



UPTOWN EYECARE & OPTICAL

Your baby's developing eyes & Guide to good vision

Prenatal care: A bright start

When you are expecting, proper prenatal care and nutrition are very important to the development of healthy eyes and the related nervous system. Researchers are continually discovering more about the link between nutrition and eyesight.

At birth: Opening to a new world

It might take a moment or two for your baby's eyes to open. His eyes should be examined for signs of congenital eye problems. These are rare, but early diagnosis and treatment are important to your child's development. Health professionals typically administer an antibiotic ointment, such as erythromycin, to prevent infection. Within a short period of time, he will begin to focus on objects less than a foot away, such as mom's face when nursing. The latest research shows that complex shapes and high contrast targets best stimulate the interest of infants. When setting up baby's room, include décor that is bright, contrasting and varied. Babies' eyes are drawn to new objects, so be prepared to change the location of items. Also have a nightlight, to provide visual stimulation when the baby is awake in bed. While children should be put down to sleep on their backs to reduce the chance of SIDS, they should have supervised time on their stomach. This provides important visual and motor experiences.

Two months: Learning to look

For the first six to eight weeks of life, it is normal for a child's eyes to not always track together. This should not be a concern unless the child's eyes are never aligned or their alignment does not gradually improve. Tears are normal for many children because the tear drainage ducts may not have fully opened. They usually open on their own, but the doctor should be informed and he or she will suggest what to do to stimulate the opening of the ducts if it continues or seems excessive.

Activity: *Stimulating both sides of the body by moving a child's arms or legs simultaneously, as parents tend to do naturally, is helpful in fostering appropriate bilateral and binocular development.*

Four months: Eyes, brains, hands

During the first four months of life, your baby should begin to follow moving objects with the eyes and reach for things. At first, this will be inconsistent, and later more accurate, as eye-hand coordination and depth perception begin to develop. During the next few months, your baby should begin to use his/her arms and legs. Eye movement and eye/body coordination skills continue to develop as vision progressively stimulates and guides movement.

Activity:

- *Use a nightlight in your baby's room. Change the crib's position frequently and your child's position in it.*
- *Keep reach-and-touch toys within your baby's focus, about eight to twelve inches.*
- *Talk to your baby as you walk around the room. Alternate right and left sides with each feeding.*
- *Hang a mobile above and outside the crib.*

Six months: A trip to the optometrist

Your baby's first visit to your doctor of optometry for a comprehensive eye assessment should be scheduled at six months of age. The optometrist will test for visual acuity, excessive or unequal amounts of nearsightedness, farsightedness, or astigmatism, evaluate eye alignment, and examine eye teaming ability. The health of your baby's eyes will be assessed as well. Although problems are not common, it is important to identify children who have specific risk factors at this stage. Vision development and eye health problems can be more easily corrected if treatment is begun early.

Exercise:

- *Let your baby explore different shapes and textures with his or her fingers.*
- *Give your baby the freedom to crawl and explore.*
- *Play "patty cake" and "peek-a-boo" with your baby.*



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Eight to twelve months: Getting mobile

Your baby is mobile now, being attracted to objects in their visual environment. He is using both eyes together to judge distances, and is grasping and throwing objects with greater precision. Crawling is important for developing eye-hand-foot-body coordination.

Activity:

- Give your baby stacking and take-apart toys Provide objects your baby can touch, hold, and manipulate.

DID YOU KNOW? The iris, or the colored part of the eye with the pupil in the middle, contains most of the pigment cells that determine the color of the eye. Most Caucasian babies are born with bluish eyes because the pigment that determines eye color is scattered thinly in newborns. As the child grows, the pigment is distributed throughout the iris, and the brownish pigment begins to dominate. The process can take several months, and is determined by genetics, with brown eyes the dominant trait.

Guide to good vision

Vision is a dominant process in the growth, development and daily performance of children. Good vision includes healthy eyes, age appropriate visual acuity, visual integration and visual skills such as eye teaming, eye focusing and eye motility. Optometrists can evaluate these components and help ensure your child reaches his or her potential.

Visual acuity: Visual acuity is the ability to see objects appropriate for your child's age. It can be measured by your optometrist long before your child can read or recognize letters.

Eye health: Eye disease can impair vision or lead to vision loss if not diagnosed and treated. Most conditions can be treated best if caught early.

Visual integration: The ability to process and integrate visual information, which includes and coordinates input from our other senses and previous experiences so that we can understand what we see. The eye-hand coordination involved in tossing a ball, or a game of patty-cake, requires a great deal of teamwork between the senses.

Visual skills your baby is learning:

Eye teaming: The ability of the eyes to work together.

Eye focusing: The ability of the eyes to focus clearly at different distances quickly, accurately, and for sustained periods of time.

Eye motility or tracking: The ability of the eyes to smoothly follow moving objects and to move accurately from one object to another.

Eye problems that 'the system' is missing

Are children with eye and vision problems 'falling through the cracks'?

Fact: Vision disorders are the fourth most common disability in the United States and the most prevalent handicapping condition during childhood.

Fact: Below the age of 6, only about 14 percent are likely to have had an eye and vision examination.

Fact: Pediatricians provide an important base-level eye screening that is designed to detect gross eye abnormalities. A comprehensive eye assessment by an optometrist is designed to detect much more and is an important part of your well baby care.

