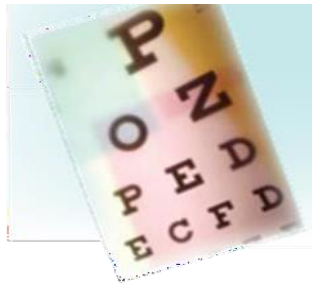
Guidelines for
Vision Screening
in Missouri Schools

Missouri DHSS
Department of Health and Senior Services

2021



Acknowledgements

The guidelines and recommendations contained within this manual have been developed by the Children's Vision Commission which was composed of two ophthalmologists, two optometrists, a school nurse, a representative from the a representative from the Department of Elementary and Secondary Education, and a representative from the Missouri State School Boards Association.

Deborah K. Cook, RN
Oscar A. Cruz, MD
Roger D, Dorson, MA, EdD
Michael C. Frier, OD
Timothy A. Wingert, OD
James Luetkemeyer, MD
Kim Ratcliffe, PhD

With additional reviews by:
Natalie Botkin, RN, NCSN
Peggy Karleskint, RN
Ardith Harmon, MSN, RN
Teri Hansen, RN, NCSN
Stacey Whitney, MSN, RN, NCSN

Recommended Practice vision screening tools and optotypes:

- National Center for Children's Vision and Eye Health – Prevent Blindness https://nationalcenter.preventblindness.org/
- Recommended Vision Screening tools https://nationalcenter.preventblindness.org/wp-content/uploads/sites/22/2021/04/ vision_screening_table2021.pdf

Screening practice recommendations during COVID-19 Pandemic:

- American Association for Pediatric Ophthalmology & Strabismushttps://aapos.org/education/allied-health/covid (August 2020)

- National Center for Children's Vision and Eye Health – Prevent Blindness https://nationalcenter.preventblindness.org/national-center-for-childrens-vision-and-eye-health-publishes-considerations-for-childrens-vision-screening-programs-during-the-covid-19-pandemic/ (August 2020)

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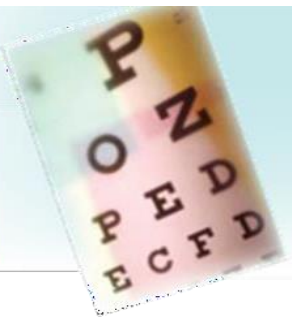


Introduction

Forward

The Missouri Department of Health and Senior Services is pleased to provide the attached vision screening protocols, preschool through grade 12, for school districts throughout Missouri. The Children's Vision Commission, experts from the ophthalmology, optometry and school nursing professions, along with representatives from the Missouri Department of Elementary and Secondary Education and the Missouri School Boards Association, has established these standardized vision screening guidelines. The recommendations described in this manual represent evidence-based methodology and current best practice in the field of vision screening. They are intended to facilitate the identification of children with common vision problems as early as possible, when treatment is most effective, thus supporting educational achievement.

Purpose

The ability to see greatly impacts a student's ability to learn. Screening for vision problems is an appropriate and important part of school health services, largely carried out by the school nurse.

The objective of a vision-screening program is to identify children with possible visual defects at the earliest possible stage. This allows ample time to refer children for diagnosis and treatment.

Screening should be done in schools for the following reasons:

- Large numbers of children of many ages are readily accessible
- Can be accomplished in a short period of time with relative ease
- Far less expensive than a comparable service performed in another sector of the health care system
- Allows an ongoing opportunity to observe, assess, and investigate potential areas of concern
- Provides the opportunity to screen children who have been previously identified

Characteristics of Screening Programs

Screening is a brief or limited evaluation of a group of individuals presumed to be normal. The value of early detection of a problem must be weighed against the timeand human resources required to conduct the screening. The value of the screeningprocess depends on how well the program is carried out and how the findings are used. Results must be communicated, and follow-up on referrals for those “at risk” must be continued until the problem is resolved in some manner.

Screening program results must be evaluated in terms of:

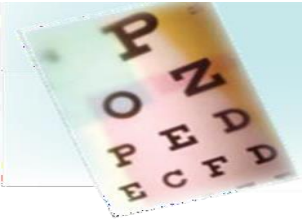
- Validity – ability to identify those individuals who have the condition and which do not
- Reliability – consistency of results of screening process
- Yield – number of persons identified to be “at-risk”
- Cost – personnel and equipment
- Acceptance – informed parents agree to the value of screening
- Follow-up – communicating results to parents and assuring the familyhas resources for diagnosis and treatment

Evaluation of Vision Screening Programs

To determine the effectiveness of the vision-screening program, careful evaluation ofthe planning, implementation, referral process and referral outcomes must be completed with each vision screening. Much of this information is essential for reports to the board of education and the school health advisory committee.

Evaluation is an on-going process. Keeping outcome data about the vision-screening program and referrals helps the school nurse evaluate the effectiveness of the program.

Many questions can be answered from the acquired data. Information that can be gathered in the evaluation process includes the number of students screened, the number of referrals, the typesof vision problems identified and utilization of vision insurance.



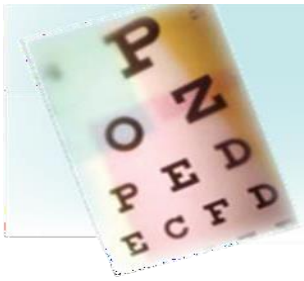
Screening Schedule and Protocol

Schools develop screening schedules based on a variety of situations; e.g., school board policy, special education plans and tradition.

Detection of visual problems at any age requires observation for signs and symptoms of vision problems and visual acuity screening. Individual children are often referred for vision screening based on signs and symptoms observed by parents and teachers. It is helpful to share the “ABC Checklist for Vision” (Appendix C) or the “Signs and Symptoms” (Appendix C) with school staff and parents. These tools may help others in making observations and referrals for possible vision problems.

Grade	Screen	Type of Screening
All Students new to the district	Recommended	Age appropriate
Kindergarten	Recommended	Near and Distance Acuity, Random Dot E (stereoacuity)
1st Grade	Recommended	Near and Distance Acuity, Random Dot E (stereoacuity)
2nd Grade	Recommended	Near and Distance Acuity, Random Dot E (stereoacuity)
3rd Grade	Recommended	Near and Distance Acuity, Random Dot E (stereoacuity)
Every other year after 3rd Grade	Recommended as time permits	Distance Acuity (Near Acuity optional)

Color Vision Testing is not a required or recommended screening procedure. Color deficiency is usually non-progressive, cannot be corrected, and usually does not affect visual acuity or visual function. Therefore, failure is not a cause for a referral. However, it is important to inform parents, teachers, counselors so that educational materials may be adjusted.



