



THE INS AND OUTS OF SETTING UP A PEDIATRIC PRACTICE

Here's what you'll need to start a pediatric practice that will be satisfying to both you and your patients.

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COURSE DESCRIPTION

Many eyecare professionals often find themselves a bit uncomfortable working with children. The fact is that providing care to this segment of the population is rewarding. In many cases, it also is the line of defense against troublesome and even sight-threatening conditions. This course looks into the elements of providing congenial and competent eyecare by all sectors of the ophthalmic professions. It also provides useful suggestions for helping the eyecare professional be comfortable working with children.

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PHOTO COURTESY OF ICI BERLIN.

BUILD RAPPORT Speak to children as well as their parents to make them feel at ease during the exam.

PEDIATRIC PRACTICE

Many eyecare practitioners, whether seasoned professionals or new graduates, often may not be comfortable providing ophthalmic care for the pediatric population. While it can be challenging, there are many reasons to provide care for children. These may include early detection and treatment of amblyopia and strabismus, treatment of vision problems that can affect development and quality of life, and detection of neurological, developmental, and pathologic disorders.

And providing for these patients can prove to be extremely rewarding and satisfying, and garner many referrals and additional family members to seek your care. Early detection with these patients is crucial, and can often be life changing. Gaining experience and confidence in dealing with children will help optometrists and opticians become more at ease in adapting their exams, equipment, and schedules to care for this portion of the population.

FIRST IMPRESSIONS

Before the doctor even begins the exam of an infant or child, it is important to develop a rapport and make the child comfortable. One way to do that is to have the doctor, as well as the technicians and opticians who work with children, not wear a white coat. Many children have already had frightening, uncomfortable experiences with pediatricians or other health care providers dressed that way.

In addition, it is extremely important to involve the children themselves in the exam, and make a conscious effort to not only speak to the parents. Kids enjoy being the center of attention, and by ignoring them and only asking the parents questions, the child will be uncomfortable before the exam even begins.

Making direct eye contact and smiling are also key to making patients feel at ease. Often having them address you by your first name and not “doctor” or “Ms. Schwartz” will make them feel more relaxed and comfortable and allow them to be more cooperative. Engaging patients by asking questions about characters on their clothing will also put them at ease and involve them in the exam.

Finally, during the exam, giving brief explanations of what you are doing (“I’m using this big microscope to look at your eyes”) and what to expect (“this light may be bright, but it will only last a second!”) will allay some of the fears that come with the unknown. This will also give the parents an opportunity to understand the exam process, and show them you are comfortable and capable of examining their child.

BACKGROUND INFORMATION

Start the exam by getting a detailed, comprehensive case history. Information you will glean from this will make your exam and treatment much easier and smoother. Often, it will be the parents that will be the source and this can be done by using a detailed questionnaire. Mail the paperwork ahead of time so that parents can fill it out at home and bring it in for the appointment, thus saving time. Some questions you may ask might include:

Are there any behaviors that the parents have noticed that may be indicative of a visual problem? These may include squinting, eye rubbing, closing an eye, head tilts, sitting close to a television, very close working distance for near tasks, and complaints that the child cannot see clearly. Often, a teacher or school nurse referral is the first time parents may become aware that their child may have a visual disorder.

Have the parents become aware of any eye turns or lazy eyes? Is there any family history of eye turns? Strabismus and amblyopia are two conditions to really focus on when examining children. If a parent has noted an eye turn, ask about the age of onset. This will determine if any additional tests will be necessary or if any other conditions, such as nystagmus or neurological disorders, should be looked for.



NO WORRIES! Make sure all of your young patients wear lenses made of Trivex material or polycarbonate.

PHOTO COURTESY OF PPG INDUSTRIES.

