

Eye Lecture

In ADDITION to [COMPLETING](#) and learning the eye learning exercises, you should review the following:

1. Understand where tears are produced, their function, and how they are drained from the eye.
 - a. **Lacrimal Apparatus produces and collects tears.
Made up of water, Sodium, Antibodies and Lysozymes.**
 - b. **Lacrimal Gland produces and secretes tears.**
 - c. **Lacrimal Canaliculi: from lacrimal puncti to nasolacrimal duct- drain tears.**
 - d. **Nasolacrimal duct- drains tears into the nasal cavity, where they are eventually swallowed.**

2. Know the function and innervation of the extrinsic eye muscles. Go to the [CRANIAL NERVES LECTURE](#) and review what kind of eye muscle problems you would have, if specific cranial nerves were damaged.

3. Review how the cornea and lens help us focus images, and review how visual information is sent to the brain.

4. Know the functions and the components of the 3 tunics (fibrous, vascular, neural).

Fibrous- avascular (Sclera, Cornea)

Vascular- Contains blood vessels to nourish the eye (Choroid,

Ciliary Body, Iris)

Neural- inner layer its photoreceptors receive light information and convert it into nerve impulses that are sent to CN 8 (Optic Disc, Macula Lutea, Rods and Cones)

5. Compare and contrast the anterior versus posterior cavities of the eye. Where are each located? What fluid fills each?

Anterior Cavity- lens and the cornea filled with aqueous humor

Posterior Cavity- between lens and retina contains vitreous humor. Helps maintain shape of the eye and it is gel-like.

Ear Lecture

In addition to doing the learning exercises, you should review the following:

1. Know the 2 functions of the ear (hearing and equilibrium).
 - a. **Hearing- detecting sound waves and converting them into nerve impulses**
 - b. **Equilibrium- detect position of the head**
2. Know what structures make up the external, middle and inner ear. Review the functions of all of these components.
 - a. **External Ear- Auricle: outer mass of tissue*collects sound waves directs them to the external acoustic meatus**
 - b. **External Acoustic Meatus: between auricle and tympanic membrane**

3. Be able to differentiate between the membranous labyrinth and bony labyrinth of the inner ear. What structures are found in each? What fluid (perilymph, endolymph) circulates in each?
4. Which membranous labyrinth structures are responsible for hearing? For balance?
5. Be able to describe the structures found within the scala media (cochlear duct). What is the spiral organ? What are the hair cells? What is the difference between scala vestibuli and scala tympani?
6. Review the steps involved in hearing. How do sound waves enter the head? Are these waves modified (amplified) in any way? How do we interpret sounds? Compare how high notes and **LOW** notes affect the basilar membrane of the scala media (cochlear duct). Once a sound wave reaches the inner ear, how does it get sent to the brain?

Cranial Nerves Lecture:

If you do the memory matrix several times, this will help you learn the specific functions of each cranial nerve. I STRONGLY SUGGEST YOU DO THIS - **COMPLETE** THE MEMORY MATRIX SEVERAL DIFFERENT TIMES. If you can't fill out parts of it without looking at your notes, then you don't know the functions of the cranial nerves! In addition to this, know the following:

1. How many cranial nerves are there?
2. Which nerves are solely sensory? Which have both sensory and