KING'S COLLEGE LONDON

OPHTHALMOLOGY SOCIETY

Teaching Day March 2013

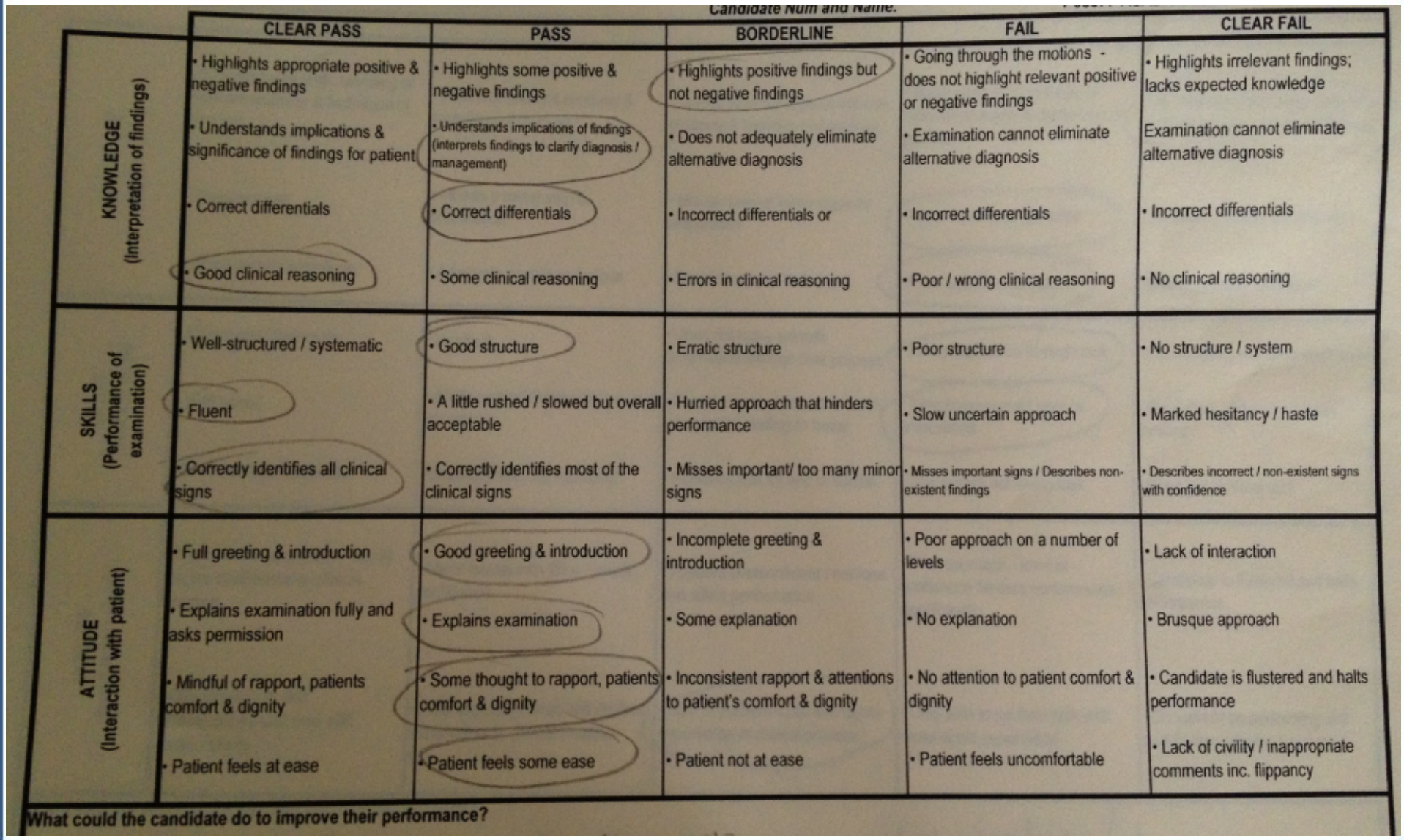
Gibran F Butt MSc

- 0) Introduction
- 1) History
- 2) Ocular cranial nerves
- 3) Fundoscopy

Intro…

WHAT DO THEY WANT!!!!!!

Can you get enough information?
Are you nice?

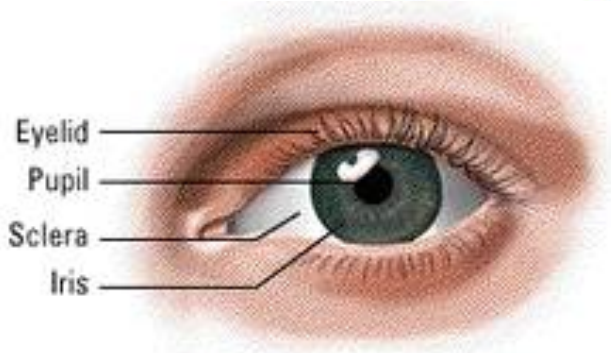


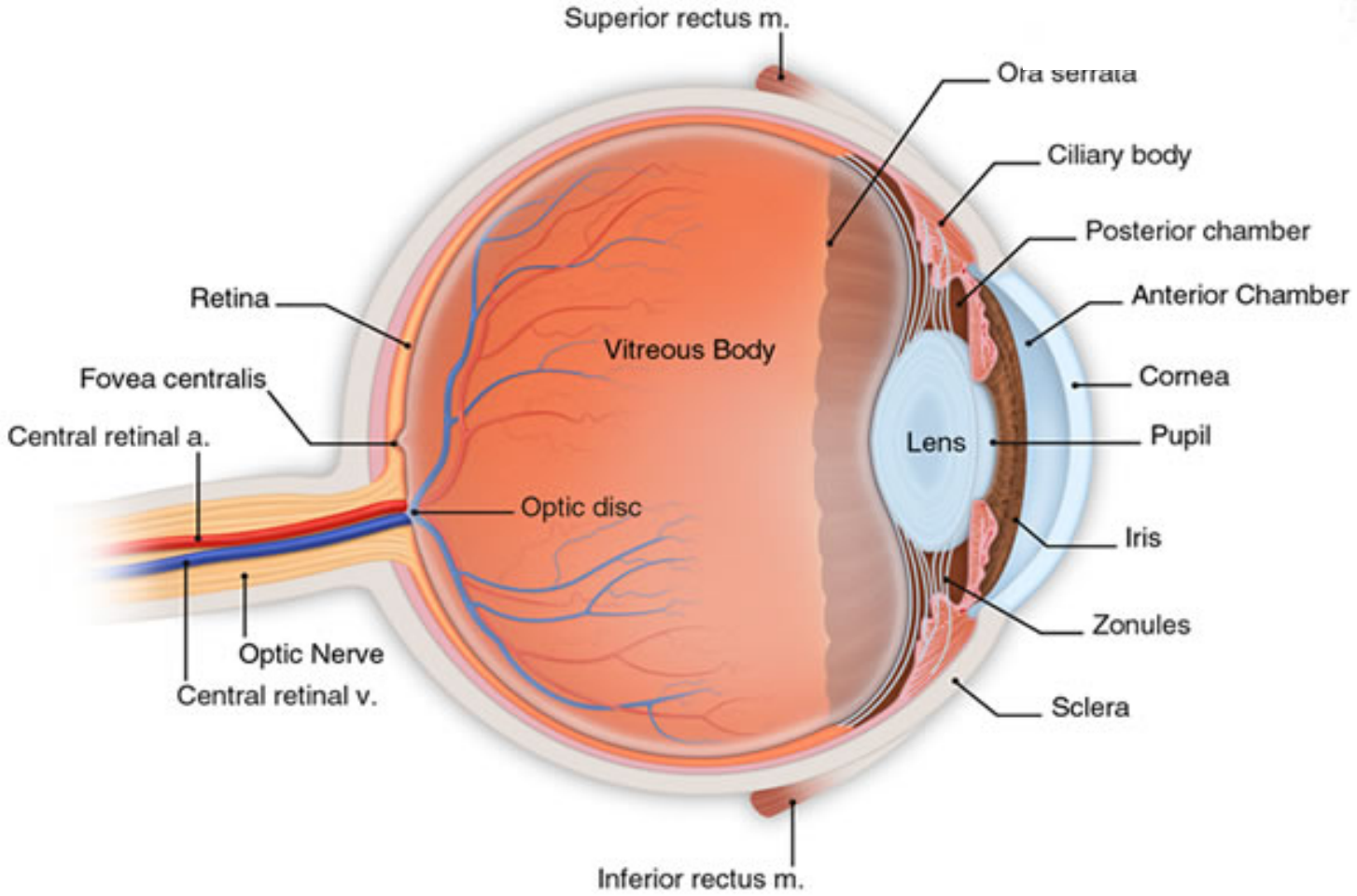
Candidate Num and Name:

	CLEAR PASS	PASS	BORDERLINE	FAIL	CLEAR FAIL
KNOWLEDGE (Interpretation of findings)	• Highlights appropriate positive & negative findings	• Highlights some positive & negative findings	• Highlights positive findings but not negative findings	• Going through the motions - does not highlight relevant positive or negative findings	• Highlights irrelevant findings; lacks expected knowledge
	• Understands implications & significance of findings for patient	• Understands implications of findings (interprets findings to clarify diagnosis / management)	• Does not adequately eliminate alternative diagnosis	• Examination cannot eliminate alternative diagnosis	Examination cannot eliminate alternative diagnosis
	• Correct differentials	• Correct differentials	• Incorrect differentials or	• Incorrect differentials	• Incorrect differentials
	• Good clinical reasoning	• Some clinical reasoning	• Errors in clinical reasoning	• Poor / wrong clinical reasoning	• No clinical reasoning
SKILLS (Performance of examination)	• Well-structured / systematic	• Good structure	• Erratic structure	• Poor structure	• No structure / system
	• Fluent	• A little rushed / slowed but overall acceptable	• Hurried approach that hinders performance	• Slow uncertain approach	• Marked hesitancy / haste
	• Correctly identifies all clinical signs	• Correctly identifies most of the clinical signs	• Misses important/ too many minor signs	• Misses important signs / Describes non-existent findings	• Describes incorrect / non-existent signs with confidence
ATTITUDE (Interaction with patient)	• Full greeting & introduction	• Good greeting & introduction	• Incomplete greeting & introduction	• Poor approach on a number of levels	• Lack of interaction
	• Explains examination fully and asks permission	• Explains examination	• Some explanation	• No explanation	• Brusque approach
	• Mindful of rapport, patients comfort & dignity	• Some thought to rapport, patients comfort & dignity	• Inconsistent rapport & attentions to patient's comfort & dignity	• No attention to patient comfort & dignity	• Candidate is flustered and halts performance
	• Patient feels at ease	• Patient feels some ease	• Patient not at ease	• Patient feels uncomfortable	• Lack of civility / inappropriate comments inc. flippancy

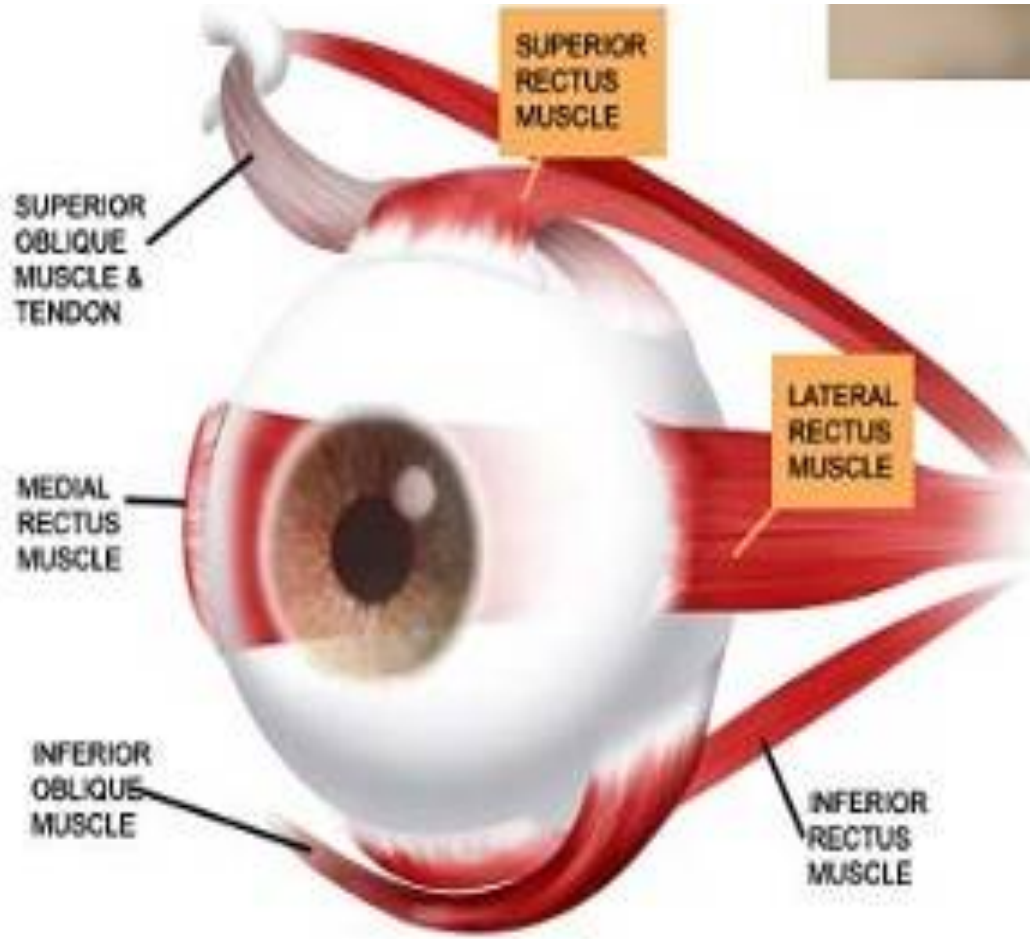
What could the candidate do to improve their performance?