Screening Vision in School-Age Children

Visual Acuity

Visual acuity refers to the sharpness of one's eyesight. The size of all letters in a row is smaller than the row above. Beside each row is a fraction. The top half of the fraction (numerator) stands for how many feet the person is standing from the chart (usually 20 feet). The bottom half of the fraction (denominator) shows how far away a person with normal visual acuity can stand from the chart and still read the symbol.

The 20/20 line is the standard for normal vision. A screening result of 20/100 means that the smallest line the person can read at 20 feet could be read by a person with normal vision at 100 feet.

- Numerator – distance from the subject to the chart, e.g., 20 feet
- Denominator – distance a person with normal vision can see the chart, e.g., 100 feet
- Example: 20/40 – At 20 feet, the eye sees at a 20 foot distance what a normal eye sees at 40 feet.

Visual Acuity Procedures for Distance Screening

Purpose: To screen for clearness of vision when looking in the distance; to detect myopia (nearsightedness), amblyopia (weakness of sight, lazy eye) and astigmatism (blurred vision).

Equipment

- Distance chart for 10 or 20 feet (should include a 20/25 line), appropriate flash cards or chart for young children
- Occluder (e.g., Lollypop" or "Mardi Gras mask", occluder glasses, adhesive patches)
- Antibacterial wipes.

Note: Ten-foot chart is preferred for young children.

Recommended acuity screening tools:
Visual acuity charts should be according to the child's developmental level. Any of the following types of visual acuity charts may be used:

- Letter charts (for example HOTV, Sloan Letters, Sloan Numbers)
- Symbol charts (for example, HOTV Symbols, LEA SYMBOL)

Location and Setup

1. Make sure the room in which you are screening is quiet and has no distractions (e.g. pictures, toys).
2. Utilizing a room that is at least 5 foot longer than the distance required for each visual acuity screening and allowing a minimum of 8-10 feet between stations provides less distraction for students and screeners.
3. Make sure that the room is well lit and free from glare. Do not shine a spotlight on the charts. Self-illuminated charts are preferred over non-illuminated charts as yellowing shadows are minimizedand the letters are well contrasted. However, clean, white wall charts with clear contrast betweenthe letters and background are acceptable.
4. Mount the chart at the child's eye level. Adjust the chart height for the size of the person being screened. A suggestion is to place Velcro on the wall and move the chart as needed.
5. Mark off 10 or 20 feet, whichever is appropriate for your chart. The line may be marked with masking tape or paper feet placed on the floor so that the child will be required distance from the chart.
6. The child can be seated or standing but the child's eyes must be in the direct line above the tapeor paper feet.
7. Ask the child to position their heels on the line or other floor marking. Do not allow the child to lean the torso or head forward. If sitting, be sure that the back legs of the chair are on the line.

Procedure

Before screening for visual acuity, orient the child to the screening. Let the child use both eyes to look at the 20/100 letters or symbols to make sure the child can identify the letters or symbols. It may save time to demonstrate to several children how to perform the screening, but the screener should review it with each child to be sure the child is able to perform the task. Demonstrate how to use the occluder.

Screening Session

1. Ask if the child wears glasses. If so, screening should be conducted with glasses. Note on the screening form that the child is wearing glasses.
2. Watch carefully to be sure that the child is not peeking, tilting the head or squinting. If at all possible for young children, have someone stay next to the child and watch closely. Children want to do well on the screening and will often peek, tilt the head, or squint to compensate for vision problems.
3. Do not allow the child to lean the head or torso forward.
4. Begin by screening the right eye, with the left eye occluded.
5. Instruct the child to keep both eyes open and read the selected letter or line of letters with the uncovered eye. Do not use a marking device (pencil/pen) as a pointer to avoid leaving distracting marks on the chart.
6. Start with the 20/50 line and move down to the 20/20 line. If the student is unable to read the 20/50 line, move upward.
7. To receive credit for a line, the child must identify one more than half of the letters/symbols on that line.
8. Do not comment either positively or negatively on the child's responses.
9. If the child is unsuccessful, he or she must be rescreened within 14-21 days prior to referral.
10. It is important to inform the classroom teacher if a child fails the screening so that classroom accommodations can be implemented.
11. Record results - A failed screening followed by a failed rescreening should be referred for further evaluation.

Referral Criteria

Beginning in first grade, each eye must see at least the 20/30 line. If not, the student is to be referred.The important exception is a two-line difference between the two eyes. For example: Right 20/20 Left 20/30 should be referred because there is a two-line difference (the second line being the 20/25 line). For younger children, preschool through kindergarten, each eye must see at least the 20/40 line. The important exception is a two-line difference between the two eyes.

Table 1. Referral Criteria: Preschool and Kindergarten

ONE EYE	OTHER EYE	RESULTS
20/20	20/20	Pass
20/25*	20/25	Pass
20/30	20/30	Pass
20/20	20/25	Pass
20/20	20/30	Refer: two-line difference
20/30	20/40	Pass
20/40	20/40	Pass
20/40	20/50	Refer
20/30	20/50	Refer: two-line difference

Table 2. Referral Criteria Grades 1-12

ONE EYE	OTHER EYE	RESULTS
20/20	20/20	Pass
20/25*	20/25	Pass
20/30	20/30	Pass
20/20	20/25	Pass
20/20	20/30	Refer: two-line difference
20/30	20/40	Refer
20/40	20/40	Refer

Near Point Acuity Screening

Purpose: Near vision cards are used to assess near visual acuity; detect excessive hyperopia/hypermetropia (farsightedness).

Equipment

1. Near vision chart chosen according to child's development level
2. Occluder
3. Antibacterial wipes

Location and Setup

1. Make sure that the room in which you are screening is quiet and has no distractions (e.g. pictures, toys). Providing a minimum of 8-10 feet between stations provides fewer distractions for the student and screeners.
2. Make sure that the room is well lit and free from glare. Do not shine a spotlight on the chart.

Procedure

Training Session

Before screening for visual acuity, orient the child to the screening. Let the child use both eyes to look at the 20/100 letters or symbols to make sure the child can identify the letters or symbols. It may save time to demonstrate to several children how to perform the screening but the screener should review it with each child to be sure the child is able to perform the task. Demonstrate how to use the occluder and where to hold the chart.

Screening Session

1. Ask if the child wears glasses. If so, screening should be conducted with glasses. Note on the screening form that the child is wearing glasses.
2. Position the card 14-16 inches from the child or according to the manufacturer's recommendations.
3. Watch carefully to be sure that the child is not peeking, tilting the head or squinting. If at all possible for young children, have someone stay next to the child and watch closely. Children want to do well on these screenings and will often peek, tilt the head or squint to compensate for vision problems.
4. Do not allow the child to lean the head or torso forward.
5. Begin by screening the right eye, with the left eye occluded.
6. Instruct the child to keep both eyes open and read the selected letter or line of letters with the uncovered eye.
7. Start at the 20/50 line and move down to the 20/20 line. If the student is unable to read the 20/50 line, move upward.
8. To receive credit for a line, the child must identify one more than half of the letters/symbols on that line.
9. Repeat steps 4-6 for the left eye.
10. Do not comment either positively or negatively on the child's responses.
11. If the child is unsuccessful, he or she must be re-screened within 14-21 days prior to referral.
12. It is important to inform the classroom teacher if a child fails the screening so that classroom accommodations can be implemented.
13. Record results - A failed screening followed by a failed rescreening should be referred for further evaluation.

