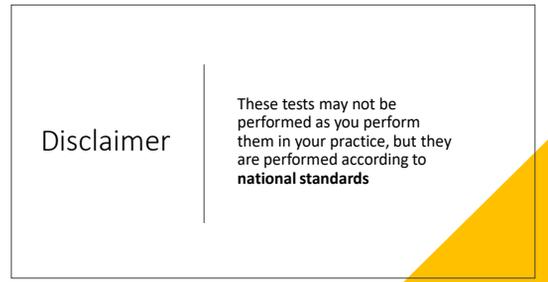
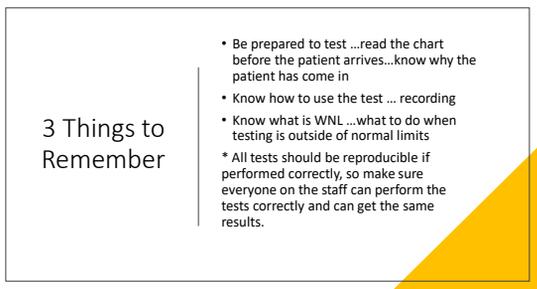




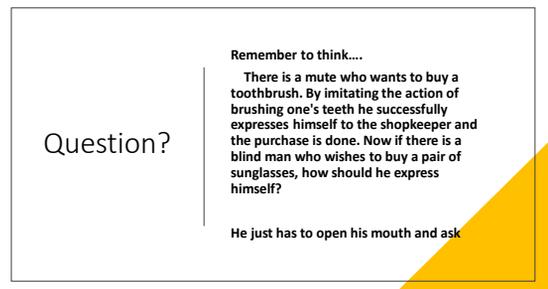
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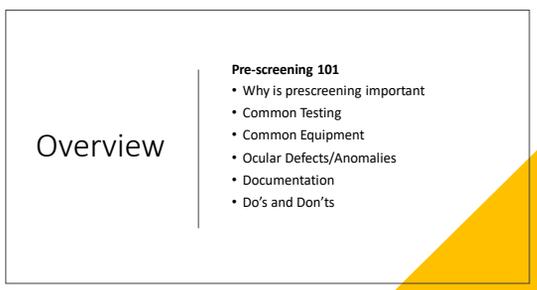
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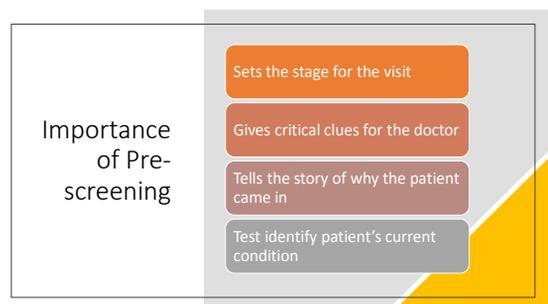
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4



5



6



4 Basic Chief Complaints

- Clouded, **blurred** or dim vision must be in the chief complaint
 - Could be many reasons for it
- Redness of eyes
 - Can be many reasons
- Sudden Pain
 - Can be many reasons
- Double vision in a single eye
 - **Direction of images important!**
 - Can be many reasons

7

Confidence

- 1 Tell the patients why you are testing them
- 2 Tell what you are going to do before you do it
- 3 Explain that the doctor will explain the test results
- 4 Treat patients like your family

8

QTPs

Step by step instructions for all key tasks

9

Warning!!!!

Do not forward information from a previous exam and hand it to your doctor, the assumption made is that the information that you gave them is current and accurate.

Vital/statistical data such as VA's, IOPs, BP, testing procedures all should be dated for the date they where performed! Beware of EHRs!

10

Screening Overview – Your Position is critical!

