

# School Vision Screening Advisory Committee Report

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## Vision Screening Standards

to

New Mexico Department of Health

### February 2009

**A summary report from the New Mexico Department of Health Vision Screening Advisory Committee on establishment of vision screening standards with recommendations for a comprehensive vision screening program for students in New Mexico**

# New Mexico Vision Screening Advisory Committee Members

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## Introduction

Currently there are no vision screening standards or screening requirements for students enrolled in school in New Mexico.

In 2005, Senate Joint Memorial 39 and House Joint Memorial formed a committee of medical and vision experts who looked at vision screening practices and their impact in New Mexico and other states across the country. That study found evidence that children in New Mexico are not receiving the vision care they need because the state lacks an organized vision screening program.

The Joint Memorial report made the following recommendations for vision screening practices for school-aged children in New Mexico.

- The Departments of Health and Public Education should study the feasibility of developing regulations requiring routine vision screening in schools.
- Training on vision screening should be standardized and implemented for all school nurses in the State.
- A process should be established for referral of all children who fail eye screening at any age to the appropriate eye care professional and develop a standardized referral form to be used between school nurses and eye care professionals.
- A statewide fund should be created for uninsured students who require vision exams and glasses and Medicaid providers should be requested to review the feasibility of paying for polycarbonate lenses for all children.
- Due to the shortage of pediatric eye care providers in the State, an investigation is needed to determine if barriers exist to participation in the Medicaid program by eye care professionals in New Mexico.

As a follow up to the Memorials, in 2007 the New Mexico legislature passed House Bill 1283 and Senate Bill 1149 that were signed into law requiring the Secretary of the Department of Health to “appoint an advisory committee to establish the standard for an appropriate vision screening. The committee shall consist of a practicing school nurse, a school administrator, a representative of a statewide organization for the prevention of blindness, a licensed New Mexico optometrist, a licensed New Mexico ophthalmologist and a licensed New Mexico pediatrician. The Department of Health shall promulgate rules to establish vision screening test standards pursuant to this section.”

This summary report represents the work of the appointed vision screening advisory committee. Vision screening standards established by the committee are included in this report as an Attachment.

Pursuant to State statutes resulting from 2007 House Bill 1283 and Senate Bill 1149:

- **“Section 22-13-30 NMSA. Vision screening.**

A school nurse or the nurse's designee, a primary care health provider or a lay eye screener shall administer a vision screening test for students enrolled in the school in pre-kindergarten, kindergarten, first grade and third grade and for transfer and new students in those grades, unless a parent affirmatively prohibits the visual screening.”

- **“Section 24-1-31 NMSA. Save our children's sight fund created.**

The "save our children's sight fund" is created in the state treasury. Money in the fund shall consist of appropriations, contributions, grants and statutory revenues directed to the fund. Money in the fund is appropriated to the department of health, which shall administer the fund for the purpose of development and implementation of a vision screening program making vision screenings and follow-up comprehensive examinations available to New Mexico children regardless of family income. Expenditures from the fund shall be by warrants of the secretary of finance and administration drawn pursuant to vouchers signed by the secretary of health or the secretary's authorized representative. Money in the fund shall not revert at the end of a fiscal year.”

- **“Section 24-1-32 NMSA. Notice of the need for further vision evaluation and availability of funds.**

The department of health shall promulgate rules for award of money from the save our children's sight fund. When the vision screen of a student indicates the need for further evaluation, the student's school shall notify the student's parent of that need and provide information on the availability of funds from the save our children's sight fund. The notice shall state that the parent, if the student is not already covered by health insurance for a comprehensive eye examination, may apply to the fund for the following expenses as a result of the screening:

- A. a comprehensive eye examination by an optometrist or ophthalmologist whose services are used to follow up the school vision screen;
- B. the cost of contact lenses or polycarbonate lenses and frames for eyeglasses; and
- C. replacement insurance for lost or broken lenses.”

- **“Section 66-6-6.3 NMSA. Save our children's sight fund option.**

The vehicle registration form in use as of January 1, 2008 shall include a check-off option for a driver who wishes to contribute to the save our children's sight fund for a one-dollar (\$1.00) or a five-dollar (\$5.00) fee in addition to the registration fees required by the division. All fees collected from the check-off option shall be paid to the state treasurer to the credit of the save our children's sight fund within two months of receipt.”

