrain

Cortex: Structure & Function

- Cerebrum
 - Longitudinal fissure
 - Cerebral hemispheres
 - Preoccipital notch
 - Cerebral cortex
- Cerebral cortex
 - Cerebral lobes
 - Frontal
 - Parietal
 - Temporal
 - Occipital
 - Insula

- Sulci separate between lobes
 - Central sulcus
 - Lateral sulcus (of Sylvius)
 - Parieto-occipital sulcus
 - Calcarine sulcus
- Main sulci within cerebral lobes
 - Frontal lobe
 - Precentral,
 - Superior frontal
 - Inferior frontal
 - Olfactory
 - Cingulate
 - Parietal lobe
 - Postcentral,
 - Intraparietal
 - Cingulate
 - Temporal lobe
 - Superior temporal
 - Middle temporal
 - Occipitotemporal
 - Collateral
 - Occipital lobe
 - Calcarine
- Main gyri & structures in the cerebral lobes
 - Frontal lobe
 - Precentral gyrus
 - Superior frontal gyrus
 - Middle frontal gyrus
 - Inferior frontal gyrus
 - Orbital gyri
 - Triangular gyrus
 - Opercular gyrus
 - Rectus (straight) gyrus
 - Medial frontal gyrus
 - Olfactory bulb
 - Olfactory tract
 - Medial & lateral olfactory striae
 - Anterior perforating substance
 - Parietal lobe
 - Postcentral gyrus
 - Superior parietal lobule

- Inferior parietal lobule
 - Supramarginal gyrus
 - Angular gyrus
 - Precuneus
- o Temporal
 - Superior temporal gyrus
 - Transverse temporal gyri (of Heschl)
 - Middle temporal gyrus
 - Inferior temporal gyrus
 - Occipitotemporal gyrus (fusiform gyrus)
 - Parahippocampal gyrus
 - Uncus
- o Occipital lobe
 - Lingual gyrus
 - Cuneus
- o Common (frontal & parietal lobes) gyri
 - Cingulate
 - Paracentral lobule
- Functional cortical areas
 - o Primary areas
 - Primary sensory areas
 - Primary somatosensory area- postcentral gyrus (area 3, 1, & 2)
 - Primary visual area- occipital lobe (area 17)
 - Primary auditory area- temporal lobe (areas 41&42)
 - Primary gustatory area- base of the postcentral gyrus
 - Primary olfactory area- temporal lobe
 - Primary motor areas
 - Primary motor area- precentral gyrus (area 4)
 - Broca's speech area- left cerebral hemisphere (areas 44&45)
 - o Association areas
 - Somatosensory association area- posterior to primary somatosensory area
 - Visual association area- occipital lobe (areas 18&19)
 - Auditory association area- temporal lobe
 - Wernicke's area- left temporal and parietal lobes (areas 39&40)
 - Prefrontal cortex- anterior portion of the frontal lobe
- Commissural fibers
 - o Corpus callosum
 - Rostrum
 - Genu
 - Forceps minor

- Body
 - Splenium
 - Forceps major
- o Anterior commissure
- o Posterior commissure
 - Inferior to pineal gland
- o Habenular commissure
 - Superior to pineal gland
- o Fornix
- Projection fibers
 - o Corona radiata
 - o Internal capsule
 - Anterior limb
 - Genu
 - Posterior limb
 - Optic radiation
 - o Crus cerebri
 - o Pyramid

Blood supply to cortex

- Internal carotid arteries
- Vertebral arteries
- Circle of Willis
- Anterior cerebral artery
- Middle cerebral artery
- Posterior cerebral artery

External features of brainstem

- Ventral Structures
 - o Midbrain
 - Cerebral peduncles (basis pedunculi)
 - Interpeduncular fossa
 - o Pons
 - Basilar pons
 - Basilar sulcus
 - o Bulbopontine sulcus
 - o Medulla oblongata
 - Ventral median fissure
 - Pyramids
 - Decussation of pyramids

- Olives
 - Pre-olivary & post-olivary sulci
 - Inferior cerebellar peduncles
- Dorsal Structures
 - o Corpora quadrigemini (midbrain)
 - Superior & inferior colliculi
 - o Cerebellar peduncles
 - Lateral walls of 4th ventricle
 - o Gracile & cuneate tubercles (closed surface of medulla)
 - Inferior to 4th ventricle
 - o Rhomboid fossa
 - Pontine part
 - Medullary part (open medulla)
 - Posterior median sulcus
 - Medial eminence (pons)
 - Facial colliculus
 - Caudal part of the eminence
 - Sulcus limitans
 - Striae medullares
 - Trigons
 - Vagal trigon (more lateral-inferior)
 - Hypoglossal trigon (more medial-superior)
 - Vestibular areas
 - Lateral points of the fossa
 - Isthmus – superior constriction
 - Obex – inferior narrowing

Plastinated Models:

- Complete Brain
- Half Brain
- Complete Brain with blood vessels
- Half Brain with blood vessels
- Brainstem

Plastic Models:

- Complete Brain
- Half Brain
- Brainstem
- Brain with Blood Vessels