PROVIDING VISION CARE FOR YOUNG PATIENTS CAN PROVE TO BE EXTREMELY REWARDING AND SATISFYING, AND GARNER MANY REFERRALS AND ADDITIONAL FAMILY MEMBERS.

wheels on a car, and can often point to the “broken” one. The Face Dot test is also good for pre-verbal patients because it is a forced choice test, using contrast sensitivity and a well recognized target. Depending on the distance, the results can be converted into an approximate visual acuity.

STEREO/OCULAR ALIGNMENT

Another important part of the exam includes stereo assessment and testing. The most commonly used Stereo Randot test has many variations, including a Randot Forms Gross Test (usually the Stereo Fly Test, Randot Forms Graded—an animal series for younger patients, and Randot Circles). These targets are usually generated with computer patterns, eliminating monocular cues, and measure stereopsis from 800 seconds to 40 seconds of arc when used at 16 in.

The Worth 4 Dot flashlight, when used with red/green glasses, can also be utilized to test diplopia, suppression, and fusion. This can be done employing the classic dots, or with letters or figures. In addition, the Lang Stereo test incorporates different figures at various disparities, but uses random dots and cylinder gratings so glasses are not needed. The cover test is a gold standard for determining the presence of phorias and tropias and measuring ocular alignment, and the only equipment needed is a fixation stick, an occluder, and a distance target. It is important to choose a fixation target that will engage patients and keep their attention. Ocular alignment can also easily be tested by the Hirschberg test, done with a penlight.

A diagnostic tool that gives doctors great information and utilizes only a penlight is the near point of convergence. While this test is being done, pupillary responses to convergence and light can be observed, and the doctor can become aware of any afferent pupil defects.

COLOR VISION

Another important aspect of the exam is color vision testing. The most widely used test is the Ishihara >>



PHOTO COURTESY OF FASHION OPTICAL DISPLAYS.

KID-FRIENDLY Use lots of bright colors to appeal to children.

Was the baby was carried to full term, were there were any problems with delivery, were forceps used, any there any medications currently being taken, what was the APGAR score, and are there any medical conditions present?

Is there any family history of amblyopia, strabismus, congenital glaucoma, congenital cataracts, albinism, retinitis pigmentosa, or any other medical or ocular conditions?

TESTING INSTRUMENTS

The pediatric eye exam will utilize equipment that often differs from what is used in a general practice. Be sure to have the essential instruments, however. A retinoscope, ophthalmoscope, handheld lenses, fixation target, and penlight will often give you enough information for a basic pediatric exam.

VISUAL ACUITY

The main area where doctors and refracting technicians need to be flexible and have the right equipment is for visual acuity testing since most pediatric patients will

be nonverbal or unable to give reliable answers.

Besides the usual Snellen chart, which can be used for older patients, most pediatric practices often incorporate picture charts, the HOTV chart, and some variation of infant cards, including Lea, Cardiff, and Teller. Other useful tools include the Broken Wheel test and the Face Dot paddles.

An HOTV chart is useful in that a child does not necessarily have to know how to read, but just to identify the letters H, O, T, and V. Picture charts are also good for pre- or nonverbal patients. Children with nonverbal skills can often use “matching” to give accurate results with Lea cards, while those with verbal skills can identify the shapes.

With Teller and Cardiff cards, patients don’t need to be able to identify or name the pictures; instead, by using preferential looking, an observer notes a child’s eye movement to test if he sees the pictures.

The Broken Wheel Test is a reliable, easy-to-use test which utilizes the Landolt C to provide a forced choice determination of acuity. Children are usually familiar with

BEFORE THE DOCTOR EVEN BEGINS THE EXAM OF AN INFANT OR CHILD, IT IS IMPORTANT TO DEVELOP A RAPPORT AND MAKE THE CHILD COMFORTABLE.

Pseudoisochromatic Test, but the HRR Pseudoisochromatic plates are also commonly utilized. The Waggoner Color Vision test is a very quick way to screen for congenital and acquired color vision defects, and also classifies them as protan, deutan, and tritan. This can be easily used on children as young as age 3.

