Here’s Looking at You Kid

Engaging Young Patients while Assessing Typical Development of Vision

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It would be great to start every day at work knowing the positive impact that could be made on the rest of a child’s life. As a paraoptometric, this opportunity presents itself each day in the office. However, without the health-team approach this chance to have a positive impact on the community would not be possible. It takes a team of dedicated paraoptometric staff and optometrists working together to provide for the demands of the vast age range of patients. There, may be patients referred by InfantSEE®, five year olds requiring an eye examination to begin school, or developmentally disabled patients requiring very creative exams. With these pressures, there is something new to be learned, on a daily basis, both from each other and from patients.

The first step is taking a thorough case history. This is critical prior to the doctor examining the patient. In many ways, this is the most important part of the exam and often performed by paraoptometrics. Due to changes in Medicare and insurance in general, documentation of case histories is vastly different than even in recent optometric history. Paraoptometrics play a vital role in ensuring that procedure is not only followed but also executed properly. Staff is required to be fluent in the proper language to enter patient information on the pretest form, not only for the doctor but also for insurance billing and coding to be performed correctly. This will only become more important in the near future with Electronic Health Records impacting optometric office procedures.

The current structure of the case history begins with the chief complaint, one or two words as to why the patient came in for their appointment, followed by the patient’s history of the present illness (HPI) noting the location, duration, severity and any mitigating factors. For example, a parent brings in a two-year-old with the complaint of an eye turn. To properly document the case history, one needs to know: which eye turns, how long it has been happening, how much it turns and can the child control it in some way?

It is important that the OD review the case history notes with the patient as well, because some patients tend to be more forthcoming with the doctor or will remember details they had forgotten the first time. Of course, sometimes patients are not willing to share details, even with the doctor. In addition to the chief complaint, which the paraoptometric has already documented, “Here’s Looking at You Kid” 1
the OD should, in the case of the two-year-old above, inquire about any issues during the pregnancy, labor and delivery, and whether all developmental milestones have been met. This is important for recommendations made to treat the patient. For some patients with developmental delays, glasses may be a possibility, which is not necessarily appropriate in the treatment of that patient.

**Typical Development of Vision: InfantSEE® to Pre-School**

Up until the age of two to three months, any intermittent eye turn is considered normal. Past the age of three months, this trait is a cause for concern. In order to help evaluate healthy vision in infants, Optometry’s Charity™, the AOA Foundation, created the InfantSEE® program, which offers no-cost eye and vision assessments for infants between the ages of six and 12 months. Doctors evaluate for many potential causes of vision problems which will impact a child's future, with the aim of ensuring that eye and vision care are a vital part of wellness care.

Strabismus and amblyopia are the main focus of interest. In approximately four percent of children, strabismus will develop. Amblyopia will develop in three percent, which combined means that of the 4.02 million children born in 2004, as many as 100,000 are at risk for serious eye and vision problems. Catching vision problems early is important because the optic nerve continues to develop until the age of eight or nine. If treatment is initiated with glasses, occlusion therapy, and/or vision therapy, prior to the age of nine, the prognosis is good and treatment may lead to a successful recovery. Visual acuity of at least 20/40, or better, in the amblyopic eye is an attainable goal. However, beyond the age of nine, the likelihood of obtaining success is very limited, even with intensive and aggressive treatment. Prescribing the proper vision correction before the age of nine is critical to the development of the visual system; yet diagnosing that same problem at age three creates the possibility of developing a normal visual system. The importance of seeing three- to five-year-olds is based on the ability to treat amblyopia at this stage.

By the age of three, the eye has developed to the point where it is capable of seeing 20/20. The most important objective at this age is that vision is equal between the two eyes. Any discrepancy between the two eyes leads to the potential development of amblyopia. Patients as young as three are capable of cooperating with an auto refraction. In order to help young patients remain calm and still, it is often a good idea to have them sit in a parent’s lap during the refraction. One or two good readings are enough of a starting point in the exam room. In the absence of that information, a standard retinoscopy may also be performed.

