PUPILLARY ASSESSMENT

Description: The function of the pupil is to allow light to enter the eye, so it can be focused on the retina. The reaction of the pupil is used to assess the brain stem function. Abnormal pupillary reflex can be found in conditions affecting the optic nerve, and brain stem lesions, such as tumors.

The pupillary assessment involves observation of the reaction of the iris muscles to light, and a test assessing the functionality of the retina and optic nerve.

Challenges to obtain a true pupil size under low light include accommodative reflex, lack of adequate time for dark adaptation, and poor technique.

Objectives: To perform the processes listed without assistance:

1. Understand the light reflex pathway
2. Explain normal pupillary responses
3. Accurately measure, compare, and record pupil sizes in bright light and dim light settings
4. Perform the "Swinging Flashlight Test"
5. Describe a relative afferent pupillary defect and common causes

Equipment: Penlight or transilluminator

Purpose: To measure pupil size (in bright light and dim light), shape, and response.

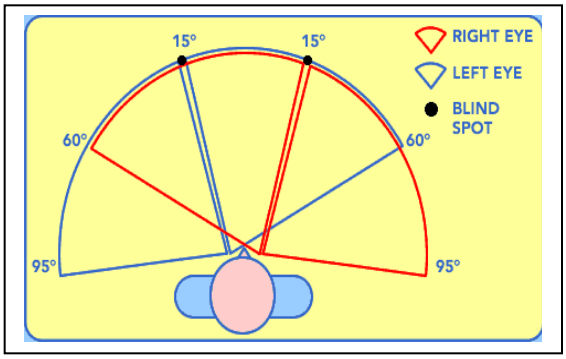
Requirements: Pupil assessment is performed without correction. The room lights should be off (except when checking pupil size in bright light). Give the patient a distance target to avoid accommodation.

Testing Process:
Pupil assessment includes measuring pupil size and response to direct and consensual light and observing for an APD.

1. Room lights should be off or dim.
2. Have the patient fixate on a distance target to avoid miosis with accommodation.
3. Without shining the light directly into the pupils, use enough light from the transilluminator to measure the dim light pupil size in each eye. Patients with dark irises will require additional light to be able to see size.
4. Shine light from transilluminator into the center of one eye while simultaneously checking the following:
    a. Direct response, reaction of the pupil in which you are shining the light.
    b. Consensual response, reaction of the fellow eye.
    c. Size of the constricted pupil in the bright light.
    d. Shape of the pupil.
5. Shine light on to the pupil for 1-2 seconds and then remove it to allow the pupil to relax and dilate. Repeat 2-3 times to capture all measurements needed.
6. Repeat steps 4 to 5 for the other eye.
7. Assess presence of APD (Afferent Pupillary Defect) by using the swinging flashlight test.
    a. Shine light of the transilluminator into one eye. Observe constriction (if present). Hold for 1-2 seconds.
    b. Quickly shift the light into the other eye going straight across the bridge of the nose.
    c. Shine light of the transilluminator into the other eye and hold for 1-2 seconds. Because both pupils should constrict upon reaction to light shone in the first eye, a normal result would be NO reaction when shining into the second eye. Continue to shine light back and forth into each eye, noting NO change in pupil size. (You may see slight pupil constriction with this, but do not confuse insignificant iris muscle spasms with an actual constriction or dilation of the pupil.)
    d. If APD is present, the examiner will see that the pupils will dilate when the light shifts to that eye with the APD and the pupils will constrict when the light is shifted to the eye without an APD.
8. Document results in the patient's chart.

Documentation: Pupillary Assessment results are documented under the Pupil Exam section in the medical record.

CONFRONTATION VISUAL FIELDS



Description: Confrontation visual field is an effective yet quick way to measure the peripheral vision of the patient. This training will provide the technician with the proper technique to effectively perform a confrontation visual field.

Objectives: Upon successful completion of training, the technician will be able to perform the following without assistance or coaching:

1. List the boundaries of the normal visual field
2. Understand the following:
    a. Scotoma (defect in the visual field, a non-seeing area)
    b. Constricted field (overall smaller visual field)
    c. Hemianopia (defect affects half the visual field)
    d. Quadrantanopia (defect affects one quadrant of the visual field)
3. Correctly perform and accurately record the results of a confrontation visual field

Handouts and Other Resources:

- Please refer to appropriate ECP Learning Academy modules and worksheets.

Equipment: None. An examiner uses their own fingers as targets.

Purpose: Screening test comparing examiner's field of vision (presumed normal) to the patient's field of vision. The CVF Test is performed using a static method (target appears, then disappears, but does not move).

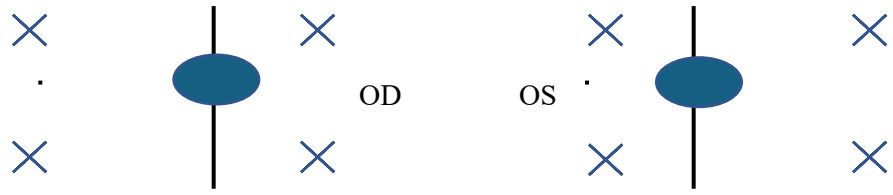
Requirements: This should be performed without correction, one eye at a time. Room lights should be on.

Testing Process: Confrontation Visual Field Test

1. The examiner sits directly in front of the patient – about 3 feet (or arm's length) apart.
2. The patient uses an occluder or the palm of their hand to cover the eye not currently being tested. Ensure the eye is completely occluded.

3. The examiner closes the same eye as that to be tested in the patient as in a mirror (i.e., the examiner covers his/her left eye when testing the patient's right eye).
4. Ask the patient to fixate on the examiner's open/uncovered eye directly across from the patient's uncovered eye, like a mirror image.
5. Ask the patient if they can see the examiner's entire face while fixating on the examiner's designated eye. This is to ensure the patient has good central vision.
6. The examiner presents a certain number of fingers (1, 2, or 5) just within his/her peripheral vision, in each quadrant. Typically, this is done with the examiner's arm fully extended in the temporal quadrants, and the examiner's arm is slightly bent in the nasal quadrants to accommodate for larger peripheral field temporally and slightly smaller field nasally.
7. The patient is asked to report how many of the examiner's fingers are presented.

8. This is repeated within all four quadrants in each eye (avoiding the midline horizontally and vertically).



9. The entire process is repeated for the fellow eye.
10. Record results in the patient's chart. If the patient can provide correct responses centrally and in all four quadrants, you may document as normal, within normal limits, full to finger count, or some other variation of "normal". If the patient has responded in such a way that there may be a visual field defect. If a defect is found, document by either drawing the defect or by describing in detail where the defect was found. For example, "defect in superior temporal quadrant- OD".

Documentation: Confrontation Visual Field test results are documented under the CVF section in the medical record.