



OPHTHALMOSCOPY

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OPHTHALMOSCOPY OR FUNDOSCOPY

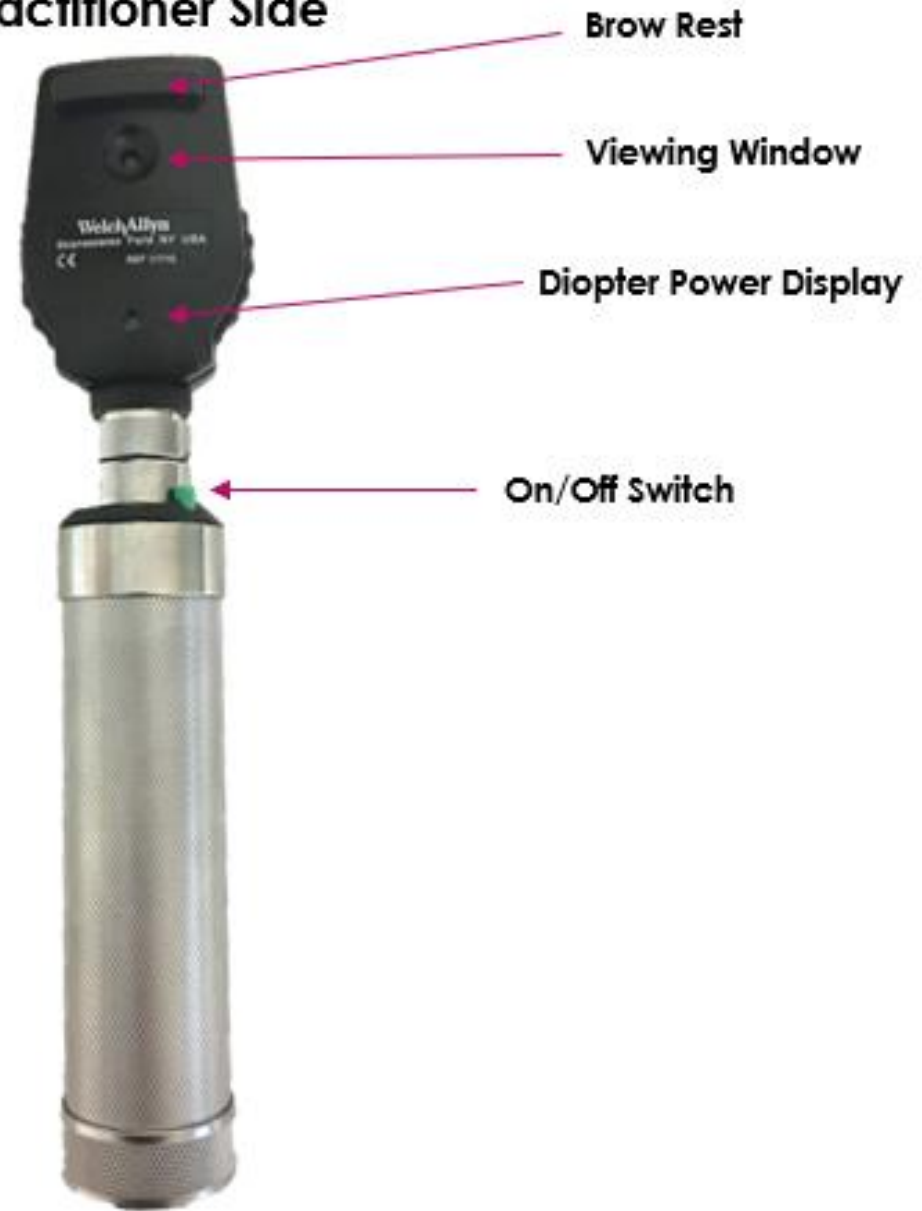
- PROCEDURE TO EXAMINE THE **POSTERIOR SEGMENT OF THE EYE AND RETINA.**
- INSTRUMENT USED IS CALLED AN **OPHTHALMOSCOPE**
- A MIRROR IS POSITIONED ON OPHTHALMOSCOPE => REFLECTS LIGHT FROM A BULB AT RIGHT ANGLE INTO THE EYE => OBSERVER THE INTERIOR OF THE EYE THROUGH A SMALL APERTURE.

