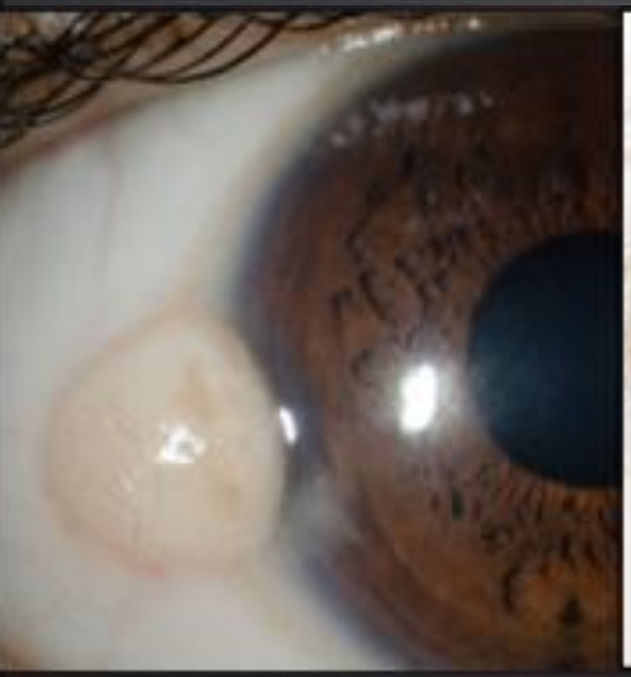
Dr Stuart Carroll

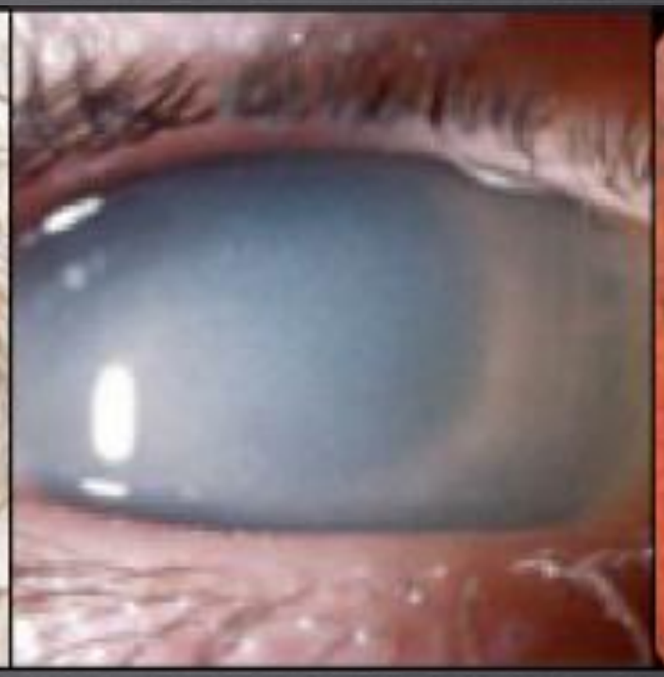
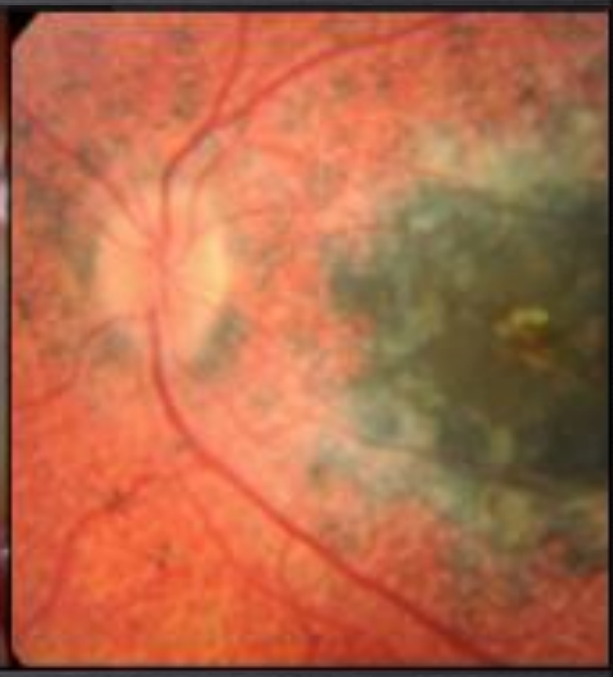
General and Paediatric Ophthalmologist

Auckland Eye & Greenlane Clinical Centre

Paediatric Eye Problems - Concurrent Workshop Repeated

Friday, 21 June 2013	Start 4:30pm	Duration: 55mins	Skellerup
	Start 5:35pm	Duration: 55mins	Skellerup



Paediatric Eyes

GP CME 2013

Stuart Carroll

AUCKLANDEYE
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AUCKLAND DISTRICT HEALTH BOARD
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Starship
CHILDREN'S HOSPITAL OF NEW ZEALAND

My Background

- Auckland med school
- Optic nerve research fellowship University of Auckland
- Registrar in Auckland and Hamilton
- Paediatric ophthalmology and strabismus fellowship training London, Melbourne
- Return to Auckland 2012

How I spend my time

- 50:50 public hospital and private
- 50:50 paediatric ophthalmology and adult general ophthalmology

What I like about Paediatric ophthalmology

Topics

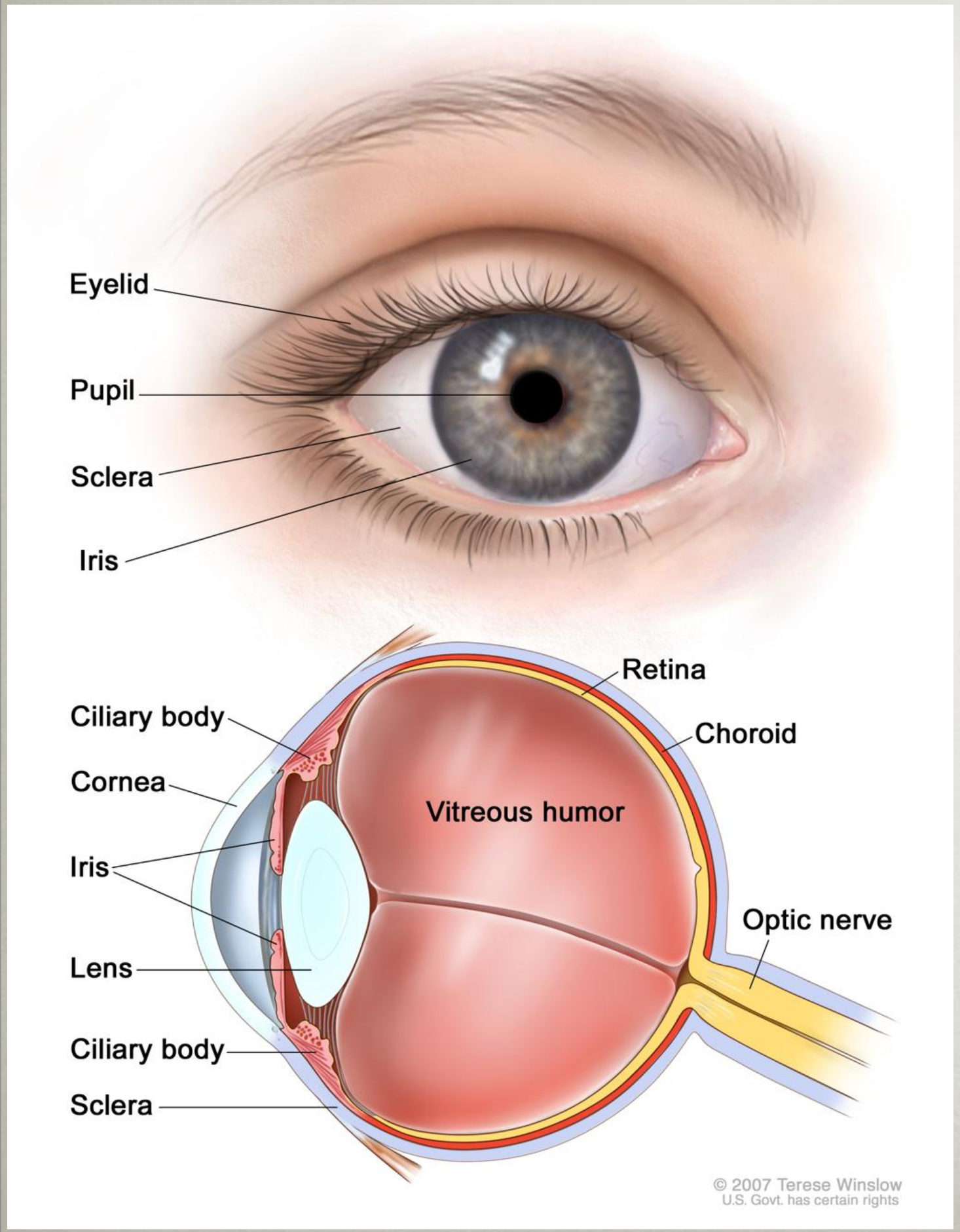
- Assessing a child - tips and tricks
- Assessing vision in pre-verbal children
- Red reflex
- The sticky eye in infancy
- Conjunctivitis & meibomian cysts
- Cover tests / strabismus / pseudostrabismus

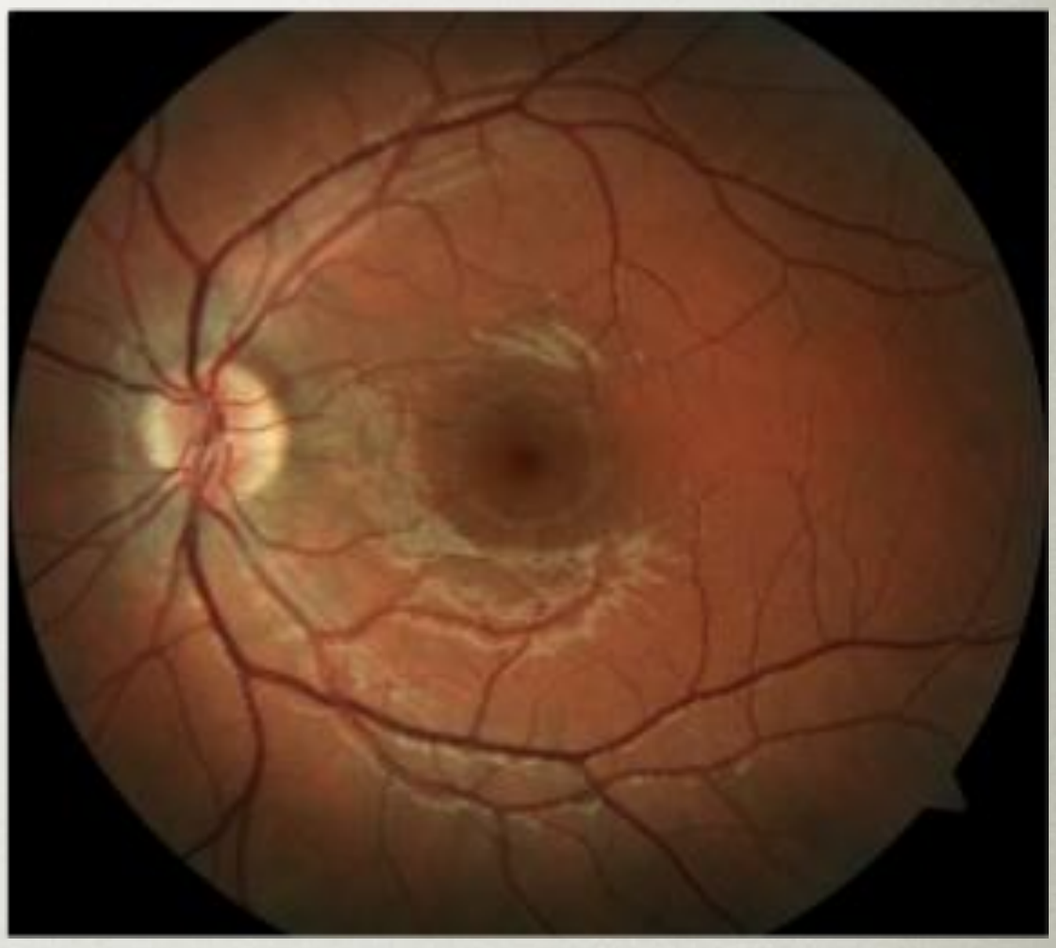
Assessing a child's eyes

- Take a good history!
  - Eye complaint
  - Family history of eye problems
  - Pregnancy, delivery, development
  - Medical history, meds, allergies

Examination

- Stand back and look
- Is the child in discomfort / photophobic?
- Visual behaviour and acuity
- Red reflex, pupils
- Alignment (corneal light reflexes) and eye movements
- Describe what you see
- Think anatomically
  - Lids, conjunctiva, cornea, iris, lens



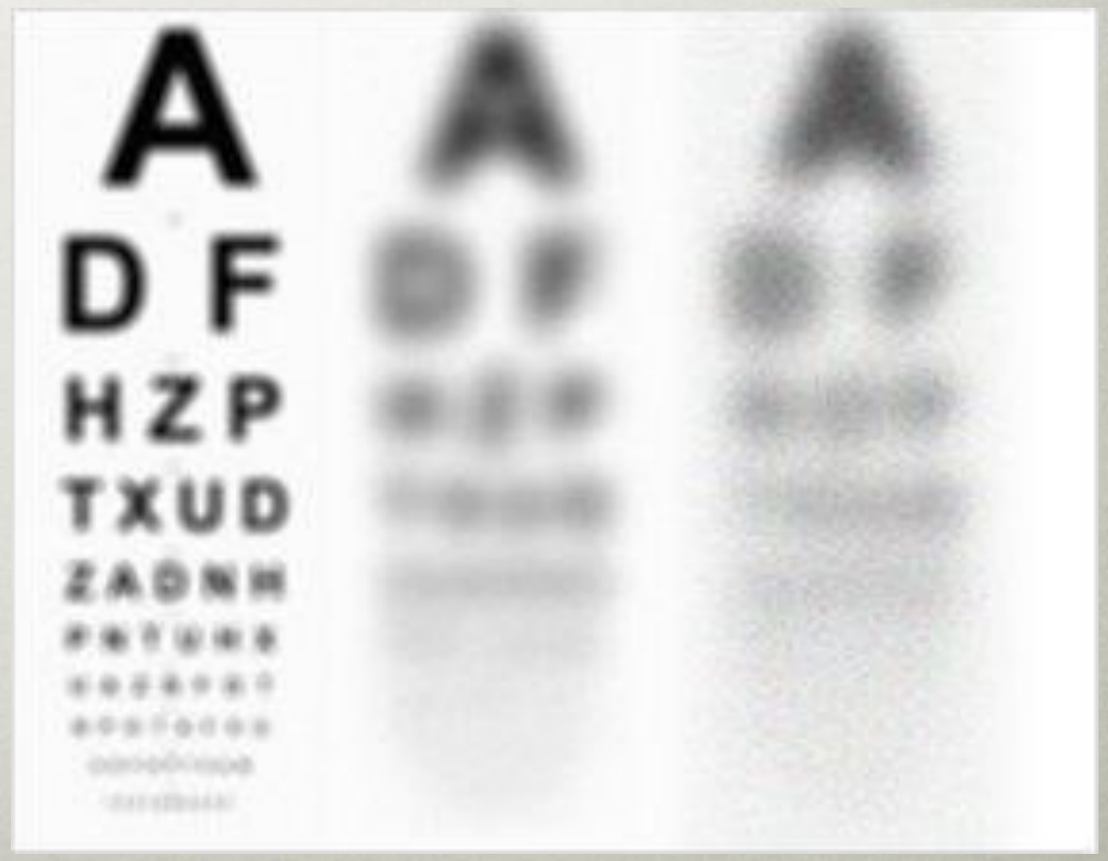


How to avoid a screaming child

- Engage the child as soon as they come into the room
- Get in close, quickly, have equipment ready
- Get on Mum’s side
- Play with them, sing songs
- “One toy, one look”
- Don’t say “drops”!

