

# Unit 1, Lab 3

## PTA/OTA 106 Regional Anatomy and Physiology

G. Blevins

Updated: Fall 06

### Human Brain Structures:

#### **Primary Embryonic structures:**

|                |               |                 |
|----------------|---------------|-----------------|
| Prosencephalon | Mesencephalon | Rhombencephalon |
|----------------|---------------|-----------------|

#### **Secondary Embryonic structures:**

|               |                |               |
|---------------|----------------|---------------|
| Telencephalon | Diencephalon   | Mesencephalon |
| Metencephalon | Myelencephalon |               |

#### **Cerebral Meninges:**

|            |                 |                    |
|------------|-----------------|--------------------|
| Dura mater | Arachnoid mater | Subarachnoid space |
| Pia mater  |                 |                    |

#### **Cerebral Hemisphere Lobes:**

|          |          |           |
|----------|----------|-----------|
| Frontal  | Parietal | Occipital |
| Temporal | Insula   |           |

#### **Cerebral Hemisphere Grooves and Ridges:**

|                      |                          |                         |
|----------------------|--------------------------|-------------------------|
| Longitudinal Fissure | Precentral Gyrus         | Central sulcus          |
| Postcentral Gyrus    | Parieto-occipital groove | Lateral cerebral sulcus |
| Transverse fissure   | Gyrus                    | Sulcus                  |

#### **Cerebral Hemisphere Surface Anatomy:**

|                     |                        |                     |
|---------------------|------------------------|---------------------|
| Cerebral cortex     | Corpora Quadrigemina   | Superior Colliculus |
| Inferior Colliculus | Medulla Oblongata      | Pons                |
| Cerebral Peduncles  | Pituitary (Hypophysis) | Infundibulum        |
| Mammillary Body     | falx cerebri           |                     |

#### **Cerebral Hemispheres Functional areas:**

|                                   |                            |
|-----------------------------------|----------------------------|
| Motor Association (pre)motor area | Primary motor              |
| Somatosensory Association area    | Primary Somatosensory area |
| Visual Association area           | Primary Visual area        |
| Auditory Association area         | Primary Auditory area      |

#### **Internal Anatomy of the brain:**

|                 |                   |                   |
|-----------------|-------------------|-------------------|
| Corpus Callosum | cerebellum        | Intermediate Mass |
| Pineal gland    | Septum Pellucidum | Thalamus          |
| Hypothalamus    | Arbor Vitae       | Folia             |

#### **Structures Involved with Cerebrospinal fluid:**

|                   |                         |                          |
|-------------------|-------------------------|--------------------------|
| Choroid Plexuses  | Lateral ventricles      | Interventricular Foramen |
| Third ventricle   | cerebral aqueduct       | Fourth ventricle         |
| Lateral apertures | median apertures        | Subarachnoid space       |
| Arachnoid Villi   | Superior sagittal sinus |                          |

**Cranial Nerves:**

|               |                       |                      |
|---------------|-----------------------|----------------------|
| (1) Olfactory | (2) Optic             | (3) Oculomotor       |
| (4) Trochlear | (5) Trigeminal        | (6) Abducens         |
| (7) Facial    | (8) Vestibulocochlear | (9) Glossopharyngeal |
| (10) Vagus    | (11) Spinal Accessory | (12) Hypoglossal     |

**Spinal Cord Meninges:**

|            |                 |                    |
|------------|-----------------|--------------------|
| Dura mater | Arachnoid mater | Subarachnoid space |
| Pia mater  |                 |                    |

**Organization of tissue in Brain and Spinal Cord:**

White Matter – Nerve fibers, Myelin Sheath, Neuroglia nuclei

Gray Matter - Motor neuron cell bodies, nerve fibers, Neuroglia nuclei

**Spinal Nerve Plexus:**

**Cervical: Formed from spinal roots (C1-C4 with contributions from C5)**

| Nerves off Cervical plexus | Origin or Root | Distribution                                                   |
|----------------------------|----------------|----------------------------------------------------------------|
| Lesser Occipital           | C2             | (Sensory) Skin of posterior scalp and superior ear             |
| Great Auricular            | C2-C3          | (Sensory) Skin anterior, inferior, and over ear, parotid gland |
| Transverse Cervical        | C2-C3          | (Sensory) Skin over anterior aspect of neck                    |
| Supraclavicular            | C3-C4          | (Sensory) Skin over superior portion of chest and shoulder     |
| Phrenic                    | C3-C5          | (Largely Motor) Diaphragm                                      |
|                            |                |                                                                |

**Other structures:**

Nerve point of the neck