Amblyopia occurs in approximately 2% of the general population. Watching for the presence of amblyopia is the most important aspect of the routine eye examination of the pediatric patient. Early diagnosis and treatment are the most important factors in determining a favorable outcome for treatment of this condition and other serious conditions associated with amblyopia. The pediatrician and the pediatric nursing personnel play an important role in early detection.

DEFINITION

Amblyopia is defined as poor vision in an eye despite correction with glasses for any refractive problem. Poor visual acuity in one or both eyes may be the result of farsightedness (hyperopia), nearsightedness (myopia), or astigmatism. However, if the vision can be corrected to a normal level in both eyes with proper glasses, there is no amblyopia. If, on the other hand, proper glasses improve vision in one eye to a normal level but do not improve the vision in the other eye to an equally good level, amblyopia is present. Although amblyopia may, on rare occasions, occur in both eyes, it is usually present only in one eye. If there is a difference of more than one line in the visual acuity between the two eyes, amblyopia should be suspected. Amblyopia can occasionally alternate from eye to eye during the course of therapy, but more importantly, it can frequently recur when therapy is discontinued.

Normal visual acuity varies with the age and cooperation of the patient as well as with other test-related circumstances. Children 5 to 6 years of age should have 20/30 vision in each eye. After that age, they should be able to read the 20/25 line or better. If the acuity of one eye is worse than this and no significant refractive error is present, the patient probably has amblyopia. Thus, a 5-year-old child with 20/30 vision in one eye and 20/50 vision in the other eye may have amblyopia.
AMBLYOPIA VERSUS SUPPRESSION

Amblyopia and suppression are often confused; however, they are distinct entities and are identified by different tests. Amblyopia refers to poor vision in one eye tested with the opposite eye covered and with all visual cells operating at their maximum capacity. Suppression occurs as a binocular function when both eyes are used simultaneously. In this condition, the child sees with only one eye while the other eye is actively suppressed. Depending on the depth of suppression, the central visual field or the entire visual field may be suppressed. In cases in which eye alignment is good and only the central visual fusion is suppressed, simultaneous peripheral vision (peripheral fusion) may be present. Suppression can occur in one eye or it may alternate from eye to eye. If the patient with suppression is young and fails to alternate fixation, then the constant suppression of the same eye will cause a functional “disuse atrophy” as well as amblyopia. Alternating fixation not only prevents amblyopia from developing, it also prevents binocular vision.

CAUSES AND CLASSIFICATIONS OF AMBLYOPIA

There are two basic causes of amblyopia: organic and functional. Functional amblyopia can be further subdivided into (1) deprivation amblyopia, (2) strabismic amblyopia, and (3) refractive amblyopia. These classifications can be helpful in understanding the significance of the different forms and in understanding the problems associated with diagnosis and treatment of the various types. The classifications are arbitrary, and patients will occasionally have a combination of types.

Organic Amblyopia

Organic amblyopia refers to decreased visual acuity from disease processes that disrupt the cellular structure of the retina or the visual pathways. Such conditions are usually apparent on routine ophthalmologic examinations. Examples of such causes include macular scarring from chorioretinitis associated with congenital toxoplasmis, macular scarring due to trauma, retinoblastoma involving the macula, and hypoplasia or atrophy of the optic nerve. Central nervous system cortical blindness following meningencephalitis would also be considered an organic cause of amblyopia. Some types of organic amblyopia may have subophthalmoscopic changes. These would include nystagmus, achromatopsia (total color blindness), albinism, and the early stages of hereditary macular dystrophy. Most organic amblyopias are permanent and irreversible; however, in a few cases, improvement in vision is obtainable when the structural problems are treated.

Organic amblyopia is characterized by poor vision in one or both eyes that is uncorrectable with glasses and unresponsive to patching therapy. It is usually congenital in onset but may be acquired. When it occurs in one eye, there may be a decrease in color perception in the amblyopic eye. The “swinging flashlight test” may help identify a unilateral organic lesion. The pupil of the good eye will contract with the stimulation of the light, but on stimulation the amblyopic eye will dilate or contract only briefly. The asymmetry of the response on swinging a flashlight from one eye to the other will usually be significant.