Amblyopia

- Poor visual development due to abnormal visual experience
  - Refraction
  - Strabismus
  - Deprivation

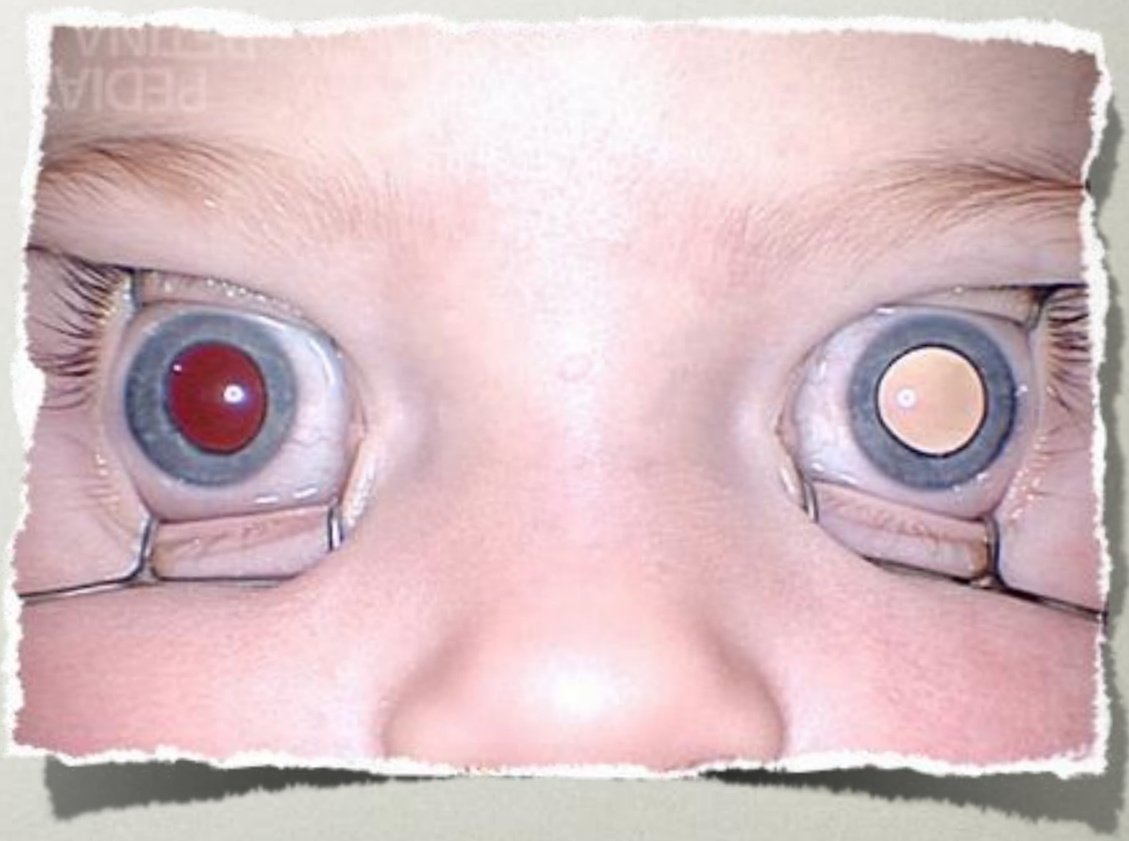


Amblyopia treatment

- Penalisation
- Patching
- Atropine eye drops

Red Reflex

- Direct ophthalmoscope
- Lights out
- Large spot size
- Focus to make pupil edge sharp
- Illuminate both eyes simultaneously to compare one with the other
- Red reflex colour depends on skin pigmentation - look at the parents



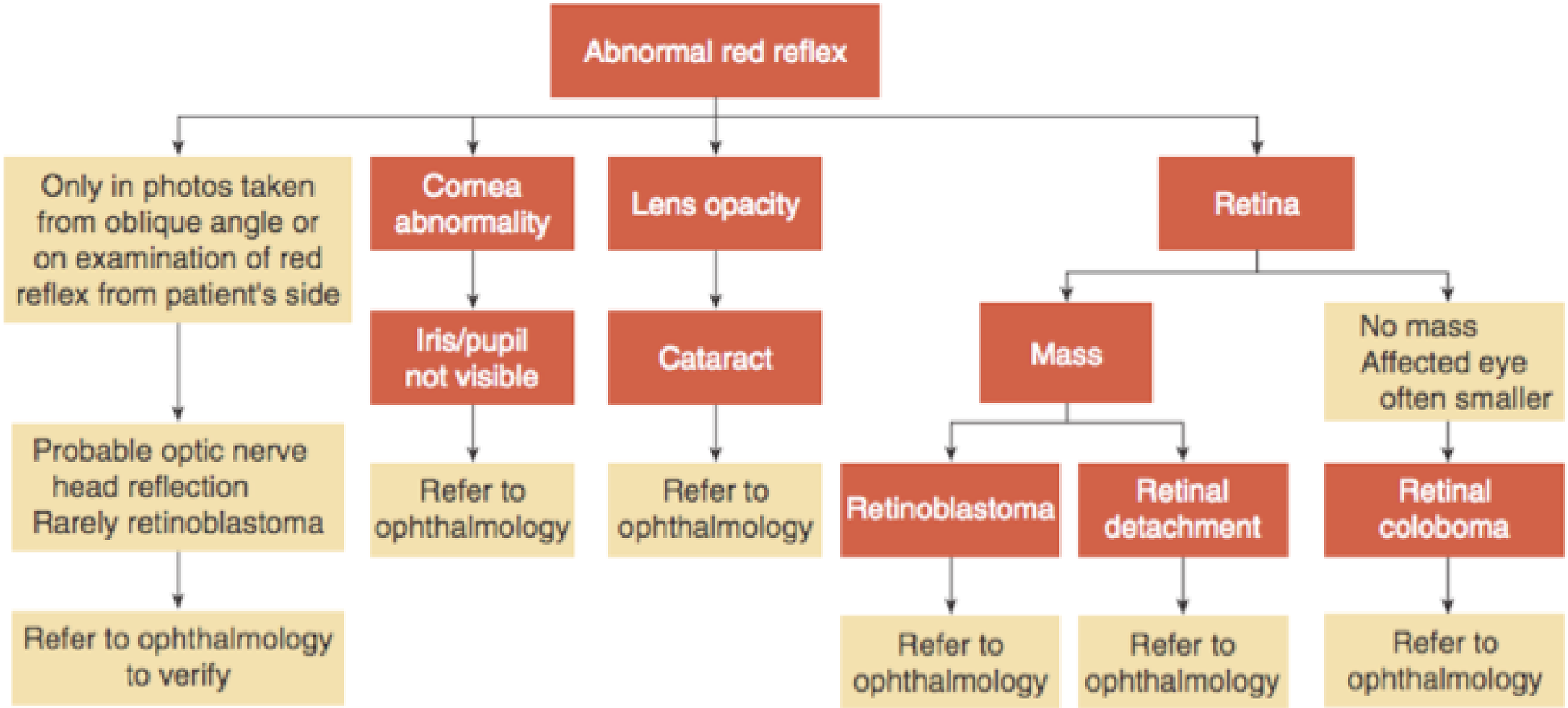


FIGURE 19–8 ■ Causes of an abnormal red reflex.

Assessing Vision in Preverbal Children

- Before 3 months of age
  - fixing and following is variable
  - eye alignment can be variable
  - ask Mum “can your child see?”
  - nystagmus is a bad sign

3 months to 3- years

- Should be fixing and following accurately and reliably
- Get Mum to cover each eye herself and use your face or a toy
- Fixation description
  - Central, steady, maintained (CSM)

Objection to occlusion

- Very simple
- Should be equal

Older kids

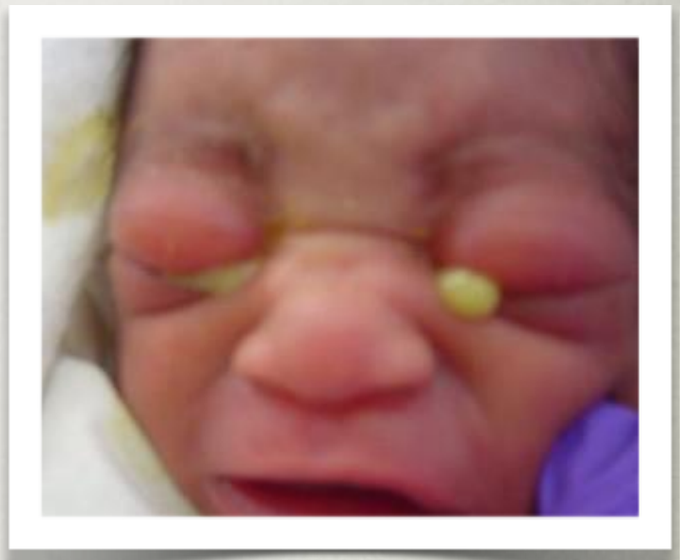
- Picture tests
- Letter matching tests
- Snellen chart

- (eyeSnellen iPad app)

Failed School Vision Screening

- New guidelines on healthpoint.co.nz
- for children >5yo referral to an optometrist or private ophthalmologist is fully funded with CSC, won’t be routinely seen at public hospital

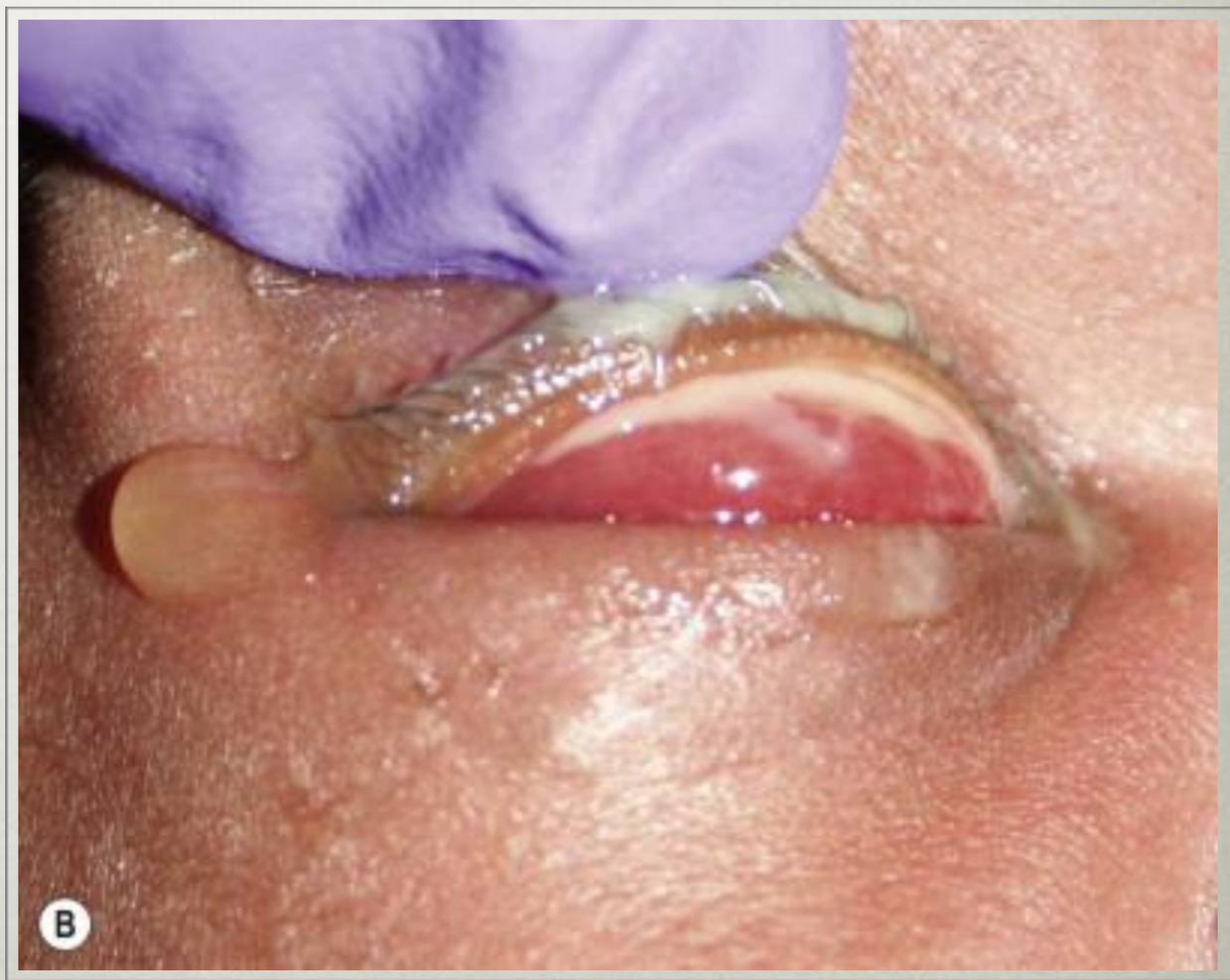
The sticky eye in Infancy



- Ophthalmia neonatorum
- Nasolacrimal duct obstruction
- Bacterial and viral conjunctivitis
- Lashes and lids

Ophthalmia Neonatorum

- Purulent discharge in the first month of life
- Ask about STI's
- DDx
  - Gonococcus
  - Chlamydia
  - HSV-2
  - Chemical
  - Other bugs

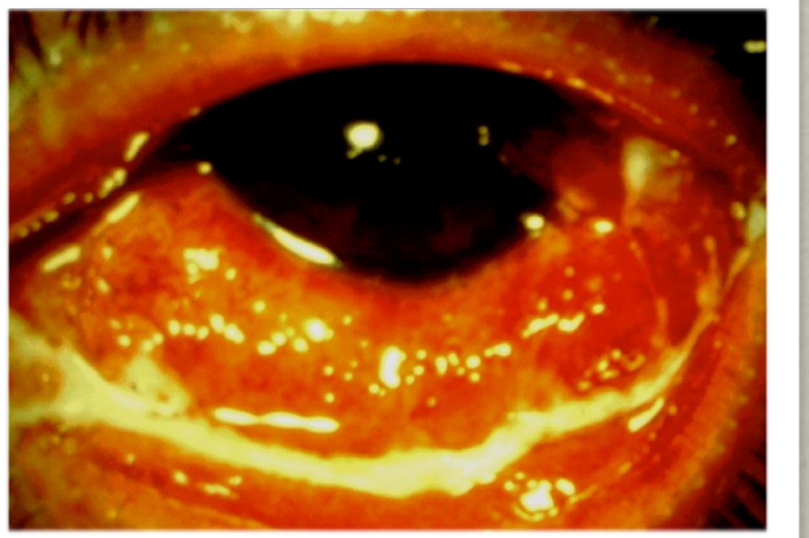


Examination

- Eye swabs for bacteria, chlamydia and HSV
- Lavage to clear fornices
- Careful inspection of conjunctiva and cornea with fluorosceine

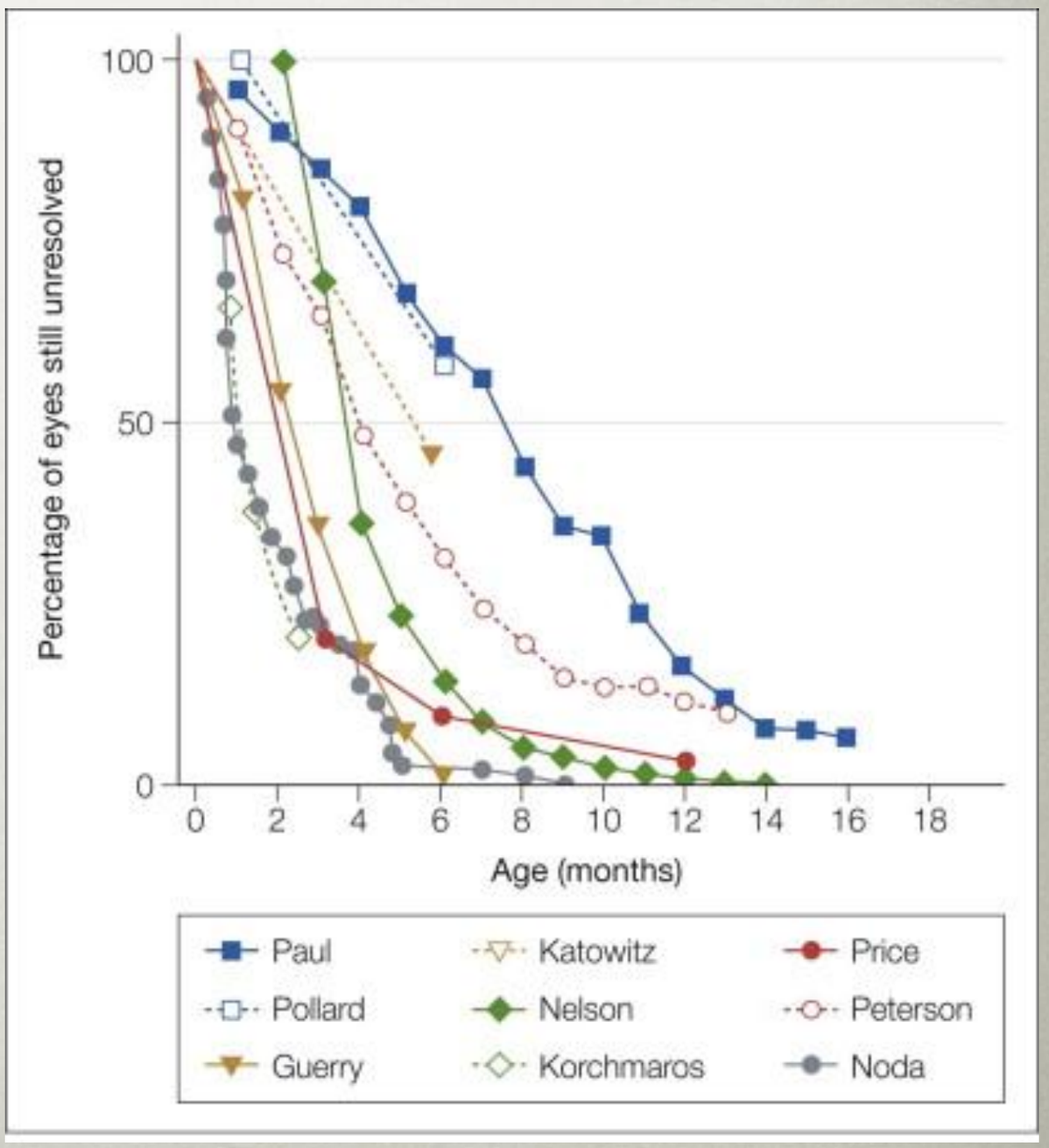
Ophthalmia Neonatorum

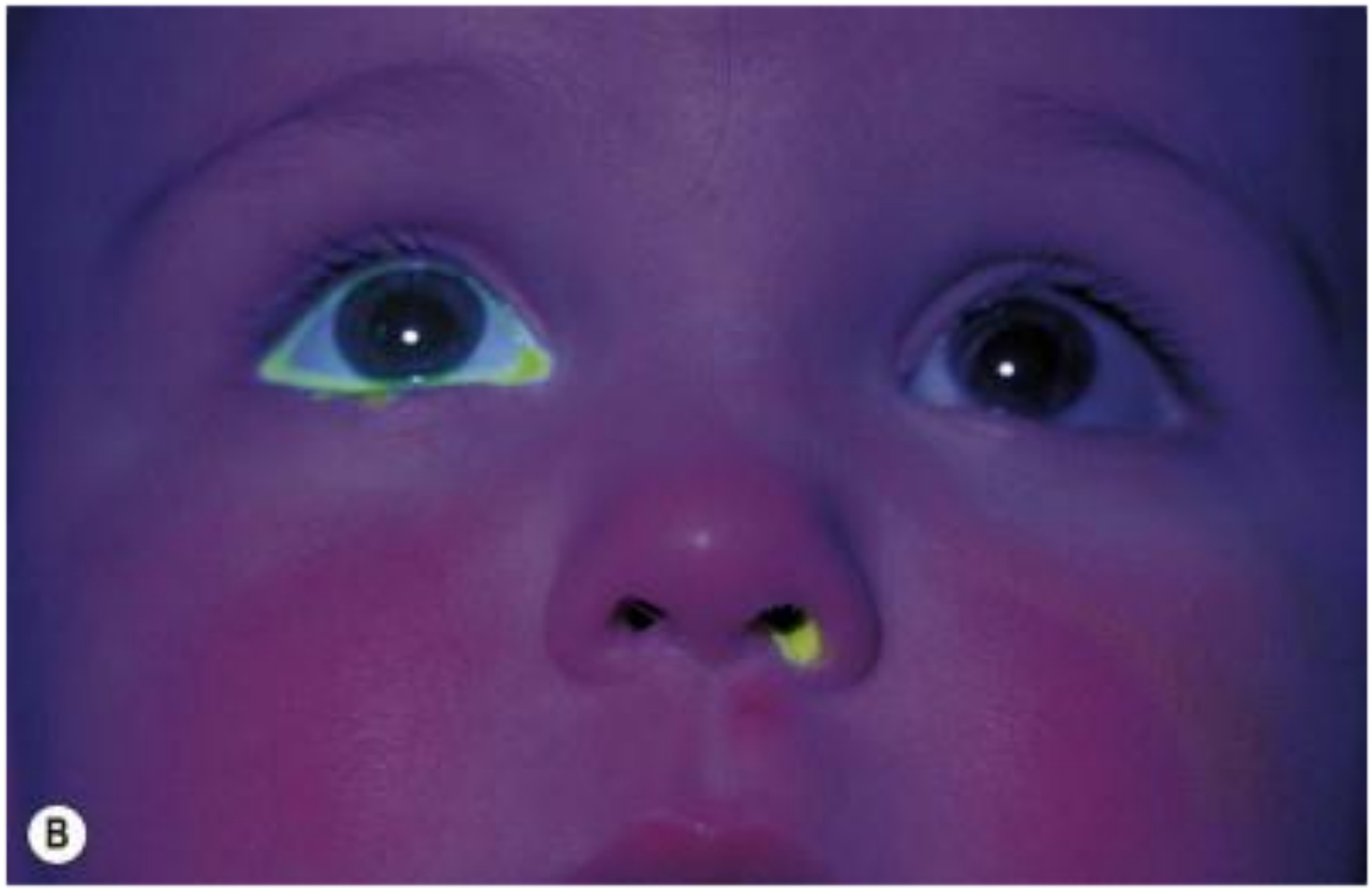
- Day 1-5 think Gonococcus
  - Hyperacute, profuse discharge, chemosis
  - Gram +ve diplococci
  - Can perforate the intact cornea
- Day 5-15 think Chlamydia
  - PCR
  - Chest examination
- Swab and refer immediately, screen parents if suspicious or swab +ve
- Systemic antibiotics, lavage, topical antibiotic support



