

Lab 9 Notes:

NERVOUS AND SENSORY SYSTEMS

Shark (pp. 191-206)

Be able to identify the following structures and their functions in the shark:

Brain and Nerves:

Telencephalon	Olfactory sac
Olfactory bulb	Olfactory tract*
Cerebral hemispheres	Diencephalon
Epithalamus	Thalamus**
Hypothalamus**	Epiphysis/Pineal gland**
Mesencephalon	Optic lobes
Anterior lobes	Posterior lobes
Auricle	Metencephalum
Cerebellum	Myelencephalon
Spinal cord	Vagus nerve (X)
Glossopharyngeal nerve (IX)*	Medulla oblongata
Optic nerve**	Optic chiasma**
Infundibulum**	Oculomotor nerve (III)**

** indicates structures that may be difficult to see in the specimens – use the model!*

*** indicates structures that may not be visible in the specimen or the model – use the illustrations provided in the book whenever necessary!*

Sense Organs:

Nostril	Olfactory lamellae
Incurrent opening	Excurrent opening
Ampullae of Lorenzini	Dorsal oblique muscle
Dorsal rectus muscle	Ventral oblique muscle
Ventral rectus muscle	Anterior rectus muscle
Posterior rectus muscle	Optic nerve
Pedichel	Pupil
Cornea	Sclera

Follow the instructions in your lab manual on locating these. Try to isolate the structures without actually removing the eye from the specimen. Know the function of these structures whenever they are provided. Read and follow the section on the shark eye on pp. 202-206.

Sheep Brain

We will be using sheep brains to represent the typical mammal brain because they are larger and thus easier to examine. Read pp. 411-417 (omit the brainstem section). Know the functions of the structures and areas whenever they are provided.

Study the table of cranial nerves (p. 417). Know the names and numbers of the cranial nerves; know where they are (for cranial nerves O, I, and II) and at least one structure innervated by the nerve (for cranial nerves III-XII). You will **not** be asked about the different branches of nerves V and VIII.

In addition, be able to identify the following structures and their functions:

Dorsal View:

Longitudinal cerebral fissure
Gyrus
Sulcus
Spinal Cord

Cerebral hemispheres
Cerebrum
Cerebellum

Ventral View:

Olfactory bulbs
Optic chiasma
Pyriform lobe
Rhinal sulcus
Medulla oblongata

Optic nerve
Optic tract
Pons
Spinal Cord

Sagittal Section:

Spinal cord
Cerebellum
Cerebral aqueduct
Arbor vitae
Pons
Lamina quadrigemina

Cerebrum
Optic chiasma
Olfactory bulb
Medulla oblongata
Lateral ventricle
Pineal gland

Sheep Eye

Follow the instructions on pp. 426-429 to dissect the sheep eye. Do not dissect the muscles, but do locate the optic nerve externally. Identify the internal structures listed below, and know their functions whenever they are provided.

Optic nerve

Dorsal oblique muscle

Medial rectus muscle

Ventral oblique muscle

Tapetum lucidum

Iris

Ora serrata

Dorsal rectus muscle

Lacrimal gland

Ventral rectus muscle

Lateral rectus muscle

Retina

Ciliary body

Lens

Note: You will likely need to look at other brains to see other nerves. **Be extremely gentle with the brains and eyes. They are extremely fragile.** Do not throw them away. Be careful when dissecting the sheep eyes; if you apply too much pressure while cutting into them, they will squirt on you! 😊