ACADEMIC SUPPORT CENTER
SUCCESS STARTS HERE.

DAYTONA STATE COLLEGE

NERVOUS SYSTEM & SPECIAL SENSES

SI REVIEW FOR ANATOMY I

A&PI LAB FINAL REVIEW

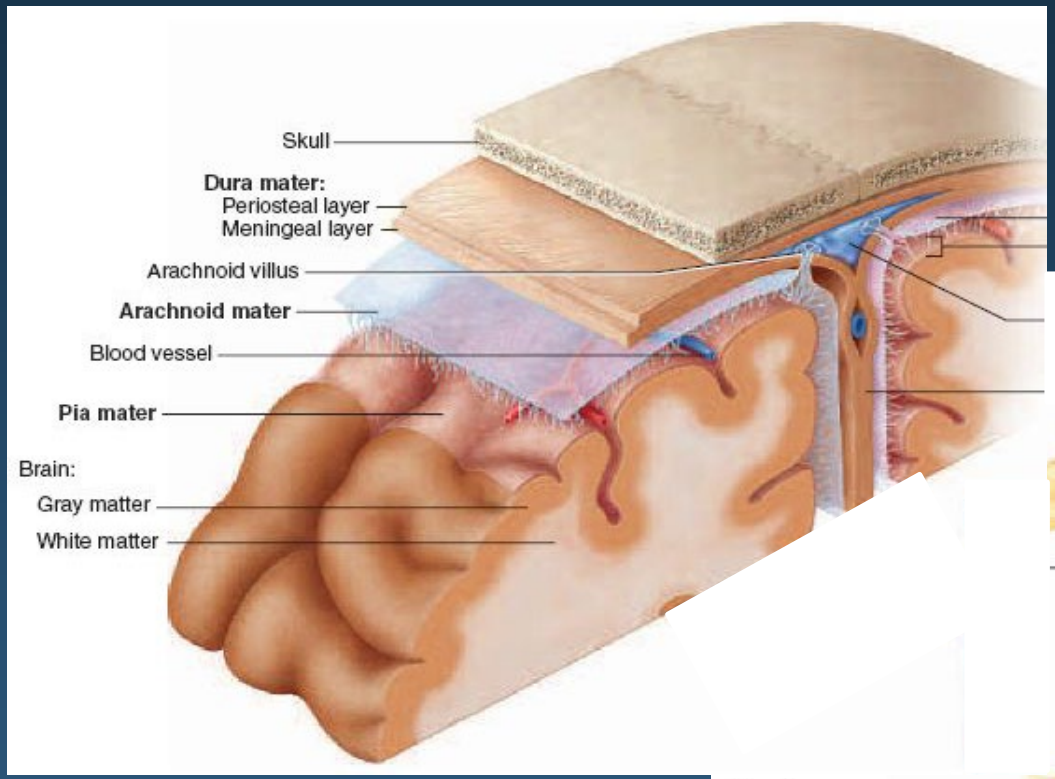
I. ANATOMY OF THE BRAIN

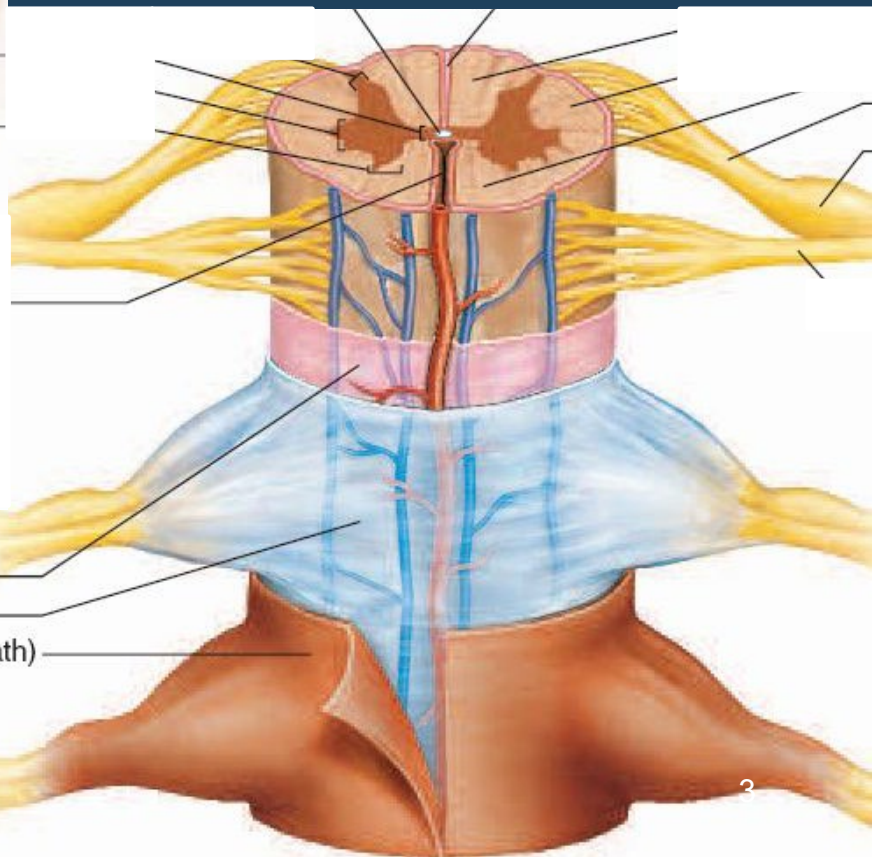
II. NEURON AND SPINAL CORD

III. SPECIAL SENSES

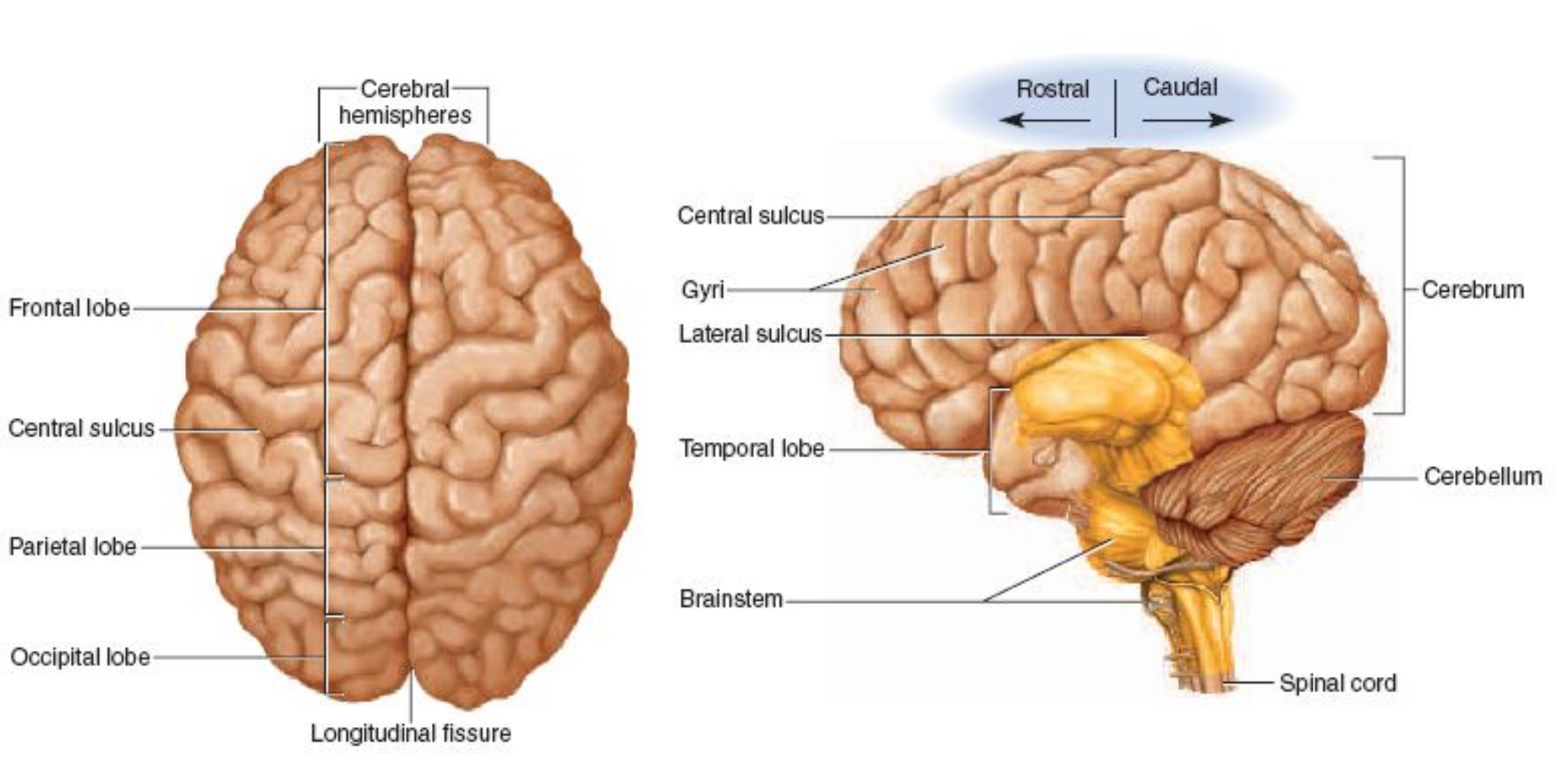
PowerPoint Created
By Eddie Hoppe

External Anatomy: The Meninges

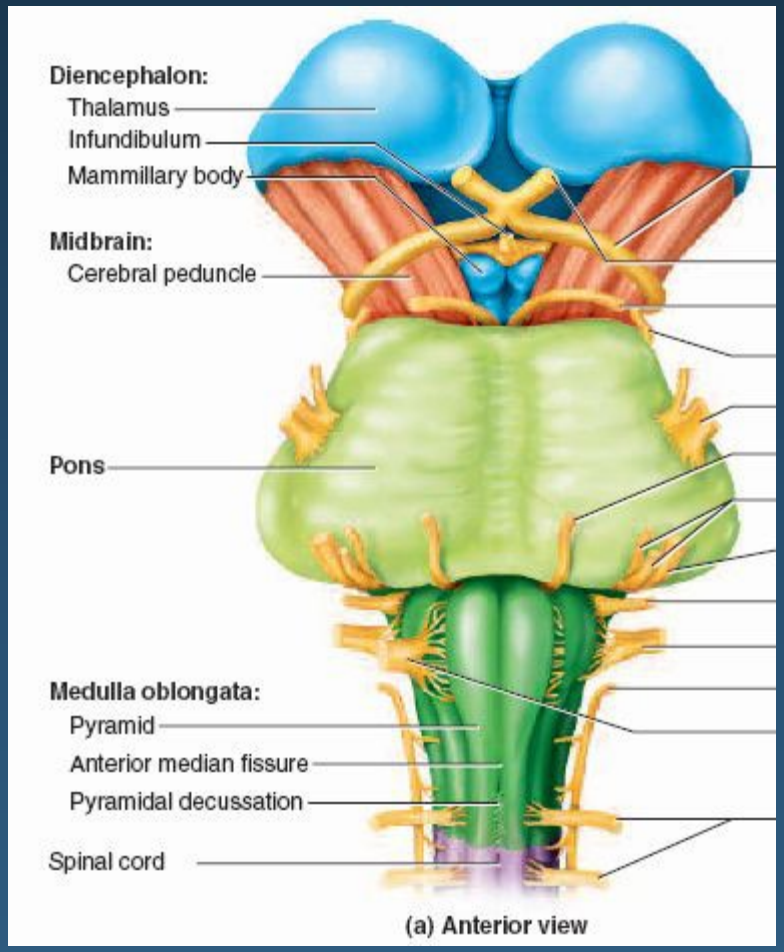




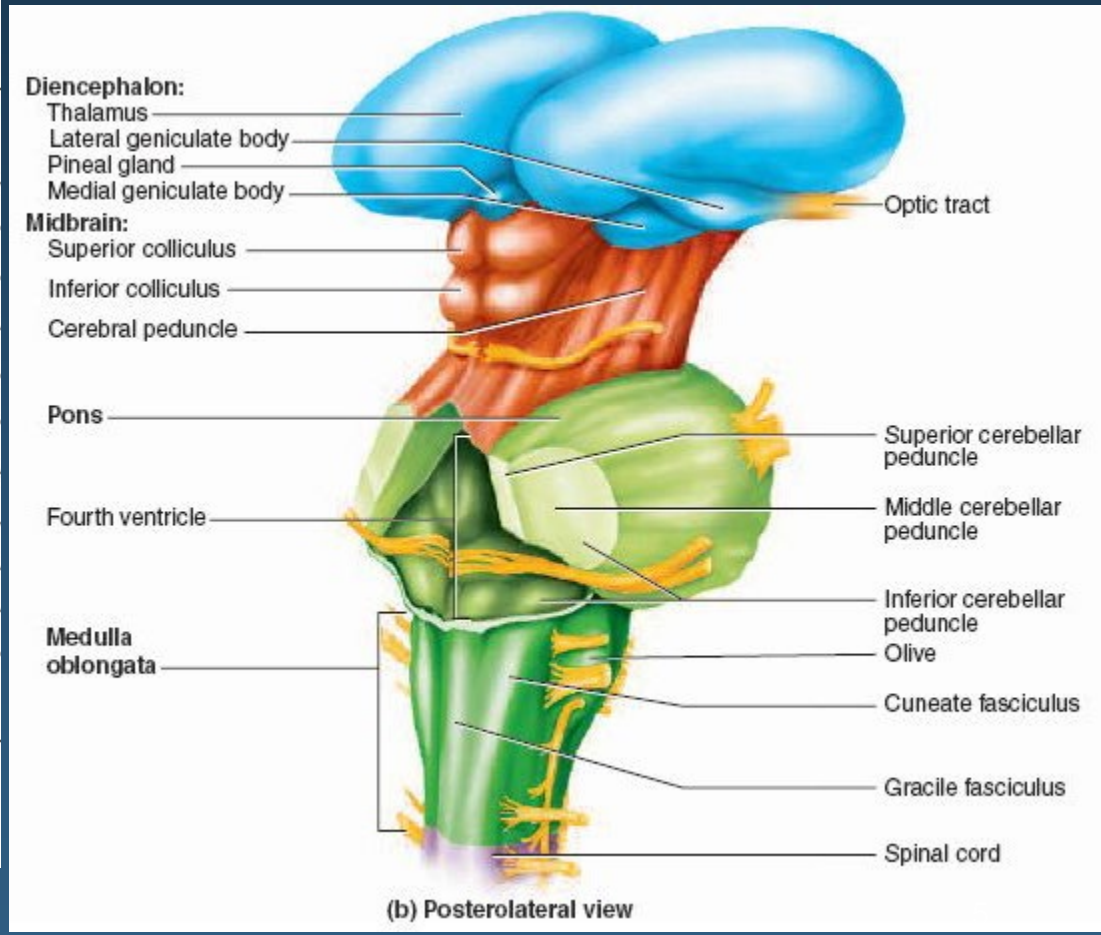
External Anatomy: Cerebral Hemispheres



External Anatomy: Diencephalon and Brain Stem

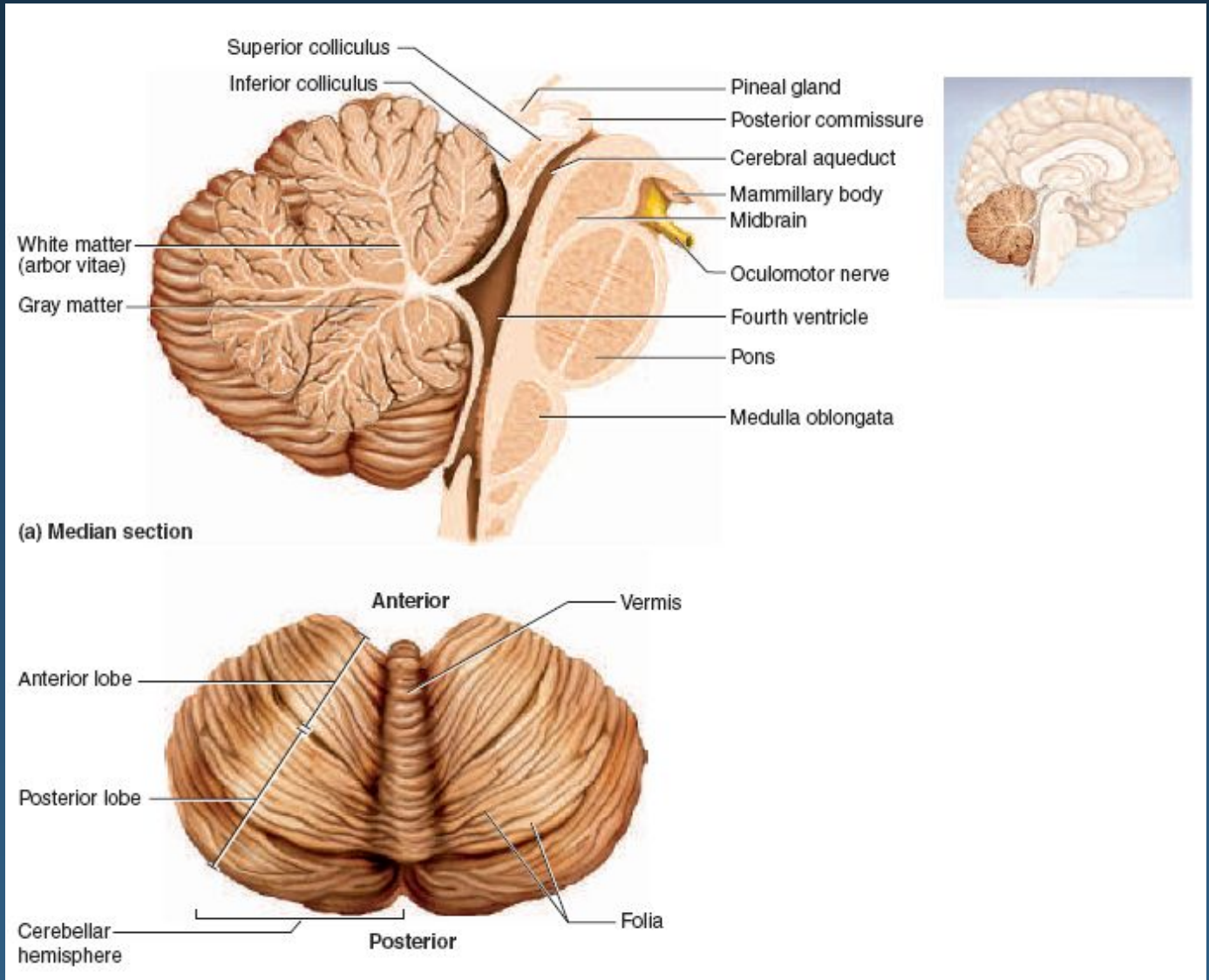


(a) Anterior view