- LENSES OF DIFFERENT POWERS ON A DISC \Rightarrow ROTATED BY INDEX FINGER \Rightarrow OBTAIN DIFFERENT DEPTHS OF FOCUS.
- POWER OF EACH LENS IS GIVEN IN DIOPTERS.
- + SIGN \Rightarrow CONVEX LENS
- - SIGNS \Rightarrow CONCAVE LENS
- **VISUALIZE RETINAL ARTERIES, RETINAL VEINS, MACULA, AND OPTIC DISC.**

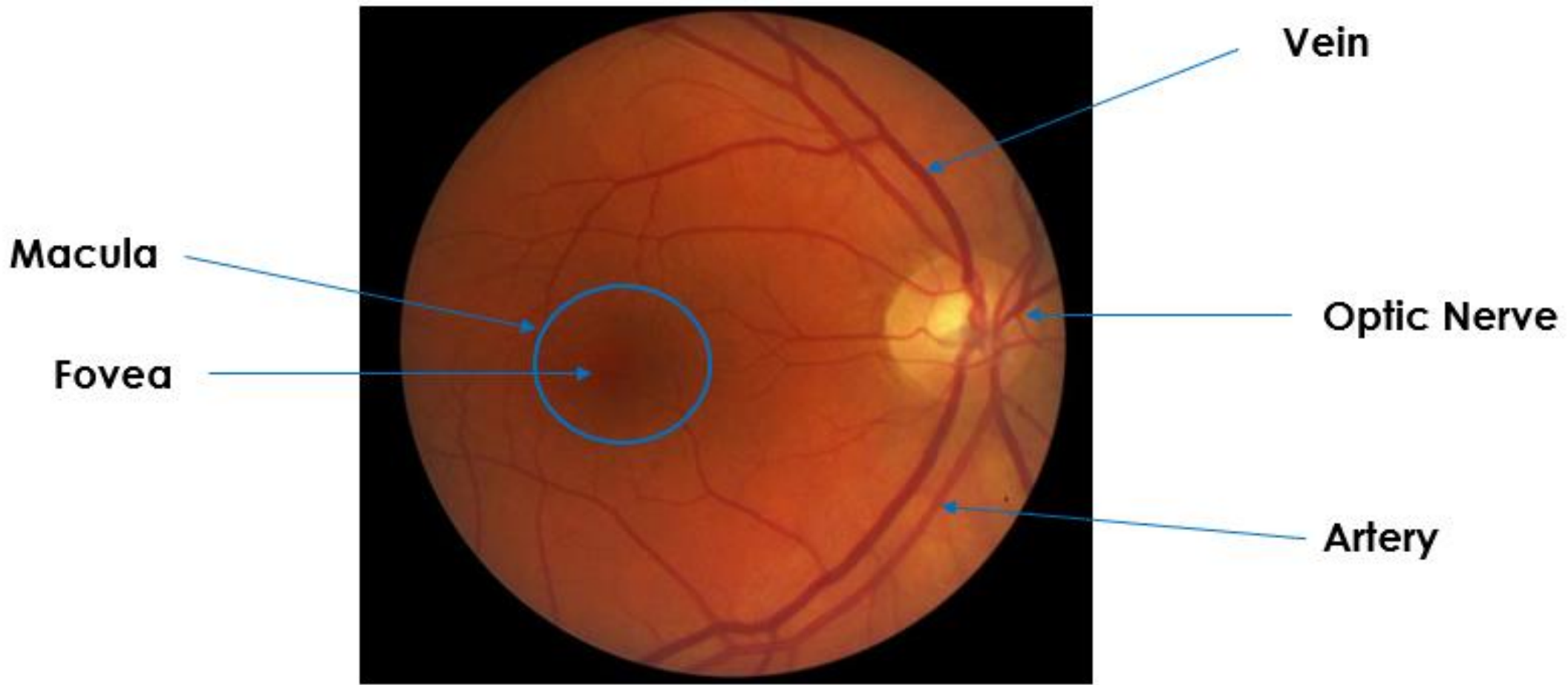
Patient Side



Practitioner Side



- OPTIC DISC: ORIGIN POINT OF OPTIC NERVE WHERE IT EXITS THE EYE.
- ALSO THE POINT WHERE ARTERIES AND VEINS ENTER AND COME OUT OF THE RETINA.
- MACULA LUTEA: A YELLOWISH SPOT WITH A CENTRAL PIT (FOVEA CENTRALIS), LOCATED LATERAL TO OD. HIGHEST CONCENTRATION OF CONES.



