

Overview of Basic Neuroanatomy and Cerebrovascular Anatomy

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Overview of Neuroanatomy and Cerebral Vasculature

- Basic 3D relationships of central nervous system structures
- Most clinically relevant pathway
Corticospinal pathway: voluntary motor control
- Cervical and intracranial cerebral vasculature
- Foundation for understanding acute ischemic stroke

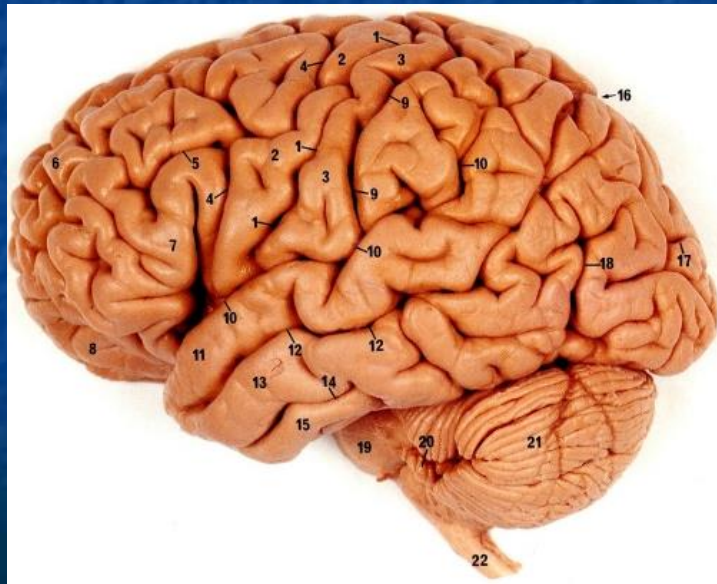
Clinical stroke syndromes

Stroke imaging

Rationale for medical and endovascular stroke treatment

Acute therapies, secondary prevention

Overview of Neuroanatomy



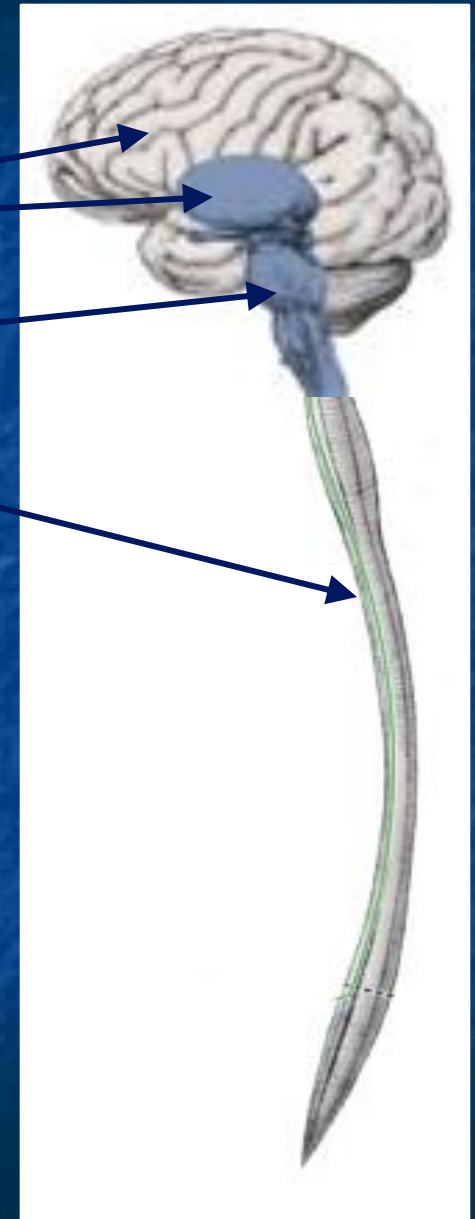
Brain

Cerebral Cortex

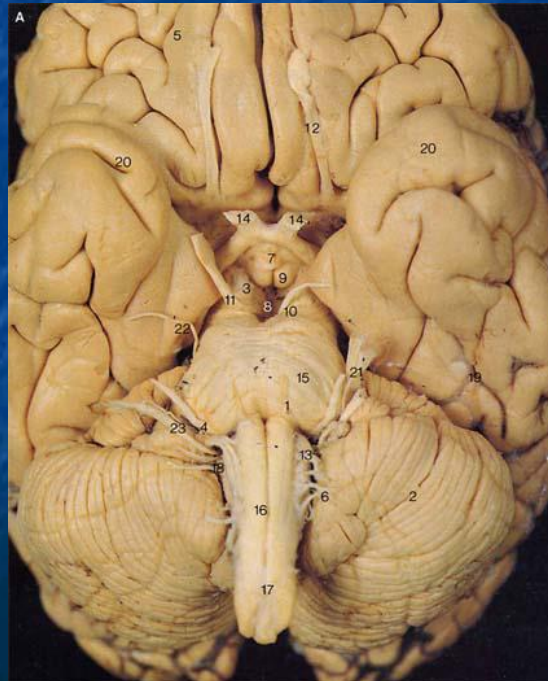
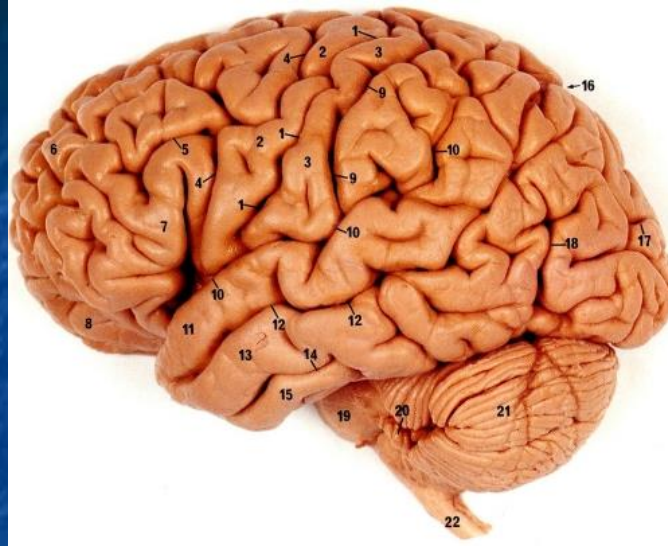
Deep Nuclei

Brainstem

Spinal Cord

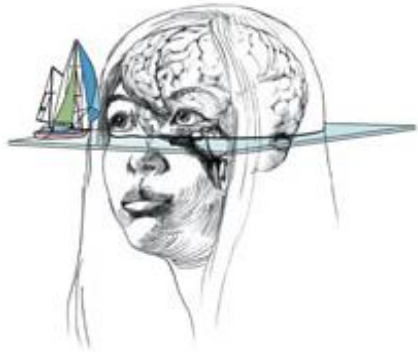


Overview of Neuroanatomy – Orientation is Important



Overview of Neuroanatomy – Orientation is Important

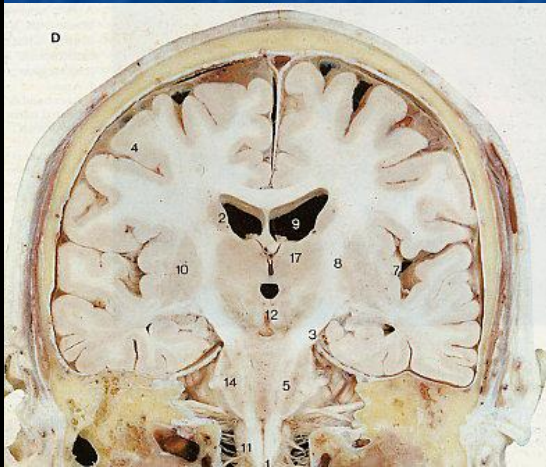
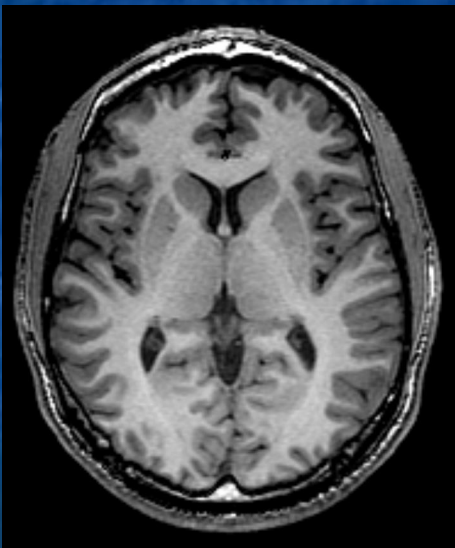
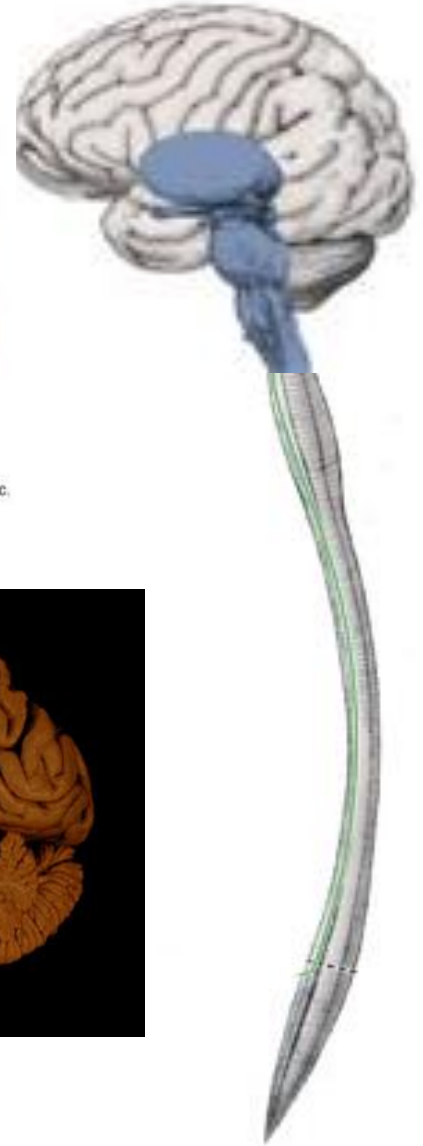
(A) Horizontal plane



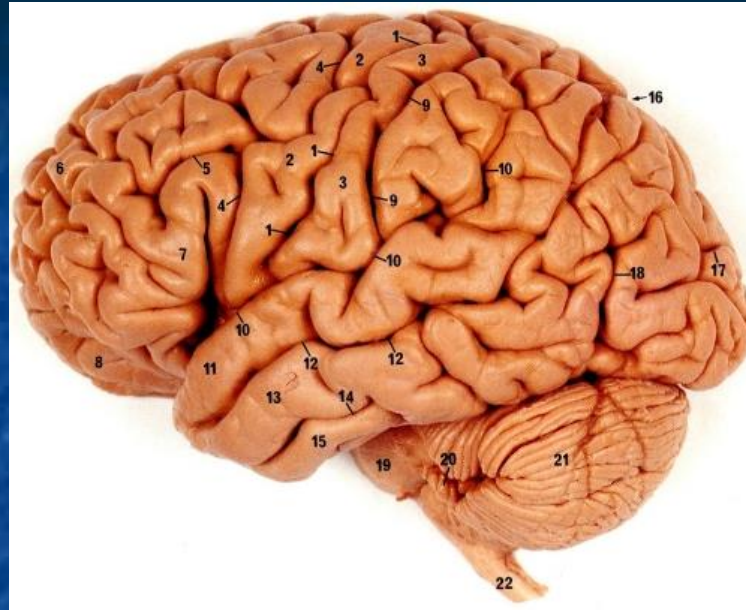
(B) Coronal plane



(C) Sagittal plane

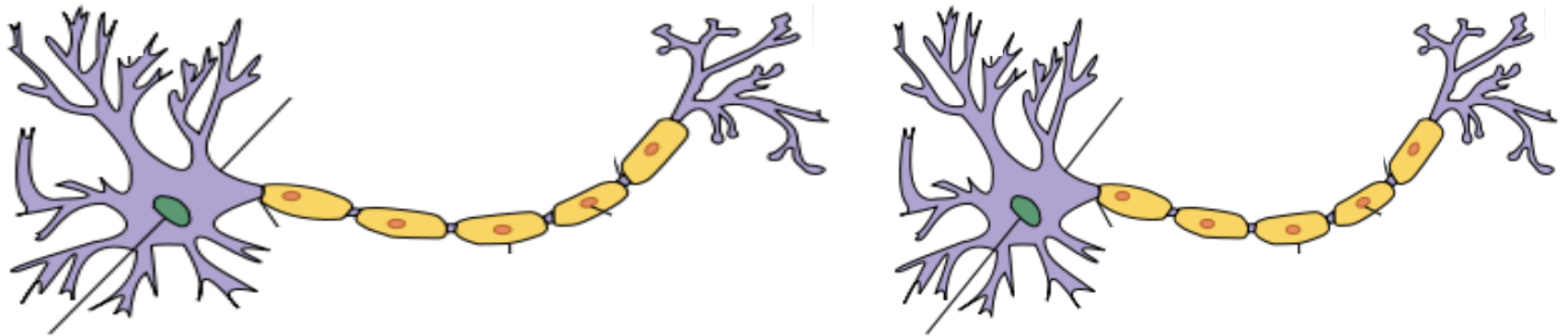


The Fundamental Unit of the Nervous System: the Neuron

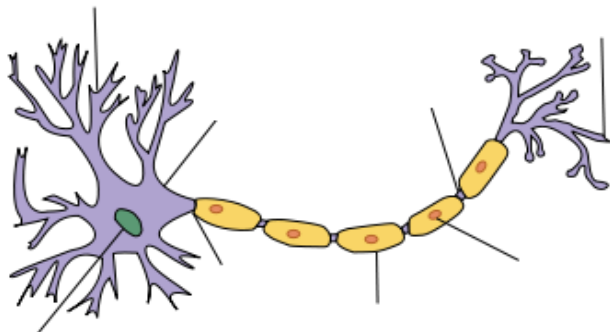


INPUT PROCESSOR

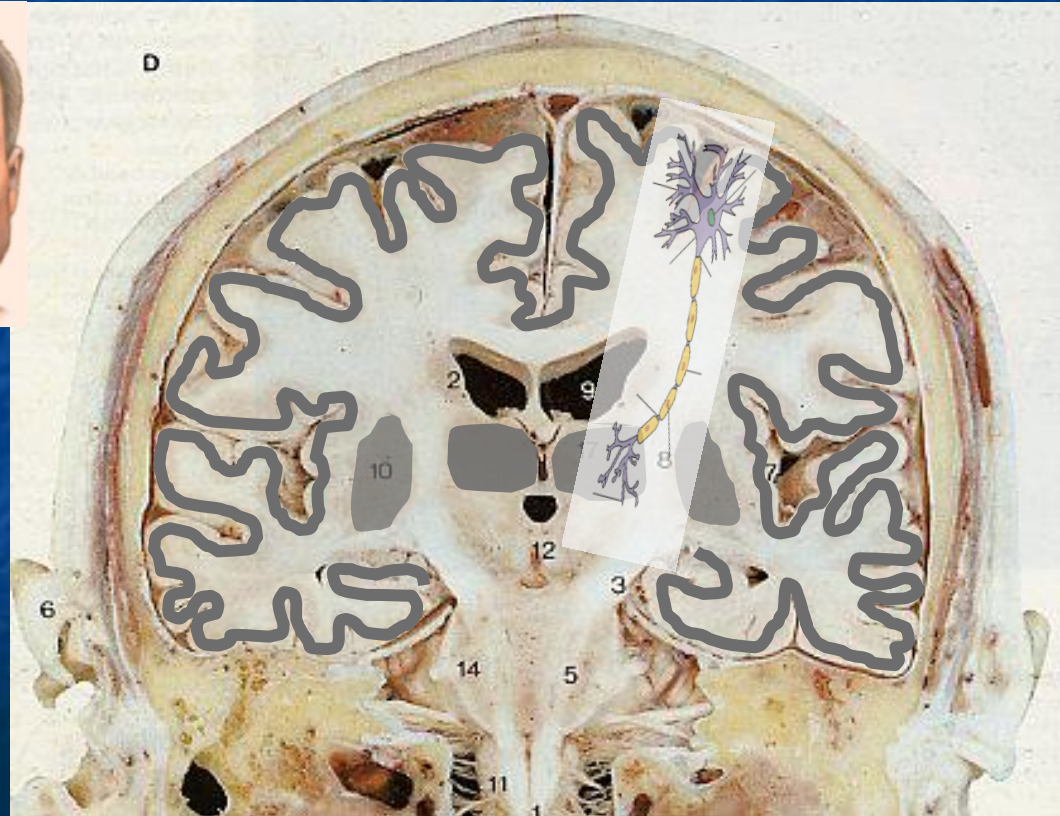
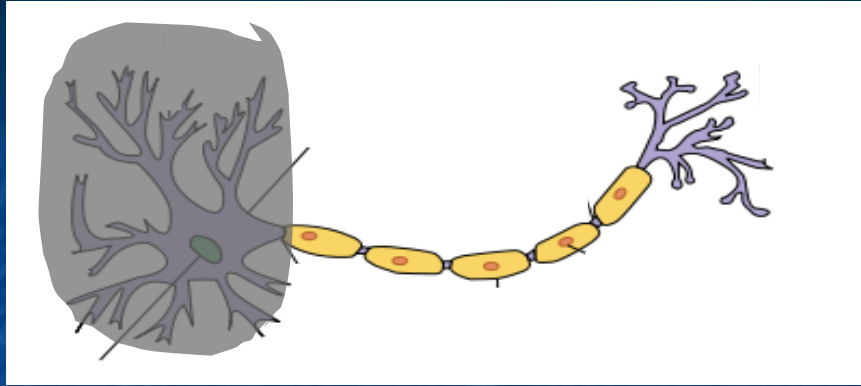
OUTPUT



Overview of Neuroanatomy



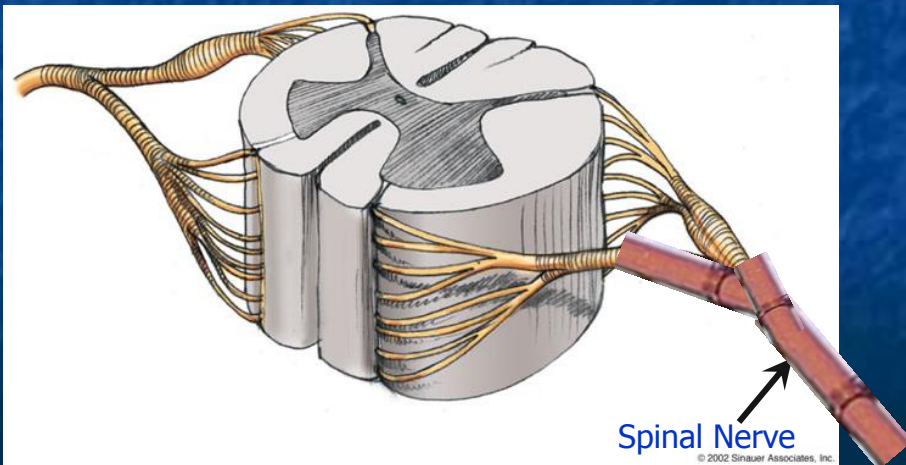
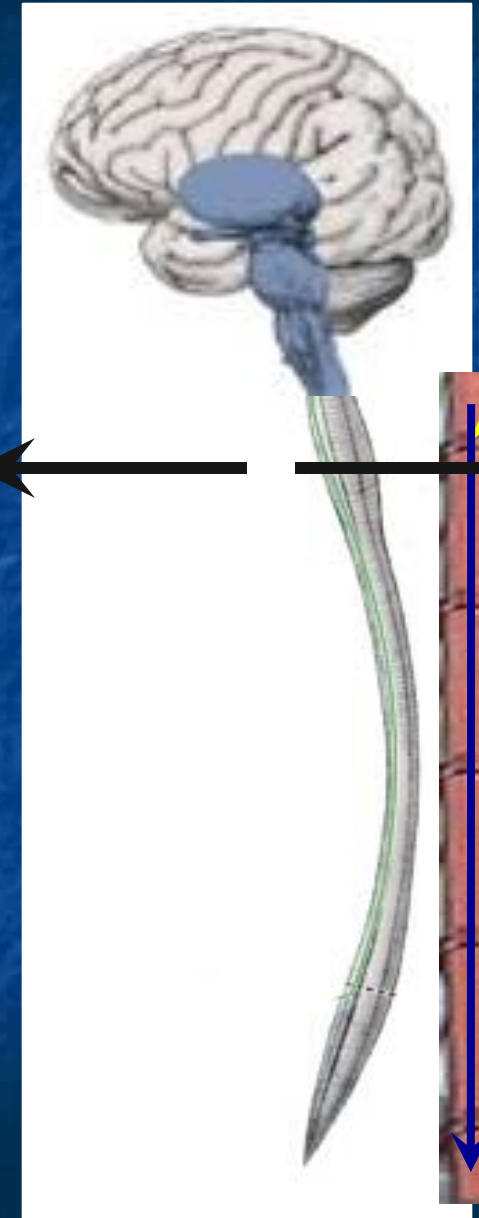
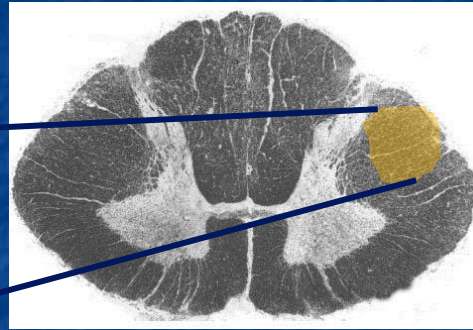
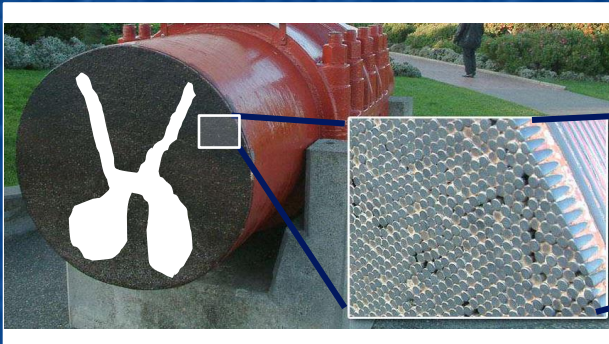
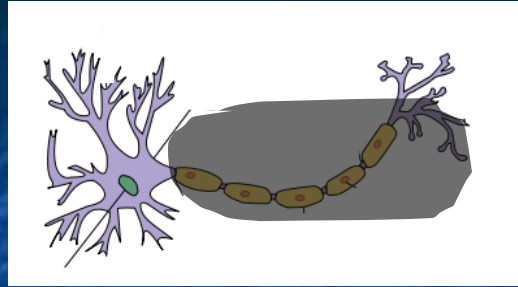
Grey Matter vs White Matter