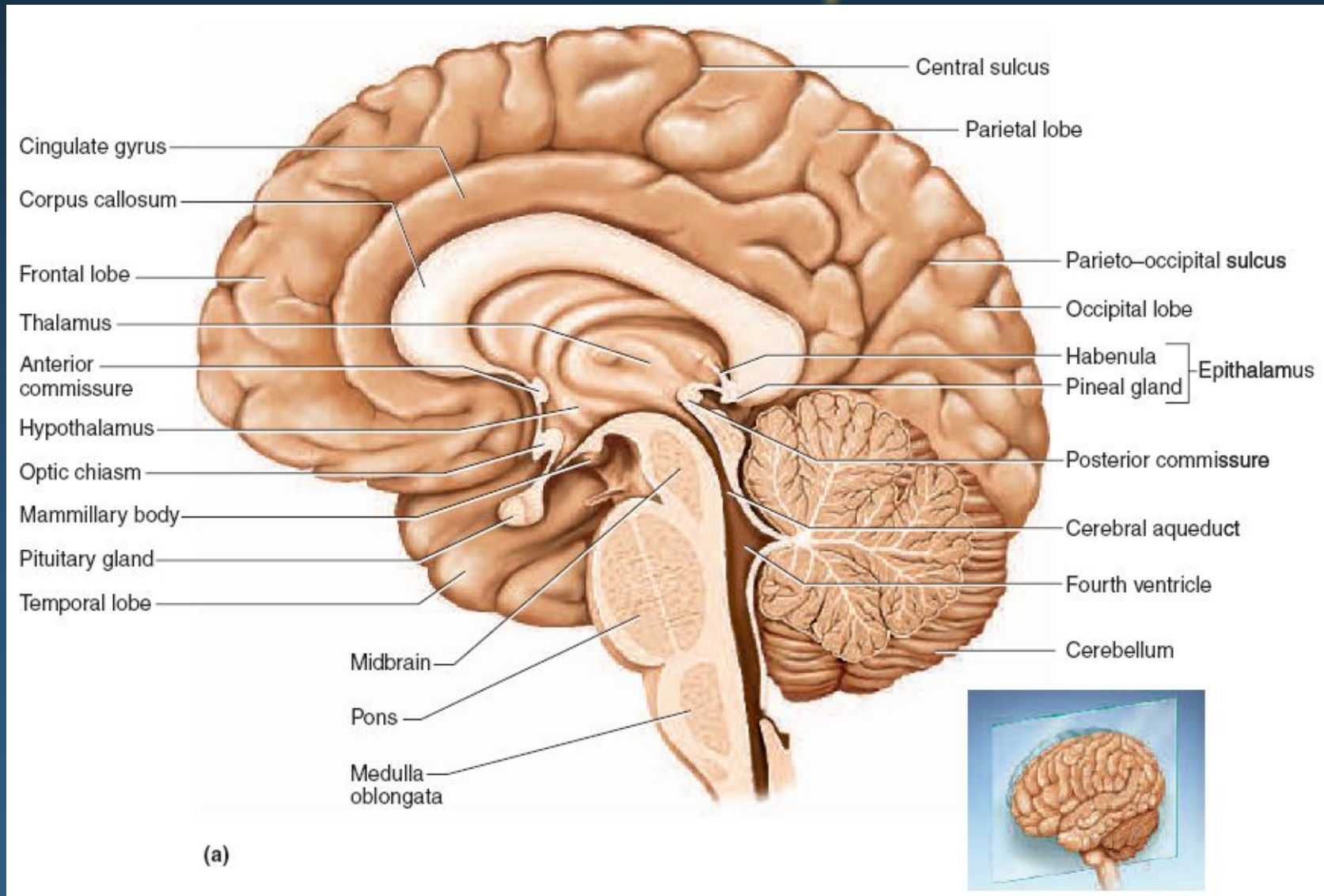


(b) Posterolateral view

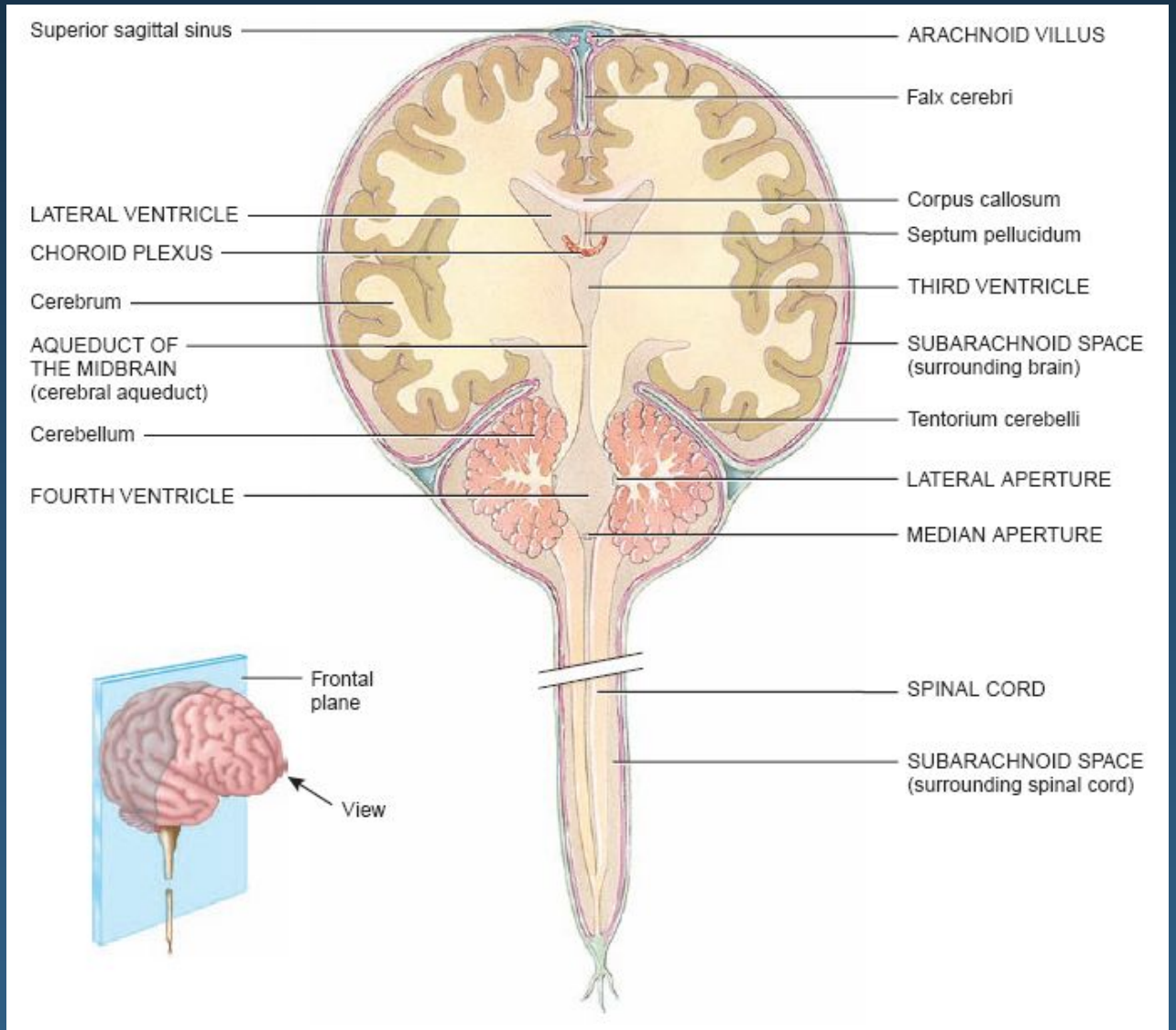
Internal & External Anatomy: Cerebellum



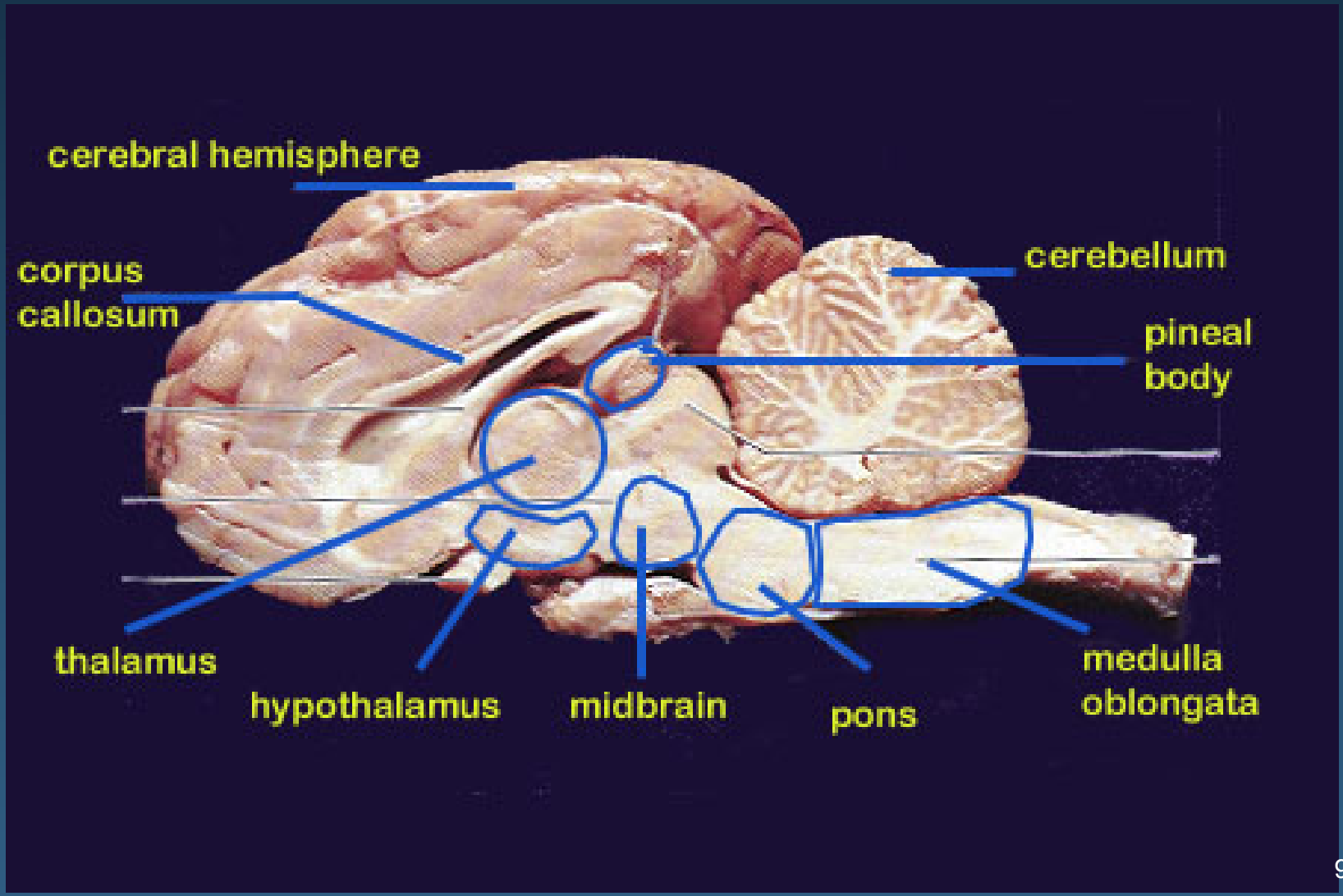
Internal Anatomy: Cerebral Hemispheres



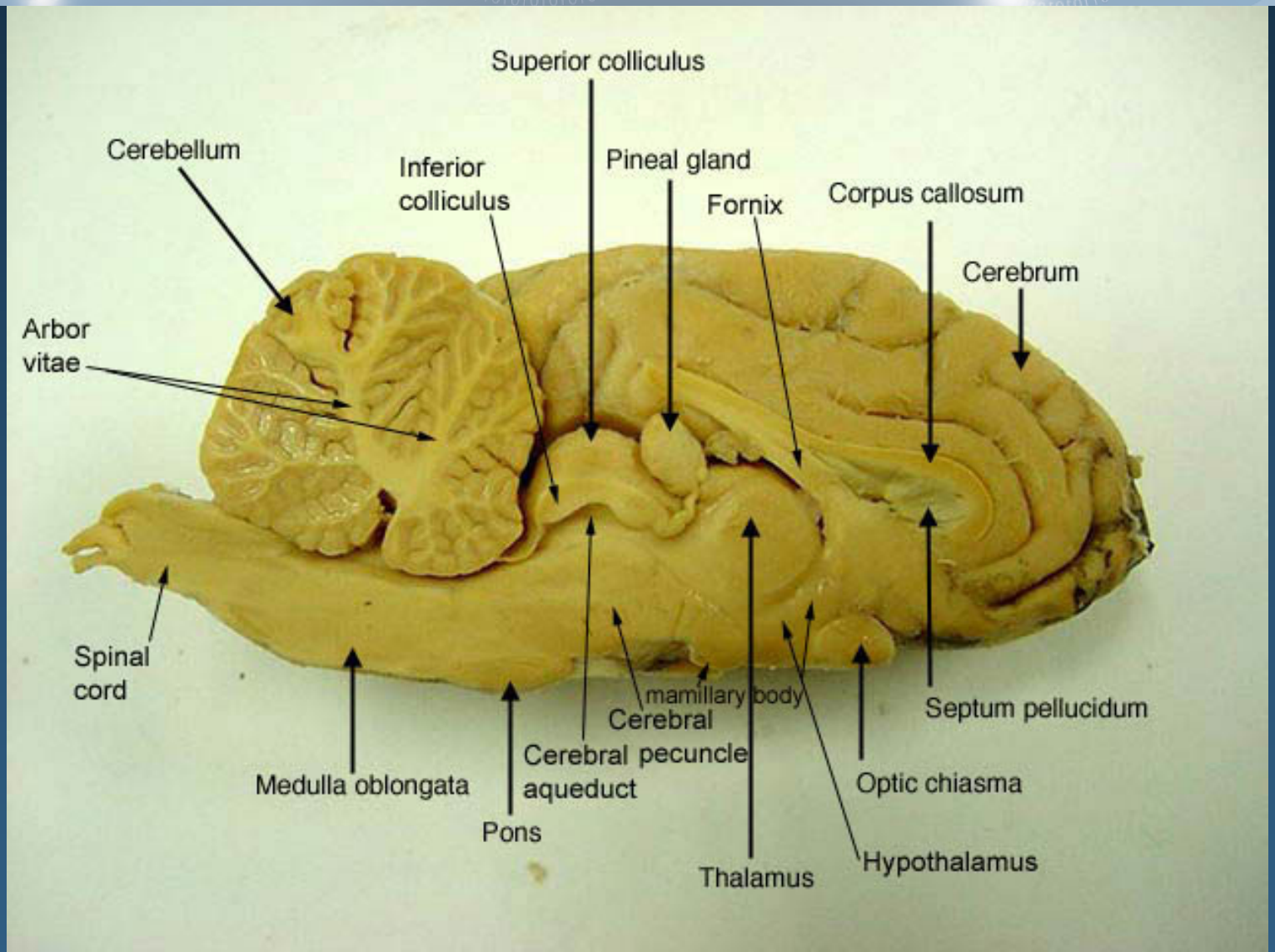
Internal Anatomy: Ventricles



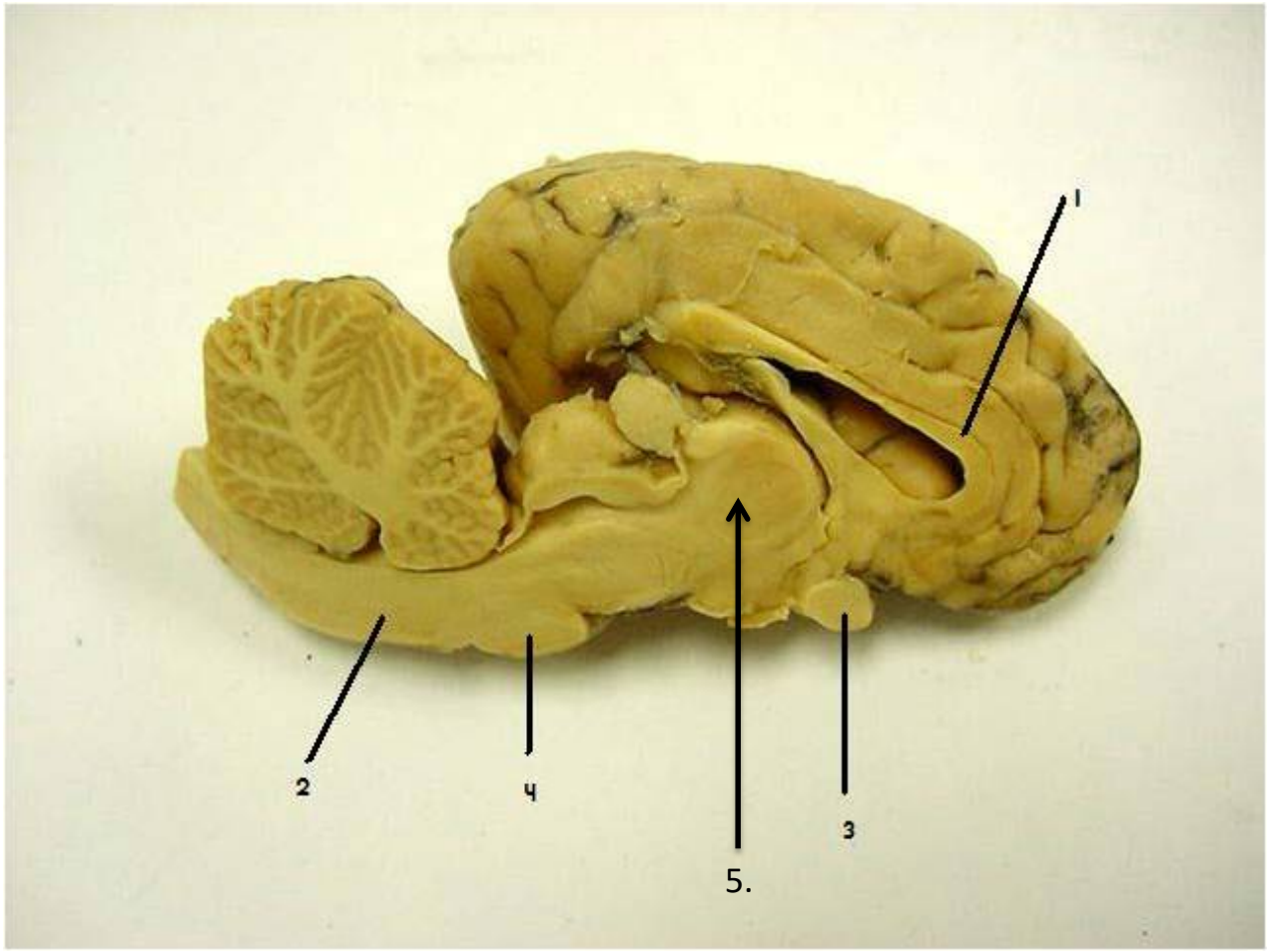
Lab Dissection: Sheep Brain



Lab Dissection: Sheep Brain

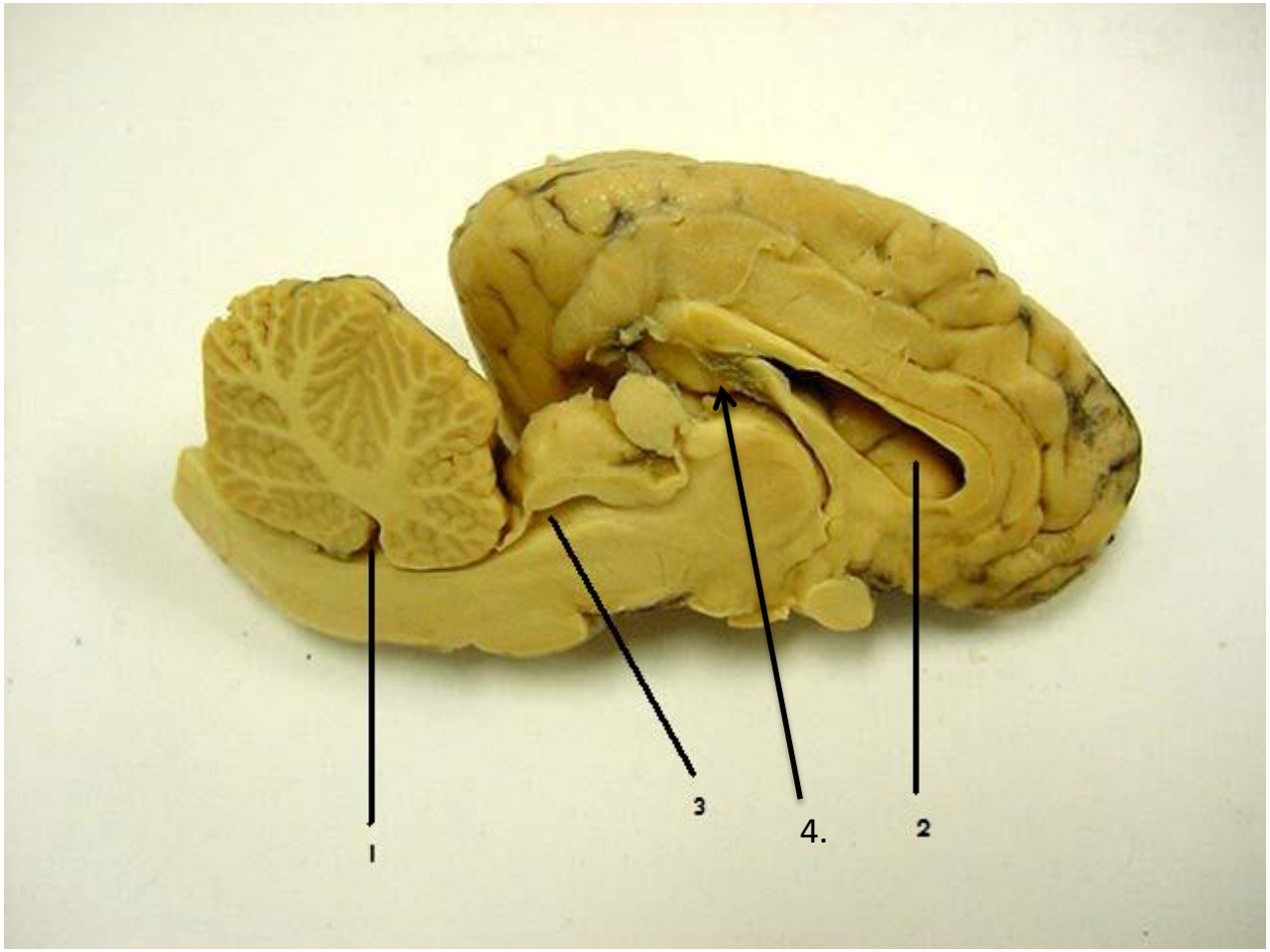


Lab Dissection: Sheep Brain



1. Corpus Callosum
2. Medulla Oblongata
3. Optic Chiasma
4. Pons
5. Thalamus

Lab Dissection: Sheep Brain



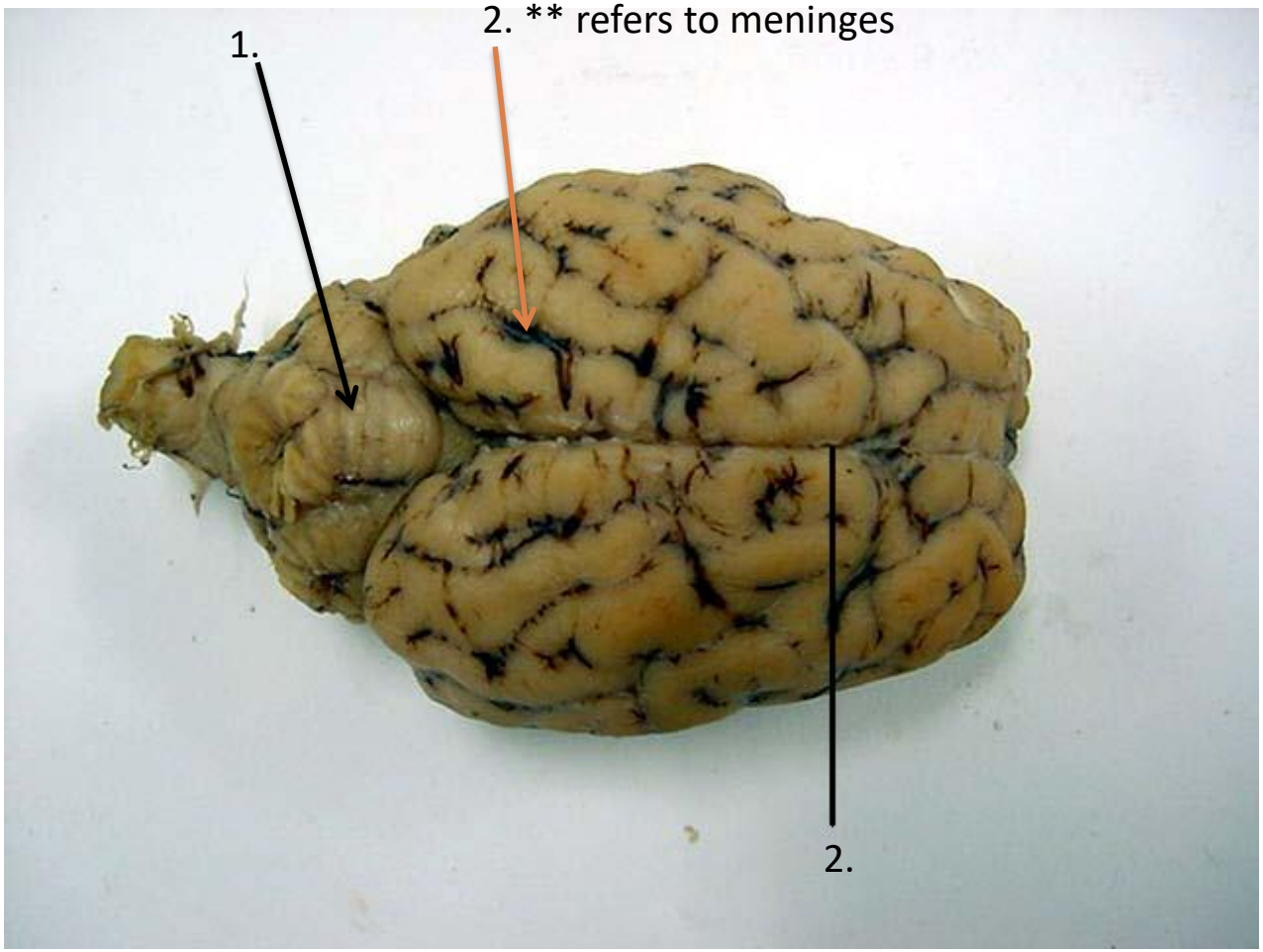
1. Fourth Ventricle

