



Photoscreening

Photoscreening occurs as part of vision screening performed by pediatricians, nurse practitioners, schools, daycare, or health departments. The purpose of photoscreening is to look for focusing problems that could indicate a child is not seeing well with one or both eyes. In addition, photoscreening detects risk factors for amblyopia. Amblyopia is a reduction in vision in one or both eyes that prevents normal brain development of the visual system. Amblyopia is much easier to treat when it is detected at a younger age. If untreated, amblyopia results in permanent visual loss in one or both eyes.

Although the standard for vision testing is checking the vision in each eye using an eye chart, in children unable to cooperate with an eye chart, photoscreening allows for earlier detection of focusing problems. Photoscreening is particularly useful with preverbal children (under age 3 yrs), young children (age 3-5 yrs) and older, non-cooperative or non-verbal children. Prior to the use of these devices, doctors could only detect amblyopia in children who could reliably recognize letters or symbols on an eye chart. Photoscreeners function by detecting special light reflexes from each eye. The devices produce images that can help identify [refractive errors](#) (like a prescription for glasses), a large difference between the refractive error of each eye (anisometropia), and ocular misalignments ([strabismus](#)). When present, these conditions place a child at risk for [amblyopia](#). The camera images can be interpreted by a trained test administrator or by software incorporated into the equipment. The photoscreening process usually takes less than a minute to perform. Thus, only brief cooperation is required for the child to look at the camera. If the images show a condition that may lead to amblyopia, a referral should be made to a pediatric ophthalmologist for further evaluation.

Newer devices called nerve fiber layer scanners examine the nerves inside the eye (retina) to detect small differences that can occur in amblyopia. These type of devices are relatively new. Since these devices detect the presence of amblyopia as opposed to the risk factors of amblyopia, they may result in less referrals to the pediatric ophthalmologist.

If your child fails the photoscreening test, they will be referred for a complete eye exam. As part of a complete eye examination, the ophthalmologist will dilate the pupils with eye drops and measure the focusing power of each eye. This is called a cycloplegic refraction and determines if a child needs glasses. Photoscreeners look for the risk factors for amblyopia, but only a trained eye physician can diagnose whether amblyopia exists and whether glasses or other treatments are necessary. Photoscreening devices do not record the vision of the child, but the focusing need for each eye and in some cases the alignment of the eyes. In some children, the visual blur created by the refractive error is not significant and the child may not need glasses at their current age but could indicate the need for close follow up with the eye doctor. Visual acuity screening thus remains an important component of a child's preventative health care.