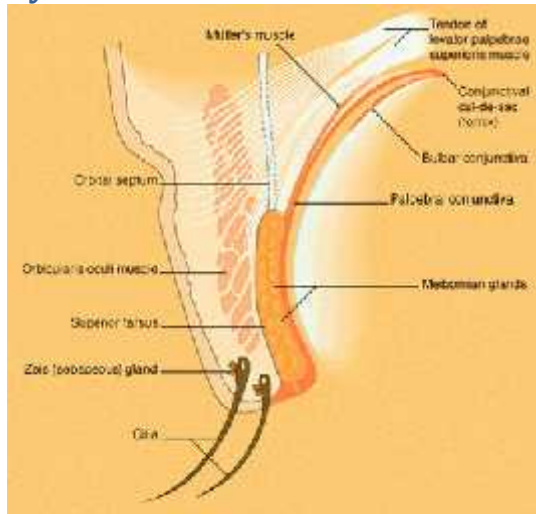


# Anatomy of the Eye

These are some notes that were not mentioned in 427

## Eyelid :



If the patient can't elevate his eyebrow it's definitely lower motor neuron lesion (facial nerve)

Opening the eye = levator

Close the eye = orbicularis

## Functions of the eyelids:

Protection of the anterior globe

Spread the tears over the conjunctiva + cornea

Contain the meibomian oil gland which provides the lipid component of the eye

Prevent drying of the eye

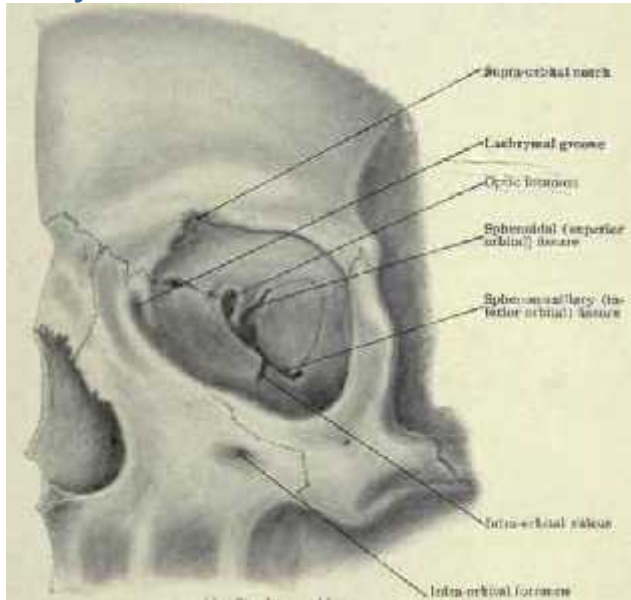
Contain puncta through which the tears flow into the lacrimal drainage system

Collagen layer (tarsal plate) houses the oil gland

## Orbital septum :

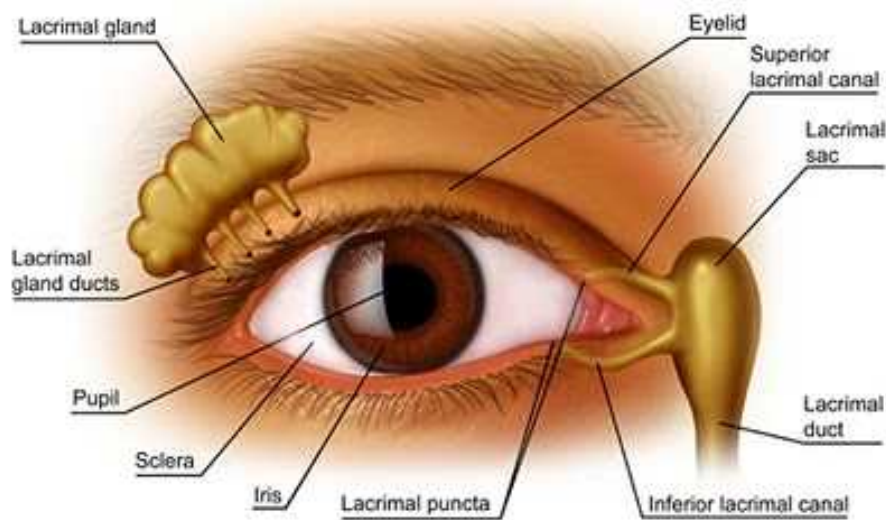
It is the continuation of the periosteum and downward to the levator

**Bony orbit :**



The weakest = medial wall  
 The more prone to fracture = floor  
 The strongest = lateral wall  
 Ethmoidal bone is the thinnest so it is easily damage by infection

**Lacrimal apparatus :** imp osce Q



[virtualmedicalcentre.com](http://virtualmedicalcentre.com)

Lacrimal gland lies anteriorly in the suprolaterally aspect of the orbit  
 Nasolacrimal sac on the anterior medial wall  
 Valve of hasner is prevent the backward secretion of the nose  
 The tear film 3 layers :

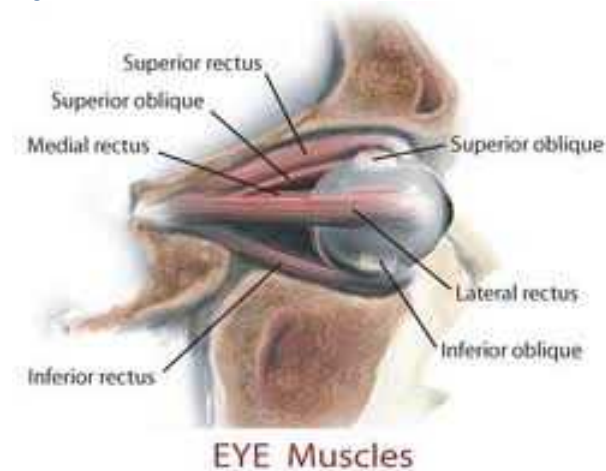
- Mucin layer = conjunctival goblet cell
- Aqueous layer = lacrimal gland

