BI 358 Discussion 11: Vision Lab w/Eye Dissections

I. Announcements Final papers due next Tuesday, March 15th, in Pat’s box, 77 Klamath < 5 pm. Q?

II. Anatomy & Physiology of the Eye
LN Dierks & RE Hammond, Carolina Biological 1980
CC Francis & AH Martin 1975
RMH McMinn & RT Hutchings 1977
DA Morton, KD Peterson & KH Albertine 2007
LS Sherwood 2006

III. Lab Tests + Eye Dissections
Eye Surface Anatomy

Caruncle = L. wart
Papilla = L. nipple
Sclera = L. hard/white
Limbus = L. margin/border

Lacrimal gland!
Eye Drops Out Nose? Why?
Eye Muscles Superior View

Superior rectus muscle
Cornea
Internal rectus muscle
External rectus muscle
Optic nerve
Optic tract
Optic chiasma
Pulley of superior oblique muscle
1. Superior oblique
2. Trochlea
3. Tendon of superior oblique
4. Levator palpebrae superioris
5. Eyeball
6. Inferior oblique
7. Lateral rectus
8. Superior rectus
9. Tendinous ring
10. Optic nerve
11. Optic canal
12. Anterior clinoid process
13. Sella turcica (pituitary fossa)
14. Posterior clinoid process
15. Ethmoidal air cells
16. Inferior rectus

Gr. pulley!
"Glass-like" canal: Fetal remnant & adjustable reservoir of mobile liquid to compensate during accommodation!

TPA Stuart, *Journal of Physiology*, Mar 29, 1904!

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1465472/?tool=pmcentrez
Intermediate Colors Are Produced When 1<sup>0</sup> Colors Are Superimposed
Smooth Muscles of the Iris

Dilator Sphincter
The Optic Cup & Optic Stalk are Evaginations of the Diencephalon

“The Eye Backs Out of the Brain”
Conjunctiva folds back on itself!
Eye & External Ear Formation

- Eye (e)
- Mandible
- 1st pharyngeal cleft
- Tragus
- Cymba conchae
- Helix
- Concha
- Antihelix
- Antitragus
Normal vs. Cataract Lens
Cataracts in Child
Detached Retina
Lab Eye Tests + Dissection Overview

1. Eye Dominance
2. Snellen Acuity
3. Astigmatism
4. Blind Spot Mapping
5. Dissection of Cow & Pig Eyes
See pp 11-1, 11-2

eg Horizontal section, see fig p 11-2
Eye Dominance?
Snellen Visual Acuity Test
Astigmatism Test

![Diagram of an astigmatism test chart with numbers and lines to test visual acuity.](image-url)
Blind Spot Mapping?
Jennifer Finley’s Eye Dissection!

- Retina
- Optic Disc
- Tapetum Lucidum
- Ciliary M.
- Lens (½)
Tapetum Lucidum "Bright Tapestry" Illuminated Due to Flash Photography