Functional Amblyopia

Functional causes of amblyopia are numerous. In all these cases, the cellular structure of the retina and visual pathways appear normal, with impairment of the function of these structures. The degree of impairment depends on various factors: (1) age at onset; (2) severity of impaired retinal image; (3) duration of impaired vision; and (4) age of the patient at the time of effective treatment. Deprivation amblyopia has also been called amblyopia ex anopsia, or amblyopia of disuse. It is the most serious type of functional amblyopia and the most difficult to treat. Here, there is a lack of formation of a retinal image, usually in one eye due to a congenital cataract, total ptosis, corneal opacity, bandaging or patching of one eye, or other problems that lead to total disuse of the amblyopic eye. The precipitating problem usually occurs from birth, but it can occur later, as in a 2- or 3-year-old with a traumatic cataract. These patients suffer a severe loss of vision, and the amblyopic eye will frequently have vision no better than light perception (LP) or hand motion (HM) perception. The end state of deprivation amblyopia may be an amblyopia that does not respond to treatment. If visual rehabilitation is delayed for more than a few months, restoring visual acuity to an acceptable level is less likely. As cataracts are the most common cause of deprivation amblyopia and because early infancy is the most common age of onset, it is important in the routine examination of the newborn and the 6 week old to look for the presence of a cataract. This can be done simply by observing the red reflex with the ophthalmoscope. If the observation cannot be made this way, a single drop of 2.5% phenylephrine and 0.5% tropicamide should provide an adequate, safe method of dilating the pupils.

Strabismic amblyopia is poor vision in one eye associated with the deviation of that eye. Although about half of the amblyopic population will have some type of strabismus problem, the other half will have eyes that are essentially straight. Therefore, the absence of strabismus does not rule out amblyopia. It is also less common for patients with esotropia from early infancy and patients with exotropia to have amblyopia. Just as strabismus problems can lead to continued on page 304.
amblyopia, so amblyopia problems can lead to strabismus. It is common for a blind eye to deviate. In early infancy and childhood, the amblyopic eye will usually turn inward or upward. Later in childhood and in adulthood a blind amblyopic eye will often drift outward. The position of the eye is often quite variable in different directions of gaze and, in more severe cases, is sometimes associated with a unilateral nystagmus on the amblyopic side.

The most common association of strabismus and amblyopia occurs in the acquired form of strabismus, which has its onset at an average age of 2 1/2 years, ranging from 18 months to 6 years of age. About 30% of these patients will have amblyopia. Amblyopia rarely occurs when the strabismus develops after 4 years of age.

The mechanism of developing amblyopia in a strabismic child is as follows. The esotropia causes diplopia in the central visual field that is annoying to the child. The peripheral visual field has lower sensitivity to eye misalignment and, therefore, rarely appears diplopic. To avoid the central diplopia, the young visual system has the ability to suppress the central visual field of the deviating eye; if the deviation persists, the suppression of that eye also persists. This solves the patient's problem of double vision but prevents use of the central vision of the deviating eye until the eye is straightened or until the child is forced to use the deviating eye by patching the good eye. Within a month, suppression can lead to amblyopia. In cases of alternating deviation, suppression alternates from one side to the other and amblyopia does not develop. Despite extensive patching, however, the patient who prefers fixing with one eye may never reach the point of alternating the strabismus and suppression. In such patients, amblyopia can recur at any time until about 9 years of age. After age 9, constant suppression will not cause amblyopia. As long as the suppressed eye is stimulated periodically by patching until this age, recurrent amblyopia can be avoided. Peripheral fusion is of the utmost importance in maintaining good ocular alignment and allowing stereoscopic depth perception.

Refractive amblyopia is poor vision that results when excessive nearsightedness, farsightedness, or astigmatism blurs the retinal image in one or both eyes, preventing the development of optimal visual function. Severe astigmatism is probably the most common cause of bilateral refractive amblyopia. Unilateral refractive amblyopia is more common, particularly in patients who are more farsighted in one eye than in the other. The most difficult problem arises when the difference in the refractive error of the two eyes (anisometropia) is of such a magnitude that corrective lenses produce a difference in the image size in the two eyes. This is known as aniseikonia. These patients suppress the vision in one eye to avoid diplopia, and continued suppression of one eye may lead to amblyopia. Pure refractive amblyopia may be the most difficult type to diagnose. There are no associated defects, such as the macular scars in the organic amblyopia, the cataracts in deprivation amblyopia, or a crossed eye in strabismic amblyopia. These patients appear perfectly normal. The only accurate way to identify them is to do routine vision screening tests on all patients at about 4 years of age.