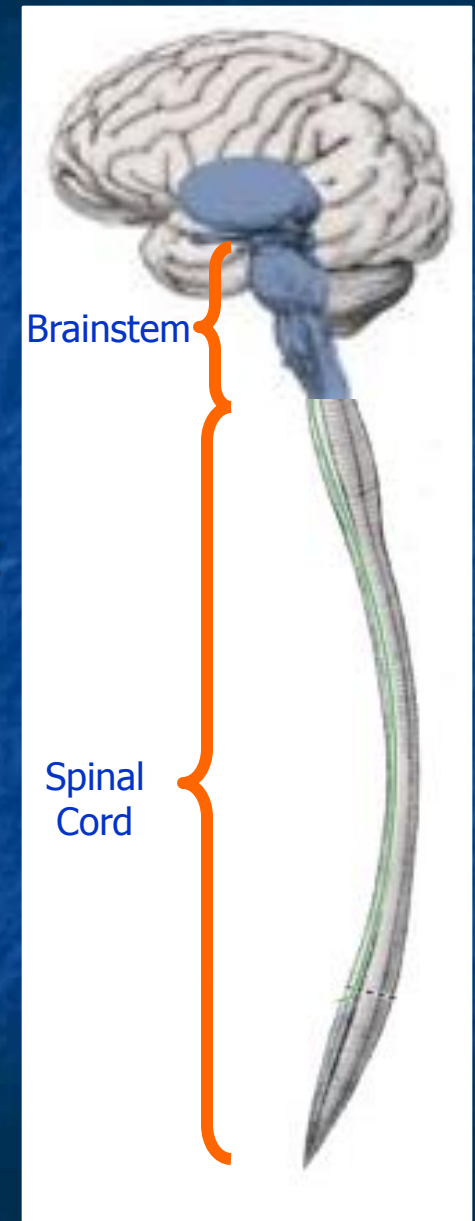
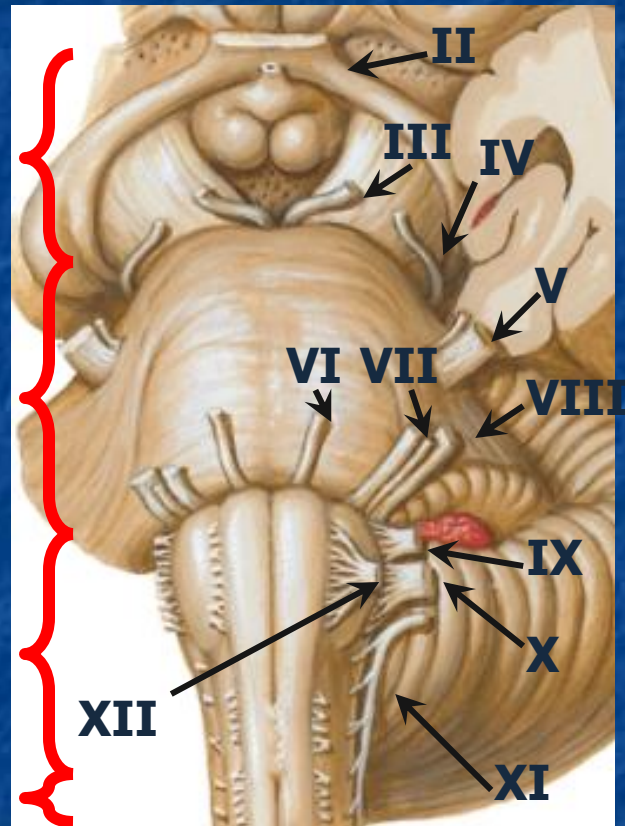
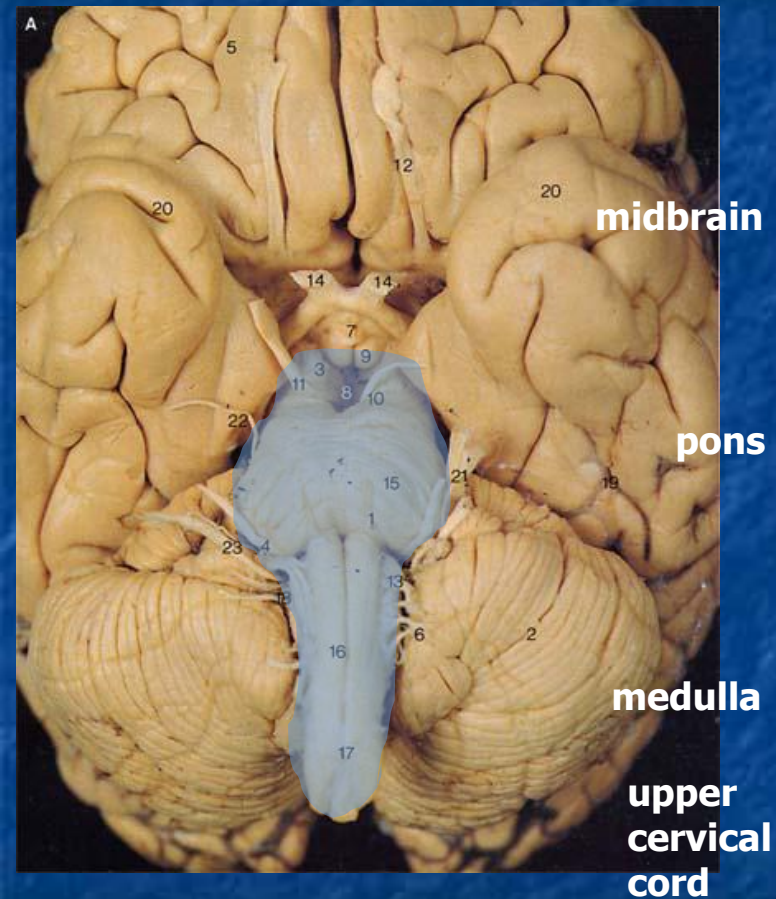
Overview of Neuroanatomy – Spinal Cord

MYELIN STAIN

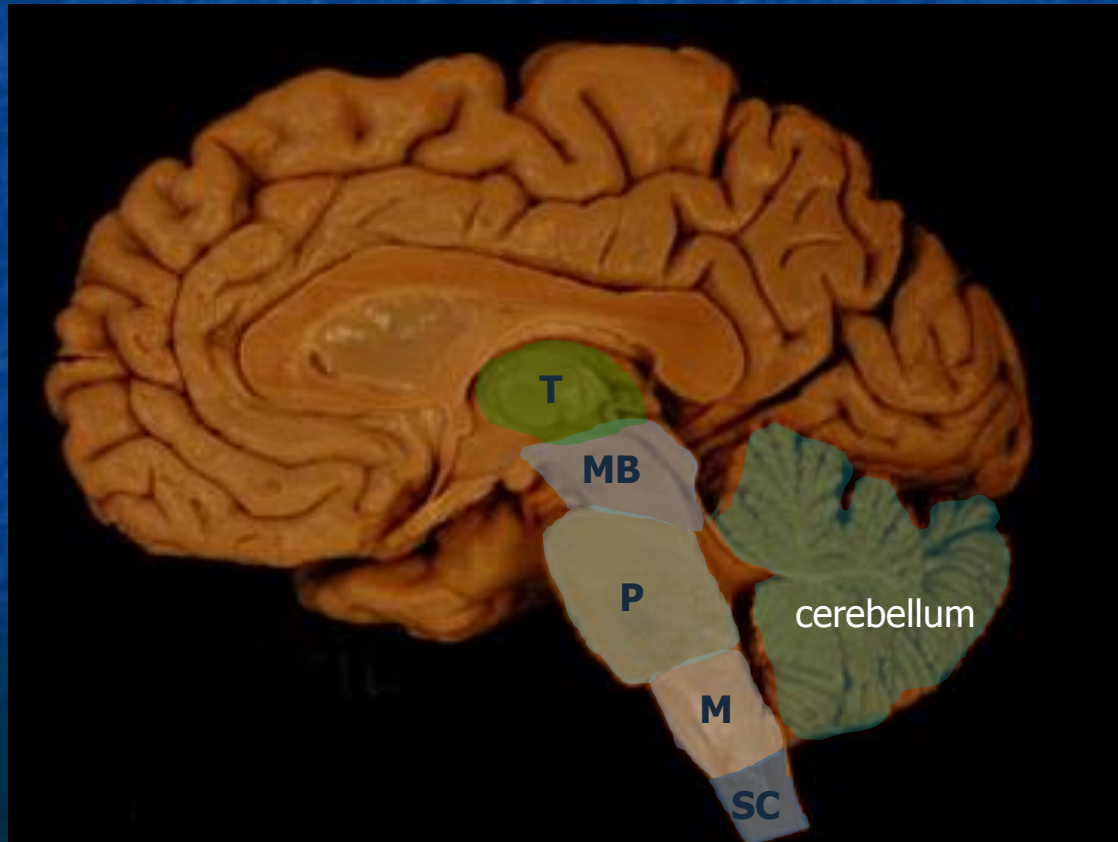
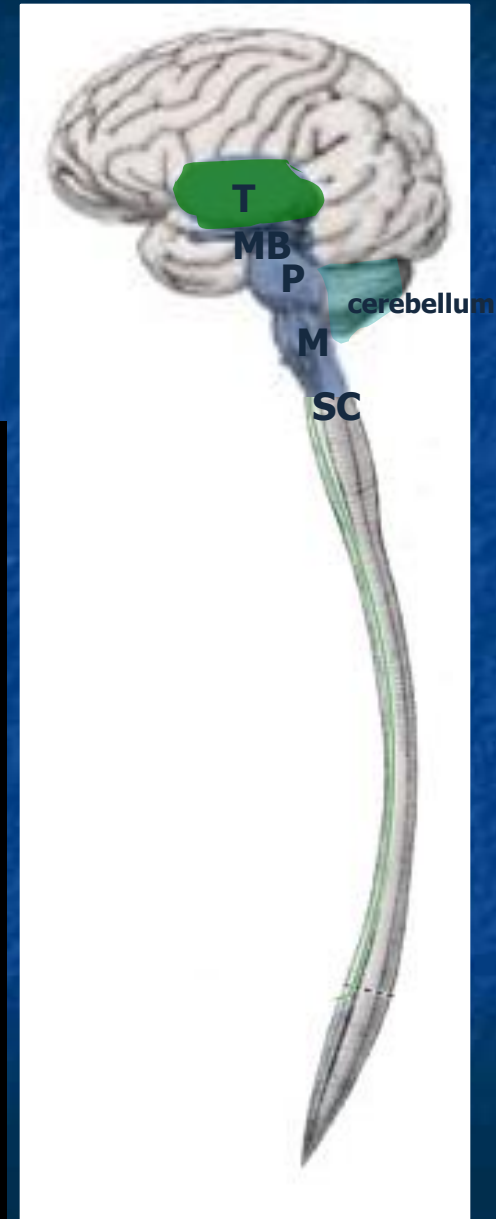
white matter = black
grey matter = white



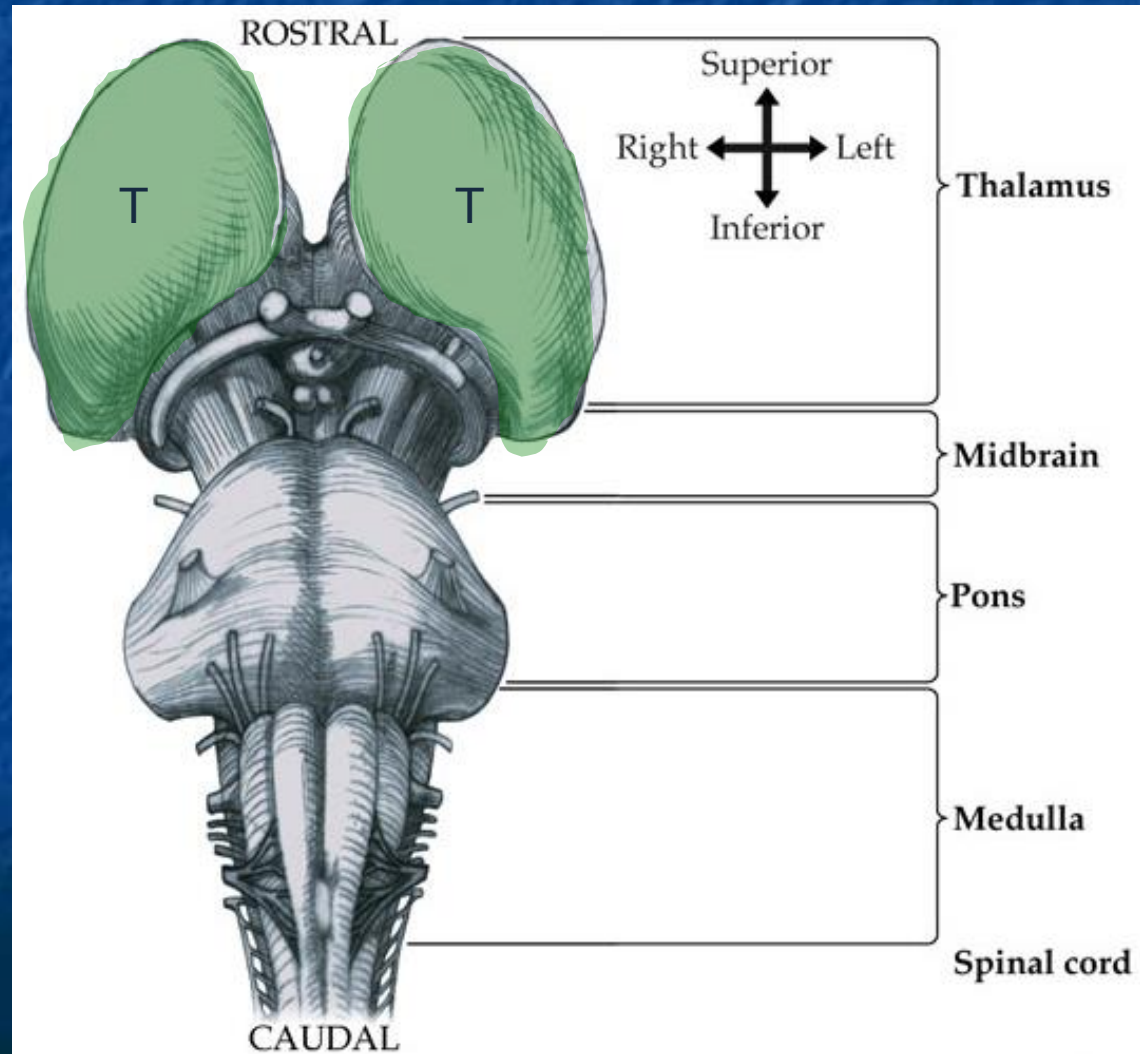
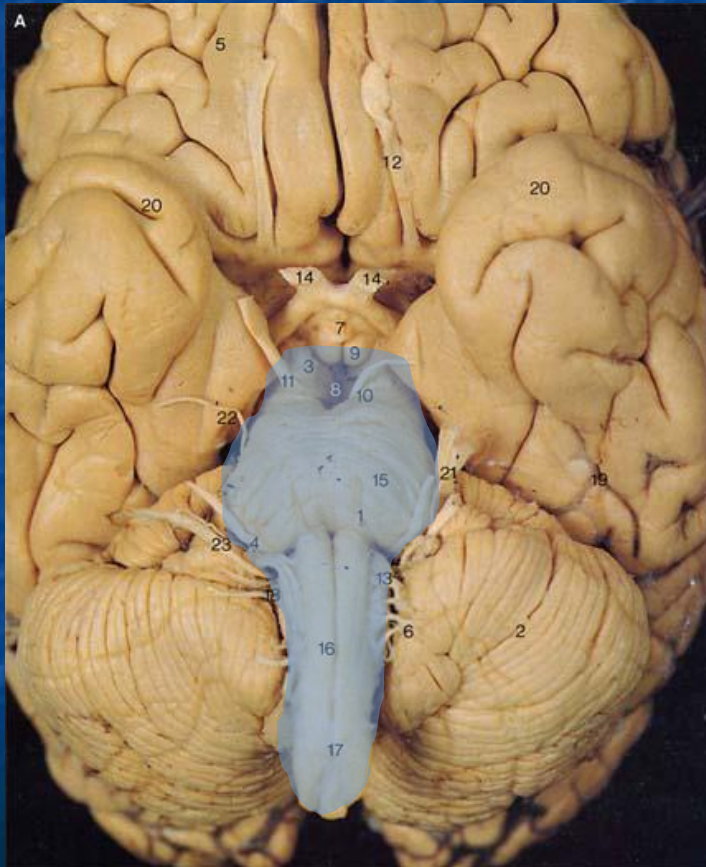
Overview of Neuroanatomy – Brainstem



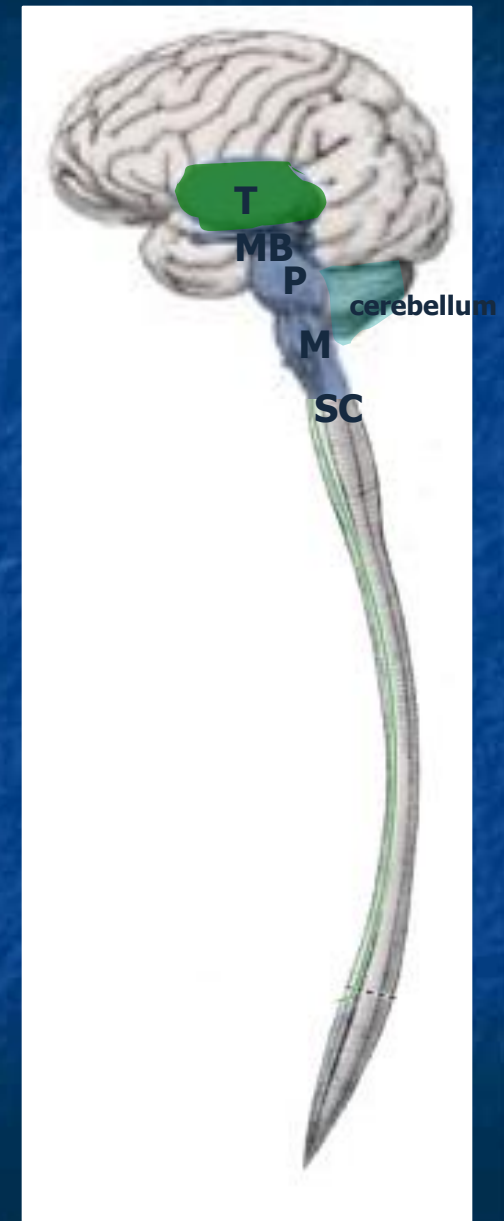
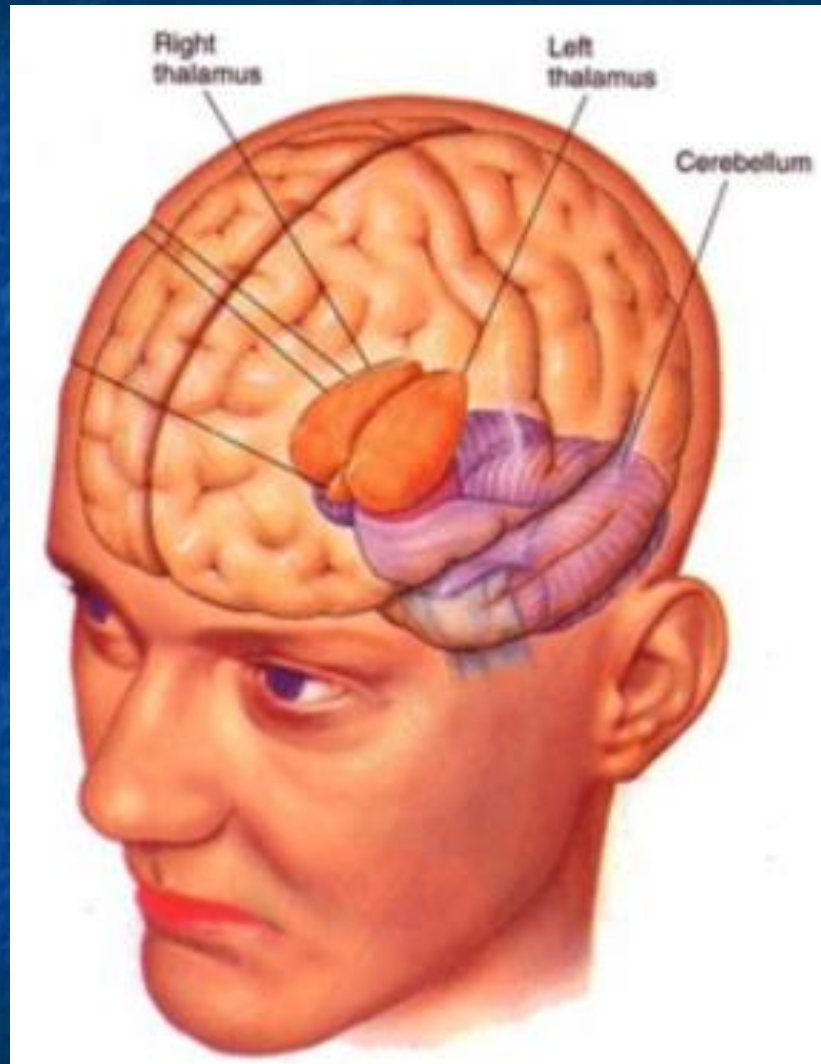
Overview of Neuroanatomy – Brainstem



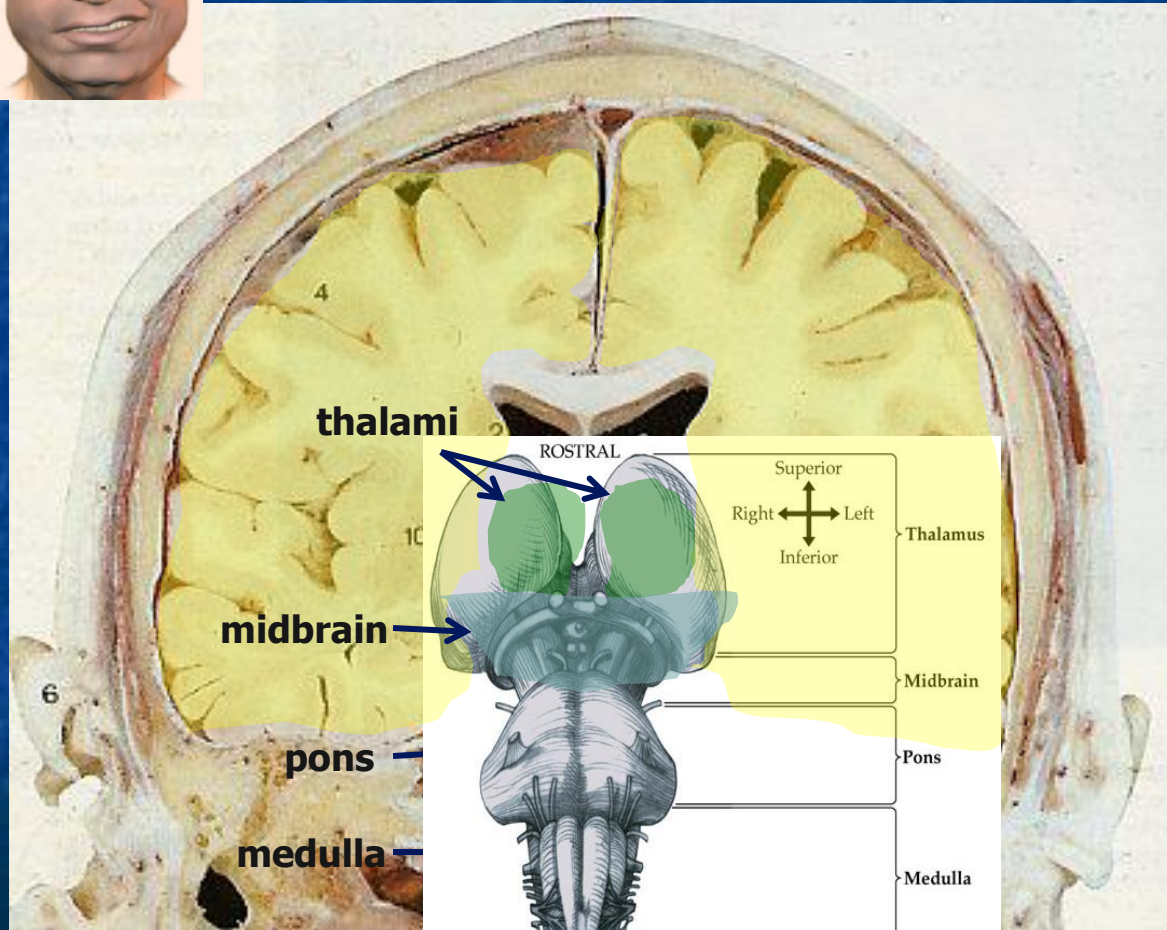
Overview of Neuroanatomy – Thalamus



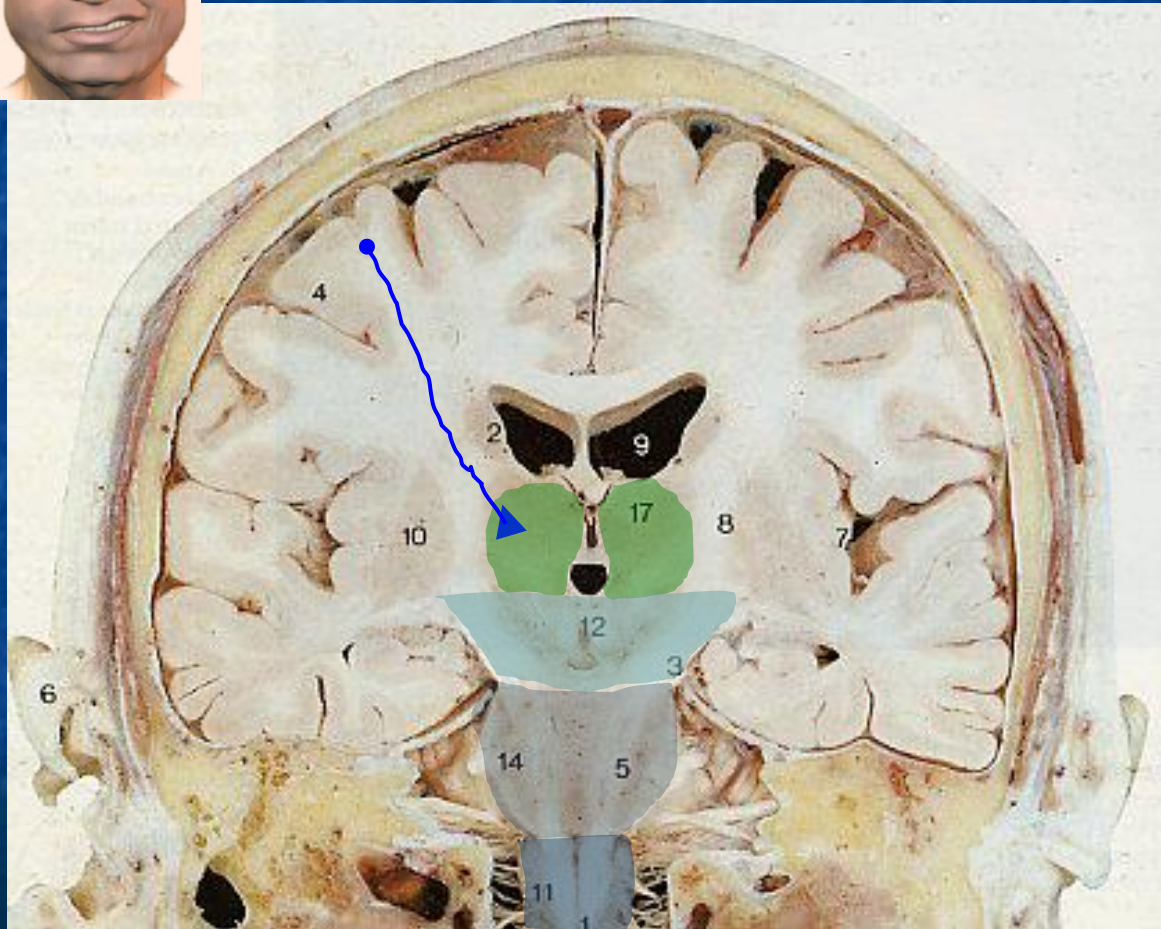
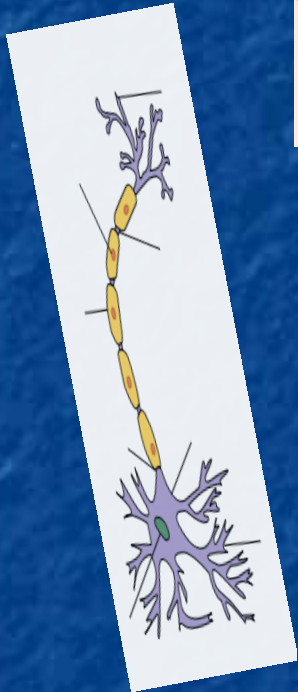
Overview of Neuroanatomy – Thalamus