- Case History
- Visual Acuity...always first test...timing
- Cover Test
- Ocular Motility
- Anterior angles
- Medication history/allergies
- Instilling drops
- Stereopsis
- Color Vision
- Pupil Testing
- Amsler Grid
- Confrontation Fields
- Documentation Requirements

11

Comprehensive History

- 30 points to cover...insurance comp
- Ask appropriate questions
- Ask question in a logical sequence
- Cover all major topics
- It is ok to return for clarification
- Be in charge, but respectful
- Get into your rhythm

12

Sleep Apnea

Don't overlook Sleep Apnea because patients DO NOT always remember to bring this up, though it is a significant part of the eye exam

Check for a neck size of greater than 16" for females and 17" for males

Could be an indication for eye disease

• 5 eye conditions that could be linked:

- Dry Eyes (DED)
- Bacterial Conjunctivitis
- Floppy Eyelid Syndrome (FES)
- Glaucoma (POAG)
- Non-Arteritic Anterior Ischemic Optic Neuropathy (NAION)
- Central Serous Chorioretinopathy (CSC)
- Retinal Vein Occlusion (RVO)

13

COPD

- Chronic Obstructive Pulmonary Disease (COPD) can impact the eyes in several ways:
- Retinal Changes: COPD can lead to ocular microvascular changes, affecting the optic nerve and retina. Studies have shown that patients with COPD have lower retinal arterial oxygen levels, which can impair vision over time.
- Thinning Retinal Nerve Fiber Layers: Research indicates that individuals with COPD often have thinner retinal nerve fiber layers compared to those without the disease, particularly in severe cases.
- Vascular Density: There is a noted reduction in vascular density in the deep capillary plexus and radial peripapillary capillary plexus in severe COPD patients, which may contribute to vascular structural loss and chronic hypoxia.
- Oxygen Delivery: Less oxygen reaches the retina in COPD patients, potentially leading to vision problems as a result of hypoxia.
- Overall, while COPD primarily affects the lungs, it can also have significant implications for eye health, especially in severe cases. Regular monitoring and management of COPD symptoms are crucial for eye health.

[COPD Associated with Ocular Changes](#)

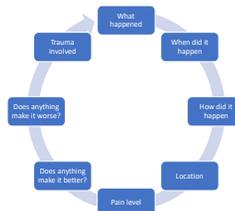
14

Check your testing position!

This is critical in getting proper results!

15

History of Present Illness



This is a necessary medical protocol in illness/trauma tracking

16

Visual Acuity...why is this important?

- Visual Acuity: verify
 - Occluder
 - Explain procedure
 - Lighting (N/D)
 - Correction (Pt)
 - Watch patient
 - Patient position
 - Documentation
 - Pin hole testing
 - Test distant (40cm)
 - Flow...



17

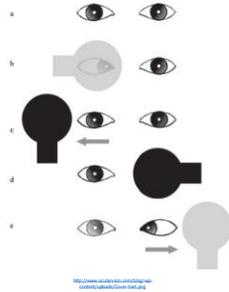
Perform Test



18

Cover Test...why is this important?

- Cover Test
 - Pt instructions
 - Occluder
 - Eye level position
 - Proper fixation
 - Procedures for cover/uncover
 - Recording accuracy



25

Cover Test... continu

- Unilateral**
 - Checks for movement
 - Tropia
- Alternating**
 - Checks for direction of movement



What is the difference between eso and exo?

26

COVER TESTING (cont.)

- COVER TESTING** has 'two' parts:
- 1) **ALTERNATING test**
 - 2) **COVER/UNCOVER test**
- 3) Do them in this order! (Please?)
 - 4) Done at DISTANCE then NEAR
 - 5) Pt wears the "correct" Rx for test distance

ALTERNATING tells you DIRECTION of DEVIATION (if any)

- ESO, EXO, HYPER/HYPO
- No movement? Pt is **ORTHO!** Yea! (Don't have to do COVER/UNCOVER test ☺)

27

COVER TESTING (cont.)