Referral Criteria

Beginning in first grade, each eye must see at least the 20/30 line. If not, the student is to be referred. The important exception is a two-line difference between the two eyes. For example: Right 20/20 Left 20/30 should be referred because there is a two-line difference (the second line being the 20/25 line). For younger children, preschool through kindergarten, each eye must see at least the 20/40 line. The important exception is a two-line difference between the two eyes.

Binocularity / Stereoscopic Vision

What is Binocular Vision? Binocular vision has two components; ocular alignment and stereo acuity.Screening binocularity determines how well the two eyes function together.

The purpose of screening binocular vision/stereovision is to determine if the child has adequate binocularity.

Equipment

* Random Dot E (RDE) Stereo test Kit
* Anti-bacterial wipes

RDE Kit includes:

- Model E slide—demonstration plate with a large, embossed letter “E” used for training purposes only.
- Stereo Blank slide—used for training and screening; contains an array of randomly oriented dots; no “E” appears even with the stereo glasses in place.
- Raised/Recessed E slide—used for screening purposes only; contains an array of randomly oriented dots; when stereo glasses are worn, a large letter “E” appears if the child has normal binocular vision.
- Stereo sunglasses

Procedure

Administering the test:

1. Show the child the Model E slide. Be sure that the child can identify the “E”.
2. Place the stereo glasses on the child. Do not remove prescription glasses if the child wears them.
3. If the stereo glasses are too large for the child, put a short piece of masking tape on the top of the glasses and use the other end of the tape to hold the glasses on the child’s forehead.
4. Be sure that the child keeps his/her head straight up when viewing the slides. Tilting to one side or allowing the glasses to tilt on the nose will interfere with the test.
5. Show the child the Model E slide and the Stereo Blank slide. Slightly rotate, without tilting the slides to give optimal viewing.
6. Have the child point to the slide with the “E”.
7. Practice by mixing up the Model E slide and the Stereo Blank slide behind your back and presenting the slides to the child until you feel the child understands.

Screening Session

1. Replace the Model E slide with the Raised/Recessed Stereo E slide.
2. Hold the slides 40” from the child at eye level.
3. Have the child identify the slide with the “E” on it.
4. Continue mixing up the cards behind your back and have the child identify the “E” slide.
5. Repeat this process 5 times.

Referral Criteria

For a pass, the child must locate the Stereo “E” card at least four out of five presentations.

Note: A child who is uncooperative or unable to complete the screening should be referred

Infection Control Considerations for Vision Screenings

Vision screeners and school nurses are responsible for complying with applicable Federal, state, and local laws, regulations, ordinances, executive orders, school board policies, and any other applicable sources of authority, including any applicable standards of practice.

Information for School Nurses and Other Healthcare Personnel Working in Schools and Child Care Settings (CDC)

Pediatric Vision Screening Guidance during the COVID-19 Pandemic by the American Association for Pediatric Ophthalmology and Strabismus Vision Screening Committee

Prioritize Screenings	Identify those screenings required or strongly recommended and do not do "extra" screenings. (i.e. 4th grade vision screening could be eliminated as a precaution) Eliminate screenings that are not socially distanced or extend the duration of student screenings (stereoacuity and near acuity screenings). Consider requesting documentation of comprehensive eye exam within the last 12 months. Any child with this documentation could be exempted from the school screening.
Location of Screenings	Screening space should be well ventilated according to CDC standards. https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/ventilation.html Screenings should not occur in areas where students and staff are evaluated for illness. Vision screenings could be done in classrooms to keep movement down in the hallways. Utilize an empty wall space for the wall chart. Students not being screened should keep their backs to the screening area to prevent memorization of wall chart. Distance acuity screenings could be held outdoors. Consider the sunlight, shadows, heat and possible wind when planning. Outdoor screenings may need to be moved indoors last minute due to weather. If having more than one screening station, ensure that stations are at least 6 feet apart to allow for social distancing. Location should have an entrance door and a separate exit door. If this isn't possible, extra time in the schedule needs to be allowed to keep individuals from passing simultaneously through the same door.
Screening Personnel	Consider limiting screening personnel to three adults: ▪ Screener ▪ Facility employee to clean chairs and monitor distancing, and ▪ Staff to accompany children traveling to and from classroom and monitor handwashing before and after screening Limit personnel screening students to those already in contact with the students. The use of outside volunteers/staff should be carefully considered for infection control purposes. If volunteers are necessary, physical distancing should be maintained and face masks worn. Include reminders about infection control practices in the event orientation.
Screening Schedule	Students should stand at least 3 feet apart while waiting outside the screening room. Mark floors where children should stand. Maintain cohorts when scheduling screenings. Consider grouping and cohorts where students have consistent exposures and plan screening schedule accordingly (i.e. screen the 7th grade science class).

	Do not call the entire class to the screening area and limit the number of children waiting - based on the amount of space available for waiting. If possible, screen students one at a time to ensure physical distancing space. If pods or cohorts are used (AAP, 2020; CDC, 2020), clean and disinfect the screening area before students from another cohort or pod arrive.
Equipment Needed	• Vision screening equipment • Disinfecting Spray/Wipes • Hand Sanitizer or access to hand washing facilities • Tissues • No touch trash cans • Face Masks
General Infection Control Practices	Do not screen students displaying any signs of illness. Follow guidelines for physical distancing as much as possible. Masks should be worn when not able to maintain physical distancing. Students and screeners will practice good hand hygiene before and after screening session. Mark floors to provide a visual guide for maintaining 6-foot distancing between the screener, the child, and between adults. • Conduct a simulated dry run of the traffic flow, timing, spacing needs, supplies, and screening procedures with adults who are informed of, and participating in, safety procedures. Have disposable occluders and matching cards for younger students so that items do not have be shared. Clean/Disinfect any possibly touched surfaces between cohorts/groups. This may include tables, occluders, doorknobs, etc. Disinfect vision acuity chart between each screening session for the protection of the screener. Do not have mass screening days that include multiple different screening types. This increases congestion in the hallways and waiting at screening stations.
Other helpful tips	Communicate tentative schedule with teachers/staff so classroom plans can be adjusted as needed. If possible, eliminate screening forms that students carry with them. Consider using a single form that lists students' names with an area to enter screening results. The screener can maintain this list and give to school nurse when complete. Take notes immediately after screening about what worked and what didn't work so future improvements can be made. Also note how long a class took to screen.