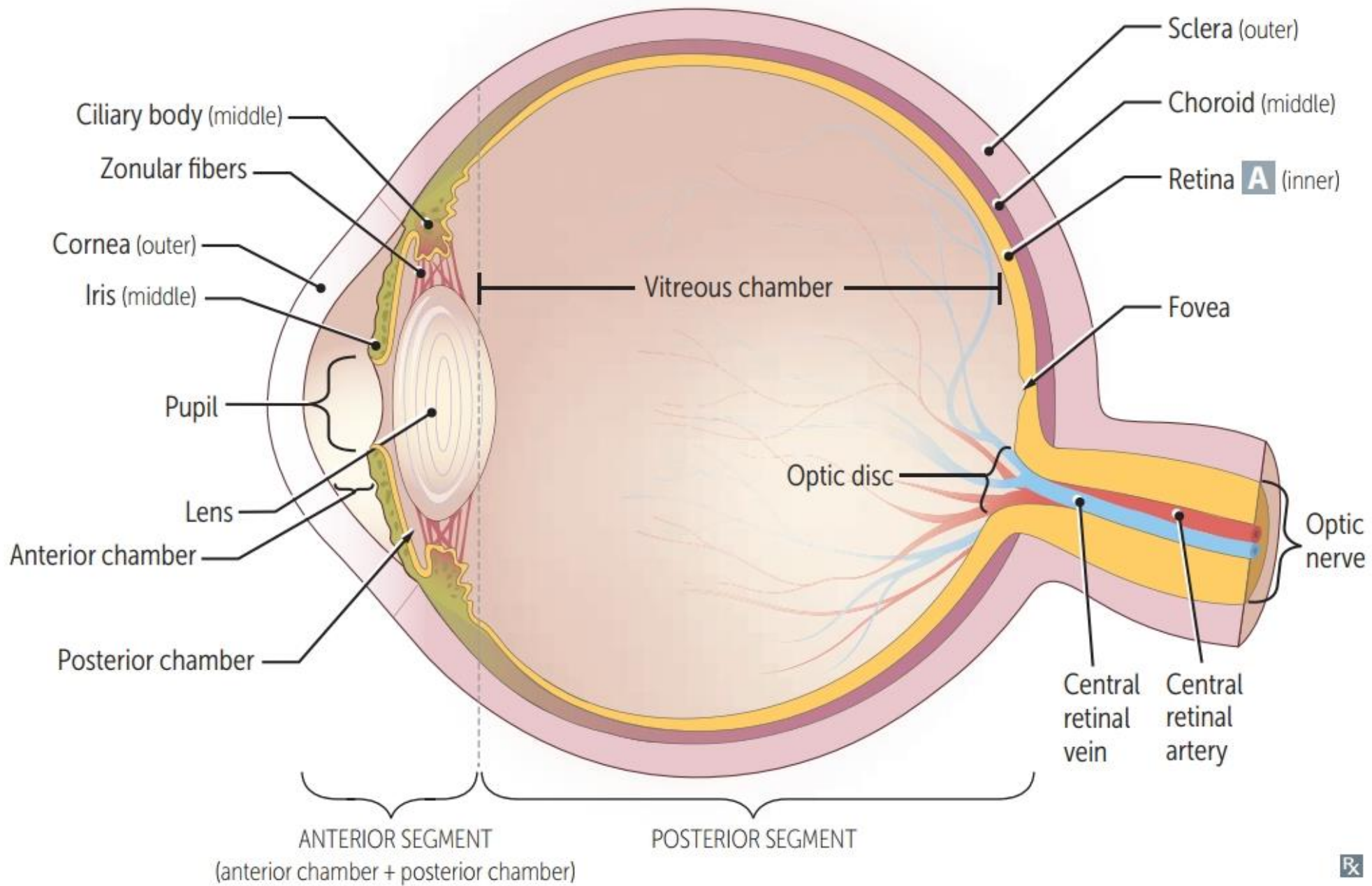
Macula

Fovea

Vein

Optic Nerve

Artery



HOW TO PERFORM

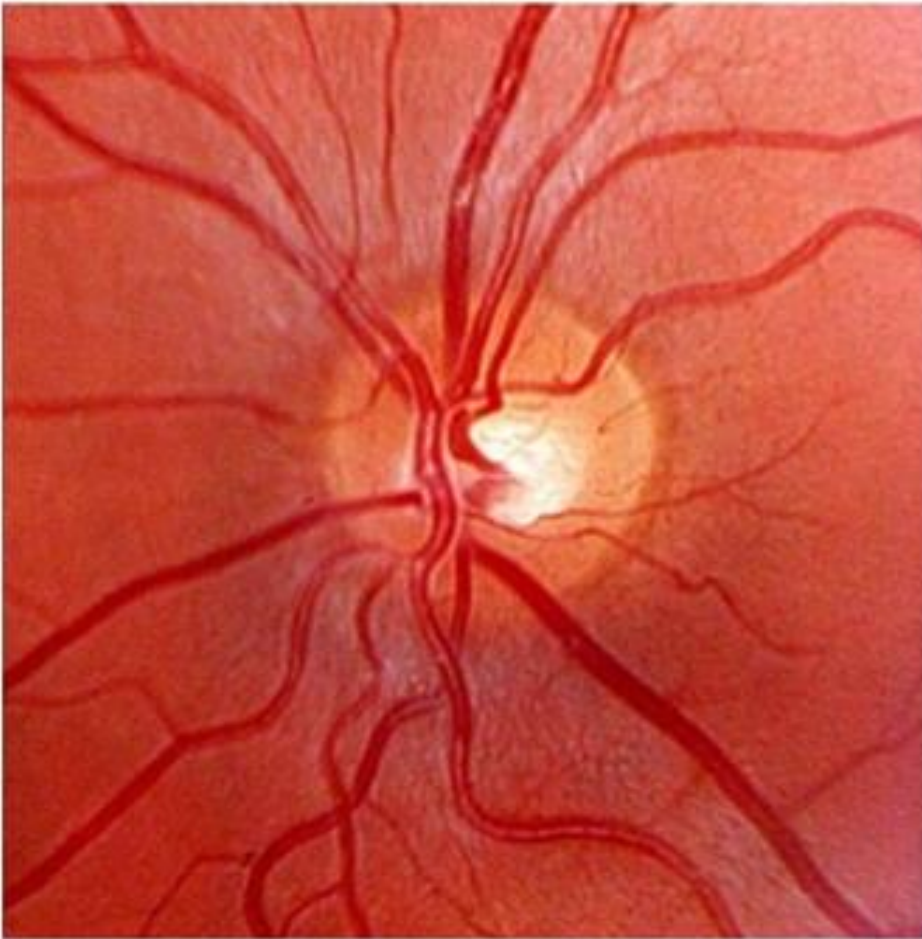
- **REQUIREMENTS:** OPHTHALMOSCOPE, HOMATROPINE 1 %, SUBJECT, DIM/DARK ROOM
- **PROCEDURE:**
- SUBJECT IS ASKED TO SIT IN A DARK ROOM. SUBJECT'S EYES SHOULD BE AT THE LEVEL OF THE OPHTHALMOSCOPE.
- INSTILL 1-2 DROPS OF HOMATROPINE INTO THE EYE TO FOR MYDRIASIS (TAKES 20-30 MINUTES)
- FOR EXAMINING RIGHT EYE OF THE SUBJECT, EXAMINER HOLDS OPHTHALMOSCOPE IN RIGHT HAND AND USES HIS/HER RIGHT EYE AND VICE VERSA.

- FOR EXAMINING SUBJECT'S RIGHT EYE, HOLD SUBJECT'S HEAD WITH LEFT HAND AND PUT LEFT THUMB ON SUBJECT'S RIGHT EYEBROW. PUT INDEX FINGER OF RIGHT HAND ON THE DISC THAT CONTAINS LENSES.
- ASK THE SUBJECT TO FOCUS ON A DISTANT OBJECT
- FIND THE RED REFLEX
- ADJUST THE WHEEL, AND HOLD THE DEVICE CLOSE TO THE RIGHT EYE AND SEE THROUGH THE WINDOW OF THE DEVICE WHILE BRINGING THE DEVICE CLOSE TO THE EYE.
- IF THE EXAMINER HAS A REFRACTIVE ERROR, CORRECT IT FIRST.

