

FUNCTIONAL VISION ASSESSMENT DIRECT ASSESSMENT PROCEDURES*

All material presented here (except that in italics) is taken directly from *Project IVEY: Increasing Visual Efficiency*. Florida Department of Education. Italicized materials were written by Dr. Dixie Mercer – Stephen F. Austin State University

I. Observation of the eyes

- A. PUPILLARY RESPONSE** - The pupil of the eye changes shape or size when the light is presented.

Procedure and Suggestions:

- a. Observe the condition of the pupil without light stimulation.
- b. Direct a light into the child's eyes from approximately 12 inches away and notice whether the pupils constrict, dilate or remain unaffected.
- c. Observe pupils when the child emerges from a dark room after an extended period of time.
- d. Use a brighter light source and/or darken the room to provide greater contrast.
- e. Present a light in different areas of the visual field, not only directly in front of the child.
- f. Vary the child's position and repeat.

Comments:

Note any abnormal conditions such as:

- "hippus," a continual constriction and dilation of pupil,
- or "fixed pupil," a pupil that will not constrict or dilate regardless of the amount of stimulation.

These conditions might lead to confusing interpretations regarding the child's response to light, and the amount of light stimulation should be carefully monitored.

- B. BLINK REFLEX** - Blinking occurs in response to hand movement toward the face.

Procedure and Suggestions:

With fingers spread, move your hand toward the child's face.

Comments:

Be careful not to create a wind by moving your hand too quickly, and be aware that the child may be blinking in response to wind, rather than to a visual stimulus.

- B. MUSCLE IMBALANCE (Strabismus)** – The eyes are not balanced because of a condition with the muscles that control them.

Reflection or Confrontation Test – a light is not reflected in corresponding places in both eyes.

Procedure and Suggestions:

- a. Shine a light into the child's eyes from approximately 30 inches away and record where the light is reflected in both eyes.
- b. Consult the eye care specialist if any deviation is noted (i.e. light reflection is off-centered or different in one eye than the other).

Comments:

Remember that with some conditions such as anindia, it may be difficult to see a reflection.

Cover/Uncover Test – *when the good eye is patched, the bad eye will move into a position where it can be used better.*

Procedure and Suggestions:

- a. *Present a visual target at approximately 12-16 inches in the very center of the visual field (even with the nose).*
- b. *Cover the eye that you assume to be the bad eye. There should be no movement in the good (uncovered) eye.*
- c. *Cover the eye that you assume to be the bad eye. There is movement (redirection of the eye toward the visual target).*

- C. CONVERGENCE** - Eyes turn inward simultaneously when following a light or object that is moving toward the face.

Procedure and Suggestions:

- a. While shining a light 24 to 36 inches in front of the child, begin slowly moving it toward the bridge of the child's nose until it is four inches from his or her face.

Comments:

Observe and note responses, especially the ability to follow smoothly, deviations in eye turns and the distance at which these or other reactions occur. The 24 to 36 inch starting distance is recommended because visually impaired children may not be able to fixate with both eyes at 16 inches. A greater starting distance might enable the child to fixate with both eyes.

II. Visual Acuties

Where possible, use a standard 10 or 20 foot chart which produces Snellen acuties. My personal favorite is the 10 foot HOTV chart produced by Goodlite. Other good charts include:

- *the New York Lighthouse House, Apple, Umbrella chart*
- *the standard 20 foot Snellen with either letters or numbers*
- *the Tumbling E (although this is not my preference).*

Regardless of which chart you use, be sure that you administer the test in accord with the publishers specifications if at all possible. Also, be sure to watch the student for behaviors which might provide more information about their visual functioning (head turn, etc.).

III. Ocular Motility

- A. FIXATION** – *the ability to obtain and maintain (at least of a short period of time) visual contact with a visual stimulus. **Please note that fixation does not require that any particular visual field be used.***

- B. TRACKING** - Visually following a moving light or object.

Procedure and Suggestions:

- a. Use lights, toys, puppets or whatever small object will attract the child's attention.
- b. Hold a light or object within the child's range of vision. Move it slowly to the right and left, up and down, and circularly. Record whether the child attends and the length of attention span demonstrated.

- c. Present lights and objects to all areas of the visual field.
- d. Note if the child follows with eyes alone or head and eyes together and record a description of tracking (e.g., smooth or jerky, with one or both eyes).
- e. Vary the child's position and repeat.

Comments:

Remain aware that multiply impaired children may experience difficulty tracking across the midline of their bodies. (P. I -M. - Movement of the light for the tracking sequence should be horizontal, vertical, oblique and circular. Watch for head movement only, eye movement only or coordinated head and eye movement.)

- C. SCANNING** - Searching in a line, from one object to another, is demonstrated in response to three objects placed in front of child.

Procedure and Suggestions:

- a. Place three objects in front of the child or in the child's functional field of view. Note the child's ability to search in a line from one object to the next.
- b. Vary the position of the objects and repeat.
- c. Vary the child's position and repeat.

Comments:

Because the child may be unaware of the expected scanning behavior, he or she may need physical assistance (i.e., evaluator moves the child's head when first attempting scanning). (P. I .M. - Use of lights or lighted objects would provide more contrast.)

- D. FOCAL SHIFT** - Shifting of visual attention is demonstrated when lights or objects are alternately presented.

Procedure and Suggestions:

- a. Hold two familiar lights or objects in front of the child. Shine, blink or shake one. Pause, then repeat these actions with a second light or object.
- b. Vary the position of lights and objects presented.
- c. Vary the child's position and repeat.

Comments:

Some children experience difficulty- with motor coordination and need additional time to respond.