Congenital Nasolacrimal duct obstruction

- Commonest cause of recurrent sticky eye in children
- >90% resolve in first year of life
- Epiphora, crusty lashes
- Mucocoele (express on massage)

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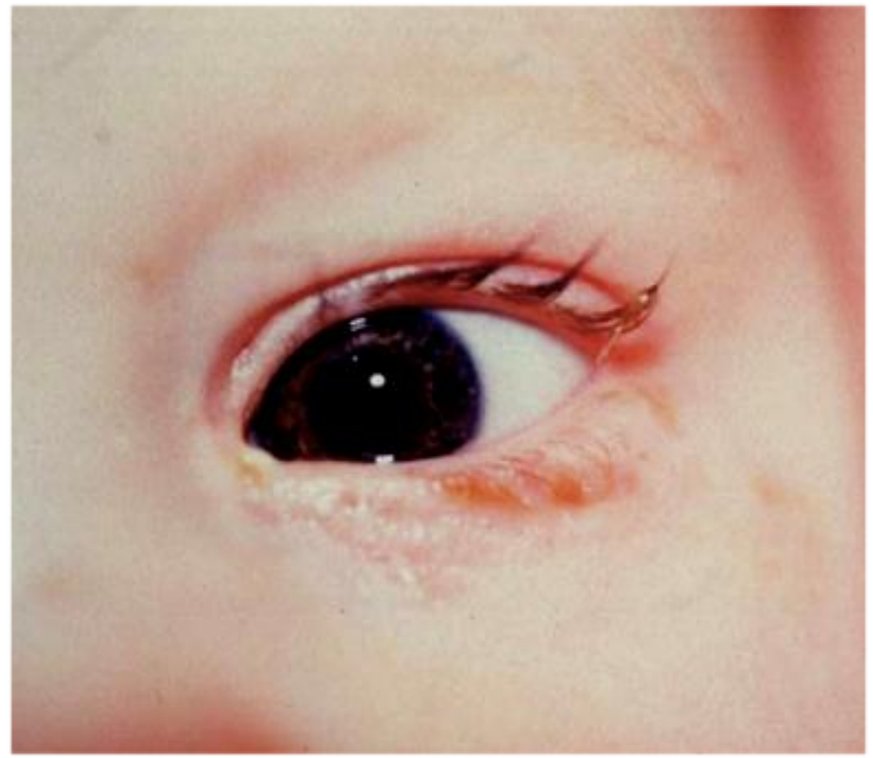
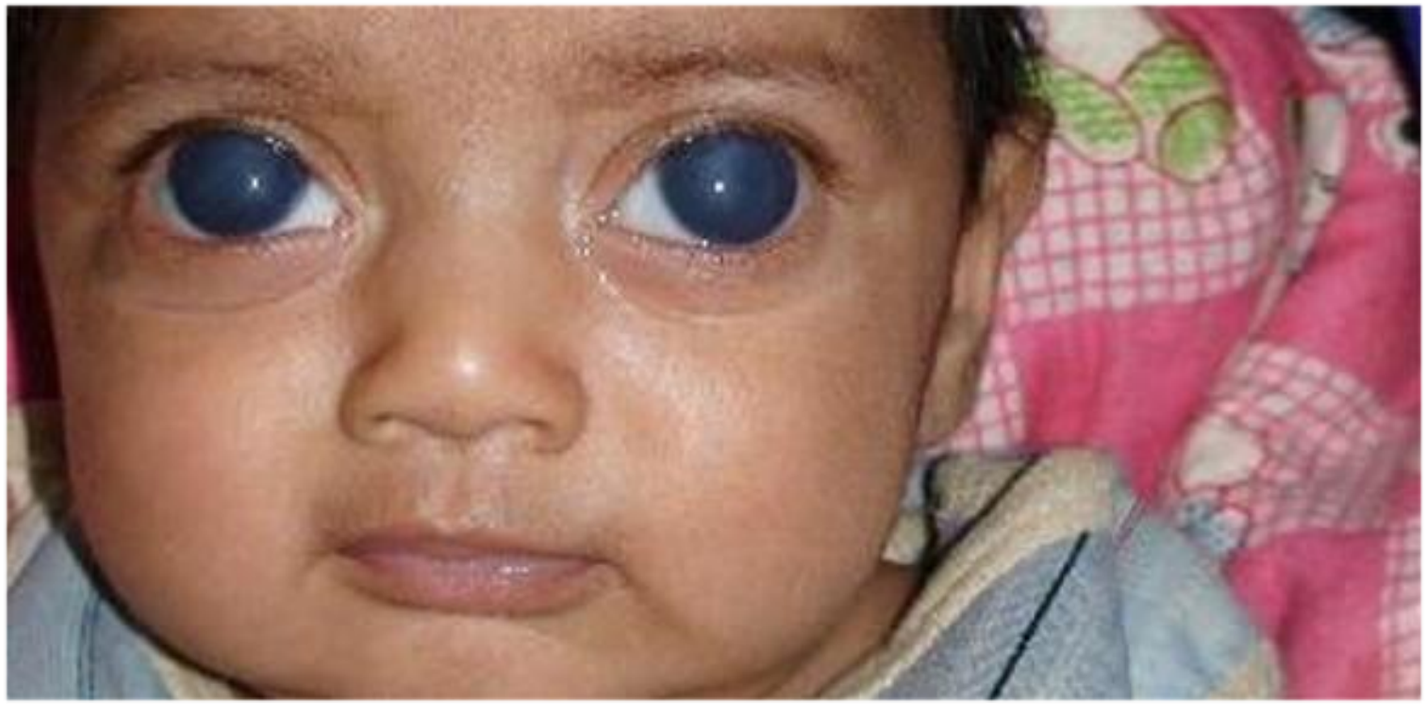
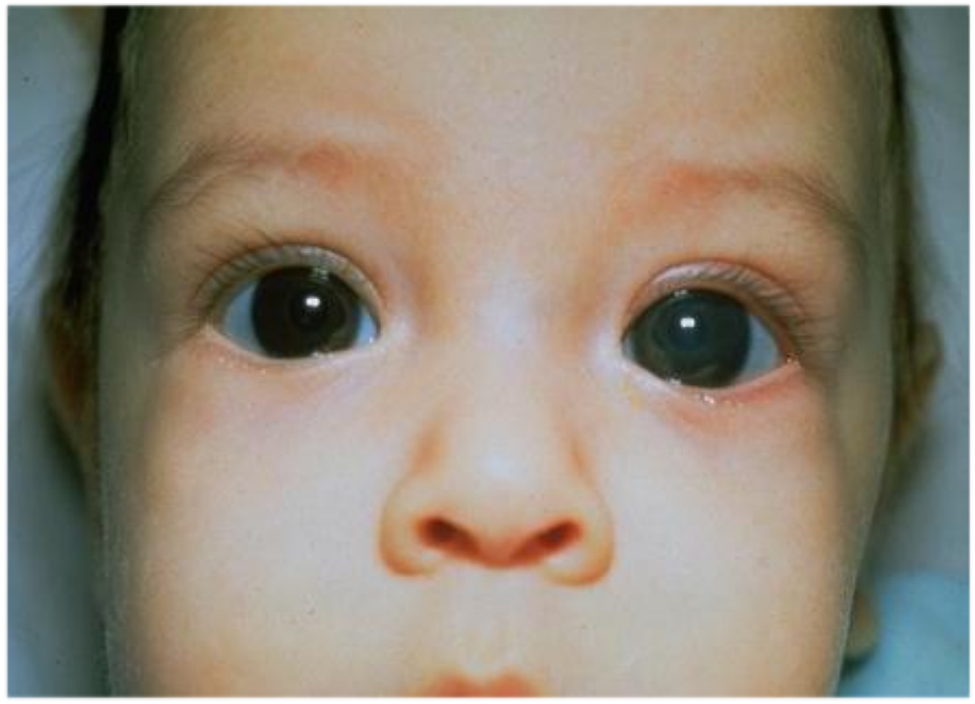
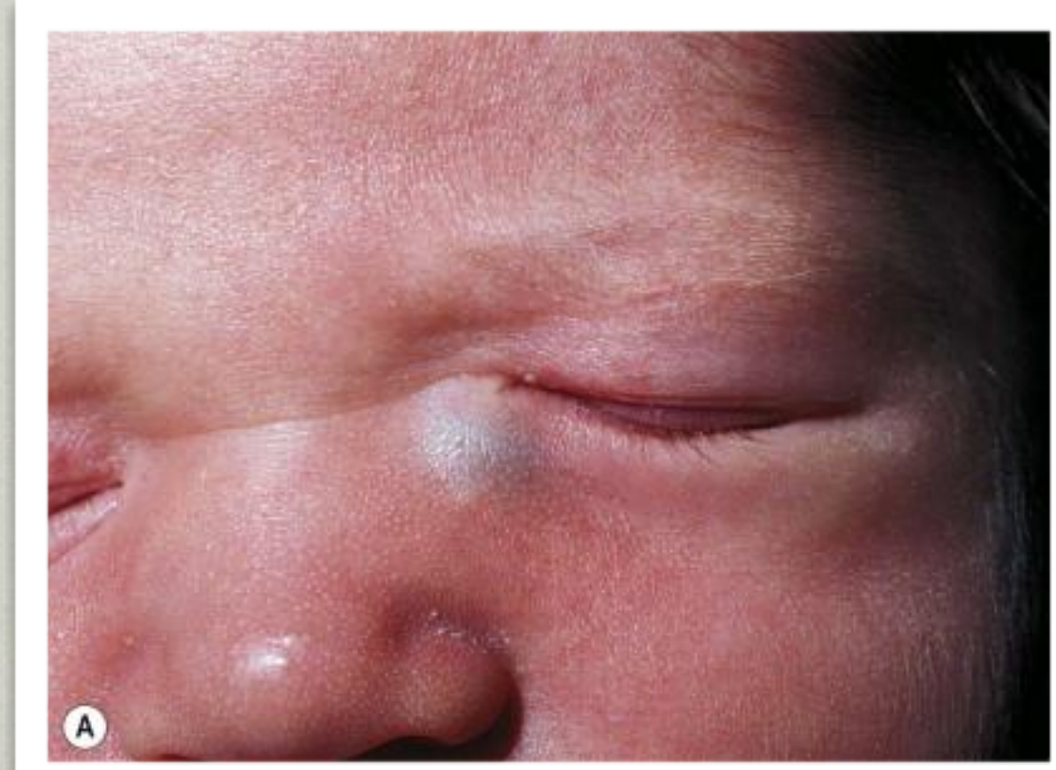
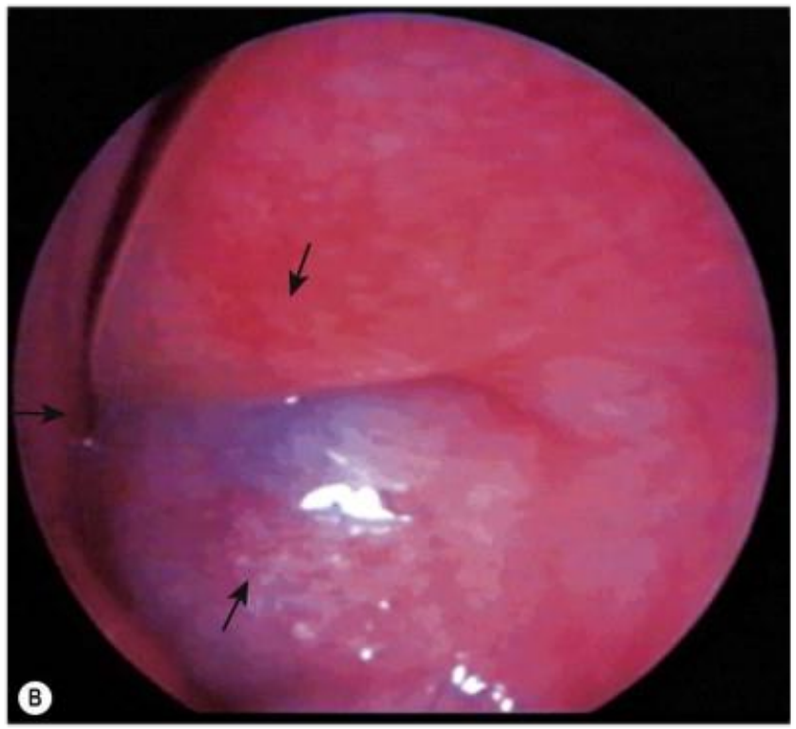