- COVER/UNCOVER test**
- Only done if **MOVEMENT** during the ALTERNATING test!
- Observe LEFT EYE as you COVER RIGHT EYE
 - Did it move? (Yes = **TROPIA**; No = **PHORIA**)
- Repeat for other side...**
- Observe RIGHT EYE as you COVER LEFT EYE
 - Did it move? (Yes = **TROPIA**; No = **PHORIA**)

UNCOVER only matters if you saw **MOVEMENT** when you COVERED! (i.e., had a TROPIA)

- Do you see **movement AGAIN** when you UNCOVER?
 - **UNILATERAL TROPIA!**
- No **movement** when you UNCOVER?
 - **ALTERNATING TROPIA!**

28

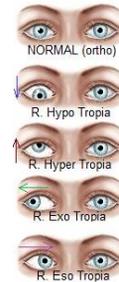


COVER TESTING (cont.)

WHAT DOES THIS CHILD HAVE?

COVER TESTING (cont.)

- **PHORIAS** are a "latent", or hidden condition
- Can't just "see" a **PHORIA**
- **Can only detect it with testing**



- **TROPIAS** are a "manifest", or **obvious condition**
- Sometimes you can just look at a person & see **TROPIA!**
- If not easily "seen", it is easily detected when tested

29

30

OCULAR MOTILITY (EOMs)

- Muscle-H Test
- Checks "ocular motility" controlled by six (6) EOMs attached to each eye
- When you are "done" you will have checked all 12 muscles! (EOMs for both eyes)
 - Patient follows your penlight
 - 14" to 16" away is 'best'
 - Move light in a "H" pattern, pulling the eyes in the 6 "CARDINAL" positions
- Observe the eyes
 - Do they track together?
 - Do they go the "same amount" in the "same direction"?
 - This is also considered 'checking pursuit' movement

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OCULAR MOTILITY (EOMs) (cont.)

Six (6)
ExtraOcular
Muscles (EOMs)
for each eye:

Four (4) RECTUS
muscles

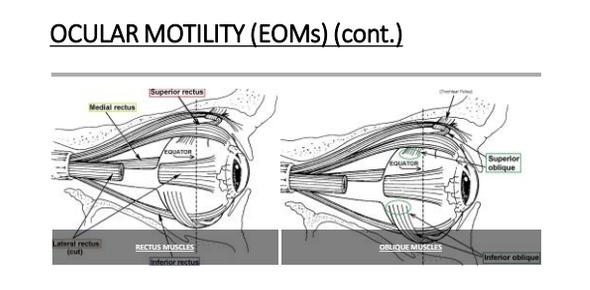
- Pull the eye the direction they "say"; EASY!
- Superior RECTUS (SR) pulls eye superiorly (up)
- Inferior RECTUS (IR) pulls eye inferiorly (down)
- Lateral RECTUS (LR) pulls eye laterally (temporally)
- Medial RECTUS (MR) pulls eye medially (nasally)

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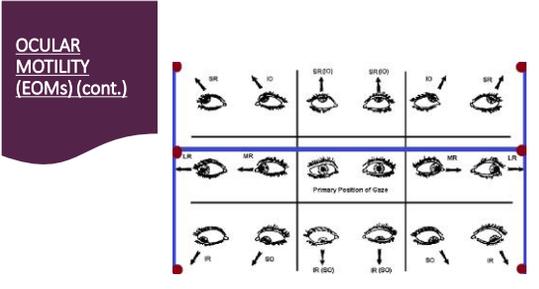
OCULAR MOTILITY (EOMs) (cont.)

- Two (2) **OBLIQUE** muscles
- Obliques are "unique"; work the OPPOSITE of name!
 - Superior OBLIQUE (SO) pulls eye inferiorly (& across nose)
 - Inferior OBLIQUE (IO) pulls eye superiorly (& across nose)

