Diagnostics II Proficiency #2

Auxiliary Tests

1. Accommodative Facility (lens rock and distance rock)

LENS ROCK:
- Hab. Rx or Subj. lenses in trial frame
- Near VA card at reading distance
- 2.00/-2.00 in flipper bar
- Read one letter at a time one line above the near BVA
- Continue for 1 min.
- # of cycles: # of flips/2
- Binocular, then monocular if necessary
- FAILING: Binocular below 8 or 10 cpms; Mono: below 11 cpms
- Low bino and normal mono → fusional vergence disorder
- Slow on minus → Prob. with negative fus. vergence; Slow on plus → Prob. with positive fus. vergence
- Low bino and low mono → accommodative infacility

DISTANCE ROCK:
- Hab. Rx or Subj. lenses in trial frame.
- Near VA card at reading distance, whole VA chart at distance
- Read one letter at a time one line above the BVA (both dist. and near)
- EXPECTED: 25 cpms
- FAILING: below 18 cpms → accommodative infacility
- Lower rates expected for younger children
- If pt. borderline or low, run test for 3 min.

Flat Fusion
- Worth Dot Test
  - Perform twice: once in the light, once in the dark
  - Check for suppression and strabismus
  - Red/Green glasses → red over right eye, green over left eye
  - Right eye sees 2 red dots, left eye sees 3 green dots
  - Start test at 40 cm. Have pt. cover one eye at a time to see if they see 2 red with the right and 3 green with the left. Then have pt. view BINOCULARLY
  - Ask how many dots they see
    - 4: normal binocular vision
    - 2 red dots: suppressing left eye
    - 3 green dots: suppressing right eye

Monofixation Syndrome: one eye has small area of foveal suppression → sees 2 or 3 @ dist
3. Modified Thorton
- Distance at 10 ft.
- Horizontal Maddox rod over right eye
- Pt. reports which number the red streak goes through and which side
  (left=exo, right=eso)
- Vertical Maddox rod over right eye
- Pt. reports which number the red streak goes through and which side
  (up=right hypo or left hyper, down=right hyper or left hypo)
- Repeat at near

4. Maddox Rod Phorias
Distance: single letter on distance VA chart
- Lateral: horizontal Maddox rod over right eye, 15ΔBI prism bar over left eye
- Reduce BI prism and ask pt. when the red line goes through the spot (letter)
- Vertical: vertical Maddox rod over right eye, 6ΔBU prism bar over left eye
- Reduce BU prism and ask pt. when the red line goes through the spot (letter)
Near: penlight at 40 cm. Procedure the same.

5. Mollett Associated Phorias
- Distance at 20 ft.
- Hob. Rx + polaroid filters
- Pt. looks at X, is asked if the top line is directly above the bottom line, or
  displaced to one side
- Top to left → eso (introduce BI prism until line are aligned), Top to right →
  eso (introduce BO prism until lines are aligned)
- For vertical, rotate the box 90 degrees and ask if the lines are aligned
- Right line too high → BD in front of left eye; Right line too low → BU in
  front of left eye
Near at 40 cm, some procedure EXCEPT when pt. is eso you can add plus
lenses instead of prism

6. Prism bar vergences
- Hob. Rx or Subj. lenses in trial frame → out of phor.
- One letter on distance VA chart
- Prism bar in front of non-dominant eye.
- Start with BI, keep prism in place for 2-3 seconds
- Have pt. report blur, break, recovery
- Repeat with BO, BD and BU
- Same procedure at near with target at 40 cm (ex. target: "E" on Ciba stick)
- Keep target up near LOS

7. Alternate visual acuities
   - see p. 42-44

8. Hirschberg and Bruckner
   **Hirschberg**
   - Transilluminator at BD-100 cm
   - Pt. does NOT wear Rx
   - Have pt. look at light, occlude each eye noting position of reflection
   - Have pt. look at light with both eyes, see if reflections have changed positions
   - Normal: 0.5 mm nasal; 1 mm displacement=22° of strabismus
   - Reflection OPPOSITE direction of eye turn
   - **RECORD:** Hirschberg: ortho, or Hirschberg: 22° LXT