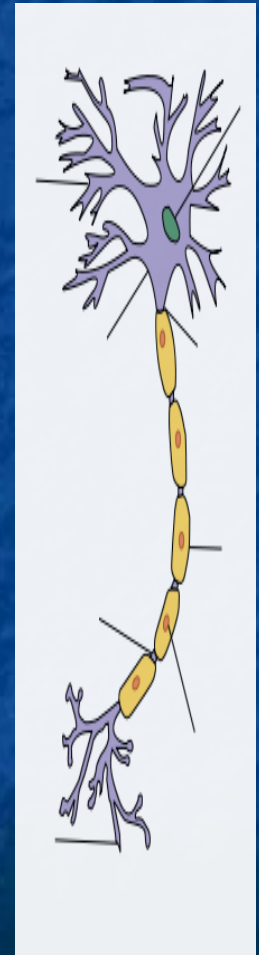
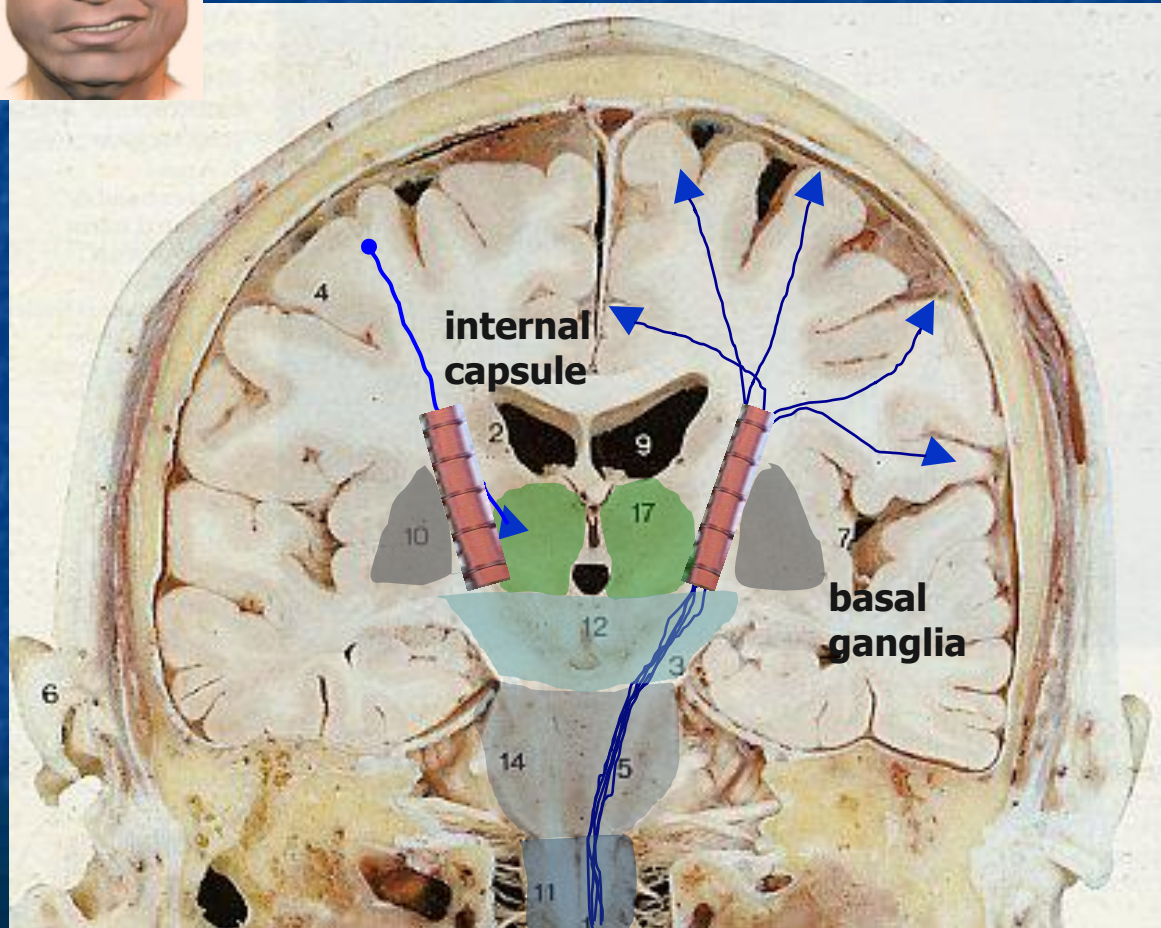
Overview of Neuroanatomy – BRAINSTEM AND THALAMUS



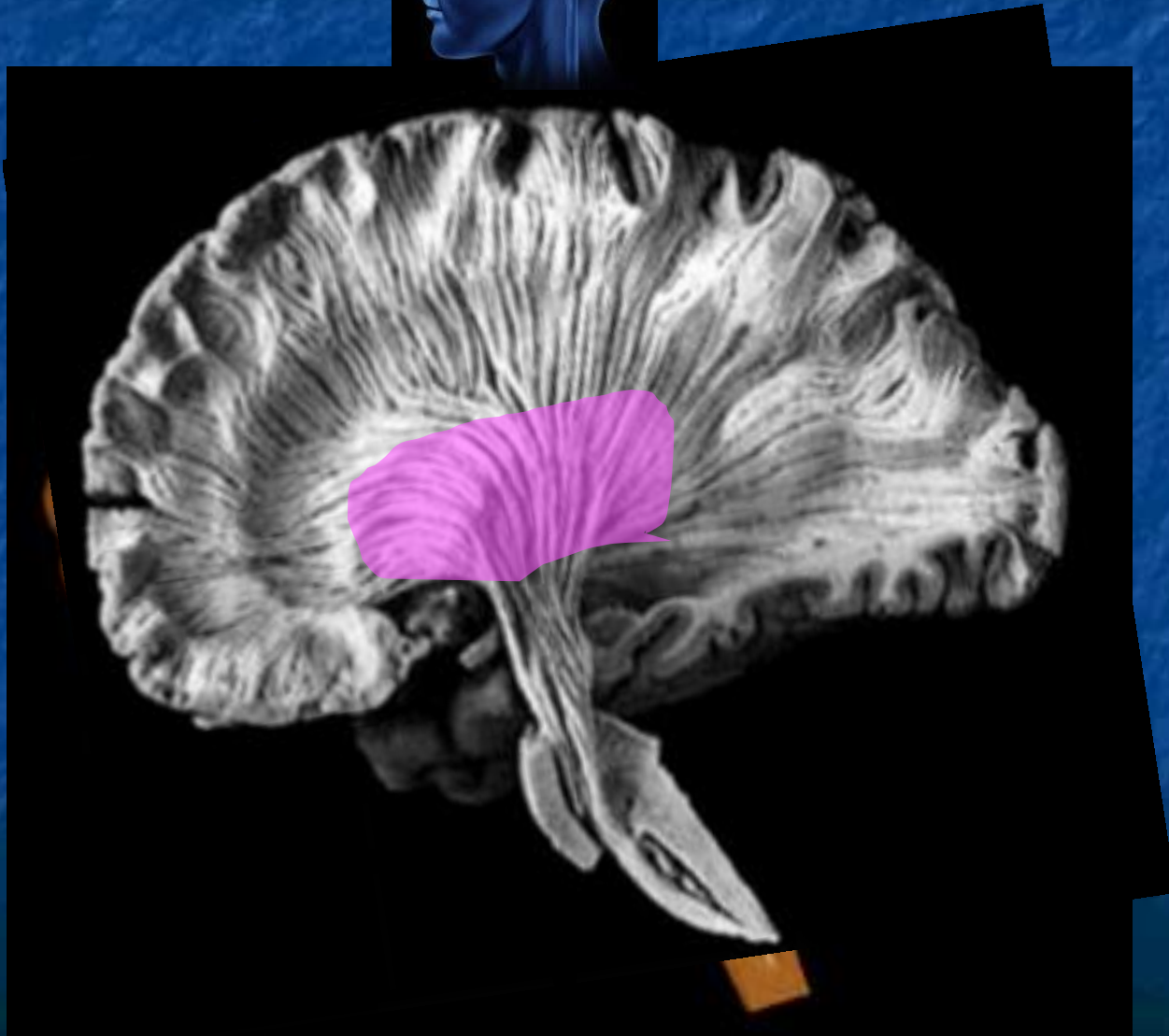
Overview of Neuroanatomy – Axonal Highways



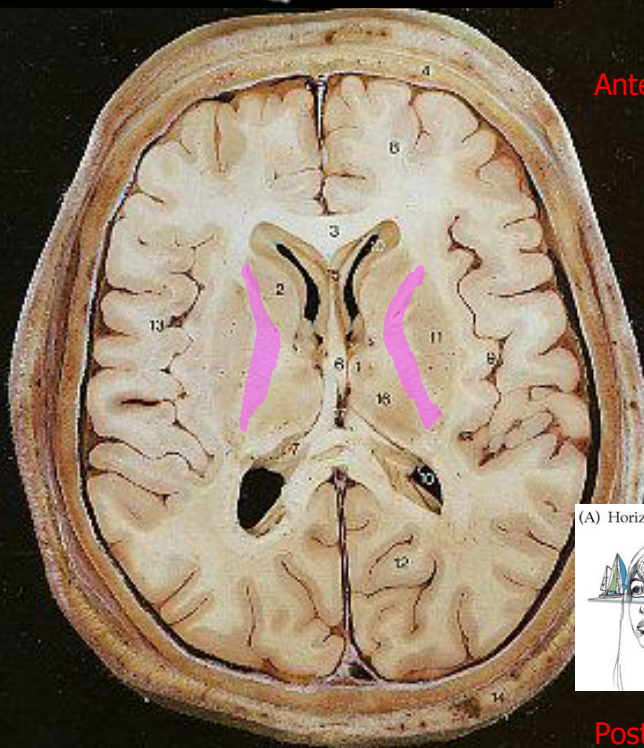
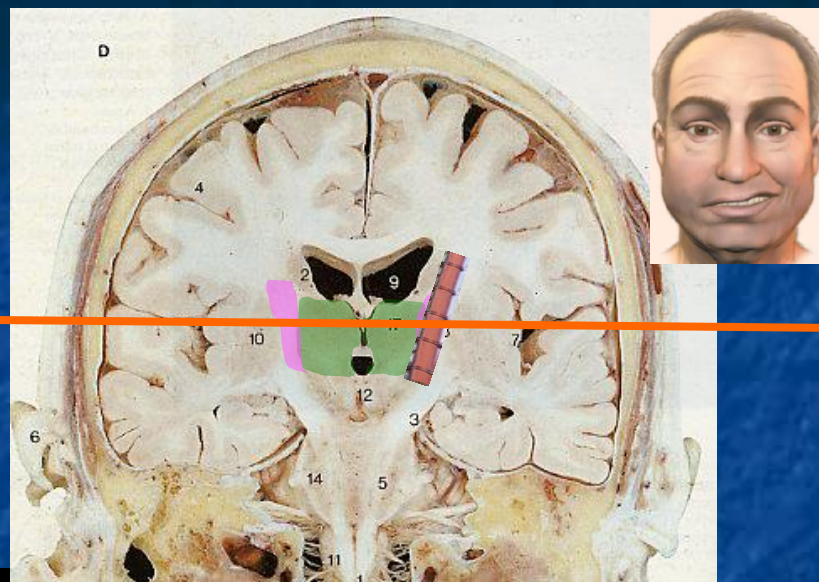
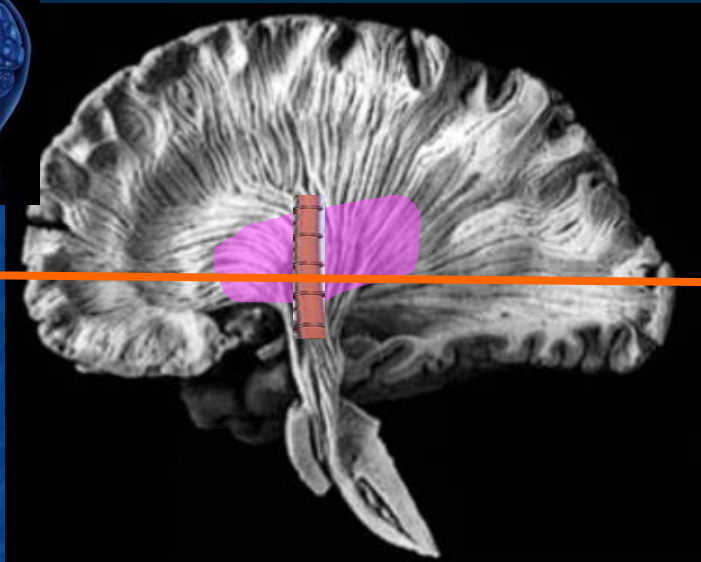
Overview of Neuroanatomy – Axonal Highways



Overview of Neuroanatomy – Internal Capsule



Overview of Neuroanatomy – Internal Capsule

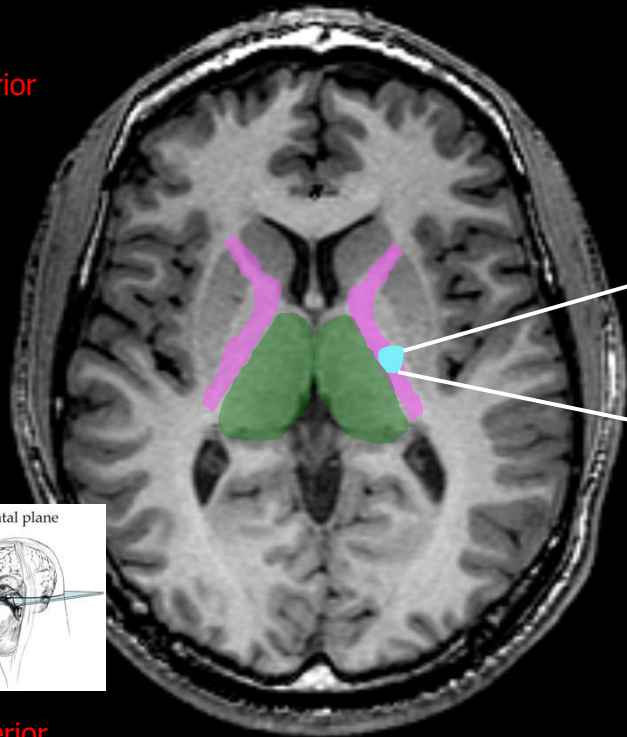


Anterior

(A) Horizontal plane



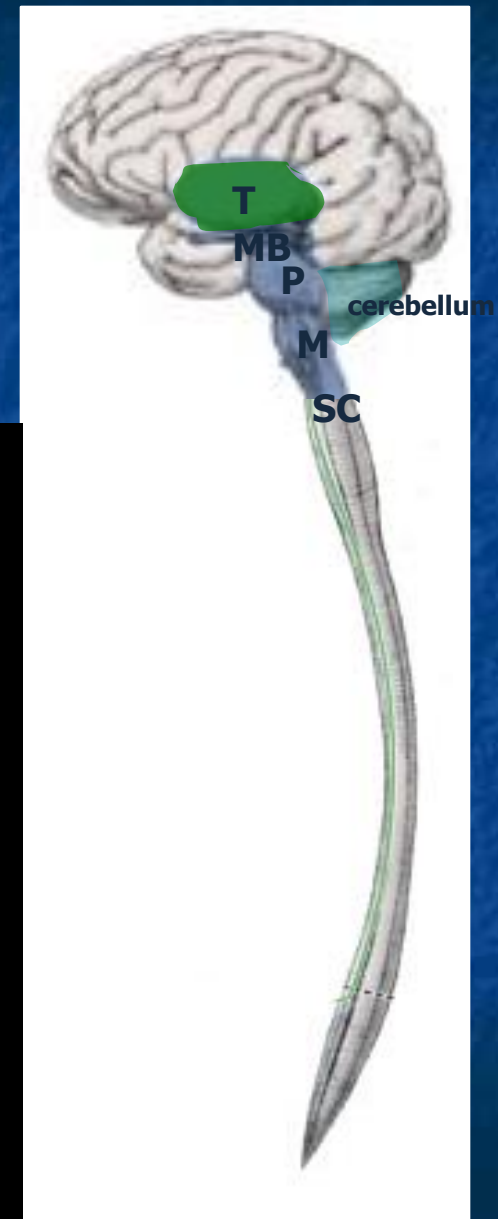
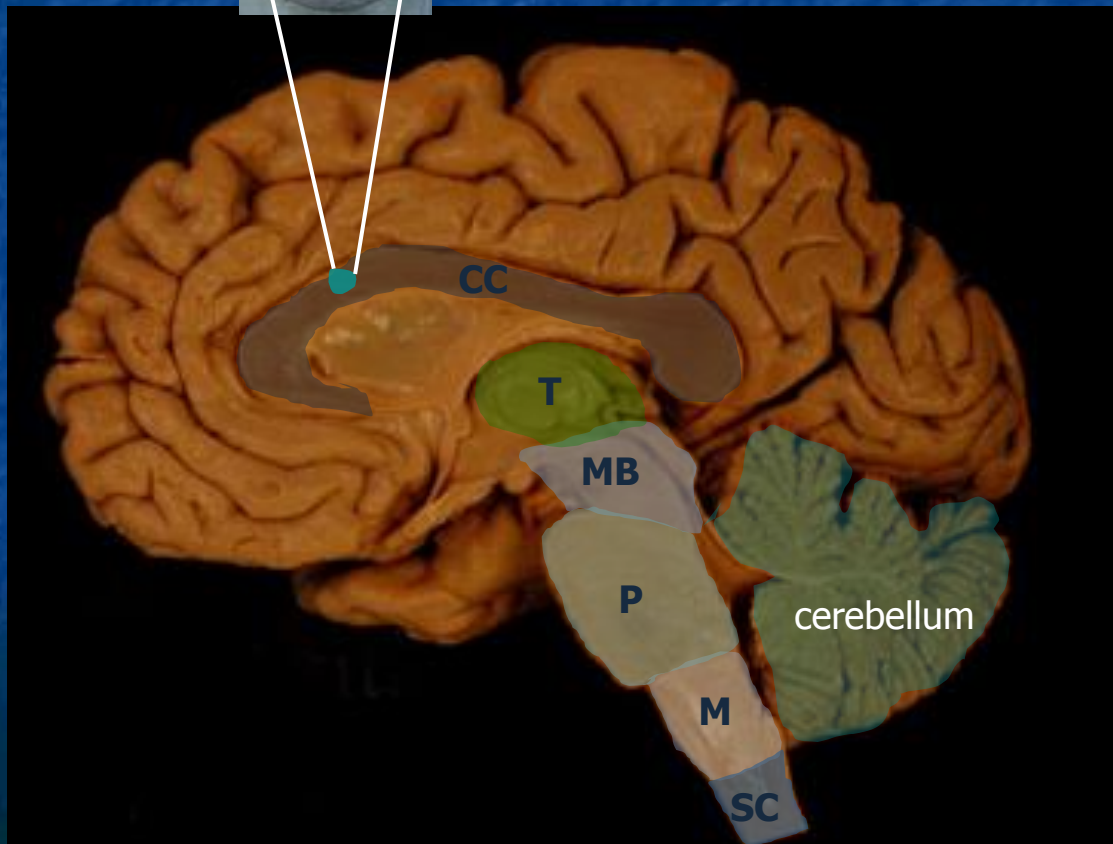
Posterior



Overview of Neuroanatomy – Axonal Highways

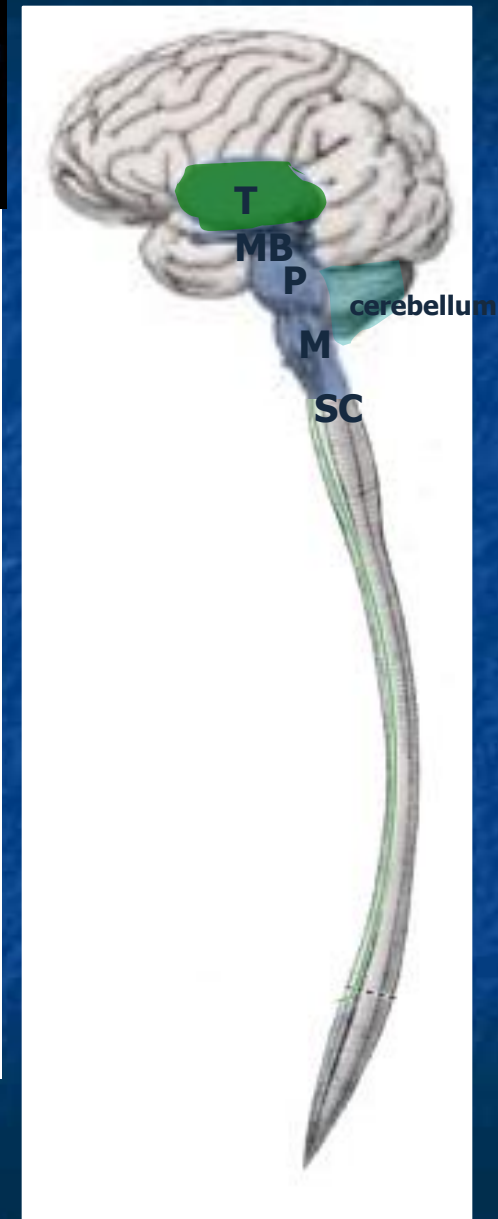
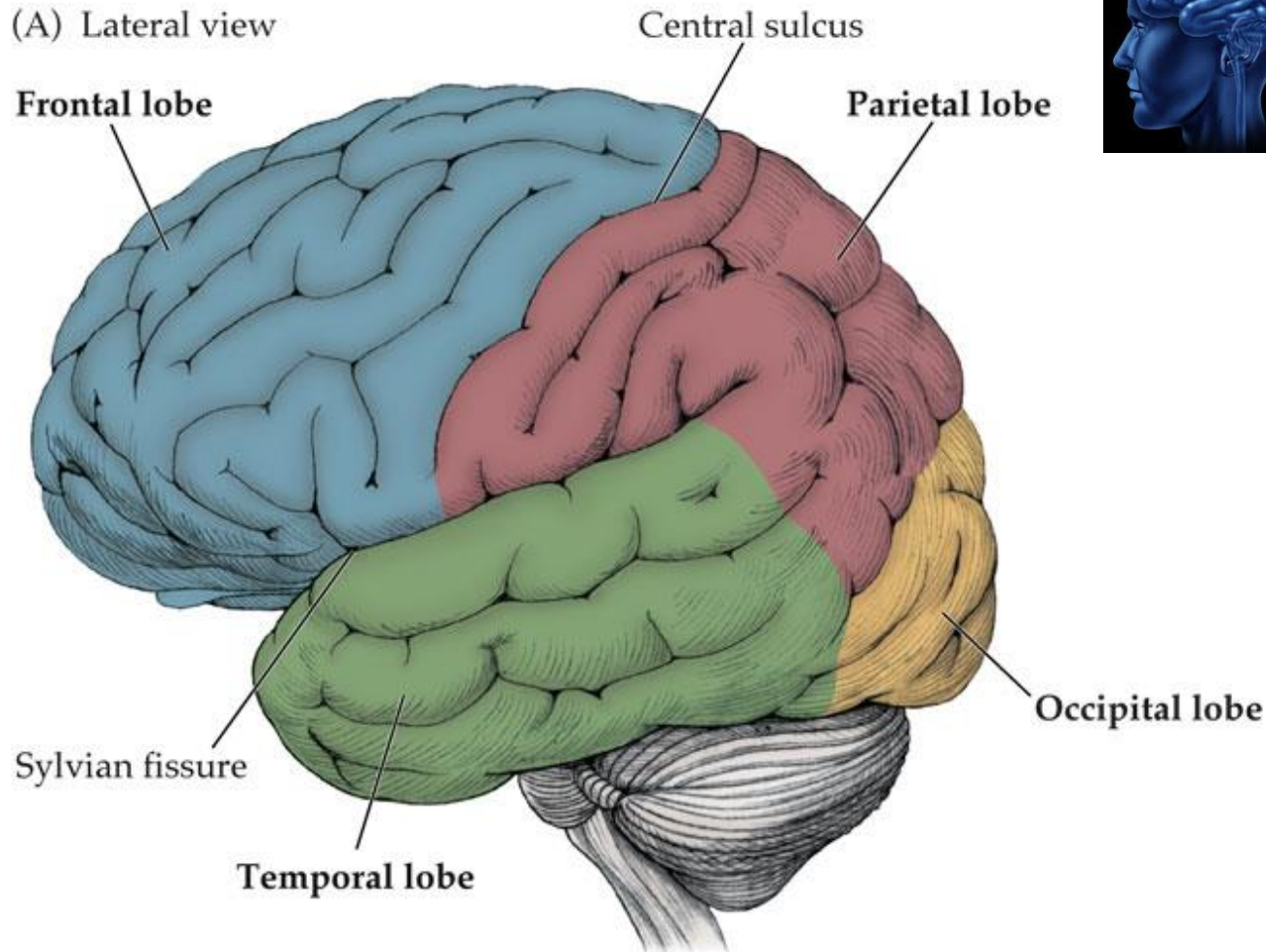