BINOCULAR VISION

Flexibility with the pediatric population is key when performing binocular vision testing. With older children and adult patients, this usually takes place behind the phoropter, but this is not typically done with younger children. Most often, vergence facility testing is done with the use of handheld prism bars to give the practitioner reliable objective results when subjective testing just isn't possible.

Accommodative facility can easily be tested with handheld plus and minus flippers of varying powers, while accommodative amplitude can be measured in free space by using a minus lens rack. Monocular estimation method retinoscopy (MEM) is done by using a retinoscope, MEM graded cards which attach to the retinoscope, and handheld loose lenses.

EYE MOVEMENTS

An analysis of eye movements can be made with simple, basic equipment, while further testing using more sophisticated technology can give more results for older children. The assessments of eye movements include three distinct parts: assessing the stability of fixation, and saccadic and pursuit function.

The determination of fixation stability is the quickest and easiest of these three parts. This can even be combined with part of the cover test. Simply put, a patient is asked to focus on a target for 10 seconds. Most patients, including young children, should be able to perform this task. Inability to do so could be a manifestation of some developmental or functional abnormality, including nystagmus.

Testing for saccadic function may include observa-



PHOTO COURTESY OF WELCH ALLYN

EASY DOES IT Handheld autorefractors can be used from up to 14 in. away.

tion by the practitioner, standardized visual-verbal tests, or objective eye movement recording by an instrument. For the NSUCO ocolomotor test, which is the more subjective test, all that's needed are two fixation targets.

The observer rates the patient on head movement, body movement, ability, and accuracy of saccadic movements, and compares this to the NSUCO scoring criteria. DEM, King Devick, and Pierce saccade tests incorporate a visual-verbal format where a patient sees a series of numbers, identifies them, and verbalizes them. While these tests are easily administered and less costly than the Readalyzer and Visuograph (see below), the issue of reliability and difficulty with naming numbers calls the validity of these tests into question.

Lastly, the Readalyzer and the Visuograph combine infrared monitoring eyeglasses and a recording unit to provide objective measurements of fixations, regressions, duration, reading rate, and efficiency. However, this equipment can be quite costly and it is difficult to use on young children or those who are inattentive and hyperactive.

Assessment of pursuits is commonly done by direct observation, similar to that in saccadic function. There

is also a NSUCO test for pursuit function, using a single target, with similar rating and scoring.

Ocular motility testing is needed to evaluate the ability of the eyes to move into the six cardinal positions of gaze. This involves the third, fourth, and sixth cranial nerves and the six extraocular muscles in each eye. Ocular motility testing can be done using a penlight or brightly colored puppets to attract and maintain the attention of children. The target, either the penlight or puppet, is moved into the six positions of gaze, looking for any restrictions. If any restrictions are found, forced duction testing may be needed to differentiate between innervational or mechanical problems.

REFRACTIVE ERROR

Determination of refractive error in children is vastly different than that of adults. Most often, with young children, this is done on a purely objective basis, and does not involve subjective testing at all. Retinoscopy, whether dry or cycloplegic, is often the choice to determine refractive error.

A cycloplegic refraction can be done quickly using

lens racks or handheld lenses, depending on the age of the patient and the practitioner's preference. Most commonly, 0.5% cyclopentolate repeated in five minutes is used on children younger than age 3, while 1.0% cyclopentolate can be utilized on older children. An anesthetic drop (0.5% proparacaine) can decrease the stinging and discomfort. It is especially important to include the parents in this portion of the exam.

When I use these drops, I begin by telling the parents about their visual effects, how long they can expect them to last, and that it is normal for the child's eyes to still be dilated the next day. I also ask the parents about the child's schedule for the rest of the day, and make sure she doesn't have a school or sporting event that will be detrimentally affected by the dilation. Many doctors often choose to schedule the cycloplegic refraction and dilated fundus examination for another day, using the first day to build a good rapport with the child and to develop trust and to ensure a pleasant experience.