Resources for recommended product for disinfection and cleaning:
https://www.epa.gov/coronavirus/about-list-n-disinfectants-coronavirus-covid-19-0

Missouri Vision Screening Protocol

Distance Acuity, Near Acuity and Stereopsis

Function to be Evaluated	Specific Screening	Recommended Screening Procedure	Passing Criterion
Distance Visual Acuity	**Letter Charts** **Symbol Charts** The chart includes a 20/25 line. It is important to choose a developmentally appropriate chart	**Screening Distance:** 10 feet or 20 feet (chart determines distance) **Conditioning:** (performed binocularly) Screening Procedure: (performed monocularly)	Preschool: 20/40 Kindergarten: 20/40 Grades 1 – 12: 20/30 To receive credit for a line, the child must identify one more than half of the letters/symbols on that line.
Near Visual Acuity	**Letter Charts** **Symbol Charts** The chart includes a 20/25 line. It is important to choose a developmentally appropriate chart	**Screening Distance:** (see chart recommendations) **Conditioning:** (performed binocularly) Screening Procedure: (performed monocularly)	Preschool: 20/40 Kindergarten: 20/40 Grades 1 – 12: 20/30 To receive credit for a line, the child must identify one more than half of the letters/symbols on that line.
Stereopsis/Binocular	Random Dot E	**Screening distance:** 40 inches all screening, including prescreening, should be done binocularly with the polarized glasses on. **Conditioning:** Screen the child's ability to perform the screening by having the child identify the location of the three-dimensional "E" correctly on four out of five presentations. **Screening procedure:** Screen the child's ability to identify the location of the Stereo E. Five presentations should be used, varying the location in a random manner	Child must locate Stereo E on four out of five presentations. Done binocularly with the polarized glasses on.

Rescreening, Referral, and Follow-Up Rescreening

- Rescreening is indicated for any child who fails any part of the initial screening (distance acuity, near point, or binocularity).
- Rescreening is performed to eliminate those children who failed the initial screening due to factors such as fatigue, illness, anxiety, misunderstanding, or distractions during the initial screening.
- The number of students rescreened will typically be about 20% of those initially screened.
- Rescreening should be done within 14-21 days after the initial screening.
- Procedures for rescreening are the same as those for the initial screening.

Referral

- A referral is indicated if the child fails any portion of the rescreening.
- The nurse should notify the parent/guardian in person or by telephone prior to sending a written referral.
- A written referral, using a form that communicates the findings of the screening as well as any additional observations made in the school setting, should be sent to the parent/guardian within one week after the rescreening.
- The referral form should request a written report from the eye care professional with the results of the examination and any recommendations for the school setting.
- A sample referral letter and medical release information form (HIPPA compliant) can be found in Appendix C.
- It is important to notify the classroom teacher if a referral is sent so that classroom accommodations can be implemented.
- To better assist families, the school nurse should be familiar with community resources available for exams and glasses and be able to assist in reminding the parent about follow-up visits, if recommended.

Follow-Up and Tracking

- Most important component of any screening program.
- A tracking system is essential to follow-up those who are referred in order to assure that the child receives the appropriate treatment/services.
- If information about the referral is not received in 3-4 weeks following the referral, a phone call should be made to the parent/guardian.
- The parent/guardian should be contacted periodically until the nurse knows the disposition of the referral.
- The nurse should be aware of community resources for those who need financial assistance.
- All pertinent information regarding the screening results, referral, and results of the professional evaluation as well as recommendations must be documented in the child's health record.
- It may be determined by the professional examiner that the child does not presently need glasses or other specific treatment. This would not invalidate the referral if a problem were confirmed.
- Following professional diagnosis and treatment, further planning may be needed for the child whose vision cannot be brought to within normal limits. The special education director should be notified so that the student may be evaluated for special programming.

Referral Resources

The school nurse's role is to identify whether there is a need for financial assistance for those students with incomplete referrals.

MO HealthNet

If a parent indicates there is a financial problem, the first step is to determine if the student is financially eligible for assistance through MO HealthNet. MO HealthNet is based on a national child health insurance for uninsured children. This is a program for medical, dental and vision insurance.

Access to these programs is through the Family Support Division (FSD) of the Department of Social Services. Children eligible for free and reduced lunch programs may often meet the financial criteria. If the parent/guardian does not have a Medicaid card for the student and is interested in exploring their eligibility for MO HealthNet, they should be referred to MO HealthNet for Kids: https://mydss.mo.gov/healthcare/mohealthnet-for-kids.
For More information, call 855- FSD-INFO (855-373-4636) to speak with a team member; or visit myDSS.mo.gov to start a chat.

These programs will provide an eye exam every two years, and frames and lenses if needed. New lenses may be obtained on an annual basis if there is a medical necessity. Some schools have personnel who have been trained to facilitate an application for *MO HealthNet*.

Prevention of Blindness Program

A resource available to all citizens in Missouri is the *Prevention of Blindness Program (POB)*. This program is entirely funded by the State of Missouri, and all funds are expended through a coordinator in the state office. All individuals in the state who are legal residents, regardless of age, are provided eye care services when they meet the eligibility requirements.

Eligibility requirements include:

- Financial – dependent upon net monthly income, number of individuals in the household, cash and resources other than the family residence. All income generated in the household is taken into consideration.
- Visual – eligibility is based on a visual acuity of 20/200 or worse without correction in at least one eye, a progressive eye disease, or a malformation or malfunction of the eye. Visual eligibility determination for the Prevention of Blindness Program can be made after a report is filed in the POB office by an eye care professional that has completed an examination of the client. This examination is to determine the existence or nonexistence of disease of the eye, to check for ocular muscle functions, and to determine whether any other ocular problems exist.

The program provides for the purchase of the following:

- Glasses
- Routine and follow-up eye examinations
- Surgery
- Hospitalization
- Anesthetic fees

Other services include:

- Referrals to other agencies (public and private)
- Counseling
- Purchase of some medication

The Prevention of Blindness Program accepts referrals from any source, utilizing a form that may be obtained from the county Family Support Division office. The nurse may need to assist the parent/guardian in completing the form to avoid unnecessary delays in getting approval for care.

Community-based Programs

- Lions Clubs

  In many communities, the Lions Club International provides assistance for vision problems. Some clubs sponsor community eye-screening programs and assistance for adults as well as children.

  The nurse has a responsibility to be an advocate for the school-age population and to communicate the need for a resource in the community. If your area has a Lions Club, check with a member to determine if the club has resources available to students in your district and what the procedure is to access the resources.

- National Association of School Nurses / Vision Service Plan

  The National Association of School Nurses (NASN) collaborates with Vision Service Plan (VSP) Sight for Students program for low-income students not eligible for government programs. Members of NASN can obtain materials for providing up to ten “gift certificates” for vision care. In exchange, they agree to ensure the child is financially eligible, assist the family with completing the application, and assure the family keeps the appointment. www.nasn.org.

