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Visual Acuity Test

What Are You Testing?

Distance visual acuity testing assesses the ability to discriminate fine details of distance targets under monocular viewing conditions. This protocol is very similar to that used in the Amblyopia Treatment Study II (ATS2.)

What You Need to Do the Test:

1. An Electronic Visual Acuity (EVA) tester consisting of a PC, monitor, cable and Palm.
2. A ruler that can be used to measure distances on the monitor screen.
3. Junior size eye patches (for example, Opticlude) or gauze pads and micropore tape for occlusion.
4. A crowded letter (HOTV) lap card.
5. Single, large letters (one each for the H, O, T, and V) with crowding bars for training the child.
6. Ribbon, string, or similar material attached to the PC monitor stand, marked at the point that is 118 inches (9 feet, 10 inches or 3 m) from the plane of the monitor screen.

Getting Ready:

1. The EVA system should be on for 10 minutes before testing begins.
2. The calibration of the EVA monitor must be checked at the beginning of each day. If the PC is not available for calibrating the monitor for size and luminance, do so by following the "Calibration Instructions for PC Tester" instructions.
3. Overhead lights in the van should be on.
4. Turn on the Palm using the green on/off button located on the upper right corner of the Palm. Remove the stylus from the right side.

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5. In the upper right corner of the Palm screen, using the stylus, select the Main menu. Select EVA and the VIP icon. Enter the child's VIP ID number and name code. Enter the child's birth date (dd/mo/yr) which can be found on the child's name tag.
6. Using the measuring ribbon as an aide, position the child in the exam chair so that the child's eyes are 3 meters (9 feet, 10 inches) from the EVA monitor.

How You Do the Test:

Binocular Training/Pretest:

1. Give the child the lap card with the letters H, O, T, and V on it and show the child one of the training cards at a distance approximately 2 feet from the child.
2. For each letter, ask the child to point to the letters on the lap card or to say a name for the letter. Use the same names consistently during testing.
3. Repeat the procedure with all 4 letters. If the response to a presentation is incorrect, ask the child a second time to identify the letter after he/she has identified the other letters. Allow a second attempt for each letter incorrectly identified the first time. If the child cannot respond correctly to all 4 letters, the child may be given a break and given another opportunity to identify the letters as described above. If the child cannot respond correctly to all 4 letters after a break or if there is no time in the schedule for a break, the child is scored "**Unable - Training card**" on the data form.
4. Respond to the question on the Palm display, "Was the child able to do the pretest with the cards?" If the answer is "Yes," proceed with the testing. If the answer is "No" (i.e., the child was "**Unable**"), the message "**Full VA Retest Required**" will appear on the Palm display and you should proceed to the next examination procedure.
5. If the child spontaneously names all the letters correctly, the lap card may be abandoned and the child's verbal responses accepted.
6. Continue the training with the EVA system. Select "**Start Pretest**" from the Palm display. Touch the display to indicate whether the child identified the letter correctly or not. Five letters will be presented during the binocular pretest phase. The child must identify 4 of the 5 letters correctly.

Note: To proceed to the testing phase, the child must identify 4 of 4 or 4 of 5 letters correctly on either the 20/200 or 20/400 series of letters.

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7. If the child does not pass the pretest, the Palm display will provide instruction to score the child "**Unable - PC Monitor.**" The message "**Full VA Retest Required**" will appear on the Palm display and you should proceed to the next procedure in the examination.

Threshold Determination:

1. Prepare the child for monocular testing by patching the left eye so that the child cannot use the left eye to see the letters. After testing the right eye, as described below, patch the right eye and test the child's left eye.
2. If the child refuses to wear the patch, the child may occlude his/her eye with the palm of his/her hand. The examiner must monitor the child carefully to make sure he/she is not peeking and that the palm is not pressing against the child's eye. Covering the eye with fingers is not allowed because peeking is too easy with only fingers in front of the eye.
3. Continue to follow the instructions on the Palm display and touch the display with the stylus to indicate whether the child has read each letter correctly.
4. After every 2 or 3 responses, give positive comments to the child, regardless of whether the previous response was correct.
5. If the child will not give a response for a letter, encourage the child to guess.
6. The child should be asked to use matching with the lap card if he/she responds with a letter that is not one of the 4 on the chart.
7. If the examiner notices that a child gives a response while not paying attention to the visual acuity task, that response should be ignored. The examiner should re-focus the child's attention on the task and continue testing.
8. Throughout the testing, check to make sure that the child is looking at the EVA monitor and is not squinting.
9. Record the visual acuity result by writing the denominator of the Snellen fraction displayed on the Palm screen on the data form.
10. Repeat the procedure by patching the right eye and testing the left eye.

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Retesting Visual Acuity:

1. After completing cycloplegic retinoscopy, recall the child's record by selecting "**VA Retest**" and selecting the correct ID number and name code.
2. If the Palm screen displays "**No VA Retest**" mark the data form accordingly. Visual acuity testing for the child is complete.
3. If the Palm screen displays "**VA Retest**" proceed by following the instructions on the Palm screen using the same technique as specified above for Threshold Determination. If retesting is required because the child was "**Unable**" on either of the binocular pretests, retesting should begin with Step 1 (training cards) of Binocular Training/Pretest. Otherwise, retesting will begin with Threshold Determination.
4. If retesting is required, it must be done with the child wearing the full cycloplegic correction. Test the child in trial frames or, if the child is wearing glasses, lenses needed to achieve the fully cycloplegic refraction can be attached to the glasses using lens-holding clips. An occluder in the trial frames, rather than a patch, should be used for retesting.
5. Test the eye (right or left) with the worse visual acuity first. Consider "**Incomplete**" visual acuity for an eye as the worst possible visual acuity. If visual acuity is the same in both eyes, do the right eye first. Always retest both eyes.

What You Tell the Child:

1. Keep encouraging the child to respond appropriately and sit still in the chair.
2. Tell the child that it is all right to guess if he/she is not sure about a letter being presented.

What You Write Down:

1. If the child refuses to do the test or cannot do the test, mark "**Unable.**"
2. Write down the denominator of the Snellen fraction for each eye.
3. If the child stops for any reason before completing the test, mark "**Incomplete.**"

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Remember!

1. Make sure the occlusive patch or child's palm completely covers the child's eye.
2. Give positive comments to the child, regardless of whether the previous response was correct.
3. Keep encouraging the child to guess

VIP Study Group