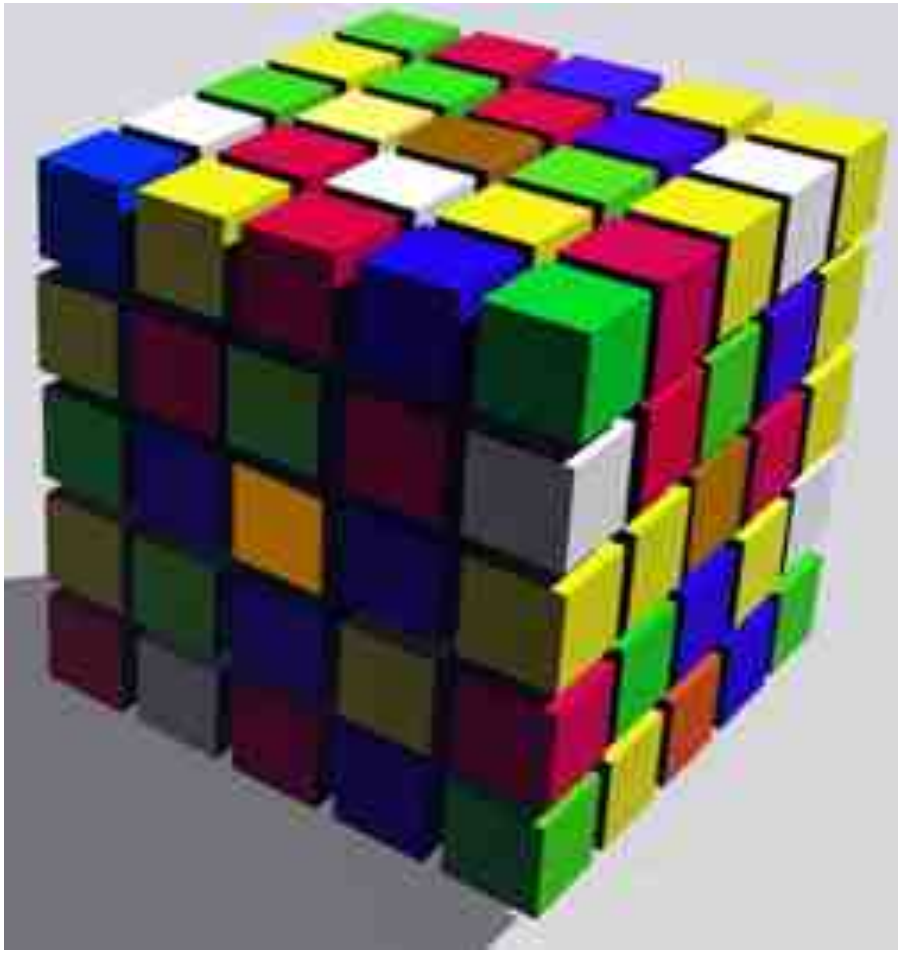
Anatomy recap





Anatomy Recap





1) Eye History

- **PC/HPC:**

UNI/BI-lateral

Red eye

Pain

Visual disturbance/loss

- **Ocular hx**

Refractive error/ contact lens/ trauma/ foreign bodies

- **PMH**

C/V risk factors

Surgical history

- **FH**

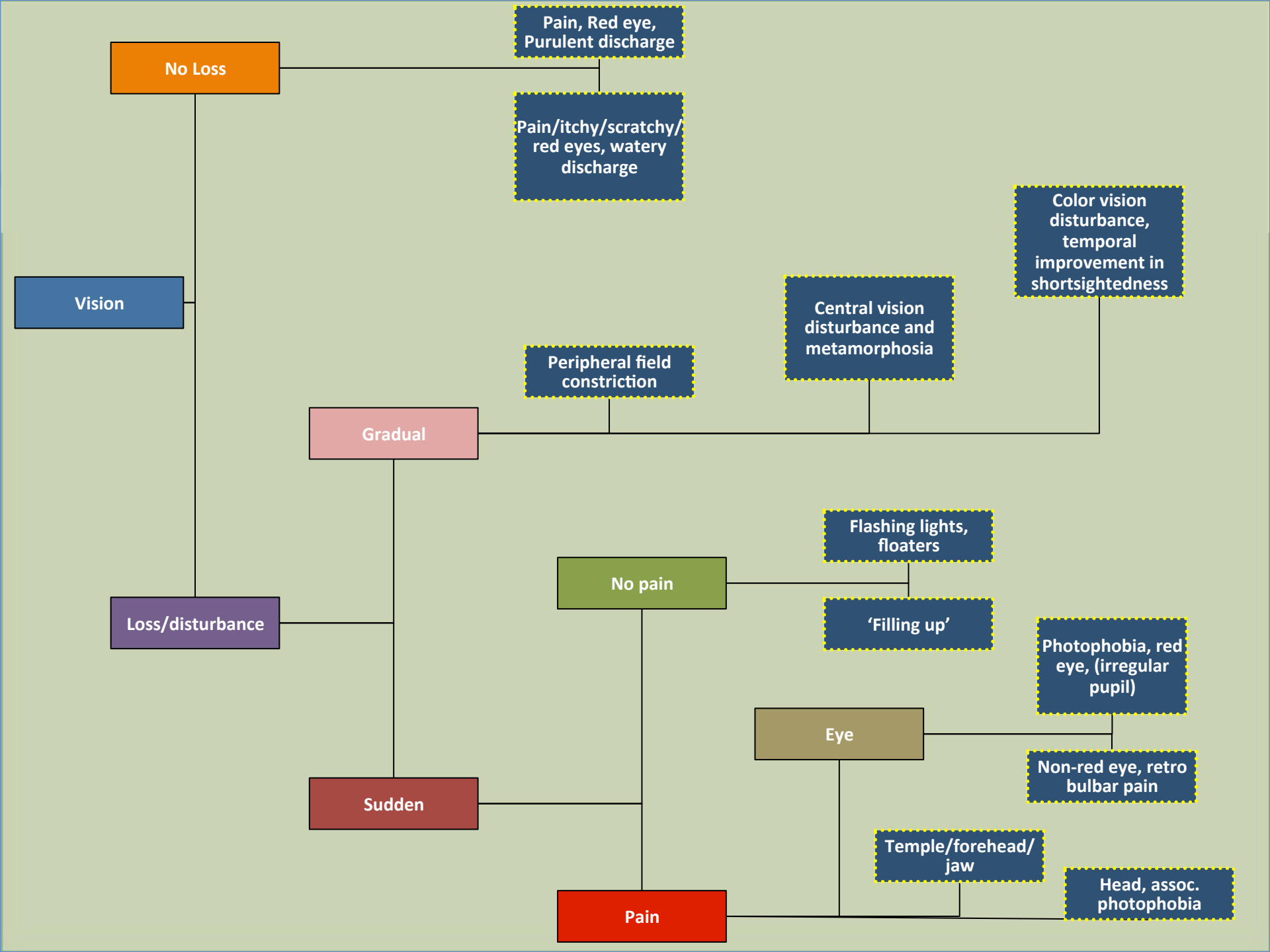
Visual conditions (retinitis pigmentosa)

Mypoia

- **SH**
- **DH**

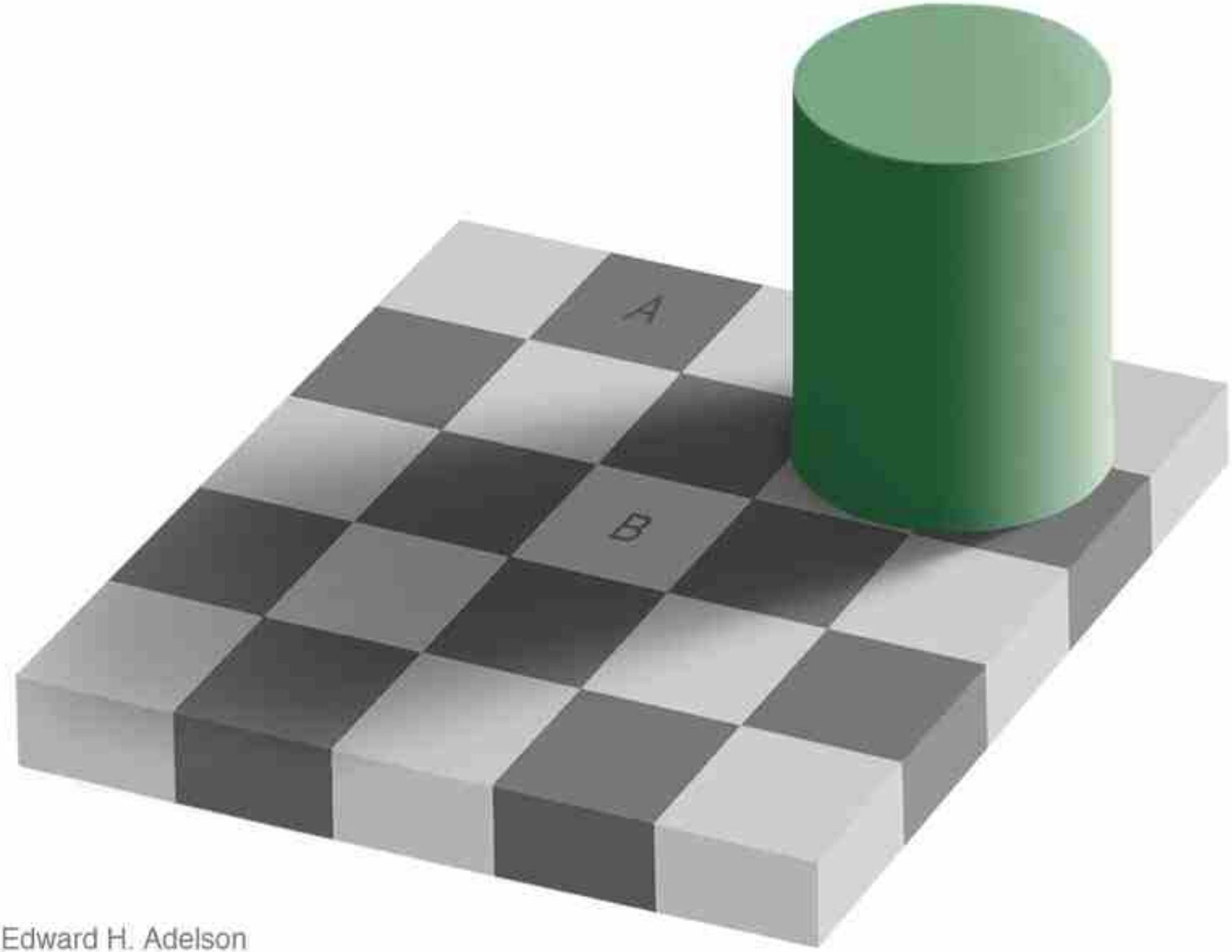
Classic histories

- Keratitis (bacterial/viral/atopic)
- Conjunctivitis
- MS
- Glaucoma (acute or chronic)
- Giant cell arteritis
- Cataract
- Age-related Macular Degeneration

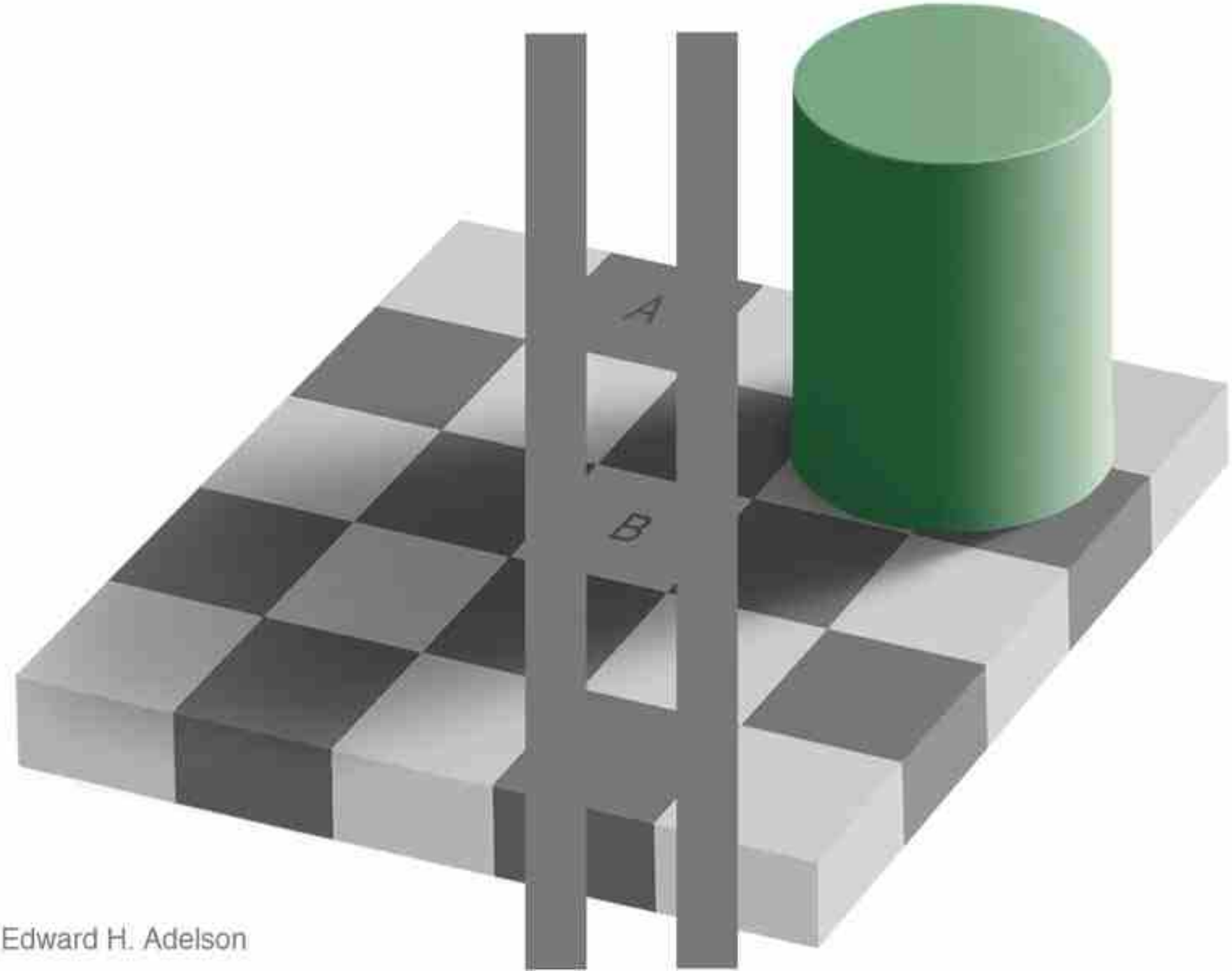

No Loss
Pain, Red eye, Purulent discharge
Pain/itchy/scratchy/ red eyes, watery discharge
Vision
Color vision disturbance, temporal improvement in shortsightedness
Central vision disturbance and metamorphosia
Peripheral field constriction
Gradual
Flashing lights, floaters
No pain
'Filling up'
Loss/disturbance
Photophobia, red eye, (irregular pupil)
Eye
Non-red eye, retro bulbar pain
Sudden
Temple/forehead/ jaw
Head, assoc. photophobia
Pain