2. Lateral Ventricles

3. Cerebral Aquaduct

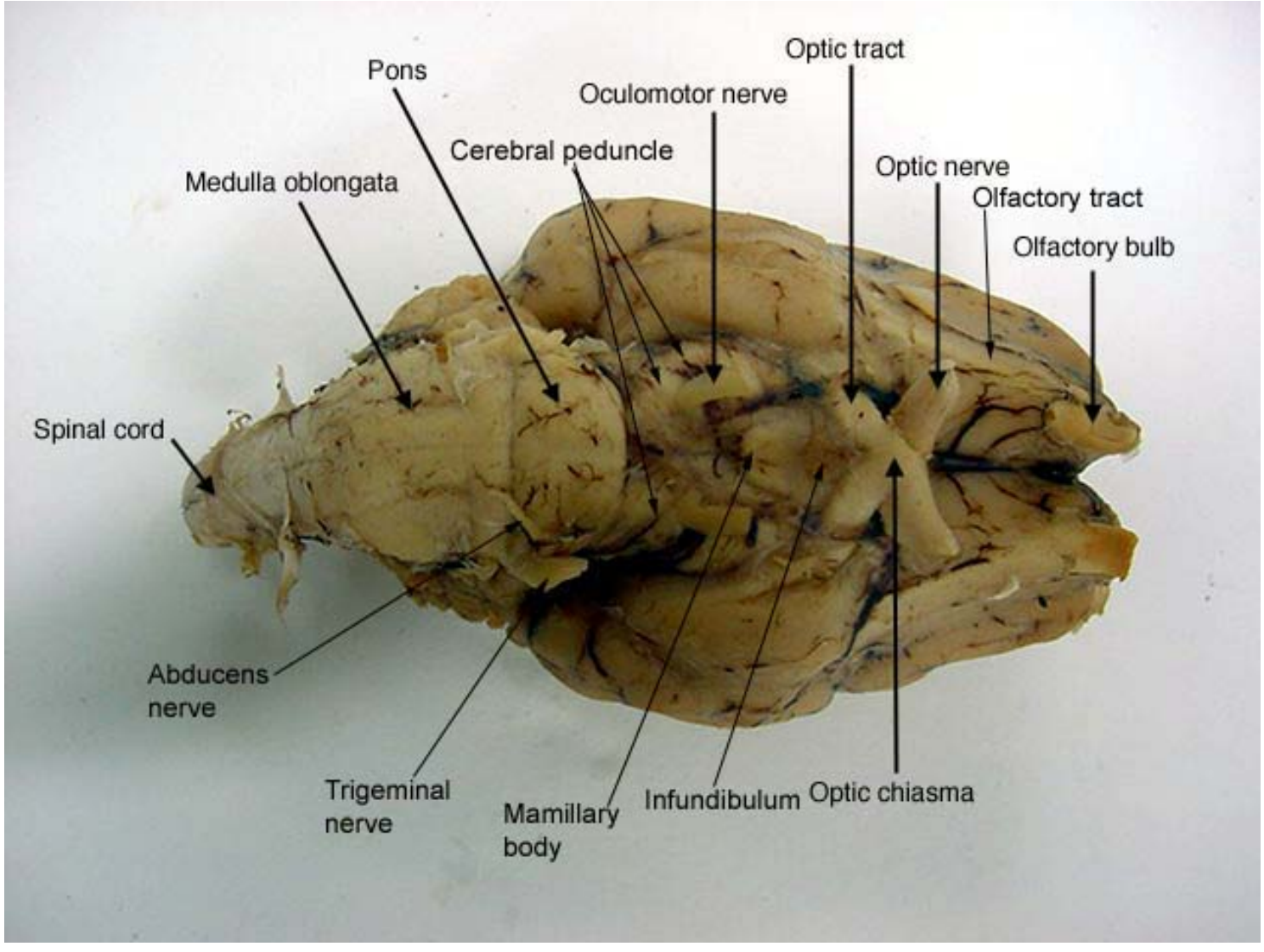
4. Third Ventricle

Lab Dissection: Sheep Brain

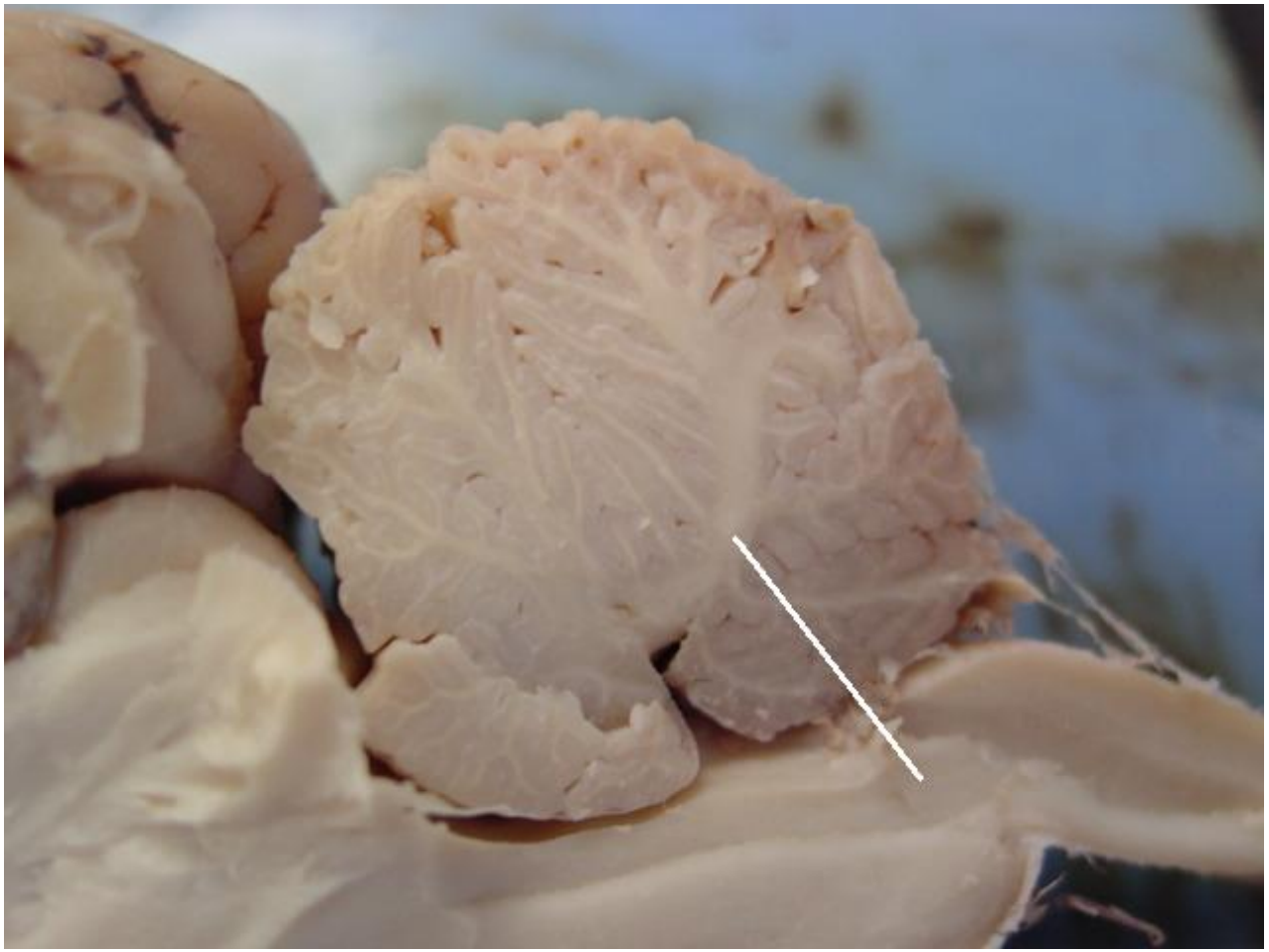


1. Vermis of the cerebellum
2. Arachnoid Mater
3. Longitudinal Fissure

Lab Dissection: Sheep Brain



Lab Dissection: Sheep Brain

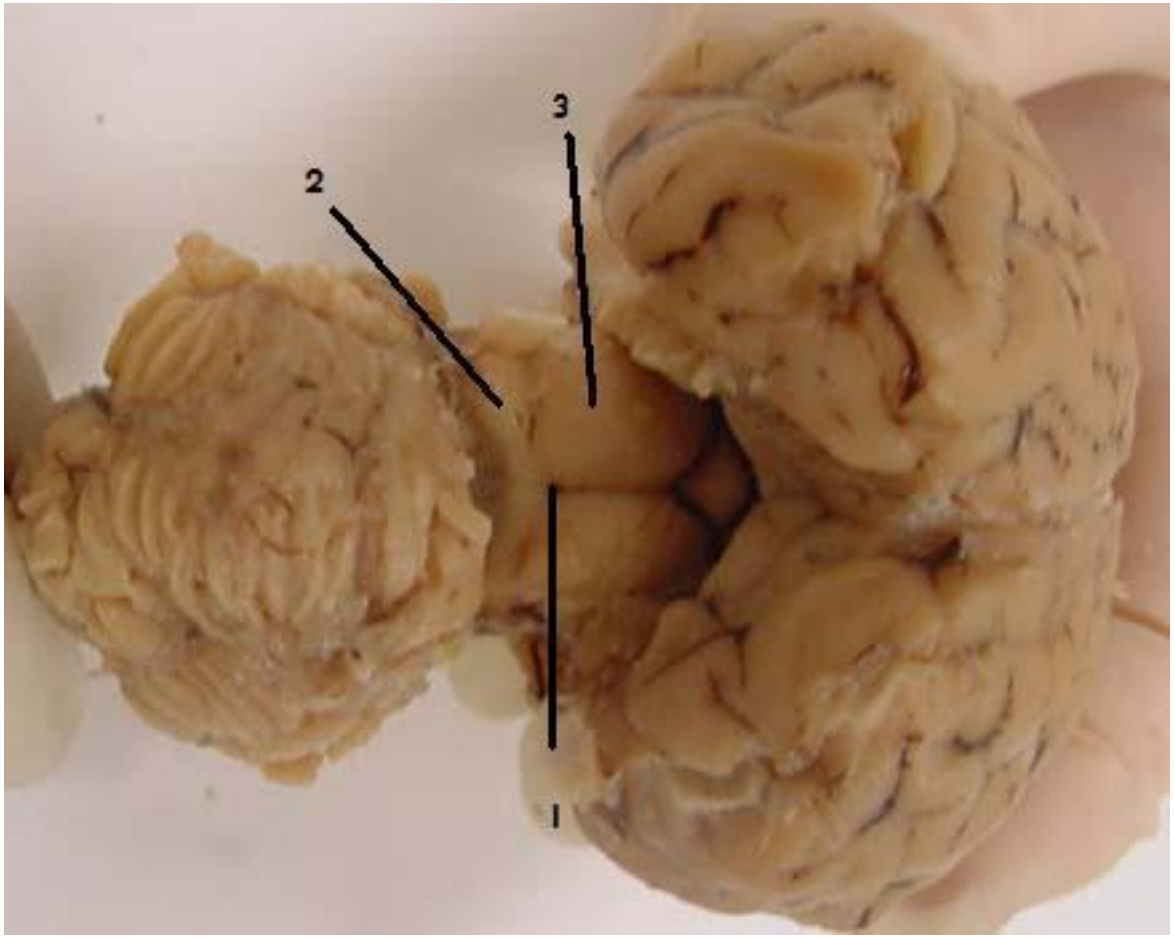


1. Arbor Vitae

Lab Model

1. Pituitary Gland

Lab Dissection: Sheep Brain

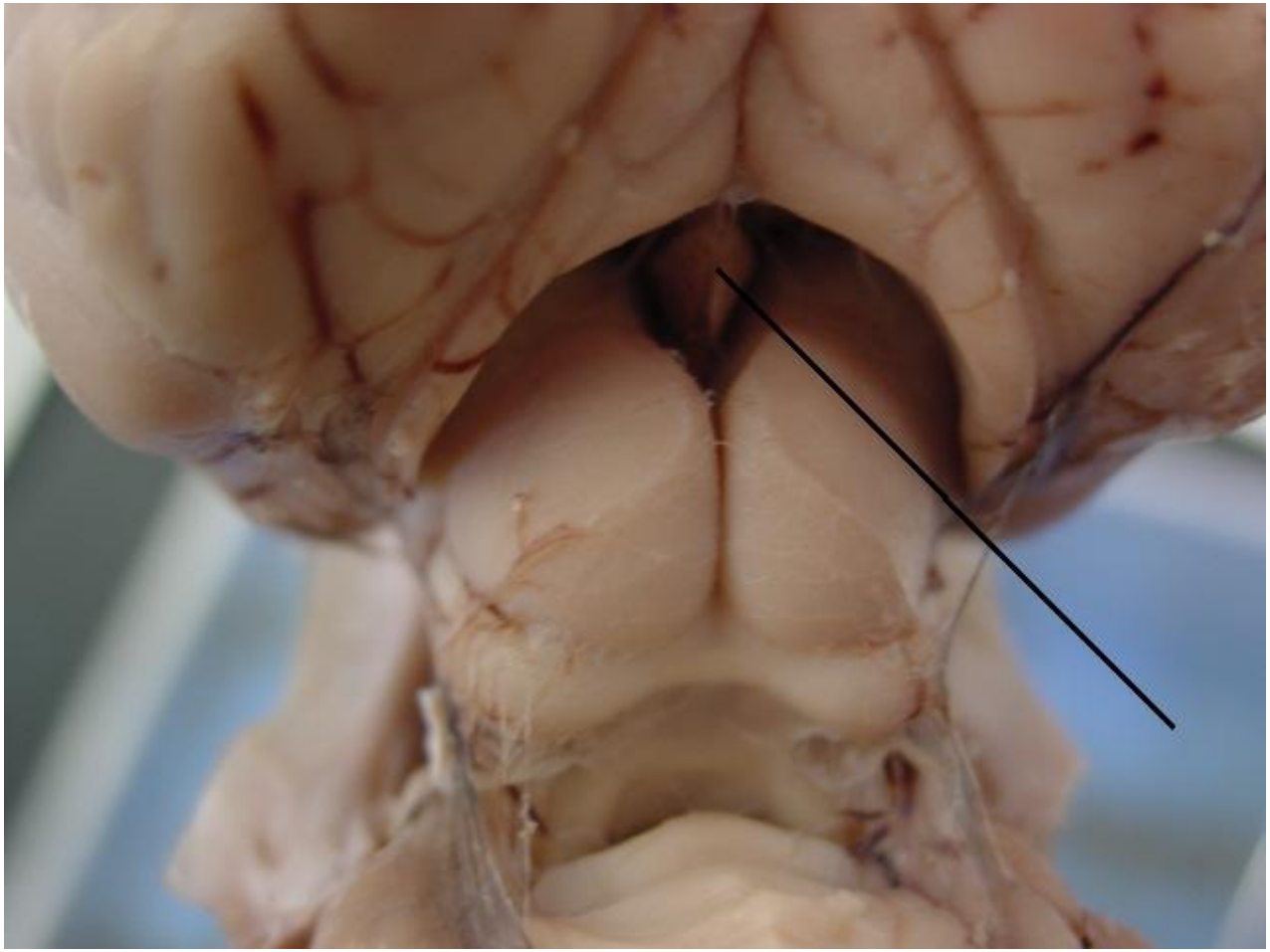


1. Label the whole structure
   Corpora Quadrigemina

2. Inferior Colliculi

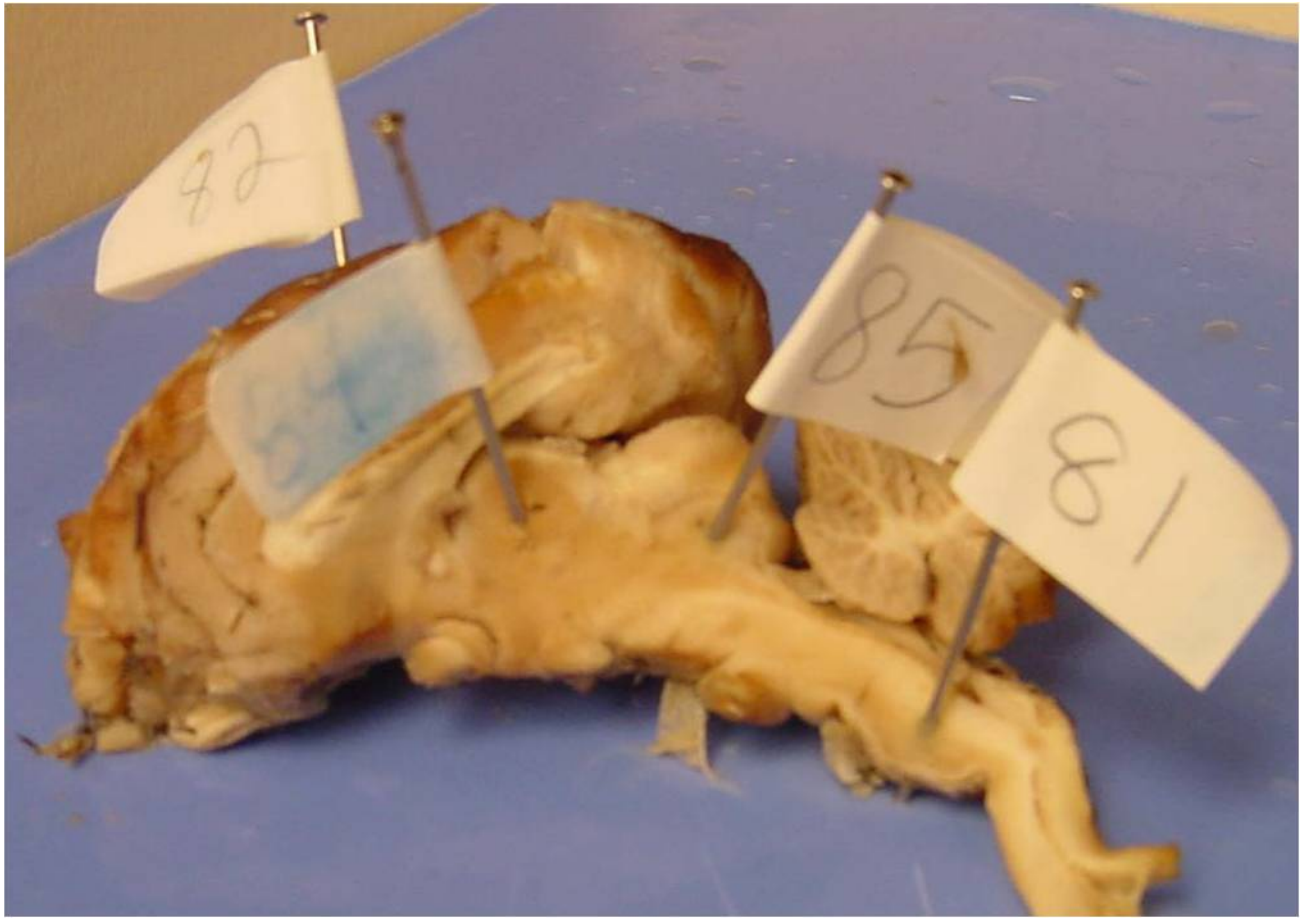
3. Superior Colliculi

Lab Dissection: Sheep Brain



