

Association of Technical Personnel in Ophthalmology (ATPO)

CE on the Internet Article

This article and accompanying quiz are worth .5 JCAHPO Group A continuing education credit.

CONTINUING EDUCATION CREDITS ARE SUBJECT TO CHANGE. Internet Articles are reviewed on a regular basis for content and amount of time needed to complete the article and quiz. We advise you to print the article and take the quiz within 30 days. Ample notice is provided when CE credits change - please check the Web site frequently for any updates and/or changes. We will accept articles for full credit within a 30-day time period when CE credits have changed or when an article has been removed from the Web site.

TESTING VISUAL ACUITY IN CHILDREN AND NON-VERBAL ADULTS

Lisa Rovick, CO, COMT

Testing visual acuity in the normal adult population is as familiar and comfortable to most of us as the commute from home to work each day. It is an activity that we repeat many times daily without hesitation. Yet, when we are asked to perform visual acuity assessment on a child or non-verbal adult, we go weak in the knees. Thoughts of technique, method, ways to elicit cooperation or even the temptation to simply skip over that portion of the initial evaluation come to the surface. This article suggests a system for approaching the pediatric patient and provides a method for selecting the most appropriate visual acuity testing method for each patient.

STARTERS

Before beginning, it is helpful to determine the age of the patient. A child who has just turned one year of age is much different from a child who is nearly two years old, so the age of a pediatric patient should be noted in years and months. For example, a child who is a month away from the second birthday has the age of one year, eleven months noted in the chart, instead of simply one year. This practice is useful throughout the elementary school years.

When bringing a pediatric patient back to the exam room, the child will most likely be accompanied by one or both parents, maybe a grandparent, or some siblings--it can be quite a parade. If the child seems a bit reluctant, try to turn the process into a game, such as follow the leader. There may be times when the child refuses to leave the waiting area. When all else fails, begin the exam in the waiting room. Some of the sensory testing is non-threatening and may relieve a little of the child's anxiety, allowing you to establish understanding and gain cooperation.

Once in the exam room, many children are intimidated by all the equipment and the large exam chair. Children are often more comfortable sitting in the lap of their parent. You may need to instruct the parent to allow the child to sit in their lap on the exam chair. Many parents are also uncomfortable with the setting and not sure what to do; they may expect their child to act "grown up" and want them to do everything on their own. Reassuring everyone and putting them at ease will make the rest of the process go smoothly.

When everyone is settled, focus most of your attention on the child who is the patient. If too much time is spent talking to the parent at the beginning of the visit, the child may become bored or the initial fear and anxiety may return. Putting the child at ease right at the start of the exam is important. Introduce the different instruments to the child, giving a clear and simple explanation of the uses for each instrument and whether or not a particular instrument will be used that day. A phoropter may be very frightening until it is described as a giant pair of glasses; a slit lamp is exotic and intimidating until you say it is a big microscope

or the "bike riding game". Sometimes children ask what you are going to do to them, but many times they remain silent. They may be wondering if they are going to get a shot. Sometimes they have heard about eye drops and are worried about them. Above all, be honest with the child. If the child is told they will not get eye drops, and later do, the child will be hurt and surprised. When a child asks about eye drops, say that they are getting eye drops later, but not right now. Promise to warn them when it is time for the drops and that you won't sneak up on them.

PEDIATRIC HISTORY QUESTIONS

The elements of a complete pediatric history are a topic for another entire paper, so we will not go into great detail here.

Even though taking the medical history may seem time consuming and tedious, this is a good occasion to make a connection with the family and the patient. Asking questions gives you an opportunity to "chat" with the patient and find out what they like to do for fun, what they have noticed about their eyes, if they wear glasses, plus other tidbits of information. Whenever possible, ask the child the question first and confirm the answer with the accompanying adult. To inquire about medications the young patient may be taking, ask, "Did you take any medicine this morning? Any pink stuff in a spoon? Any pills to chew?" The child will usually have some response, even if it is just to laugh. All of these opportunities to converse and relax are worth the extra minute or two when it comes to the real eye examination. Remember, you are more likely to obtain good information from a child that is comfortable.