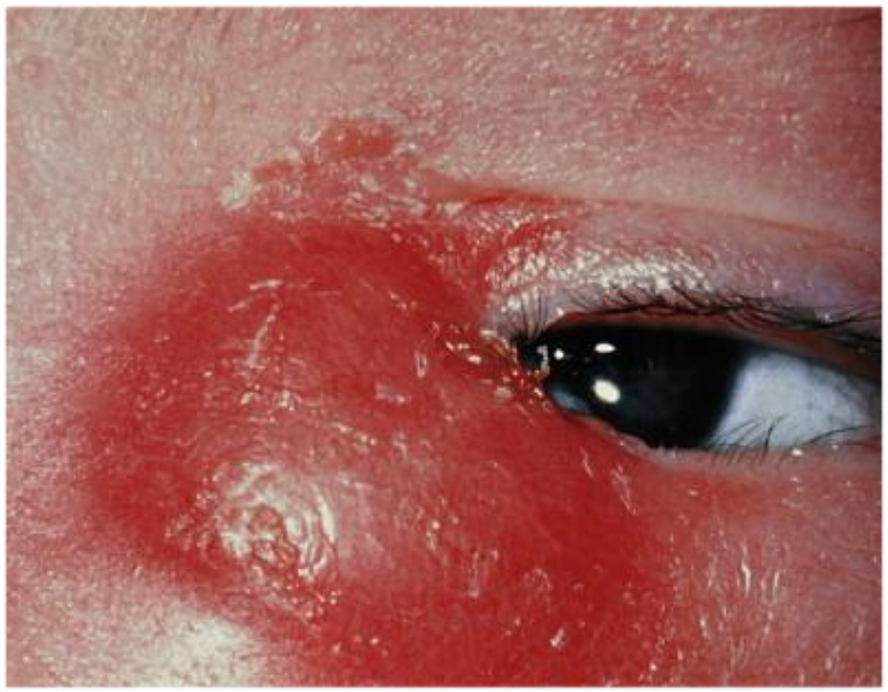




Dacryocystocoele(respiratory distress

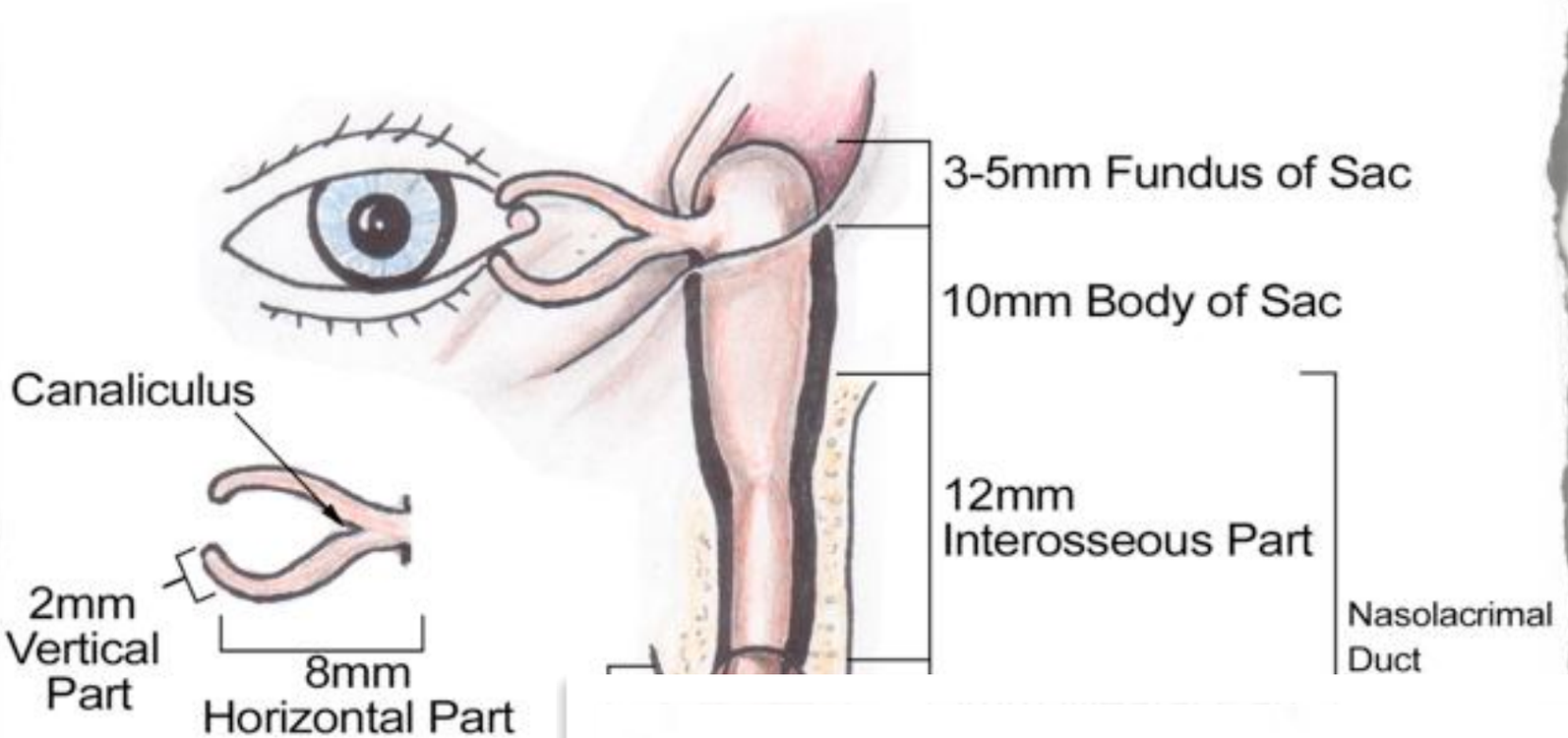




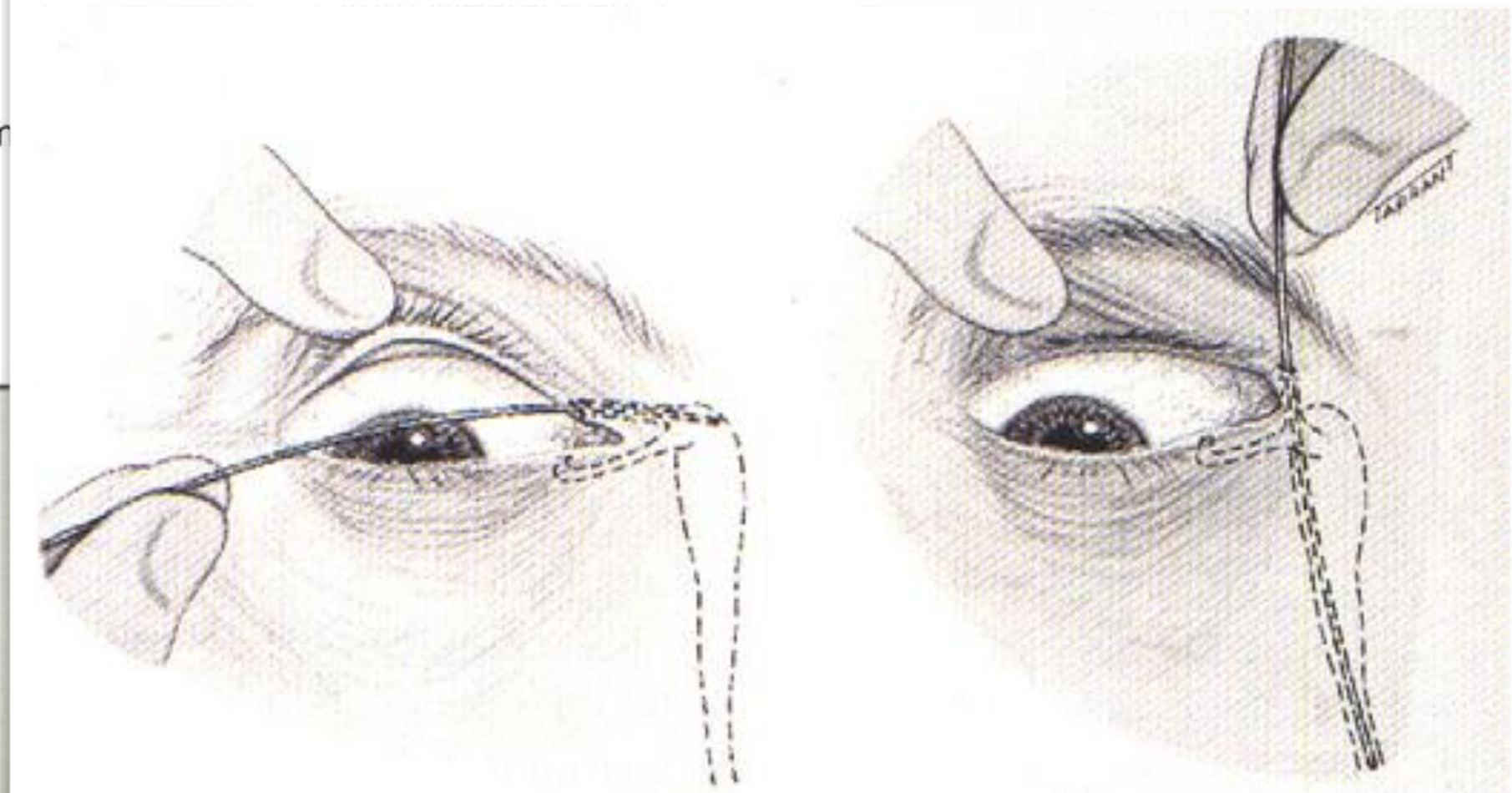


Management of NLDO

- Cleaning
- Massage over lacrimal sac
- Courses of chloramphenicol if required
- Probing



Inferior Meatus 20mm



Conjunctivitis

- Beware the diagnosis of unilateral conjunctivitis
- “Traumatic conjunctivitis”unacceptable
- Careful history and exam for eg corneal foreign body or unwitnessed trauma
- Redness, discharge, swelling, chemosis
- Pain and photophobia rare
- Vision normal, normal cornea, no stain
- Routine swab is often helpful (B/V)

Infectious Conjunctivitis

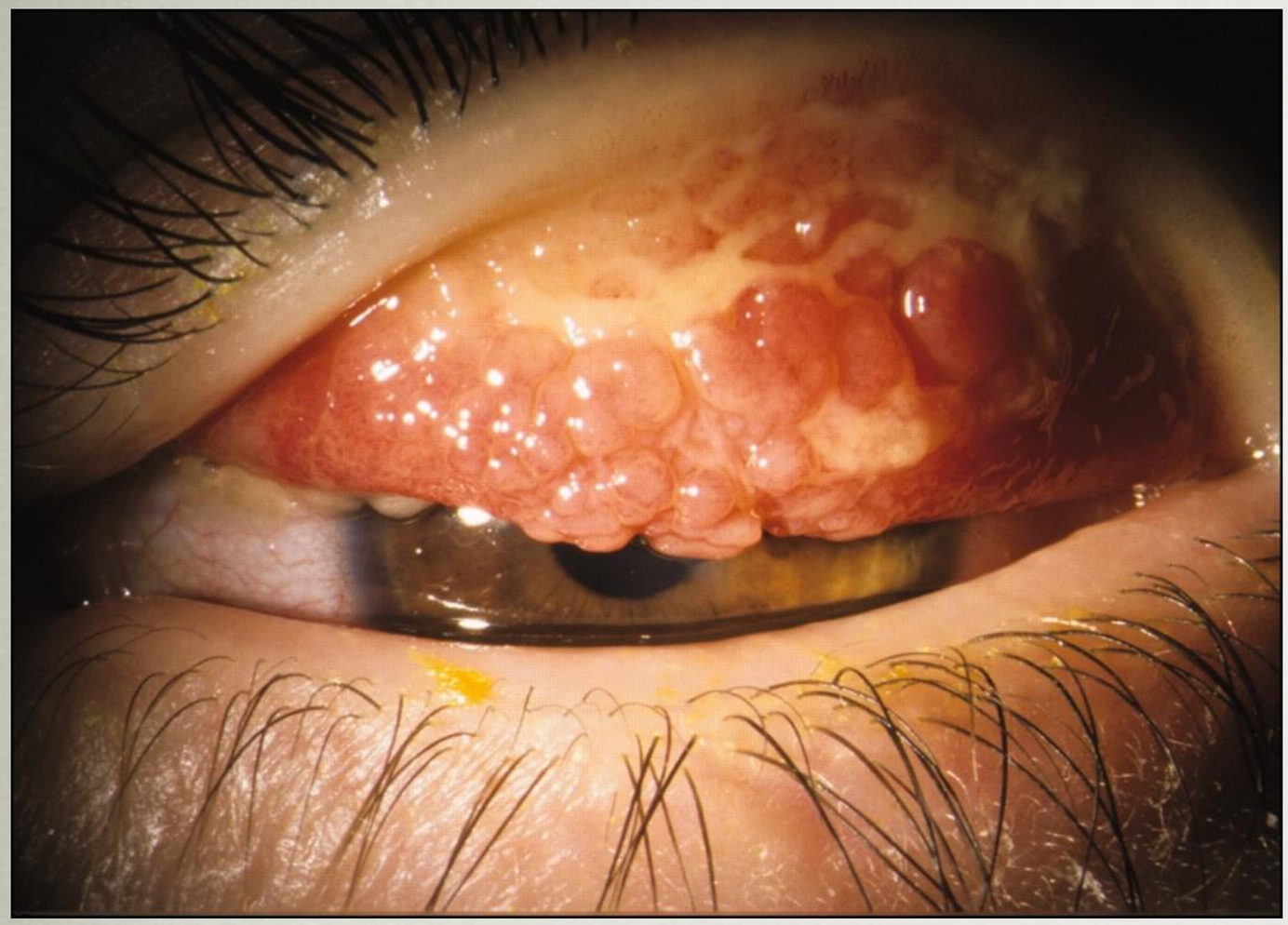
- Viral
  - contagious +++ any contacts?
  - lymphadenopathy (pre-auricular)
  - watery discharge
  - recent URTI
  - handwashing, cool compresses
  - no treatment required usually, chloramphenicol ok
- Bacterial
  - pus, many organisms (Staph, Strep, Moraxella, Haemophilus)
  - usually self-resolving
  - chloramphenicol or fucidic acid - qds too infrequent

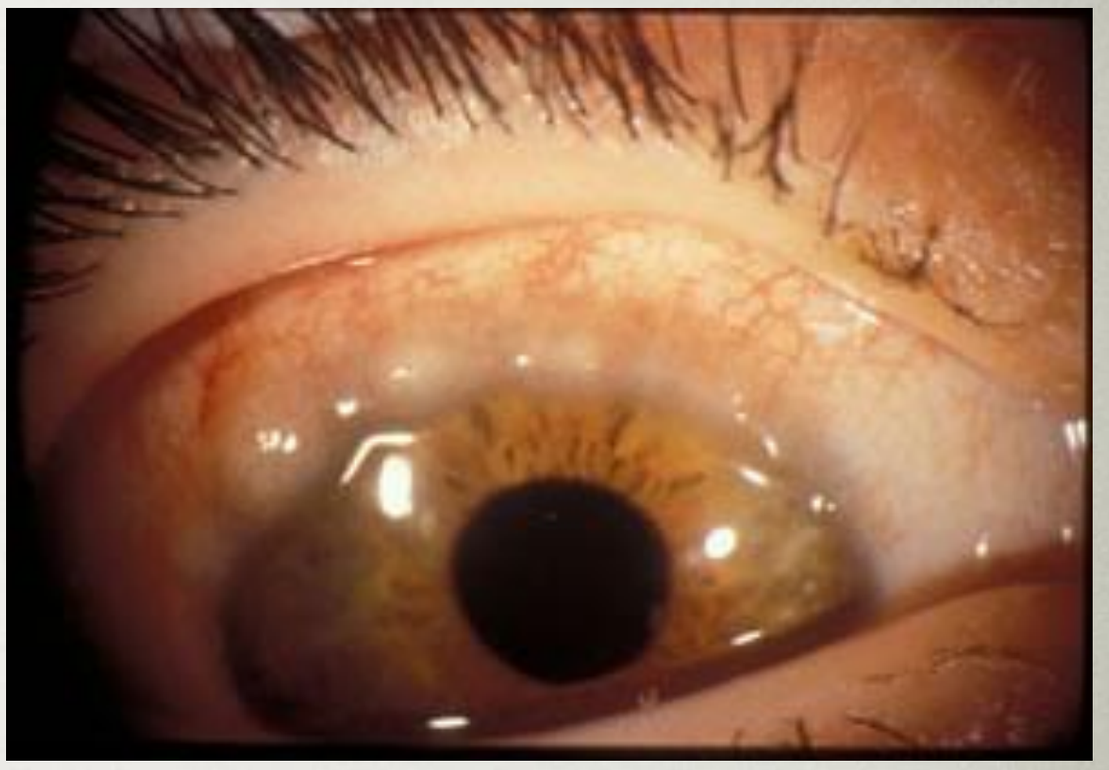
Allergic conjunctivitis

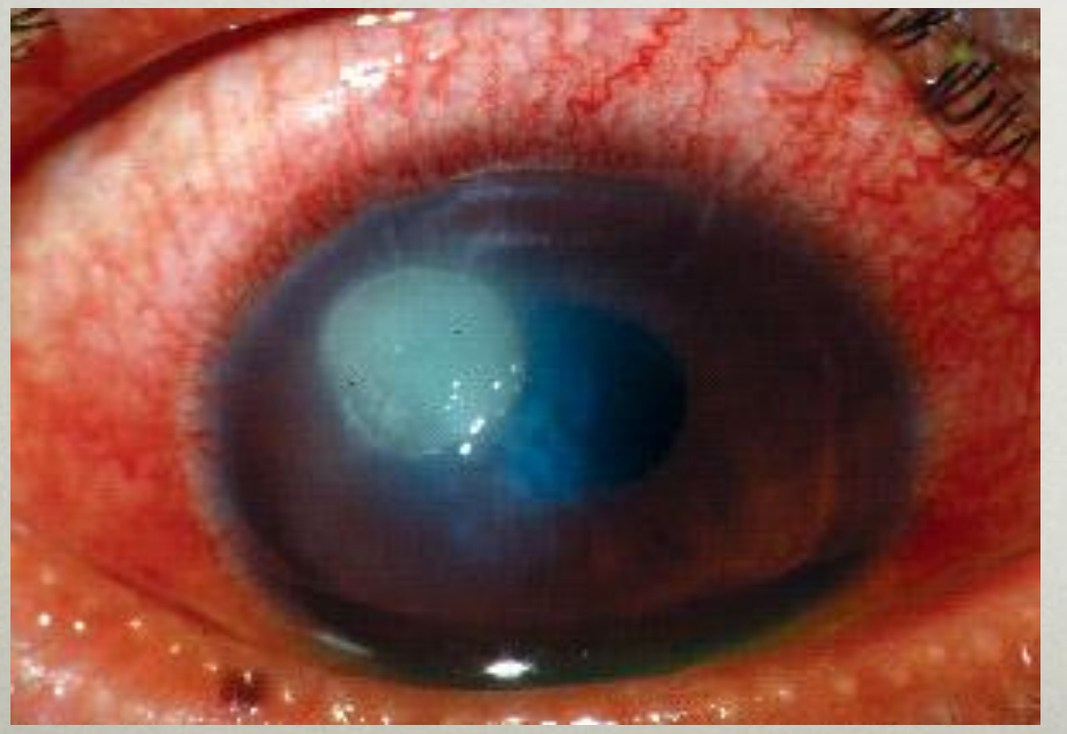
- Bilateral, mucus, itch
- Frequently have asthma, eczema etc.
- Evert the lids and look for papillae
- Vernal and atopic more chronic forms

Seasonal allergic conjunctivitis

- Type 1 hypersensitivity
- IgE antibodies bind mast cells and degranulate releasing histamines
- hyperaemia, vasodilation, itch and chemosis
- Often history of asthma / eczema
- Dust / pollen / moulds - seasonal component
- Pets - perennial





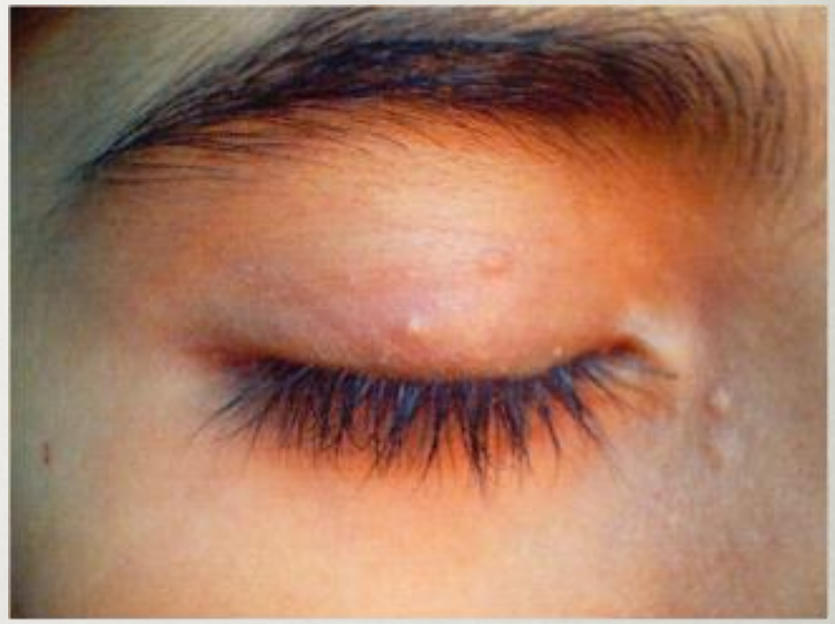


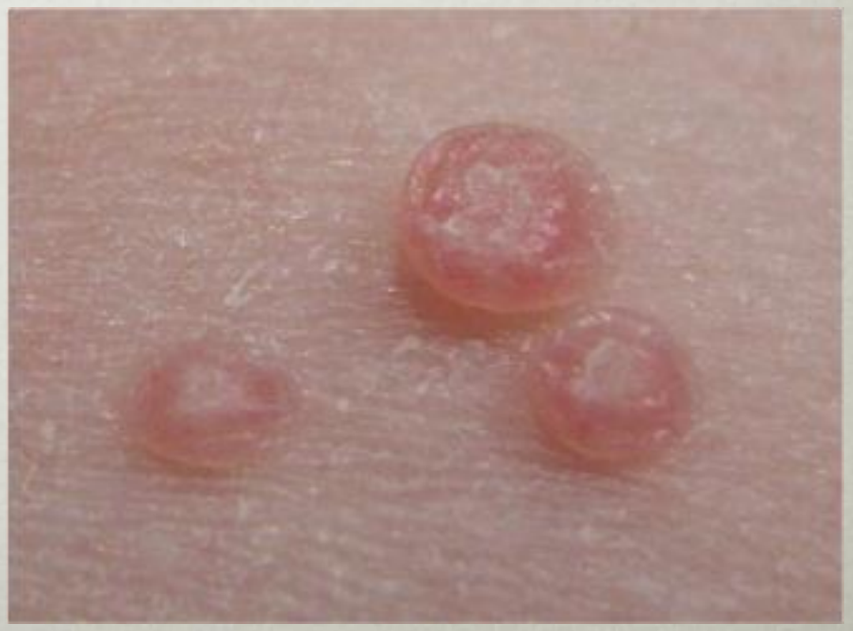
Allergic conjunctivitis

- Avoid steroids at all costs
- Cool compresses
- Lomide qds - mastcell stabiliser (year-round)
- Livostin qds - antihistamine
- Patanol bd - dual therapy
- Oral antihistamines if rhinitis
- Immunology skin prick testing (+/- desensitisation) if allergen suspected
- Refer if not settling with above treatment