- ROTATE THE DISK WHILE EXAMINING THE SUBJECT'S EYE AS CLOSE AS POSSIBLE TILL THE RETINA BECOMES VISIBLE (ORANGE).
- IF + LENSES ARE NEEDED TO FOCUS THE RETINA => HYPERMETROPIA
- IF – LENSES ARE NEEDED TO FOCUS THE RETINA => MYOPIA
- FOLLOW THE ARTERIES AND VEINS TO THEIR ORIGIN I.E. OPTIC DISC
- NOTE THE COLOR, TORTUOSITY, AND THICKNESS OF THE ARTERIES
- ALSO NOTE THE VEINS AND THEIR THICKNESS; LOOK FOR AV NIPPING
- NOTE IF THE RETINA HAS ANY COTTON WOOL SPOTS, HARD EXUDATES, ANY HEMORRHAGES, OR DISCOLORATION
- ASK THE SUBJECT TO LOOK INTO THE LIGHT OF DEVICE TO SEE THE MACULA AND FOVEA.

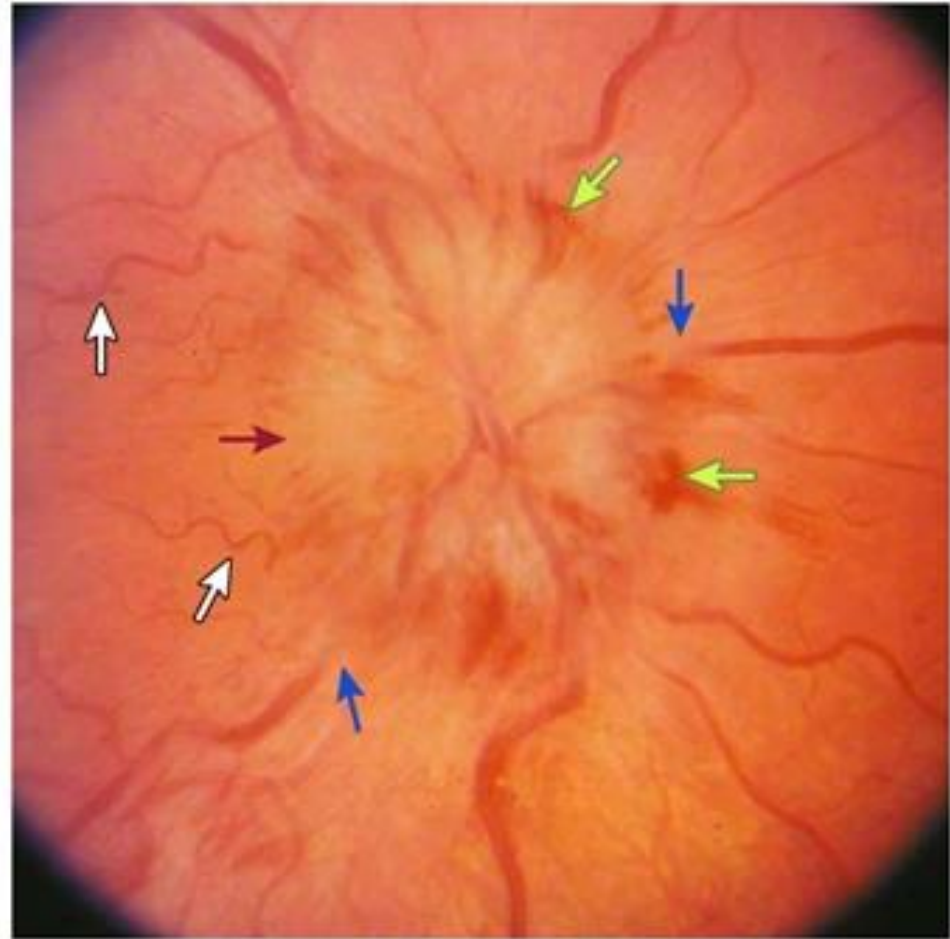
CLINICAL CORRELATES

- OPHTHALMOSCOPY HELPS IN THE DIAGNOSIS OF VARIOUS CONDITIONS.
POINTS TO NOTE DURING OPHTHALMOSCOPY
- SHAPE AND COLOR OF OD AND EDEMA OF OD (PAPILLEDEMA)
- CONDITIONS OF ARTERIES AND VEINS (SILVER WIRING, COPPER WIRING APPEARANCE IN CERTAIN SYSTEMIC DISEASES). AV NIPPING
- PRESENCE OF SOFT EXUDATES OR HARD EXUDATES, PIN POINT HEMORRHAGES OR BLOT HEMORRHAGES (DOTS AND BLOTS)
- REFRACTIVE ERRORS LIKE MYOPIA AND HYPERMETROPIA
- RETINAL DISEASES LIKE RETINITIS PIGMENTOSA AND RETINOBLASTOMA CAN ALSO BE DIAGNOSED BY FUNDOSCOPY.
- DISEASES LIKE DM, HTN, AND RAISED ICP CAN ALSO BE DIAGNOSED



