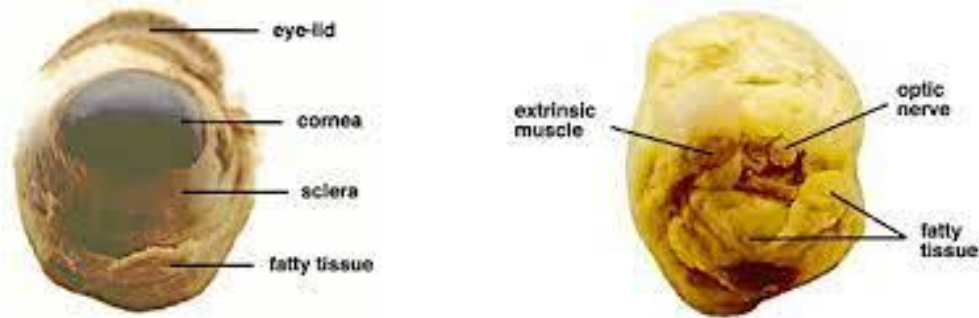


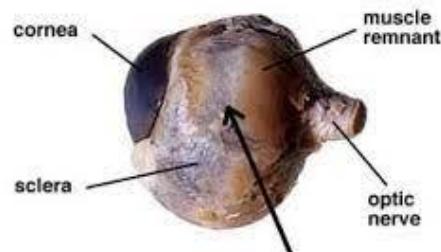
Pig Eye Dissection [/40]

Name(s): _____

Introduction: The anatomy of the human eye can be better shown and understood with the dissection of an actual mammalian eye. One eye will be provided for dissection, that closely resembles the human eye, in the case of our class that will be a pig's eye. Differences between the eye types will be noted as the dissection is completed. Begin the dissection by gathering equipment and supplies listed below



Step 1. Wash the eye under cool water to remove excess blood or preservation fluid. Dry the eye with a paper towel. Examine the front of the eye and locate the eye-lid, cornea sclera(white of the eye) and fatty tissue. Examine the back of the eye and find extrinsic muscle bundles, fatty tissue and the optic nerve. The four extrinsic muscles (humans have six) move the eye while the fatty tissue cushions the eye. If the optic nerve is not visible use the probe to move the fatty tissues around until it is exposed.



Step 2. Using Scissors cut away the eyelid(if necessary), muscle and fatty tissue from both the front and rear surfaces of the eye. Be careful not to remove the optic nerve. Cut along the surface of the sclera until all the tissue is removed and your specimen is only sclera tissue. The sclera is very tough and should not be in danger of breaking it. The cloudiness seen in the cornea is due to its preserved/dead state, in life it is normally transparent.

Identify the following:

- ☐ Cornea
- ☐ Sclera
- ☐ Optic Nerve
- ☐ Remaining muscle

At this time make 3 or more observations regarding the exterior of the eye [/3]

Question:

1. Why do you not need to worry about bursting the sclera when removing fatty tissues and extrinsic muscle. How does this relate to the function of the sclera? [/2]
2. Describe the ways in which fat tissue looks distinctly different from the muscle tissue. Hypothesize as to the function of each. [/3]

Interior of Eye

Step 3. Place your specimen in the dissection pan, with the cornea facing left and the optic nerve facing the right. Select a spot to start your incision of the sclera midway across the eye. Make the incision. Then using your shears cut around the eye and separate it into two hemispheres. Do not be alarmed if fluid oozes out during this step.



Step 4. With your newly separated hemispheres arrange them as seen above. Observe the following structures

- ☐ Vitreous humor
- ☐ Aqueous humor
- ☐ Retina
- ☐ Lens
- ☐ Ciliary Bodies
- ☐ Iris

Make 3 or more observations regarding the interior of the eye [/3]

Step 5. Using your probe gently dislodge the lens in front the ciliary bodies to further observe the way they are attached. Repeat the steps and detach the retina from the choroid layer to observe the structure and function of the choroid. The attachment between the retina and choroid should only be firm in the blind spot, where the optic nerve attaches to the eye.