IMPORTANCE OF EARLY INTERVENTION

During the last trimester of gestation and the first 6 months postnatally, the visual system of the human infant undergoes rapid growth. Of particular note is the doubling in number of axonal and dendritic connections among neurons in the visual cortex. Overproduction of connections among neurons occurs in the early postnatal period, followed by selective elimination after 4 to 6 months of age. These rapid physical changes are accompanied by functional changes, including improvement in acuity from the newborn level of 20/400 to 20/80 by 6 to 7 months; the onset of binocular fusion and stereopsis at 4 months; and refinement and control of accommodation and eye movements.

Because visual development progresses postnatally, it can be influenced by what the infant sees. The susceptibility of the developing visual cortex to modification by early visual experience has been demonstrated in animal models. A normal monkey's visual cortex contains neurons that respond to the left eye only, neurons that respond to the right eye only, and neurons that respond to both eyes. The visual cortex of a monkey that had one eyelid sutured shut during infancy contains neurons that respond only to the eye which remained open. The two eyes "compete" for connections in the visual cortex during early development, and the eye deprived of visual stimulation is at a disadvantage. Even when the sutured eyelid is reopened and many years have passed, the cortex does not recover and continues to respond only to the eye that had early normal visual experience. The functional consequence of these few early months of monocular visual deprivation is permanent and profound visual impairment of the deprived eye.

This animal model of early visual deprivation is similar to the human infant born with a dense unilateral cataract. An infant with a dense cataract in one eye is deprived of visual stimulation through that eye during the early postnatal months. If the cataract is not removed before the infant reaches 1 year of age, the affected eye has a poor prognosis for visual rehabilitation. At best, acuity may reach 20/200, but more likely only light perception will be attained. However, recent research has shown that early
detection and treatment of congenital cataracts can dramatically improve the prognosis. If the cataract is extracted during the first 2 months of life and optical and occlusion therapy are started promptly after surgery, many infants with congenital unilateral cataracts can achieve 20/80 to 20/25 vision. The idea that early intervention can improve the outcome in cases of congenital unilateral cataract is not unique in pediatric ophthalmology. Similar improvements in outcome, although not as dramatic, are found with early treatment of infantile esotropia, ptosis, anisometropia, and other infantile eye disorders that disrupt the balance in quality of vision between the two eyes.

SCREENING FOR AMBLYOPIA

A history of eye disease or previous amblyopia treatment should alert the pediatrician to the possibility of amblyopia, as should a positive family history either in older siblings or in parents. Amblyopia frequently recurs, a problem which sometimes is not recognized. Eye disorders are also among the problems of the multihandicapped child, so those with congenital defects should be observed carefully for the possibility of amblyopia.

In ruling out amblyopia and associated conditions, different procedures should be undertaken at different stages of childhood.

Newborns to Age 4 Months

Make sure the eyes appear normal externally and that each eye has a clear red reflex (no cataracts).

Infants After Age 4 Months

Check fixation with each eye with a pen light, look for symmetrical corneal light reflexes. In addition, check for red reflex and look at the fundus. The Bruckner test is an excellent way to perform this task.

Using this technique, the light reflection of both eyes is observed through a direct ophthalmoscope at a distance of 1 meter, with the instrument set optically at 0 in a dimly lit room. Reflections from both eyes should appear symmetrical. Any difference in the red reflex may suggest an organic problem or refractive differences between the two eyes.

Age 6 Months to 4 Years

There are two methods of testing for amblyopia in this age group: (1) observe the patient's ability to fixate on a pen light with each eye independently, and (2) observe the patient for associated eye defects. The normal patient with good vision in both eyes can see and fixate on a pen light with either eye. Dropping a thumb or three fingers down over the visual pathway of one eye should not prevent the patient from maintaining a clear view of the pen light with the uncovered eye (Figure 1). If the child objects to the test, the objection will usually be the same no matter which eye is covered. Patients with amblyopia have a marked asymmetry in their response to this test (Figure 2). They will usually accept covering of the visual pathway of the amblyopic eye but will object strenuously to having the pathway of the good eye covered. Again, this is the asymmetry of the response that determines whether they should be suspected of having amblyopia. This test need not be prolonged; 2 or 3 seconds of fixation with either eye is enough to indicate that the vision is normal.