## **Rationale for a Vision Screening Program**

The visual system of the young child is immature. Equal input from both eyes is required to develop the visual centers in the brain. If a growing child's eye does not provide a clear and focused image to the developing brain, irreversible loss of vision may result.

Good vision is essential for proper physical development and educational progress in growing children. Much of learned information is achieved through vision. When vision is reduced or absent, nearly all aspects of early development can be affected: motor, cognitive, language, self-help, self-concept, and social skills. Children do not always complain of vision difficulties; yet, vision disorders may affect 10-20% of school-aged children.

Vision screening can result in the early detection of common vision disorders, such as refractive errors, amblyopia and strabismus. Amblyopia is the most common cause of vision loss in developed countries, and early detection provides the best opportunity for effective treatment. Failure to detect and treat these conditions in a timely manner can lead to inadequate school performance or, at worst, blindness in children. The primary cause of bilateral visual impairment

in children in developed countries is cortical visual impairment (visual impairment due to brain injury). Early detection of this condition helps promote the habilitation process for these children.

The American Academy of Ophthalmology, the National Association of School Nurses, the Individuals with Disabilities Education Act, and the Centers for Disease Control and Prevention all endorse school vision screening programs.

## **NM Vision Testing Standards (See attachment.)**

### **Traditional Screening**

Vision screening guidelines have been endorsed by the American Academy of Pediatrics (AAP), the American Association for Pediatric Ophthalmology and Strabismus (AAPOS), and the American Academy of Ophthalmology (AAO). These published guidelines were used in determining the testing standards for traditional testing in New Mexico and include distance visual acuity, ocular alignment and color vision tests for students in pre-kindergarten, kindergarten, first grade and third grade and for transfer and new students in those grades. These New Mexico standards established by the DOH advisory committee require ocular alignment and color vision testing only once during enrollment in any of the targeted grades.

### **Photoscreening**

Photoscreening is included as an acceptable screening method in New Mexico vision testing standards based on published recommendations. It is a newer method of vision testing whereby a measurement or photograph is made of the light reflections from the eye and has been shown to be highly effective in detecting the need for glasses as well as detecting other treatable vision conditions. Some benefits of this method of screening are time efficiency, ease of screening and high predictive value. Another advantage when screening the non-verbal and developmentally delayed student is that it requires little cognitive skill to respond to the test. If the child can remain still for a photograph, the test can be adequately performed.

Photoscreening technology is improving rapidly. Photoscreeners that have been well studied and validated for pediatric use at the time of this report are recommended for use by the advisory committee and are identified in the attached standards. As technology changes and new devices are developed that are also validated for pediatric use, these devices should be considered for inclusion as an acceptable testing method for vision screening by the NM DOH. Periodic review of the photoscreening methods validated for pediatric use is recommended, and referral criteria should follow vision screening standards for photoscreening of the AAPOS that are soon to be posted on its website at [www.aapos.org](http://www.aapos.org).

### **Alternative Screening**

A major challenge in vision screening occurs when a child is unable to cooperate due to learning disabilities or conditions (e.g., history of prematurity, head trauma, or anoxia; or neurological disorder, etc.) that affect his or her comprehension or ability to perform the required tests. When this occurs, alternative testing tools or testing techniques are needed to obtain an accurate test result. Therefore, an alternative screening method is included in the standards for New Mexico to accommodate a broader range of students for screening. If this screening method is used it should be performed by a school nurse, teacher of the visually impaired, or other professional with training in alternative vision screening, or a primary care health provider rather than a lay screener.

## **Additional Screening Recommendations**

Although the vision screening standards developed for New Mexico and included in this document are limited to age groups for which legislation requires screening, annual screening at other grade levels is not discouraged. Certainly, any student at any grade level with vision complaints or who exhibits signs listed in the “eye appearance” and “visual behaviors” sections of the pre-screening chart should be referred for a comprehensive vision exam by an eye care provider.