VISUAL ACUITY TESTING

INFANTS

When assessing visual acuity or visual function in the newborn age group, a variety of methods are available. Simply documenting fixation behavior is informative. If the baby can hold fixation on a target and follow it around in space as the target moves, this visual acuity is noted as "fix and follow". If the visual acuity measurement of fix and follow, or "F&F," is written in the chart, it is assumed the patient could see a small target or toy in a normally illuminated room. If you had to modify the target or the room illumination to elicit the fix and follow behavior, add this information to your chart note. For instance, the ability to fixate on, but not follow, a bright light in a dark room is noted "fix on bright light in dark room, no follow". Make sure to check for fixation behavior with each eye, as well as binocularly. If there is a fixation preference (the baby will follow the target better with one eye over the other), or the child objects to having one eye covered, but not the other, this is noted in the chart, "fixation preference right eye" or "objection to occlusion right eye."

Another way to notate fixation behavior is CSM—central, steady, and maintained fixation on a target. If each eye fixates centrally rather than eccentrically, holds steady fixation on that target rather than searching for it or wandering, and continues to stay fixated on that target even when occlusion is removed from the

fellow eye, the vision is noted "CSM". This assessment can be done on both near and distant targets as soon as a baby will show sustained visual interest. In a child with strabismus, it is possible to determine the presence of amblyopia with this method. If a child holds fixation with either eye or spontaneously fixates with either eye, even in the face of ocular misalignment, then the visual acuity is notated "CSM" for each eye. If there is a fixation preference, then typically the preferred eye has CSM for the visual acuity and CSNM (central, steady, not maintained) for the fellow eye. What you see in this case is the non-preferred eye holding fixation as long as the fellow eye is covered. Once the preferred eye is allowed to also fixate on the target, it takes over and the nonpreferred eye deviates again. If there is nystagmus present, then the fixation would likely be CNSM (central, not steady, maintained) if the patient was fixating centrally despite the nystagmus.

In an infant without strabismus, it is sometimes difficult to determine whether or not there is a fixation preference. In this case, it is helpful to use the induced tropia test. To perform this test, the infant is presented with a toy for fixation. While binocular fixation is maintained on the target, a 25 diopter base-in prism is held in front of one eye. If the eye behind the prism shifts over to continue looking at the target, then you will know that the infant has maintained fixation. The prism is then moved to the other eye and presented base-in again. If there is no fixation preference, this eye will also make a shift to maintain fixation on the target. At distance fixation, this test may also be performed using a 10 diopter prism held base-down in front of either eye.

It might be more difficult getting a baby with nystagmus to fixate, however, the baby may tend to gaze at the overhead lights in the exam room and react when they are turned off. If this is the only visual behavior you can elicit, this is what you write in the chart.

Another behavior that is unique to babies is "eye popping." Sometimes, for a variety of reasons, very young infants don't show any distinguishable visual behavior at all. In this case, the eye popping reflex indicates at least the infant's ability to detect changes in room illumination. When the room lights are suddenly dimmed, the baby's upper eye lids should pop open wide for a moment. The baby will often close its eyes when the lights are brought back up, but will again pop its eyes open when the lights are dimmed. This behavior is documented as "positive eye popping".

Preferential looking tests give a more detailed visual acuity assessment for infant and non-verbal patients. Teller Visual Acuity Cards are widely used in practices that have a significant pediatric population. The cards are divided into halves with a small hole in the center. On one half the card is a uniform gray; the other half has a large square made up of vertical black and white lines. The frequency of the line spacing determines the visual acuity. When presented with this stimulus, the baby automatically glances toward the side with the stripes. If the patient has nystagmus or a horizontal motility deficit, the cards may be presented vertically. In either case, look through the hole in the center of the card and watch for eye movement toward the side with the stripes. The card with the highest frequency of stripes (lines closest together) that elicits an eye movement represents the visual acuity. This test is performed monocularly,

with the fellow eye patched, and binocularly, with both eyes looking together. Age norms are published for reference. While this test has a tendency to overestimate visual acuity, especially in amblyopic eyes, it is valuable for following patients and for determining whether an infant has a visual response within the normal range for age. Other companies make tests that are variations on this same theme.