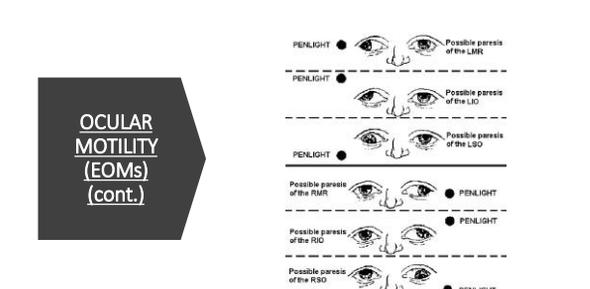
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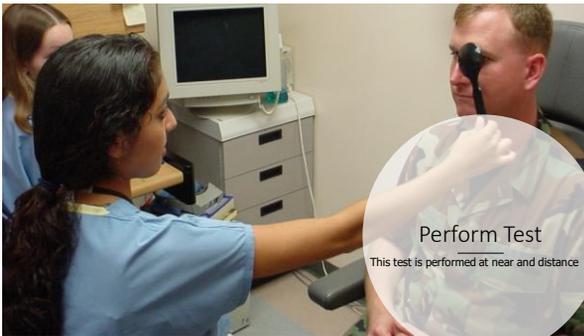
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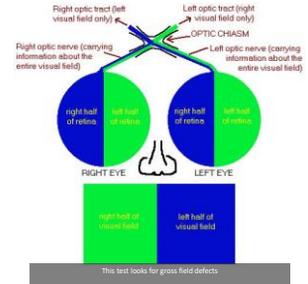


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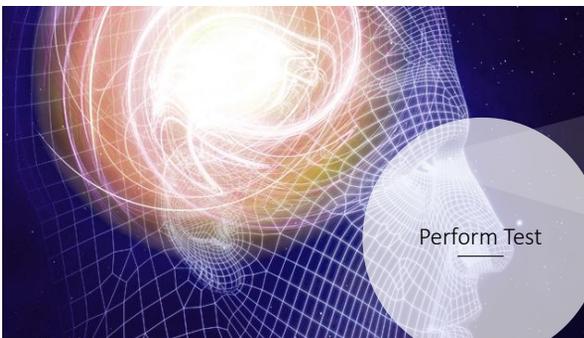
Confrontation Field...why is this important?

- Confront Fields
 - Pt instructions
 - Proper distance
 - Cardinal positions
 - Recording accuracy

Why are confrontation fields necessary?



38

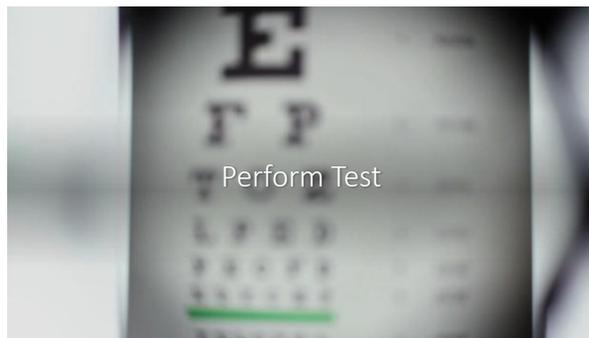
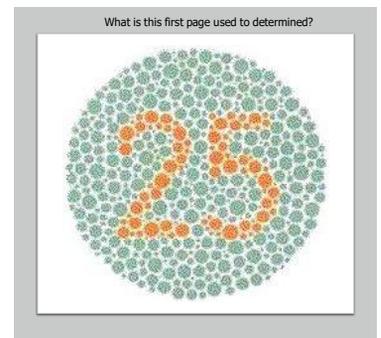


39

Color Vision...why is this important?

- CVT
 - Patient instructions
 - Proper lighting
 - Cover proper eye
 - Pt habitual Rx
 - **Test distance (75cm)**
 - Patient position
 - Record accurately

40



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Cause of pupil dilation (Mydriasis)

- Internal factors that can affect pupil dilation include:
 - mental and emotional state
 - health conditions, such as Holmes-Adie syndrome, congenital aniridia, and [mydriasis](#)
 - brain and eye injuries
 - prescription medications
 - commonly misused drugs

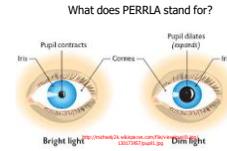
42

Drugs that can cause Mydriasis

- Commonly misused drugs: Dilated pupils are sometimes a [sign of drug misuse](#). Commonly misused drugs that dilate the pupils include:
 - amphetamines
 - bath salts
 - benzodiazepines
 - cocaine and crack cocaine
 - crystal methamphetamine
 - ecstasy
 - ketamine
 - LSD
 - MDMA
 - Mescaline
 - Pinpoint pupils
- Opoids**, including *oxycodone*, *heroin*, and *fentanyl*, are commonly misused drugs that have the opposite effect, causing pupils to constrict (miosis). Pinpoint pupils are pupils that do not respond to changes in lighting. This is a sign of an opioid overdose, which is a medical emergency.