Overview of Neuroanatomy – Corpus Callosum

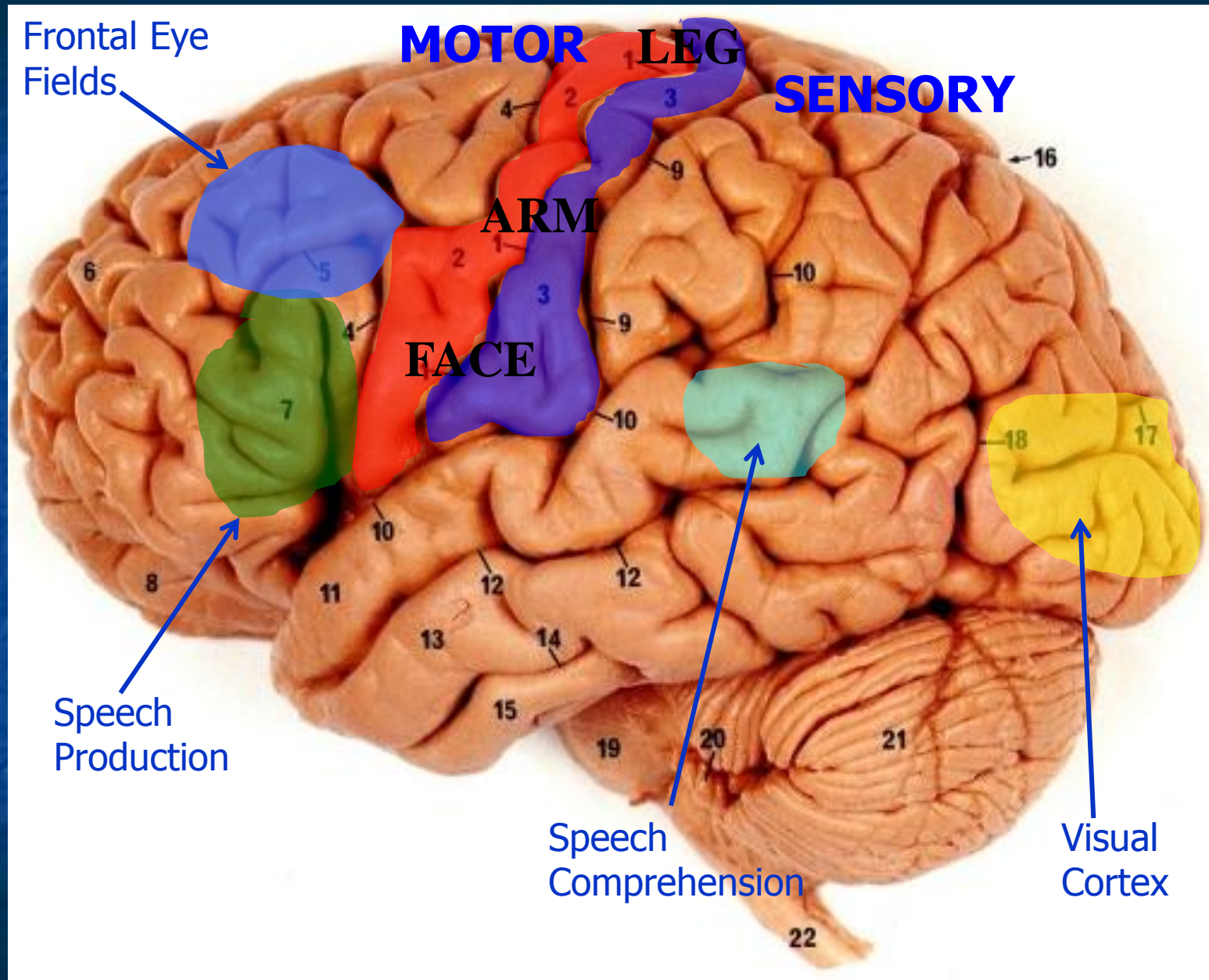


Overview of Neuroanatomy – Cerebral Hemispheres

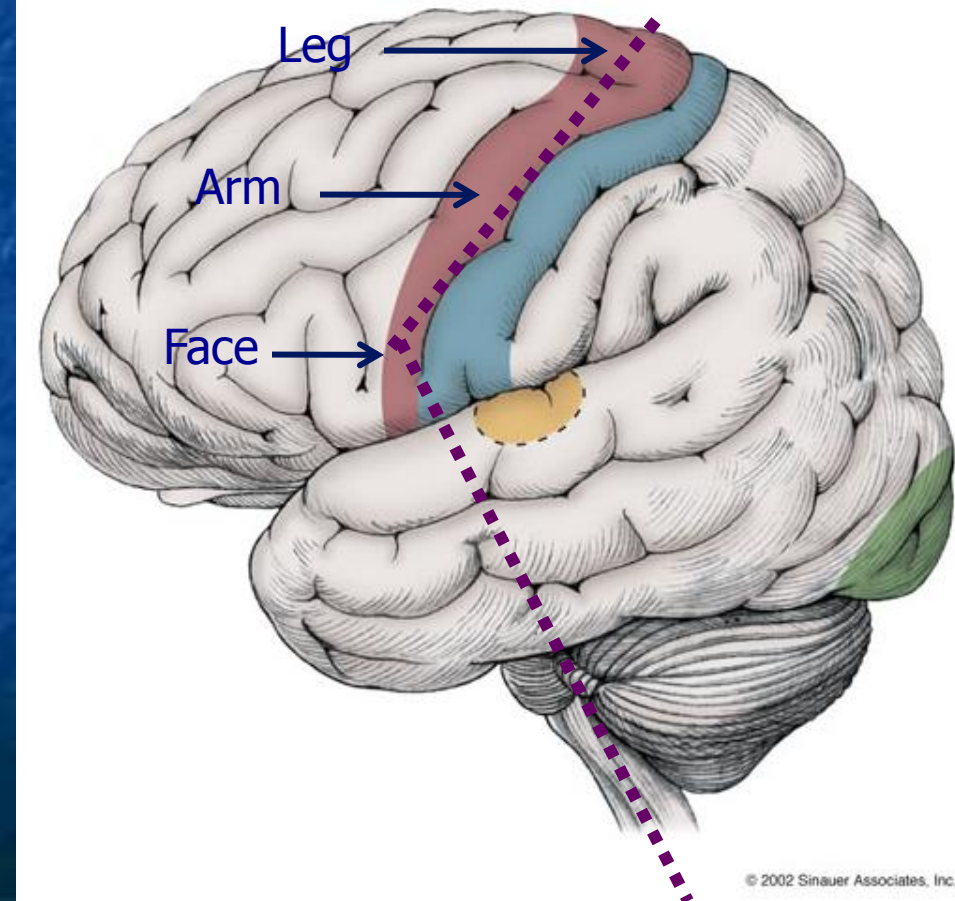
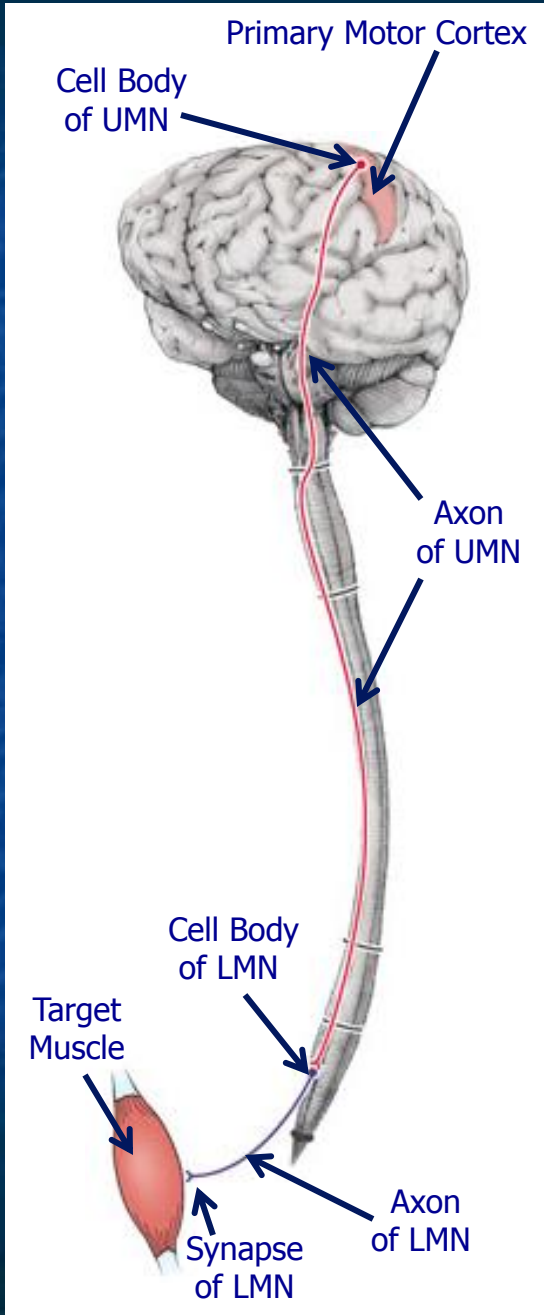
(A) Lateral view



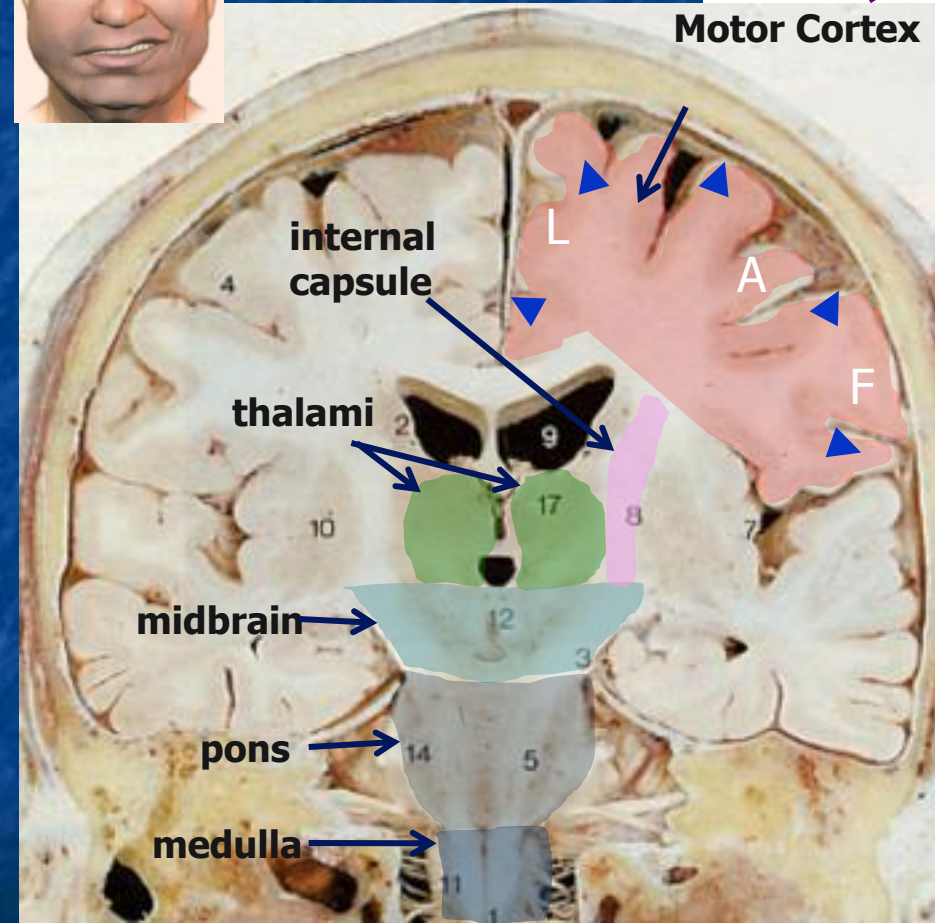
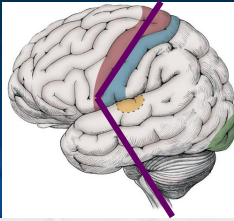
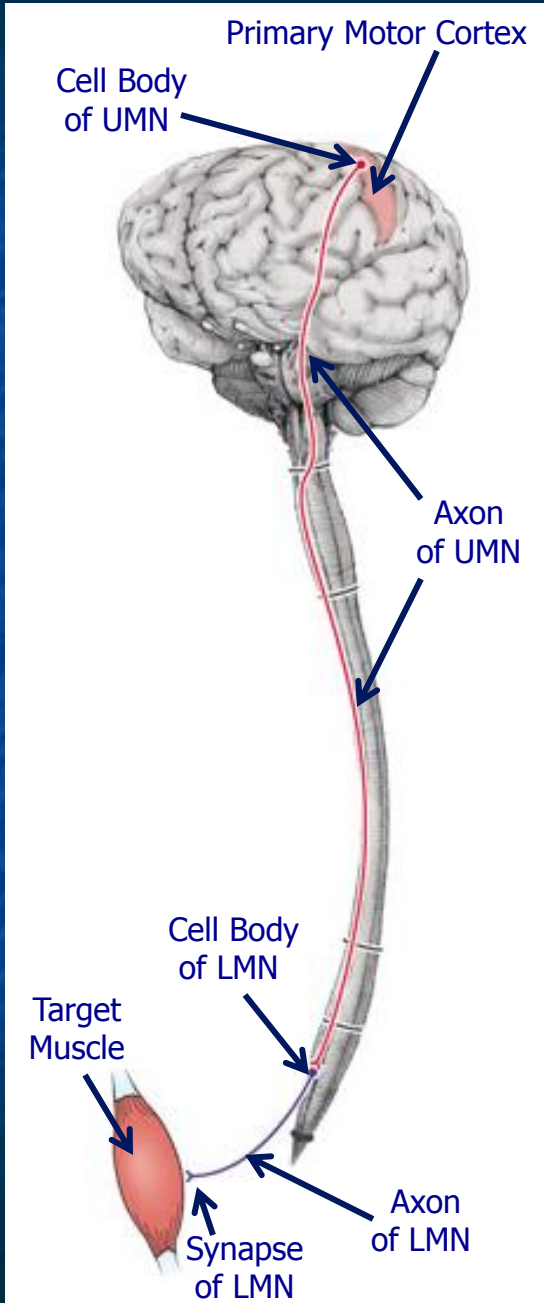
Cortical Anatomy and Functional Organization



Voluntary Motor Control: The Corticospinal Pathway

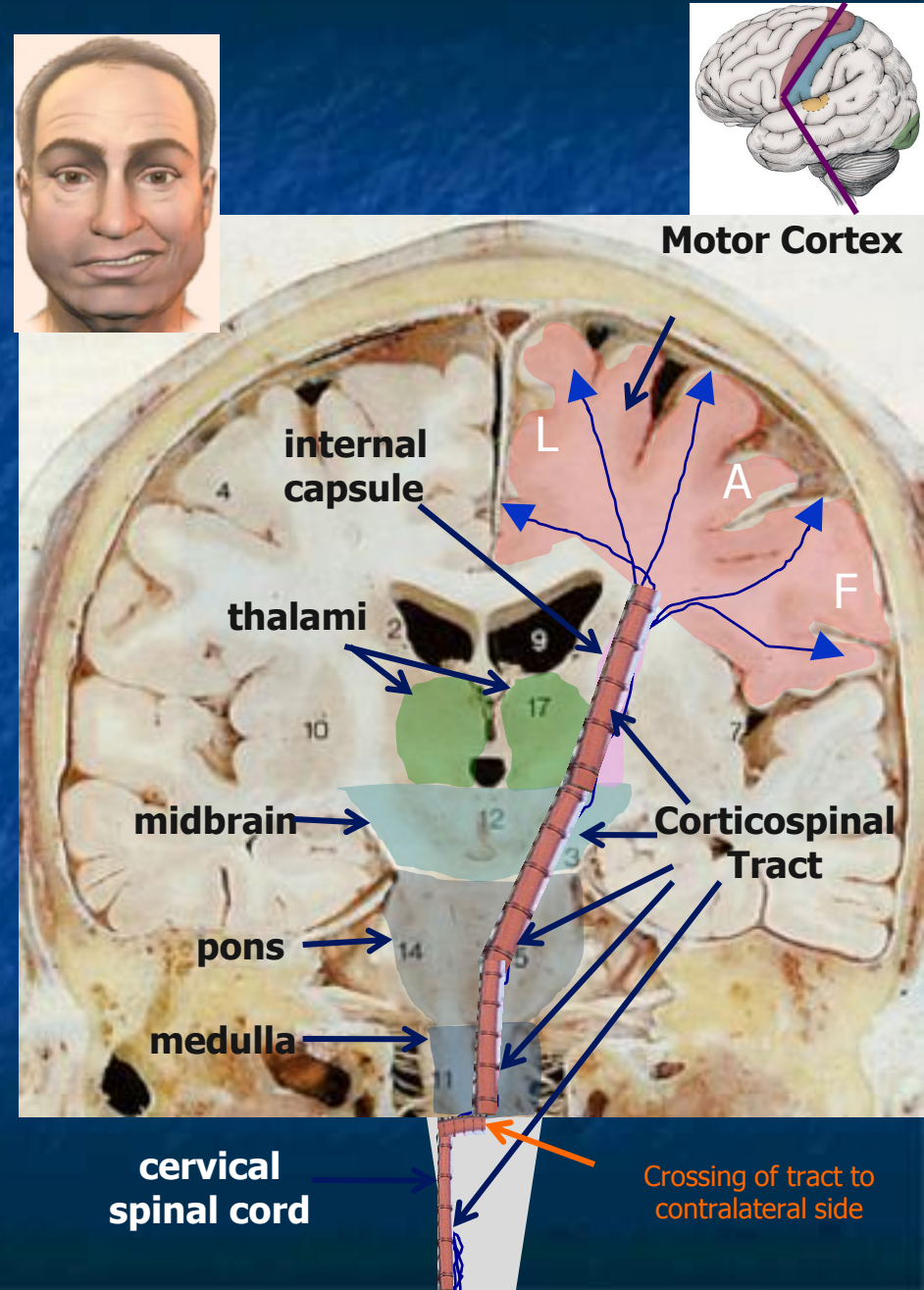
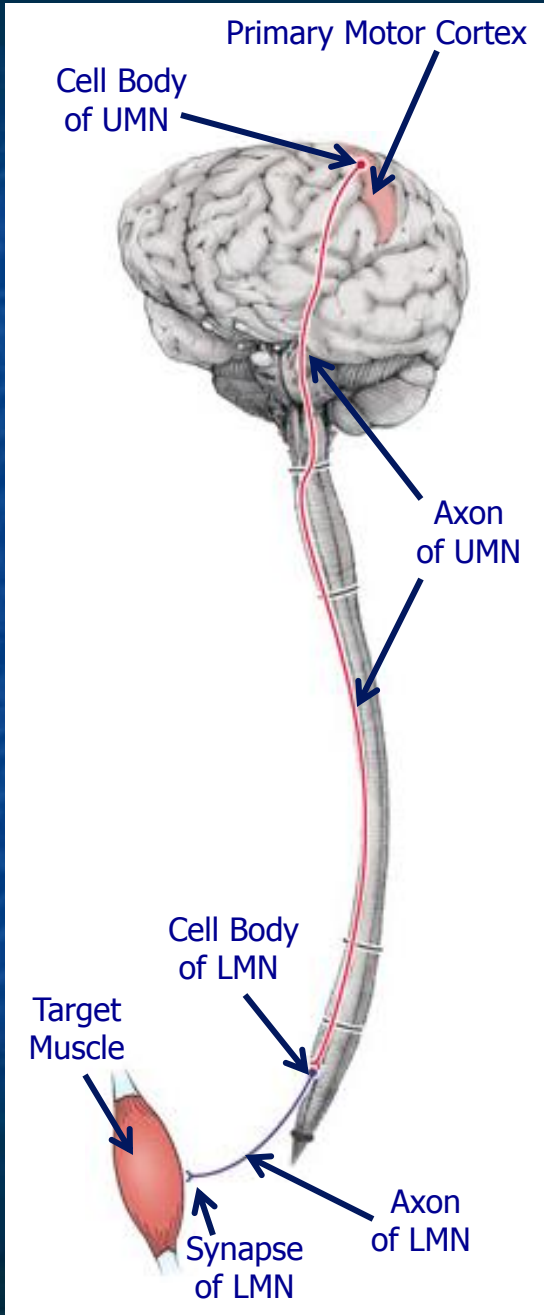


Voluntary Motor Control: The Corticospinal Pathway

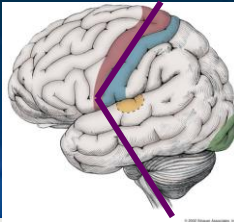


cervical spinal cord

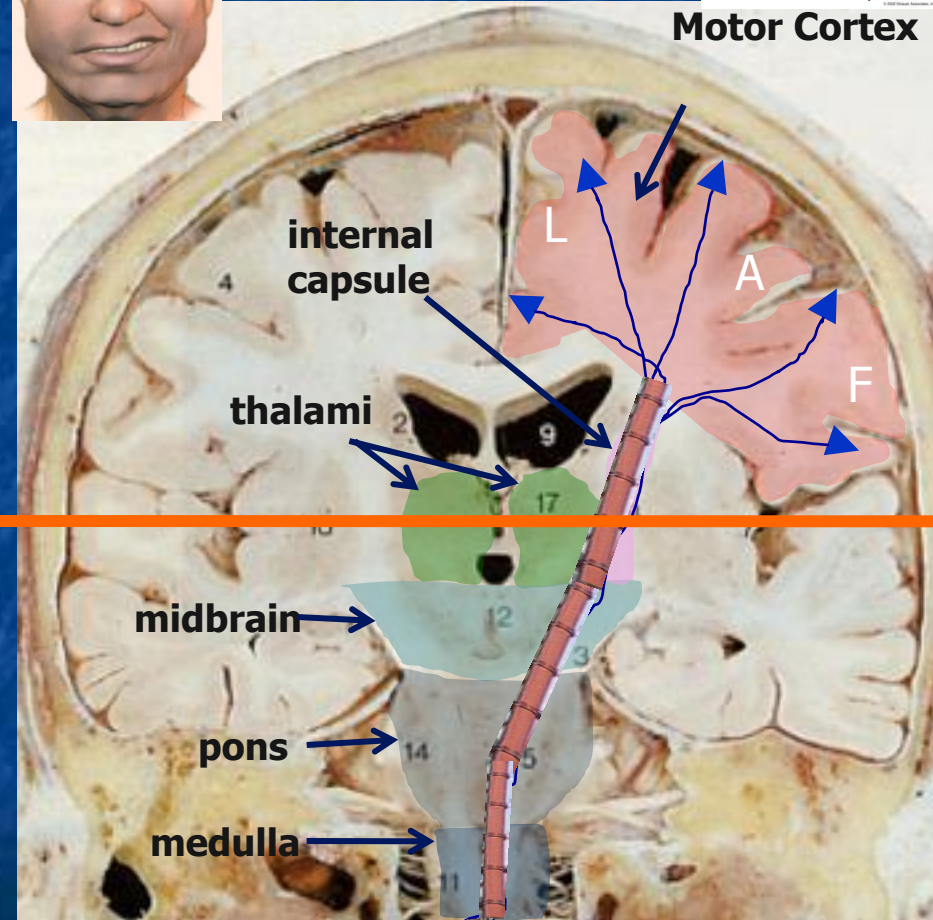
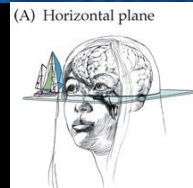
Voluntary Motor Control: The Corticospinal Pathway