The second test for amblyopia in children under age 4 is to determine if there are any eye defects are associated with amblyopia. The pen light can again be used. If the corneal light reflex is symmetrically centered in both eyes, we can assume that the eyes are fairly straight and that no strabismus problem is
present. If the reflex is centered in one eye but eccentrically situated in the other eye, the second eye can be presumed to have a strabismus problem and possibly strabismic amblyopia as well. The Bruckner test can determine if there are any disruptions to the red reflex, such as from a cataract. In some cooperative children a quick check of the fundus to get a glimpse of the disc and macula may be possible.

Age 4
Visual acuity in each eye should be measured. When economically feasible, all children should be referred to a pediatric ophthalmologist for a complete eye examination and refraction.

School Age
Check vision annually. This may be done by vision screening volunteers, school nurses, or in the pediatrician's office by trained personnel who understand the importance of the task.

In vision screening, good standardized tests and careful testing techniques are essential, making certain each eye is completely occluded while the patient reads, preferably, a line of letters or symbols appropriate for the child's level of maturity. The best charts for measuring visual acuity in children are the Snellen, HOTV, Snellen E, and Allen pictures. The HOTV and the E chart both use the forced-choice method of testing and rely primarily on matching responses. Responses of the mentally impaired child may be more reliable on these tests than those that call for verbal responses. Both can be used at a 10 or 20 foot distance. The best technique for performing the HOTV screening is to have the child match the symbol on a card to the symbol on the smallest line the child can see on the chart (Figures 3 and 4). With the E chart, the child can match the "legs of the E" on the chart by pointing in the same direction.

For children who are verbally responsive but not yet literate, the Allen chart, using familiar pictures, is often useful in determining the acuity. Once the examiner learns what term the child uses to identify each symbol, the child identifies progressively smaller symbols using one eye at a time.

The Snellen chart for literate children offers a great advantage, as no specific instructions are needed. Some 3, 4, and 5 year olds are even able to be tested with it.

There are several important factors to consider when obtaining reliable visual acuity determinations with these four tests. Children with amblyopia may try to peek around whatever is occluding their normal eye. This is most frequently done by turning the head so that the child can find a "peep hole" between the occluder and the bridge of the nose. For this reason, the child cannot be relied upon to hold the occluder. The parent may be needed to point to the eye chart while the experienced examiner occludes the eye. Failure to occlude the preferred eye probably accounts for most of the amblyopia problems that are missed.

The second important factor in testing is determining the smallest full line that the child can identify with at least 80% accuracy, as opposed to determining the smallest isolated letter that can be seen. Isolated letters or symbols are not recommended for amblyopia screening because it is common for the amblyopic eye to have better acuity with isolated symbols than with a linear arrangement of symbols. This effect has been called the "crowding phenomenon." Because isolated letters are not sensitive to the reduction in acuity caused by the crowding phenomenon, it is possible for a child to have amblyopia and still be able to identify very small isolated symbols. The crowding phenomenon that occurs when the patient is presented with a line of
symbols will reduce the acuity to its true amblyopic level. As isolated symbol tests are much easier to administer to young children than linear tests, several new eye charts and electronic devices (Figure 5) have been developed which use isolated symbols surrounded by crowding bars. These "crowded" acuity tests allow isolated symbols to be used for young children who may be confused by full lines of letters while the test remains sensitive to amblyopia.12

Because many children may have short attention spans, it is valuable to move quickly through the chart, identifying only one symbol per line until one symbol is missed. The child can then begin identifying the symbols on the line above that until 80% accuracy is achieved on the smallest line possible.

Ideally, determination of acuity should be made by 4 years of age and then every 1 or 2 years in the school-age child. Myopia often develops between 8 and 14 years of age. Once a vision problem has been identified, the child should be referred to a pediatric ophthalmologist for further testing and diagnosis. The ophthalmologist's evaluation will include a review of the history, redetermination of acuity, screening for evidence of strabismus, testing for binocularity, cycloplegic refraction, and fundus examination. Cycloplegic refraction is desirable because it is the most accurate means of determining the total refractive error in each eye. Ophthalmic eye drops used to dilate the pupils can be strong and dangerous if abused; however, they are relatively safe when used judiciously by those who are thoroughly educated in their pharmacology.

NEW METHODS FOR ASSESSING ACUITY IN INFANTS AND PREVERBAL CHILDREN

Two new methods for assessing acuity in infants and preverbal children are becoming increasingly available to pediatric ophthalmologists. Both methods were originally developed in research laboratories studying the normal course of visual development in infants free of eye disorders.13 Over the past 10 years, these methods have begun to be applied in clinical research studies of congenital, infantile, and early onset visual disorders. Over the past 5 years, commercial systems have become available for routine clinical use, and many major medical centers, as well as some of the private practices, are now using these procedures.