## **Recommendations for Implementation**

In addition to developing Standards for Vision Screening in New Mexico, the vision screening advisory committee offers the following recommendations for a comprehensive vision screening program:

- 24-1-32 NMSA should be amended so that funds in the Save Our Children’s Sight Fund are available to students who do not have insurance coverage for the cost of lenses, eye glass frames or replacement for lost or broken lenses. It is the advisory committee’s belief that this was the intent of the drafters. As written, however, the law curtails the availability of funds depending on whether the student, via his/her parent, is covered by health insurance for a comprehensive eye examination. Even with insurance that covers the comprehensive eye examination, if the student’s insurance does not cover the cost of lenses, frames, or replacements for lenses, those students may not be able to afford those necessary vision aids.
- A DOH-approved training should be required for eye screeners at least every five years. It could be hands-on or web-based and should be periodically reviewed. Such trainings are currently available on web sites for the Minnesota and Massachusetts Departments of Health ([www.health.state.mn.us](http://www.health.state.mn.us) and [www.mass.gov/](http://www.mass.gov/) ).
- A vision screening program should include a system to evaluate if referrals are appropriately being made and that appropriate care is being delivered as a result of referrals from vision screening. A vision screening program that collects data from the screenings and requires eye care providers to submit exam results could help address the following key programmatic questions:
  - 1) How many New Mexico children with visual problems are being identified and helped by the state program?
  - 2) Considering that New Mexico has a shortage of pediatric eye care providers, are appropriate guidelines being used to refer students to eye care specialists and are New Mexico optometrists and ophthalmologists adhering to best practices regarding comprehensive examinations and glasses/contact lenses prescriptions?
  - 3) Can the cost effectiveness and predictive value of the vision screening methods be defined?
- Appointment of a standing advisory committee should be strongly considered that would guide the creation of a vision screening program and its implementation as well as review the vision screening standards every two years. The committee would include representation from the Department of Health, Public Education Department, New Mexico

School for the Blind and Visually Impaired, school nurses, school administrators, optometrists, ophthalmologists, pediatricians, and community stakeholders.

- A full-time DOH staff position should be created to oversee the implementation of the vision screening program and the disbursement of Save Our Children's Sight Funds, as well as facilitate the recommended standing advisory committee.
- Consideration should be given to all the potential resources available to provide the care and corrective lenses that students will need as a result of vision screenings in the school setting. Identifying national, state and community partners and effectively coordinating with them should be a priority for implementation of a state vision screening program. Below is information on several currently functioning financial resource organizations identified to date.
  - Efforts should be made to maximize contributions to the Save Our Children's Sight Fund. Ohio has established a similar funding mechanism for their vision screening program and the Executive Director of the Ohio Ophthalmological Society ([www.ohioeye.org/public/community/sos.cfm](http://www.ohioeye.org/public/community/sos.cfm)) may be a resource for suggestions on how to maximize contributions.
  - Medicaid will pay for an eye examination and for one pair of glasses per year.
  - Children's Medical Services has funding to pay for eye exams and glasses for children without Medicaid who meet certain criteria, such as children born in Mexico who are not eligible for Medicaid.
  - The New Mexico Lions Operation KidSight (NMLOKS) is active in certain NM counties and has limited resources for eye exams and glasses for uninsured and needy students. In addition, certain community Lions Clubs not participating in NMLOKS also provide resources for students with identified vision-related needs ([www.nmlions.org](http://www.nmlions.org)).
  - Currently, the New Mexico School for the Blind and Visually Impaired and the Commission for the Blind manage a fund for eyeglasses for children who are diagnosed with visual impairment. The status of this funding beyond the current fiscal year is unknown as the funding has to be approved by the legislature each year.
  - Albuquerque Public Schools (APS) has the Patsy Irene Bennett Memorial Endowment Vision Care Program Fund that is to be used solely for exams and glasses for the vision care of APS students. The APS nurse manager is the contact for this Fund.
  - Sight for Students is a Vision Service Plan (VSP) resource that provides free vision exams and glasses to low-income, uninsured children. The program operates nationally through a network of community partners who identify children in need and through VSP network doctors who provide the eyecare services. The National Association of School Nurses (NASN) is one of the community partners. Sight for Students can be contacted at 1-800-852-7600 ([www.sightforstudents.org](http://www.sightforstudents.org)).