Molluscum

- Consider this if no papillae and follicles instead
- Redness and itch ++
- Lesions near lid margin easy to miss
- Treatment with curettage
- Nail polish on skin lesions





Lids and Lashes

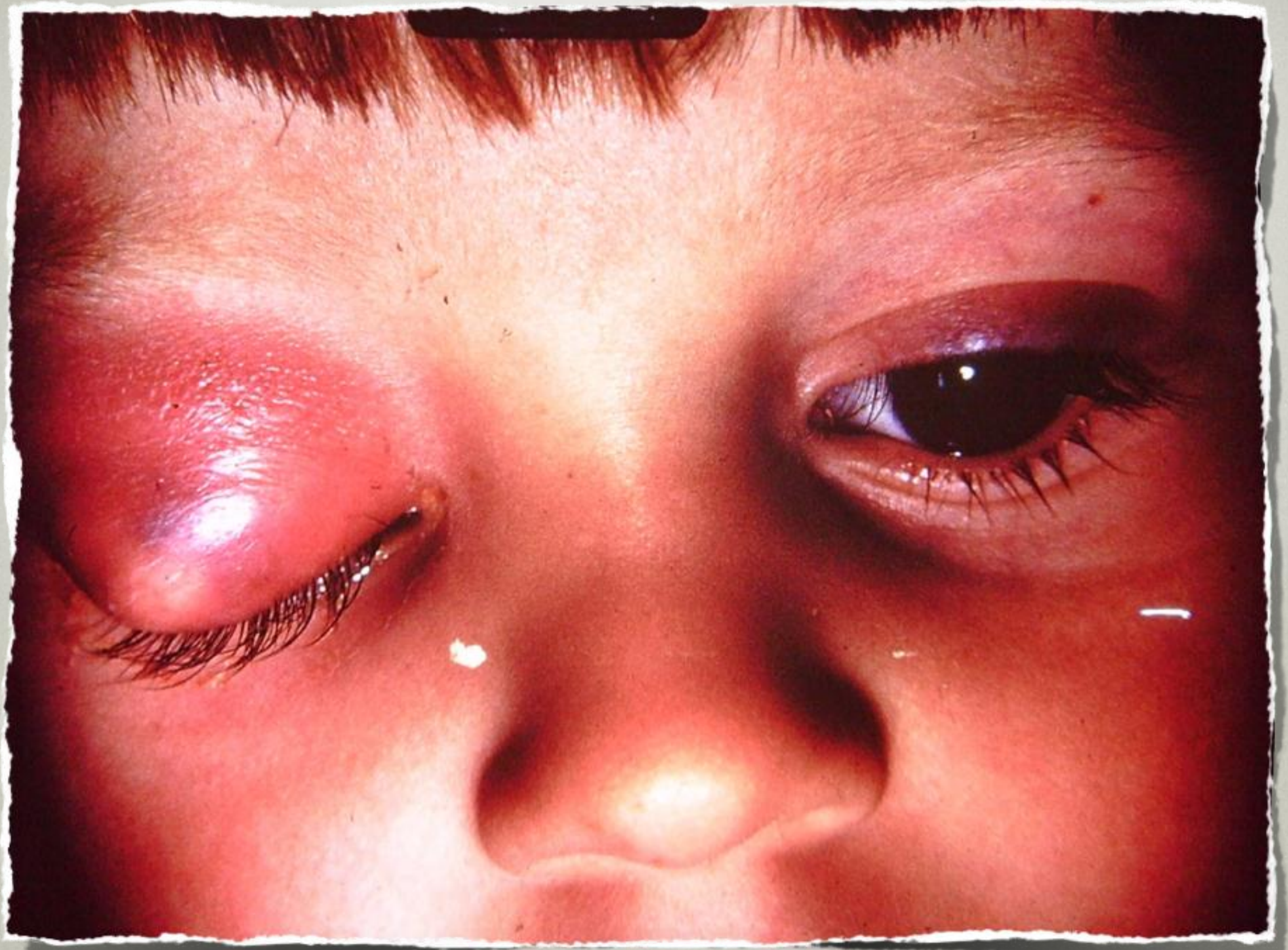
- Abnormal lid position
- Abnormal lid shape
- Abnormal lid closure

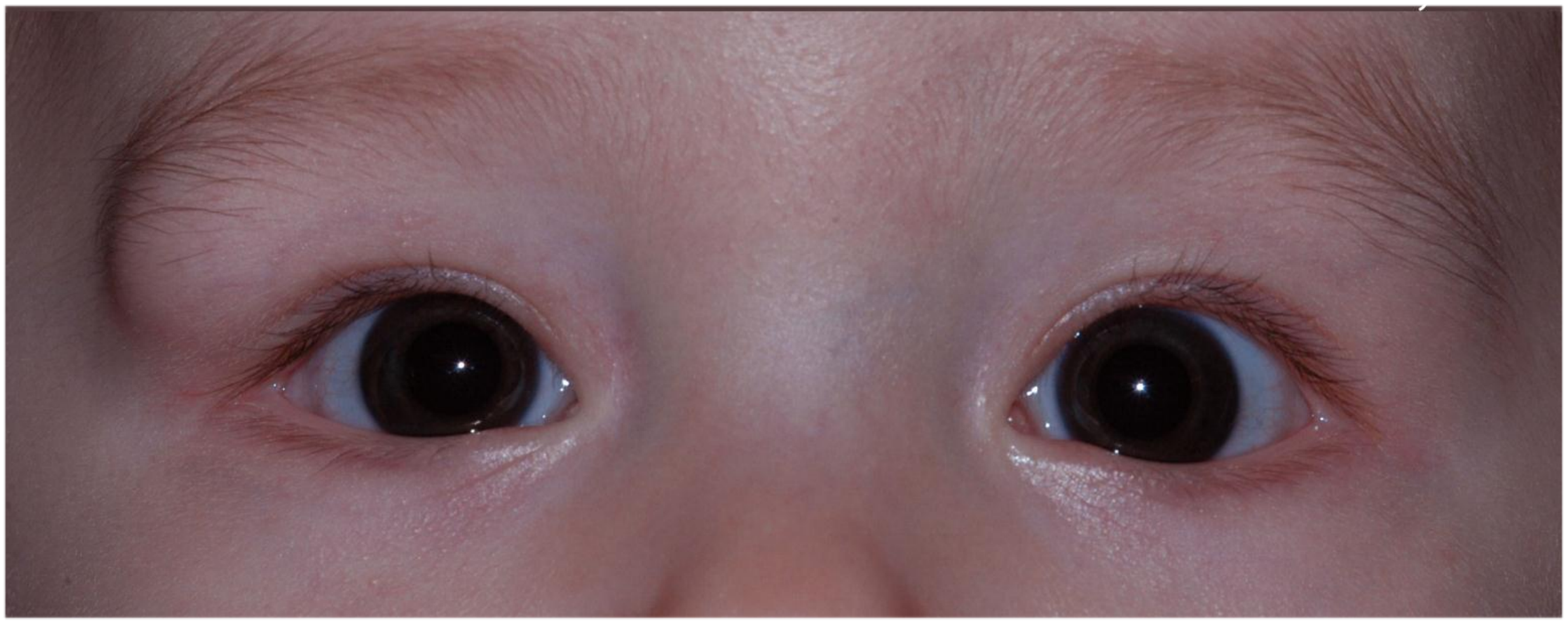
Epiblepharon

Meibomian cyst

(aka chalazion)

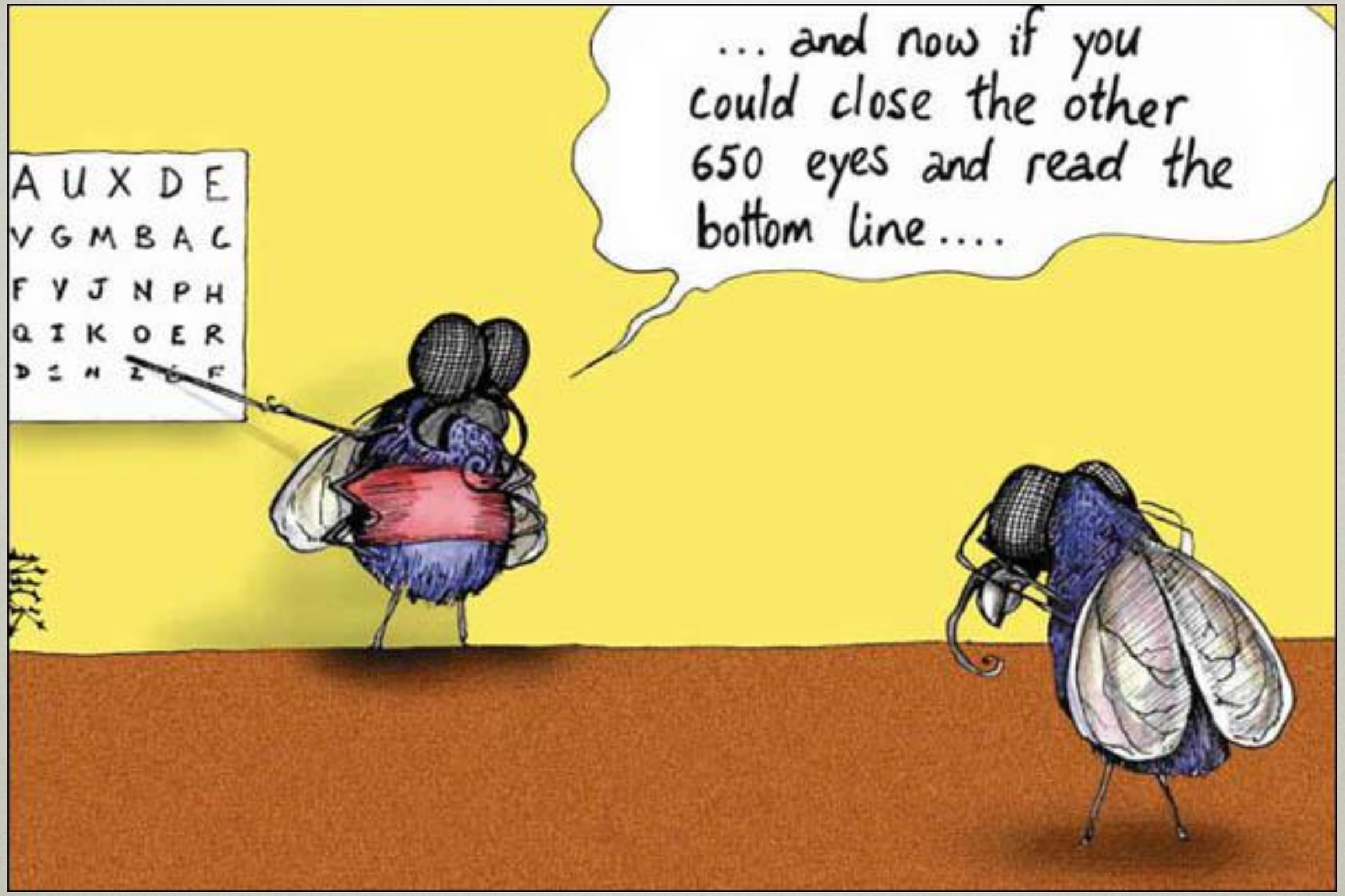
- usually self-resolving
- conservative treatment +++
- refer if
  - acute infection (rapid increase in size and cellulitis)
  - persisting despite >1 month of conservative rx
  - potential for amblyopia (eg ptosis)





Treatment of MC's

- Topical antibiotics totally ineffective
- Oral antibiotics ineffective unless infected (?erythromycin)
- Warm compress and massage
  - water balloon, hot potato
- Incision and curettage or steroid injection

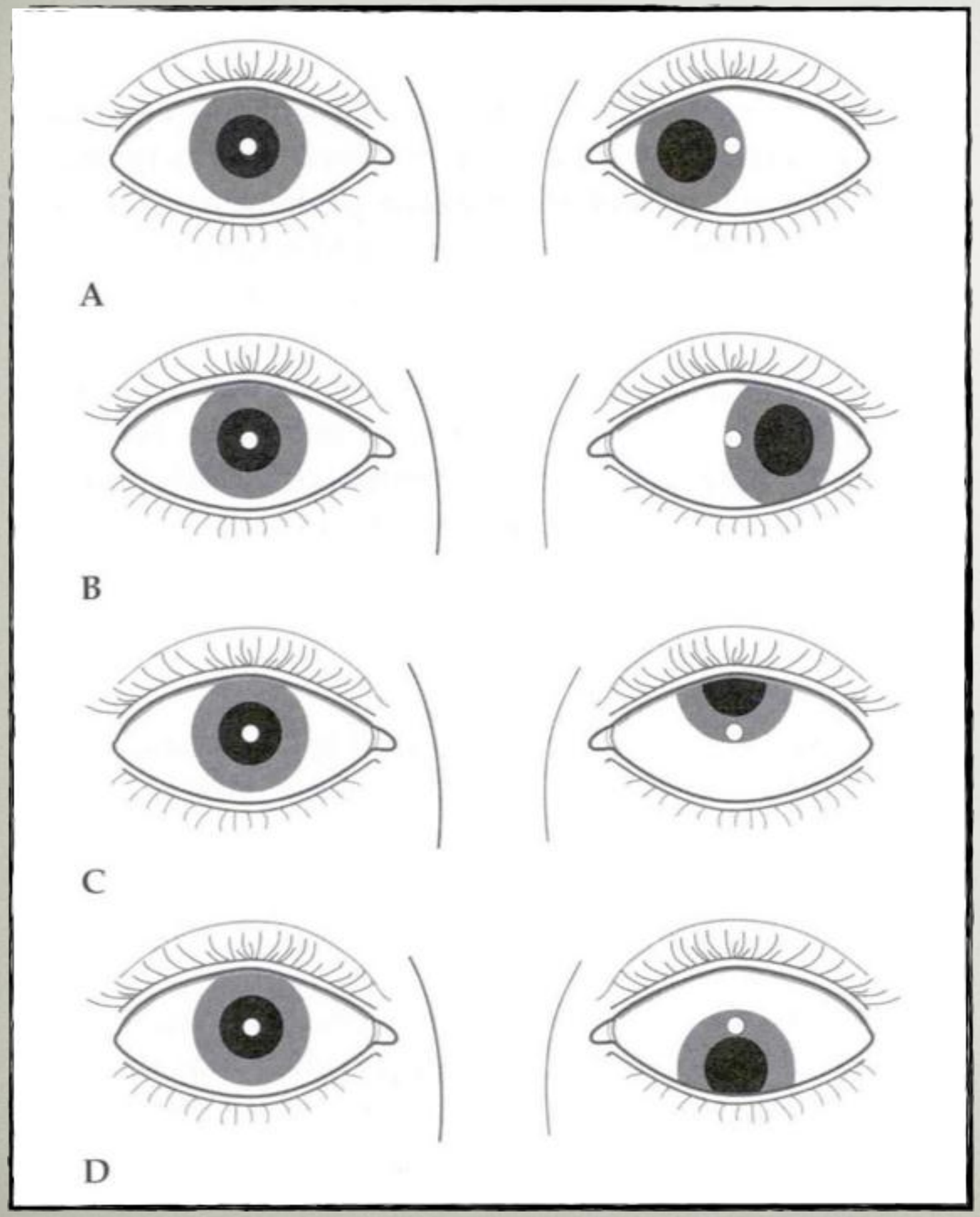

A U X D E
V G M B A C
F Y J N P H
Q I K O E R
... and now if you could close the other 650 eyes and read the bottom line....
NICK

Strabismus

- Misalignment of the visual axes
- Many causes
  - Congenital / infantile
  - Acquired
    - Sensory
    - Refractive
    - Neurologic
    - Traumatic
    - Other

Describe what you see

- Try to avoid the word squint
  - Can mean ptosis, closing eyes or strabismus
- Lazy eye similarly ambiguous



Esotropia

Exotropia

Hypertropia

Hypotropia

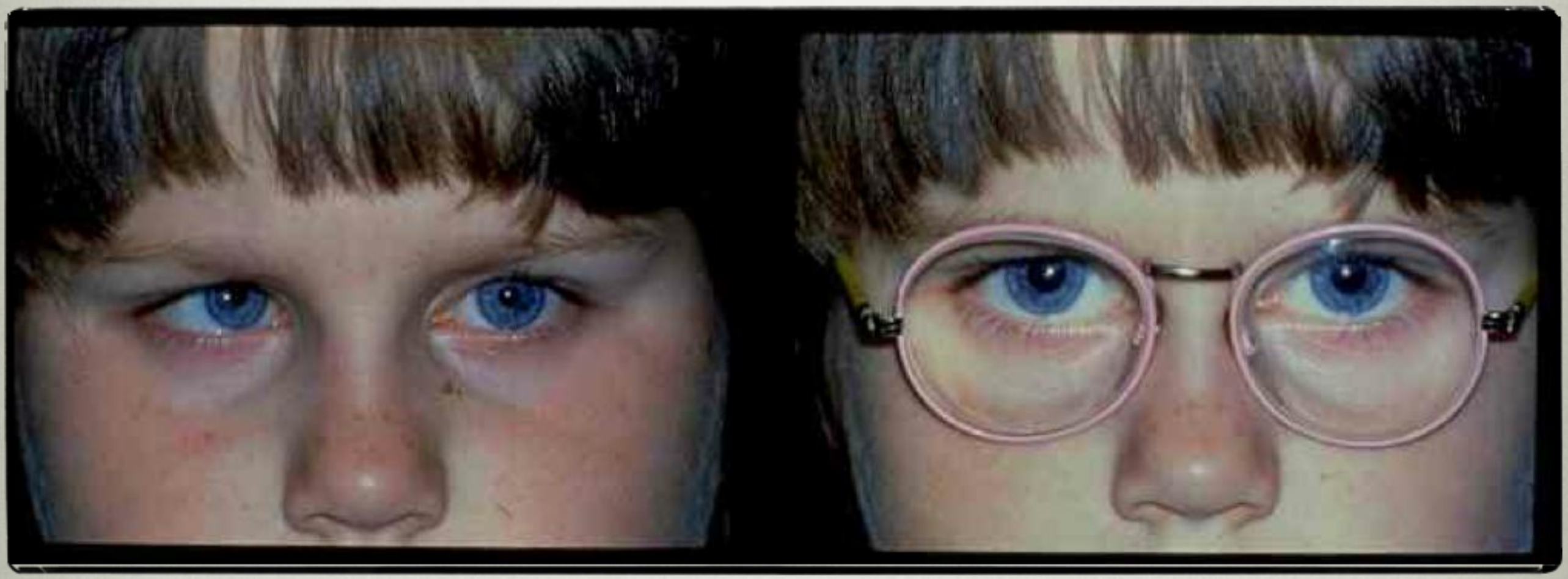
Corneal light reflexes

Light source held in front of patient to cast reflection on each cornea

Normal placement slightly nasal (medial) to the pupil centre

Temporally (laterally) displaced light reflex - indicates right esotropia

Accommodative Esotropia
Corneal light reflexes



16th century strabismus mask

Dresden, Germany

Tropia’s and phoria’s

- TROPIA
- present all the time
- visible without any special tests
- “manifest”