Pupil Testing

- Explain test
- Proper lighting and position
- Perform direct and consensual
- Swinging flashlight
- Evaluate near response
- Recording accuracy



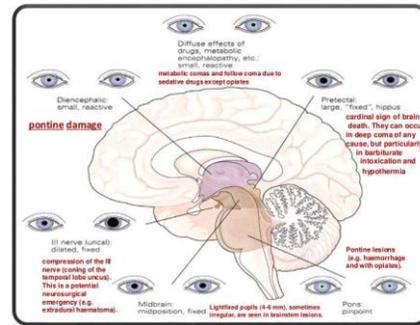
Pupil testing checks the connect between the retina and brain

43

44

Pupil size matters

- The size of a **person's pupils** can reveal important health information and monitoring pupil dilation is a standard medical assessment. Constricted pupils under 3mm may indicate conditions like drug use or increased intracranial pressure. Dilated pupils over 6mm often signify head trauma, concussion, or exposure to chemicals. Uneven pupil size can signal an underlying neurological issue.
- Normal pupil size in light is 2-4mm, and 4-8mm in darkness as pupils dilate to allow in more light. Changes in pupil size can also reflect cognitive processes like increased mental effort or emotional responses. A responsive pupil that changes size predictably in response to light is a key indicator of brain function. Understanding typical pupil sizes and reactions helps determine if observed changes may require medical care or suggest an underlying



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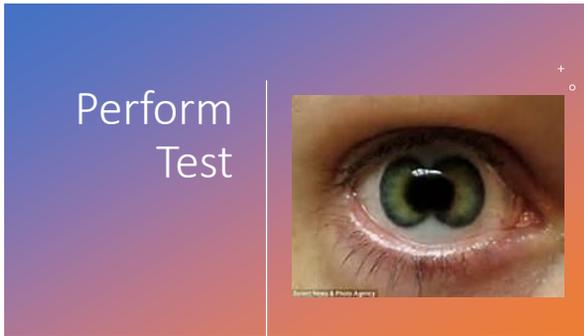
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Lesion	Unilateral	Bilateral	Reaction to light	Associated signs
Small reactive-drugs, metabolic encephalopathies, diencephalic dysfunction				
Large fixed pupils-pretectal lesions	Third nerve palsy		Negative	Pinix (partial or complete) external ophthalmoplegia
Pinpoint pupils-pontine lesions	Homer's syndrome		Poor reaction to shade	Pinix (always partial) anisocoria, enophthalmos
	Hörner-Adie syndrome		Slow reaction	Contribution to ptosis (0.1%) lower limb ataxia
Midposition, fixed pupils-midbrain lesions	Argyll Robertson		Negative	Depigmented iris normal accommodation, neurosyphilis
	Midbrain compression		Negative	Contra lateralizing signs
Dilated fixed pupils-3 rd nerve lesions	Pontine stroke		Negative	Coma, hyperventilation, hyperpyrexia

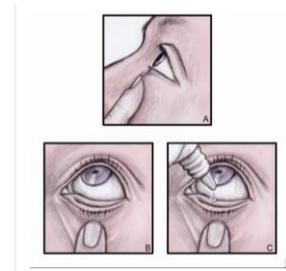
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Drop Instillation

- Clean hands
- Explain procedure
- Remember safety
- Inspect bottle
- Check date



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Blood Pressure ...why is this important?