## References

### Children and vision

- Bishop V. *Teaching Visually Impaired Children*. Charles C Thomas, Publisher, Springfield, Illinois. 1996.
- Chen D., ed., *Essential Elements in Early Intervention, Visual Impairment and Multiple Disabilities*. New York: American Foundation for the Blind. 1999.
- Department of Health and Human Services. (2004) Vision and Hearing Target 28. *Healthy People 2010*. Retrieved November 28, 2007 from <http://www.healthypeople.gov/document/HTML/Volume2/28Vision.htm>.
- Dutton G, Jacobson K. Cerebral visual impairment in children. *Seminars in Neonatology*. 2001;6, 47-485.
- Good W, Jan J, Burden S, Skoczinski A, Candy R. Recent advances in cortical visual impairment. *Developmental Medicine and Child Neurology*. 2001;43, 56-60.
- Ferebee A. Childhood vision: Public challenges and opportunities: A policy brief. Washington DC: The Center for Health and Health Care in Schools, School of Public Health and Health Services, George Washington University Medical Center. 2004.
- Hatton D. Model Registry of Early Childhood Visual Impairment: First-Year Results. *Journal of Visual Impairment & Blindness*, July 2001.
- Holmes JM, Clarke MP. Amblyopia. *Lancet* 2006;367(9519):1343-51.
- Hoyt CS. Visual function in the brain-damaged child. *Eye*. 2003;17, 369-384.
- Huebner KM. Social skills. In Scholl G. ed., *Foundations of Education for Blind and Visually Handicapped Children and Youth: Theory and Practice*. New York: American Foundation for the Blind. 1986.
- Simons K. Amblyopia characterization, treatment and prophylaxis. *Surv Ophthalmol*. 2005;50(2):123-66.
- Teplin S. Visual Impairment in Infants and Young Children. *Infants and Young Children*. 1995; 8 (1): 18-51.
- Vinding T. Prevalence of amblyopia in Denmark. *Acta Ophthalmologica*, 1991;69, 796-798.

### Vision screening

- American Academy of Ophthalmology (2007). Policy Statement, Vision Screening for Infants and Children. Retrieved December 17, 2008 from <http://one.aao.org/asset.axd?id=2efe6879-b631-4878-b878-18bc1679114c>.
- American Academy of Pediatrics Policy Statement Eye Examination in Infants, Children, and Young Adults by Pediatricians. *Pediatrics*. 2003;111(4), 902-907. [Reaffirmed *Pediatrics* 2007;120, 683-684.]
- Arnold RW, Stange CA, Ryan C. The compared predictive value of Bruckner, acuity and strabismus from pediatric referrals. *Am Orthopt Journal*. 2006;56(1):15-21.
- Arnold RW, Gionet EG, Jastrzebski AI, et al. The Alaska Blind Child Discovery project: rationale, methods and results of 4,000 screenings. *Alaska Med*. 2000;Jul-Sep; 42(3):58-72.
- Atkinson J, Braddick O, Nardini M, Anker S. Infant hyperopia: detection, distribution, changes and correlates-outcomes from the cambridge infant screening programs. *Optom Vis Sci*. 2007;84(2):84-96.
- Beauchamp C, Felius J, Beauchamp GR, Brown M, Brown G. The economic value added for care of amblyopia, strabismus, and asthma (abst). *J AAPOS*. 2007;11(1):76.
- Bradford G, Nottingham-Chaplin PK. Positive Predictive Value of Lea Symbol and Random Dot E Testing by Trained Lay personnel in a Large Preschool Vision Screening Program. Poster presentation at the Association for Research and Vision in Ophthalmology annual meeting, Fr. Lauderdale, FL. 2006.

