

LED Insta-Line Quantum Vision Screening



Screening Procedure

From birth to six years of age the vision process matures. If this developmental process is interrupted before six years of age, permanent changes may occur in the visual pathways resulting in amblyopia (lazy eye). Prevention of amblyopia through early identification of children with risk to develop amblyopia, with observable symptoms or visual acuity problems is of primary importance in vision screening. When screening preschool children it is important to find out whether the infant/child uses both eyes together and how each eye is seeing independently.

When testing adults it is customary to test distance vision first, followed by near vision. It is also customary to first test each eye separately, then binocularly. When testing children, better results are obtained by starting with near vision testing before proceeding to distance vision testing. This allows the child to learn the testing procedures and symbols. The examiner learns what to expect from the child under the most favorable conditions. Also, when testing children, it is important to create a pleasant play situation before testing near and distance vision. Test both eyes first, then each eye separately.

During visual acuity testing, near vision is measured first. The functionally important value is the value measured with both eyes open, because that is the vision the child uses in communication and learning.

Details about Testing

Start testing with binocular testing at near. Distance testing and monocular testing with occlusion of one eye follows naturally once confidence with the child is established. When testing monocularly, test the right eye (O.D.) first followed by the left eye (O.S.), unless there is an obvious negative response to occlusion of the left eye.

During measurement of distance vision the child should be seated in a chair facing the test cabinet (see figure 1). Visual acuity is first measured with both eyes open. Then the left eye is occluded and the right eye is tested. Tell the child you are going to cover one eye. Place your Good-Lite occluder over the left eye. Remember this is a monocular test, cover the eye well and watch for peekers! Illuminate the optotypes allowing response time between them. Test until the threshold line is reached. The threshold line is the smallest line size that the child can read correctly. Repeat test procedure occluding right eye.

If the child becomes upset when the left eye is covered, quickly move the cover on the right eye and test the left eye first. The right eye may be amblyopic or near sighted.

Definition of Visual Acuity Threshold

According to the Visual Acuity Measurement Standard, "A line of optotypes is generally considered to have been read correctly when more than 50% (e.g. 3 of 5, 4 of 6) of the optotypes presented have been read correctly."

Suggested Passing

There shall not be a difference between the two eyes greater than two lines in any age group.

3 year olds use 20/40 optotypes

4 year olds use 20/30 optotypes

5 year olds use 20/25 optotypes

7 year olds use 20/20 optotypes

(Above are suggestions, please check your mandated criteria.)



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Visual Acuity Objects (optotypes)

Matching is a good method in determining visual acuity at an early age. The first step is to familiarize the child with the four optotypes prior to the vision screening. Before you begin screening, show the child the conditioning flash cards and ask the child to point to the same shape on the response panel. A verbal response is acceptable if the child is consistently accurate and knows his/her optotypes during the conditioning phase. Continue revealing the flash cards until you are confident the child can point to each shape or can verbally identify each optotype. When the child can respond without difficulty, it is time to start testing with the Insta-Line test chart.

The child should be seated in a chair facing the instrument, with the response panel on the table in front of the child (Figure 1) if the child prefers matching. The response panel, when placed on the table, should show all the optotypes in their normal upright position (figure 1). To start, show one optotype on each line in sizes 20/50, then 20/40, 20/30, 20/25 and 20/20 until the child hesitates or misidentifies the optotype. Go up one line and ask the child

to read all the lighted optotypes. Repeating previously shown optotypes may be necessary to achieve three out of five correct responses. Always test until threshold (the smallest optotype size the child can correctly read) to be able to detect the difference between the visual acuity values of the two eyes.

Once the child has successfully responded in the binocular testing, the left eye is occluded and the right eye is tested. Tell the child you are going to cover one eye. Place your Good-Lite occluder over the left eye. Remember this is a monocular test, cover the eye well and watch for peekers! Illuminate the optotypes allowing response time between them. Test until threshold. Repeat test procedure occluding right eye.

Pass/Fail Criteria - Preschool (distance)

The child must correctly identify 3 out of 5 optotypes at the age appropriate level described in your mandated criteria. If there is a difference between the two eyes greater than two lines, measure monocular visual acuity values at near. If there is the same two line difference in the near visual acuity values, amblyopia should be suspected and the child referred (AAP recommendation 1996).

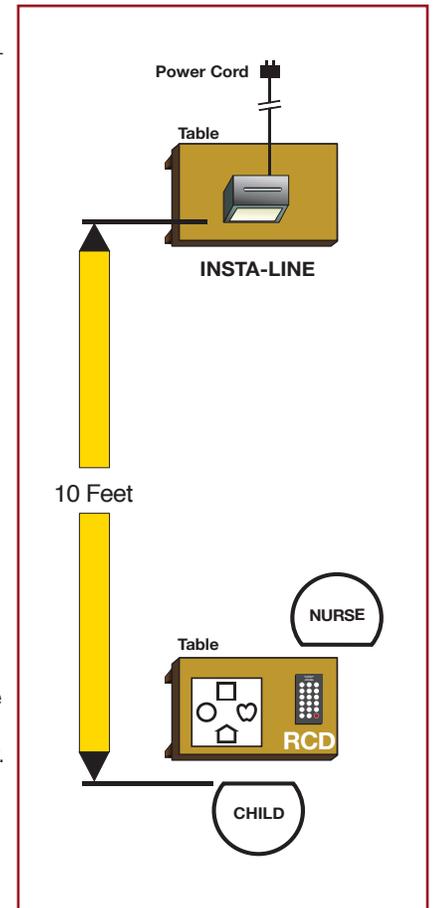


Figure 1



904025 - LEA Symbols Test Set



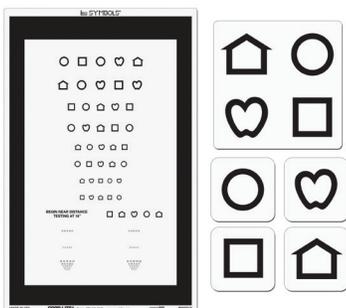
904030 - HOTV Test Set



904026 - LEA Numbers Chart



904029 - Sloan Letters Chart



904034 - LEA Symbols Combination Distance and Near Test Set



904020 - Canvas Carrying Case