The optokinetic nystagmus (OKN) drum may also be used to test for any response from an inattentive baby. When held in front of the baby, the drum is rotated slowly. A child with some vision will demonstrate a nystagmus-like eye movement as the stripes move across the field of view.

TODDLERS

As soon as a child is able to speak a few words, it is time to introduce pictures for acuity testing. The most commonly used pictures are the Allen figures of cake, car, horse, duck, hand, and telephone. They are available in slides for the AO projectors and also appear on the BVAT acuity tester. Other tests are available that use different pictures, including those on the Nikon projector and some of the wall charts, but the principle is the same. The pictures are devised with the same spacing and size formula as the Snellen letter chart, but are considered to be less threatening to a young child than the alphabet.

A good way to introduce these pictures is to enlarge them on a single sheet of paper and have the child name each figure. This way the pictures are introduced while you are sitting right next to the child. Because the pictures are so large, even a moderately visually impaired child can see them. Ask the child to name each picture on the paper. Listen and make sure that each picture has a consistent and unique name. Using this method makes it possible to test children in unfamiliar languages! Once the name for each of the figures is established, it is time to present the figures in the distance. Sometimes it is useful to test young children binocularly the first time they are given this test. Just looking at the pictures and naming them is a good way to become comfortable before doing the test with occlusion. The picture test should be done both in the distance and at near. The standard testing distance for the near card is 13 inches, which is closer than the adult reading card.

The Allen figures are also available on individual cards, which are useful in testing children with low vision. They are designed to be held at a distance of ten feet from the patient and represent acuity of 20/30. When you hold the cards closer than ten feet, the acuity will be noted in the familiar fraction with the test distance as the numerator and 30 as the denominator. For example, a child who can identify the pictures accurately at six feet would have a visual acuity of 6/30 with the hand held Allen pictures. Note that the acuity and the method of testing are documented. Also note which eye was tested first.

When a difference in the acuity is noted, test the poorer eye first. This eliminates the fatigue factor. If done routinely, it is not necessary to note the eye tested first, however, if any doubt arises, this information may be useful for the following visit.

A note about occlusion: Children are famous for peeking around occluders if they have one eye that doesn't see as well; it is essential that your method of occlusion is reliable. Sticky occlusion patches are the most fool proof, but are also the most threatening. How the patches are presented to the child could potentially make or break the examination. A good way to present the patch is to take it out of the wrapping and show it to the child. Let the child touch it and see that it is not a painful thing. You can call the pad in the center a "pillow for your eye." Touch the adhesive portion lightly to the child's arm or cheek to show that it is not too sticky.

If the patch does not work, a standard occluder held by the examiner can be used, if done carefully. Do not let the child hold the occluder alone. A parent's hand may be used as a last resort, but make sure that the palm of the hand is over the eye. There is a natural tendency for the fingers to spread apart slightly, allowing a clear view from the "occluded eye" through the fingers.

PRESCHOOLERS

As soon as possible, switch from pictures to letters or numbers for visual acuity testing. Just as the Teller Cards tend to overestimate acuity, especially in amblyopic eyes, the Allen pictures do the same. To get a true estimate of visual acuity, it is important to use letters or numbers presented in a line, rather than as isolated figures. Several tests are available to use with children who are ready to move away from pictures but don't know their letters or numbers. The two most commonly used tests are the HOTV and the Lea matching tests. To perform these tests, the child holds a lap card that has enlarged copies of the letters or shapes to be presented. Point to letters or figures on a card that is held 10 feet away from the child and ask the child to point to the figure that matches the one you selected. Before beginning this test, it is helpful to teach the child "the rules of the game" by holding the test card right next to the child and asking for a demonstration of matching. The 20/200 size of letters is good for this, since almost every child will be able to see the letters of this size when presented at a distance of three to four feet. When performing the test, start with a few large letters to allow the child some initial success. Skip quickly through the test to the line of letters that begin to seem challenging. At this point, test the entire line of letters. Remember to encourage the child to guess or "think hard" when the figures get small. Many children are reluctant to guess when they are not absolutely sure of the answer. This will lead to an underestimate of the visual acuity. The letters on the ends of the lines are often easier to distinguish, so make sure to continue until the patient can no longer identify any of the figures on the line.