- Castanes, M. Major Review: The Underutilization of Vision Screening (for Amblyopia, Optical Anomalies and Strabismus) Among Preschool Age Children. *Binocular Vision & Strabismus Quarterly*. 2003;18 (4), 217-232.
- Ciner EB, et al. Stereoacuity development: 6 month to 5 years. A new tool for testing and screening. *Optom Vis Sci*. 2006;73(1): 43-8.
- Chang CH. Screening amblyopia of preschool children with uncorrected vision and stereopsis tests in Eastern Taiwan. *Eye*. 2007;21: 1482-1488.
- Donahue SP. Relationship between anisometropia, patient age, and the development of amblyopia. *Am J Ophthalmol*. 2006;142(1):132-140.
- Donahue SP. How often are spectacles prescribed to "normal" preschool children? *J AAPOS*. 2004;8(3):224-9.
- Donahue S, Arnold R, Ruben JB. Preschool vision screening: What should we be detecting and how should we report it? Uniform guidelines for reporting results from studies of preschool vision screening *JAAPOS*. 2003;7(5):314-6.
- Eibschitz-Tsimhoni, M. Early screening lowers amblyopia rate. *J AAPOS*. 2000;4 (4), 194-199.
- Eibschitz-Tsimhoni M, Friedman T, Naor J, Eibschitz N, Friedman Z. Early screening for amblyogenic risk factors lowers the prevalence and severity of amblyopia. *J AAPOS*. 2000;4(4):194-199.
- Birch E, Williams C, Janes D, Fu V, Cheng C, Northstone K. Random Preschool Stereoacuity test: Normative data and validity. 2004.
- Hartmann EE, Bradford GE, Chaplin PK, et al. Project Universal Preschool Vision Screening: a demonstration project. *Pediatrics*. 2006;117(2):e226-37.
- Hered RW, Rothstein M. Preschool vision screening frequency after an office-based training session for primary care staff. *Pediatrics*. 2006;112(1 Pt 1):e17-21.
- Kemper AR, et al. Barriers to Follow-up Eye Care after Preschool Vision Screening in the Primary Care Setting: Findings from a Pilot Study. *JAAPOS*. 2006;10(5): 476-478.
- Kimel L. Lack of Follow-up Exams after Failed School Vision Screenings: An investigation of contributing factors. *Journal of School Nursing*. 2006;22(3), 156-162.
- Kirk VG, Clausen MM, Armitage MD, Arnold RW. Preverbal photoscreening for amblyogenic factors and outcomes in amblyopia treatment: early objective screening and visual acuities. *Arch Ophthalmol*. 2008;125(4):489-492.
- Kvarnstrom G, et al. Preventable vision Loss in Children: A Public Health Concern? *Amer. Orthoptic Journal*. 2006;56: 3-6.
- Kvarnstrom G. Vision Screening of Swedish Children. *Acta Ophthalmol.Scand*, 2001;79, 240-244.
- Kvarnstrom G, Jakobsson P, Lennerstrand G. Screening for visual and ocular disorders in children, evaluation of the system in Sweden. *Acta Paediatr*. 1998;87(11):1173-1179.
- Miller JM, Hypermetropia Screening Recommendations of Pediatric Eye Specialists [ARVO Abstract]: S302 Abstract nr. 1595. 2000.
- National Association of School Nurses. Issue Brief School Vision Screening. Retrieved July 2, 2008 from <http://www.nasn.org/Default.aspx?tabid=284>.
- New Mexico Vision Screening Tool, Family Infant Toddler Program, New Mexico School for the Blind and Visually Impaired. Retrieved on July 29, 2008 from [www.nmsbvi.k12.nm.us](http://www.nmsbvi.k12.nm.us).
- Recommendation Statement. *Ann Fam Med*. 2004;2:263-266.
- Simons K. Preschool vision screening: Rationale, methodology and outcome. *Survey of Ophthalmology*. 1996;41(1):3-30.
- Swanson J. Eye examination in infants, children and young adults by pediatricians: AAP Policy Statement. *Ophthalmology*. 2003;110(4):860-5.

Vision in Preschoolers Study Group. Random Dot E stereotest: Testability and reliability in 3- to 5-year-old children. *JAAPOS*. 2006;10(6):507-514.

VIPS. Children Unable to Perform Screening Tests in Vision In Preschoolers Study: Proportion with Ocular Conditions and Impact on Measures of Test Accuracy. *Invest Ophthalmol Vis Sci*. 2008;48(1):83-7.

VIPS, Dobson V, Quinn G, et al. Preschool vision screening tests administered by nurse screeners compared with lay screeners in the Vision in Preschoolers Study. *IOVS*. 2005;46:2639-48.

Vision in Preschoolers Study Group. Comparison of Preschool Vision Screening Tests as Administered by Licensed Eye Care Professionals in the Vision in Preschoolers Study. *Ophthalmology*. 2004;111: 637-650.

Williams C, Northstone K, Harrad RA, Sparrow JM, Harvey I. Amblyopia treatment outcomes after screening before or at age 3 years: follow up from randomised trial. *BMJ*. 2002;324(7353):1549.