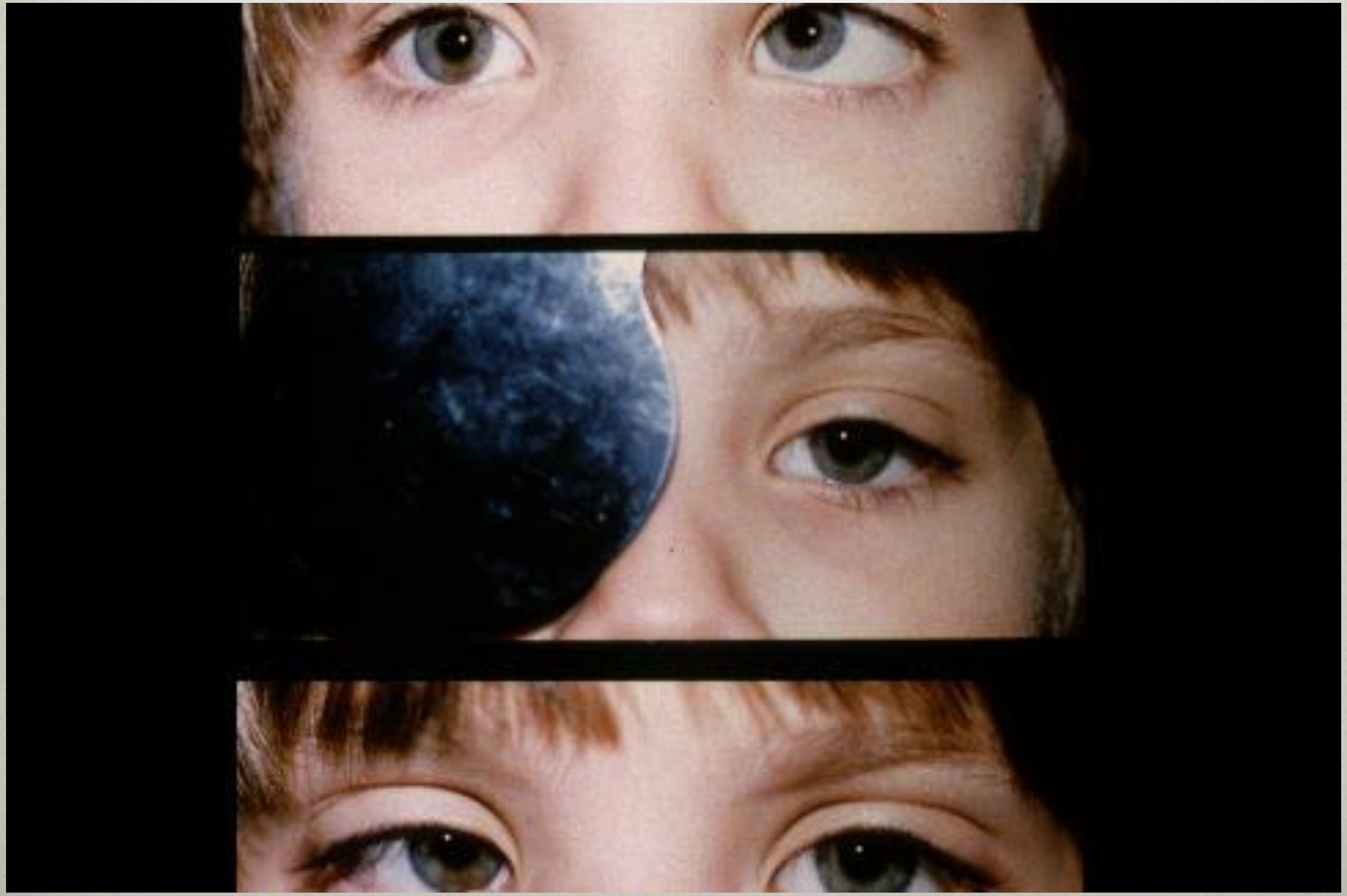
- PHORIA
- present only when the eyes are dissociated
- elicited with cover testing

Cover testing

- For it to give an easy to interpret result you need to
  - assume each eye can see
  - assume each eye can move

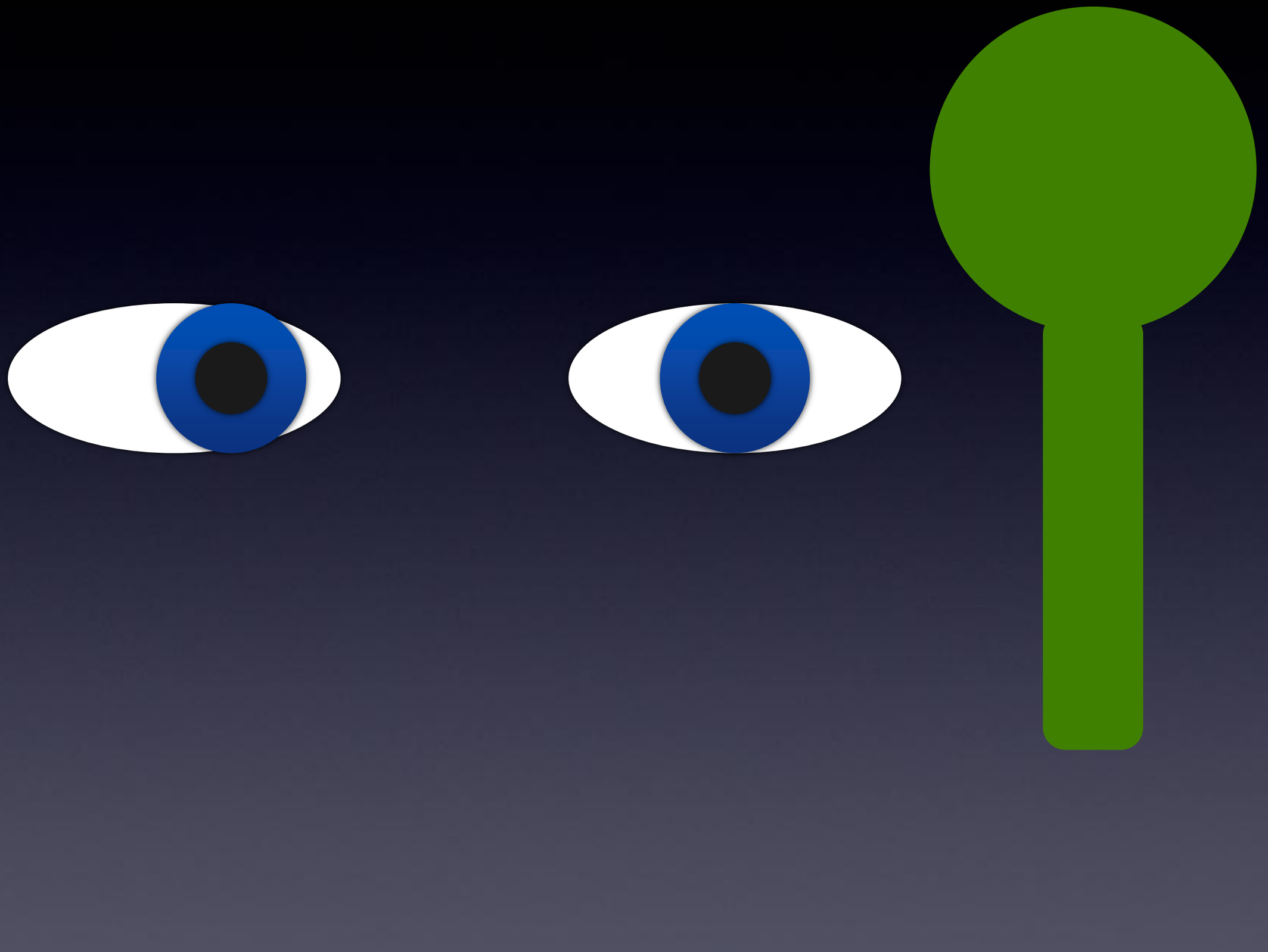
- Cover - uncover test (one eye)
- Alternating cover test (both eyes)

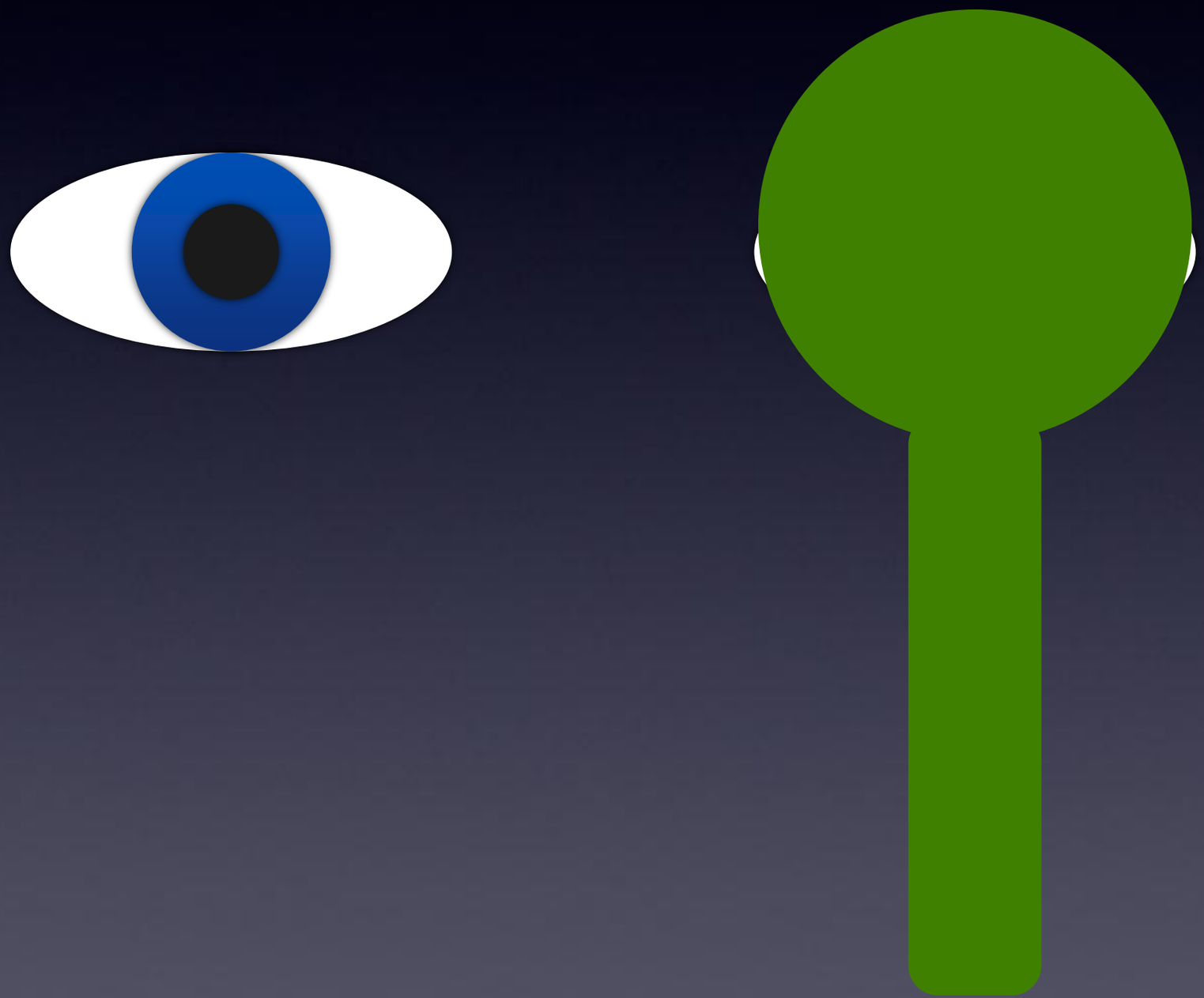
Cover - Uncover test - Alternating esotropia