- Informal Community Resources

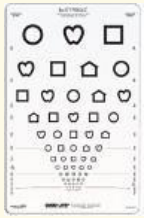
In addition to these resources, local school health advisory councils often identify informal resources within the community by communicating the need for financial assistance for vision care. School nurses play an important role in collecting the data to identify the needs and advocating for the development of resources.

Recommended Screening Components

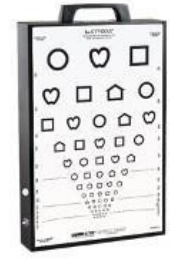
National Center for Children's Vision and Eye Health States, and even separate school districts within states, have varying vision screening procedures and protocols. The following information provides recommendations from currently available evidence-based sources, including the National Expert Panel to the National Center for Children's Vision and Eye Health, Prevent Blindness, and Bright Futures.

National Center for Children's Vision and Eye Health
Prevent Blindness

OPTOTYPE-BASED SCREENING APPROACH

TEST	AGES	TOOLS	OPTOTYPES	PASS	NOTES AND TIPS
Distance Visual Acuity	3, 4, 5, and 6 years	Tests of distance visual acuity: • Single, surrounded optotypes in wheels or flip charts at 5 feet.  • Flip charts with crowded lines of 5 optotypes per page at 10 feet in critical line or full threshold formats.  • 9 x 14 charts • Tests of visual acuity screening software with single, surrounded optotypes at 10 feet. 	LEA SYMBOLS or HOTV letters response panels for playing matching game.    	3yo – 20/50 line 4 and 5yo – 20/40 line 6yo and older – 20/32 line	Screen annually. Measure 10-foot screening distance between chart and child's eyes. Place arch of child's foot on the line when measuring the 10-foot distance, not heels or toes. Screen one eye at a time. Rescreen as soon as possible and no later than 6 months with the same screening tool. Refer to an eye doctor (pediatric optometrist, optometrist, pediatric ophthalmologist, or ophthalmologist) with experience examining young children. Use 9 x 14 Sloan Letters chart in an illuminated cabinet (e.g., ESV1200 below) or place on a wall in a well-lit room. 

OPTOTYPE-BASED SCREENING APPROACH (Continued)

TEST	AGES	TOOLS	OPTOTYPES	PASS	NOTES AND TIPS
Distance Visual Acuity	Beginning at ages 6 or 7 years, depending on when children can identify letters in random order	Tests of visual acuity at 10 feet, using standardized format. If you draw a line around the outside of the optotypes, the line will resemble an upside down pyramid and not a rectangle. No more than 5 optotypes per line, unless using a 9" x 14" chart. Test of visual acuity should be 10 feet, not 20 feet, AND should have a 20/32 (10/16) line, not a 20/30 line. 	Sloan Letters Response panel of Sloan Letters for students who use English as a second language and may need to match optotypes. 	More than half of optotypes on 20/32 line with each eye (e.g., 3 of 5 optotypes)	Bright Futures recommends vision screening for well-child medical visits at ages 8, 10, 12, and 15 years. Measure 10-foot screening distance between chart and child's eyes. Place arch of child's foot on the line when measuring the 10-foot distance, not heels or toes. Screen one eye at a time. Rescreen as soon as possible and no later than 6 months with the same screening tool. Refer to an eye doctor (pediatric optometrist, optometrist, pediatric ophthalmologist, or ophthalmologist) with experience examining school-aged children. Use 9 x 14 Sloan Letters chart in an illuminated cabinet (e.g., ESV1200 below) or place on a wall in a well-lit room. 

OPTOTYPE-BASED SCREENING APPROACH (Continued)

TEST	AGES	TOOLS	OPTOTYPES	PASS	NOTES AND TIPS
Distance Visual Acuity	All ages beginning at age 3 years	Tests of visual acuity at 10 feet for threshold and critical line screening. AAPOS Basic Vision Screening Kit  	LEA SYMBOLS® and Sloan Letters Also available with HOTV and Sloan Letters	Follow instructions in kits	Measure 10-foot screening distance between chart and child's eyes. Place arch of child's foot on the line when measuring the 10-foot distance, not heels or toes. Screen one eye at a time. Rescreen as soon as possible and no later than 6 months with the same screening tool. Refer to an eye doctor (pediatric optometrist, optometrist, pediatric ophthalmologist, or ophthalmologist) with experience examining preschool- and school-aged children.

Instrument-based screening is appropriate for children ages 1 and 2 years, and as an alternative to optotype-based screening for ages 3, 4, and 5 years. Instrument-based screening can be used for children ages 6 years and older *only for children who cannot participate* in optotype-based screening. This age range may expand as high quality, peer-reviewed, published research emerges. All individuals, including community groups, screening children ages 6 years and older should follow this guideline until such research emerges.

Donahue, S. P., Baker, C. N., & AAP Committee on Practice and Ambulatory Medicine, AAP Section on Ophthalmology, American Association of Certified Orthoptists, American Association for Pediatric Ophthalmology and Strabismus, American Academy of Ophthalmology. (2016). Procedures for the evaluation of the visual system by pediatricians. Pediatrics, 137(1), e20153597. Retrieved from: http://pediatrics.aappublications.org/content/pediatrics/early/2015/12/07/peds.2015-3597.full.pdf

INSTRUMENT-BASED SCREENING APPROACH

TEST	AGES	TOOLS	OPTOTYPES	PASS	NOTES AND TIPS
Screens for estimates of refractive error and eye misalignment	1 year to 6 years	Welch Allyn® Spot™ Vision Screener  Plusoptix S12 *(C model shown here)*  Righton Retinomax 	None	According to device settings	Vision screening instruments do not measure visual acuity. Consult local eye care provider for referral criteria settings in programmable devices. Insufficient data currently exists to support instrument-based screening for ages 6 years and older. Monitor the Prevent Blindness website for additional approved devices: https://preventblindness.org/recommended-tools-and-tests/

TEST	AGES	TOOLS	OPTOTYPES	PASS	NOTES AND TIPS
Near visual acuity	All	LEA SYMBOLS LEA NUMBERS near chart with cord.  Sloan Letters near chart with cord.  LEA SYMBOLS near chart with cord. 	Ages 3 to 6 years: LEA SYMBOLS or HOTV letters Ages 6 years and older: Sloan Letters	3yo – majority of optotypes on 20/50 line with each eye separately or both eyes open 4yo – majority of optotypes on 20/40 line with each eye separately or both eyes open 5yo – majority of optotypes on 20/40 line with each eye separately or both eyes open 6yo and older – majority of optotypes on 20/32 line with each eye separately or both eyes open	Plus lens testing is not a near visual acuity test. Can conduct full threshold screening (starting at top line and moving down the chart) one eye at a time OR critical line screening with each eye individually, or with both eyes open. Hold cord at child's temple. Ensure cord remains tight to prevent the child from moving closer to or farther away from the chart.