Identify

- ☐ Choroid Layer
- ☐ Retinal Layer
- ☐ Lens attachment
- ☐ Blind spot
- ☐ Optic nerve (internal view)

Questions

3. What is the primary function of the choroid? How does its location and structure assist in that function? [/2]
4. Describe the consistency of the **vitreous** humor? How does this consistency assist in its function? [/2]
5. Where does light focus on the posterior of the eye? Were you able to observe this structure? [/2]
6. Describe how an image would be projected on the posterior of the eye? [/1]
7. Where are the cones found? What about the Rods? Be precise! [/2]
8. Explain the physiology/function of the blind spot [/1]

9. Describe how the ciliary body interacts with the lens, both when at rest and contracted. Explain how this affects vision. Draw a diagram if necessary. [/4]

10. What regulates the size of the pupil? [/1]

11. If the pupil size is larger there is _____ light intensity [/1]

12. Compare the vitreous humor and aqueous humor in terms of function and texture [/2]

13. Compare the thickness of the sclera and the cornea, contrast this information with their functions. [/2]

14. What structure of the eye is most immediately behind the pupil [/1]

15. What is the shape of the pig's pupil? [/1]

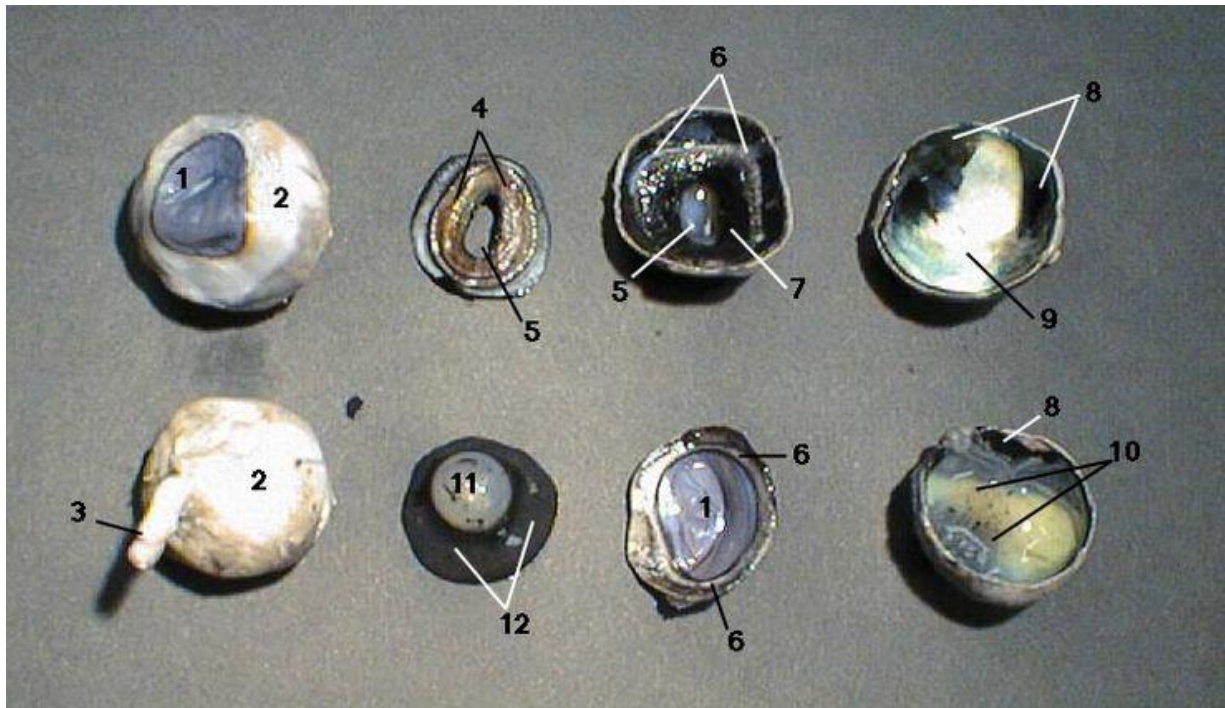
16. What color was the pigs iris [/1]

17. Describe the texture and density of the lens, contrast this observation with its function.
[/2]

Step 6. Clean your trays and tools in warm soapy water, place the remaining pieces of the specimen in the garbage. Dry everything with a paper towel.

Conclusion. [/ 5]

Given the image below try and label each part shown below. The image shown is a cows eye, and structure 8 is not present in your specimen.



1.

4.

8.

12.

2.

5.

10.

3.

7.

11.