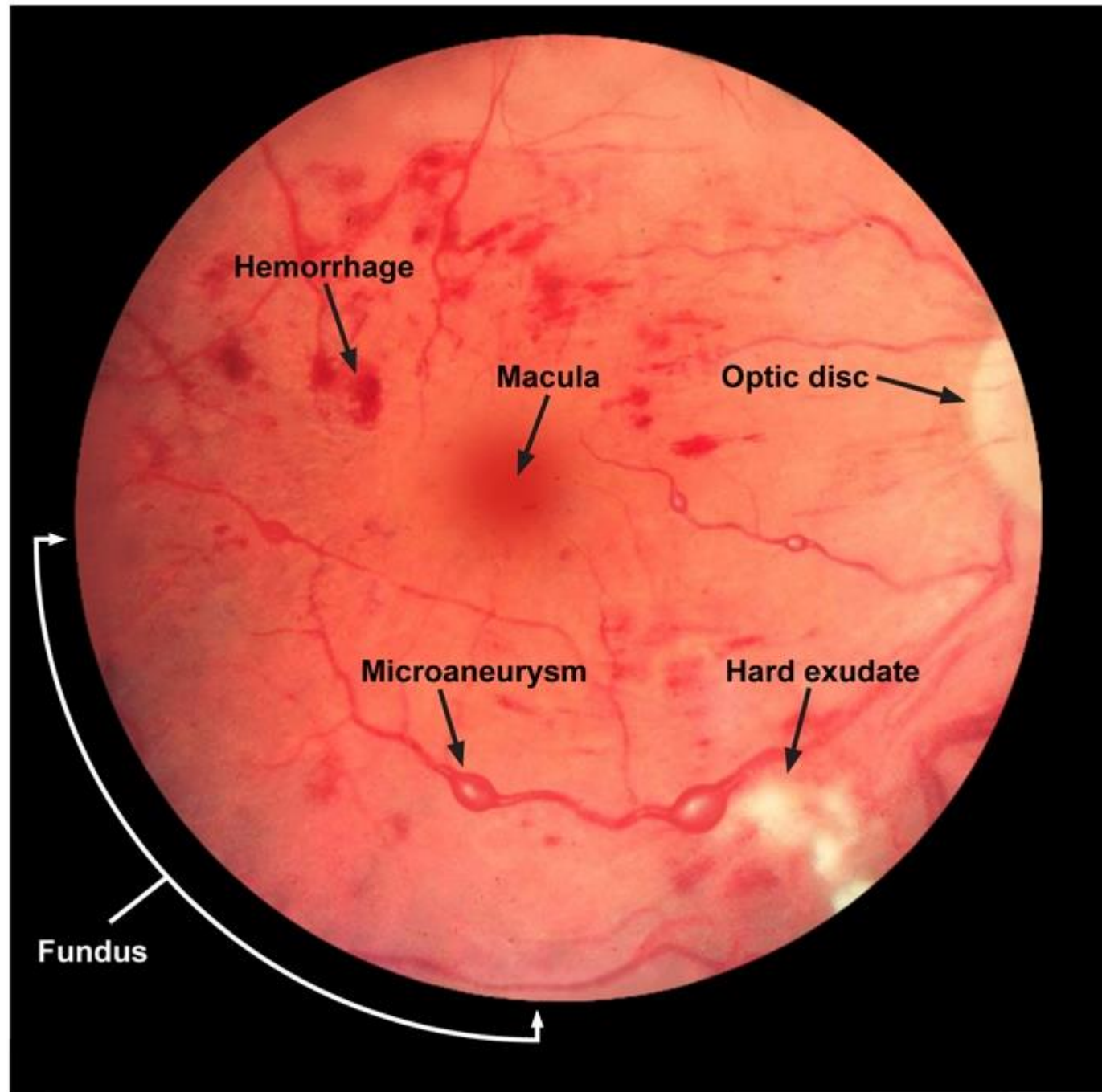
Normal retina

- Clear disc margins
- Clear visualization of large vessels
- Faint linear small veins



