



HOTV Near Vision Card

Part Number: 731000



Near vision is functionally more important than distance vision in the life of a young child. The child is also more accustomed in using vision at near than at greater distances. Therefore introduction of the test situation at near familiarizes the child with the test situation. You learn also about the child's functional vision: In the rare case of myopia you will find that the child has useful vision at near and parents will not be alarmed when the child does not see well during the distance visual acuity test.

When examining normally sighted children, hold the card at 40cm/16", the length of the cord. Let visually impaired children use their preferred distance and head posture during the first testing, later measure at 40cm/16" if the child also uses that distance in visual tasks.

Instruction

- Establish a method of communication such as naming (signing) or pointing (matching). When needed, train with the *HOTV Response Panel* (#700523), or *Flash Cards* (#700515).
- Start with binocular testing, using the center grouping of letters.
- Point to each of the four letters (HOTV) on the top line, observe the baseline responses for comprehension, speed and accuracy.
- Cover the top line with a white card (the reverse side of a flash card may be used). It is best not to cover the top line completely, but to leave the bottom half of the letters exposed. (This maintains the "contour interaction" effect of the standardized chart layout. If this confuses the child, cover the top line completely.)
- Ask the child to identify only the first letter on the line below the covering card.
- Repeat this procedure for each or every second line (moving quickly down the chart to avoid tiring the child) until the child hesitates or misidentifies a letter.
- Move back up one line and ask the child to identify all the letters on that line.
- If the child identifies all letters correctly go to the next line down and ask the child to identify all the letters on that line.

- If the child skips a letter, ask the child to try again while briefly pointing to that letter.
- The visual acuity is recorded as the last line on which at least 3 of the 5 letters are read correctly. Always test until the threshold line.
- If the chart is held at 40cm (16 in) the visual acuity value is found in the margin adjacent to that line.
- After binocular testing, proceed with testing each eye separately. When the right eye is covered ask the child to identify the letters grouped on the lower left of the card (lower right when the left eye is covered). Use two pairs of plano glasses for occlusion of the child's eyes or a pair of symmetric glasses that can be used for covering both eyes, one at a time. This is the least disturbing type of occluder for children.
- For monocular testing, follow the same procedure as for binocular testing.

Monocular near vision testing

Monocular near vision values are important in the follow-up of amblyopia treatment. Visual acuity values often improve first at near and later at distance. Before the age of three years it is usually easier to measure monocular near vision values than distance visual acuity values.

As a part of vision screening monocular testing is of interest at the age of 6-7 years. If visual acuity at distance has become less than it was at age 4 or if there is difference between the two eyes, near vision measurement may give the following diagnosis: If the near vision values are symmetric and as before the change in distance vision cannot be caused by anything else but mild myopia, which does not need to be corrected. The child does not need to be referred. This leads to a decrease in the expenses of vision screening and simultaneously an improvement in the quality of screening.

Testing Near Vision at Shorter Distances

A child with a visual impairment is allowed to choose any distance and is given a correction for that distance, if needed. If the chart is used at a distance other than the usual 40cm (16 in)+, measure and record the viewing distance and the letter size read (the M value) or the visual acuity value printed adjacent to the threshold line.



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To determine the visual acuity use one of the following formulas:

Note that it is incorrect to report "V.A. 20/25 at 8 inches" if the child could read the 20/25-line (.50M line) at 8 inches. Visual acuity is in that case: $8"/16" \times 20/25 = 1/2 \times 20/25 = 20/50$. (When using the British notation: 6/9 line at 20cm equals: $20\text{cm}/40\text{cm} \times 6/9 = 1/2 \times 6/9 = 6/18$. When using the decimal notation 0.8 line at 20cm equals: $20\text{cm}/40\text{cm} \times 0.8 = 1/2 \times 0.8 = 0.4$.)

When the distance is one half (or one third) of the standard distance, the visual acuity value is also one half (one third) of the value printed next to that line.

If you do not want to do the calculations, report the result as M-unit value, i.e. in the previous case .50M at 8" (20cm). Visual acuity is easy to calculate based on these values: $VA = 0.2\text{m}/.50\text{M} = 2/5 = 4/10 = 0.4$ or $2/5 = 20/50$ or $2/5 = 6/15$ the closest being 6/18.

The calculation is based on metric measurements. The corresponding visual acuity values in the American and in the British notation you can also find on the visual acuity chart. If the exactly corresponding value is not printed on the chart, calculate it as follows: For example $0.07 = 7/100 = [7 \times 3/100 \times 3] = 21/300$ or $20/300$; or for the British notation: $0.07 = 7/100 = 6/86$ ($6 \times 100/7 = 86$)

You multiply both the numerator and the denominator with the number that makes the numerator equal or closely equal to 20 or 6.

Test Procedure for Mass Preschool Protocol: 50% Crowding Box

1. Point to the child's left eye and tell the child to close that eye. Place a patch or other cover over the child's left eye. Alternatively, the child or an assistant may use the palm of his/her hand to completely cover the eye. It is very important to observe the child carefully to ensure that he/she does not peek around the hand. Covering the eye with fingers is not allowed because peeking is too easy with only fingers in front of the eye. Children with poor vision in one eye are the ones most likely to peek! If the child persists in peeking, the child should be referred for a comprehensive eye exam by an ophthalmologist or optometrist.
2. Move to the wall chart or the location (10 feet from the child) where the MassVAT flip cards will be presented.
3. If using the MassVAT flip cards, go to the two cards which correspond to the child's age. Point to the first letter/symbol on the R card (for the right eye). Be very careful to point just below the rectangular box around the letters/symbols. The pointer (finger or pencil) must not cover the letter/symbol or

extend over the line of the rectangular box, i.e. don't "break the box". Masking, i.e. presenting one letter/symbol at a time, can overestimate the visual acuity in children with poor vision. Ask the child to name the letter/symbol or point to the matching letter/symbol on the lap card. If the child is correct, point to the second letter/symbol and have the child name or match it. Continue pointing to the letters/symbols, one at a time, until the child correctly names at least 4 of the 5 letters/symbols on the line. If the child misses 2 letters/symbols, stop there, record the results on the data sheet, and proceed to testing of the left eye. The child must correctly name or match 4 of the 5 letters/symbols on the line to pass the test for that eye. If the child is unable to correctly name or match at least 4 letters/symbols on a line for each eye, the child needs to be referred for a comprehensive eye examination by an ophthalmologist or optometrist. If using a wall chart, point to one letter/symbol at a time on the line appropriate for the child's age. As noted above, be careful not to cover the surrounding letters or symbols with your finger or pencil when pointing.

4. After testing of the right eye has been completed, cover the right eye, and proceed with testing of the left eye. Repeat the testing procedure by starting with the L card (for the left eye) if using the MassVAT flip cards. If using the wall chart, point to the letters or symbols on the appropriate line in a different order from that used when the right eye was tested, in order to help prevent memorization.
5. The acuity level required for a child under 4 years of age to pass is 10/20 (equivalent to 20/40). The acuity level required for children 4 years of age and older to pass is 10/16 (equivalent to 20/32, with MassVAT) or 10/15 (equivalent to 20/30, with the wall chart)

What You Tell the Child:

1. Keep encouraging the child to respond to your questions. Urge the child to keep naming or matching the letters/symbols even if the child must guess.
2. Provide positive comments about the child's performance, regardless of whether the child identifies the letter/symbol correctly or incorrectly.
3. Remind the child to stay seated and look straight ahead at the flip cards or the wall chart.
4. Repeat the instruction to keep the eye covered.

What You Write Down:

1. Circle "Pass" or "Refer".