Voluntary Motor Control: The Corticospinal Pathway



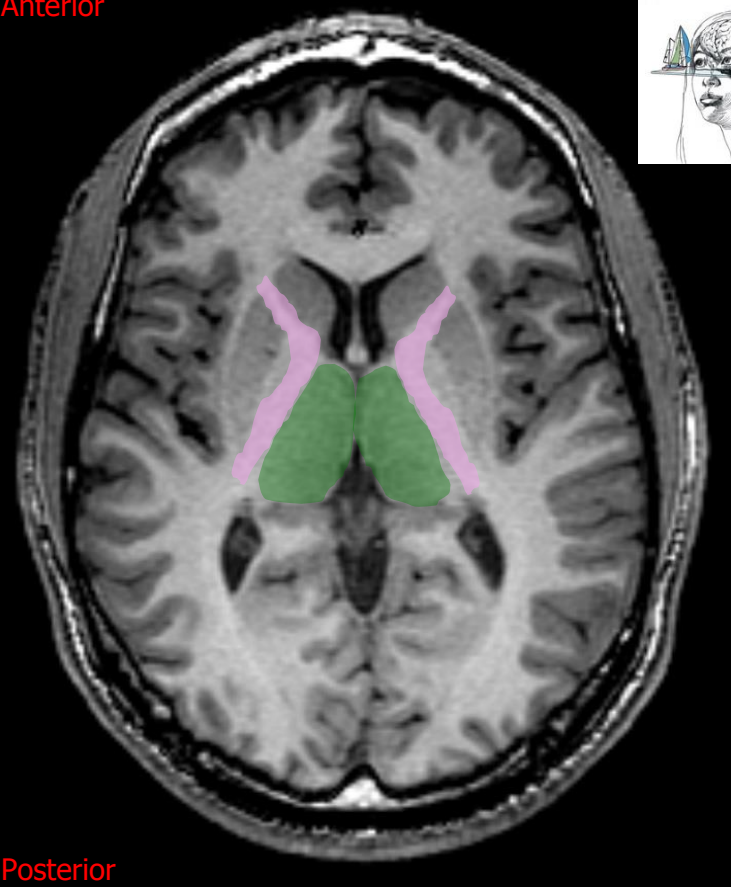
Motor Cortex



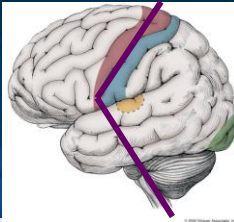
cervical spinal cord

Anterior

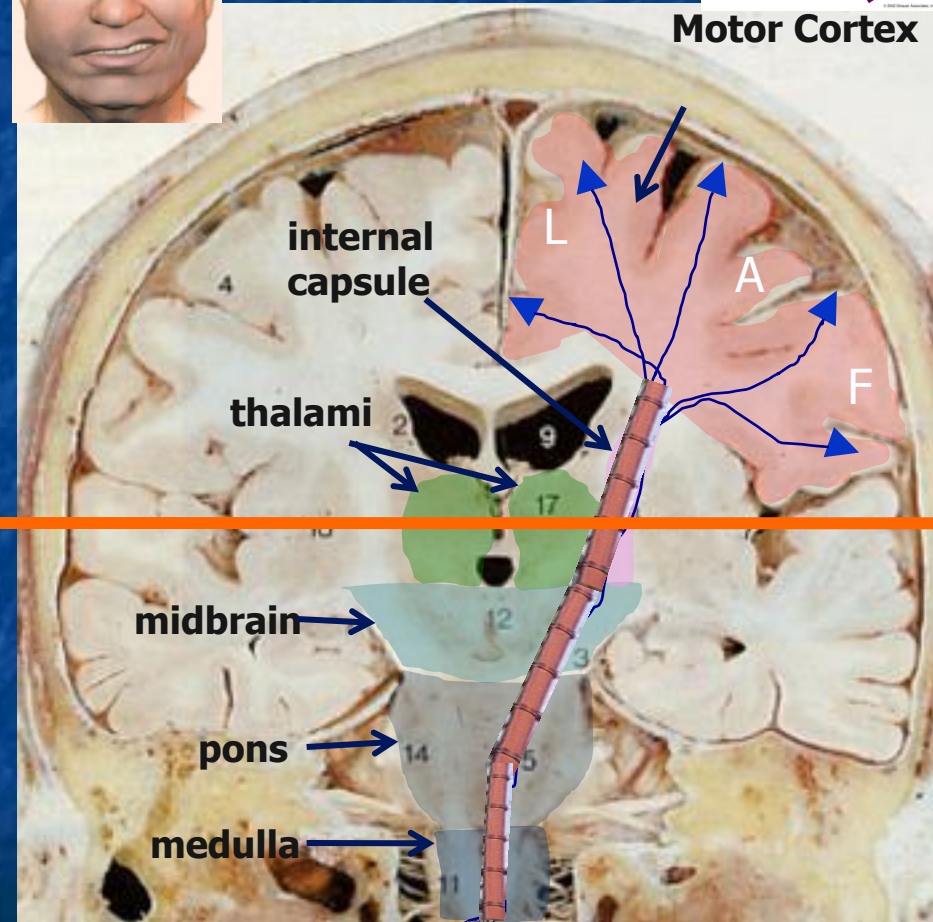
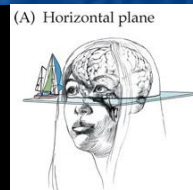
Posterior



Voluntary Motor Control: The Corticospinal Pathway

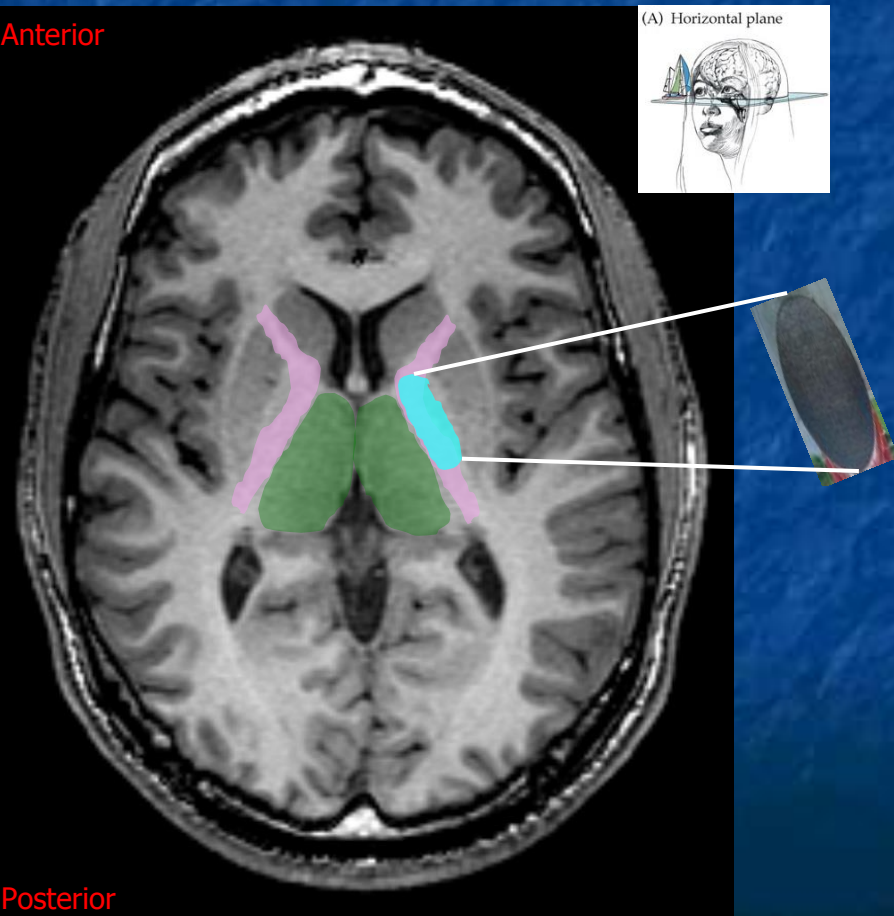


Motor Cortex

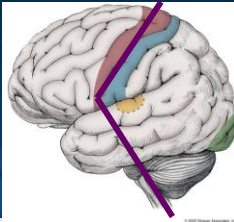


Anterior

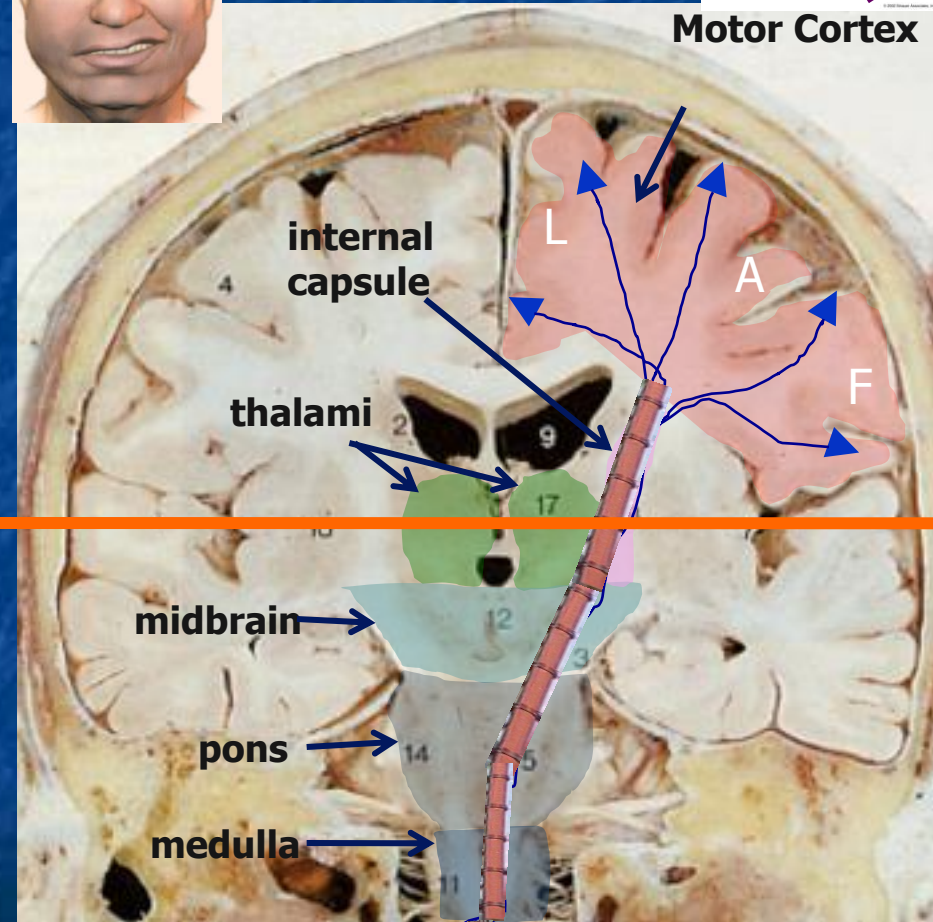
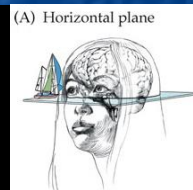
Posterior



Voluntary Motor Control: The Corticospinal Pathway

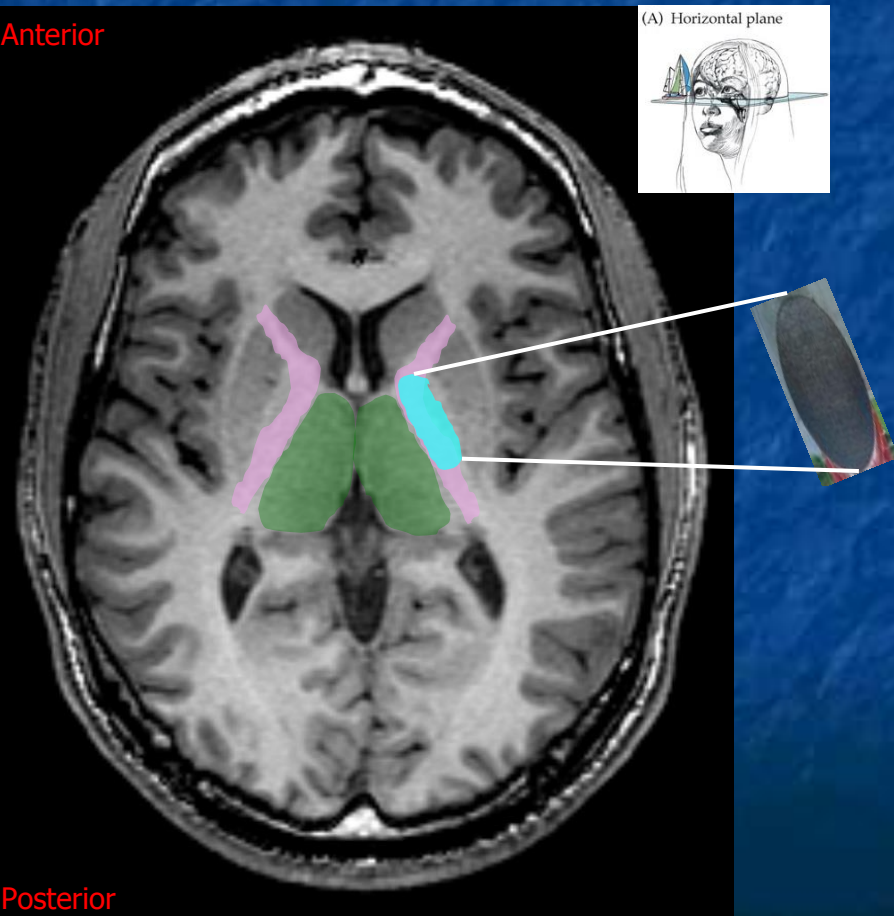


Motor Cortex

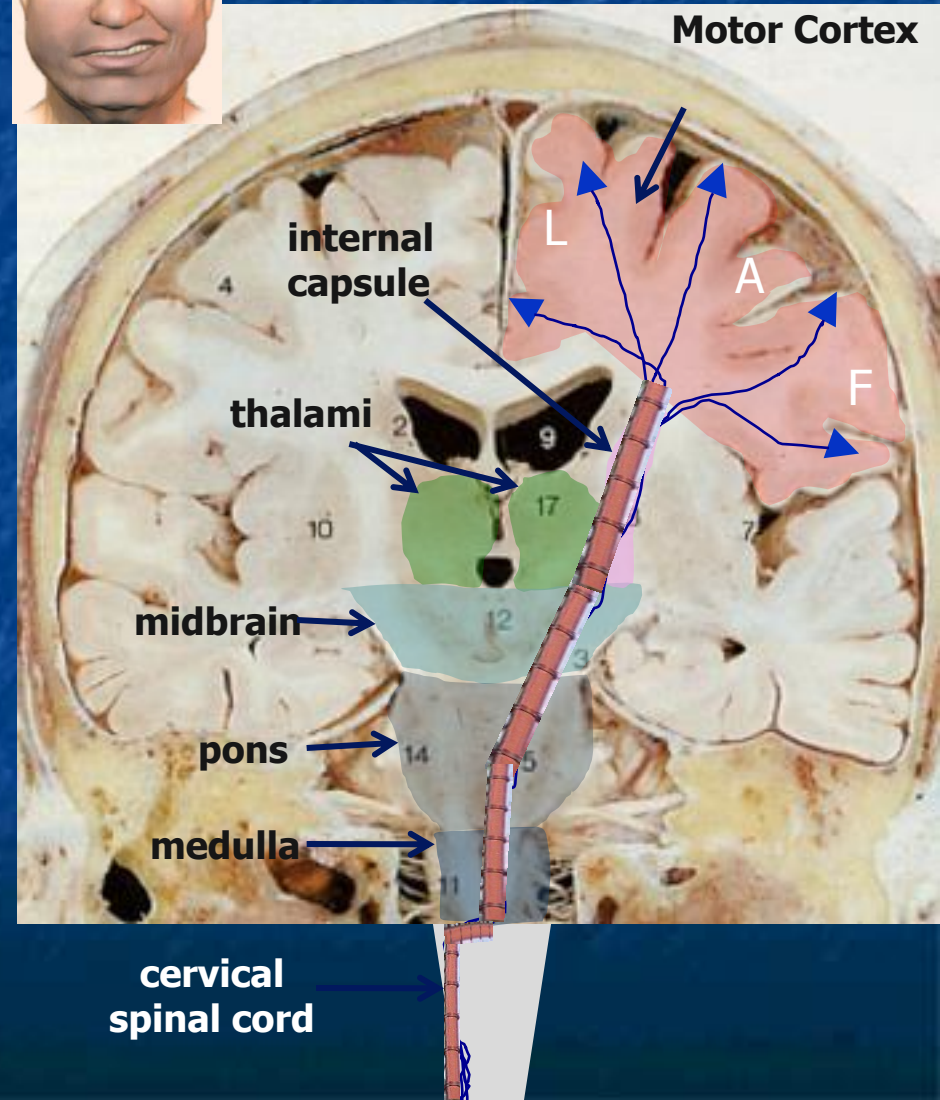
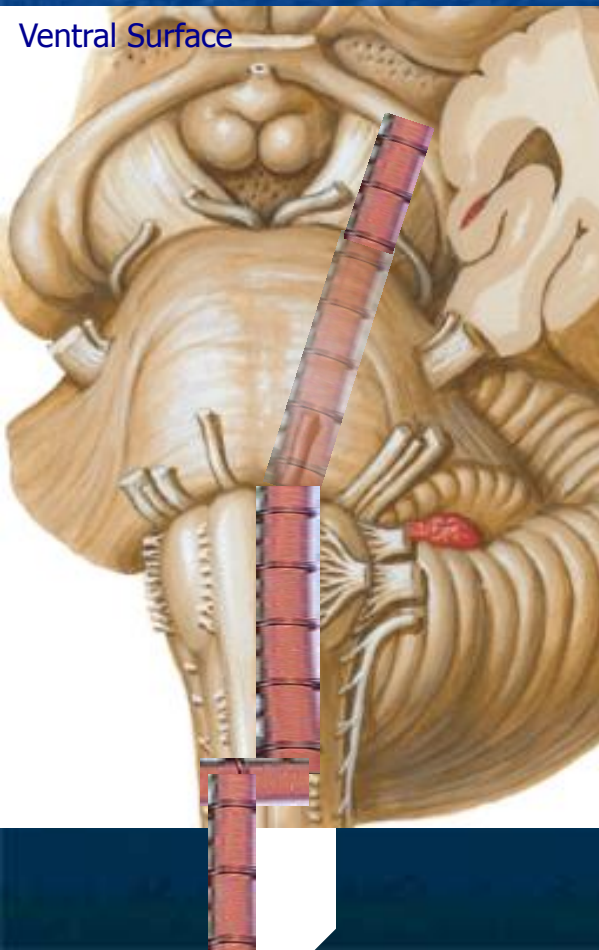


Anterior

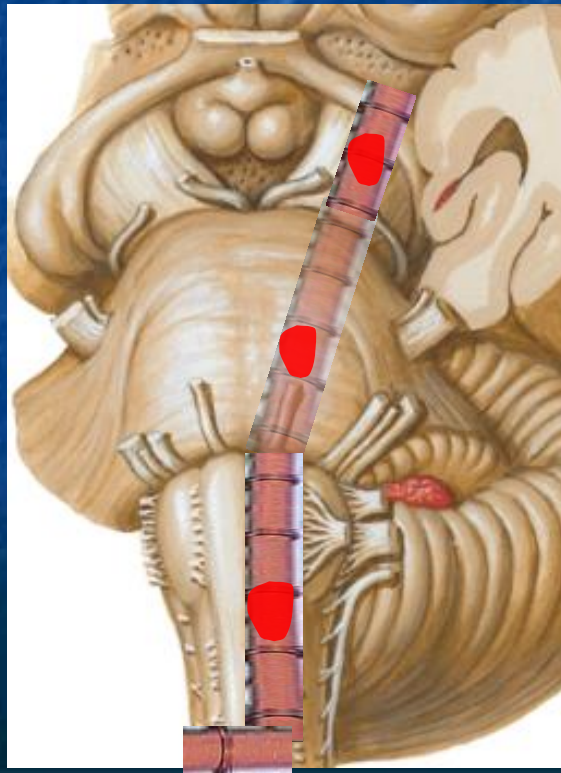
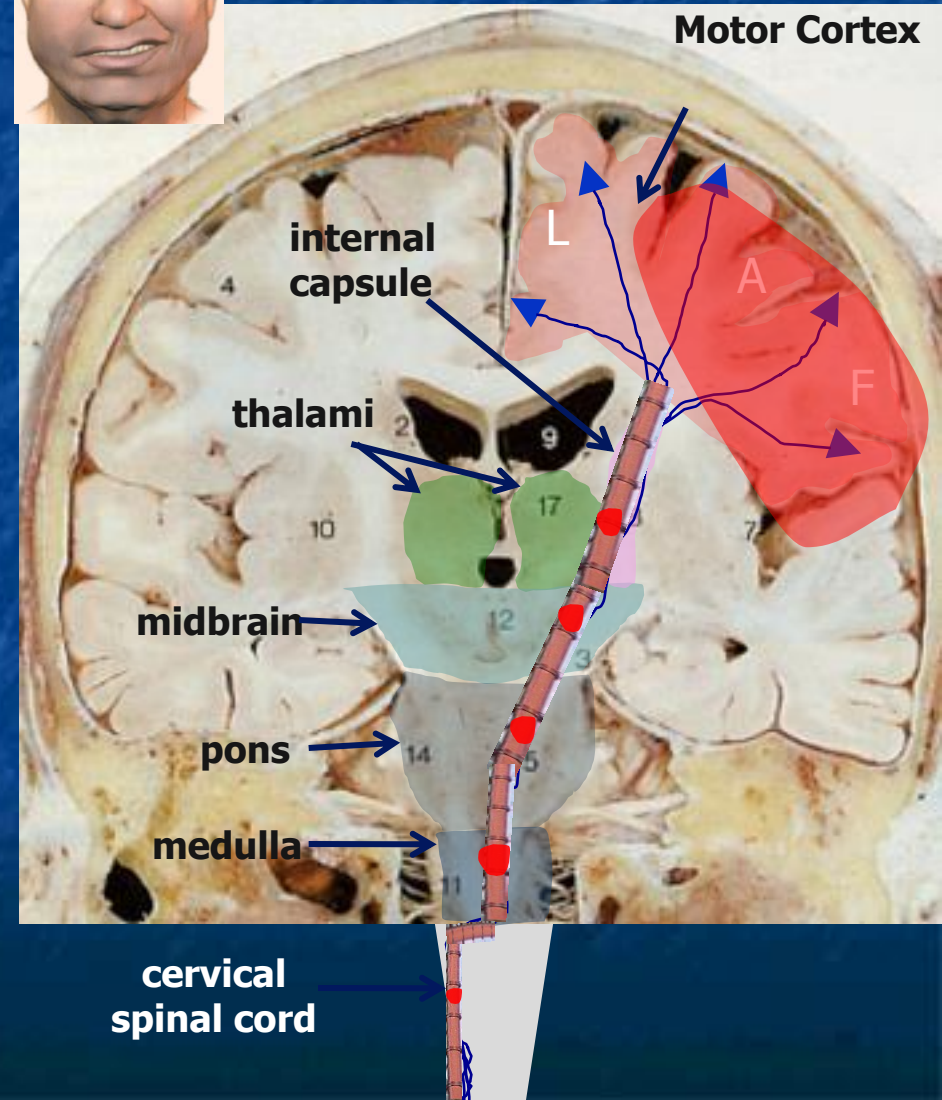
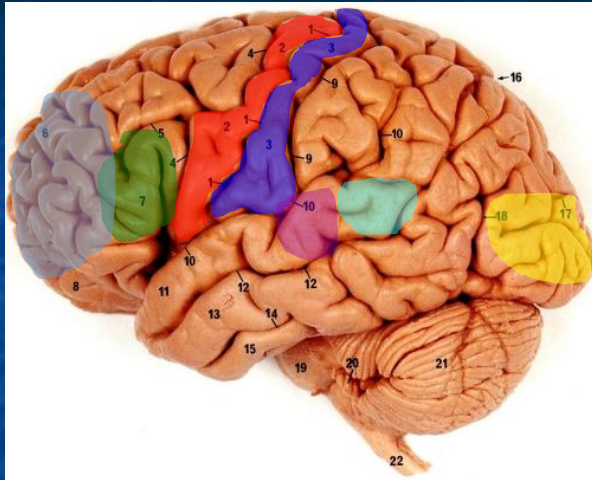
Posterior



