

Issue Brief: “Vision screening” Should Be Called “Amblyopia Screening”

In the U.S. one in every four children have vision disorders that require diagnosis and treatment by an eye doctor, yet 93 percent of children during the critical developmental years before starting school never see an eye doctor for diagnosis and treatment.¹ This situation exists because of a singular overreliance on so-called “vision screening” to identify children requiring eye examination from an eye doctor.²

A child’s vision and overall well-being depends on getting the best health care (diagnosis and treatment at the right time by the right doctor). As such, “amblyopia screening,” the prevention service rendered in school screenings and pediatric well child visits, should not be referred to as “vision” screening and should not be overstated to provide adequate care for all children.

The National Academies of Science, Engineering, and Medicine (NASEM) in “Making Eye Health a Population Health Imperative: Vision for Tomorrow” (2016) described “vision” screenings as services that can possibly identify but never diagnose eye disease and conditions. Unlike other clinical screenings which are administered in the context of overall preventative care with medical oversight to insure proper follow-up and treatment, vision screenings of any type only lead to a suggested referral to an eye doctor, not necessarily diagnosis or treatment.

Amblyopia screening checks for possible amblyopia (lazy eye) and amblyopia risk factors (Strabismus, a large visible eye turn, and anisometropia, a large difference in vision between each eye) that indicate the child should have an eye examination by an eye doctor to determine whether the child has the condition. Amblyopia is present in 2 to 3 percent of children and when not diagnosed and treated, can adversely affect cognition, learning, and socialization in the classroom.³

Amblyopia screening does not screen for most vision conditions, such as hyperopia (farsightedness), smaller but clinically significant amounts of anisometropia or binocular vision disorders of convergence (turning the eyes inward), disorders of divergence (turning the eyes outward), disorders of tracking (following objects in space), disorders of accommodation (focus ability at near) and disorders of fusion (the ability to fuse images from each eye in the brain into one stereoscopic 3D image). Left undiagnosed, all of these conditions may also adversely affect cognition, learning and socialization.

Amblyopia screening (as recommended by the United States Preventive Services Task Force but incorrectly called “vision screening”) is mildly effective when used appropriately in the age range of age 3 through age 5 and is meant only for children who are asymptomatic, and whose parents or caregivers have no concerns regarding their child’s vision impacting their education performance. Most children do not verbalize their vision problems, because they don’t know what is or what should be normal vision.

With these considerations, amblyopia screening is not reliable in determining the need for a child to be seen by an eye doctor for other vision or eye health problems.

¹ 2002 National Health Interview Survey as cited in CDC MMWR, 54(17), 425-9

² http://www.visionandhealth.org/documents/Child_Vision_Report.pdf

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In fact, 22 to 23 percent of children undergoing amblyopia screening have other vision disorders. These children all require eye exams by an eye doctor but are instead returned to the classroom with a clean bill of vision health and performance, although their vision system lacks vision efficiencies necessary for learning (such as seeing an eye chart at distance but having difficulty maintaining focus up close, and suffering from reduced reading comprehension and stereopsis).⁴

To compound the problem, schools and policymakers singularly rely on amblyopia screening throughout all grades to determine the need for children to receive an eye exam by an eye doctor, even when amblyopia screening conducted outside the age range of age 3 through age 5, is not endorsed by the USPSTF.⁵

The terminology “vision screening” when used to describe “amblyopia screening” misleads children, parents, and teachers, thereby interfering with necessary eye exams by an eye doctor to diagnose and mitigate all non-amblyopic vision disorders.

The public does not accept misuse of screening terminology in other instances. For example, the USPSTF identifies 14 different types of “Cancer Screenings” (including but not limited to, separate screenings for Bladder, Breast, Cervical, Colorectal, Gynecological, Lung, Oral, Ovarian, Pancreatic, Prostate, Testicular and Thyroid Cancers and Skin Cancer). The terminology “Skin Cancer Screening” would not be considered as acceptable terminology for “Breast Cancer Screening” and the general term “Cancer Screening” would not be used in place of “Colorectal Cancer Screening” to suggest the person has also been screened for, say, lung cancer.⁶ In the realm of children’s vision care, the USPSTF and others blindly accept Amblyopia Screening as analogous to Vision Screening.

In conclusion, amblyopia screening must no longer be referred to as “vision screening,” but instead to its more accurate terminology “amblyopia screening.”

⁴ Association between reading speed, cycloplegic refractive error, and oculomotor function in reading disabled children versus controls, Patrick Quaid and Trefford Simpson, Graefes Arch Clin Ophthalmology (2013) 251:169-187.

⁵ <https://www.uspreventiveservicestaskforce.org>

⁶ <https://www.uspreventiveservicestaskforce.org/BrowseRec/Index>