1. Pineal gland

Lab Dissection: Sheep Brain

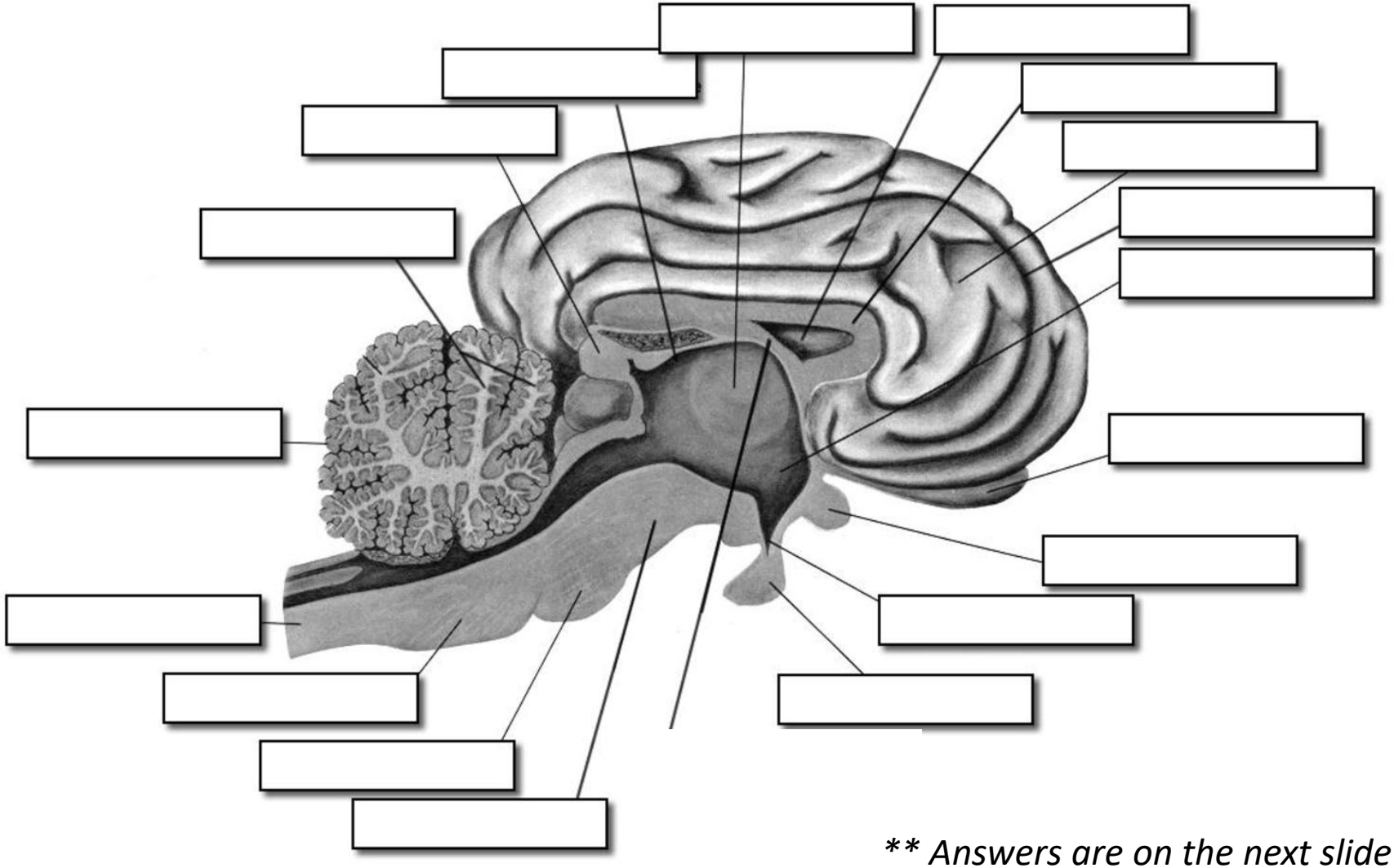


81. Medulla oblongata

84. Thalamus (the third ventricle is between the thalamic nuclei and the hypothalamus)

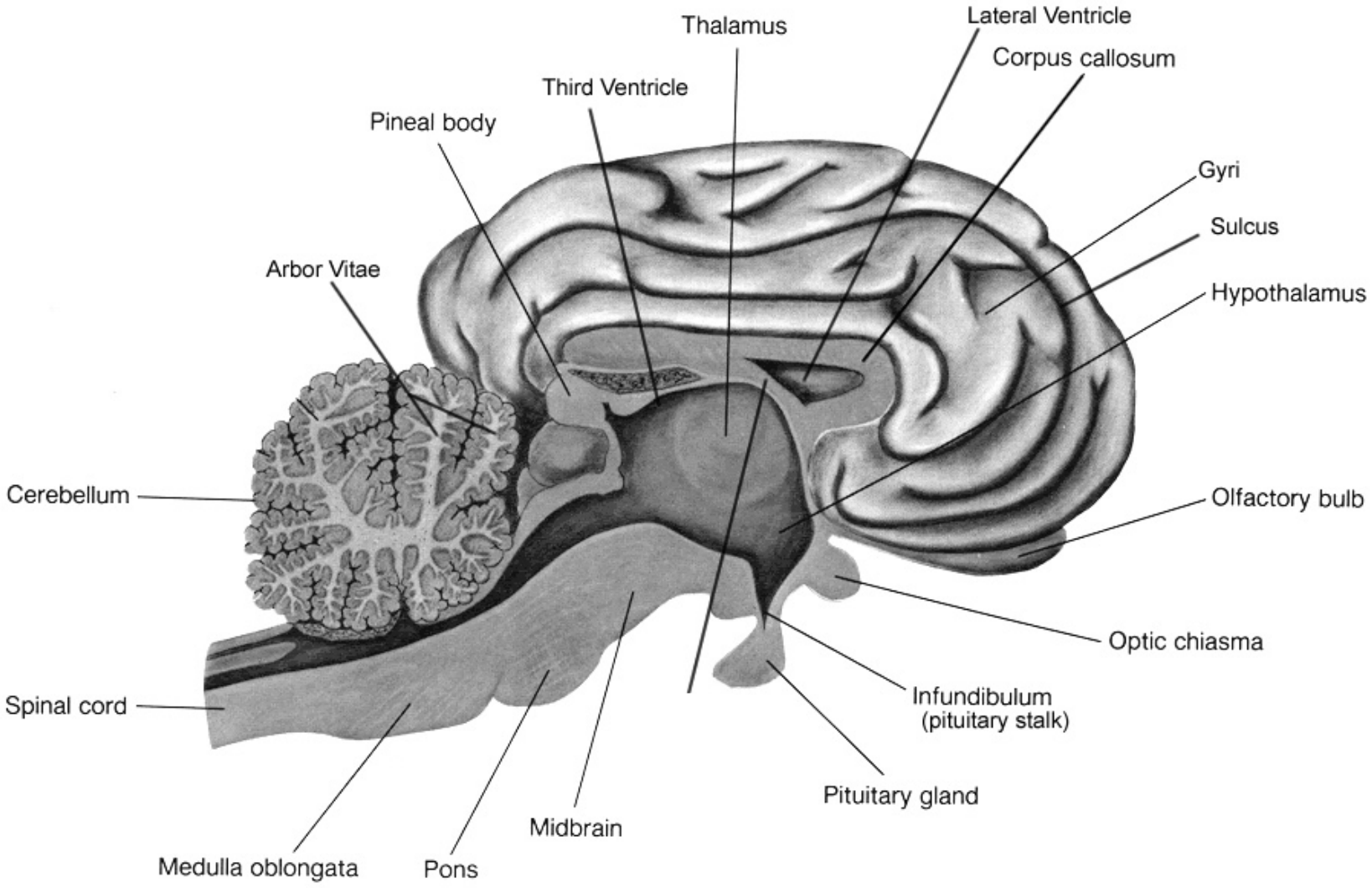
85. The cerebral aquaduct

Label the Following

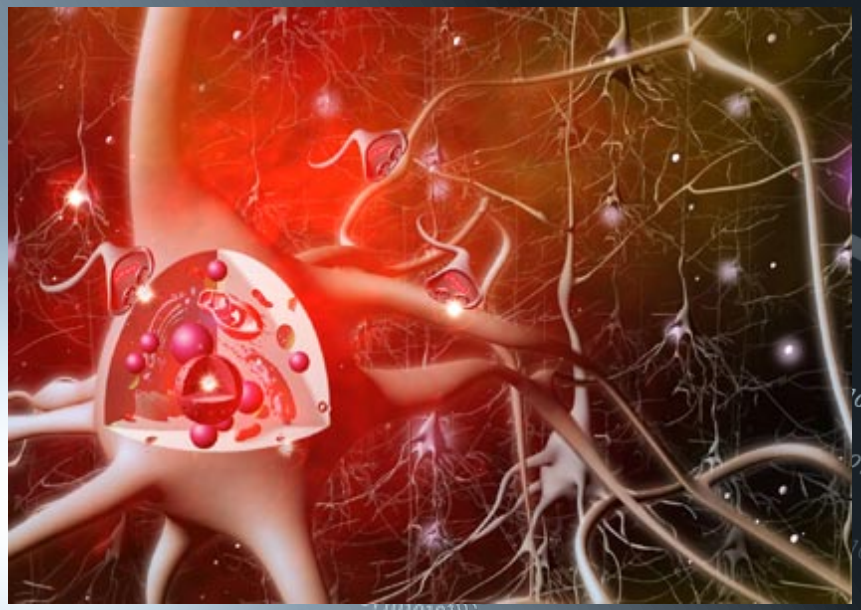


*** Answers are on the next slide*

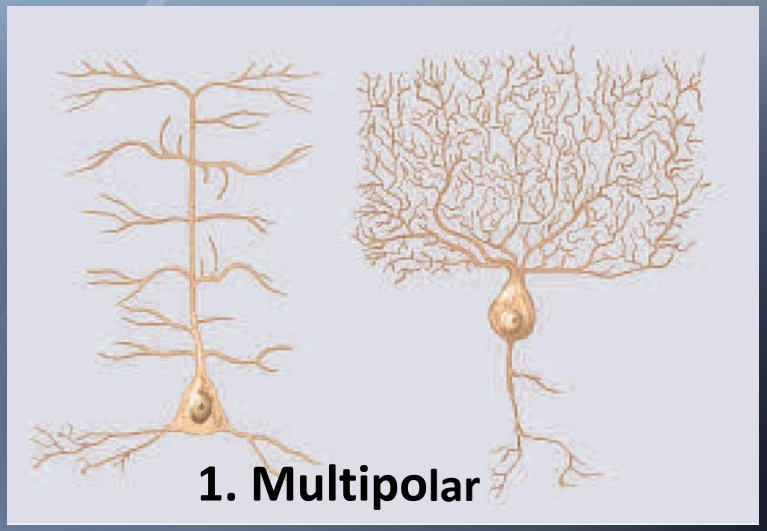
Answers


Thalamus
Lateral Ventricle
Corpus callosum
Third Ventricle
Pineal body
Gyri
Sulcus
Arbor Vitae
Hypothalamus
Cerebellum
Olfactory bulb
Optic chiasma
Spinal cord
Infundibulum
(pituitary stalk)
Pituitary gland
Midbrain
Medulla oblongata
Pons