Matching is a concept that develops in children in their toddler years. If a child does not yet comprehend this concept, it is time to go back to the Allen pictures and try again at a later office visit.

Alternatives to the matching tests described above are available. One is called the Landolt Rings test. The test figures are circles and broken circles that are open on one side. The child is asked to identify the open circles and the closed circles, or "C's and O's".

A similar approach is the Tumbling E test. In this test, the only figure presented is an upper case E. The E is presented in any one of four positions: normal, backwards, upside down on its "back" and turned with its back up. The child is asked to show which direction the E is pointing by pointing with the hand.

The major drawback for each of the latter two tests is that it can be confusing to both you and the child when trying to point to or describe the orientation of the figures.

While more accurate than preferential looking or pictures, these tests still tend to overestimate vision because there are so few variables. A child has a 25% chance of guessing the correct answer without being able to actually see the figure. This makes your role even more crucial. Carefully watch the child for signs, such as body language, that will indicate whether or not guessing is taking place.

SCHOOL AGED AND OLDER

As soon as a child knows the numbers from one to nine, you can switch your visual acuity testing to include those numbers. Most of the visual acuity testing projectors and slides include numbers, as well as letters. Again, it is good to start with a few large numbers on a card or chart, to make sure the child is able to identify all of the numbers. Many children, when they are first learning numbers, make some errors that are consistent throughout your exam. A common error is to mix up the six and nine. If you know this in advance, you will be able to take this into account during your evaluation and still be able to use numbers for your acuity testing.

You may also give the child a choice of either numbers or letters. If they have become more comfortable with letters, they are likely to want to be tested with them. Children know that the letters are used for "grown ups" and are typically eager to become part of that world. It is also common for the child to surprise the parents with their knowledge. This is especially true of preschool children.

NON-VERBAL ADULTS

Non-verbal adults and adults who speak a language foreign to you can still be accurately tested. Matching tests such as the HOTV test work well with adults of normal intelligence. Many times adults can indicate numbers simply by holding up fingers, even if they don't know sign language.

For developmentally delayed adults who are not able to perform matching tests, the fixation behavior assessment (CSM) or the preferential looking tests (Teller acuity cards) are quite useful. Just as in the case with children, it is important to take a few minutes to discover which test each patient is capable of performing. Do not underestimate the ability of the patients simply because they are delayed. Many times, if they find some entertainment in the test, you will get more information than you thought possible.

SOME GENERAL TECHNIQUE TIPS

Children, as a rule, are reluctant to guess when identifying figures on an eye chart and, if not obvious, may refuse to tell you what the figures might be. This does not necessarily mean that the child is unable to see that size. It is important that you encourage the child to think hard and study the picture or letter and tell you what they think it could be. This encouragement will often motivate a child to go several lines smaller on the chart than they would have otherwise.

A child with poor vision in either one or both eyes needs some special treatment. A child (or patient of any age) that is unable to see the largest projected letters in the distance, but has better than average hand motion or count fingers vision, may be moved closer to the chart until the figure is identified. If it is possible with the instrumentation available, change the image on the chart to make sure that the patient actually sees the figure and is not simply remembering what it was from the other eye. In this case, you would document the acuity with the numerator as the distance from the chart and the denominator as the figure size. For example, if a child can identify the 20/100 Allen figures at 12 feet, it would be documented as 12/100 acuity.

The figures at the ends of the lines on the chart are easier to see than those in the middle. Ask the child to identify the ends if you are attempting to push to try smaller figures.