For most three-year-olds, the visit is their first eye exam and everything is new, maybe even scary. Paraoptometrists can do a lot to help calm those fears. However, do not say, “This won’t hurt.” Once said, the child automatically fears that it will hurt. Nothing in the eye exam is painful, but it is better to be positive and help children think of something else than to add additional fears. When working with young children it helps greatly to be young at heart and to enjoy them. One method is to get down to their eye level. A doctor or paraoptometric is not so intimidating
to a child at their level. This is also an easy way to show the child that they are important and their input is valuable.

Many offices find the use of technology, such as a DVD player for cartoons or educational videos about healthy vision, a great help with children. Small toys with their favorite characters and very simple pictures help measure their visual acuity and keep them focused on the task at hand. There are many measures of visual acuity available, such as Lighthouse cards, which include pictures of a house, an apple and an umbrella. These are a great tool and also are easily used with nonverbal and hearing-impaired children, which is an important consideration. The sign language for those pictures is easy to learn. Another commonly used acuity target is HOTV cards, which can be used in a matching game with the younger children while the slightly older patients of four to five years old can identify the letters themselves. See Figure 1 for an example of a HOTV Chart. One less commonly used method is a preferential looking technique. This method requires the observer to note the size of the target the patient attends to, using increasing smaller target sizes. Mostly used with infants, this technique may be modified for older patients as needed.

Stereopsis also should be present at age three. The Randot® Stereotest may be used to test the presence of this development. Figure 2 is an example of this commonly used test. It is often a normal part of standard pre-testing as well; however, with younger patients one must be careful. Occasionally, younger patients do not understand the test, especially three- and four-year-olds, so if they have difficulty in the pre-test room the test should be repeated during the course of the exam. If they pass the stereo test, it generally means their binocular vision is developing properly. If they fail, it may mean one of two things, they do not understand the test or there is a binocular vision problem present.

**Typical Development of Vision: Kindergarten to Adulthood**

In a growing number of states, eye exams are required for all students entering kindergarten, or entering school in the state for the first time. In those states with such a law enacted, it is amazing the number of patients with vision problems that had been undiagnosed up to that point. Most children this age do not have any awareness of what they should be able to see. They either have no idea that one eye does not see as well as the other, or if they do, they fail to share that information with their parents.

One patient seen for the kindergarten requirement, for example, sat quietly during the explanation that he needed glasses because one eye did not see as well as the other. He looked at his mom, and said, “Of course Mom, I can’t see with my left eye. That's why I always

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put my pirate patch on my left eye. If I put the patch on my right eye, I can’t see.” His mom almost burst into tears at that very moment. Being aware that behaviors such as head turning, squinting and eye rubbing may indicate vision problems is important vision wellness information that the optometric community needs to help communicate to the general public. In cases like this family, a little information could have gone a long way. Luckily, this young man responded well with the suggested treatment. Upon their follow-up visits, it was discovered that his visual acuity had greatly improved from 20/80 to 20/30 simply by wearing glasses. He had no need for aggressive vision therapy or occlusion.

Three- to five-year-olds generally are honest with their answers. It is the seven- to ten-year-olds that take more care, occasionally they want glasses because their friend has glasses. However, the difficulty with this age group is that between the ages of eight and 12 is the most common time for myopia to develop. Up to 30 percent of the population of the United States is myopic, with almost 60 percent of this population beginning to show signs of myopia around the age of eight. Yet, they often continue the progression into myopia until they reach mid-teens. Perhaps this is due to an increasingly technological lifestyle, as the leading causes are heredity and visual stress. Nearsightedness is affected by use, such as reading, gaming, computer use and intense visual work.  