## Photoscreening

Arnold RW, Stark L, Leman RE, Arnold KK, Armitage MD. Tent photoscreening and patched acuity by school nurses: Validation of ASD-ABCD. *Binoc Vis and Strabismus Quart*. 2008;23(3):83-94.

Arnold RW, Armitage MD, Gionet EG, et al. The cost and yield of photoscreening: Impact of photoscreening on overall pediatric ophthalmic costs. *JPOS*. 2005;42(2):103-111.

Atodaria NJ, Harvey EM, Miller JM, Dobson V. Preschool Vision Screening Using a New Photoscreener: Effectiveness in a Population with a High Prevalence of Astigmatism [ARVO Abstract]. 2000: S302 Abstract nr 1953.

Bobier WR, Cowan L, Machan C, et al. Autorefractors Preschool Screenings. *Optometry and Vision Science*. 1999; Issue 12S, Volume 76, # 113.

Clausen MM, et al. Pediatric Eye/Vision Screening: Referral Criteria for the PediaVision PlusOptix S04 Photoscreener Compared to Visual Acuity & Digital Photoscreening. *Binocular Vision & Strabismus Quarterly*. 2007;22(2):83-89.

Donahue SP, et al. Lions Clubs International Foundation Core Four Photoscreening: Results From 17 Programs and 400,000 Preschool Children. *J AAPOS*. 2006;10:44-48.

Donahue SP, et al. Age-based Refinement of Referral Criteria for Photoscreening. *Ophthalmology*. 2001;108(12): 2309-2315.

Ehrt O, et. al. Screening for Refractive Errors in Preschool Children with the Vision Screener. *Strabismus*. 2007;15: 13-19.

Freedman HL, Preston KL. Polaroid photoscreening for amblyogenic factors. An improved methodology. *Ophthalmology*. 1992;99(12): 1785-95.

Harvey EM, Miller JM, Dobson V. Preschool Vision Screening with a New Portable Vision Screener: Effectiveness in a Population with a High Prevalence of Astigmatism [ARVO Abstract]: S302 Abstract nr 1594. 2000.

Ho CS, Armstrong M, Bobier WR. Screening for Refractive Errors in Children using the Welch Allyn DAV-1 Prototype. *Optometry and Vision Science*. 1998; Issue 12S, Volume 75, # 110.

Holgado SI, Arfeli S, Gomez-Demmel E, Espinosa J. Comparative study of the MTI PhotoScreener™, visual acuity and Lang stereopsis test for amblyogenic factors in mentally delayed children. *Am Orthop J*. 1998;48:122-130.

Joish VN, Malone DC, Miller JM. A cost-benefit analysis of vision screening methods for preschoolers and school-age children. *JAAPOS*. 2003;7:283-290.

Lang DM, Arnold AW, Leman RE, Arnold RW. Validated portable pediatric vision screening in the Alaska Bush: A VIPS-like study in the Koyukon. *Alaska Med*. 2007;49(1):2-13.

- Leman R, Clausen MM, Bates J, Stark L, Arnold KK, Arnold RW. A comparison of patched HOTV visual acuity and photoscreening. *J Sch Nurs*. 2006;22(4):237-43.
- Matta NS, et al. Performance of the PlusOptix vision screener for the detection of amblyopia risk factors in children. *Journal of AAPOS*; Article in Press.
- Paysee EA, Williams GC, Coats DK, Williams EA. Detection of the red reflect asymmetry by pediatric residents using the Brückner Reflex versus the MTI PhotoScreener™. *Pediatrics*. 2001;108(4).
- Ottar WL, Scott WE, Holgado SI. Photoscreening for amblyogenic factors. *J Pediatric Ophthalmol Strabismus*. 1995;Sep-Oct; 32(5):289-95.
- Robinson BE, Bobier WR. Setting the Referral Criteria for Autorefractors Used in the Oxford County Preschool Vision Screening. *Optometry and Vision Science*. 1999; Issue 12S. Volume 76, # 26.
- Rowe S, Taub M, Bartuccio M. *Examining special populations. Part 4: Additional examination techniques*. *OT, March 24, 2006*. Retrieved on July 29, 2008 from <http://www.opt.pacificu.edu/ce/catalog>.
- Salido A, Bradley J, Donahue S. Predictive Value of Photoscreening and Traditional Screening of Preschool Children. *JAAPOS*. 2005; 9(2), 114-120.
- Shoemaker, JA. Repeatability of Welch Allyn SureSight Autorefraction in Adults. [ARVO Abstract].: S301 Abstract nr. 1590. 2000.
- Simons BD, Siatkowski RM, Schiffman JC, Berry BE, Flynn JT. Pediatric photoscreening for strabismus and refractive errors in a high-risk population. *Ophthalmology*. 1999;106(6):107-80.
- Swanson J. Committee on practice and ambulatory medicine -. Use of photoscreening for children's vision screening (AAP Policy Statement). *Pediatrics*. 2002;;109(3):524-5.
- Tong PY, Bassin RE, Enke-Miyazaki E, et al. Screening for amblyopia in preverbal children with photoscreening photographs. II. Sensitivity and specificity of the MTI PhotoScreener™. *Ophthalmology*. 2000;107:1623-1629.
- Weinand F, Graf M, Demming K. Sensitivity of the MTI PhotoScreener™ for amblyogenic factors in infancy and early childhood. *Grafe's Archive for Clinical and Experimental Ophthalmology*. 1998;236(11):801-805.