Fact: The American Public Health Association adopted a resolution that recognizes the shortcomings of vision screenings, encourages regular eye examinations at the ages of 6 months, 2 years, and 4 years, and urges pediatricians to recommend that all children receive eye examinations at these intervals.

Fact: Healthy People 2010, a national disease prevention initiative of the U.S. Department of Health and Human Services, also recognizes the importance of preventive vision care. One of its goals is "to improve the visual health of the Nation through prevention, early detection, treatment, and rehabilitation." These national efforts to inform the public about the importance of early eye care and the current limitations of vision screening are issues that all optometrists need to discuss within every community until all children receive professional eye examinations on a regular basis throughout childhood.

Why do you suggest getting the eyes tested at 6 months?

Clinical experience and research have shown that at 6 months, the average child has reached a number of critical developmental milestones, making this an appropriate age for the first eye and vision assessment. Many visual abilities are fully functioning by the age of 6 months. Interference with development during this very critical phase may lead to serious lifelong effects on vision. Successful treatment can be obtained more quickly with early intervention. The good news about a trip to the optometrist is that there are no shots or cold stethoscopes. While the doctor will be shining a light in the baby's eyes, and may spray a mist on eyelids or use eye drops to dilate the baby's pupils, many infants seem to enjoy the "games" they play as part of the professional assessment.



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Preparing for a trip to the optometrist

Everyone understands that the young patient may be cooperative for only a limited period of time. **When setting an appointment time**, let the practitioner know if you have any special concerns or conditions. Set an appointment time that is most agreeable to the baby's schedule, avoiding naptime. **On the day of the visit**, change the infant's diaper just before the assessment. Children in this age group generally perform best if the assessment takes place when they are alert. Because infants tend to be more cooperative and alert when feeding, it is also helpful to bring a bottle to feed the child. Bring a security toy or object for the infant, but also toys or games that will hold older siblings' interest if they are coming too. If possible, arrange for only the infant and the parent to be in the exam room during the assessment. **During the assessment**, most likely you will be asked to hold the baby on your lap, or on a lap pillow. Parents should be present for the assessment to help the baby focus on the doctor, so avoid talking to the baby or adults during the assessment. You may be recruited to hold targets or be a puppet master to hold the baby's attention during certain procedures. The optometrist may encourage the child to touch and explore the instrument. Be ready to play each "game" first to show the baby that it is safe and fun.

What the optometrist is looking for during the assessment:

Babies can't speak. How do you test their vision? Optometrists have the clinical background and expertise necessary to provide eye and vision assessments for any non-verbal patients, including infants. The optometrist is looking for answers to the same questions you are: Does the patient history suggest a problem? Can the baby see? Are the eyes straight? Are the eyes healthy? Is intervention necessary?

Patient History: Some eye conditions are strongly linked to family history, so the first step for the optometrist is to compile a history on the child. A comprehensive patient history for infants may include any problems you have noticed, visual and ocular history, general health history, family eye and medical history, developmental history and demographic data.

Factors placing an infant, toddler, or child at significant risk for visual impairment include:

- Prematurity, low birth weight, oxygen at birth
- Family history of eye diseases such as retinoblastoma, congenital cataracts, or metabolic or genetic disease
- Infection of mother during pregnancy (e.g., rubella, toxoplasmosis) or drug/alcohol use during pregnancy
- Sexually transmitted diseases, cytomegalovirus, or HIV
- Difficult or assisted labor, which may be associated with fetal distress or low Apgar scores

Visual Acuity: Because traditional eye chart testing requires identification of letters or symbols and demands sustained attention, this test cannot be used with infants and toddlers. Assessment of visual acuity for infants and toddlers may include tests to assess that the infant can fix his eyes on an object and follow the object, or at which objects the baby prefers to look, and at what distances.

Refractive Status: The doctor may use lenses and light from a small hand-held instrument to assess how the eye responds to particular targets. The doctor may also repeat this test after using eye drops to enlarge the pupil and stabilize the baby's focusing. As an alternative, some doctors use photographic testing to then analyze the pupil reflex in the photo. The typical infant may have some degree of nearsightedness, farsightedness, and astigmatism not requiring correction. Studies show that 30 to 50 percent of infants under 12 months have significant astigmatism, which declines over the first few years of life, becoming stable between approximately 2½ to 5 years of age. Low amounts of anisometropia (where the refraction is not the same in both eyes) are common and variable in infants.

Eye movement: Using her hands, a light, or a toy, the optometrist catches the baby's attention and observes how the baby follows the movements of the object.

Eye Alignment/Binocular Potential: By covering one eye at a time, the optometrist gathers information about the eye muscles and acuity. While identifying strabismus is important in itself, the presence of strabismus may indicate any number of disease entities.

Eye Health: The optometrist will examine the eye's structure as well as eyelids, tear ducts, and other parts of the eye. Pupil function will be checked, and a hand-held biomicroscope may be used for evaluation of the front of the eye. A test to assess visual field will be completed and an examination of the inner eye through a dilated pupil will be done. An ideal time for evaluation of the posterior segment is when the infant is in a calm, relaxed, condition (i.e., being bottle fed or sound asleep).

The assessment: In addition to sharing her findings with you, you may request the optometrist to send summary letters to the infant's pediatrician, family physician, or other appropriate practitioner, reporting and explaining any significant condition diagnosed in the course of the assessment.