PMH

- Diabetes
- HTN
- Previous focal neurology
- Polymyalgia rheumatica
- Atopy



Edward H. Adelson


A
B
Edward H. Adelson

2) Ocular Cranial Nerves

- CN: 2,3,4 & 6
- 2.1)CN2: Visual acuity (+ defects)
- 2.2) CN2/visual system: fields (+ defects)
- 2.3) CN2: Reflexes (+ defects)
- 2.4) CN3,4,6: Movement (+ defects)
- 2.5) To complete the examination I would like to perform direct ophthalmoscopy, take a full history, examine intraocular pressure….

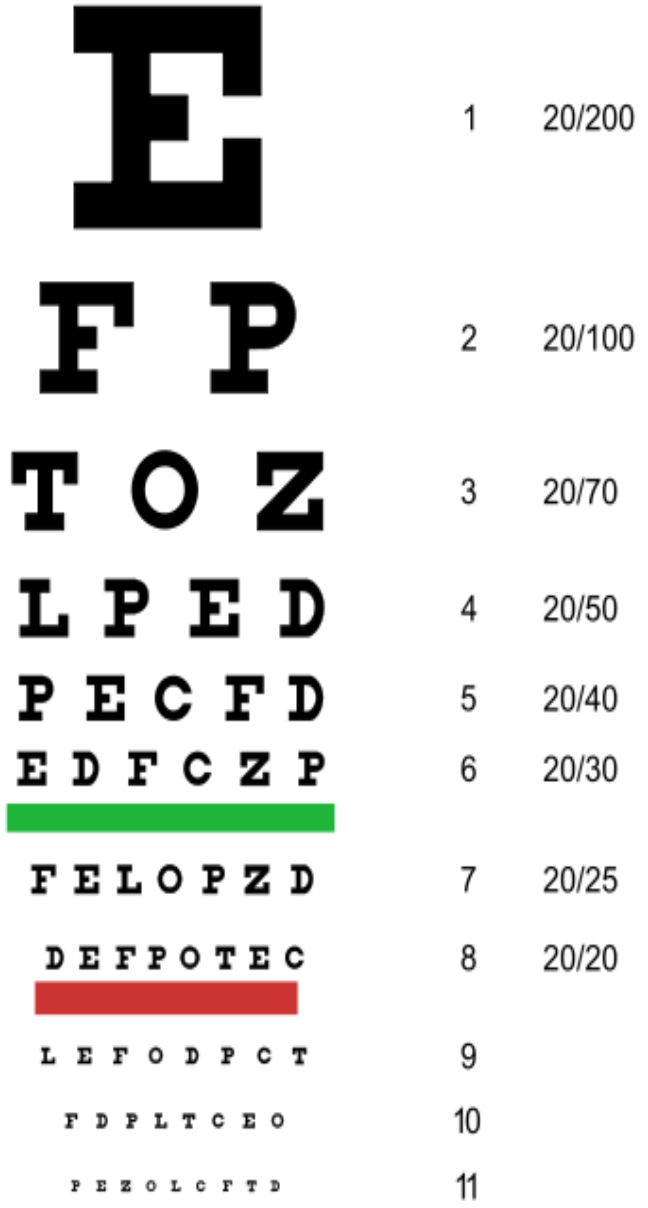
2.1) Visual acuity: far vs. near

$$\frac{\text{Distance between the patient and the eye chart}}{\text{Distance at which the letter can be read by a person with normal acuity}}$$

- Ask what their vision is like (need to assess based on hand movements, number of fingers or snellen?)
- Ask about glasses
- Place patient at 20 ft from Snellen chart
- OD then OS
- VA is line in which > ½ letters are read

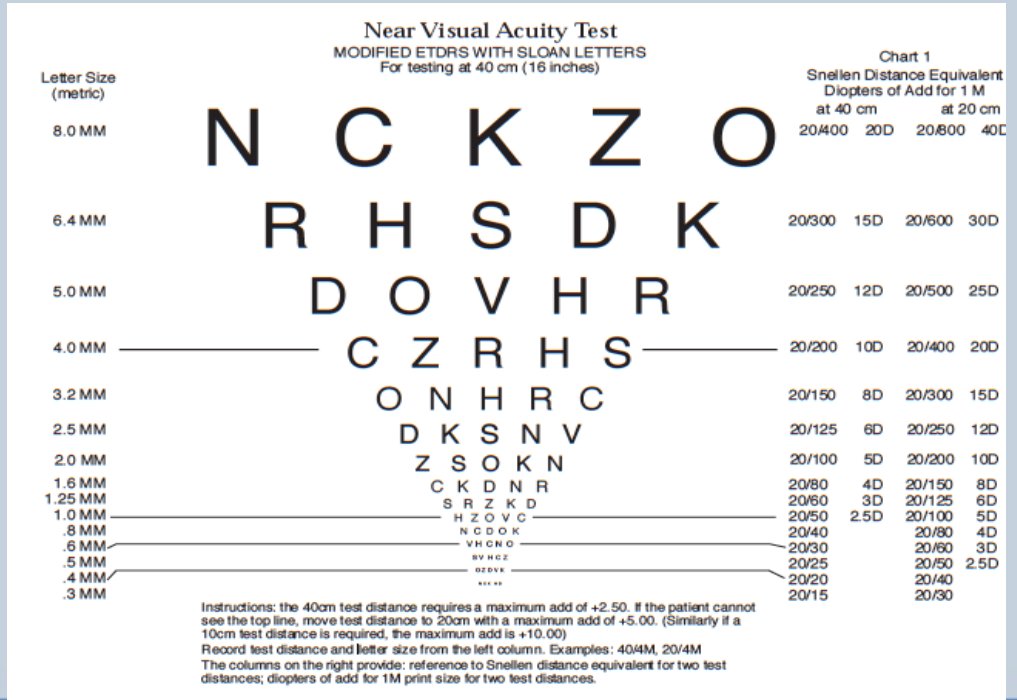
¿¿¿ 20/28 +2 ???

OD - ocular dexter, OS - ocular sinister


E
1 20/200
F P
2 20/100
T O Z
3 20/70
L P E D
4 20/50
P E C F D
5 20/40
E D F C Z P
6 20/30
F E L O P Z D
7 20/25
D E F P O T E C
8 20/20
L E F O D P C T
9
F D P L T C E O
10
P E Z O L C F T D
11

2.1) Visual acuity: near

- Test of **function**
- (may get away with mentioning it)
- Use a card if available (at ~40 cm)
- Record (or at least remember!)