Mohindra retinoscopy is often used for infants or toddlers and has excellent results. To do this, first turn off all the lights in the room, and have the child focus on your retinoscope light. Perform retinoscopy at a distance of 50cm from the patient, and use loose lenses or lens racks (no phoropter) to determine your gross result. Once that is found, add -1.25D to determine the final value. The results of this technique are extremely accurate.

Autorefractors can also greatly streamline the process of refractive error determination. The RIGHTmedical Retinomax is a portable, handheld autorefractor that is and convenient to use; it can even be linked to a remote printer. It's especially useful with children because there's no chinrest, readings are taken as soon as alignment and focus are achieved, and a melody function keeps their attention.

The handheld SureSight by Welch Allen is truly kid-friendly—it can be used from up to 14 in. away and has lights and sounds to keep a child's attention. It is also quick to take measurements as soon as alignment is achieved.

ANTERIOR/POSTERIOR SEGMENT

Be sure and perform a comprehensive anterior and posterior segment examination of children. This can easily be done with the use of a handheld slit lamp, or even a 20.00D lens with a light source. A Burton lamp can also be used if corneal surface evaluation with sodium fluorescein is needed.

The fundus can easily be evaluated following a cycloplegic refraction. It is especially important to get a good view of the posterior pole, and to attempt to

get a view of the peripheral retinal. It may be easier to have the child sit or lay in a parent's lap while performing this part of the exam.

PEDIATRIC FRIENDLY

If you're planning on increasing the pediatric portion of your practice, it is essential that your office be child-friendly. Having toys, books, and even television or video games will relax children when they enter your office, keep them occupied and less fidgety when they are waiting, and make their visit to your office enjoyable.

Many eyecare professionals who have a large pediatric population in their practice often have a separate

THE PEDIATRIC EYE EXAM WILL UTILIZE EQUIPMENT THAT OFTEN DIFFERS FROM WHAT IS USED IN A GENERAL PRACTICE.



TESTING INFANTS With Teller activity cards, an observer can note a child's eye movements to test if he sees the pictures.

children's waiting room, equipped with plenty of toys, coloring books, and movies. It may even be sound-proof, or at least have a door that shuts. Parents of your pediatric patients and your adult patients who are also waiting for examinations will certainly appreciate this.

Flexibility in appointment scheduling will also be helpful when dealing with children. Parents will appreciate appointments when their kids will be happy and cooperative, most likely first thing in the morning or after naps. Avoid late appointments when the children are more apt to be tired, hungry, and fussy. Also, being flexible about having the child return to finish the appointment is important if the visit spans a nap or

feeding time. Having parents bring snacks along can also make the exam less stressful and easier to handle.

It is also important to reflect the pediatric friendliness of your practice in your dispensary. Have a section devoted to kids with smaller furniture and activities to keep them busy while waiting. Keep all of the displays at eye level and use lots of bright colors and displays to appeal more to children and let them know that these are the glasses for them.

Address children by name—this will make them feel welcomed and important. Speak to kids as well as parents—children often have specific things that they like and dislike, and they want to be included in the decision making.

Make sure to have a large selection of frames to fit infants through teenagers, and include recognizable brands and characters. Kids will often gravitate to glasses featuring their favorite cartoon or character, making the transition to wearing glasses more exciting and fun. Tweens and teens will often shun the younger, cartoony frames, and will instead want grownup frames with recognizable designer names. They want to feel mature and independent, and also on the forefront of fashion. Also, keeping a large selection of flexible, non-breakable frames is extremely important for all ages.

SUN AND SPORTS

As practitioners, it is our duty to inform all of our patients, even the young ones, of the danger of UV light. Be sure to have a wide array of children's sunwear (including wraparound frames and anti-skidding temple tips) and utilize specialty lenses, including Transitions® lenses, to fully protect your young patients from UV light.