## Useful Web Sites

- Alaska Blind Children Discovery (A cooperative, charitable research project to vision screen every preschool Alaskan): [www.abcd-vision.org/index.html](http://www.abcd-vision.org/index.html)
- American Academy of Ophthalmology (AAO): [www.aao.org](http://www.aao.org)
- American Academy of Pediatrics (AAP): [www.aap.org](http://www.aap.org)
- American Association for Pediatric Ophthalmology and Strabismus (AAPOS): [www.aapos.org](http://www.aapos.org)
- American Optometric Association: [www.aoa.org](http://www.aoa.org)
- Healthy People 2010: [www.healthypeople.gov](http://www.healthypeople.gov)
- Massachusetts Department of Health: [www.mass.gov/](http://www.mass.gov/)
- Minnesota Department of Health: [www.health.state.mn.us](http://www.health.state.mn.us)
- National Association of School Nurses (NASN): [www.nasn.org](http://www.nasn.org)
- Ohio Ophthalmological Society: <http://www.ohioeye.org/public/community/sos.cfm>
- Vision Service Plan (VSP) Sight for Students Program: [www.sightforstudents.org/](http://www.sightforstudents.org/)

## **Standards for Vision Screening in New Mexico Schools**

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### **Rationale:**

Pursuant to House Bill 1283 and Senate Bill 1149 passed by the 2007 legislature, these vision screening standards are established by the vision advisory committee appointed by the Secretary of the Department of Health.

### **Target Population for Required Screening:**

Section 22-13-30 NMSA requires that, unless a parent affirmatively prohibits the visual screening, a vision screening test be administered to students enrolled in school in the following grades including new and transfer students:

- pre-kindergarten,
- kindergarten,
- first grade and
- third grade.

### **Vision Screeners:**

Section 22-13-30 NMSA also requires that a school nurse or the nurse's designee, a primary care health provider or a lay eye screener administer the school vision screening tests.

### **Vision Screening Standards:**

Traditional vision screening is one of three screening methods (see charts below) considered appropriate for vision screening in New Mexico schools. In place of traditional vision screening, photoscreening using identified devices is appropriate for students in pre-kindergarten, kindergarten, and first grade. When neither the traditional method nor the photoscreening method can be used due to student's inability to adhere to instructions for either of these methods, use of the alternative vision screening method is appropriate. A pre-screening observation (see chart below) is to be performed on all students undergoing vision screening by any method.

The screening method charts below list the minimum test standards for each screening method.

**Pre-Screening Observation  
All grades**

Clinical Observation	Referral Criteria
<p align="center"><b>Eye Appearance</b></p>	<p><b>Refer for any of the following:</b></p> <ul style="list-style-type: none"> <li>• Cloudy or milky appearance</li> <li>• Keyhole pupil</li> <li>• Sustained eye turn inward or outward</li> <li>• Droopy eyelids</li> <li>• Absence of eyes moving together</li> <li>• Abnormal pupil constriction or dilation</li> <li>• Difference in size, shape, etc. of eyes</li> <li>• Excessive tearing</li> <li>• Jerky eye movements (nystagmus)</li> </ul>
<p align="center"><b>Visual Behaviors</b></p>	<p><b>Refer for any of the following:</b></p> <ul style="list-style-type: none"> <li>• Inconsistent visual behavior</li> <li>• Visually inattentive or uninterested</li> <li>• Difficulty sustaining eye contact</li> <li>• Holds objects close to face</li> <li>• Bending close to view objects</li> <li>• Tilts head</li> <li>• Stares at lights and ceiling fans</li> <li>• High sensitivity to room light or sunlight</li> <li>• Appears to look beside, under or above an object or person</li> <li>• Bumping into things</li> <li>• Tripping over objects</li> </ul>