Contact lenses maybe an alternative for those children who require a prescription but do not want glasses for myopia and other vision problems. Recent research has proven that fitting children as young as eight years old has a very positive impact on their self-esteem. Fortunately, working with young children and contact lenses is an area in which paraoptometrics excel. Their expert training in this area is invaluable, especially for young first time contact lens wearers who may need extra care. Paraoptometrics may take full charge of the process leaving the doctor to simply determine the appropriate fitting while they help train the new contact lens wearer on the proper processes. Once the recommendation has been made for contact lenses, the assistant may place the lens on the eye, remove it once the doctor has made the evaluation, teach the patient the proper lens handling techniques and answer any questions that the parent and child have.

Working with young children may be challenging in a busy office, but the rewards are great. Not only is their sight key to understanding and growth, but their vision may even affect the way they view themselves. Proper care offered by the health-team of paraoptometrics and doctors helps provide the necessary vision wellness care not only to prevent the lasting effects of undiagnosed strabismus or amblyopia but also to assist patients in establishing a lifetime of healthy vision from three months to 80 years of age. Paraoptometrics have a huge opportunity through their interactions with parents and children in the office to help remind them of proper vision development, and the opportunity to positively affect the future of each child’s sight by careful case history taking, including asking for behavioral signs of vision problems. Most of all, there is an opportunity to encourage healthy eye practices for life with each child that visits the office. Take advantage of this positive way to influence another’s life—through the protection of what 93 percent say is their most important sense—their sight.

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Footnotes


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Select the option that best answers the question.

1. Why is the role of the paraoptometric and health care team approach important?
   a. It has a positive impact on the community
   b. It takes a team working together to provide for the demands of the vast age range of patients
   c. It reduces staff in a large multi-doctor practice.
   d. Both a & b

2. What is a goal of the InfantSEE® program?
   a. To help a child who is having trouble seeing
   b. To help children age three to five years old
   c. To encourage the entire family to get eye exams all at the same time
   d. Helps promote early detection of vision health concerns in infants six and 12 months that may otherwise go undiagnosed for many years.

3. What percentage of children develop strabismus and amblyopia?
   a. Strabismus 4 percent and amblyopia 3 percent
   b. Strabismus 5 percent and amblyopia 8 percent
   c. Strabismus 8 percent and amblyopia 4 percent
   d. Strabismus does not develop in the child’s vision
4. By what age has the eye developed to the point where it is capable of seeing 20/20?
   a. Three months
   b. Five years
   c. Three years
   d. Nine years

5. Why are a growing number of states requiring an eye examination before the child enters school?
   a. Most school-aged children need to wear eyeglasses to read
   b. An average of 30 percent of the population show signs of myopia around the age of eight
   c. Eye examinations will find any vision health problems undetected prior to entering school.
   d. Vision screenings before the age of five are unreliable.

6. Fitting children with contact lenses
   a. has a positive impact on their self-esteem
   b. should only be done on children after the age of eight
   c. definitely will alter the corneal curvature
   d. is not a good alternative to glasses

7. Beyond the age of nine, the likelihood of obtaining visual acuity of at least 20/40, or better in an amblyopic child is:
   a. Very likely
   b. Not likely at all
   c. Very limited
   d. Likely, with corrective surgery

8. Why is it important for the doctor to review the case history with the patient?
   a. It provides a reason to spend more time with the patient
   b. To make sure all possible screenings and tests have been performed
   c. To double-check if the staff had performed their duties thoroughly.
   d. Patients may be more forthcoming with the doctor or remember more details they had forgotten the first time.

9. What else should the doctor inquire about in addition to the chief complaint with young patients?
   a. Foods the child likes to eat
   b. Whether the child likes the dentist
   c. Issues during pregnancy, labor, delivery and milestones met
   d. Socialization with other children

10. Up to the age of two to three months, any intermittent eye turn is considered normal.
    a. True
    b. False

11. Stereopisis should be present at age two.
    a. True
    b. False

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