

The InfantSEE® Assessment Explained

The InfantSEE® assessment offers early detection of potential eye and vision problems as a complement to the eye screening conducted in a pediatric well-care visit. A comprehensive assessment between the ages of 6 months and 12 months is recommended to determine healthy development of vision. Risk factors for many eye conditions, including amblyopia (often referred to as lazy eye), muscle imbalances, and some ocular diseases, have no signs or symptoms and may not be detected in a well-baby check-up. Such pediatrician visits include care and services performed by all personnel and last an average of 22.1 minutes, which is ample time for screening and detecting potential large-scope health problems. However, significant risk factors for eye and vision disorders are not detectable by base-level infant eye screening, and even early retinoblastoma, the seventh most common pediatric cancer, is detected more than 80 percent of the time outside the doctor's office by a family member or friend.



How an InfantSEE® Assessment Is Conducted

Although infants cannot speak, optometrists have the clinical education, training and experience, as well as the instruments and resources, to provide non-invasive eye and vision assessments for any non-verbal patients such as infants. Additionally, volunteer InfantSEE® optometrists have access to additional AOA training in working effectively with babies – and parents.

During the assessment, parents might hold the baby on their laps or on a lap pillow and might also assist by holding targets or toys to hold the baby's attention. Optometrists will gauge the babies' comfort levels with specific techniques and adjust them as necessary, but will typically evaluate visual acuity, refraction, motility, alignment, binocularity and overall eye health. As detailed below, these tests will determine signs of strabismus, amblyopia or diseases of the eye.

- **Visual Acuity/Refractive Status** – Assessments for visual acuity and refraction are largely intended to measure for nearsightedness or farsightedness – common risk factors for amblyopia, which develops when an otherwise healthy eye has not received adequate use during early childhood. Nearsightedness or farsightedness in an infant's developing eye can cause the brain to favor seeing through one eye, suppressing vision in the other eye, which can lead to permanent vision impairment.

Because the traditional eye chart with letters or symbols cannot be used with infants,

assessment of visual acuity may include tests to ensure that the infant can fix his eyes on an object and follow it. Tools such as gray cards with various sized stripes or pictures may be used to determine at which objects the baby prefers to look, and at what distances. The doctor may also use lenses and light from a small hand-held instrument to assess how the eye responds to particular targets. Some doctors use photographic testing to analyze the pupil reflex in the photo. In many cases, the infant may have some degree of refractive condition not requiring intervention.

- **Ocular Motility/Alignment/Binocular Potential** – Assessments for motility, alignment and binocularity can determine the presence of strabismus, which occurs when one eye does not aim at the same object as the other eye. Strabismus can lead to amblyopia, if undetected, or may indicate a number of ocular diseases.

These assessments also measure eye coordination, which is the ability of both eyes to work together as a team to create one three-dimensional image in the brain. Good eye coordination, a skill that is not innate and must be developed, keeps the eyes in alignment. Later in life, poor eye coordination can make reading for extended periods of time difficult and may result in avoidance of detail work, such as writing or art work, poor reading comprehension and clumsiness.

Using very simple instruments, such as penlights, finger puppets or toys, the optometrist tests the eye's ability to move by getting the baby's attention and observing how the baby follows the movements of the object. By shining a penlight toward the baby's eyes, the doctor can gauge eye alignment, which is straight if the light is reflected in the center of both eyes. The optometrist can also assess a baby's depth perception by using red/green glasses (commonly known as 3-D glasses), and displaying 3-D pictures. To a baby with good eye coordination, the pictures will appear in 3-D, and the infant will then reach to touch the picture.

- **Overall Eye Health** – The optometrist will assess the eye's external structure as well as eyelids, tear ducts and other parts of the eye. Often, the optometrist can detect existing allergies from an external assessment.

Pupil function is then checked, followed by an examination of the inner eye through dilated pupils, which can also detect ocular diseases such as retinoblastoma, the seventh most common pediatric cancer.

Following the assessment, in addition to sharing findings with the parents, the optometrist may send summary information to the infant's pediatrician, family physician or other appropriate practitioners reporting and explaining any significant condition diagnosed in the course of the assessment.