Along the same vein, isolated figures are easier to identify than figures in a group or presented in a line. This is called the crowding phenomenon. The crowding phenomenon is important to remember when testing children, since a visual acuity tested with isolated figures may overestimate the acuity in an amblyopic eye. Amblyopia may be missed altogether if testing is done only with isolated figures. On the other hand, it is sometimes useful to know the isolated figure acuity in an amblyopic eye. Some people consider the isolated figure acuity to be an indicator of the vision potential in an amblyopic eye.

The child with nystagmus requires special techniques for acuity testing. In most cases, occlusion of one eye will bring out or enhance the nystagmus. As a result, it is difficult to do accurate acuity testing of patients with this condition. One commonly used technique is to blur the vision of the eye to be occluded with a high plus lens, such as a +5.00. Another method is to use a Spielmann occluder, which is made of a rather clear but frosted plastic. This way, there is still light being presented to the "occluded" eye, but any images are too blurred to confuse the visual acuity testing of the other eye. Make sure to allow the patient to adopt any head position that is preferred, to allow for use of a null point. Once acuity is measured monocularly, it is very important to also assess acuity binocularly, as the vision is likely to test much better under binocular viewing conditions.

If you are testing an infant with horizontal nystagmus, it is acceptable to present the Teller acuity cards vertically, as the horizontal eye movements will mask the preferential looking fixation movements made by the child.

Remember that children like to get the answers right! They will do anything to avoid seeming like they can't see the chart. Peeking around an occluder to use the better-seeing eye seems like the most reasonable response to a child who is reluctant to make mistakes. Be on the lookout for the peekers. It is a huge disservice to the patient to perform a visual acuity test and unknowingly examine the same eye twice. Amblyopia is only treatable in a child less than eight years old. When missed during early vision screening, it may never get treated.

Another reason for inaccurate acuity assessment is a child's memory. Because children tend to think of a vision test as something to pass or fail, they are prone to try and remember the chart and "read" it from memory. Having the ability to change the figures or mix up the order of presentation helps to avoid this confusion.

All of the visual acuity tests developed for preschool children have a tendency to overestimate visual acuity, especially in amblyopic eyes; therefore it is crucial that you use the most precise test the child can accurately perform. It is easier and faster to test vision with the projected Allen figures than with the matching HOTV or Lea charts, but it is less accurate. Think to the future of the child when making the choice of tests. It is possible for an amblyopic child to have 20/20 vision in each eye with the Allen figures but only 20/70 in one eye with Snellen letters or numbers. By choosing the most discriminating test possible, you are assuring the patient that the most accurate vision assessment possible has been done.

SUMMARY

Here is a list, in age (or developmental age) order, for visual acuity tests:

Infant

- Fixation behavior: CSM, F&F
- Preferential looking

Toddler (As soon as the child can talk)

- Pictures

Preschool (As soon as the child can do matching, around age 2 ½ - 3 years)

- Matching: HOTV, Lea
- Tumbling E
- Landolt rings

As soon as possible (preschool or school-aged)

- Snellen letters
- Numbers

CE on the Internet Quiz

This article and accompanying quiz are worth .5 JCAHPO Group A continuing education credit.

TESTING VISUAL ACUITY IN CHILDREN AND NON-VERBAL ADULTS

1. Which of the following is the most appropriate test to use with a mature 3½ year old?
 - a. Preferential looking
 - b. Fix and Follow
 - c. CSM
 - d. Lea figures

2. Which of the following is included in a visual acuity assessment of a patient with nystagmus?
 - a. Visual acuity without correction
 - b. Pinhole acuity
 - c. Binocular visual acuity
 - d. Patched monocular visual acuity

3. Which of the following tests is the most appropriate for a visually inattentive 2 month old?
 - a. Snellen letters
 - b. Fix and Follow
 - c. Allen figures
 - d. HOTV

4. Which of the following is the correct notation of the visual acuity for an infant who only looks at a bright light?
 - a. Fix on bright light, no follow
 - b. Fix and follow
 - c. CSM
 - d. 20/20