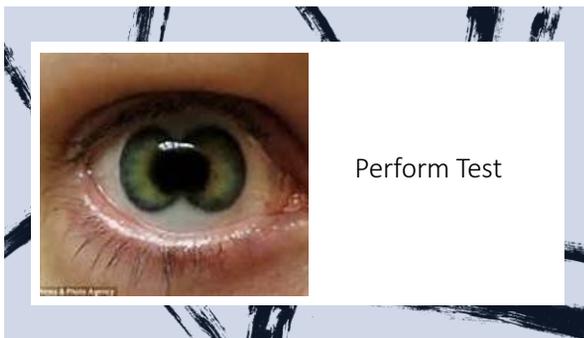
- Please understand the procedure
- Correct position
- Explain it
- Perform it
- Document it
- No more than 3 attempts

Category	Systolic, mmHg	Diastolic, mmHg
Hypotension	Less than 90	Less than 60
Normal	90 - 119	60 - 79
Prehypertension	120 - 139	80 - 89
Stage 1 Hypertension	140 - 159	90 - 99
Stage 2 Hypertension	160 - 179	100 - 109
Hypertensive Crisis	Greater than 180	Greater than 110

http://www.lifeinscreening.com

What is considered a normal adult blood pressure?

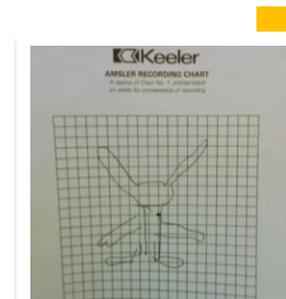
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Amsler Grid...why is this important

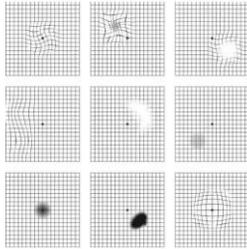
- Used in early detection
- Checks for central 20 degrees of vision
- 4 basic questions
- Normally given to diabetic patients or those with macular diseases for at home use



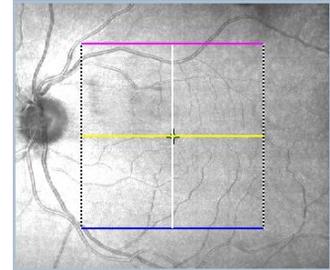
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Amsler Grid Interpretation

- Wavy lines
 - AMD, CSR, ERM, etc.
- Localized bending near fixation
 - Macular edema/traction
- Blank or missing area on (white patch)
 - Absolute scotoma, Wet AMD, mac hole
- Gray or blurred area
 - Relative scotoma, early mac disease, CSR
- Enlarged or displaced central dot
- Irregular circular distortion
- Bark spot near center
 - Central scotoma, optic neuritis, toxic maculopathy, Adv AMD



Perform Test



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PUPILLARY ASSESSMENT

- Follow the **PERRLA** format & you'll do great!
- **PER** = Pupils **EQUAL & ROUND?**
- **RL** = Pupils **REACT TO LIGHT?**
 - Direct
 - Consensual
- **A** = Accommodate? (i.e., pupils get **SMALLER** when focusing on a **NEAR** object)
- But what about **MARCUS GUNN (MG)?**
 - Also called **APD** for "afferent pupillary defect" (APD)
 - Or...
 - The "Swinging Flashlight Test"

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PUPILLARY ASSESSMENT (cont.)

- Check for "equal & round" FIRST! (put the penlight down!)
- Perform direct & consensual response to light ("reacts to light")
 - **DIRECT** – shine in OD & observe OD; repeat for OS
 - **INDIRECT** – shine in OD but observe OS; repeat for other side
- Evaluate "accommodative" response (pupils constrict @ near)
 - Hold a pen tip 6" in front of Pt's eyes (yes, that's close!)
 - Have the patient look at the 20/200 "E"
 - Then have Pt look @ the pen tip; PUPILS should **CONSTRICT** when attempting to focus on the near object! That's all that matters. (Don't care if blurry or double!)
- At this point, you've covered **PERRLA**!
- Not done...
- Check for an Afferent Pupillary Defect (APD), also called the "Marcus Gunn" (MG) test, or the Swinging Flashlight test

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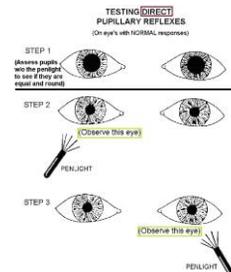


WHAT DO YOU THINK ABOUT THESE PUPILS?