<b>Traditional Vision Screening Method Ages 3 years and older</b>		
<b>Required Test</b>	<b>Results/Referral Criteria</b>	<b>Suggested Testing Tools</b>
<b>Distance Visual Acuity</b>	<p><u>3 through 5 years of age:</u> Passing test line is 20/40.</p> <p>Refer if either eye tests 20/50 or above.</p> <p>Refer if more than 1 test line difference between the eyes.</p> <p><u>6 years and older:</u> Passing test line is 20/30.</p> <p>Refer if either eye tests 20/40 or above.</p> <p>Refer if more than 1 test line difference between the eyes.</p>	<p>Snellen Letter Charts</p> <p>HOTV- linear or crowding bar</p> <p>Lea Symbol Chart – linear or crowding bar</p>
<b>*Ocular Alignment</b>	<p>Passing is identification of test object.</p> <p>Refer for failure to identify test object.</p>	<p>Random Dot E (preferred)</p> <p>Stereo Fly or Butterfly</p> <p>Randot Preschool Stereoacuity</p>
<b>*Color Vision</b>	<p>Notify parent/guardian with failure to pass any standard color vision test. Consider referral to eye care provider for anticipatory guidance.</p>	<p>Standard Color Vision Chart</p>

\* These tests required only once in any of the target population grades.

<b>Photoscreening Method</b> <b>Pre-kindergarten, Kindergarten, First Grade</b>		
Required Test	Results/Referral Criteria	Currently Approved Photoscreeners
Photoscreen	For passing criteria refer to recommendations of the American Association for Pediatric Ophthalmology and Strabismus (AAPOS) vision screen committee* at <a href="http://www.aapos.org">www.aapos.org</a> (preferred). Alternatively may refer to the manufacturer's manual for the specific photoscreener used.	Welch Allyn Suresight iScreen PlusOptix PediaVision

\*Donahue SP, Arnold RW, Ruben JB; AAPOS Vision Screening Committee. [Preschool vision screening: what should we be detecting and how should we report it? Uniform guidelines for reporting results of preschool vision screening studies.](#) *J AAPOS.* 2003 Oct;7(5):314-6.

<b>Alternative Vision Screening Method<sup>†</sup></b> <b>Ages 3 years and older</b>		
Required Test	Results/Referral Criteria	Suggested Testing Tools
Visual Acuity	For passing/referral criteria refer to the manufacturer's criteria for the testing tool.	Bailey Hall Cereal Test Colenbrander Lea Symbols Low Vision Chart Teller Acuity Cards McDowell Kit
<sup>††</sup> Ocular Alignment	Passing is equal corneal light reflex in each eye. Refer with unequal corneal light reflex.	Hirschberg Test

<sup>†</sup>This method of testing to be performed by school nurses, teachers of visually impaired or other professionals with training in alternative vision screening.

<sup>††</sup> This test required only once in any of the target population grades.

**Screening Referrals:**

Section 24-1-32 NMSA requires that when the vision screen of a student indicates the need for further evaluation, the student's school shall notify the student's parent of that need and provide information on the availability of funds from the save our children's sight fund appropriated to the department of health. The notice shall state that the parent, if the student is not already covered by health insurance for a comprehensive eye examination, may apply to the fund for the following expenses as a result of the screening:

- A. a comprehensive eye examination by an optometrist or ophthalmologist whose services are used to follow up the school vision screen;
- B. the cost of contact lenses or polycarbonate lenses and frames for eyeglasses; and
- C. replacement insurance for lost or broken lenses.

**Periodic Review of Standards:**

These New Mexico Vision Screening Standards will be reviewed by a committee appointed by the Secretary of the Department of Health every two years and updated for alignment with currently accepted best practices.