- Oil layer = meibomian gland

Functions of tears :

- Provide smooth air\tear interface for free reflection of light at cornea
- Provide oxygen to avascular cornea
- Remove debris from the ocular surface through the flow of tears
- Antibacterial properties

### Eye muscle :



Inferior oblique muscle is the most dangerous insertion ( because of the macula )

Superior oblique muscle it is the muscle of reading

Movement of the eye :

Adduction = move the eye to the medial side

Abduction = to the lateral side

### Retina and vitreous :

Vitreous = gel structure to support the retina and fill the eye

Retina composed of 10 layers

The photoreceptor layer ( cones + rods ) convert the light to electrical signals

The optic nerve out of the eye through the cribriform plate

Vitamin A is play a role in the visual pathway

MCQ ;

1-Coronal sensation is by :

- A. 5<sup>th</sup> cranial nerve
- B. 3<sup>rd</sup> cranial nerve
- C. 7<sup>th</sup> cranial nerve
- D. 4<sup>th</sup> cranial nerve

2-Nerve supply , all true EXCEPT:

- A. sympathetic supply papillary dilator and muller muscles
- B. parasympathetic supply papillary constrictor muscles
- C. coronal sensation from 7<sup>th</sup> cranial nerve
- D. inferior oblique muscle is supplied by 3<sup>rd</sup> nerve
- E. levator palpebrae superioris supplied by 3<sup>rd</sup> nerve

3-IOP within the eye normally varies from :

- A. 10-15 mmHg
- B. 20-25 mmHg
- C. 10-20 mmHg
- D. 20-30 mmHg

4- the cornea:

- A. Constitutes 2/3 of refractive power = 40 dioptries
- B. Constitutes 90% of refractive power
- C. Constitutes 75% of refractive power
- D. Constitutes 1/3 of refractive power

5- lacrimal gland , all true EXCEPT:

- A. Contraction of lower lid act as tear pump
- B. Drains in periauricular lymph node
- C. The lacrimal fossa located in the upper and outer part of the upper lid
- D. The superior punctum drains most of tear to the lacrimal sac

6- all can be use in assessment of optic nerve EXCEPT :

- A. Size of pupil

7-damage which will result in right hemianopia is:

- A. Left occipital lobe infarction

8- the structure between the optic tract and the optic radiation is :

- A. Lateral geniculate body

9- all about retinal artery true EXCEPT:

- A. It supply the whole retina = only the inner layer

10- which muscle does not take origin from orbital apex :

- A. Inferior oblique
- B. Inferior rectus
- C. Superior oblique
- D. Levator palpebrae superioris

11- nasolacrimal duct EXCEPT :

- A. Drain into middle meatus

12-what location of a retinal detachment would be most amenable to treatment by pneumatic retinopexy ?

- A. Inferior rhegmatogenous detachment  
 B. Superior tractional detachment  
 C. Superior rhegmatogenous detachment\*  
 D. Traumatic macular hole

• rhegmatogenous detachment are the classical detachment occurring from a break in the retina . A pneumatic retinopexy is the technique of injection a gas bubble into the eye that float and tamponades the break .Gas bubble require careful head-positioning and work best for superior break (patient cant stand on their head for weeks for inferior break .

13- the abducent nucleus would be most affected by a brainstem lesion at :

- A. pons \*  
 B. mid-brain  
 C. medulla  
 D. foramen magnum
- 4-4 role= bottom four nuclei (CN 12,11,10,9) are in the medulla , while the next four nuclei (CN 8,7,6,5) are in the pons

14- aqueous fluid is produced in which chamber :

- A. Anterior  
 B. Vitreous  
 C. Posterior  
 D. Trabecular

15- which orbital bone is most likely to fracture with blunt trauma to the eye ?

- A. Zygomatic  
 B. Maxillary  
 C. Ethmoid  
 D. Sphenoid

16- put the following retinal layers in order from inside (next to the vitreous) to outside:

- A. Ganglion nerve, photoreceptor ,choroid ,then sclera on the outside  
 B. Photoreceptor , ganglion nerve , choroid , then sclera on the outside  
 C. Choroid, photoreceptor, ganglion nerve , then sclera on the outside  
 D. Choroid , ganglion nerve, photoreceptor , then sclera on the outside

17- action of the 4<sup>th</sup> cranial nerve :

- A. Adduction and depression  
 B. Adduction and elevation  
 C. Abduction and elevation  
 D. Abduction and depression

18- regarding the extraocular muscles (E.O.M) , all true EXCEPT :

- A. M.R. is main adductor
- B. L.R. is main abductor
- C. S.R. is main elevator in abductor position
- D. S.O. is main elevator (N.B; it is depression in abductor position)
- E. I.O. is main elevator

19- in the lid , all true EXCEPT :

- A. Glands of the lid participat in tear film
- B. Orbicularis oculi is partly supply by sympathetic .
- C. Contraction of lower lid act as tear pump

20- which of the following is not present in the lateral wall of cavernous sinus :

- A.trochlear nerve
- B.abducent nerve
- C. oculomotor nerve
- D. maxillary nerve
- E. ophthalmic nerve

21- bone forming the floor of the orbit is :

- A.sphenoid
- B.maxillary
- C. nasal
- D. ethmoidal
- E. temporal

22-the surface ectoderm provides in the eye , all of the following structures EXCEPT:

- A.lens
- B. corneal &conjunctival epithelium
- C. substantia propria of the cornea
- D. lacrimal & tarsal gland

**GOOD LUCK**

**Done By: Amani Albjadi and Bashayer Alotaibi**