5. Which of the following is the most effective method of occlusion in a patient without nystagmus?
 - a. The patient's hand over one eye
 - b. Occlusive patch over one eye
 - c. The patient holding an occluder stick over one eye
 - d. +5.00 lens over one eye

6. Identify the set of tests that are listed in order from least accurate to most accurate.
 - a. Preferential looking, HOTV, Lea figures, tumbling E
 - b. Fix and follow, Preferential looking, Allen figures, Landolt rings
 - c. Snellen letters, numbers, tumbling E, HOTV
 - d. Landolt rings, HOTV, Lea figures, tumbling E

7. Which visual acuity test is considered to be the "gold standard"?
 - a. HOTV
 - b. Allen figures
 - c. Teller cards
 - d. Snellen letters

8. What is the term used to describe the tendency for visual acuity to be better when tested with isolated letters than a line of letters?
 - a. crowding phenomenon
 - b. Purkinje images
 - c. chromatic aberration
 - d. Allen acuity phenomenon
9. What should be done when a patient is unable to see the largest figure on the distance eye chart?
 - a. walk the patient up to the chart until the largest figure is identified and note the distance
 - b. note that the patient could not see the largest figure on the chart (eg >20/400)
 - c. check only the near vision
 - d. leave that portion of the test blank and have the ophthalmologist assess acuity
10. What is the possible information missed if visual acuity is assessed with an incorrect test?
 - a. Visual acuity of the left eye
 - b. Presence of aniseikonia
 - c. Presence of amblyopia
 - d. Presence of stereopsis
11. Which test is most equivalent to the HOTV test?
 - a. Snellen letters
 - b. Teller Cards
 - c. Allen figures
 - d. Lea figures
12. If a patient begins to lose interest in the test what information is essential to note in the chart?
 - a. "Patient likes the duck figure the best."
 - b. "Tested right eye first."
 - c. "Patient knows letters."
 - d. "Patient wears glasses well."
13. Which of the following is an indicator of at least some vision in a visually inattentive infant?
 - a. Pendular nystagmus
 - b. Doll's head
 - c. Eye popping
 - d. Looks toward barking dog
14. What is the correct way to check vision in a patient with nystagmus?
 - a. Use occlusive patch for monocular testing
 - b. Force the patient to hold the head straight to avoid peeking
 - c. Test without glasses, since they provide little or no benefit
 - d. Test binocularly, allowing preferred head position.
15. What should the examiner do if the child doesn't speak a language familiar to both examiner and patient?
 - a. Show the test figures to the child and find out what each one is called.
 - b. Use Teller Cards for the acuity assessment.
 - c. Ask the parents if they feel the child sees well.
 - d. Use the OKN drum.
16. What should the examiner be especially alert for when the parent is occluding the child in the acuity test?
 - a. Parent whispering the answers to the patient.
 - b. Patient peeking through the parent's fingers while occluded.
 - c. Older sibling giving away all of the answers.
 - d. Younger sibling playing with toys during test.

17. What is one use for the OKN drum?
 - a. Watch for induced nystagmus movements in a visually inattentive patient.
 - b. Measure strabismus.
 - c. Measure eyelid position in patients with congenital ptosis.
 - d. Measure visual acuity in amblyopic eyes.

18. At what point does a child usually understand the concept of matching?
 - a. At about age 4 years.
 - b. By about age 6 months.
 - c. By the time kindergarten starts.
 - d. Sometime around age 3 years.

19. What is one way to help a child feel comfortable in an eye examination setting?
 - a. Leave the parents in the waiting room. Have the child come into the exam room alone.
 - b. Immediately put the occlusive patch on one eye and ask the child to read the 20/20 Snellen letters.
 - c. Allow the child to sit in a parent's lap on the exam chair.
 - d. Put the dilating drops in the eyes right away, "to get it over with" and then proceed with the tests.

CE on the Internet Answer Sheet

This article and accompanying quiz are worth .5 JCAHPO Group A continuing education credit.

