

Opto 411
Anomalies of Binocular Vision

Practical Evaluation Form

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2014

Objective # 1

Determines the patient visual acuity level

(3 Marks)

Task: The student will perform testing on at least 3 people (simulated patients) to determine patient Visual Acuity level, this includes:

- Optotype Testing:
1. Crowding phenomenon
 2. Neutral density filters

Optotype Testing:

(0.50 each)

- Uses proper occlusion technique for age (young children cannot hold occlusion paddle).
- When vision is reduced, attempts to improve it by the proper means- pinhole and singles. Possibly with plus or minus lenses.
- Records the findings properly, including +1-, results while improving vision, and recording the proper eye.
- Proper instruction to the patient and frequent monitoring of the patient's behavior/ fixation.
- Proper pointing technique (avoids the end letters that lack crowding effect when determining threshold vision)
- Question.

Objective # 2

Assesses the Patient's Binocular Status.

(3.75 Marks)

Sensory tests:

1. W4Dot testing at near with flashlight, at distance with wall box and at distance with the flashlight.
2. Bagolini testing at near and distance.
3. 4 diopter base out / base in testing.

1-Worth 4 Dot:**(0.25 each)**

- Glasses put on with red over right eye and a proper distance of flashlight at near (33cm)
- Proper questions asked (Total # of lights seen and be sure this refers to lights that are on constantly, rather than alternating red and green)
- Proper alignment of flashlight (white light at bottom)
- Proper interpretation of results

Flashlight at distance:**(0.25 each)**

- Started at 6m and proceeded forward in 1m increments to determine central scotoma size.
- Properly recorded results.
- Is aware that W4dot flashlight is only necessary if BSV is found at both near and with the distance wall box.

2-Baqolini:**(0.25 each)**

- Correct lens orientation and use proper testing distance (33cm and 6m)
- Proper questions asked (How many lights do you see, how many lines coming from the central light?)
- Proper interpretation of patients report and proper recording of 4 diopter Base out Testing

3- 4 Diopter Base out testing:**(0.25 each)**

- Uses accommodative target at 6m.
- Uses the proper prism strength (4 diopters) and holds it properly (Base out)
- Introduces prism from the top and not side of the eye
- Movement is a sweeping motion and quite a quick introduction of the prism
- Proper interpretation of patient's response and proper recording.

Objective # 3

Assesses the Patient's Binocular Status.

(3.50 Marks)

Motor tests:

1. Prism bar- horizontal and vertical
2. Risley rotary prism horizontal and vertical

Check-off List for Prism Vergences:

(0.50 each)

- Proper sized accommodative target 6/12 unless visual acuity is reduced)
- Proper patient instructions to maintain fixation on the target as the prism is increased in strength and for the patient to report diplopia if it is seen.
- Proper speed of movement of the prism bar / Risley rotary prism and proper order of testing when both horizontal vergences are performed (BI near, BI distance, BO distance, BO near to avoid tonic convergence).
- Student can recognize break point and recovery, versus suppression even without patient report.
- Knowledge of the most appropriate vergences to do give the patient's strabismus.
- Student watches the prism as they remove it following recovery point to ensure the patient has regained fusion.
- Properly records the findings.

Objective # 4

Determine Patients' Stereo Acuity

(3.75 Marks)

1. Titmus
2. Hard Randot
3. Frisby
4. Two Pen (for gross stereo)

1-Titmus Testing:**(0.25 each)**

- Proper testing distance (40cm)
- Covered one eye or turned test 90 degrees and retested fly to ensure true stereopsis present and not monocular cues when appropriate.
- Does not allow patient to wiggle the test; examiner always holds the test booklet.
- Proper recording of results.

2-Hard Randot:**(0.25 each)**

- Proper testing distance (40cm)
- Does not allow patient to wiggle the test; examiner always holds the test booklet.
- Proper recording of results.

3-Frisby Testing:**(0.25 each)**

- Testing distance is measured to ensure accuracy.
- Starts with largest plate at 33cm. Proceeds to medium and thin plates at same distance before moving back from patient.
- Holds the Frisby plate so that it is NOT against the background (as this allows monocular cues) but about a finger width in front of the white background.
- Once threshold is determined, testing is repeated by rotating the plate to ensure patient is not guessing, then proper recording of results.

4-Two Pen (for gross stereo):**(0.25 each)**

- Starts with both eyes open and examiner holds one of the pens while the other is given to the patient.
- Proper patient instructions to patient to reach arm up and bring their pen down vertically on top of other pen.
- Occludes non-dominant eye when performing the second time.
- Proper interpretation and recording: Knows "positive" stereo present and "Negative" = no stereo and patient shows no difference between both eyes open and one eye occluded.

Objective # 5
Quantitating Patient's Deviation.
(6 Marks)

Task: The student will perform testing on at least two people (simulated patients) to quantify the eyes deviation. This includes:

1. Cover uncover;
2. Alternate cover test,
3. Alternate prism and cover test,
4. Simultaneous prism and cover test.

1-Cover / uncover test:

(0.25 each)

- Proper patient instructions to maintain fixation on the target as the occluder is alternated from one eye to the other.
- Performs cover test first to determine direction and control of deviation.
- Proper speed of movement of the occluder allowing the patient to pick up fixation each time.
- Proper evaluation of the control of the eye turn (manifest, latent or intermittent)
- Properly records the findings.

2-Alternate cover test:

(0.25 each)

- Proper patient instructions to maintain fixation on the target as the occluder is alternated from one eye to the other.
- Performs cover test first to determine direction and control of deviation.
- Proper speed of movement of the occluder allowing the patient to pick up fixation each time.
- Proper evaluation of the control of the eye turn (manifest, latent or intermittent)
- Properly records the findings.

3-Alternate prism and cover test:**(0.25 each)**

- Proper patient instructions to maintain fixation on the target as the occluder is alternated from one eye to the other.
- Performs cover test first to determine direction and control of deviation.
- Proper speed of movement of the occluder allowing the patient to pick up fixation each time.
- Proper prism placement and goes to reversal to ensure full amount measured
- Accurate measurement: within +/-3 prism diopters if deviation ≤ 20 ; +/-5 of greater than 20. Vertical within +/-2 prism diopters.
- Proper evaluation of the control of the eye turn (manifest, latent or intermittent)
- Properly records the findings.

4-Simultaneous prism and cover test:**(0.25 each)**

- Proper patient instructions to maintain fixation on the target as the occluder is alternated from one eye to the other.
- Performs cover test first to determine direction and control of deviation.
- Proper speed of movement of the occluder allowing the patient to pick up fixation each time.
- Proper prism placement and goes to reversal to ensure full amount measured
- Accurate measurement: within +/-3 prism diopters if deviation ≤ 20 ; +/-5 if greater than 20 for vertical within +/-2 prism diopters.
- Proper evaluations of the control of the eye turn (manifest, latent or intermittent)
- Properly records the findings