Preferential-looking acuity tests use the infant's innate tendency to gaze at black-and-white stripes rather than a blank gray field when presented side by side in an otherwise bland environment. The gray and striped fields are matched in average brightness so that when the stripes are too fine to see, both fields appear to be the same homogeneous gray. These patterns are salient for infants, and the acuities obtained with them can be easily expressed in common units, such as Snellen visual acuity. Figure 6 shows normal Snellen equivalent acuity by months of age.

An observer hides behind the stimuli and watches the infant's response to the stripes versus the gray field over a number of presentations. On some presentations the stripes are presented on the left, whereas on others they are presented on the right. On each presentation, the observer is unaware of the stripes' left-right position and must make a guess as to their location based solely on the infant's looking behavior. Therefore, the observer can consistently make correct decisions about the location of the stripes only if the infant can distinguish the stripes from the gray and prefers looking at the stripes.

When unable to discriminate the stripes from the gray field, the infant is equally likely to gaze at the left or at the right field because both fields appear gray. At this point, the observer is provided no information

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by the infant about the stripes' location and will make correct decisions about their left-right location on approximately 50% of trials simply by guessing. As the observer must make a decision about the location of the stripes on each trial, this paradigm is often called "forced-choice preferential looking" (FPL). Teller Acuity Cards™ are illustrated in Figure 7. There are several statistical strategies for determining which stripe patterns elicit a consistent fixation response. The smallest stripes which the infant consistently fixates indicate the infant's acuity. This test is valuable not only in diagnosing amblyopia, but also in following amblyopia treatment and in providing encouragement for parents.

The second technique is the pattern known as cortical potential. Typically, three gold cup electrodes are placed on the scalp and/or ears. The infant views striped or checkerboard patterns on a video screen. The patterns are contrast reversed in time; that is, the black areas of the pattern are switched to white while the white areas are switched to black. If the pattern is seen by the child, a reproducible electrical signal is picked up by the electrodes each time the contrast is reversed. If the pattern is not visible, no reproducible electrical signal is obtained. For acuity testing, a range of checkerboards or gratings, from coarse to fine, is used in each test. Acuity is usually estimated by examining the relationship between the amplitude of the electrical response and check size or grating stripe width and extrapolating to the finest pattern that elicits a response.

TREATMENT

Patching for amblyopia has been in use since the 18th century. It is most effective when patching is complete and constant; however, since this method of treatment requires the cooperation of patient, parent, and physician, patching therapy can be difficult to implement.

Problems the child faces include discomfort from summer heat and irritation to the skin. Depending on the severity of the amblyopia, it can leave the child with marked visual impairment during the patching. Watching television or doing schoolwork will be difficult. The patch may make children uncertain of their surroundings and thus quite insecure. Older children may see the patch as unattractive.

Parents also face problems with patching therapy. They have a limited amount of time which they can spend working with the child on patching therapy and some parents are unable to cope with the child's resistance to patching. Others simply do not understand the amblyopia problem and the need for early treatment despite discussion of the problem with the pediatric ophthalmologist.

Many forms of eye patches are available. Coverlet™ and Opticlude™ eye patches come in junior and regular sizes (Figure 8). Opticlude is hypoallergenic. Both of these are generally available at pharmacies in boxes of 20. They are usually the most effective in completely occluding the eye. Although they can be irritating to the skin, this problem can be avoided by using a cotton swab to paint the skin with a tincture of benzoin compound several times each morning before applying the patch. This not only helps to protect the skin but will also help the patch adhere more tenaciously. A simpler alternative treatment is to apply Maalox™ in the same manner; it is just as effective, but it is more easily washed off.

Organic Amblyopia

Treatment of patients with organic amblyopia is directed at protecting the good eye. This should include protective glasses and warnings about hazardous activities, such as lawn mowing and woodworking. When the organic amblyopia involves both eyes and is considered severe, treatment must be
directed at helping both the child and the parents adjust to the handicap. Many communities have service organizations for visually impaired children. These organizations offer a place for parents to turn when physicians have no curative treatment for the problem. Although there may be little hope of improving vision, these organizations can help the visually impaired child to use residual vision and to learn strategies to cope with everyday tasks.