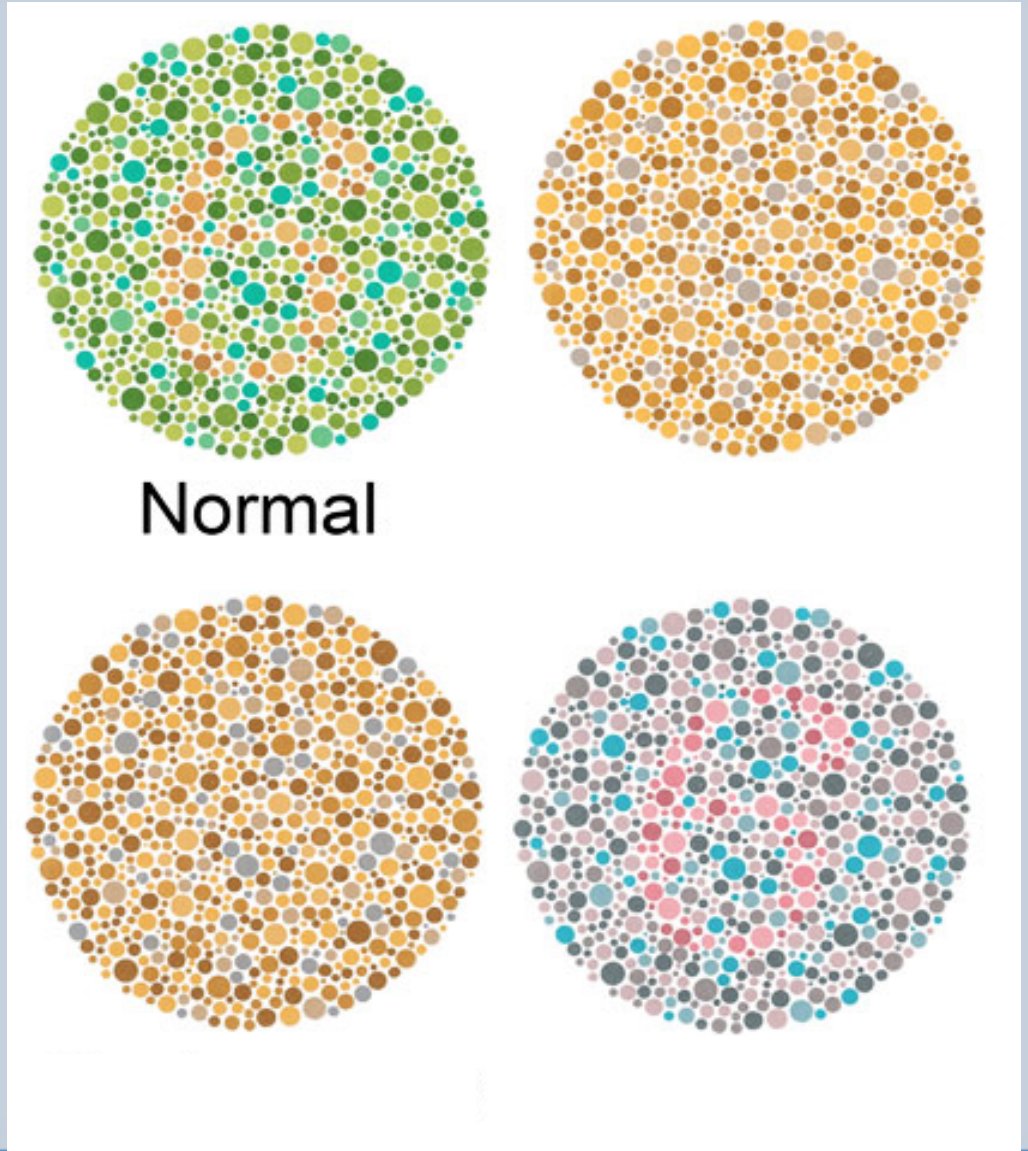


2.1) Ishihara plates

- Mention it – may be prompted to use the book and stopped and asked to explain use.

So:

- Check pt can read
- Open on control page
- Proceed with examination making sure to note which pages pt has difficulty with



2.2) Visual fields

Confrontation

- Same level, same eye.
- Red Pin to measure color saturation

Visual inattention

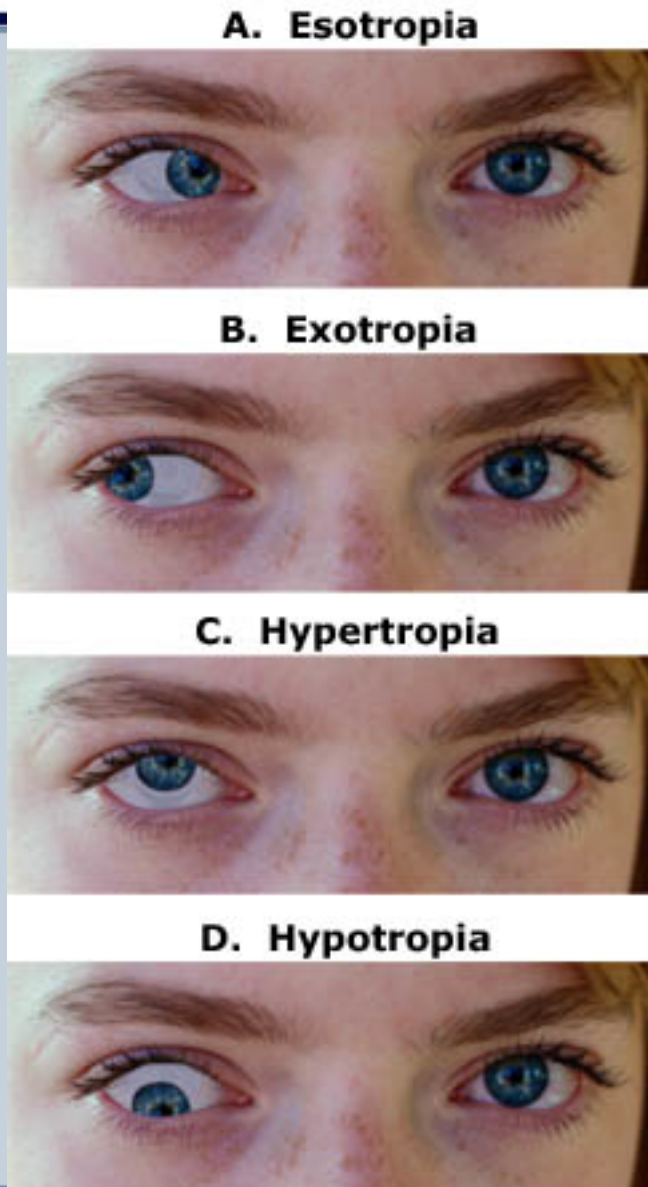
Blind spot defect

2.3) Reflexes: Pupillary Examination

- **Inspect**
- **Direct**
  - Constriction of ipsilateral eye
- **Consensual**
  - Constriction of contralateral eye
- **Swinging light test - RAPD**
- **Accommodation**
- **Defects:**
  - Fixed dilated – Tonic Holmes Aides pupil
  - Pinpoint – Horner's syndrome
  - RAPD – optic neuritis
  - AR Pupil

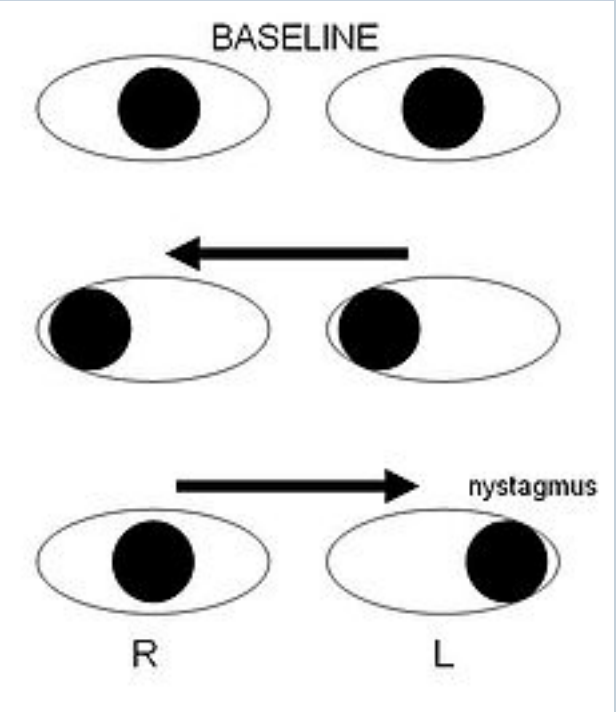
2.4) CN 3,4,6: Eye movements

- **Inspection**: Ptosis, squint, ask about double vision
- **Eye movements** – any double vision?
- Where is the (neuromuscular) lesion?



How to work out which muscle is affected

1. Which eye is affected
2. Which movement is affected
3. Which muscle(s) is responsible
4. Which nerve is responsible



Important defect:

Internuclear ophthalmoplegia:-
Nystagmus and impaired adbuction on lateral gaze.
Lesion is in MEDIAL LONGITUDINAL FASICULUS on side of nystagmus
May be feature of Multiple Sclerosis

3) Fundoscopy

- Turn on the scope
- Set to 0
- Red reflex (leukocoria/darkened)
- Look in the eye
- Locate a blood vessel and follow back to the disc
- Inspect quadrants
- Inspect macula by getting them to look directly into the light

Fundus signs

- Gross observations
- Specific Structures:
  - Vessels: arteries and veins
  - ONH
  - Retina
  - Macula

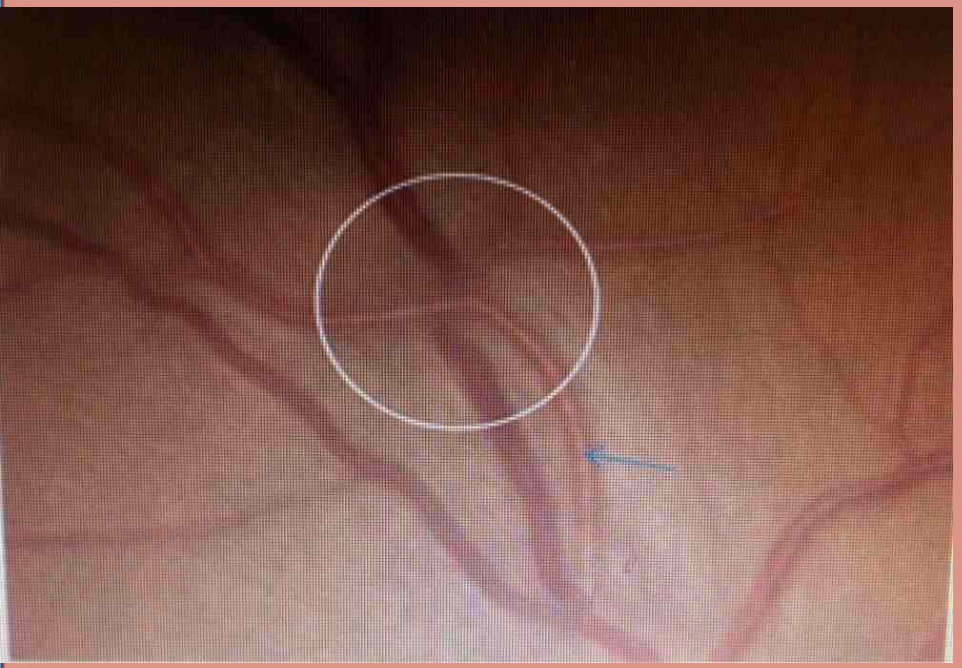
Likely 3rd year Diagnoses

- Diabetic Retinopathy
- HTN retinopathy
- Macular Degeneration
- Retinitis pigmentosa

Others to consider?