   **Bruckner**
   - One meter
   - Pt. does NOT wear Rx
   - Look through ophthalmoscope, focus, assess brightness of the fundi
   - Have pt. look at light
   - Both symmetrical → binocular fixation
   - Brighter reflex in one eye → that eye is not fixing or has significant refractive error
   - **RECORD:** Bruckner: OD=OS, or Bruckner: OD>OS

9. 480
   - BVA, full room illumination
   - 1 letter on distance chart, 1 above BVA
   - Have pt. watch letter
   - Put 480 over the better eye, watch other eye
   - Other eye should move out, then back in
   - Then place lens over other eye
   - Checks for small angle strabismus
   - ABNORMAL: Eye does not move, or eye moves out but not back in
   - **RECORD:** 480: negative, or 480: positive, OD suppressing

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7. Alternate visual acuities
too young, illiterate

8. Hirschberg and Bruckner

Infants, School screenings

9. 480

small angle Strabismus
10. RDE (Random Dot E) Stereopsis
- Small children
- Polarized glasses
- 3 cards:
  - demo with physically raised E
  - stereo raised E
  - blank
- Ask child which card has the E on it. Make sure there is no glare on the cards and that they have their head straight
- Distances:
  - 50 cm: 504°
  - 1 m: 252°
  - 1.5 m: 168°
  - 2 m: 126°
  - 2.75 m: 92°
- Repeat 4x at each distance. If correct 3 out of 4 times, have stereopsis at that distance

11. Clock dial Astigmatism
- Remove cyl after ret and fog pt. to 20/40
- Ask pt. if they see 3 lines in any of the spokes. Ask in what spoke are the lines most dark and distinct.
- Multiply the smaller number by 30 and set your axis there
- Ask pt. to watch the lines that are 90 degrees away from the axis. Have them tell you when those lines are equally as distinct as the lines they originally said.
- Add -0.25 D of cyl until pt. reports the lines are equally as distinct. Go one more -0.25 D to get a reversal. Then return to the lens that gave you an equal response.

12. Vectographic Associated Phorias
- Vectographic slide in projector
- Pt. behind phoropter with BVA and polaroids lenses in
- Ask pt. what they see. If they report 2 lines, they are suppressing and the test is over. Determine which eye is suppressing and record the results. If left eye suppressing -> top and right seen, If right eye suppressing -> bottom and left seen
- If pt. sees all 4, ask them to look at the middle circle. Then ask if the top line is directly above the bottom line or displaced to one side.
- To the right, eso -> add BO prism until aligned
- To the left, exo \( \rightarrow \) add BI prism until aligned
- Then ask pt. if the lines going across are aligned
- If right line too high, add BU prism over right eye
- If right line too low, add BD prism over right eye

13. Nott Dynamic Ret
- Room lighting normal
- Nott test card at 40 cm (hole in center)
- Pt. behind phoropter with BVA in phoropter
- Instruct pt. to read the words around the hole and not to look at the light
- Examiner moves back until neutrality is seen
- Example: Neutral at 66.67 cm \( \rightarrow \) AR=+1.50 D
- Lag=AS-AR, Lag=2.50-1.50, Lag=+1.00 D
- Subtract 0.25 D to get add power, must be greater than 0.75 to do this

14. MEM Dynamic Ret
- Room lighting normal
- Ret at 40 cm with MEM card attached
- Pt. wears hub, Rx or subj., ref. in trial frame
- Instruct pt. to read the words and not to look at the light
- Examiner observes reflex in horizontal meridian \( \rightarrow \) with, lag, add plus; against, lead, add minus
- Estimate amount of lag/lead by judging the speed, width, and brightness
- Confirm results by placing an appropriate lens in front of eye for 0.5 sec
- Once neutral is found, repeat for other eye
- Subtract 0.25 D to get add power, must be greater than 0.75 to do this

15. Low Neutral Dynamic Ret
- Room lighting normal
- 40 cm test distance
- Pt. behind phoropter with BVA in phoropter
- Can use Nott card or MEM card
- Instruct pt. to read the words and not to look at the light
- Sweep horizontal meridians in both eyes
- See with, add plus lenses BINOCULARLY. See against, add minus lenses BINOCULARLY
- For example, get +0.75, 2.50-0.75= +1.75 \( \leftarrow \) AS and AR
- Subtract 0.50 to get add power, must be greater than 1.00 to do this