Neuron A&P and Spinal Cord

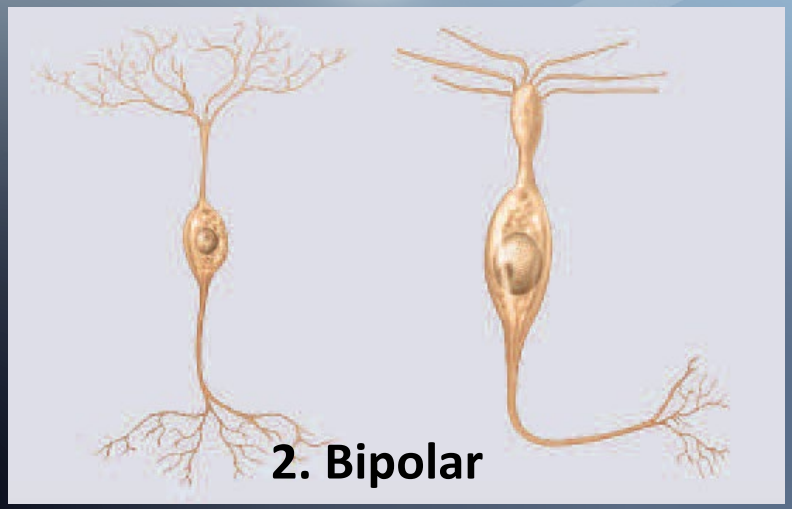


Identify Neuron Type



1. Multipolar

"In the brain"



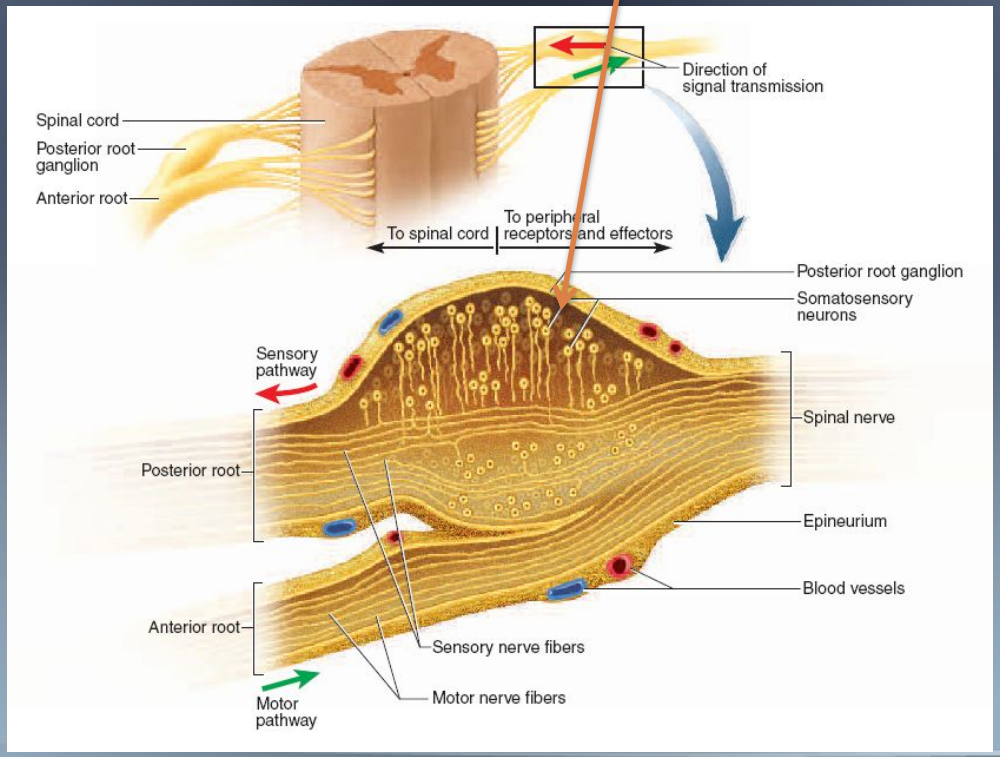
2. Bipolar

"Vision, hearing, olfaction"

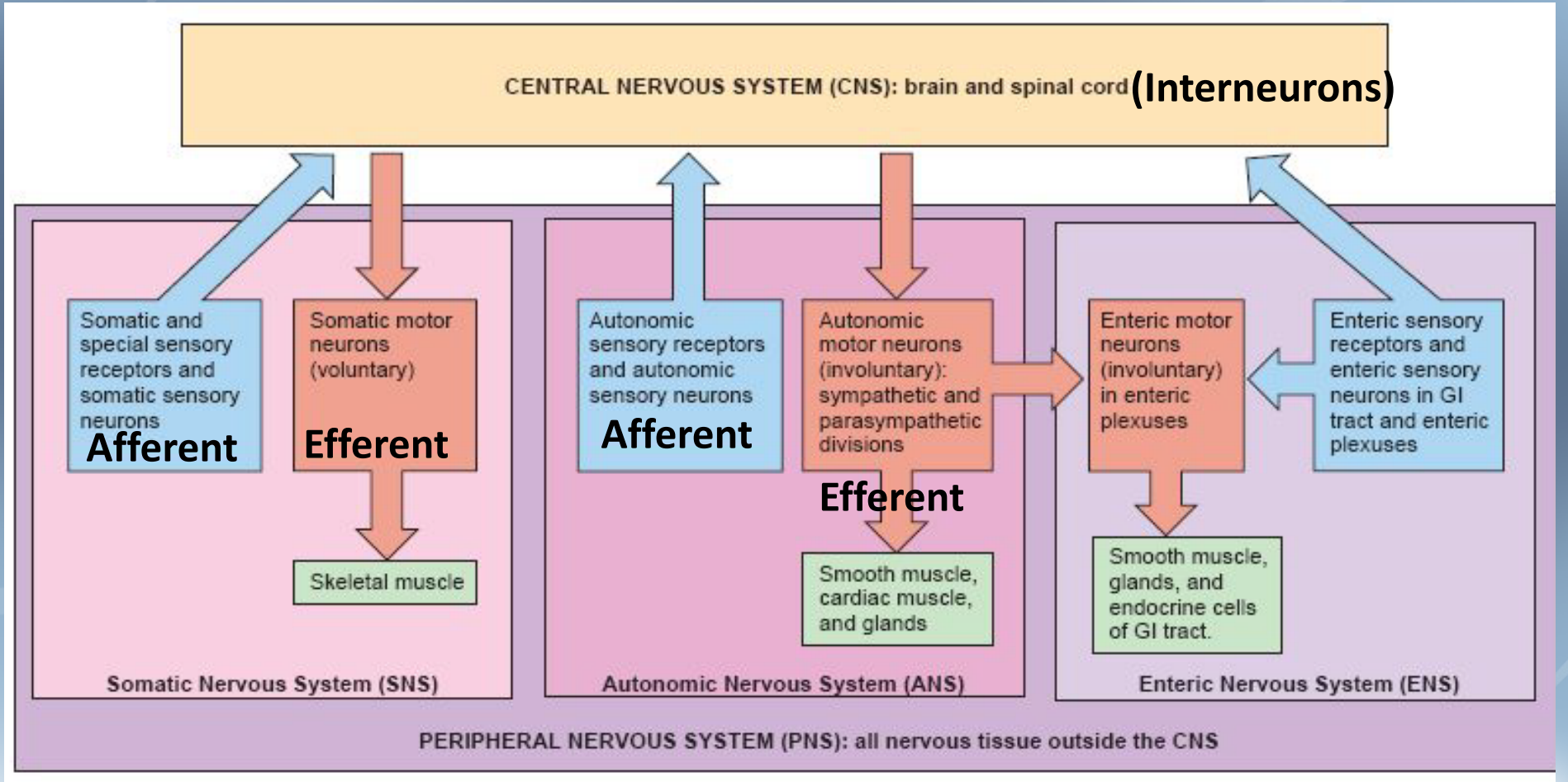
Identify Neuron Type

3. Unipolar

"Most afferent neurons entering dorsal horns of the spine"



The Nervous System



Important Terminology

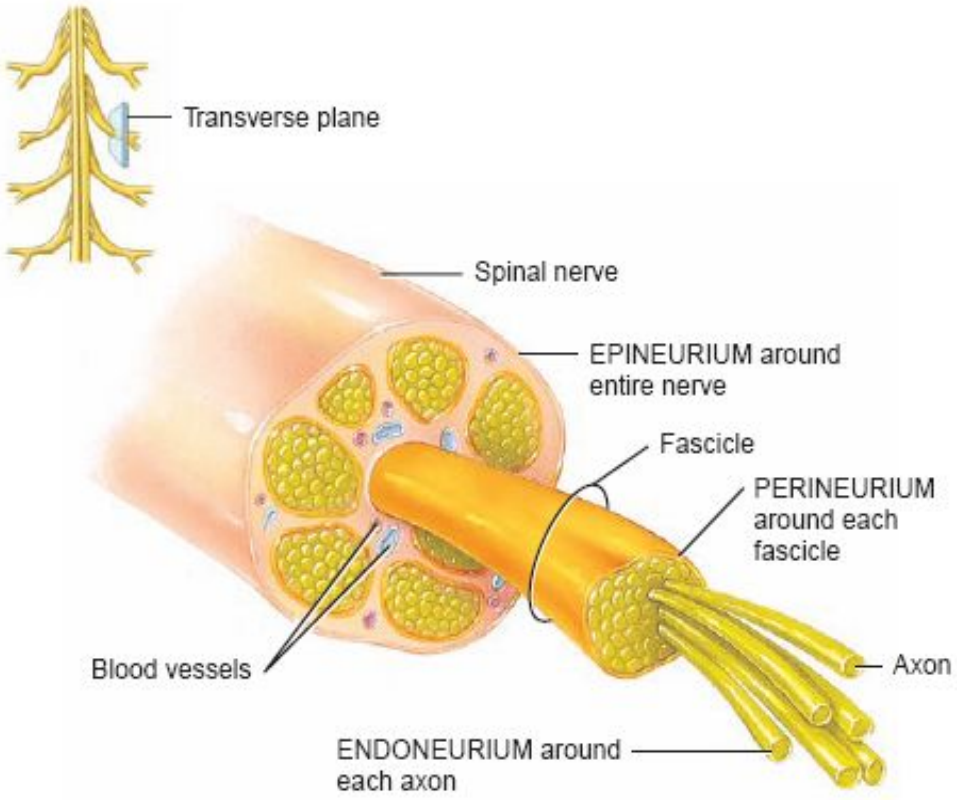
A group of cell bodies in the CNS (gray matter) is referred to as Nuclei.

A couple of cell bodies in the PNS is referred to as Ganglia.

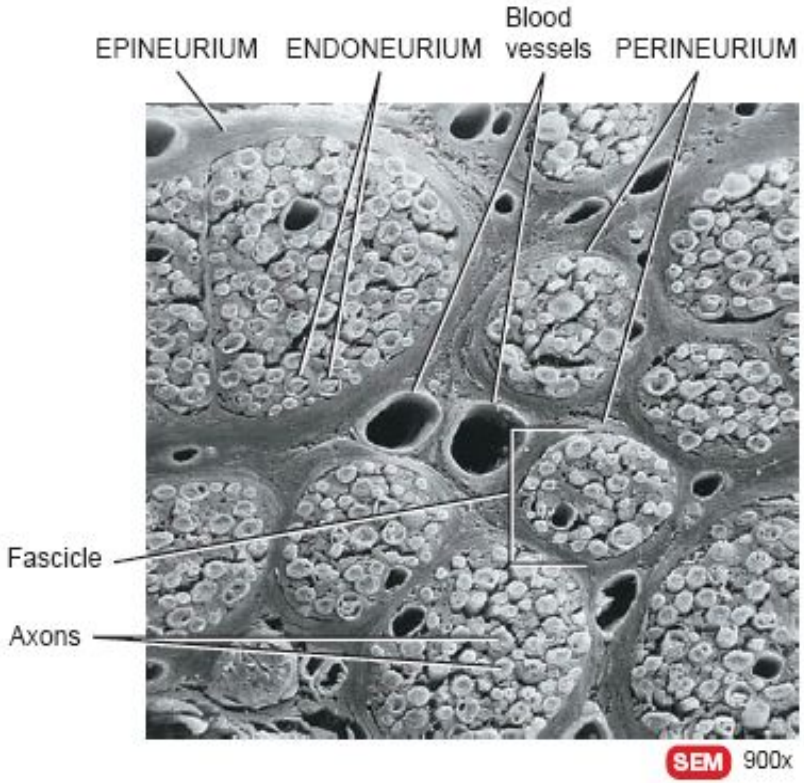
A bundle of Axons in the CNS (white matter) is referred to as Tract.

A bundle of axons in the PNS is referred to as Nerve.