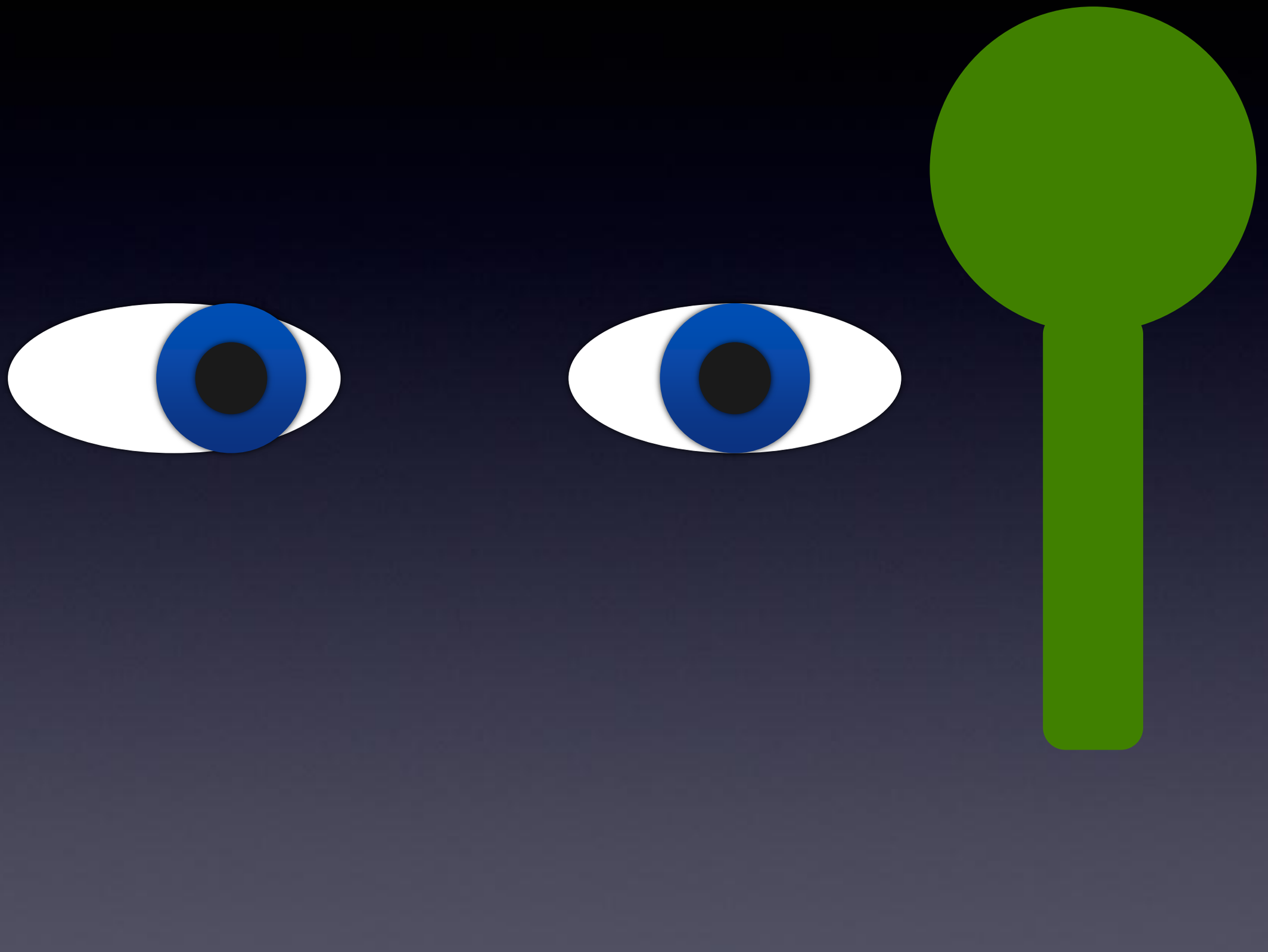


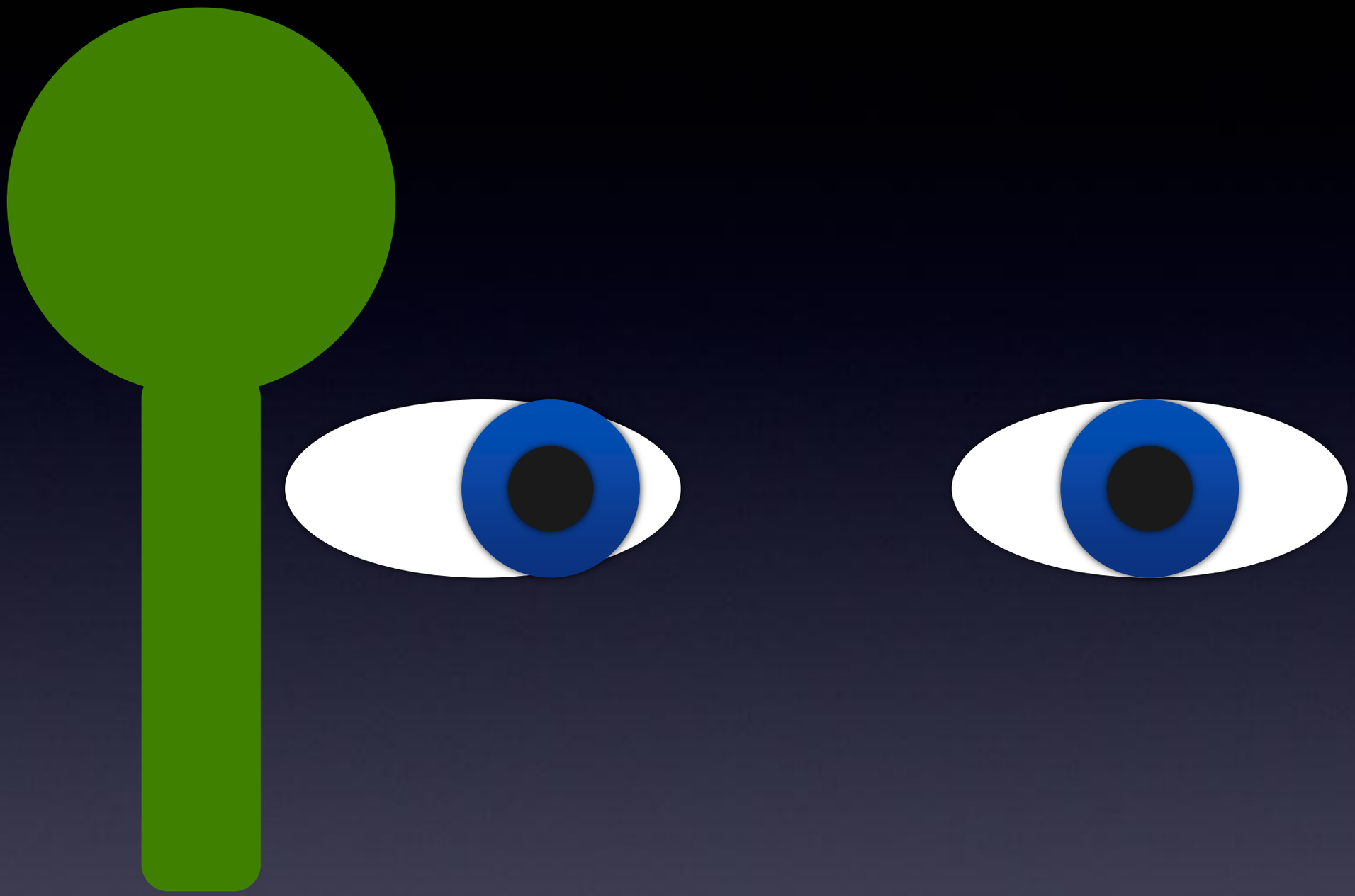
Cover-Uncover Test

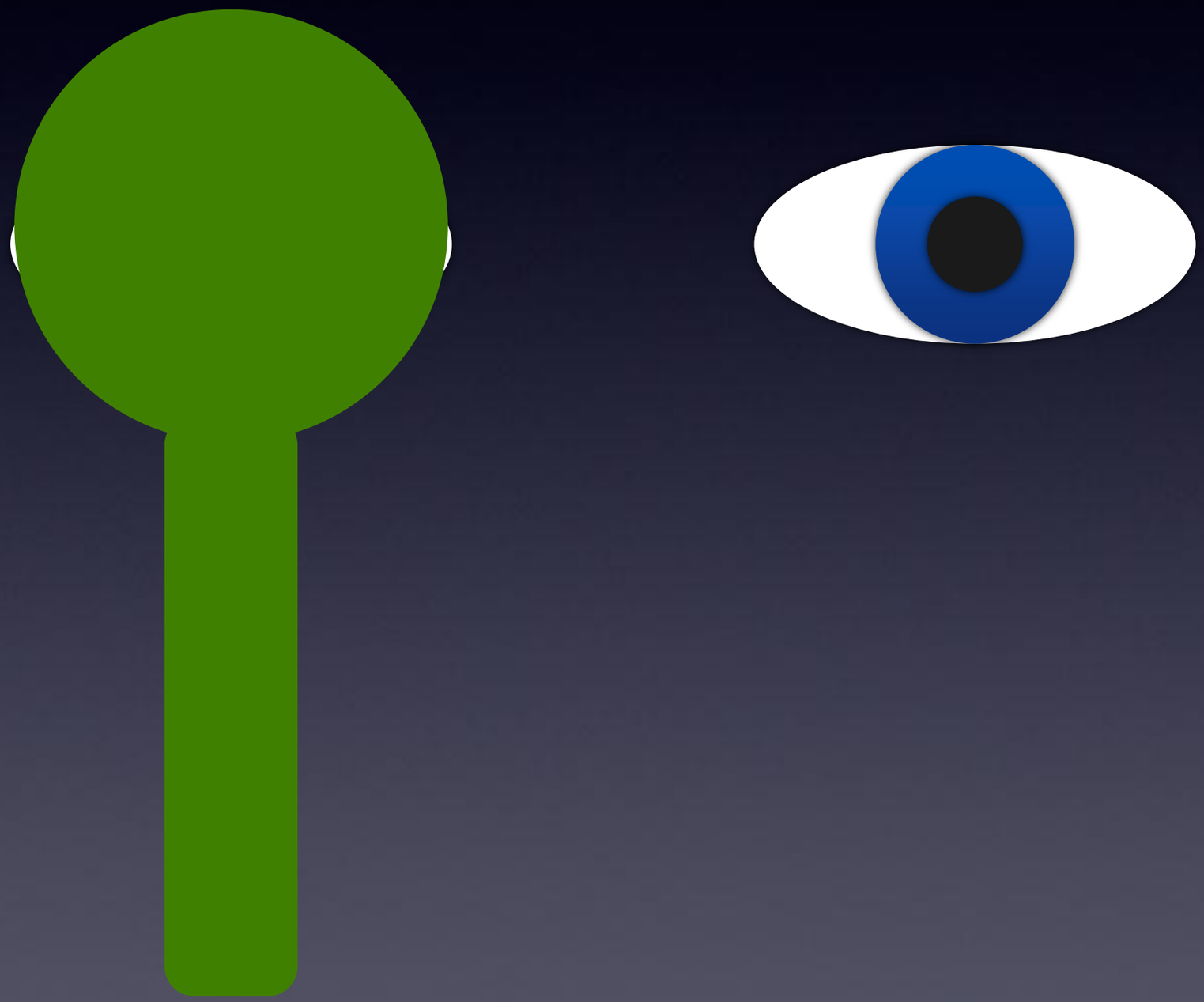
- Right esotropia

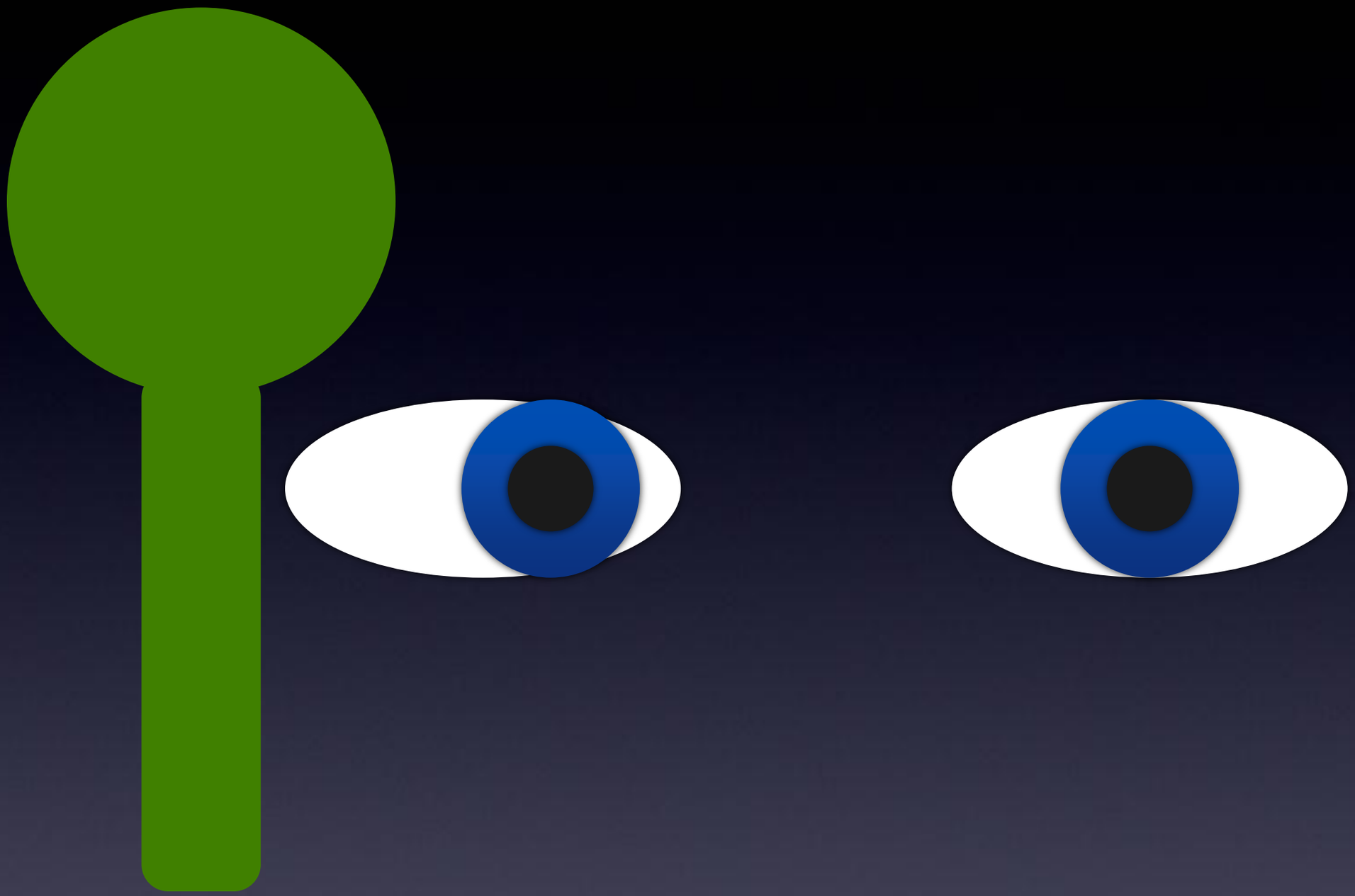






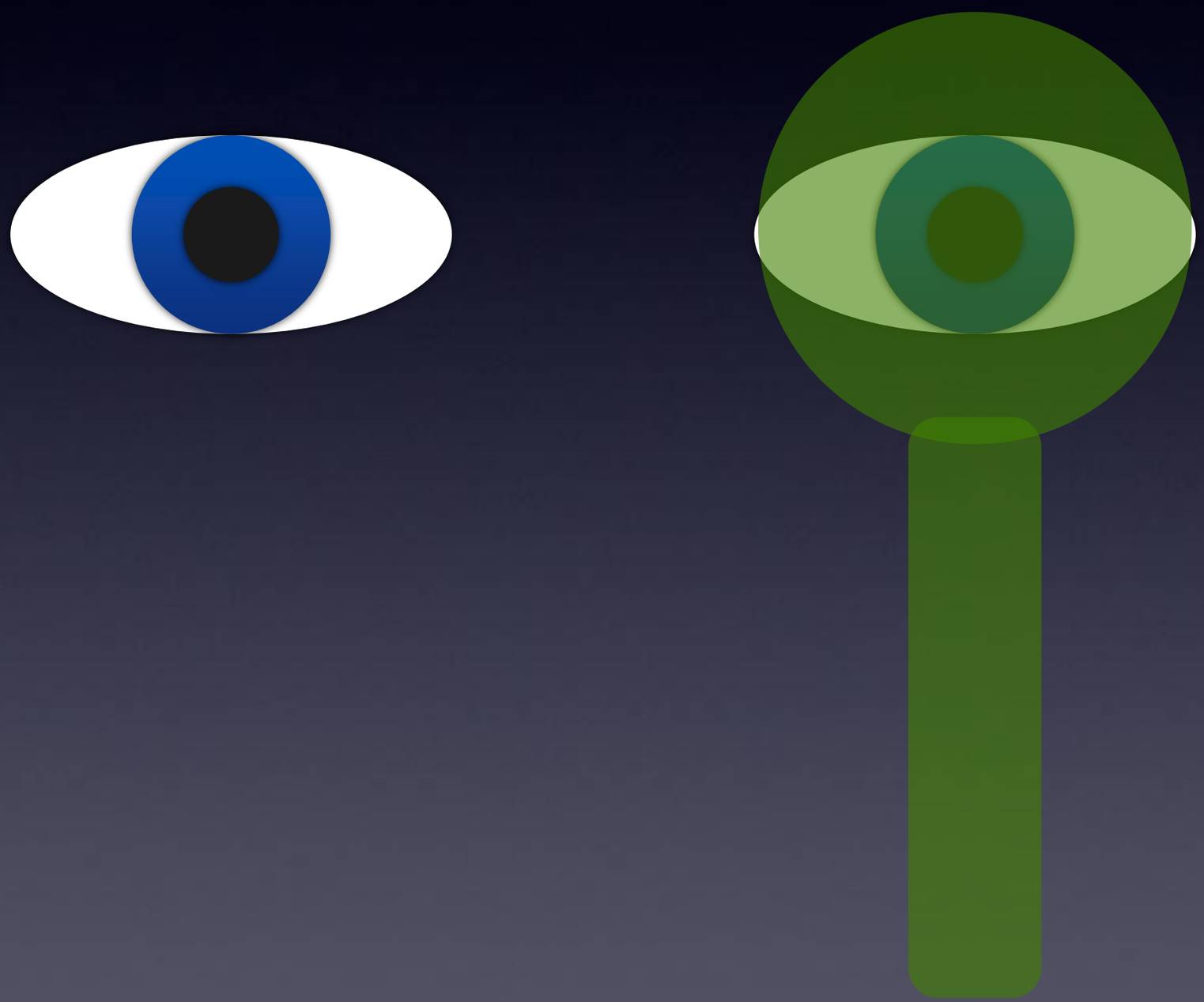


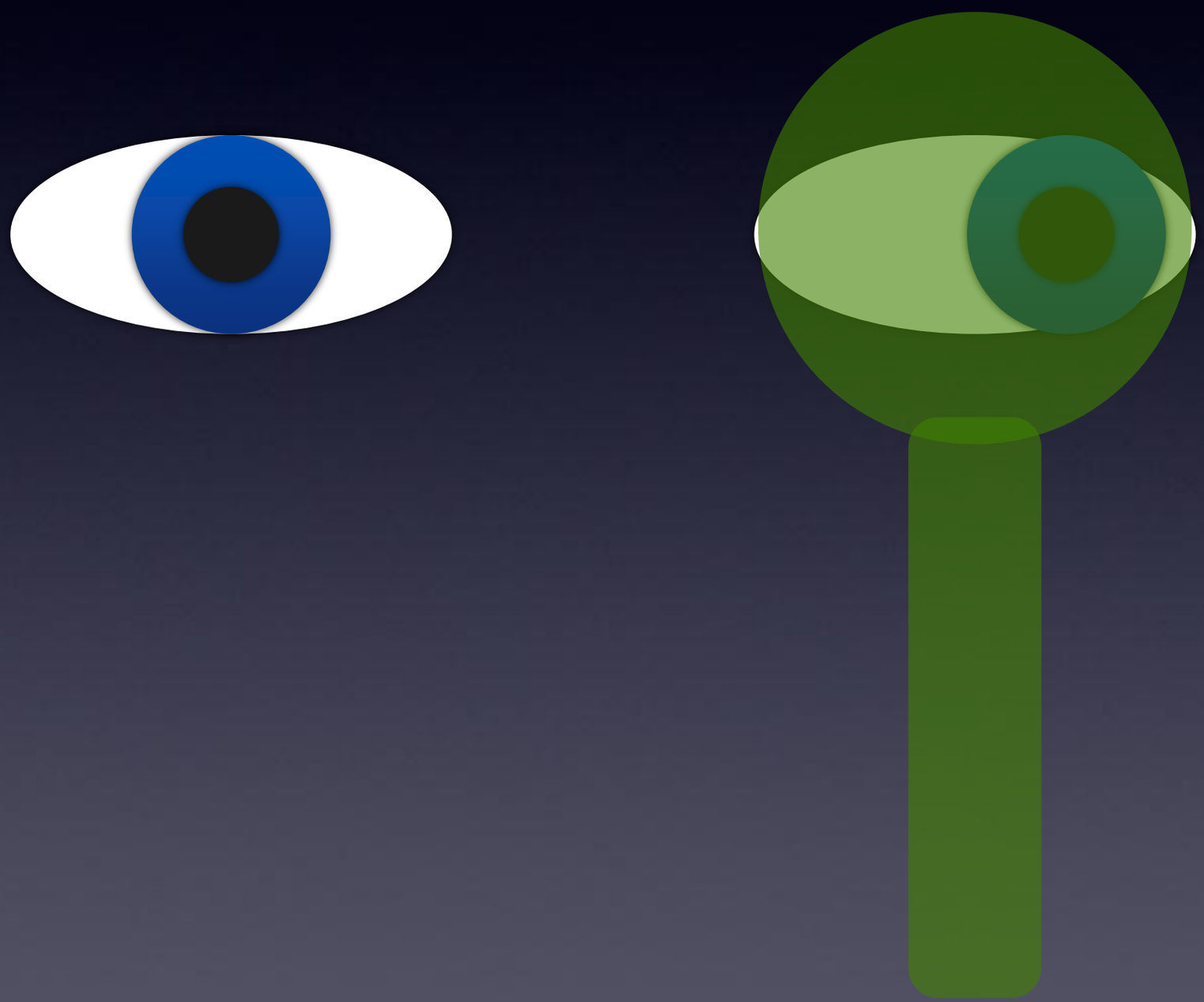




Cover-Uncover Test

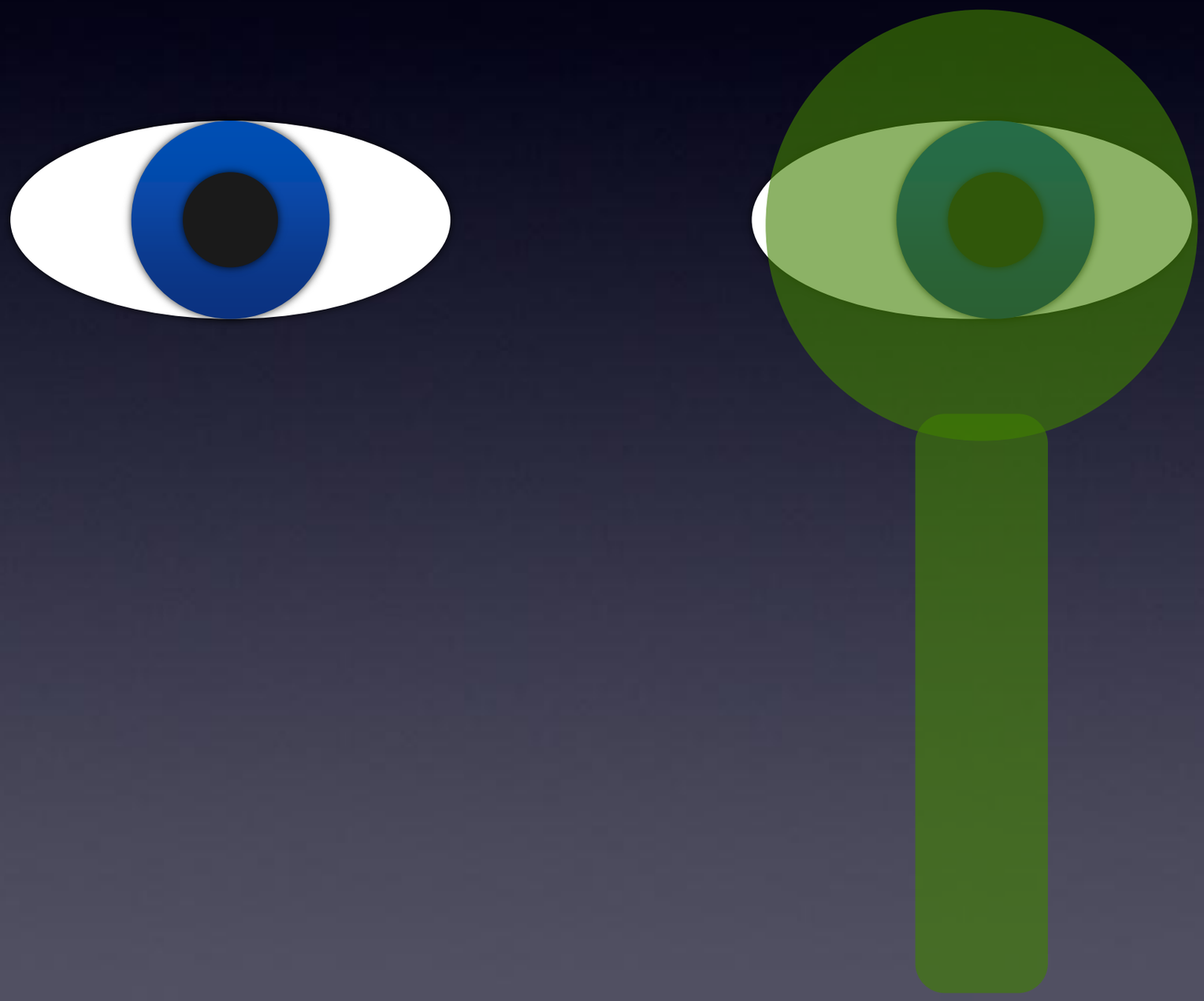
- Left exophoria

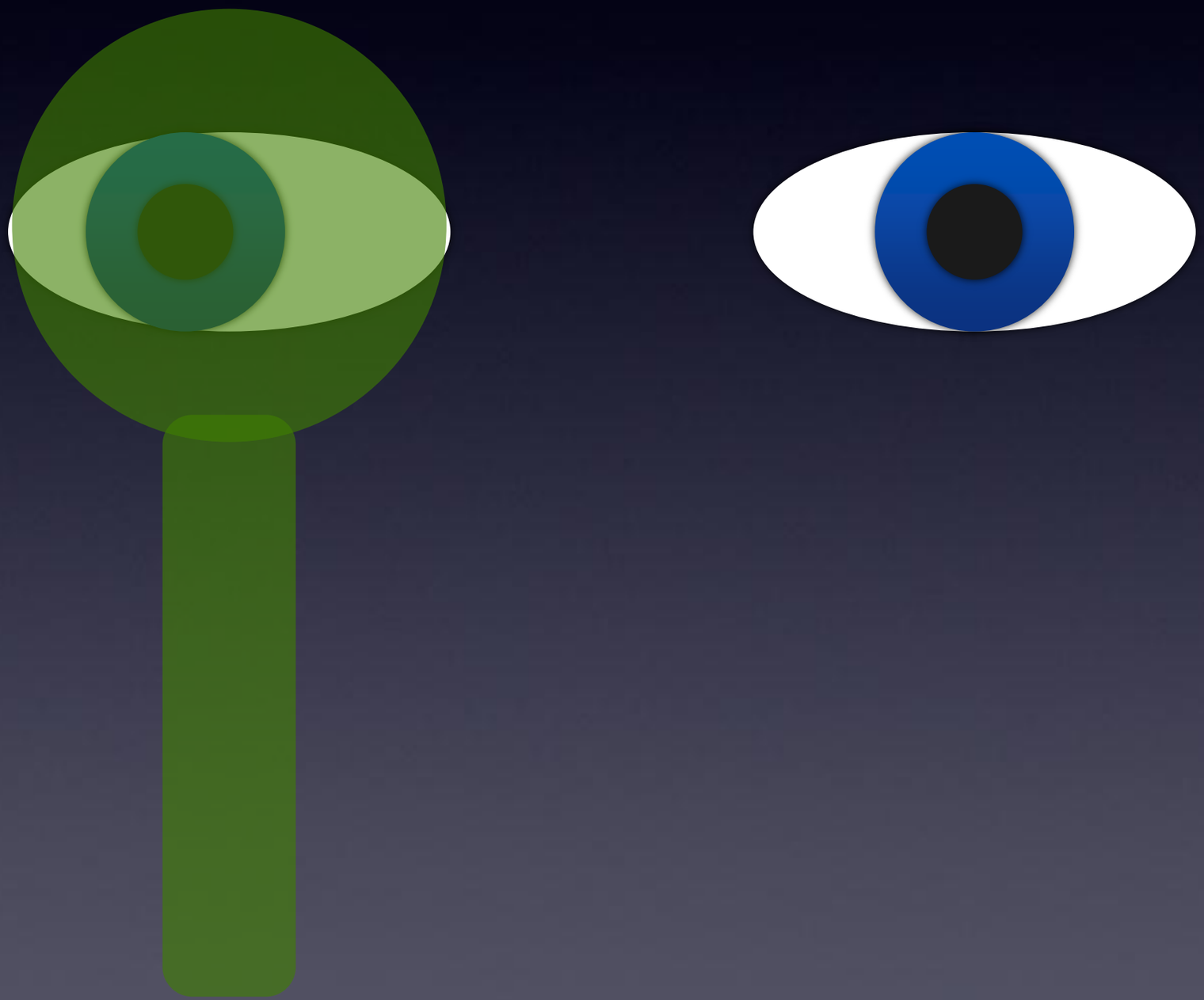


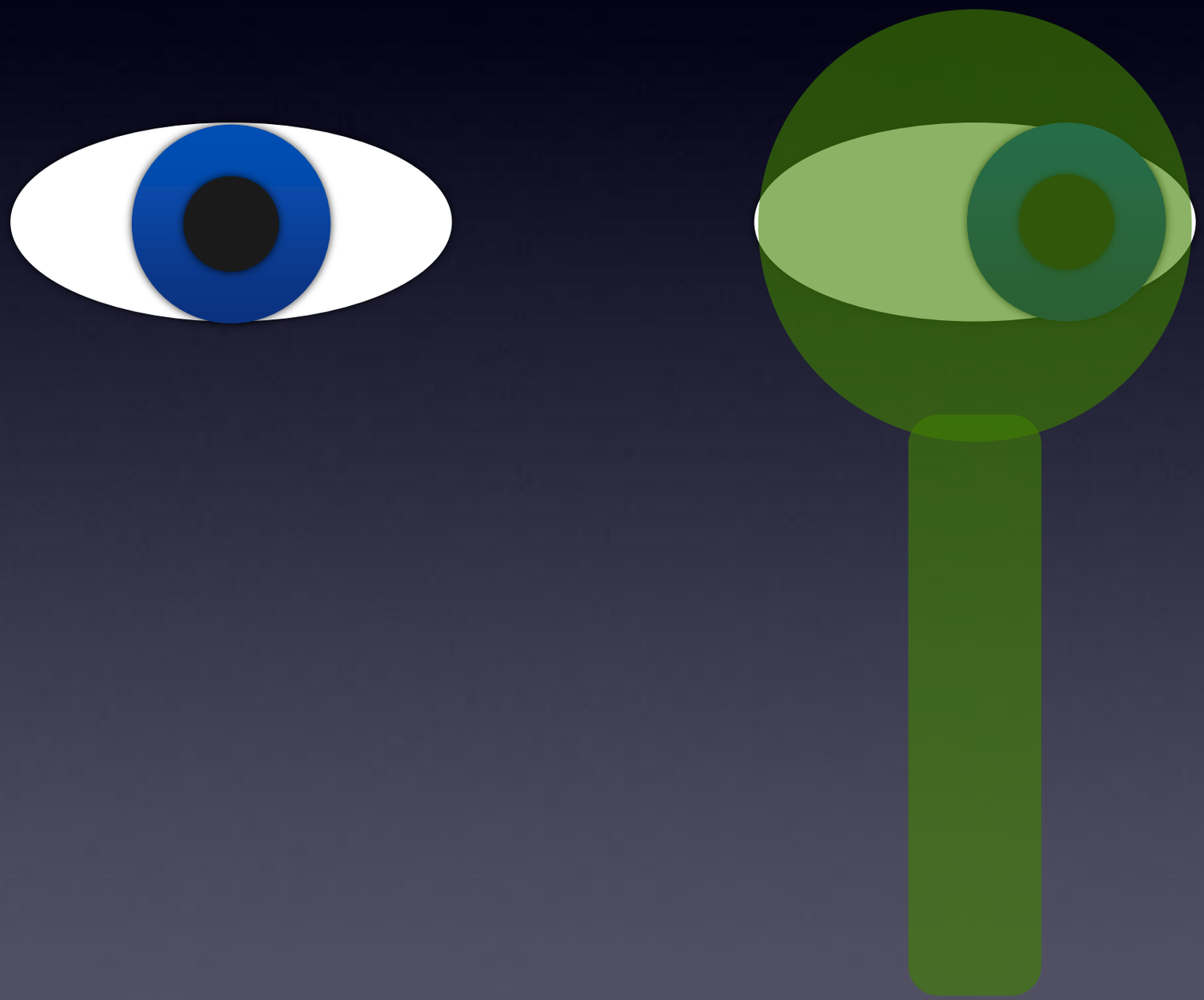


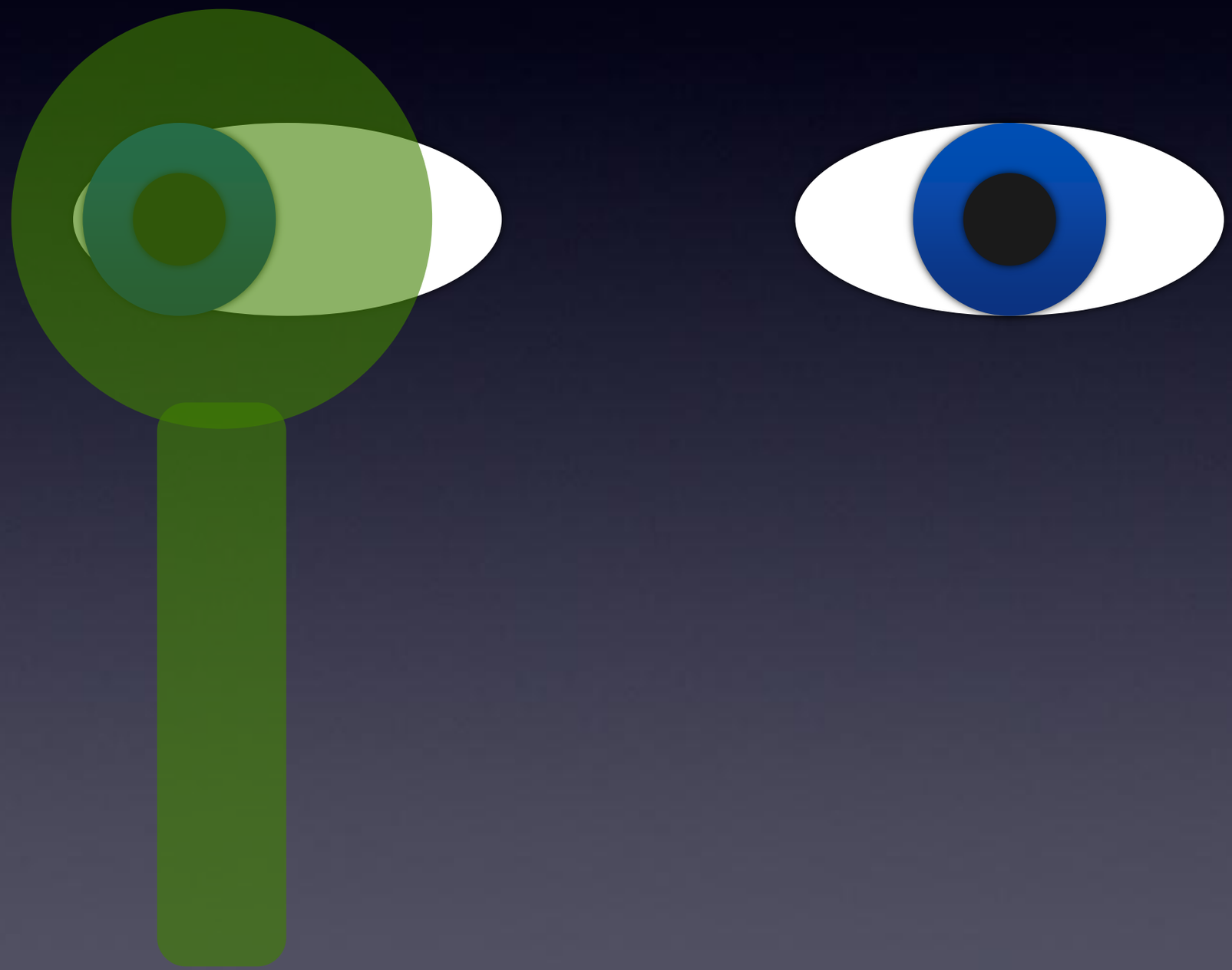