Lastly, don't forget that many of your young patients are involved in sports and other activities. Include different types of sports goggles and swim goggles in the dispensary to keep kids' eyes safe and vision corrected during sports. As always, make sure that all of your young patients wear either lenses made with Trivex® material or polycarbonate in all of their eyewear, including dress eyewear, sunglasses, and sports goggles.

Providing eyecare to children is an extremely rewarding experience. By incorporating simple changes to your routine, office, and dispensary, you can easily increase the pediatric portion of your practice, which in turn will generate referrals, recommendations, and a greater satisfaction in your career. ■

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CHILDREN'S EYEWEAR CE SELF-ASSESSMENT TEST

Please fill out the Answer Sheet at the end of this test. Respondents with a passing score will receive one (1) hour of CE credit. Respondents seeking COPE credit need to receive a passing score of 70 or more and should answer the first 10 questions only. Those seeking ABO credit need a passing score of 80 and must answer all 15 questions. This test is valid through December 1, 2009.

1. Which of the following is a good way to develop a good rapport with children?

- a. have them address you with your professional title
- b. wear your white coat at all times
- c. leave out explanations of what you are doing
- d. maintain direct eye contact

2. Which visual acuity test uses the Landolt C to provide a forced choice determination of acuity?

- a. LEA cards
- b. HOTV
- c. Broken Wheel
- d. Face Dot test

3. What range of seconds of arc does the standard Randot chart test?

- a. 600-20
- b. 800-40
- c. 600-40
- d. 800-100

4. Which test incorporates different figures at various disparities, using random dots and cylinder gratings?

- a. Worth 4 Dot
- b. Ishihara
- c. Lang
- d. Randot

5. Which of the following tests color vision?

- a. Mohindra
- b. MEM
- c. Waggoner
- d. Cardiff

6. Binocular testing for children should be done_____.

- a. behind the phoropter
- b. at the end of the exam
- c. in free space
- d. with the exam room well lit

7. Which is not a test of saccadic function?

- a. cover test
- b. NSCUO
- c. King Devick
- d. Pierce

8. Which is not measurable using the Visuograph or Readalyzer?

- a. fixations
- b. regressions
- c. reading rate
- d. amplitude

9. What is a drawback of the Visuograph and Readalyzer?

- a. inaccurate results
- b. cost
- c. size of instrument
- d. availability of instrument

10. Which cranial nerve is not involved in ocular motility testing?

- a. III
- b. IV
- c. V
- d. VI

OPTICIANS ONLY. Please answer these five additional questions:

11. What value is added to the gross result in Mohindra retinoscopy?

- a. -1.00D
- b. -1.25D
- c. -1.50D
- d. depends on the refractive error of the practitioner

12. What is a good way to make your office more hospitable to kids?

- a. have a separate children's waiting room with a closable door
- b. offer weekday appointments only
- c. do not allow food in the office
- d. give evening appointments only

13. What is something to avoid when making your dispensary pediatric-friendly?

- a. smaller furniture
- b. lower, eye-level displays
- c. neutral-toned and muted displays
- d. wide variety of frames appealing to all age groups

14. What features are the least important in pediatric sunwear?

- a. UV protection
- b. designer names and styles
- c. wraparound styles
- d. anti-skidding temple tips

15. According to the text, what should be reflected in a pediatric-welcoming dispensary?

- a. friendliness
- b. cost effectiveness
- c. confidence
- d. correctness

ANSWER SHEET

Fill out and mail this portion to: Children's Eyewear CE, c/o First Vision Media Group, Inc., 25 East Spring Valley Ave., Suite 290, Maywood, NJ 07607 or Fax to: 201-587-9464. Be sure to fill out form completely. This CE article is also available at TotallyOptical.com.

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ANSWERS Blacken the selected answer circle clearly and completely.

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- 1. (a) (b) (c) (d)
- 2. (a) (b) (c) (d)
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- 10. (a) (b) (c) (d)

Opticians ONLY

- 11. (a) (b) (c) (d)
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