Transverse section of a Spinal Nerve



(a) Transverse section showing the coverings of a spinal nerve

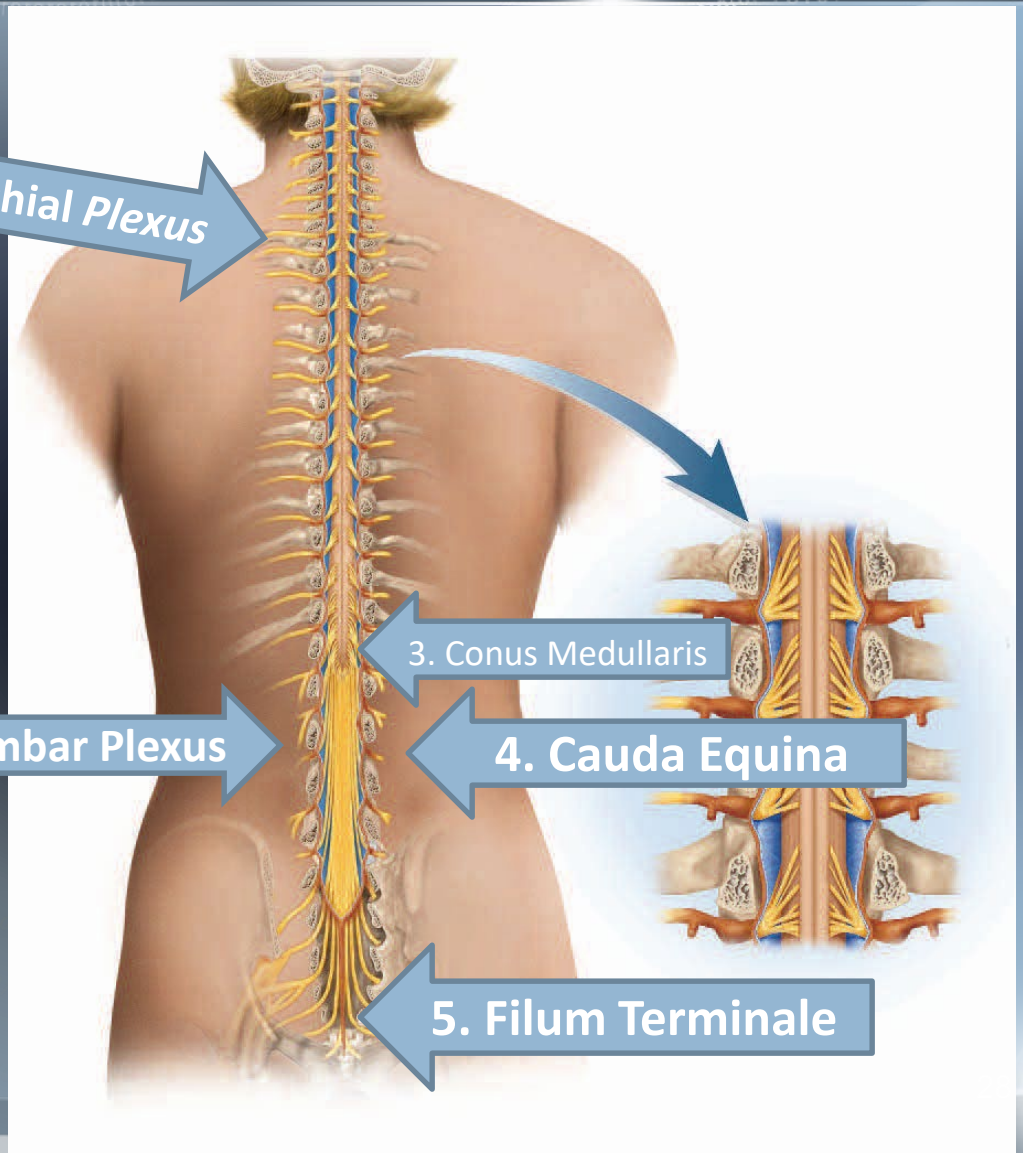


(b) Transverse section of 12 nerve fascicles

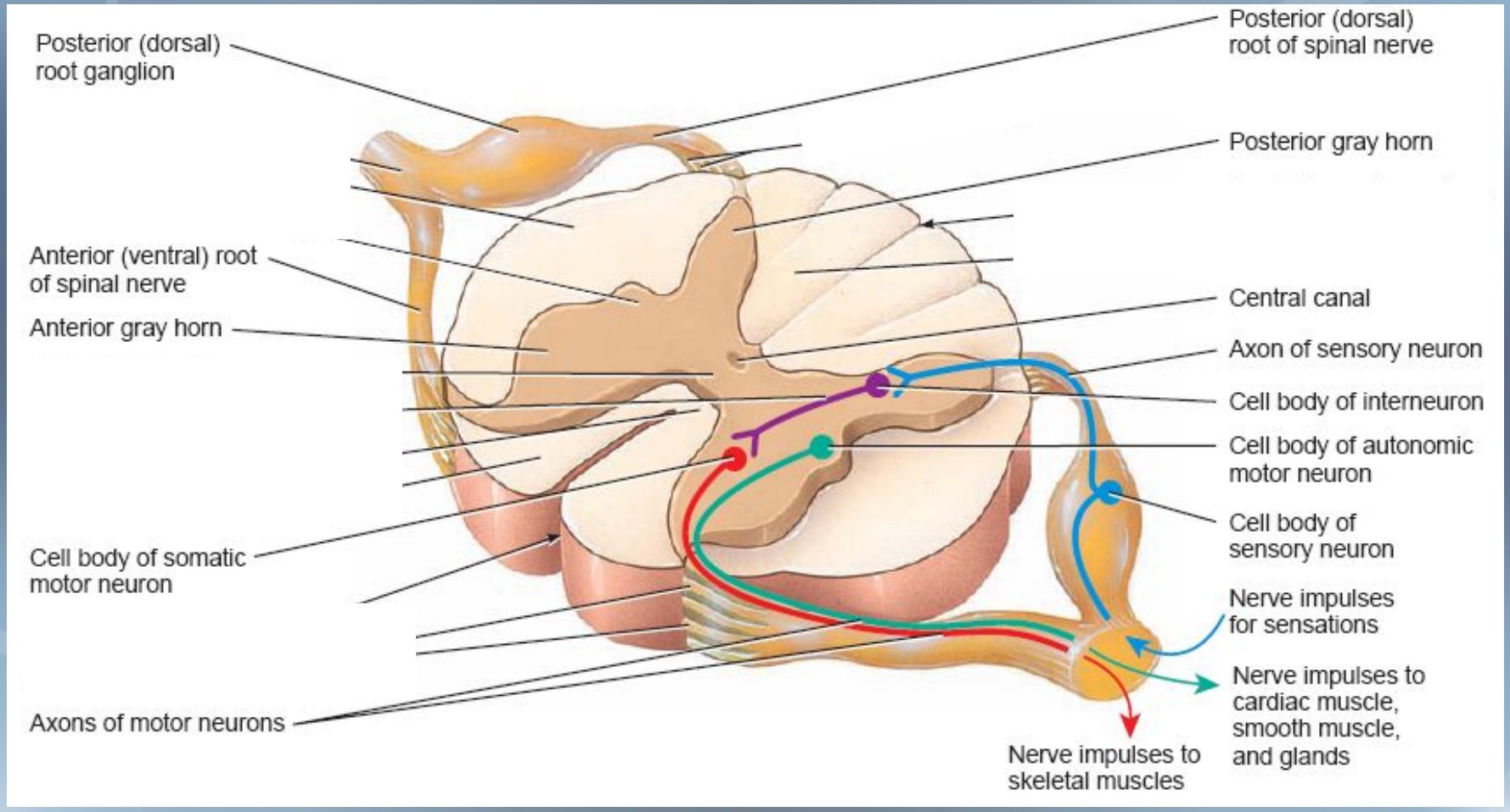
Spinal Cord and Plexes

1. Refers to region of nerves exiting spinal cord at C5-T1

2. Refers to region of nerves exiting spinal cord at the lumbar region



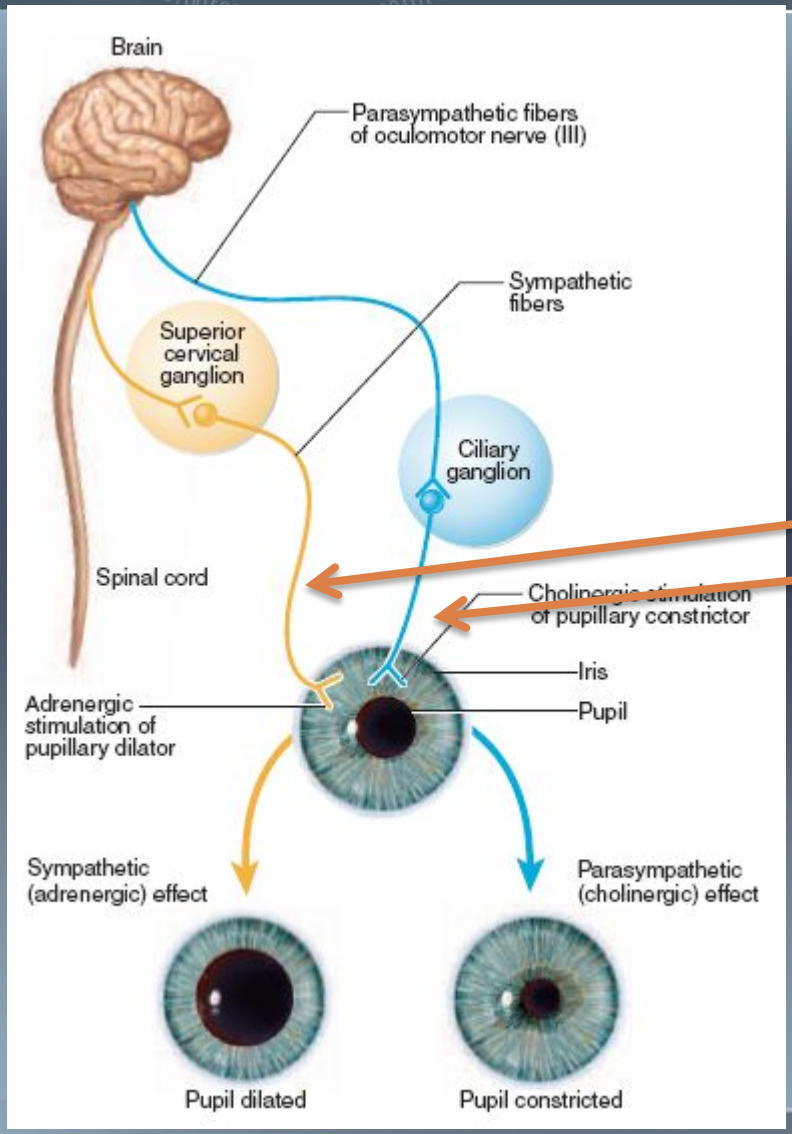
Transverse Section of the Spinal Cord

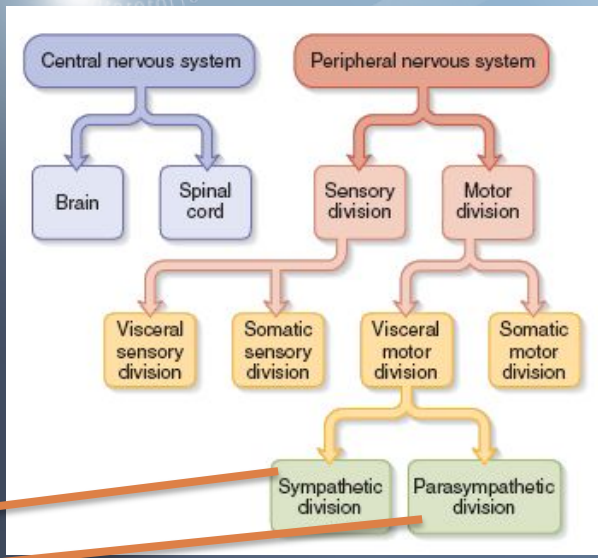


Eye Autonomic Reflex Test

Is the pupillary reflex driven by the sympathetic or parasympathetic division of the autonomic nervous system?

If somebody spooks you, the diameter of your pupil gets larger – thus the reflex is driven by the sympathetic response



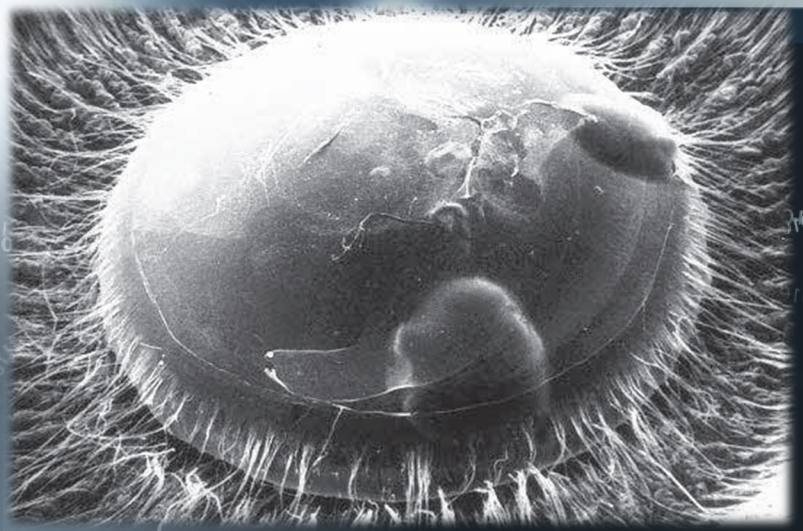


Response of Sympathetic Division →

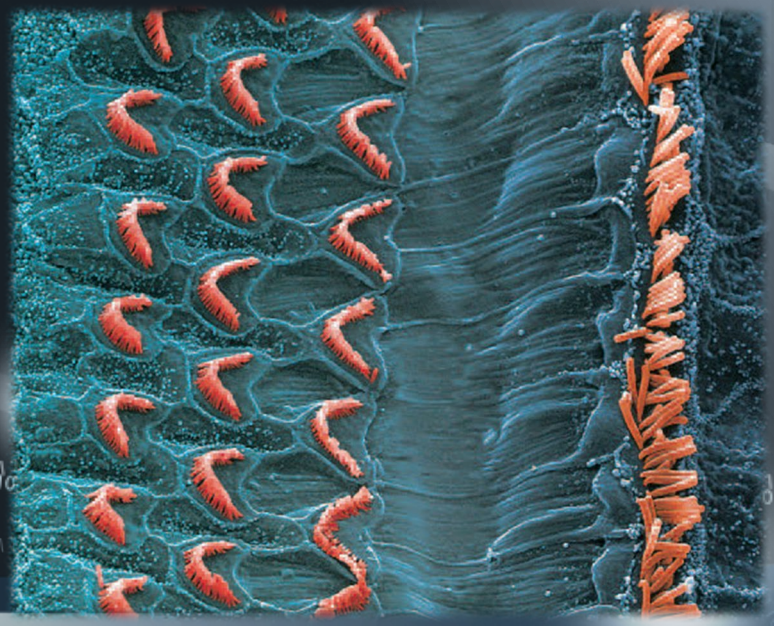
← Response of Parasympathetic Division

Reflex Activities

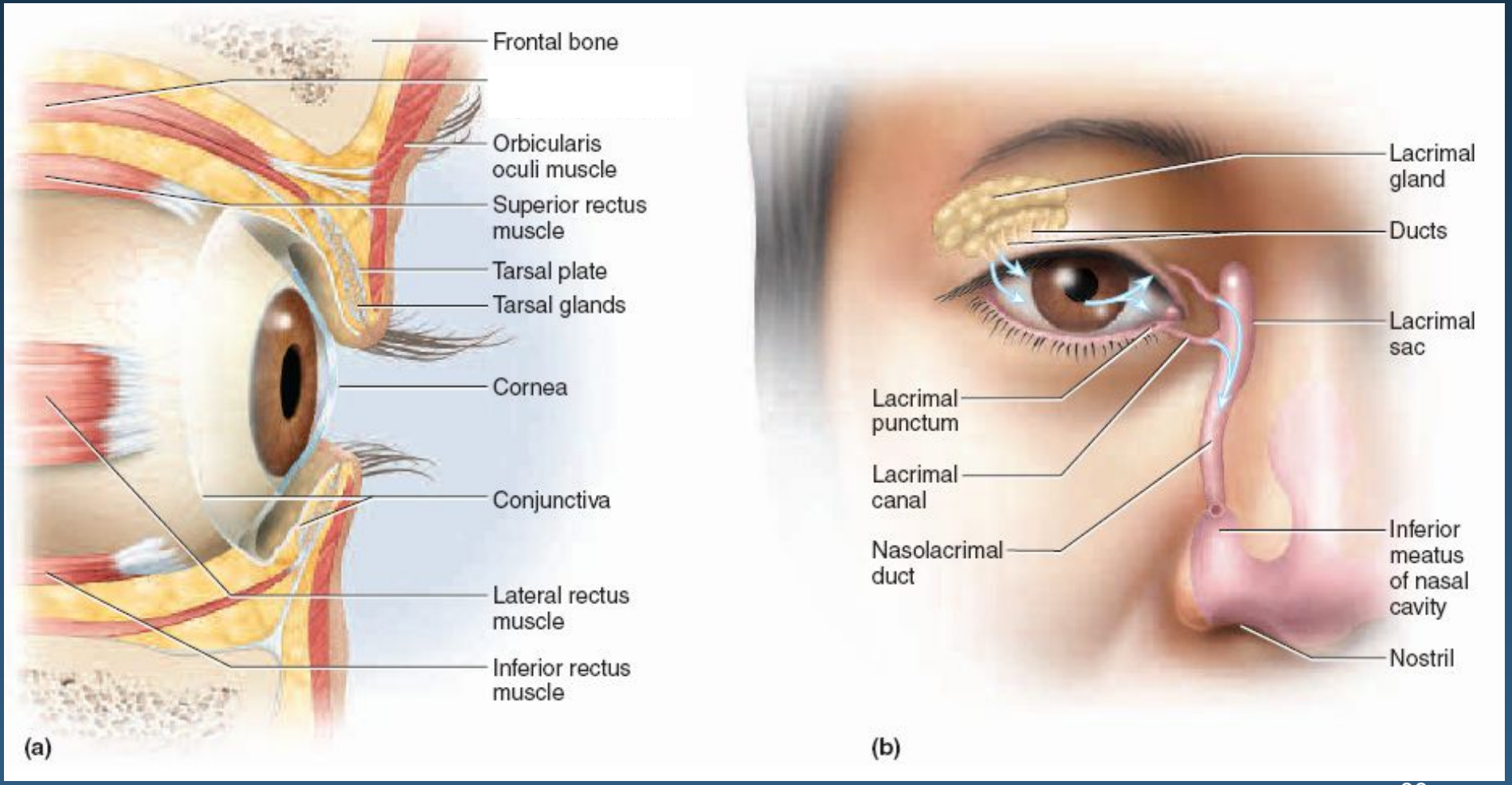
- Reference your notes on the reflex activities.