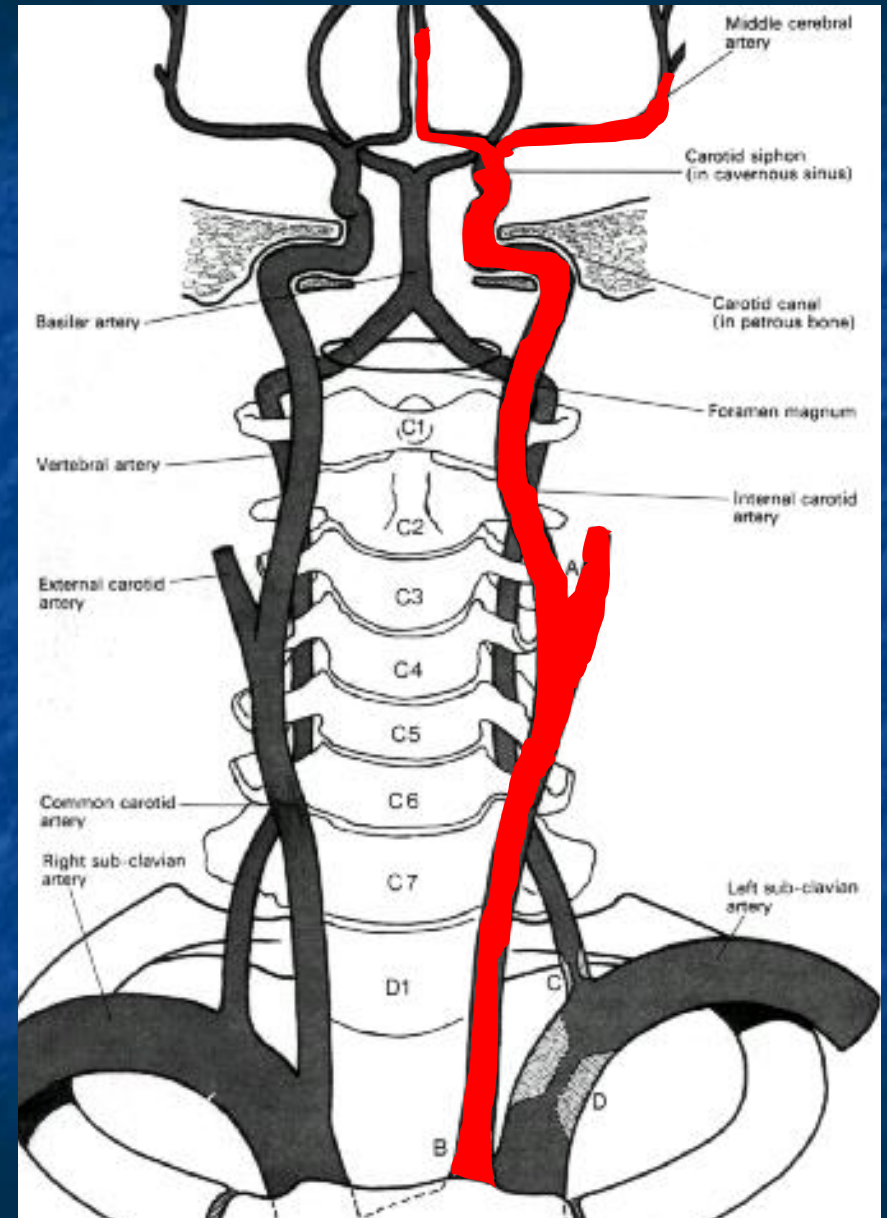
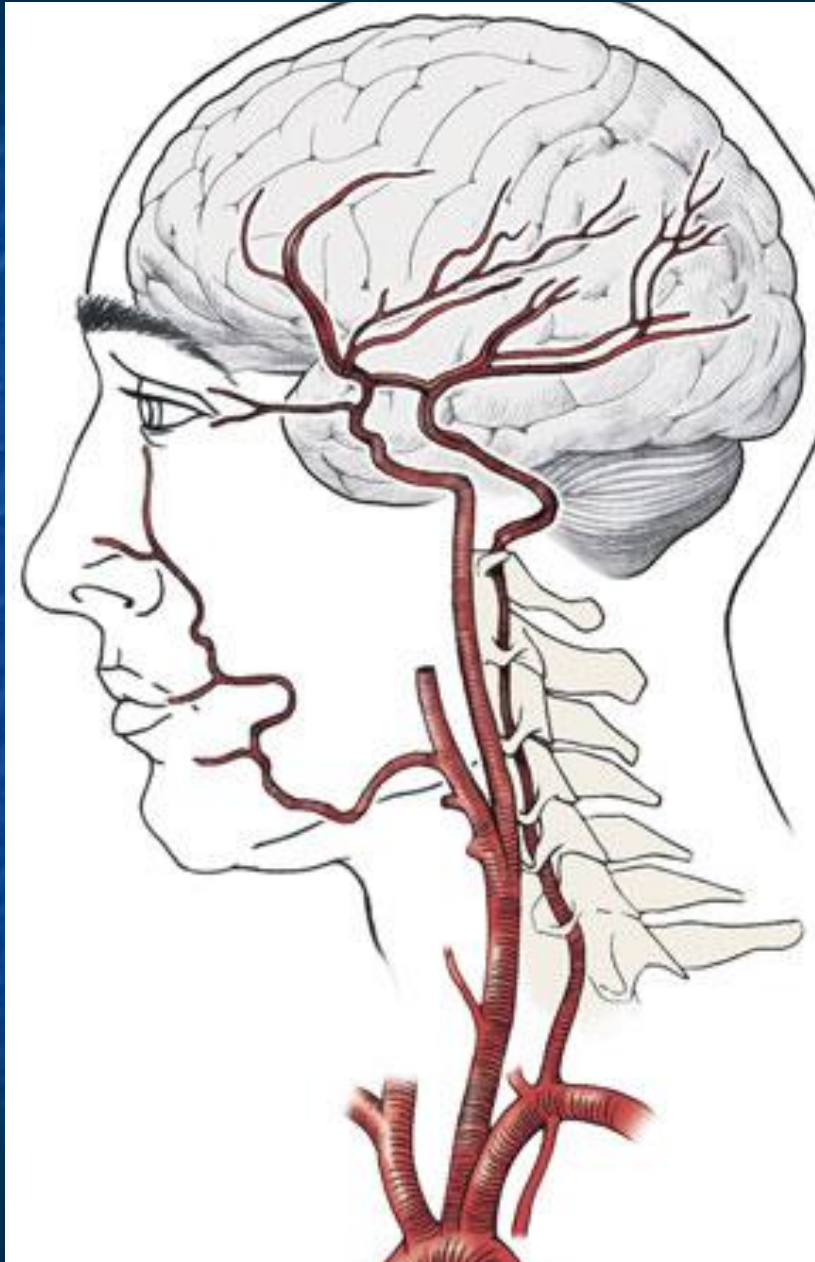
Voluntary Motor Control: The Corticospinal Pathway



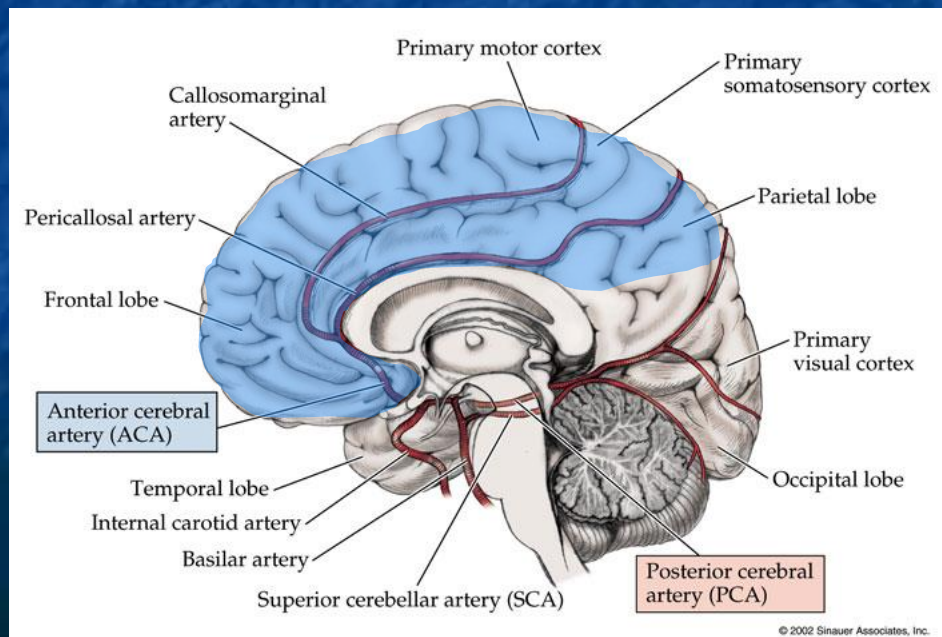
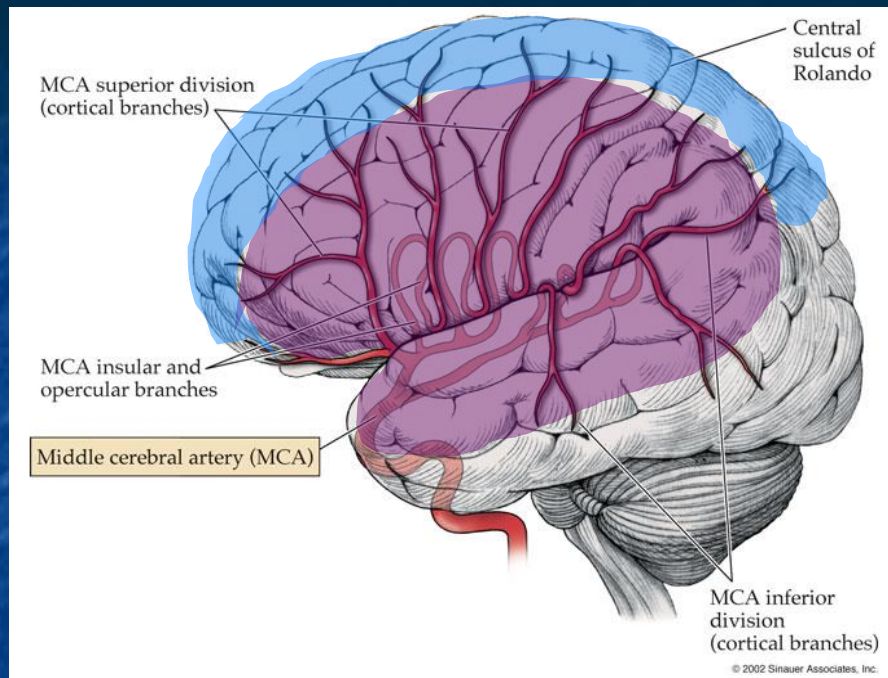
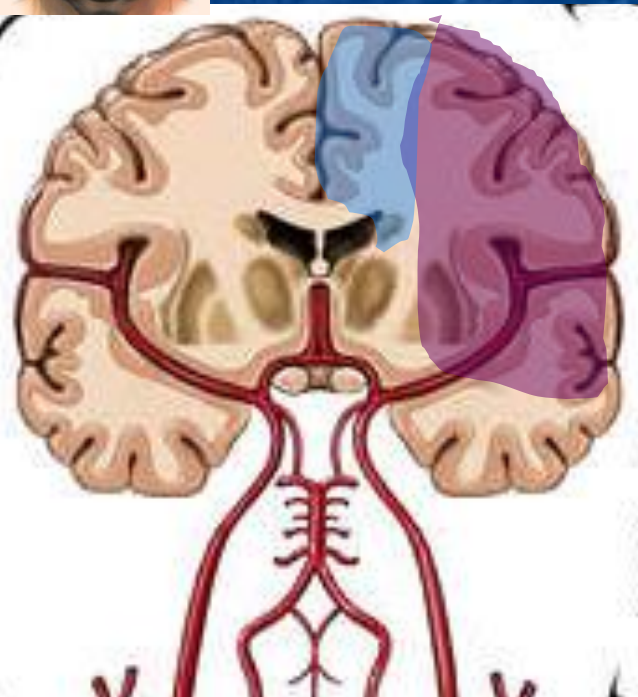
Voluntary Motor Control: The Corticospinal Pathway



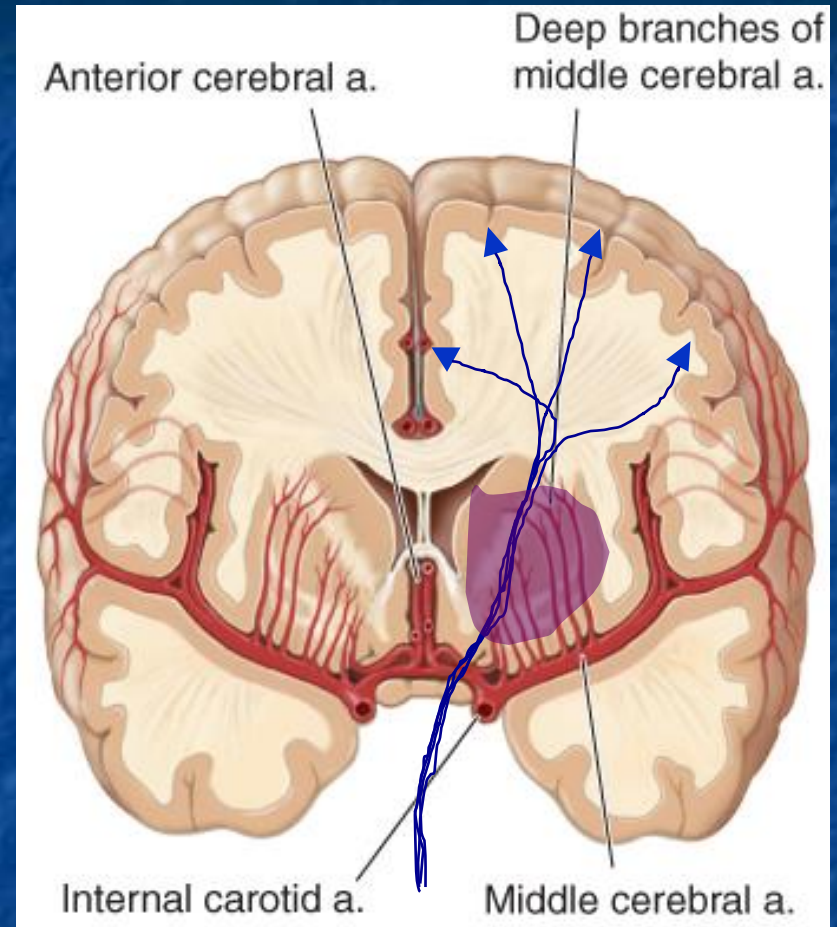
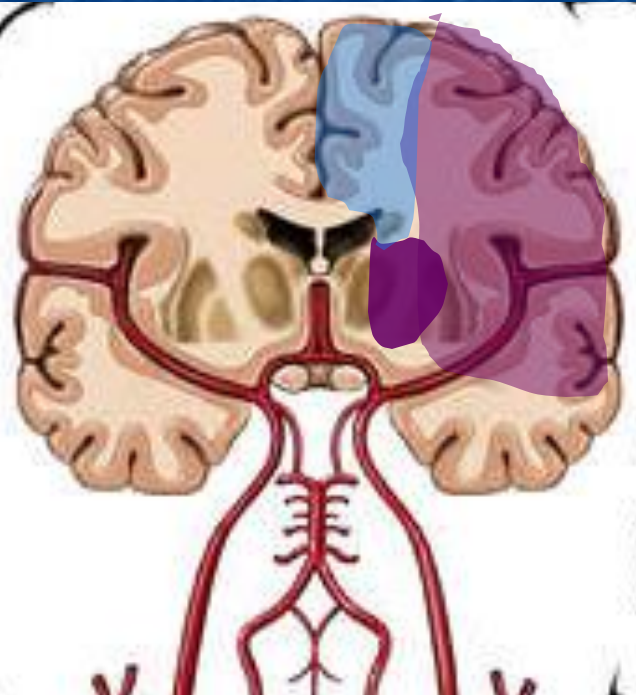
Vascular Supply to the Brain



Cerebrovascular Anatomy

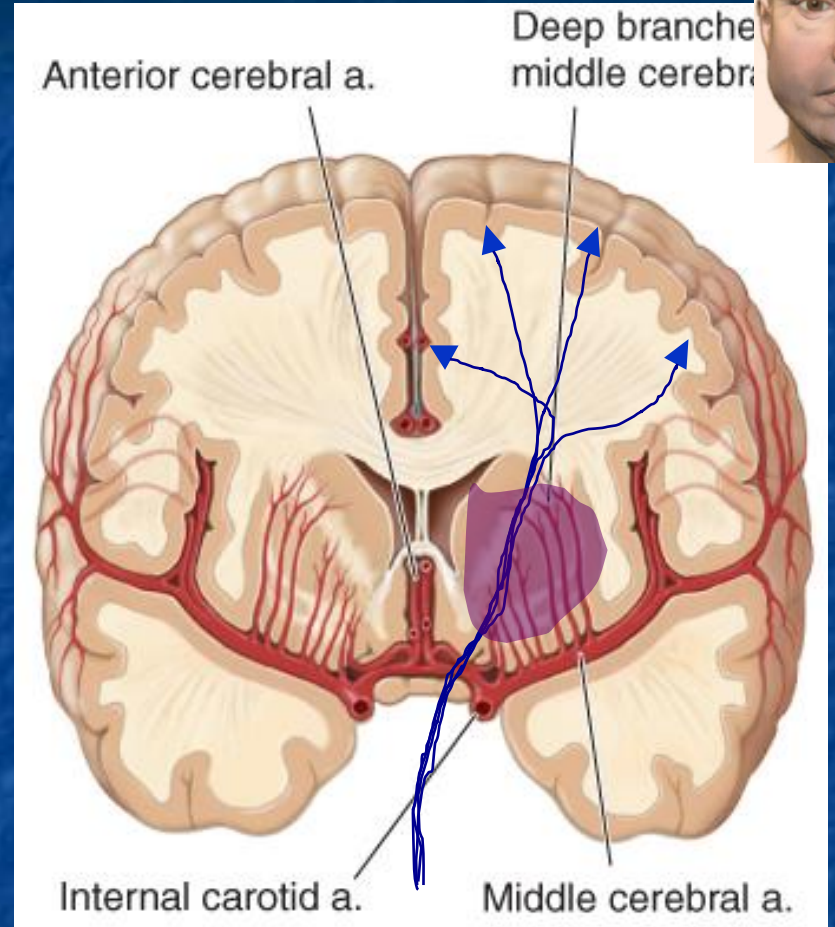
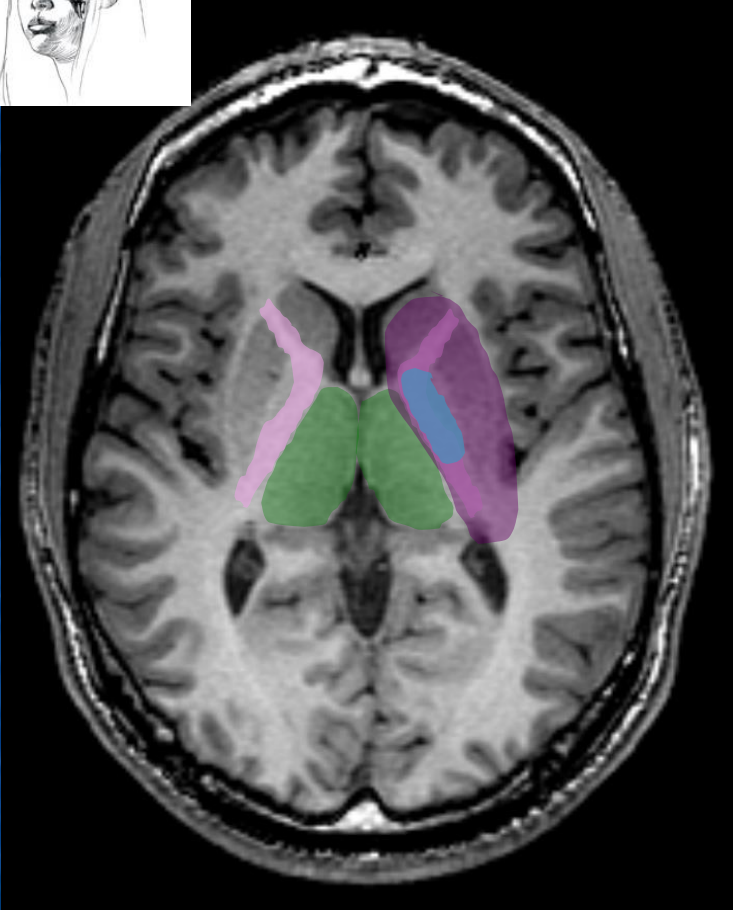
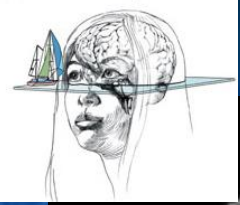


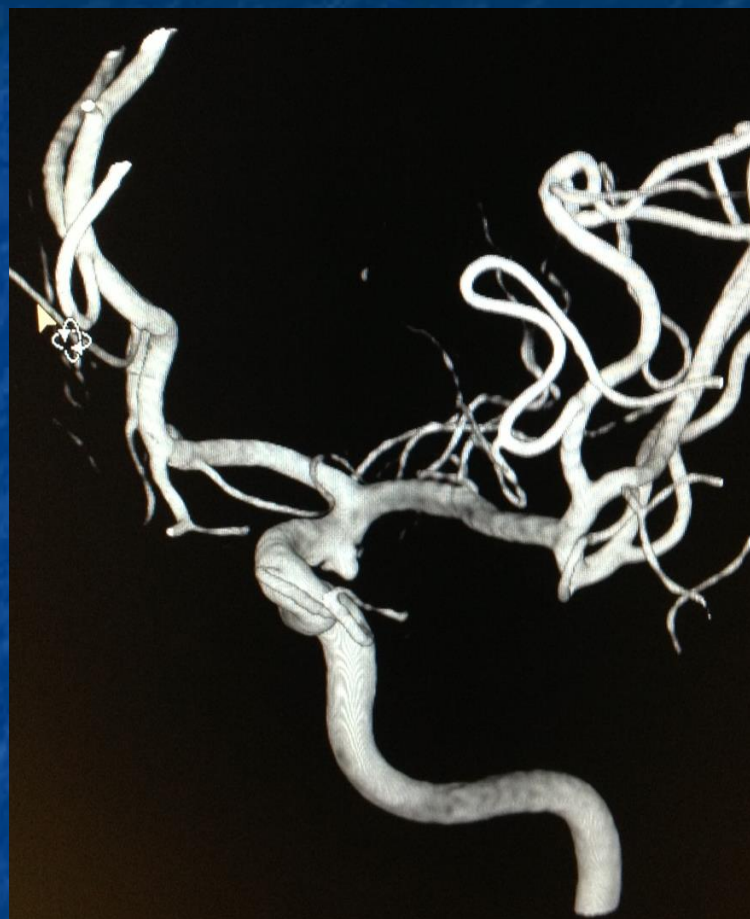
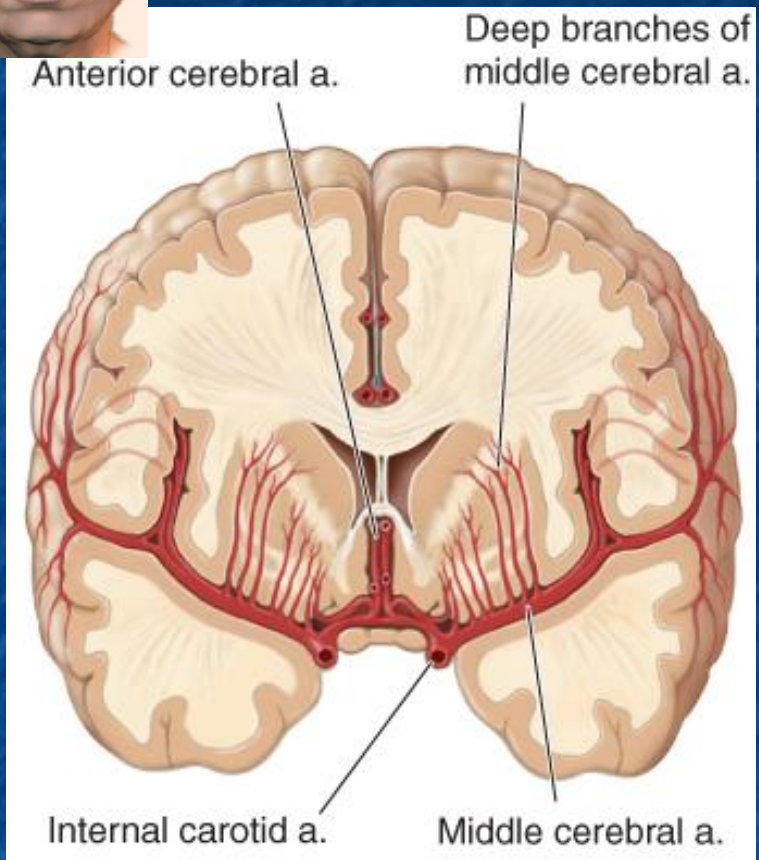
Cerebrovascular Anatomy