TEST	AGES	TOOLS	OPTOTYPES	PASS	NOTES AND TIPS
Stereoacuity	All	PASS Test™ 2. 	NA	3yo – pass Card B (no testing with Card C) 4yo – pass Card B (no testing with Card C) 5yo and older – pass Cards B and C	If student wears prescription glasses for distance viewing, remove prescription glasses and screen only with polarized glasses. If student wears prescription glasses for near viewing, or full time, place polarized glasses over prescription glasses when screening. You may need a larger set of polarized glasses. If student wears prescription glasses and you do not know the reason, place polarized glasses over prescription glasses when screening. You may need a larger set of polarized glasses. If the child cannot see the 3-D image, then try conducting the test without the child wearing their glasses. Ensure no glare or shadow on cards. Hold cards with edges of fingertips. Tilt cards slightly backward – about a 10-degree tilt.
Color Vision Deficiency Screening	Upon entry to school system	Book with pseudoisochro-matic plates.	Symbols and numbers	Follow manufacturer instructions	Replace book every 7 years; colors desaturate over time. Use cotton swab or brush for pointing or tracing the image as oil from fingertips will desaturate colors.
Occluders	3 years to 10 years	Adhesive patches, 2-inch wide hypoallergenic surgical tape, or occluder glasses. 	NA	NA	*Unacceptable* occluders include: Tissues, hands, paper or plastic cups, paper occluders, adults holding occluders over child's eyes, and occluder paddles.
Occluders	10 years and older	"Mardi Gras mask" or "Lollypop" occluders. 	NA	NA	*Unacceptable* occluders include: Tissues, hands, paper or plastic cups, paper occluders, adults holding occluders over child's eyes. Hold "lollypop" occluders with handle toward temple, not chin.

APPENDIX A: Screening Vision in Infants and Toddlers

A. Health and developmental history related to vision

When assessing infants and toddlers, a thorough health and developmental history especiallyrelated to vision is important. Some indicators for potential vision problems are prematurity, family history of “lazy eye” or other visual problems. Infection and high fever may also lead to vision difficulties.

1. Normal visual development

Visual function develops in an orderly sequence as follows:

Neonate	Alert with widening of palpebral fissures to visual stimulation by an object or face presented 20 to 30 cm (6-12 inches) from the eyes. Makes momentary eye contact with an adult. Follows a visual stimulus in a horizontal arc 30 degrees on either side of the mid line. Turns head toward a diffused source of light.Blinks at a flashlight shone in the eyes.
1 month	Follows a visual stimulus in a horizontal arc 60 degrees on either side of the mid line. Follows a visual stimulus vertically 30 degrees above and below the horizontal meridian. Shows “looming” response – blinks at approaching object.
2 months	Tracks horizontally across midline. Follows a moving person 13 cm (7 inches) away. Makes prolonged eye contact with adult. Smiles in response to a smiling face.
3 months	Eyes and head follow smoothly through 180 degree arc. Regards own hands. Looks at objects placed in hand; initiation of visual-motor coordination.

4 to 5 months	Shows spontaneous social smile in response to familiar adult. Reaches on sight for a 2.5 cm (1 inch) cube presented 30.5 cm (12 inches) from the infant. Notices a raisin presented 30.5 cm (12 inches) from the infant.
5 to 6 months	Smiles at mirror image.
7 to 8 months	Picks up a raisin by raking.
8 to 9 months	Pays visual attention to details of objects, e.g., facial features of dolls, or pokes at holes in pegboard.
9 months	Shows neat pincer grasp.
12-14 months	Gains skills in perceptual motor items such as stacking blocks, using form board or placing a peg in a round hole.

2. Signs of potential vision problems

The following list of alerting signs and blindisms is a useful guide to identify infants in need of a referral to an eye specialist.*

Alerting signs suggesting referral to an eye specialist:

1. Failure to pass screening items, such as those listed in “Visual Development”, other developmental items at a similar level are passed
2. Appearance of any strabismus (cross-eyed) after 2 months of age
3. Wandering uncoordinated eye movements
4. Nystagmus (dancing or jerky eyes)
5. Holding items too close (within 6 inches) for visual inspection
6. Cocking head habitually to look at items
7. Turns head, then eyes, to look at people or object
8. Disregard of objects presented in peripheral field

Blindisms (self-stimulating behaviors frequently observed in visually impaired children)

1. Prolonged hand watching past developmental age of 5 months (shadowing)
2. Staring at lights in preference to people or objects
3. Poking at eyes
4. Rubbing eyes
5. Flicking finger (stimulus presented peripherally)
6. Rocking
7. Spinning
8. Banging head
9. Smelling, sniffing, “rooting”
10. Prolonged mouthing of objects

After the infancy period, obtain an initial history, or update previous history, including questions about illness, injury, and signs and symptoms of visual problems.

**“Program Planning for the Visually Impaired Child,” by Carol M. Donovan*

Knowledge of the sequence of normal visual development will alert the screener to “red flags” in history taking.

B. Gross assessment of vision

In infancy, the screening of vision is usually based on visual fixation and following responses. These are screened by moving an object of visual interest in front of the child and watching to see whether the child’s eyes turn toward the object and follow its movement back and forth in the visual field. The object of visual interest can be a face, a flashlight, or a brightly colored toy.

Although adding sound to the screening might theoretically compromise its purity as a visual stimulus, in practice, a light that rattles or a toy that squeaks is often more effective in gaining an infant’s visual attention. The size of the object and its distance from the face are not critical, since one is not trying to measure quantitative visual acuity.

Full-term, normal infants under ideal circumstances can fix and follow objects at birth, but such responses become more obvious to parents at six weeks to two months of age. If visual fixation and following are not present by four months of age, further eye examination is certainly indicated.

There are a number of screenings that advocate the use of small objects such as cars, animals, etc., but none are standardized screenings. Observing an infant’s or child’s notice of such an object can indicate gross visual acuity. Developmental screenings incorporate vision in the screening where an infant is observed noticing and attempting to pick up a raisin.

The following pages contain specific guidelines for functional assessment of vision in infants and toddlers. Gross vision in children with severe development delays may be assessed using these same techniques.

Red reflex

Ages: Birth to three years

Purpose: To observe for the red reflex in both eyes

Description: The demonstration of the red reflex indicates no interruption of the light pathways

Facilities: Normal or lowered light level in the room

Equipment: Penlight, flashlight or ophthalmoscope

Procedure: Move the light beam across the pupil. Observe from a distance of approximately 10 inches. An orange or red glow should reflect from the fundus through the pupil.

Pass: If both pupils reflect the orange or red glow, it is considered normal.