Alternating Cover Test

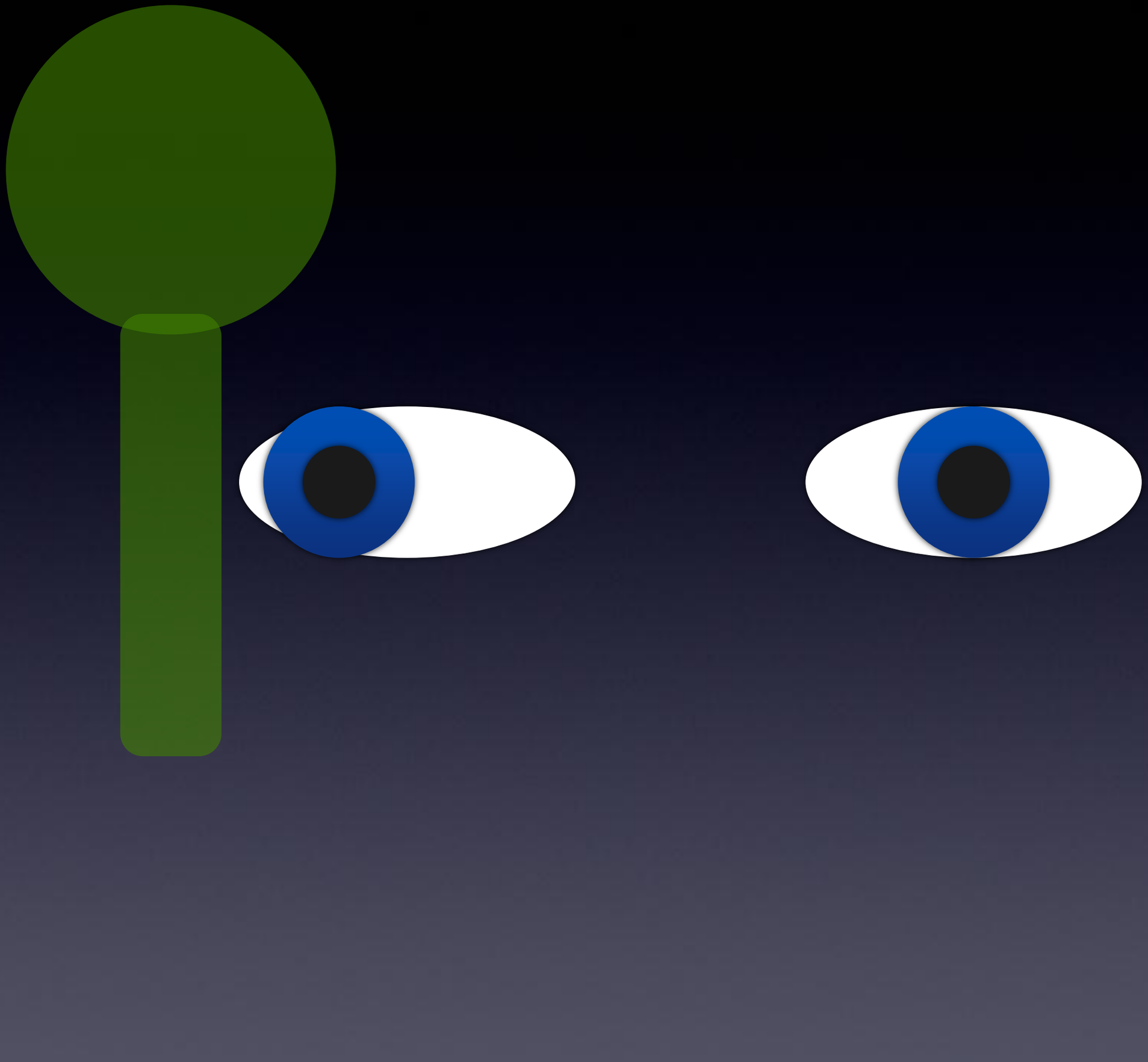
- The sum of any tropia and phoria
- A good example is Exotropia which can often ‘build' with prolonged dissociation of the two eyes











Strabismus Red Flags

- Pupil involvement
- Ptosis
- Sudden onset

- Refer for urgent assessment

Many topics not discussed!

- Too much to cover in one hour..
- Ptosis / anisocoria / congenital abnormalities / cataracts / glaucoma usually referred directly

Thanks for listening