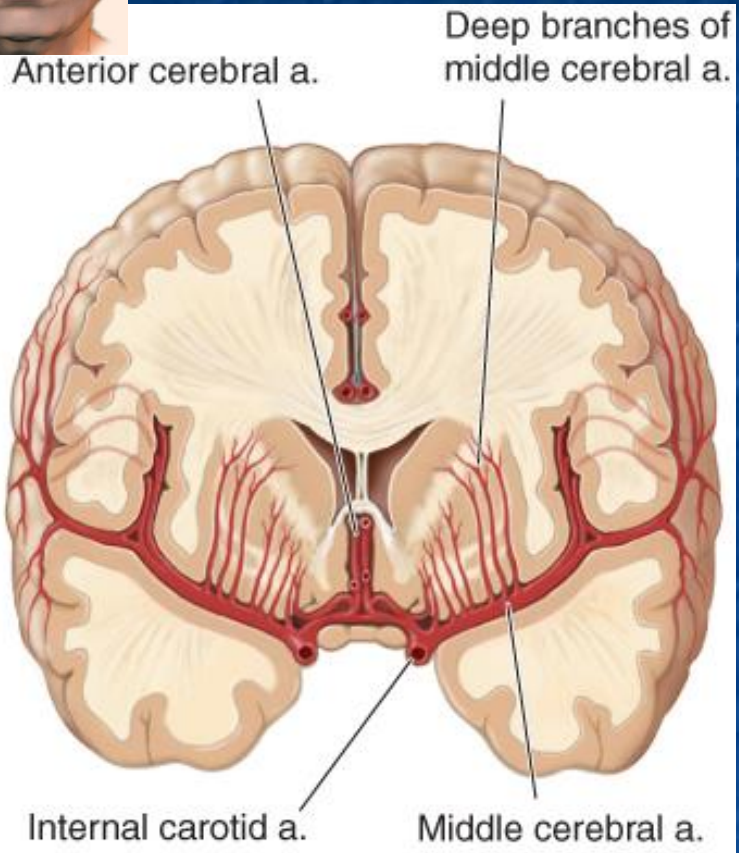


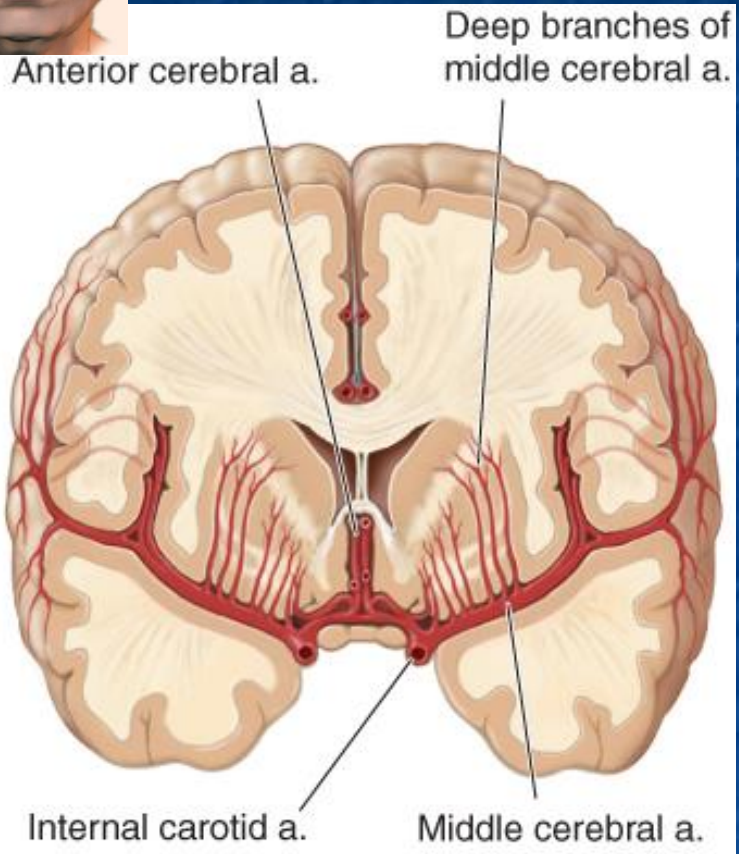
Cerebrovascular Anatomy

(A) Horizontal plane

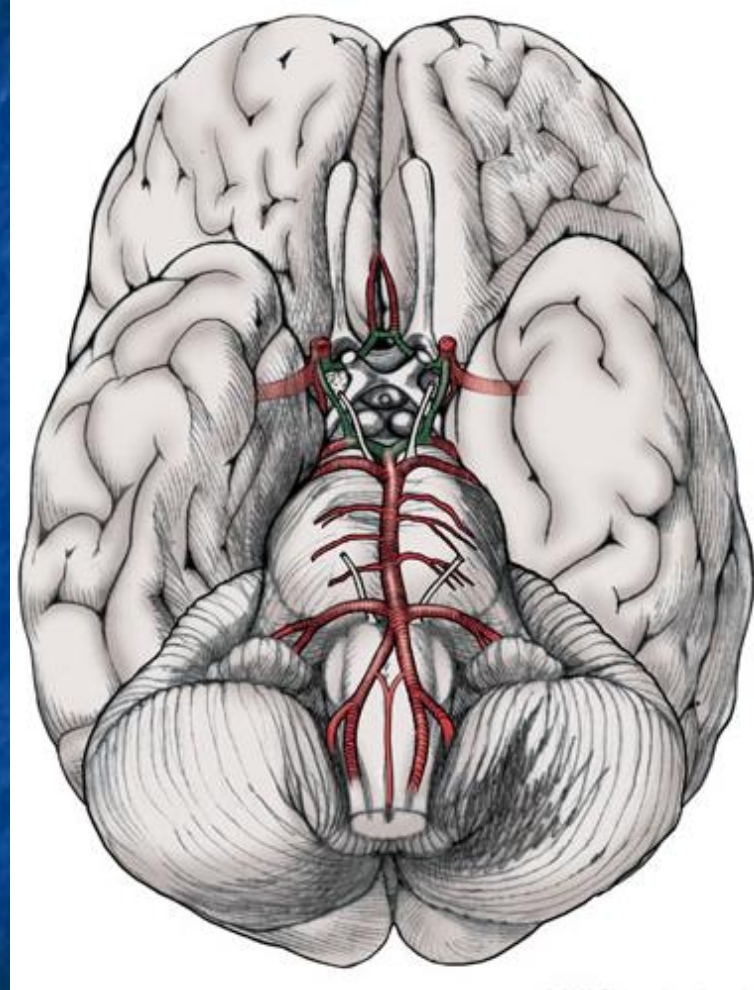
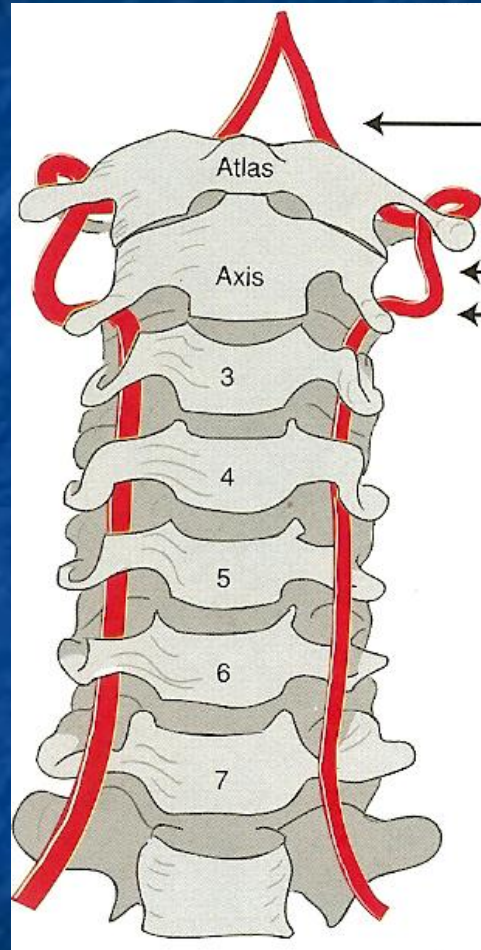
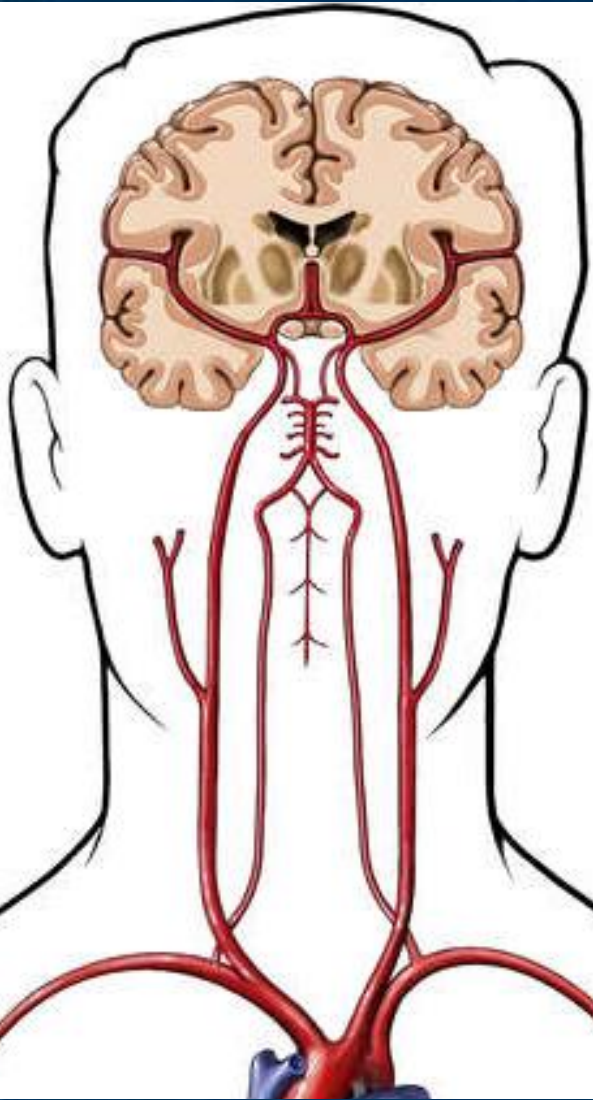




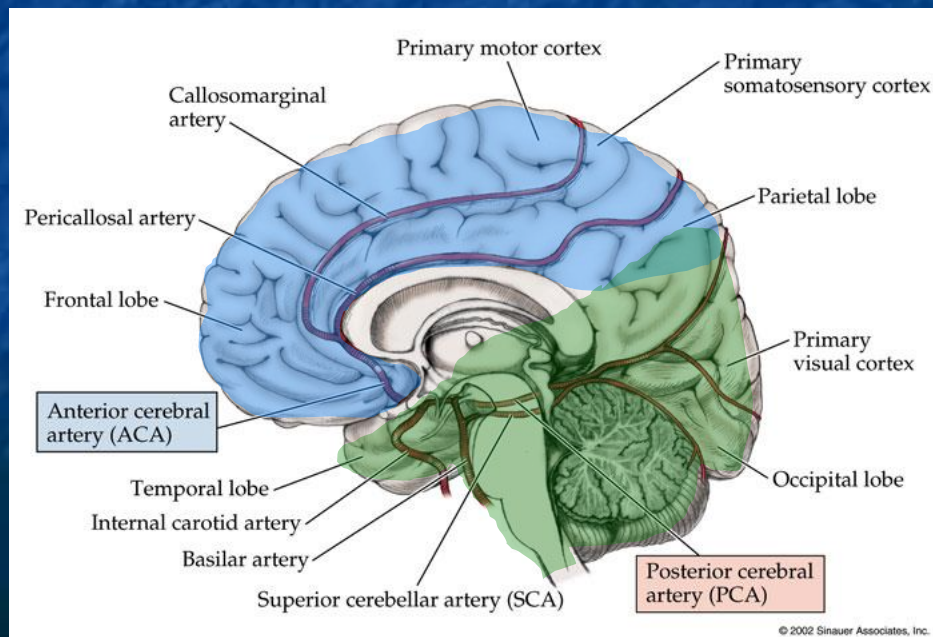
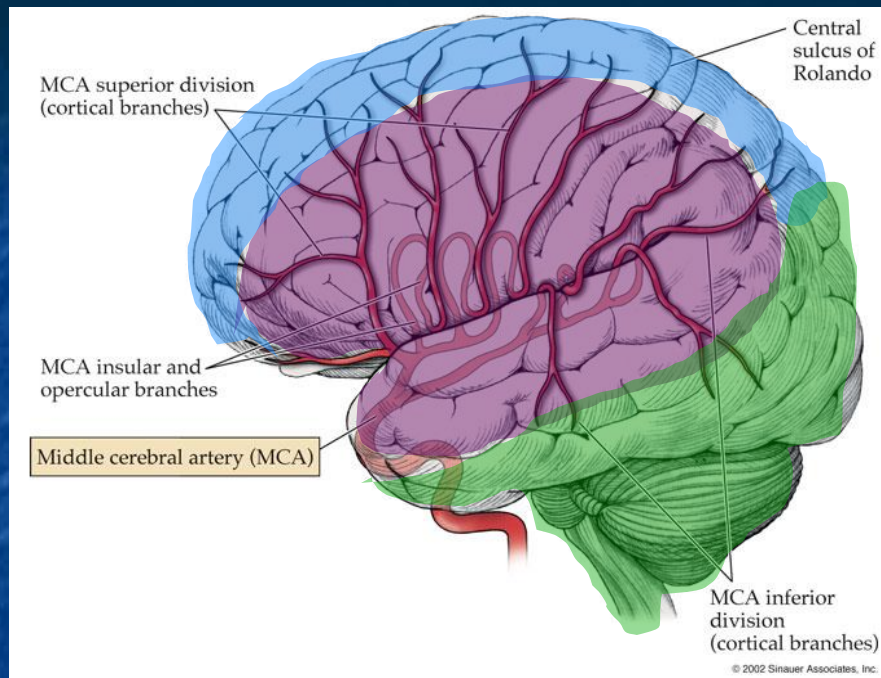
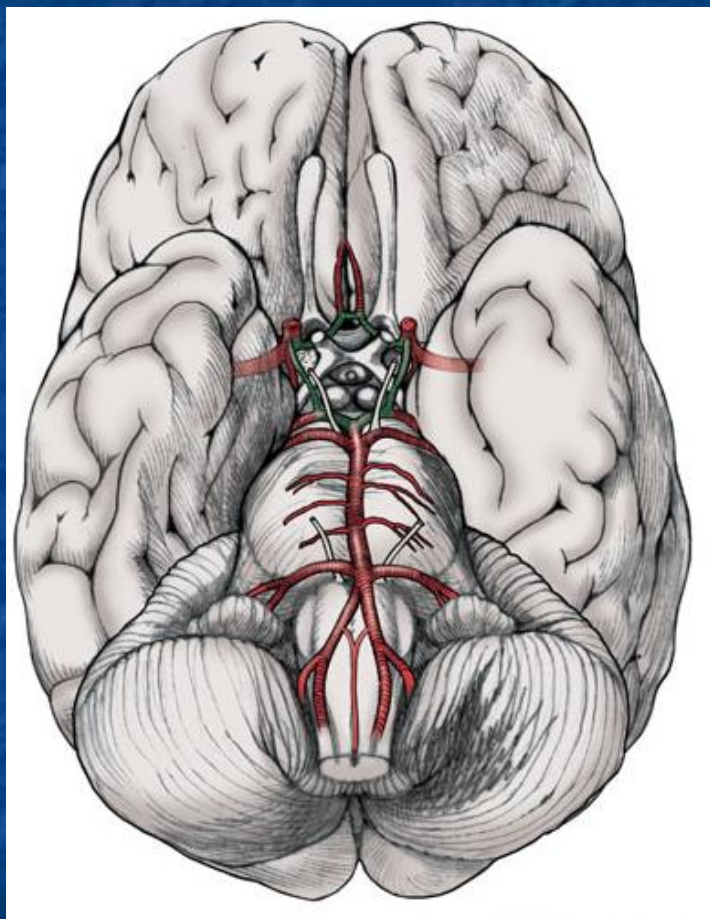




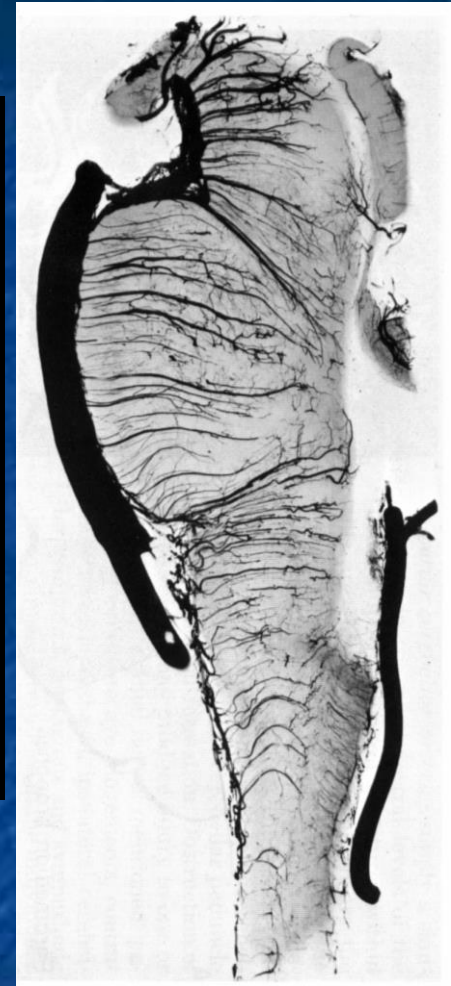
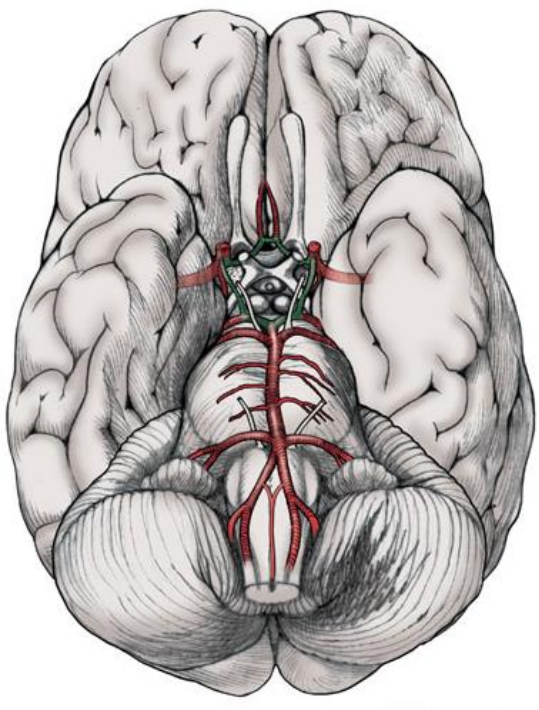
Cerebrovascular Anatomy



Cerebrovascular Anatomy

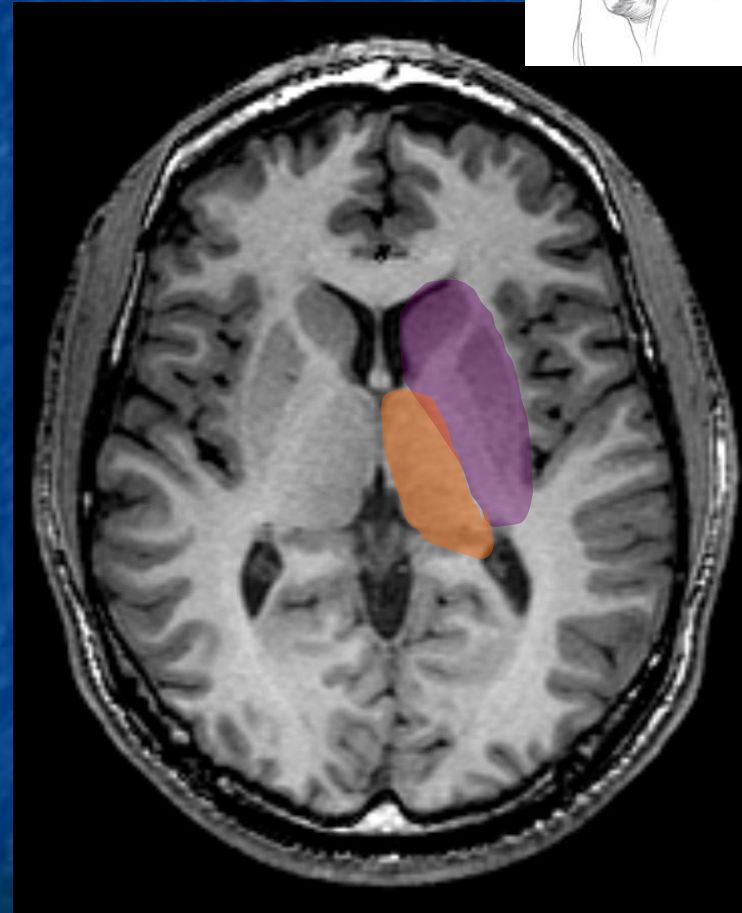
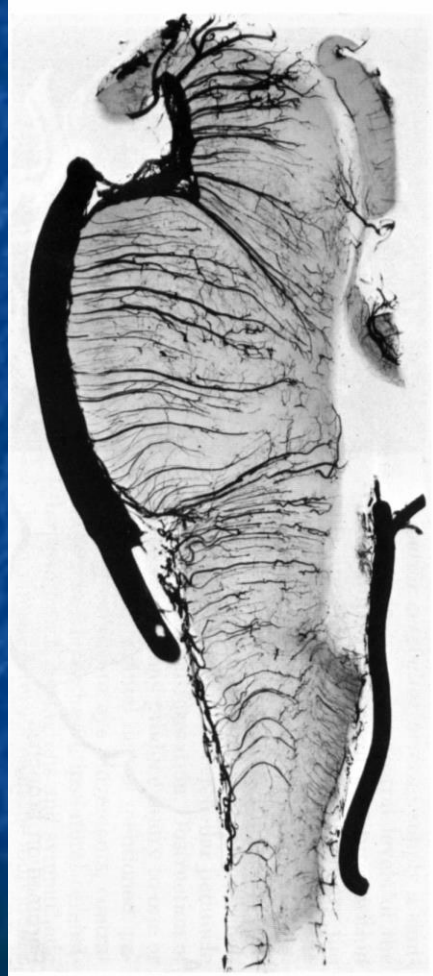
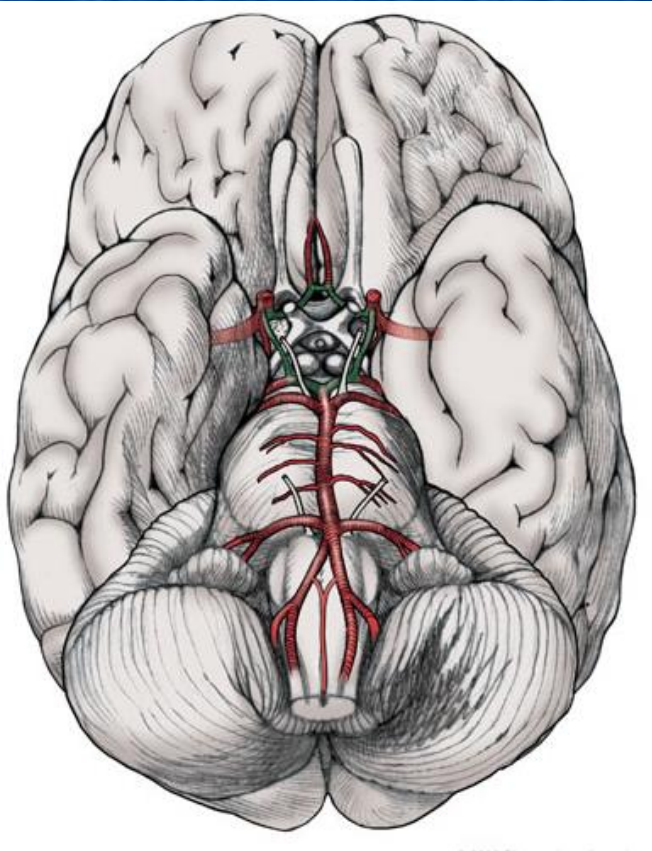