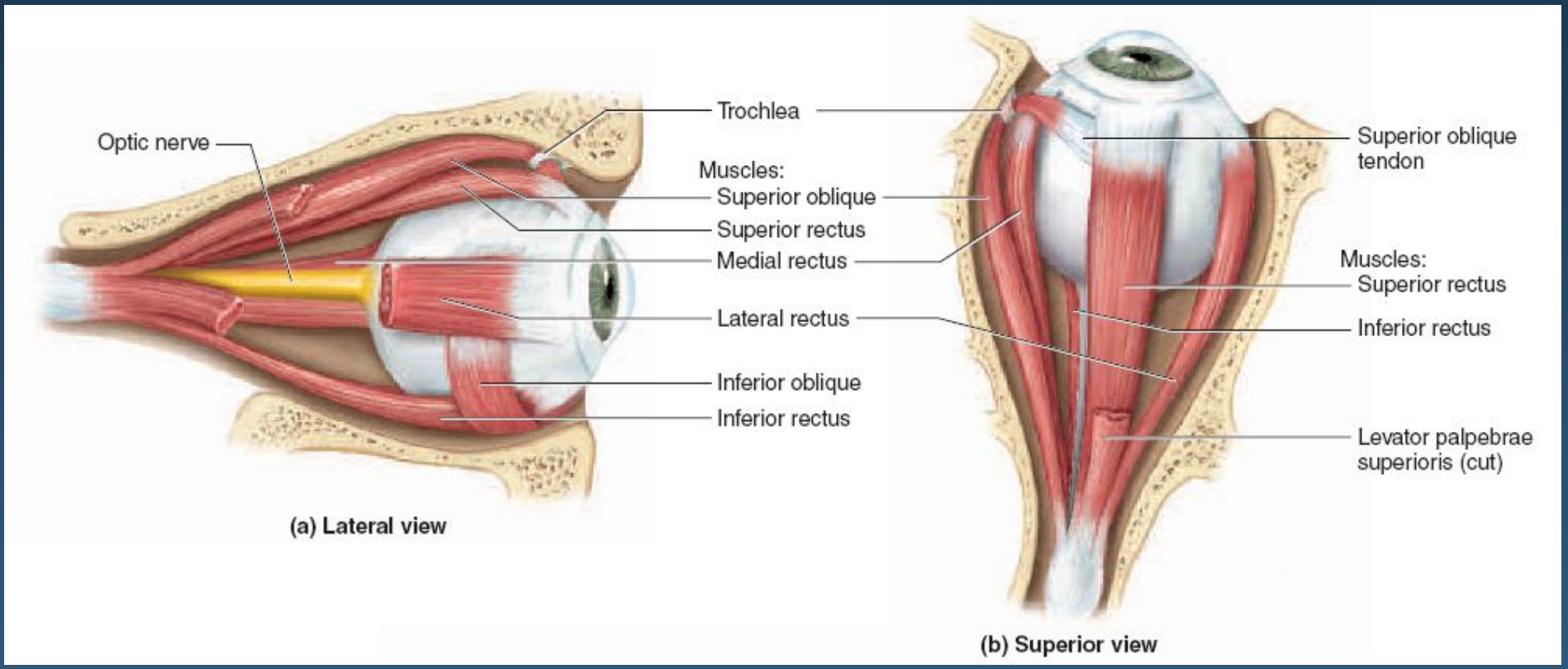
Special Senses



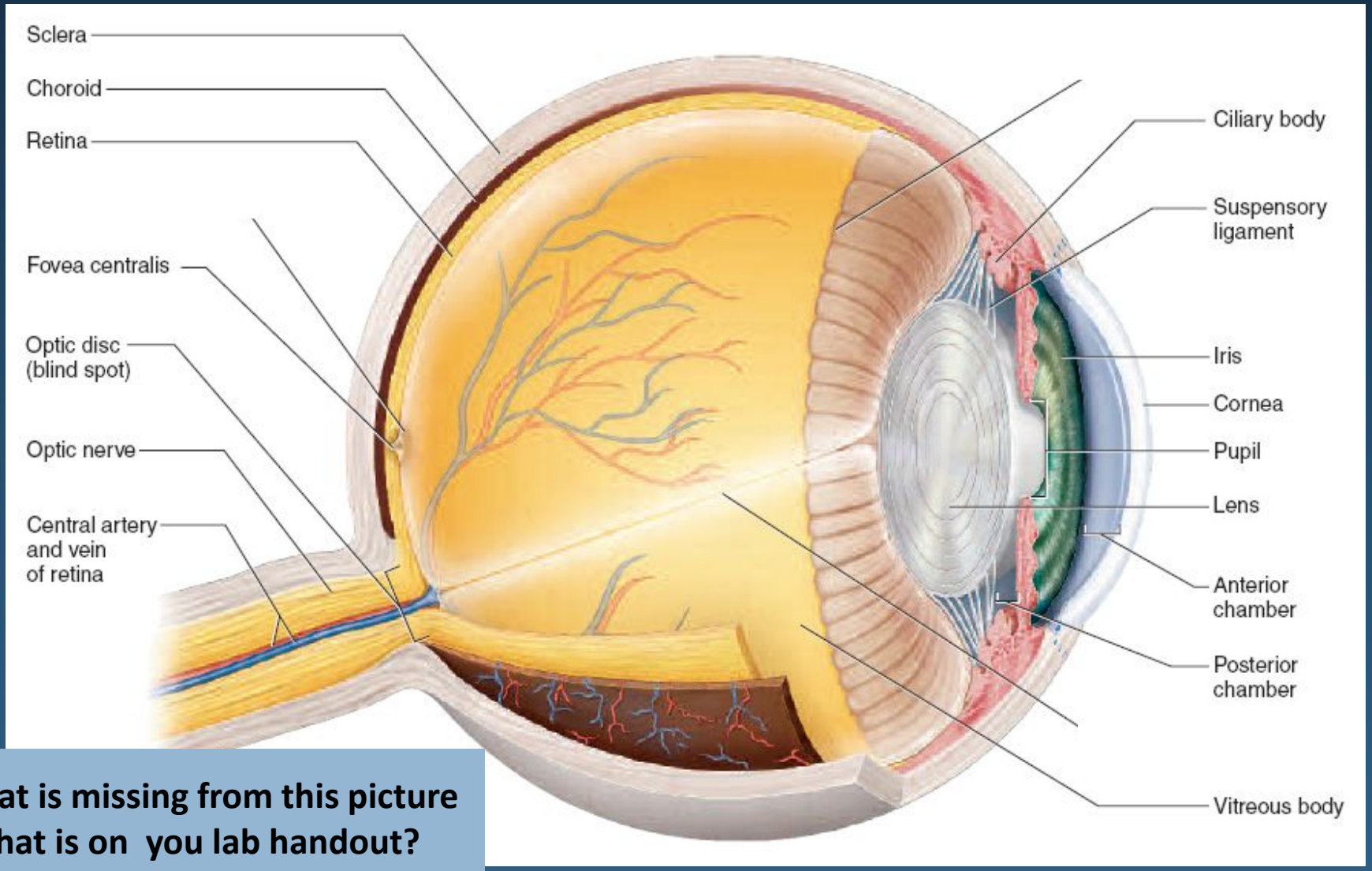
External Anatomy of the Eye



Muscles of the Eye



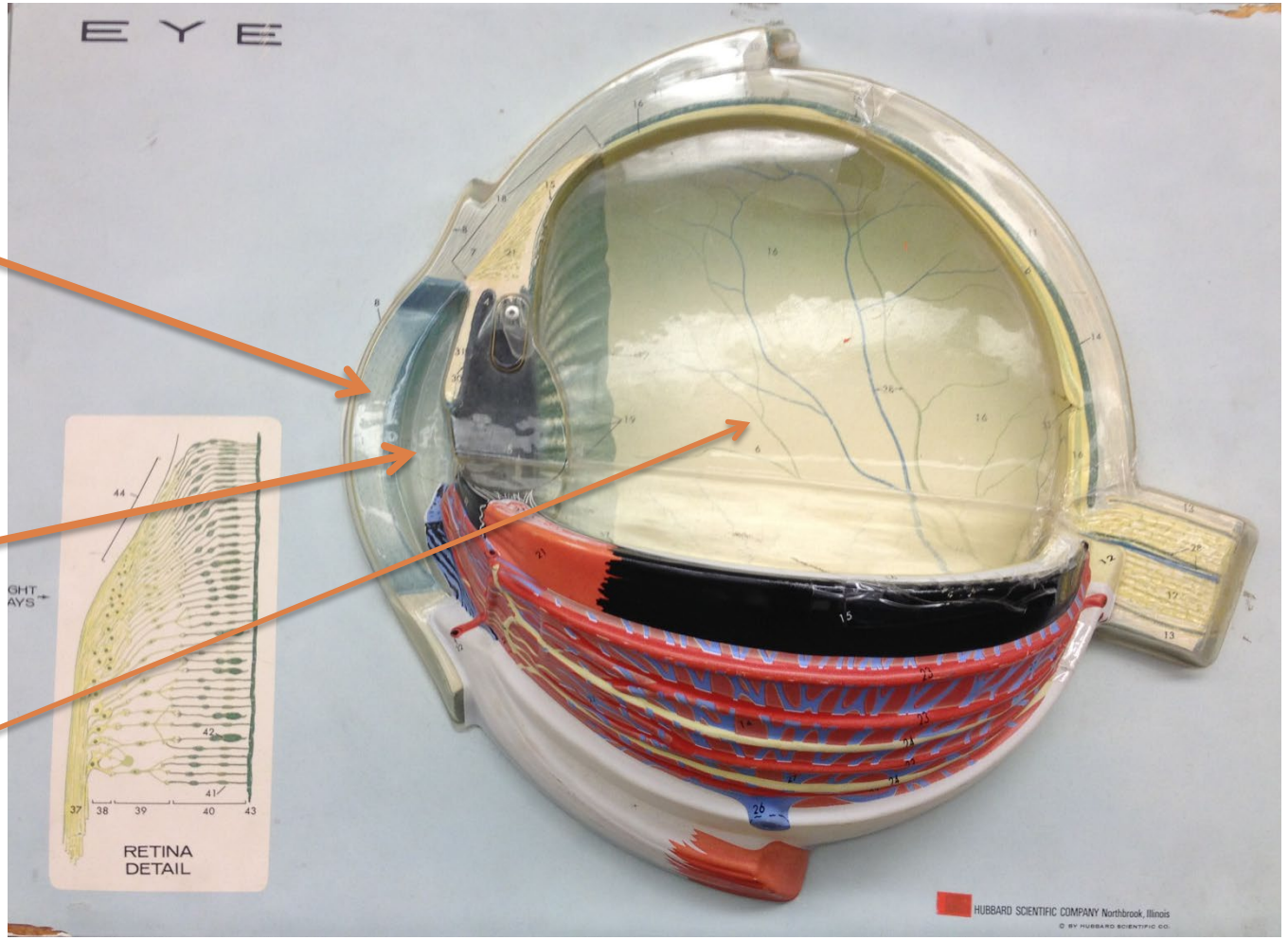
Internal Anatomy of the Eye



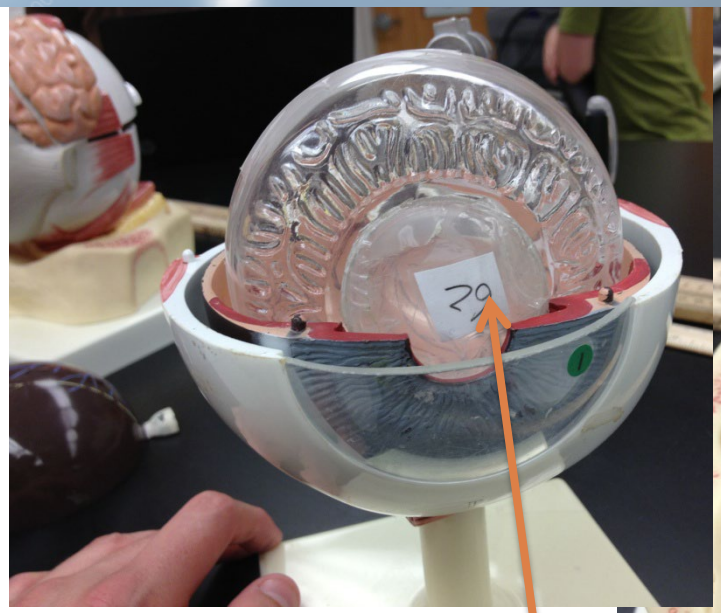
What is missing from this picture that is on you lab handout?

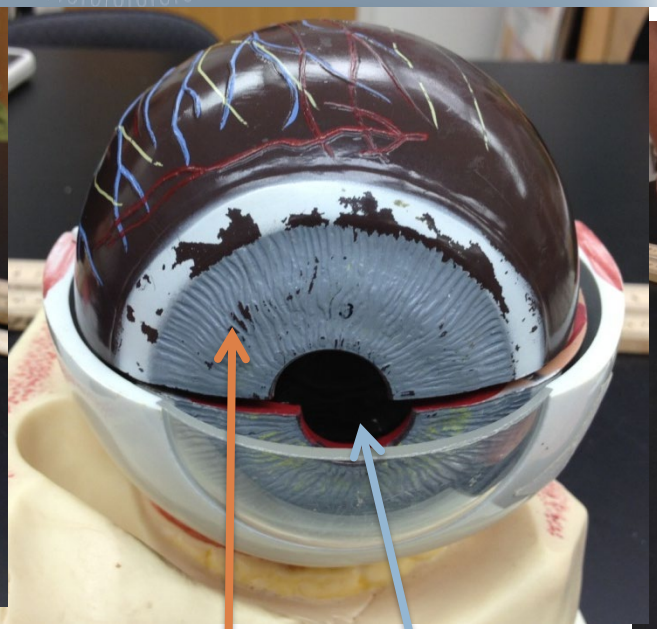
Lab Model: The Eye

1. Cornea
2. Aqueous humor
3. Vitreous humor



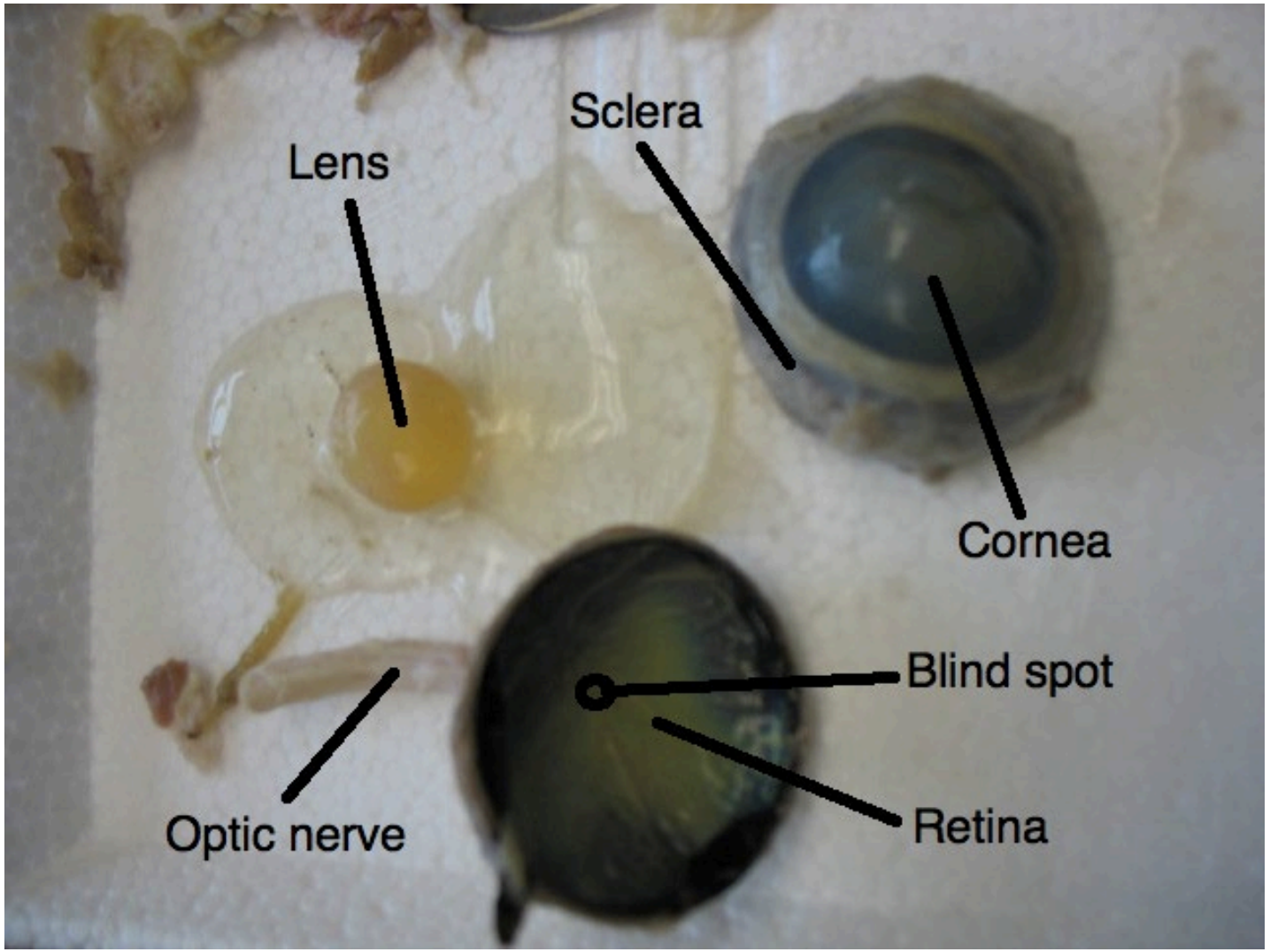
Lab Model: The Eye



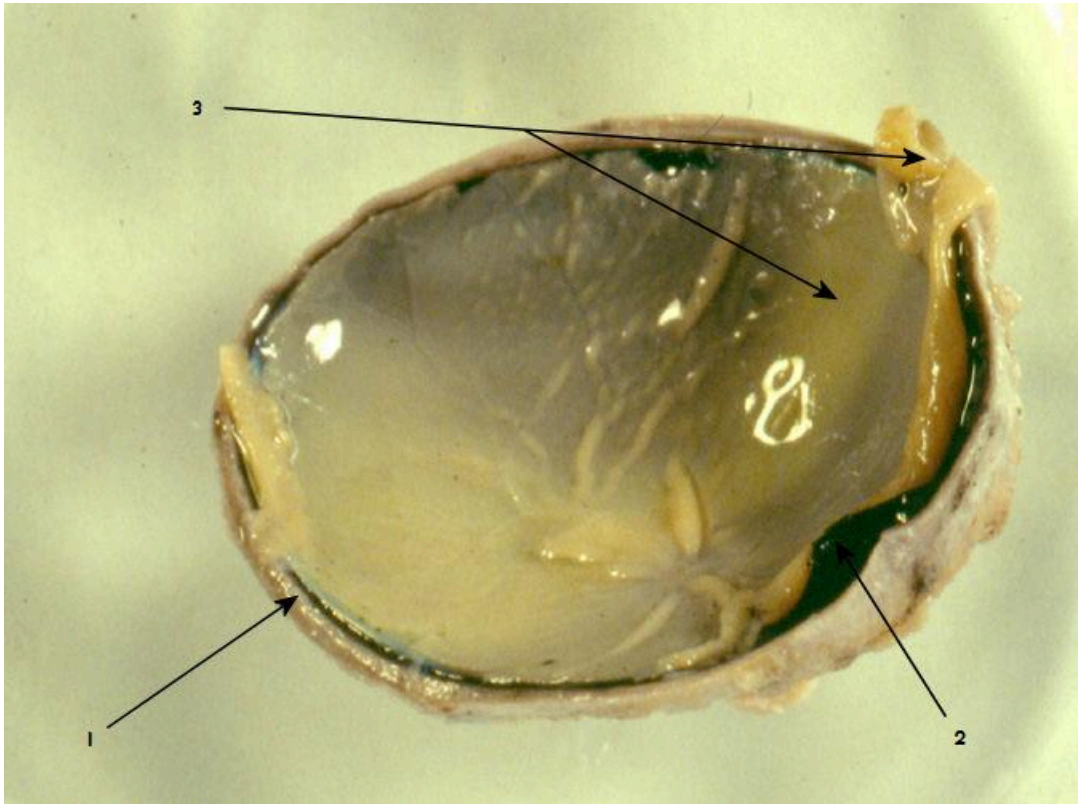


1. Lens
2. Iris
3. Pupil
4. Lacrimal gland
5. Optic Nerve

Lab Dissection: Cow Eye



Lab Dissection: Cow Eye



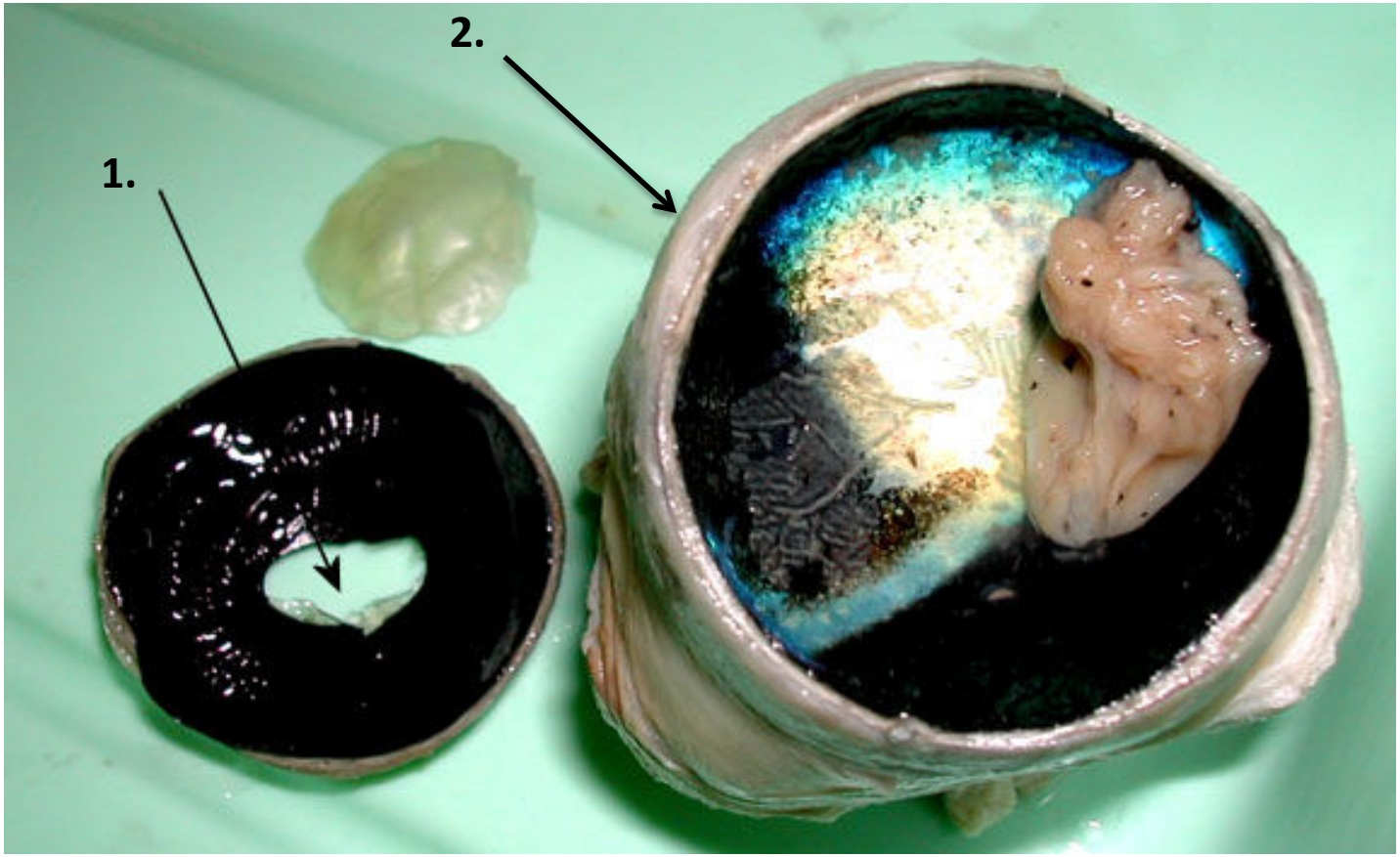
Identify the layers or tunics:

1. Sclera

2. Choroid

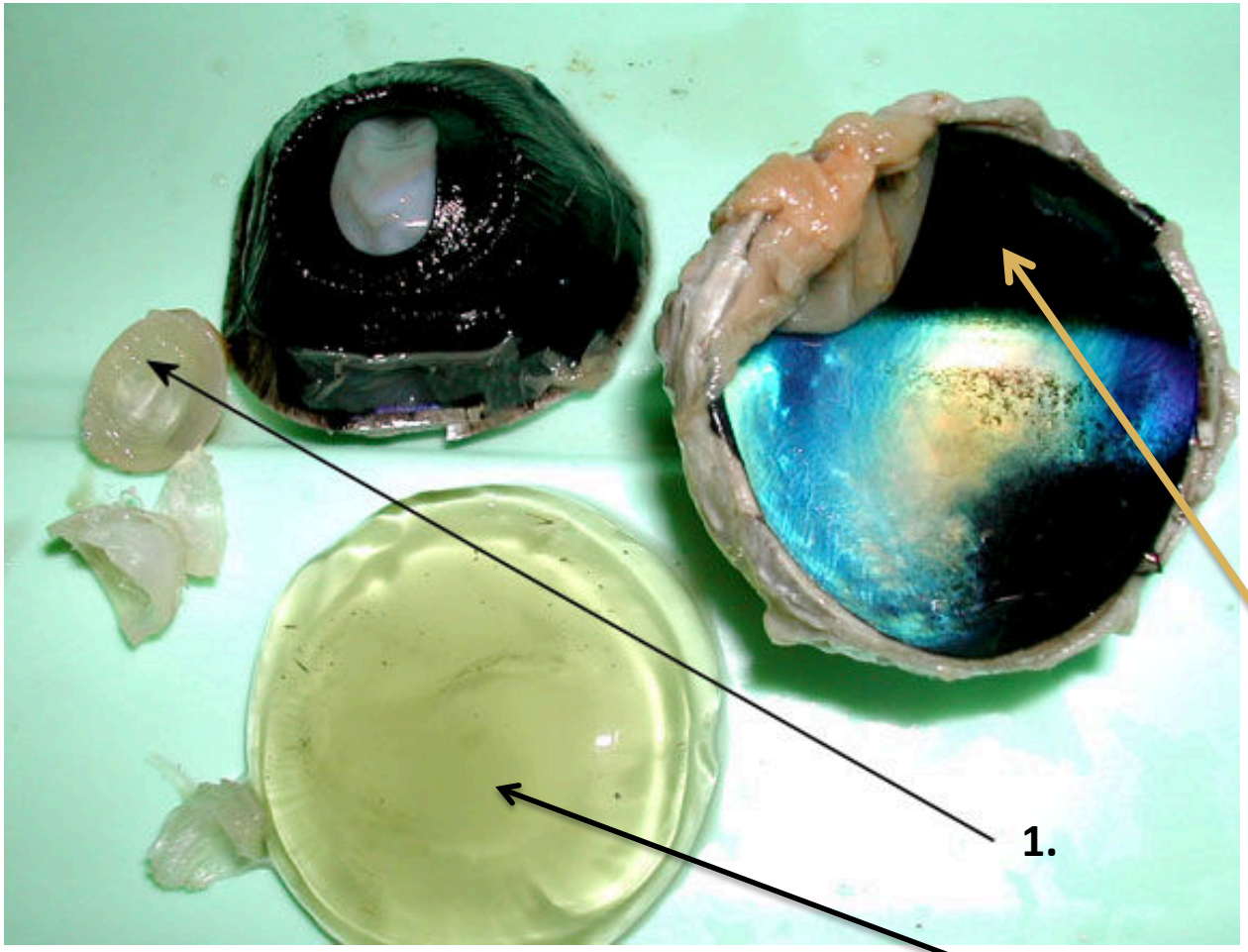
3. Retina

Lab Dissection: Cow Eye



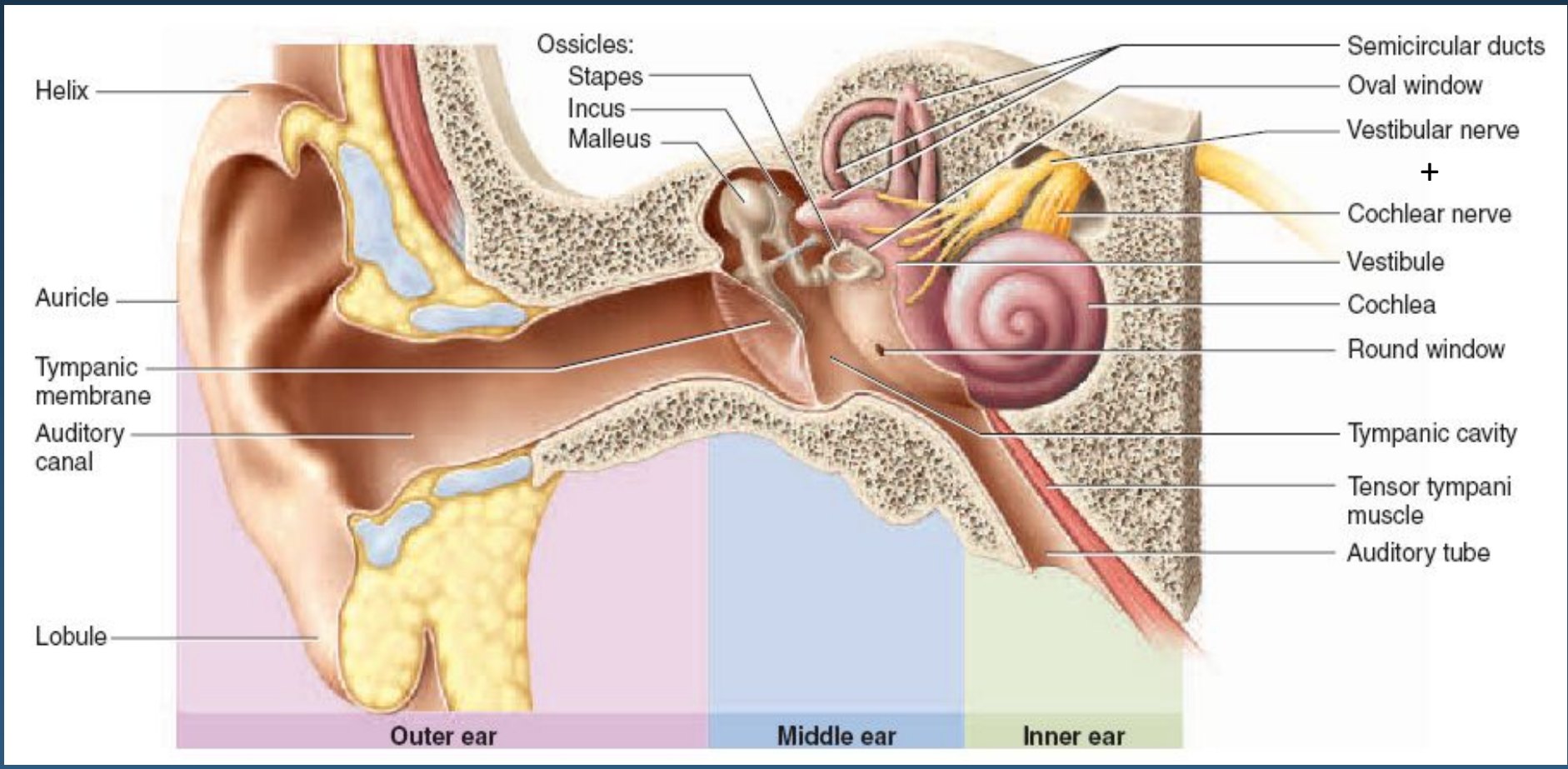
1. Pupil
2. Sclera

Lab Dissection: Cow Eye



1. Lens
2. Vitreous Humor
3. Choroid

Anatomy of the Ear

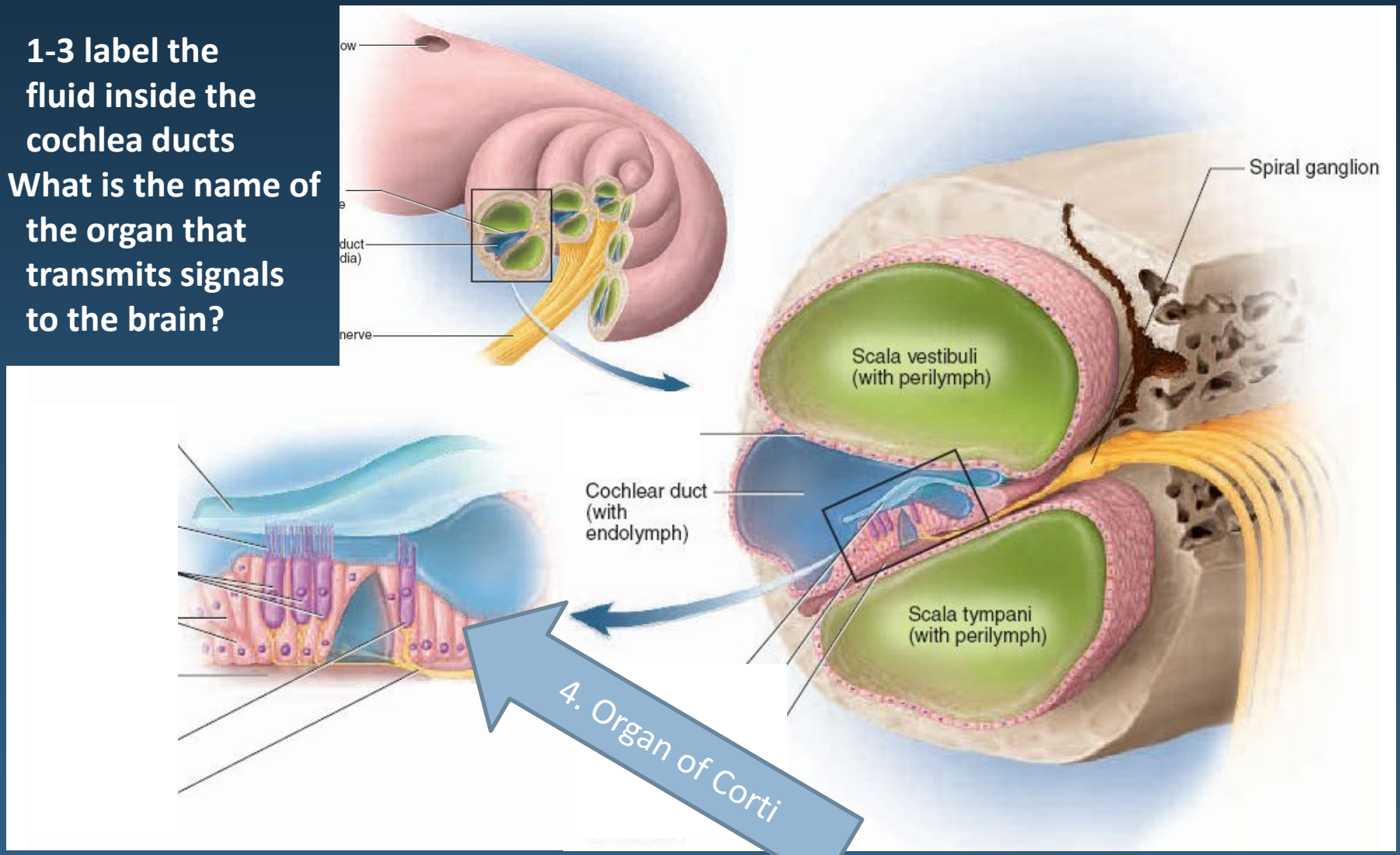


Lab Model: Osseous Labyrinth

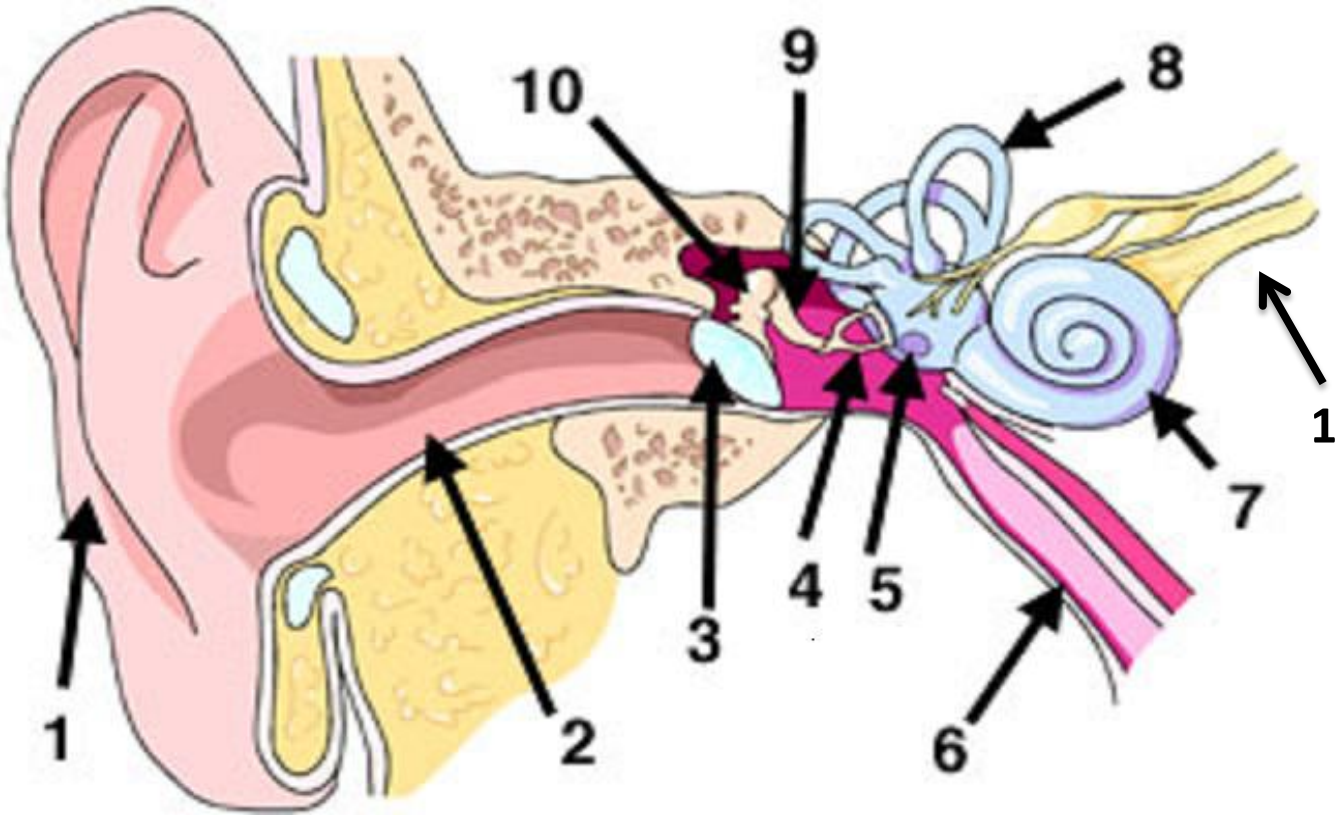
1. Semicircular Canals
2. Cochlea
3. Vestibulocochlear Nerve

Anatomy of the Cochlea

1. 1-3 label the fluid inside the cochlea ducts
2. What is the name of the organ that transmits signals to the brain?

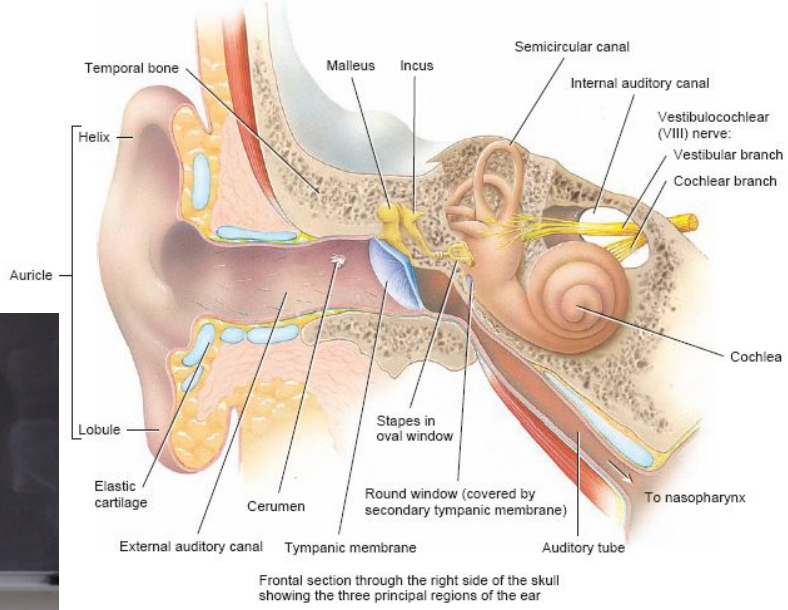


Anatomy of the Ear



1. Pinna or auricle
2. External auditory Canal
3. Tympanic Membrane
4. Stapes (presses against the oval window)
5. Round Window
6. Eustachian Tube, auditory Tube, or pharyngotympanic tube
7. Cochlea
8. Semicircular Canals
9. Incus
10. Malleus
11. Vestibulochoclear Nerve

Lab Model



Frontal section through the right side of the skull showing the three principal regions of the ear

General Senses

- Refer to your lab handout for the Experiments done in lab.

Special Thanks

- Special Thanks to Matthew Allred for taking pictures of the lab models!! ☺

DAYTONA STATE COLLEGE

Questions

Prepared by

E. Hoppe (SI Leader) & M. Allred *(Anatomy Student)*

The Academic Support Center @ Daytona State College

http://www.daytonastate.edu/asc/ascsciencehandouts.html