



# Lions Screen Kids Sight

## Photoscreener Agency Recognition & Approvals

The use of handheld photoscreeners, such as the Welch Allyn Spot Vision Screener, has received widespread recognition as a highly valuable method for vision screening preschool and younger school children. The screenings are done at a distance of one meter, in low light, completed in seconds, with immediate results. No drops or special precautions are required.<sup>1</sup> This procedure is non-invasive (doesn't touch the child).<sup>2</sup> These screening devices work by projecting harmless, low energy infra-red light into the eye and measure the light reflected back out into the device.<sup>3</sup>

The United States Preventative Services Task Force (USPSTF) has recognized photoscreening as appropriate methodology for vision screening of children aged 3-5 years.<sup>4</sup>

Photoscreening is Endorsed by the American Academy of Pediatrics. The American Academy of Pediatrics has issued a policy statement supporting the use of these technologies for preschool vision screening.<sup>5</sup>

The American Academy Of Pediatrics Instrument-Based Pediatric Vision Screening Policy Statement states that instrument-based screening is quick, requires minimal cooperation of the child, and is especially useful in the preverbal, preliterate, or developmentally delayed child.<sup>6</sup> This Policy Statement by the American Academy of Pediatrics is cosponsored by the American Academy of Ophthalmology, the American Association for Pediatric Ophthalmology and Strabismus, and the American Association of Certified Orthoptists.<sup>7</sup>

Their findings: The goal of vision screening is to detect subnormal vision or risk factors that threaten visual development, preferably at a time when treatment can be initiated to yield the highest benefit. A primary goal of vision screening in young children is the detection of amblyopia or the risk factors for development of amblyopia, a neural deficit in vision that is estimated to be present in 1% to 4% of children. ... The hallmark of amblyopia is decreased visual acuity, typically monocular, for which no ocular structural disorder fully accounts. However, successful visual acuity testing by using a vision chart is highly dependent on patient age and screener experience. In children younger than 3 years, few professionals can reliably determine acuity in each eye by using a vision chart. Therefore, for younger children, the preferred methodology is instrument-based detection of risk factors for amblyopia—primarily photoscreening and autorefraction.<sup>8</sup>

Recommendations from this study: Photoscreening and handheld autorefraction are recommended as an alternative to visual acuity screening with vision charts from 3 through 5 years of age.<sup>9</sup>

As stated in the above study, successful visual acuity testing is highly dependent on patient age and screener experience. In a study done by Silbert DI, Matta NS, Brubaker A., the objective was to determine the reliability of visual acuity screening performed by a lay screener compared to a photoscreener operated by a lay screener, for the detection of amblyopia risk factors. The conclusions stated that the results from the photoscreener for ages 3-10 were significantly more reliable than the results from acuity testing.<sup>10</sup> The photoscreener in the study is a PlusOptix Vision Screener, but the conclusions of the study are valid for other high quality photoscreeners, including the Spot Vision Screener from Welch Allyn.

National Center for Children's Vision and Eye Health has approved the use of Welch Allyn® Spot™ Vision Screener for Instrument-based vision screening.<sup>11</sup>

In a 2016 study done by Irene Sanchez, Sara Ortiz-Toquero, Raul Martin, and Victoria de Juan, the authors state that infrared photoscreeners are effective for early detection of amblyopia, high refractive error measurement, and non-intermittent strabismus screening, and help reach the percentage of children who did not receive the recommended preschool vision screening and therefore reducing the permanent vision impact

of these conditions. It also referred to a VIP (Vision in Preschoolers Study Group) study that demonstrated the usefulness of the photoscreener in vision screening in preschoolers. .... In the discussion the authors refer to an AAPOS study of Lions Clubs International Foundation photoscreening results from 17 programs and 400,000 preschool children. The authors conclude that the Lions Clubs International Foundation programs should be considered a starting point from which vision screening evolves trying to be cost-effective and time-efficient. .... The authors conclude that the use of photorefractors allows the noninvasive quick measurement of refraction and ocular alignment in both eyes, and they would be of great value in refractive error screening, early detection of amblyopia, and in eye care practice and research.<sup>12</sup>

#### References:

- 1.) Arizona Lions Vision Center sponsored document: Arizona Kid Sight Sample Vision Screening Introductory Letter. <http://arizonalionsvisioncenter.org>
- 2.) Lions Kid Sight USA Training Manual, Rev 2017.11.07 minus appendix, page 8. <http://lionskidsightusa.org>
- 3.) Ibid, page 11.
- 4.) Pediatric Vision Screening, AAPOS Revised 5\_28\_15, American Association for Pediatric Ophthalmology and Strabismus, PowerPoint Presentation, Slide 44. <https://www.aapos.org>
- 5.) Ibid, Slide 45
- 6.) **Pediatrics**, Official Journal of the American Academy of Pediatrics, *American Academy Of Pediatrics Instrument-Based Pediatric Vision Screening Policy Statement - 2012-983-6*, page 2 - Abstract. <http://pediatrics.aappublications.org/content/130/5/983>
- 7.) Ibid, page 2 Title Block
- 8.) Ibid, page 2 Introduction
- 9.) Ibid, page 4
- 10.) 2013 *Flip chart Visual Acuity Screening for Amblyopia Risk Factors Compared to the PlusoptiX A09 Photoscreener, Tests Performed by a Lay Screener*, Abstract. <https://www.ncbi.nlm.nih.gov/pubmed/24372416>
- 11.) National Center for Children's Vision and Eye Health, *Handout\_Vision\_Milestones\_Year\_1\_Atlanta\_2018*, page 18 <https://nationalcenter.preventblindness.org/publications-and-presentations>
- 12.) 2016, *Advantages, Limitations, And Diagnostic Accuracy Of Photoscreeners In Early Detection Of Amblyopia: A Review*, page 10 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4969043>

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