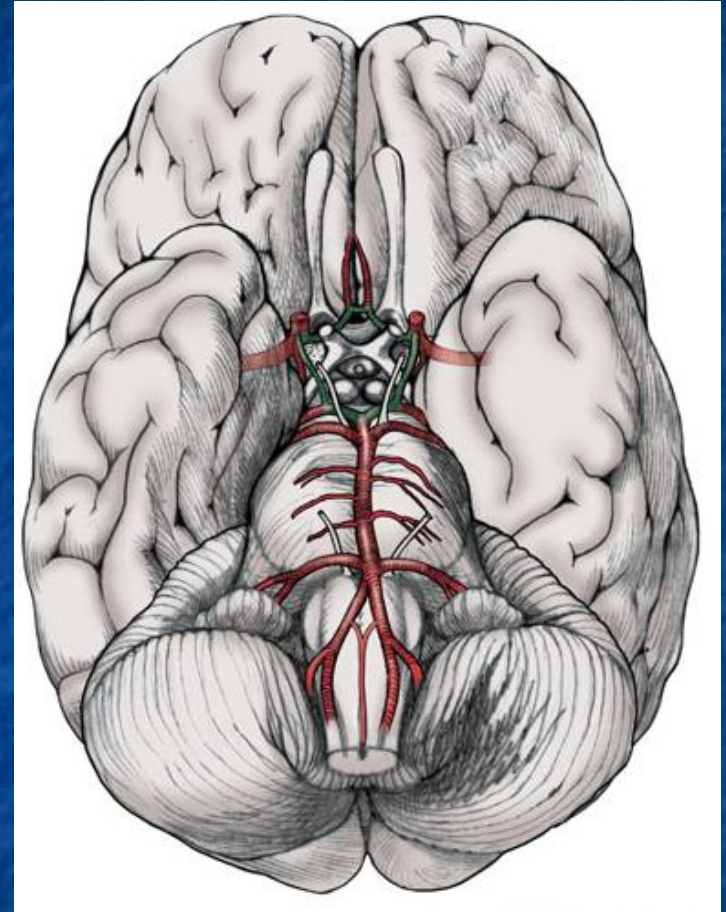
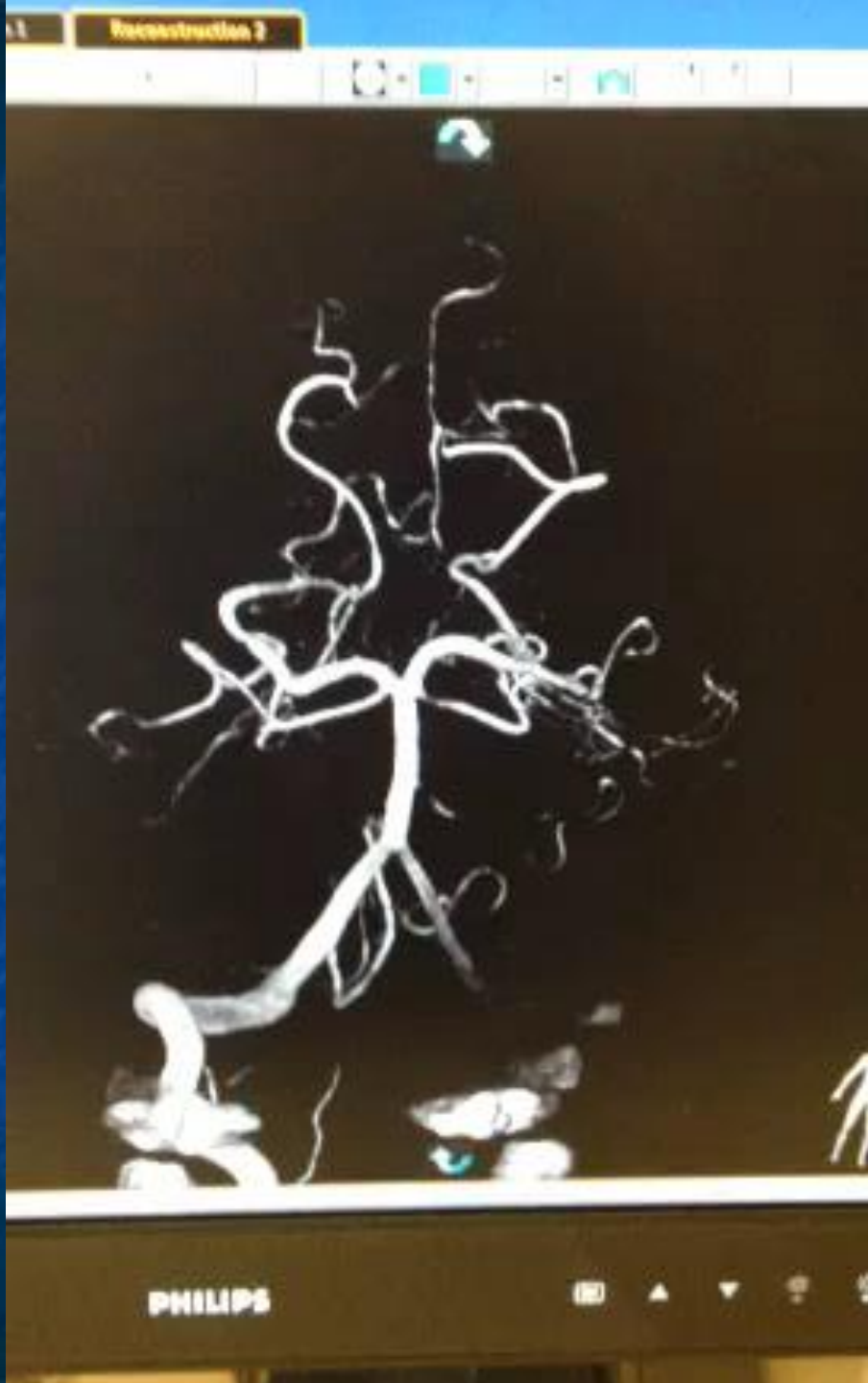
Cerebrovascular Anatomy



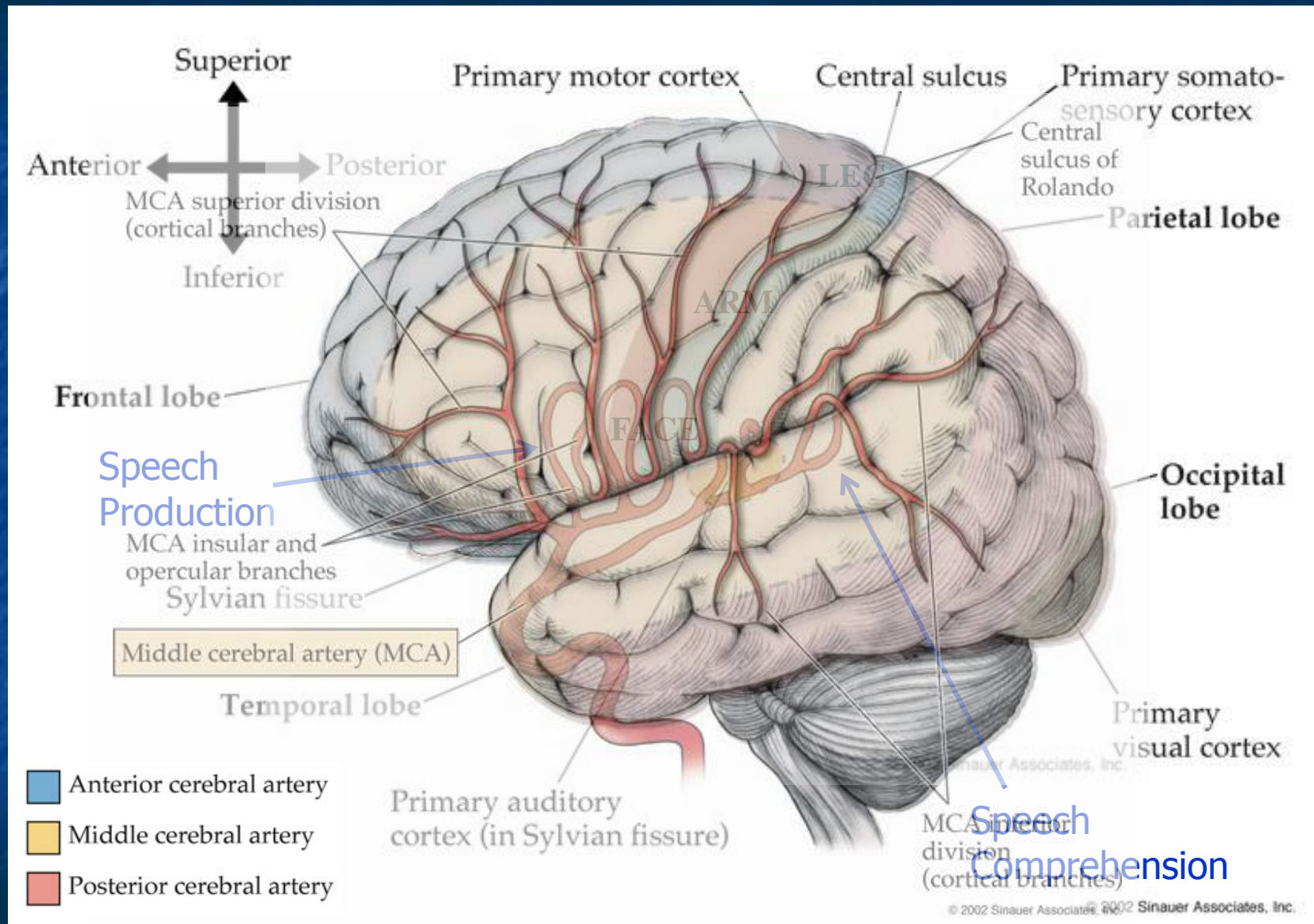
Cerebrovascular Anatomy

(A) Horizontal plane

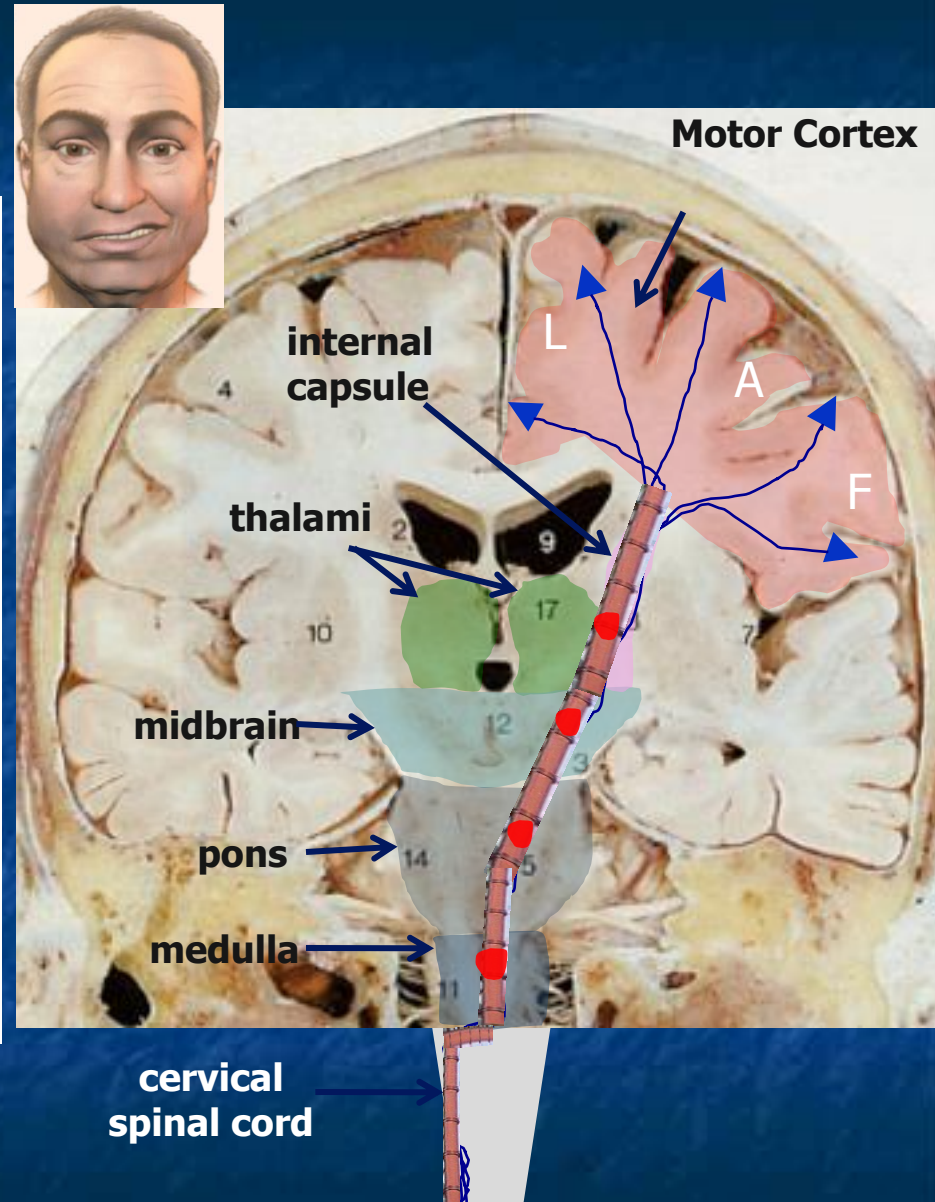
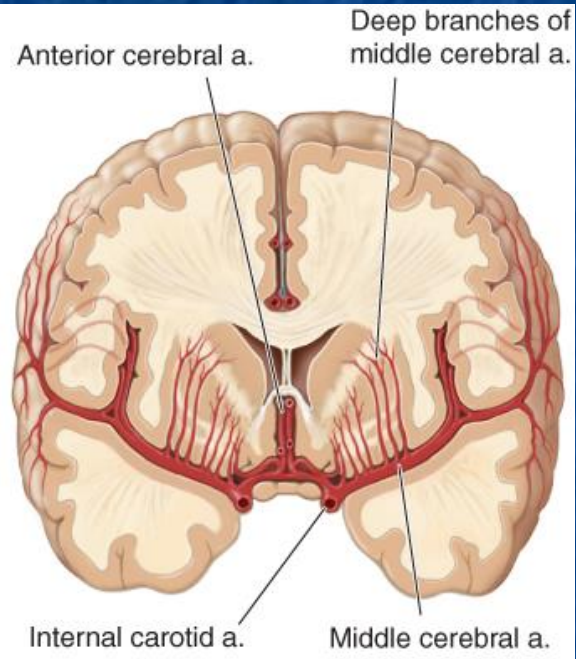


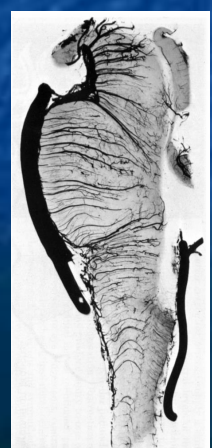
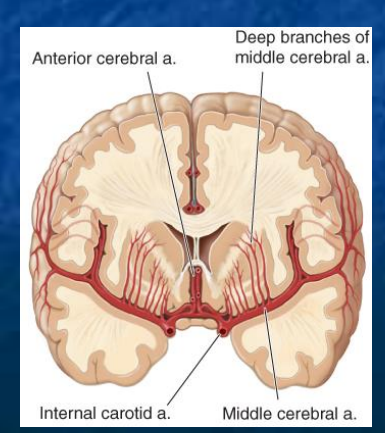
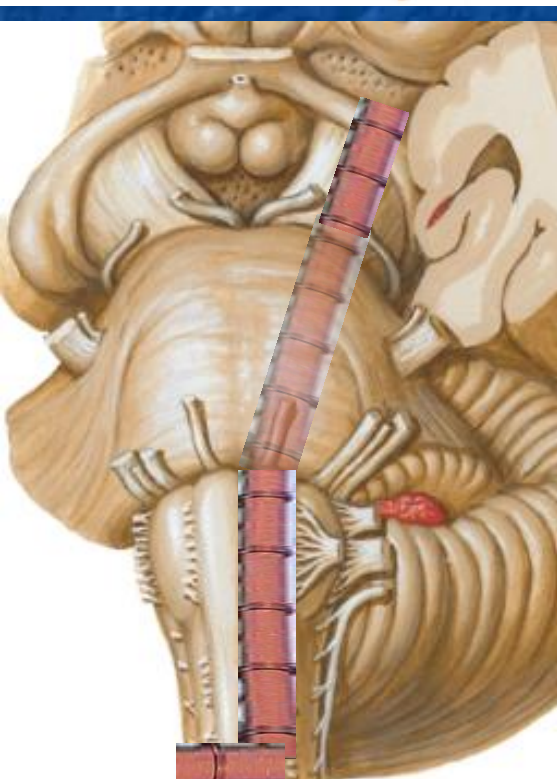
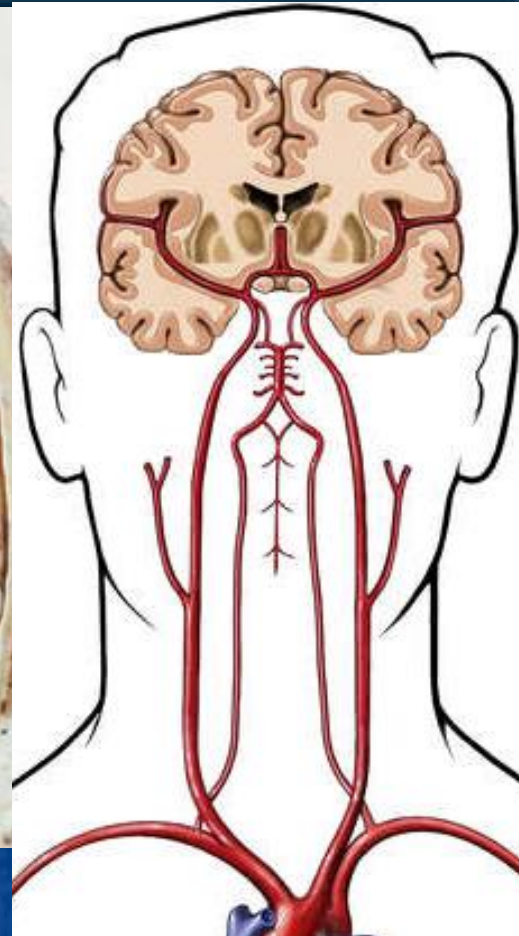
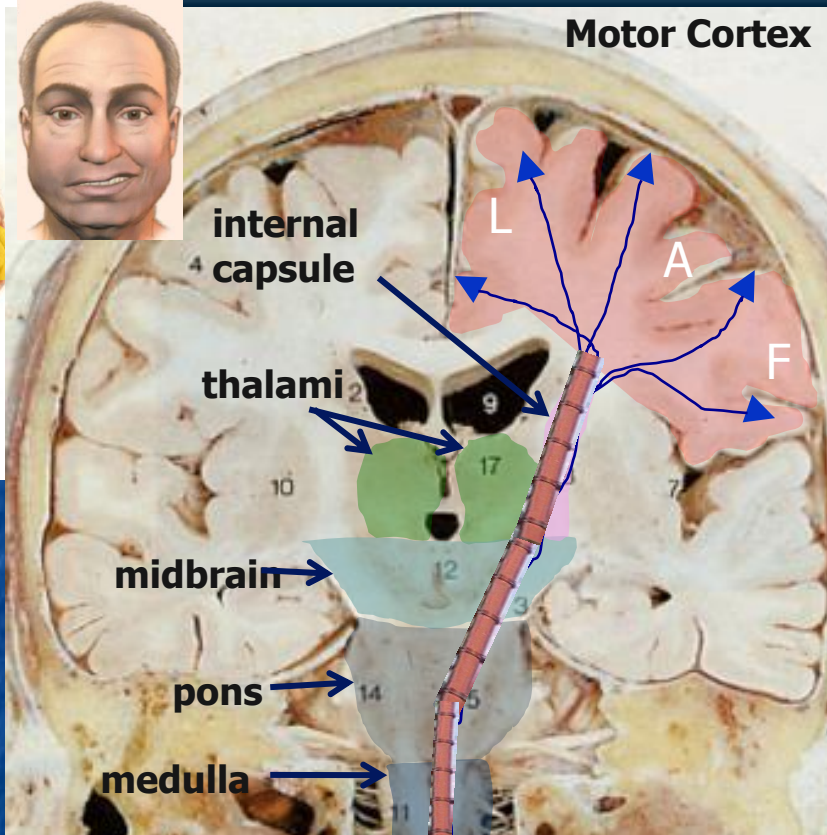
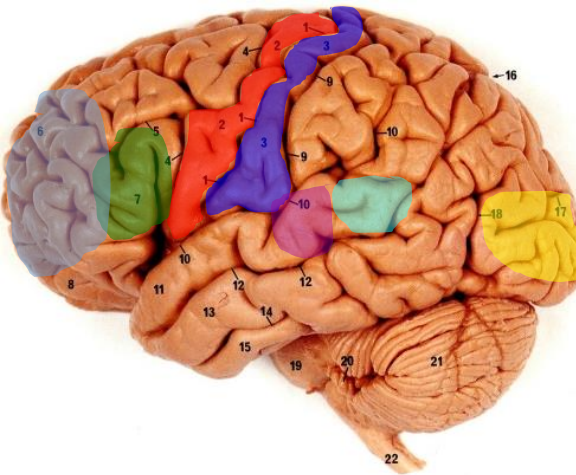


Vascular Neurology: Neuroanatomy and Vascular Anatomy



Vascular Neurology: Neuroanatomy and Vascular Anatomy





Overview of Basic Neuroanatomy and Cerebrovascular Anatomy

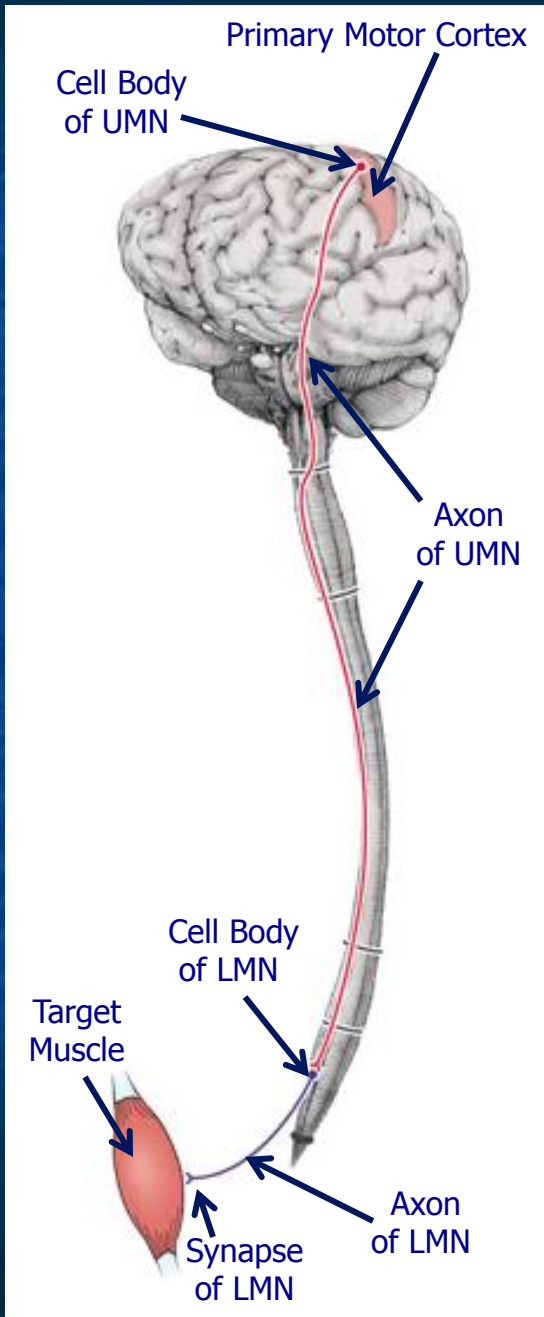
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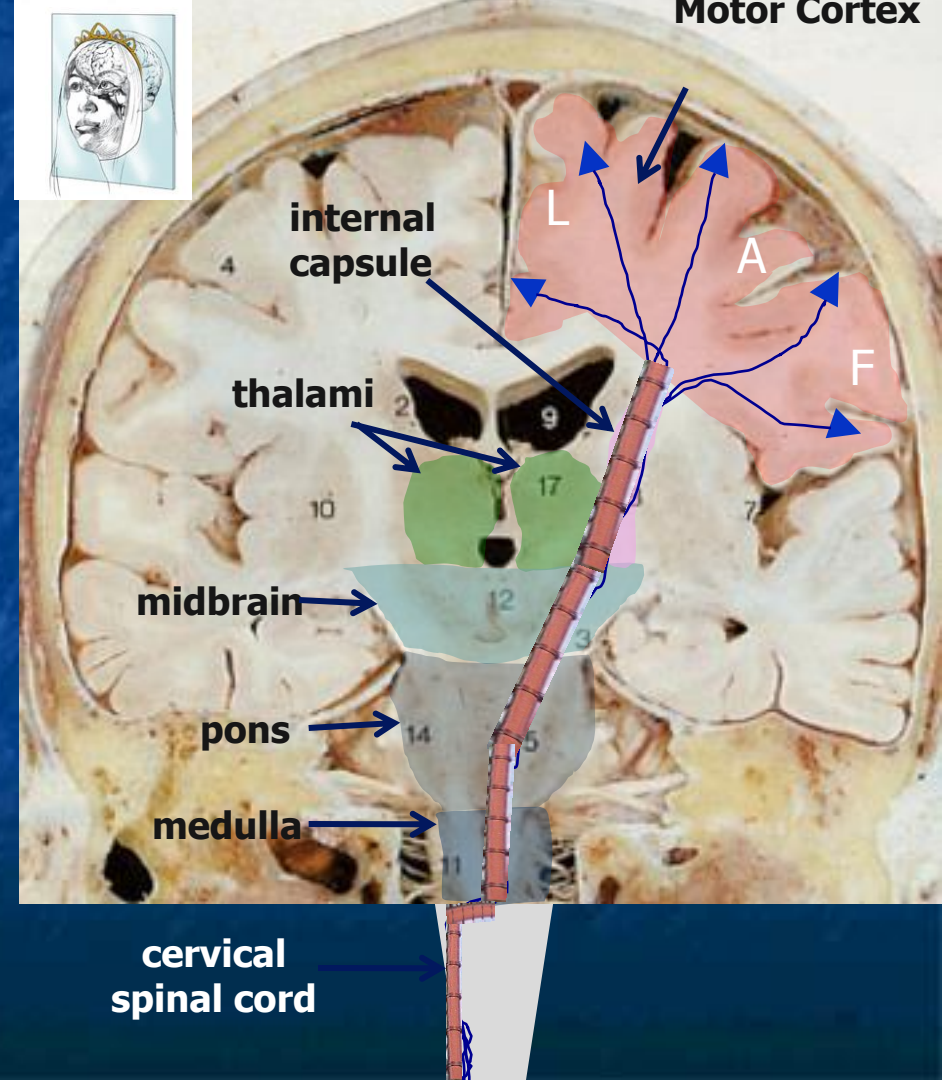
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Voluntary Motor Control: The Corticospinal Pathway



(B) Coronal plane



Cortical Anatomy and Functional Organization