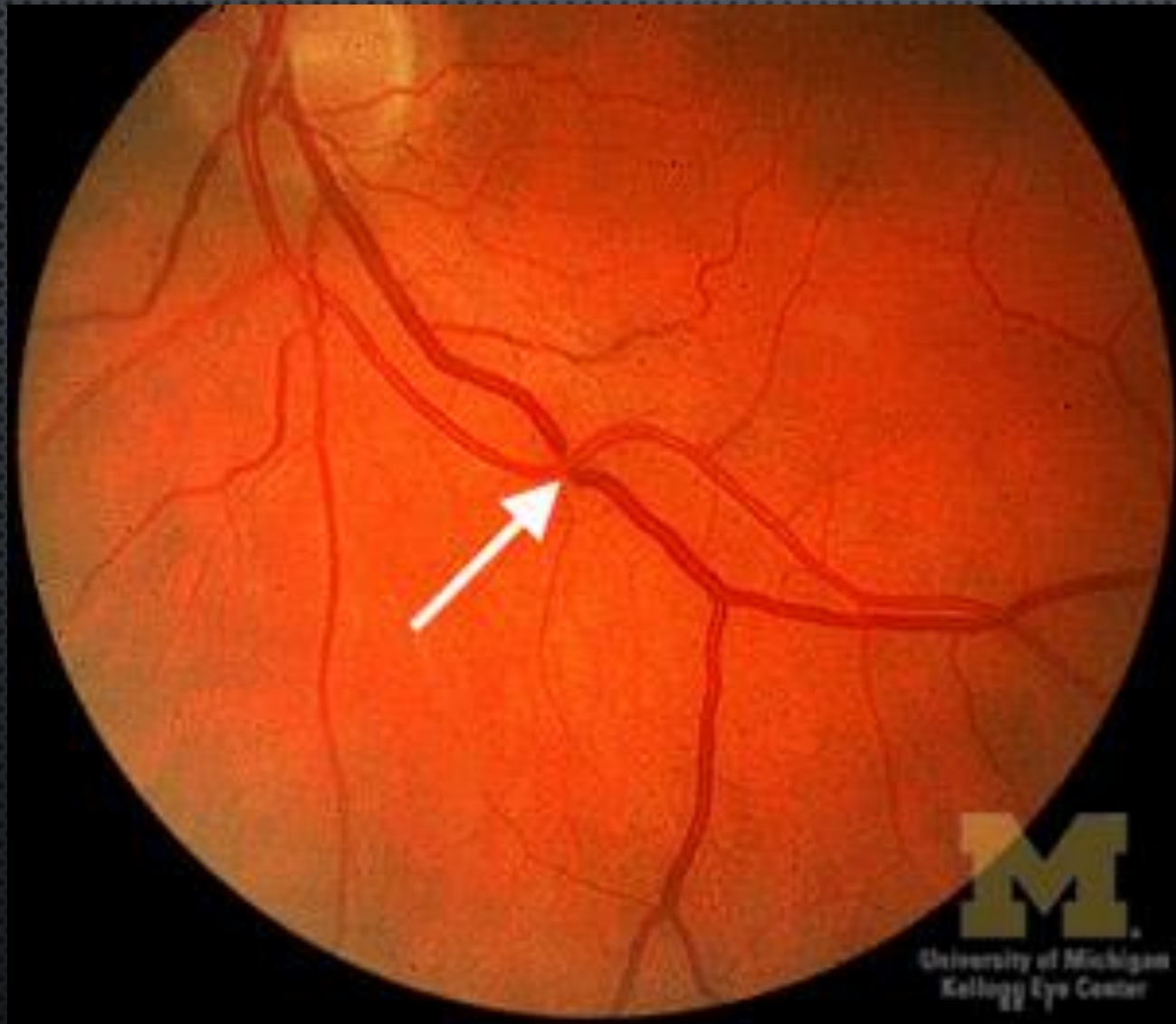
Papilledema

- Blurred disc margins →
- Obscuration of vessels →
- Splinter hemorrhages →
- Serpentine engorgement of small veins ⇨



ARTERIOVENOUS NICKING (AV NICKING OR NIPPING):