PUPILLARY ASSESSMENT (cont.)

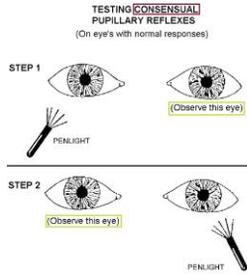
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PUPILLARY ASSESSMENT (cont.)



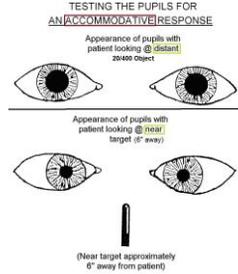
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PUPILLARY ASSESSMENT (cont.)



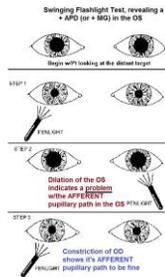
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PUPILLARY ASSESSMENT (cont.)



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PUPILLARY ASSESSMENT (cont.)



63

PERFORM SKILLS!

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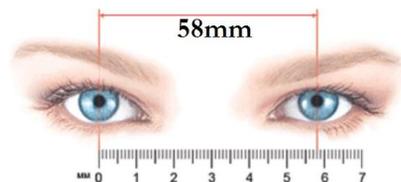


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- PD or Pupillary Distance (often referred to as IPD, for "inter-pupillary distance) is **CRITICAL** for an optical department to know & do correctly!
- GOAL is for the Optical Centers (OCs) of glasses ordered to **MATCH** the Patient's PD
- Two ways to measure PD:
 - **PD Ruler** (millimeter ruler)
 - Gives you a **BINOCLAR** measurement (GOOD!)
 - **Pupillometer**
 - Gives you a **BINOCLAR** 'total' and a **MONOCULAR** measurement for each eye (BETTER!)

PD MEASUREMENT (cont.)

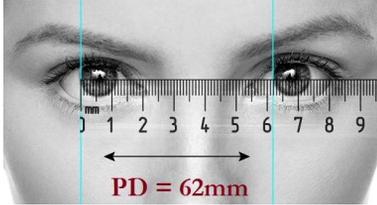
- In **THEORY**, you are measuring from the center of one pupil to the center of the other, as shown in the picture...



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PD MEASUREMENT (cont.)

- In **REALITY**, you will measure from **OD temporal limbus** to the **OS nasal limbus!**
- Why? Much easier to SEE & MEASURE! (meaning "more accurate")



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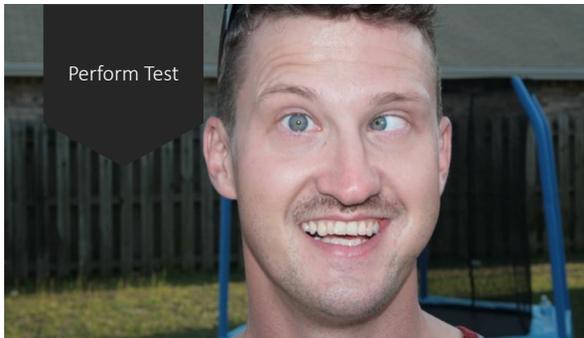
PD MEASUREMENT (cont.)

PUPILLOMETER

- Can set to measure DIST or NEAR
- Pt looks @ object in unit
- Optician slides tabs to put "lines" through Pt's pupils
- Read-out shows you the PD!
- EASY...LOVE IT!



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Evaluation & Management (E/M) Codes:

- All levels have same **four** basic history-taking components in common:
 - Chief Complaint (CC)
 - History of Present Illness (HPI)
 - Review of Systems (ROS) and
 - Past, Family and/or Social History (PFSH)

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CHIEF COMPLAINT dictates the exam process!