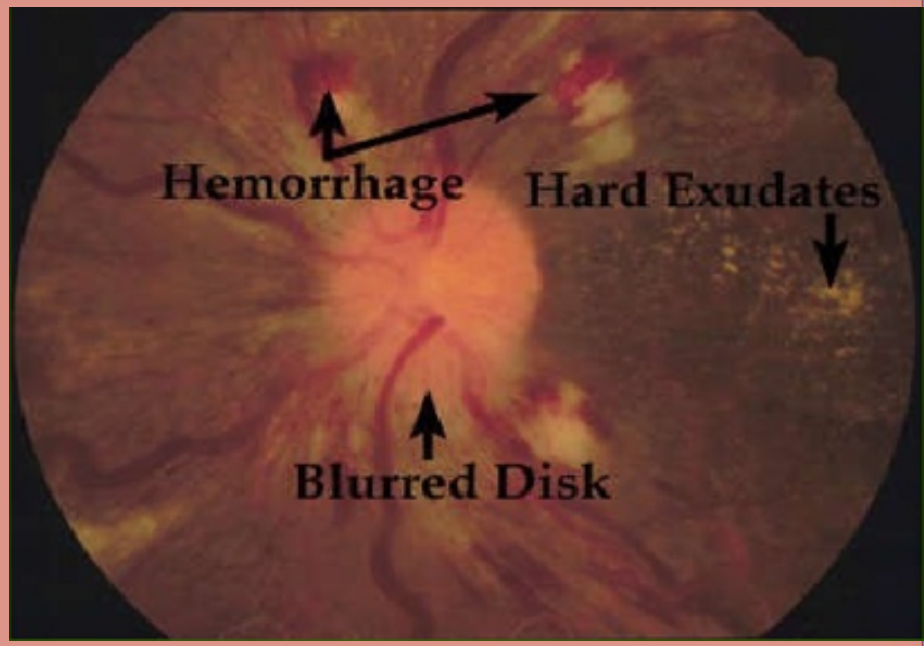
- Macular hole
- Epiretinal membrane

HTN



I) SILVER/COPPER WIRING

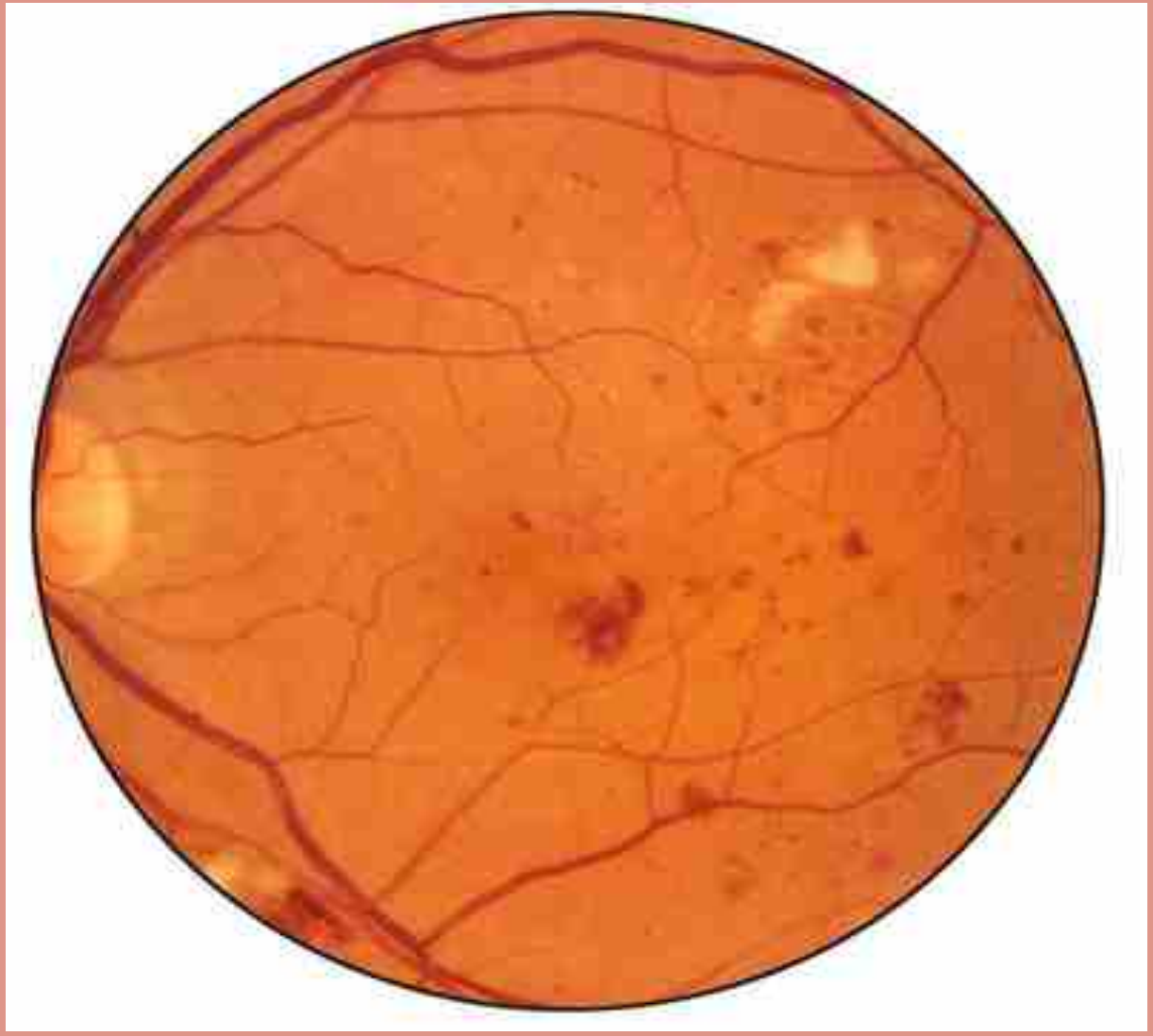
II) AV NIPPING



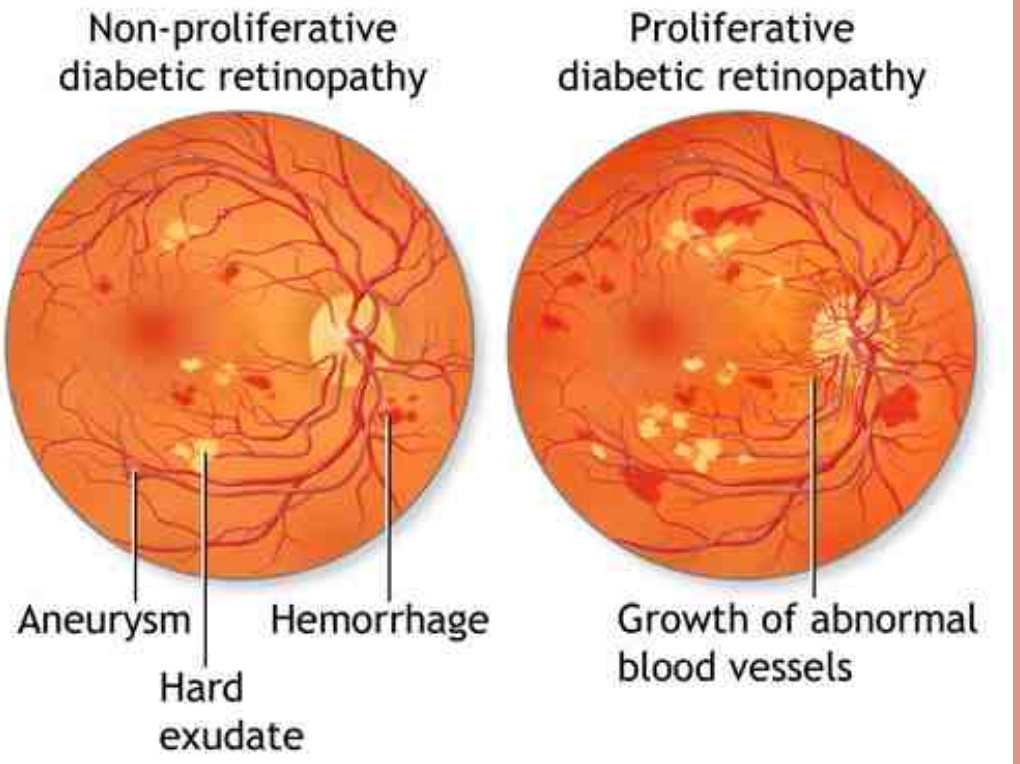
III) Cotton wool spots and flame hemorrhages