RETINAL ARTERIOLES INDENT RETINAL VEINS AS THEY CROSS EACH OTHER



COPPER WIRING: RETINAL ARTERIOLES APPEAR ORANGE OR YELLOW INSTEAD OF RED



SILVER WIRING: RETINAL ARTERIOLES LOOK WHITE BECAUSE OF OCCLUSION



COTTON WOOL SPOTS: WHITE SPOTS ON RETINAL SURFACE CAUSED BY MICROINFARCTION



PLEASE WATCH THIS EDUCATIONAL VIDEO TO
BETTER UNDERSTAND THE PROCEDURE

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=I-
QTROJIR5E&T=334S&AB_CHANNEL=MORANCORE](https://www.youtube.com/watch?v=I-QTROJIR5E&t=334s&ab_channel=MORANCORE)

WILL SMITH

the PURSUIT of HAPPYNESS

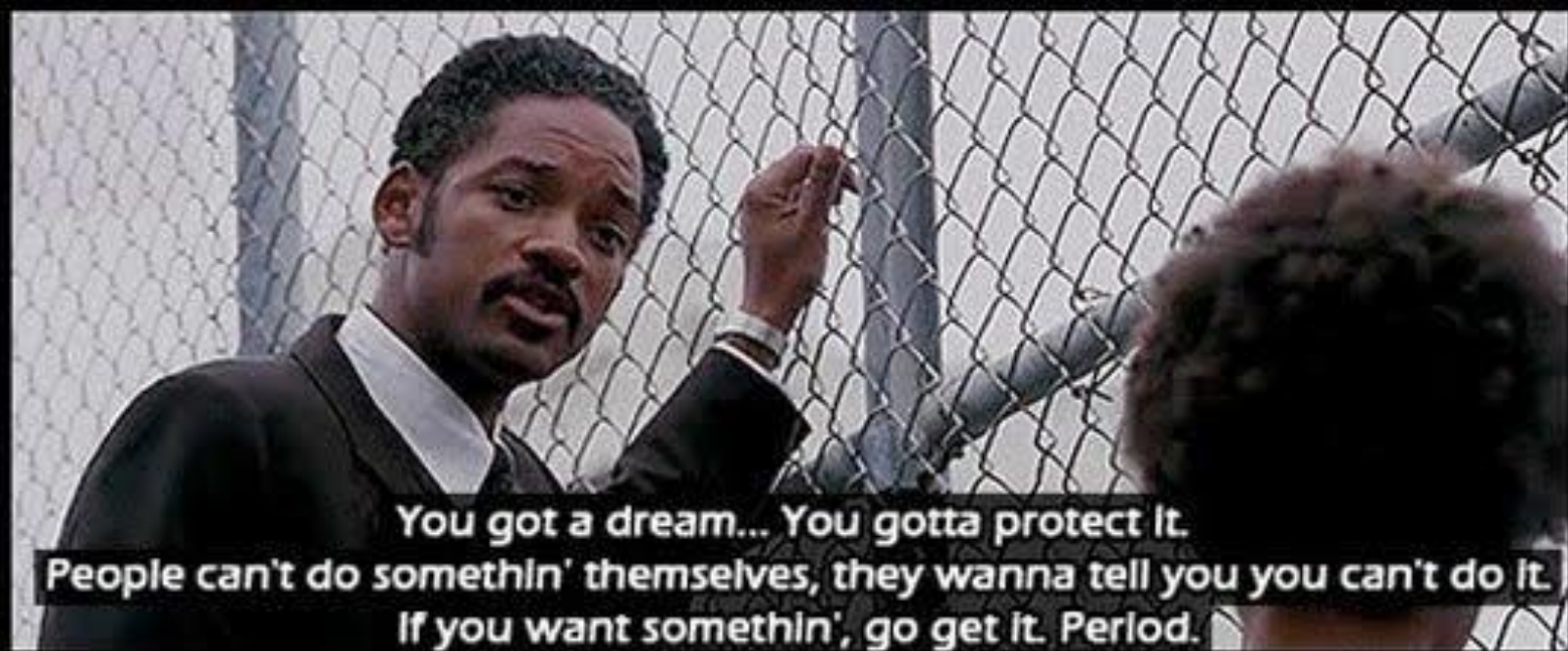


WILL SMITH
JEREMY IRONS
AND
THE
CAST
OF
"THE PURSUIT OF HAPPYNESS"
INSPIRED BY A TRUE STORY
CHRISTMAS 2006

Inspired by a true story
CHRISTMAS 2006



**Don't ever let somebody tell you...
You can't do something. Not even me. All right?**



**You got a dream... You gotta protect it.
People can't do somethin' themselves, they wanna tell you you can't do it.
If you want somethin', go get it. Period.**

THANK YOU