You must complete the enclosed quiz on your own and may not seek assistance from other individuals in completing the quiz. You may, however, seek assistance from other individuals for clarification and understanding of the article content. Failure to comply with this policy may result in the revocation of credit.

TESTING VISUAL ACUITY IN CHILDREN AND NON-VERBAL ADULTS

Name _____ JCAHPO Certification _____

Home Address _____

City / State / Zip _____

Home Phone _____ Work Phone _____

E-mail Address _____ Signature _____

PAYMENT INFORMATION - ALLOW 2-4 WEEKS FOR PROCESSING

Price (check one)

- ATPO Member – \$8
- ATPO Member – Complimentary*
- Non-Member – \$12
- Rush Processing - \$10.00

***ATPO members receive 4 complimentary CE credits via CE on the Internet or COVE assessment exams.**

Method

Method of Payment: Check (payable to ATPO) VISA MasterCard Discover Am. Express

Credit Card #: _____

Expiration Date: _____ Security (SVC) Code (on back of credit card): _____

Name of Cardholder (please print): _____

Cardholder's billing address: _____

Cardholder's Signature: _____

Place your answers to each question in the appropriate space adjacent to the question number.

- | | | | |
|----------|-----------|-----------|-----------|
| 1. _____ | 6. _____ | 11. _____ | 16. _____ |
| 2. _____ | 7. _____ | 12. _____ | 17. _____ |
| 3. _____ | 8. _____ | 13. _____ | 18. _____ |
| 4. _____ | 9. _____ | 14. _____ | 19. _____ |
| 5. _____ | 10. _____ | 15. _____ | |

By filling in the above spaces and signing your name, you agree that:

- A total of 75% or more correct is a passing score.
- ATPO is not responsible for Answer Sheets and Evaluation Forms not received at the ATPO offices.

I attest that I have completed this quiz on my own. _____
(SIGNATURE)

CONTINUING EDUCATION CREDITS ARE SUBJECT TO CHANGE. Internet Articles are reviewed on a regular basis for content and amount of time needed to complete the article and quiz. We advise you to print the article and take the quiz within 30 days. Ample notice is provided when CE credits change - please check the Web site frequently for any updates and/or changes. We will accept articles for full credit within a 30-day time period when CE credits have changed or when an article has been removed from the Web site.

Return completed answer sheet,
evaluation form, and payment, to:
ATPO
Attn: CE Dept
2025 Woodlane Drive
St. Paul, MN 55125
Fax: (651) 731-0410

Questions?
Visit www.atpo.org
Call (800) 482-4858



Office Use Only	
Date Exam Received	_____
Date Exam Scored	_____
Score _____	Pass Fail
Notified Quiz Taker	_____

CE on the Internet Evaluation

TESTING VISUAL ACUITY IN CHILDREN AND NON-VERBAL ADULTS

*Please read each question carefully. Your feedback is **important** to us. Thank you!*

1. How long have you been employed in the field of ophthalmology? _____ years
2. This written article was designed at a level right for me. (circle one) YES NO
3. Please read the following statements. Then, circle the number corresponding to the degree to which you agree with each statement.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable
a. The material was organized and presented in a clear and efficient way.	5	4	3	2	1
b. The information will be useful/relevant to me.	5	4	3	2	1
c. The material was presented at a level appropriate to my background and level.	5	4	3	2	1
d. Overall, I was satisfied with the article.	5	4	3	2	1

4. What part of the article was **most useful** to you?

5. What part of the article was **least useful** to you?

6. What suggestions do you have for improving this article?

Thank you for completing this article evaluation! ATPO values your feedback. Please return your evaluation form with the completed quiz and payment.

Return completed answer sheet, evaluation form, and payment, to:

ATPO
 Attn: CE Dept
 2025 Woodlane Drive
 St. Paul, MN 55125
 Fax: (651) 731-0410

Questions?

Visit www.atpo.org
 Call (800) 482-4858

A•T•P•O