IV) PAPILLODEMA

Diabetic retinopathy



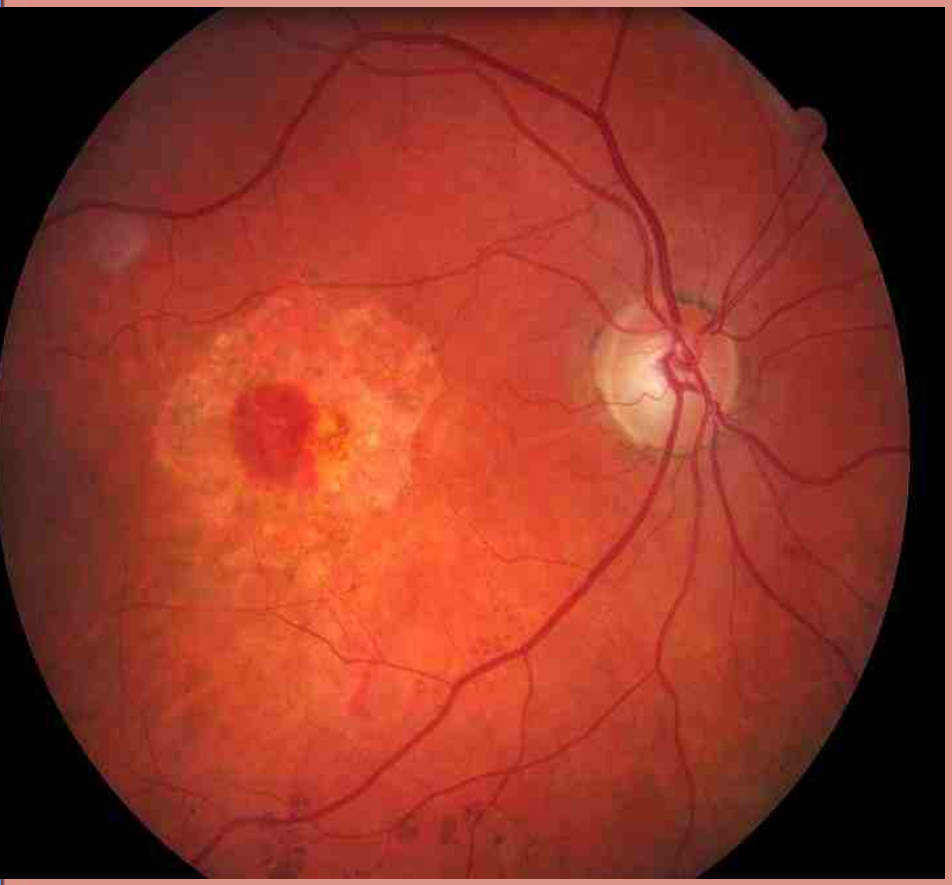
Diabetic retinopathy



Laser Photocoagulation

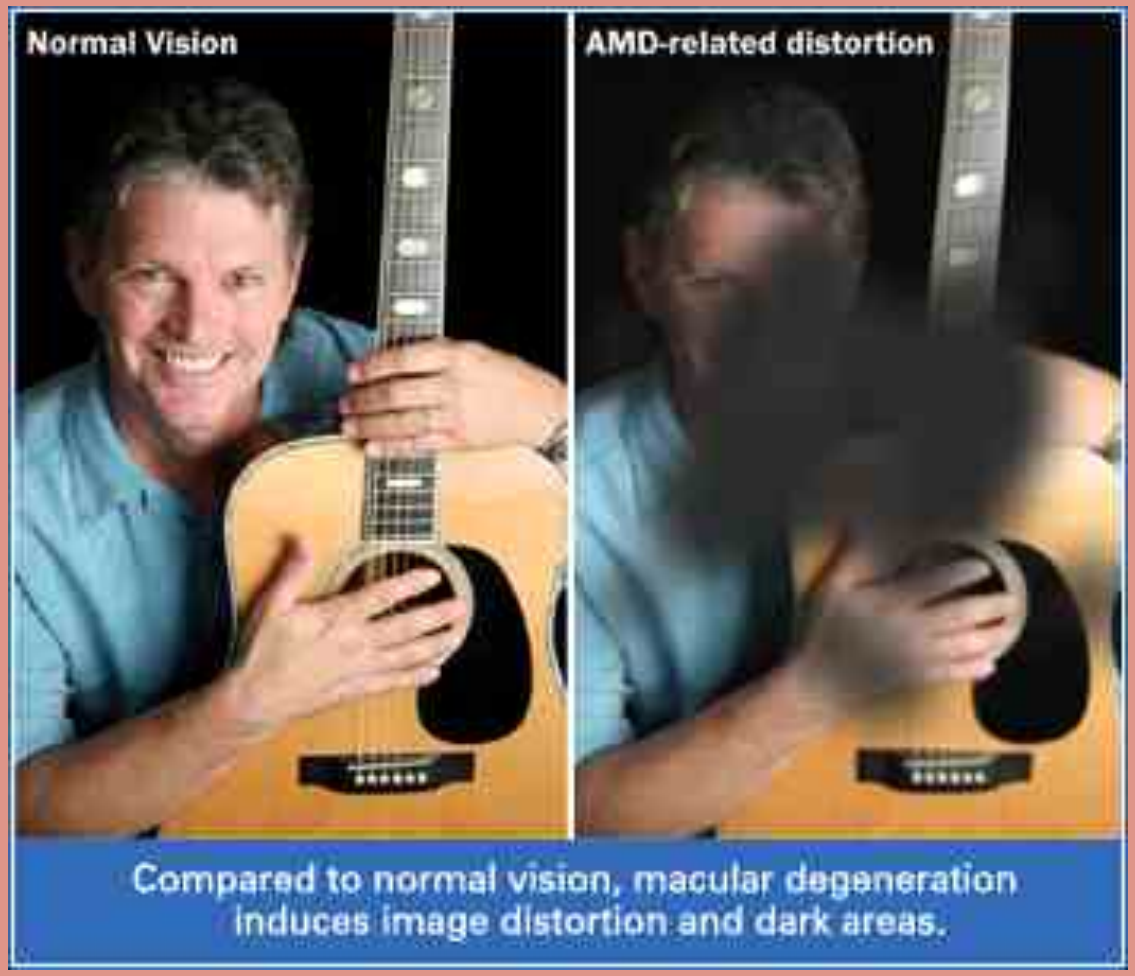
Macular Degeneration

Wet V.S Dry

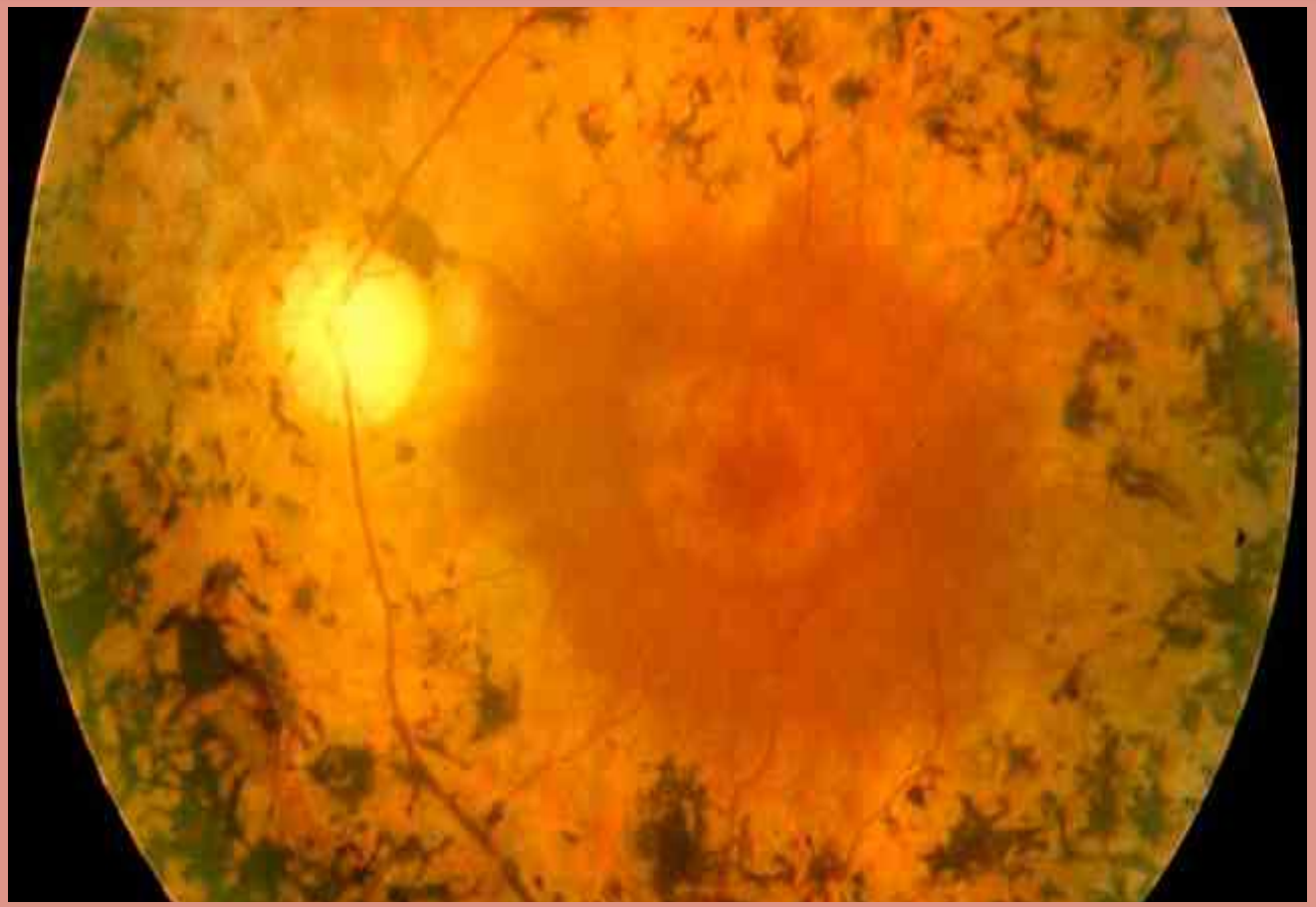


- Exudative changes/ Macular odema/ atrophy
- Soft exudates / Drusen

Macular Degeneration



Retinitis Pigmentosa

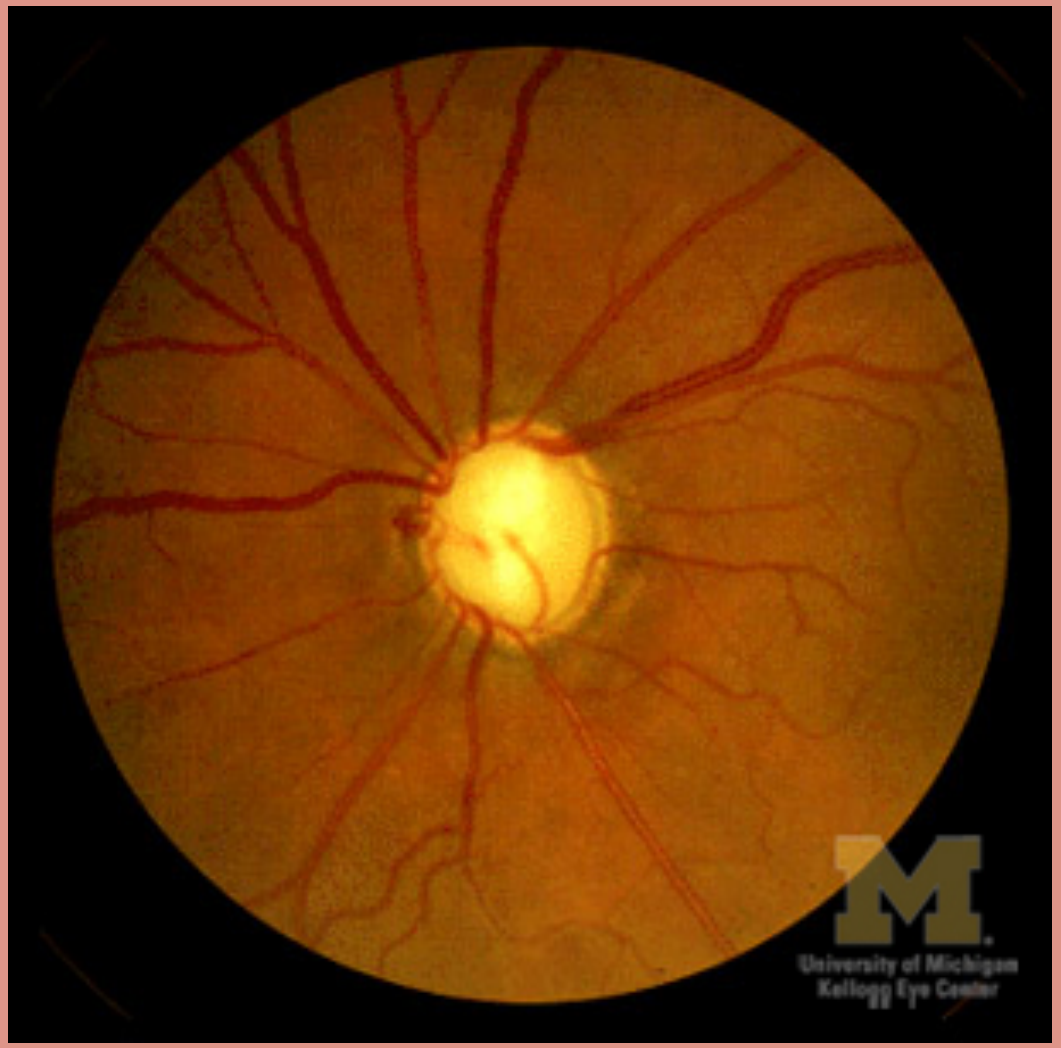


-Bone Spicule deposits

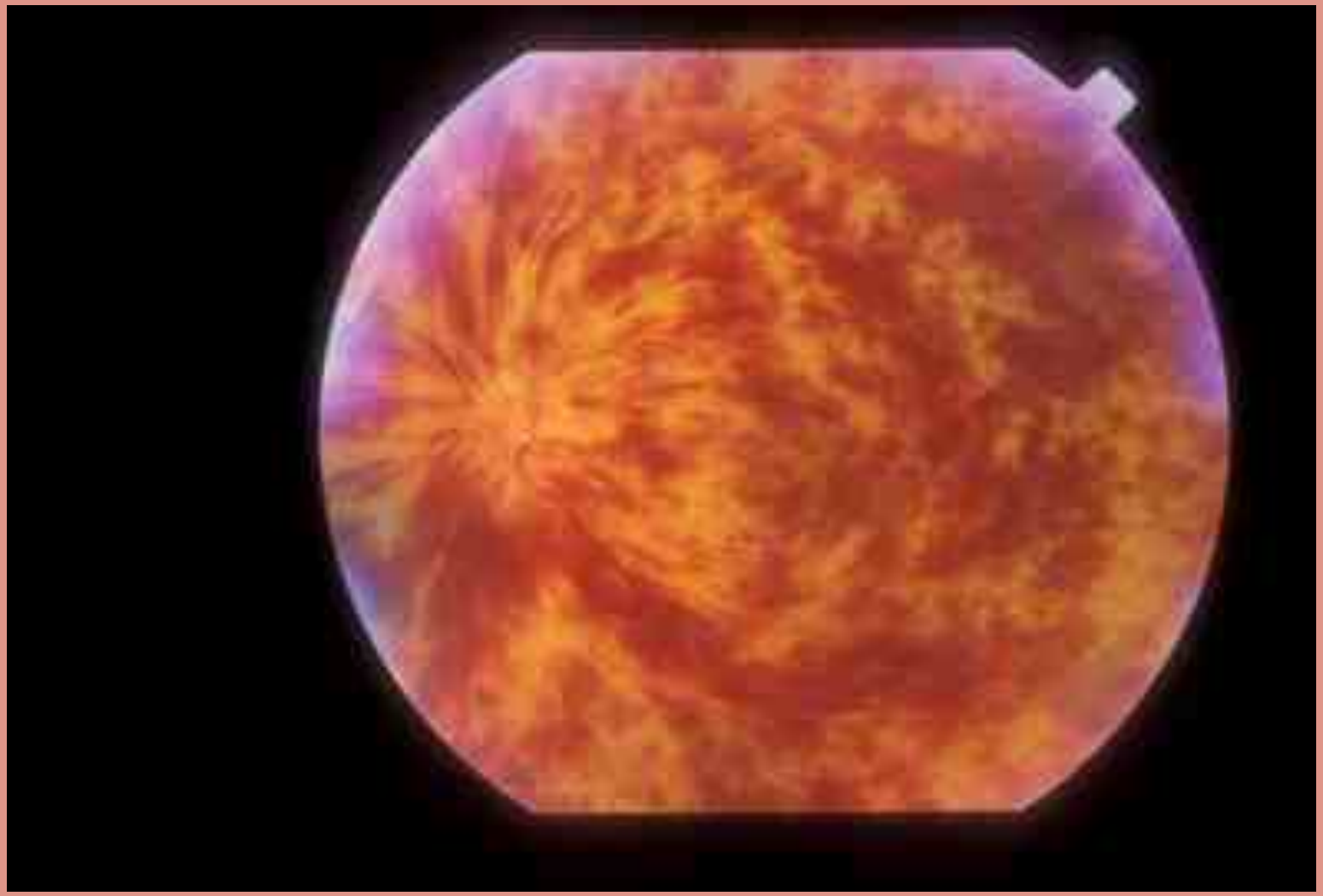
-Cherry red Macula

-Waxy pale optic disc

Chronic Glaucoma



Central Vein Occlusion



1. SENILE MACULA DEGENERATION. The disc appears normal but there is unusual pigmentation at the macula. The patient also has drusen which are asymptomatic nodules occurring in the choroid.

2. CENTRAL RETIANL VEIN OCCLUSION. Typical "stormy sunset" appearance with engorged veins with haemorrhages alongside them.

3. HYPERTENSIVE RETINOPATHY. The retinal arteries have become narrow and and tortuous. In more advanced cases haemorrhages and "star burst" exudates occur together with papilloedema.

4. PAPILLOEDEMA. The disc is swollen and the disc margin has disappeared. The veins are congested.