(Reimbursement intimately linked to the chief complaint.)

- CC: should detail **primary reason(s) patient scheduled an examination**
- At times, should be in the **patient's own words** (put in "QUOTES" to show it is verbatim from Pt)
- The chief complaint also suggests **what tests you'll need to perform** (saves time; impresses the doctor; gets Pt care they need & deserve)

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- "I'm just here for checkup" or, "I want new glasses"
 - These two responses would disqualify reimbursement by some payers (e.g. **Medicare**)
 - How OLD is Pt?
 - What is **PRIMARY** insurance?
- Pts returning for eval of chronic conditions such as **Glaucoma** or **AMD** can be reason enough for visit (even in absence of specific pt complaint)
- If pt complains of blurred or decreased VA, get a specific "lifestyle" issue it is negatively impacting!
 - Can't Drive @ night
 - Can't Read medicine label or books

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CASE HISTORY & HPI (HPI)

History of Present Illness (HPI)

- Try to elicit @ least four HPI bullets (or status of three or more chronic or inactive conditions)
 - **Signs & symptoms** (decreased VA, pain, tearing, discharge, redness, FB sensation, etc.)
 - **Context** (while driving, after take pills, when CLs in)
 - **Duration** (date of onset; duration of problem)
 - **Location** (R. eye, L. eye, lid, behind eye, etc.)
 - **Quality** (blurry, double vision, etc.)
 - **Modifying Factors** (Art tears help, bright light aggravates, blinking makes it better, etc.)
 - **Severity** (degree of pain or loss of sight)
 - **Timing** (a.m., p.m., upon waking, at end of day, etc.)

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CASE HISTORY & HPI (HPI, cont.)

Example of an HPI:

- Mrs. Braxton gives this CC (HPI), w/your help!
 - “My right eye is red”
 - “it began 3 days ago”
 - “It doesn’t hurt”
 - “Lids stick together in the morning last two days”
 - “Art Tears soothe it, but redness remains”
- You did GREAT! You got more than FOUR of the HPI elements & info the doc can use to help Pt

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CASE HISTORY & HPI (ROS & PFSH)

Review of Systems (ROS)

- Most time-consuming!
- Most offices use pre-printed forms that can be filled out by patients online or at home before exam.
- Go here for lots more info on this!
 - <http://emuniversity.com/ReviewofSystems.html>
- A review of 10 or more systems will qualify **any** E/M code

Past, Family and/or Social History (PFSH)

- **Past History of Pt** (illnesses, injuries, surgeries, other treatments)
- **Family History** (most interested in diseases which may be hereditary and/or place the patient at risk)
- **Social History** (review of past & current activities like smoking, drinking, drugs)

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SUMMARY & CONCLUSION

- Our **OBJECTIVE** was to review:
 - **Pre-screening** (basic tests, testing positions, and documentation)
 - **Blood Pressure Testing**
 - **Confrontation Fields**
 - **Color and Stereo tests**
 - **COVER TESTING / EXTRAOCULAR MOTILITY (EOMs)**
 - **PUPILLARY ASSESSMENTS**
 - **PD MEASUREMENT** (PD Ruler vs. Pupilometer)
 - **CASE HISTORY (& HPIs)**

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Patients

- Each one is different
- Each one has its own scenario
- Think the entire process through based on current patient status
- Treat each patient as your favorite family member
- Always greet them and always tell the patient what you are doing before you do it
- Listen to your patients

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Blast from the Past

- Do's and Don'ts
- Position yourself properly for testing
- People not reviewing the pt chart before the patient arrives
- Ignoring safety measures
- Don't say, "in my old office, we did it differently"
- Not listening to the patients
- Improper recording/documentation

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Questions?



GIBBLEGUTS.COM By Dan Gibson
© 2011 GIBSON
GUIDE DOG INSTITUTE FOR THE BLIND
This dog you gave me only has one ear, and really bad breath!

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Thank you
Lynn: martraln@msn.com



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