Deprivation, Strabismic, and Refractive Amblyopia

Amblyopia is treated by patching the preferred eye and by prescribing corrective lenses when appropriate. This is the most universally effective way of improving vision to a normal or near normal level. Although medical treatment (atropine penalization) can be used as an alternative with certain patients, in most cases patching is the most effective method of treatment (Figure 9). If the parents are unable to accept this mode of therapy, then they will have to be prepared to accept the amblyopia as a permanent condition.

If patching is the most important aspect of amblyopia treatment, early treatment is perhaps the second most important factor. This is particularly true in deprivation amblyopia. Patients with a unilateral congenital cataract must receive effective amblyopia therapy within the first few months of life or there will be no hope of salvaging vision. Patients under 4 years of age with traumatic cataracts must be visually rehabilitated within 2 months in order to recover good visual acuity.

Strabismic amblyopia, which occurs most commonly when a “cross-eyed” child does not alternate fixation, should be treated within a few months of the onset of symptoms. Effective treatment may then take only a matter of weeks. If treatment is delayed until 4 to 6 years of age, treatment will still be effective, but may take many months. Before considering corrective surgery for the strabismus, an attempt should be made to eliminate the amblyopia. Cases that do not respond to amblyopia treatment may require surgical intervention, although the strabismus correction may be less predictable. In cases that have responded to treatment, amblyopia frequently recurs, so periodic follow-up may be needed up to age 9. Also, to prevent the recurrence of amblyopia, these patients should be placed on a 1 to 2 hour per day patching routine. After age 9, the acuity does not usually decrease significantly.

Refractive amblyopia usually cannot be diagnosed until the child reaches an age at which visual acuity can be accurately measured—at about age 4. Fortunately, this form of amblyopia often responds to treatment at a later age than do the other forms.

Various types of occlusive devices have been used with glasses, including a shield on the front or back surface, fingernail polish, tape or transparent contact paper applied directly to the lens, or a semi-opaque lens. These have all met with some success in different situations. A hard, black contact lens and a soft lens incorporating a large refractive error have also been effective in occluding the vision of the good eye.

All of these methods employ some type of mechanical device to obstruct the vision and are susceptible to the patient doing everything possible to remove that obstruction. Many types of restraints have been used, unfortunately, some youngsters can circumvent even the best efforts of parents and physician. In such difficult cases, success has been achieved by keeping the good eye dilated with 1% atropine ointment given three times a day for several weeks or months (atropine penalization). This treatment is effective in some patients when the refractive error is enough to cause the vision in the dilated eye to be reduced below the level of vision in the amblyopic eye.

Corrective glasses are always prescribed when a significant refractive error is responsible for amblyopia. In some of those cases, the amblyopia will clear without the addition of patching to the treatment regimen.

COMPLICATIONS

Two complications can occur with patching therapy. One is the development of “occlusion amblyopia,” or poor vision in the good eye as a result of being patched. Frequent rechecks of the amblyopic patient guard against this rare, but real condition. Follow-up visits should be weekly for the infant and 1 to 3 months for older children. To avoid occlusion amblyopia, the patch can be reversed from the good eye to the poor eye for 1 hour per day during the course of intensive, full-time patching therapy.

A second, and rare, complication is the development of strabismus. It is distressing for parents to follow the physician’s patching routine conscientiously, only to find that the child’s eyes
begin to cross with therapy. Sometimes this can be avoided by making sure the child wears the proper glasses; at other times, it seems to be an unavoidable complication. Positive, compassionate encouragement from the pediatrician and the ophthalmologist, as well as office personnel, is imperative to help establish good compliance. When the child’s resistance is greatest, the need for the treatment is usually just as great. Patient, gentle persistence on the part of the parents has proven the most effective method of overcoming this resistance.

SUMMARY

Amblyopia is one of the most common and significant eye ailments in children. It is classified into organic and functional; functional is further divided into classifications of deprivation, strabismic, and refractive. Early diagnosis and treatment are of paramount importance. Diagnostic techniques are age-related. Treatment consists of eliminating associated defects, properly focusing the image on the retina (glasses or contact lens), and patching the good eye to force the child to use the amblyopic eye. Treatment may only be effective within the first 2 or 3 months of life for some conditions and later in childhood for other conditions. Amblyopia can recur up to age 9.

The pediatrician has the heavy responsibility of recognizing amblyopia at an early enough age to allow for effective treatment. Nationwide there are many pediatric ophthalmologists available to institute this early, effective treatment. With this team work, we can help eliminate the most common cause of visual impairment in the pediatric patient.

REFERENCES