5. DISC CUPPING. Here the degree of cupping is mild but suggestive of glaucoma. As the condition progresses the optic disc becomes pale and the cup wider and deeper.

6. OPTIC ATROPHY. The optic disc is pale and the condition is associated with gradual loss of vision. It may be secondary to a number of conditions including glaucoma, retinal damage, ischaemia and poisoning.

7. MILD BACKGROUND DIABETIC RETINOPATHY. Haemorrhages and microaneurysms can be seen.

8. BACKGROUND DIABETIC RETINOPATHY. There are areas of hard exudates and some evidence of macula involvement.

9. PREPROLIFERATIVE DIBETIC RETINOPATHY with haemorrhages , microaneurysms and hard and soft exudates.

10. PREPOLIFERATIVE DIABETIC RETINOPATHY with extensive haemorrhages and exudate formation and a preretinal (subhyaloid) haemorrhage.

11. PROLIFERATIVE DIABETIC RETINOPATHY with new vessel formation.

12. DIABETIC RETINOPATHY recently treated with laser photocoagulation.

Good Luck!!!!

- Sources:

Picture credits to google etc…

www.uninteforsight.com

www.labordeeyegroup.com

http://www.health.state.mn.us/divs/fh/mch/webcourse/vision/mod4a.cfm

http://web1.ncoptometry.org/nonpro.aspx