Fail: If a partial white or asymmetrical reflex is observed, the child should be referred. A partial red or black reflex may be abnormal or due to misalignment of the light.

Several conditions may prevent the red reflex, i.e., cataracts, tumors, retinal abnormalities, opacity of the cornea, retrolental fibroplasia, retinoblastoma, orchorioretinitis.

Note: A white pupil warrants immediate referral!

Blink reflex

Ages: Birth to 1 year

Purpose: This screening is to determine if the infant or child has visual function and responds to the movement of a hand toward their face.

Description: With the blink reflex, blinking occurs automatically when a hand or any object moves toward the face.

Procedure: Problems to avoid: Do not create a wind by moving the hand too quickly as the child may blink in response to the wind rather than the visual stimulus.

Pass: The child blinks in response to the hand.

Fail: Child does not blink in response to hand

Refer for evaluation

Pupillary response

Ages: Birth to three years.

Purpose: To screen to the degree to which the pupils respond to light.

Description: A pupillary response occurs when the pupil of the eye changesshape or size when the light is presented.

Facilities: Normal or lowered light in room.Bright

Equipment: penlight or flashlight.

Procedure: Observe the condition of the pupil without stimulation. Remove glasses if the child is wearing them (for screener's benefit). Direct a penlight into the child's eyes from approximately 12-16 inches away and notice whether the pupils constrict or remain unaffected.
If no response, use a brighter light source (flashlight) or turn off room lights to provide greater contrast.

Pass: Both pupils should react by constricting when light is presented and dilating when the light is removed

Fail: If one/both pupils do not respond as expected, or if one pupil is slower to respond than the other on two occasions.

If repeat screening is consistent, refer child for evaluation.

Tracking

Ages: 4 months to 3 years (Informal assessment can be done as early as 4 months of age when the child should be developmentally able to fixate and follow an object. By 12 months of age, child should be able to follow an object with both eyes horizontally and vertically, without moving or turning head.)

Purpose: To determine if an infant's or child's eye muscles are working together

Description: Tracking is evidenced when a child follows a moving light or object with his or her eyes or head.

Equipment: Penlight, flashlight or brightly colored object

Procedure: Hold light or object 14-16 inches from eye. Move the light or object horizontally 18 inches to the left from the center, then 18 inches to the right from the center. If the child does not follow at 14-16 inches, move closer.
Screener may lightly hold child's head in place while screening.

Move light vertically, about 18 inches above, then 18 inches below eye level. Move light in a circle, at least 2 feet in diameter. With each screening, observe for full, smooth eye movements.

Pass: Child follows light with eyes completely, to right-left and above-below.

Fail: If a cooperative child does not visually follow an object in all directions with smooth eye movements, referral should be made for evaluation.

Corneal light reflex (Hirschberg)

Ages: Six months to three years

Purpose: Six months to three years

Description: By noting the similarity or dissimilarity in position of light being reflected inthe pupils, the observer is able to detect a constant eye deviation of a lesser degree than possible in the observation screening. This screening is easily done while checking for pupillary reaction

Facilities: Normal or lowered light level in room – minimum number of light sources (windows, overhead lights, etc.)

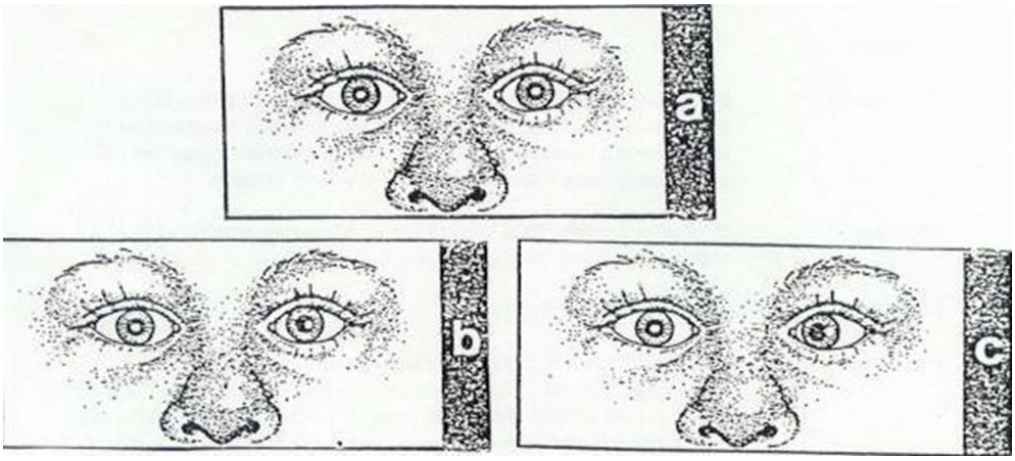
Equipment: Bright penlight or flashlight

Procedure: Screen with glasses if child has them (glasses may already be correcting problem). Position the child so the penlight is held at arm's length (12-16 inches), directly in front of the child's eyes, and the light is directed at the bridge of the nose Instruct the child to look toward the light. The screener observes the pupils for the position of the light reflex in each eye.

Pass: The reflection of the penlight appears to be in a similar position in the pupil of each eye (see illustration).

Fail: The reflection of the penlight does not appear to be in a similar position inthe pupil of each eye (see illustration).

If a repeat screening is consistent, the child should be referred for evaluation. Even a slight difference may indicate the presence of strabismus (cross-eyed).



The position of the light on the cornea or pupil may be used to detect strabismus.

a. Since light reflexes are symmetrical in both eyes, no strabismus is present.
b. An esotropia exists in the left eye since it is turned inward. The light reflex is on the outer half of the right pupil.
c. An exaggeration of the degree of esotropia in the left eye is shown by the farther position of the light reflex.

This screening is useful in detecting pseudostrabismus where epicanthal folds may give a child the appearance of crossed eyes.

APPENDIX B: Screening Students for Dual Sensory Loss

Children who are born deaf or who have a profound hearing loss should be screened for the possibility of a genetic disorder, Usher Syndrome. This condition is of very low incidence, but a young person with Usher Syndrome develops retinitis pigmentosa (RP), usually in adolescence. RP is a condition that results in progressive loss of vision and ultimately, total blindness. It is important to identify these students as soon as possible in order to prepare them for the future.

Deaf students may function well using sign language or lip reading, but when they lose their vision, they must have other means of communication. Students identified with Usher Syndrome are often referred to special centers where they learn communication skills and mobility before they totally become blind.

The first screening is done by completing a screening checklist on any student who has a history of congenital deafness or has a significant hearing loss. This will rule out more than 99 percent of the students who should be screened further for vestibular dysfunction, or balance, dark adaptation, and loss of peripheral vision (see page 32).

Screening for balance

Screening for balance is easy to do. Ask the student to stand with feet together, arms outstretched to the side, and then close their eyes. In this position, younger students may have problems maintaining balance, but older students may only wobble a little.

Next, ask the student to stand with the heel of one foot immediately in front of the other foot, with arms outstretched. They may have some problem with their eyes open, but when asked to close their eyes, they will fall over immediately. It is important to support the sides of their torso until they get their balance, and be ready to catch them if they fall.

If the student fails the balance screening, parents should be contacted to get further history and to ask questions about their observations of the student's balance and vision. Look particularly for signs of night blindness. The student may have excellent central visual acuity in well-lighted conditions but have difficulty in dim light, twilight or at night.

Screening for dark adaptation

Put some red, white and blue objects (poker chips work well) in a jumbled heap on a dark table or carpet. Ask several students to participate. Turn out the lights, leaving just a tiny amount of light in the room. Ask the students to pick up a white object and note how long it takes each one to do it. Next, ask one student to sort the red and blue objects. After the first one completes the task, mix them up again and ask the next student to sort them. Use yourself as a comparison, but be aware that older people may have a longer adaptation time.

Some students with RP may not show any clinical signs of vision loss at night or during the day until mid- adolescence, so night vision should be checked periodically.

Screening visual fields

In students over age eight, screen for visual fields. In the early stages of cone dysfunction (a resultof retinitis pigmentosa), students can see well at the extreme periphery but then lose sight of the object closer-in while maintaining normal vision centrally. Face the student, asking him to keep looking at your nose. Hold your hands out at three and nine o'clock, then at six and 12 o'clock and in between these two positions. Keep your arms completely still and wiggle just the fingers on one or the other hand, varying the side in an unpredictable pattern. Ask the student to point to the one which is wiggling. If the student is unable to see the wiggling fingers, he may be losing peripheral vision.

Referral

Students who meet the referral criteria should be referred to a pediatric ophthalmologist or retinal specialist. The provider should be given any history that indicates the possibility of Usher Syndrome, results of observations, balance screening, dark adaptation and visual fields.

If a student is identified as having Usher Syndrome, please call the Missouri Deafblind Project (see page 33 for a description of services).

What is Usher Syndrome?

Usher Syndrome is a genetic disorder involving the loss of both sight and hearing. Hearing loss occurs at birth or shortly thereafter. A progressive loss of vision due to retinitis pigmentosa (degeneration of the eye's retinas) begins later in life, but usually before adolescence. There is no way of knowing the time of onset or rapidity of vision loss, but in almost all cases, the result is legal blindness.

A person with Usher Syndrome has inherited the Usher gene from both parents. Usher Syndrome is an autosomal recessive gene, and both parents must pass the gene to their child in order for the child to have the condition. When both parents have the gene, the chances each child will have Usher Syndrome is one in four. While only approximately three per 100,000 people will have Usher Syndrome, it is estimated that three percent to six percent of people who are congenitally deaf have the condition.

Usher Syndrome accounts for over 50 percent of all cases of deaf-blindness, with approximately 10,000 known cases in the United States. In the general population,anywhere from one in 100 to one in 300 carry the Usher gene.

The two major types of Usher Syndrome are Type I and Type II. The most common is Type I (almost 90 percent of all Usher Syndrome cases) and is deafness with retinitis pigmentosa (RP) symptoms before adolescence. In Type II (almost 10 percent of cases), moderate to severe congenital hearing loss is paired with RP symptoms after adolescence.

Why is it important to diagnose Usher Syndrome as soon as possible?

Identifying Usher Syndrome as early as possible is important because:

- The gradual decrease in vision may go unnoticed by an individual who may continue activities, e.g., driving or working in hazardous conditions that cannot be safely done anymore.
- The individual, parents and teachers can plan for educational and vocational experiences and guidance that take into account the eventual visual difficulties. Resources are available for experiences such as mobility training, use of Braille and tactual communication.
- A diagnosis of Usher Syndrome in an older child allows parents to consider genetic counseling.
- People who have Usher Syndrome may also want to consider genetic counseling.

How is an individual identified as having Usher Syndrome?

Several screenings are used to determine whether a person has retinitis pigmentosa, and that is how a person who has a hearing loss is identified as having Usher Syndrome. These screenings include a visual field screening to assess peripheral vision and screening to evaluate color vision and dark adaptation. However, the definitive screening of retinitis pigmentosa is electroretinography (ERG), which has been found to be 95 percent accurate. ERG is the measurement of the electricity given off by nerve impulses in the retina. This painless screening is done by having the patient wear special contact lenses while looking at flashing lights.

The following is provided by the Missouri Deafblind Project in cooperation with the Missouri School for the Blind and the Missouri School for the Deaf.

Missouri Deafblind Project

Purpose

The purpose of the Missouri Deafblind Project is to develop partnerships, coordinate service networking and provide systematic training. Technical assistance, training and resources are available for the students identified as deaf and blind on the Missouri Deafblind Census, their families and service providers. Leadership and support is provided by the Missouri School for the Blind Outreach Team. Services are coordinated with local education agencies, adult service providers and Deafblind task forces to enhance networking and build expertise in the community.

Services

- On-site technical assistance and consultation from the outreach team
- In-service training on specific content areas
- Active state and local Deafblind task forces
- Transition assistance including personal futures planning

- Missouri Deafblind Census
- Parent training including a home program for children, birth through five years
- Family workshops including Family Learning Vacation and Families Together, Inc.
- Early childhood training, such as VIISA and INSITE workshops
- Deafblind coursework, such as Hand-in-Hand
- Mentor program
- Usher screening resources
- Loan library of resources on effective practices
- Deafblind newsletter

All services are free. For additional information regarding the Missouri Deafblind Project, contact:

Director, Outreach Services
Missouri School for the Blind3815 Magnolia Avenue
St. Louis, MO 63110

314-776-4320, ext. 250
https://msb.dese.mo.gov/

USHER Screening Check List

Name_____ Birthdate_____ Date_____

GENERAL QUESTIONS	Yes (stop)	No (go on)	?
1. Are multiple organ systems affected?			
2. Does a family history of deafness exist, with multiple generations affected?			
3. Is the individual mentally retarded?			
HEARING QUESTIONS	**Yes**	**No**	**?**
4a. Is the individual hard of hearing?	screen	go on	
4b. Is the individual prelingually deaf?	screening	stop	
5. Is the audiogram *atypical* of Usher Syndrome?			
BALANCE QUESTIONS	**Yes**	**No**	**?**
6. Is screening balance abnormal in deaf individual?	screen	stop	
7. Was individual late to walk (>15 months)?			
8. Is Individual considered clumsy?			
9. Does individual lose balance easily in dark?			
VISION QUESTIONS	**Yes**	**No**	**?**
10. Is there a history of night blindness?	refer	go on	
11. Abnormal dark adaptation screening?	refer	go on	
12. Abnormal confrontational visual fields?	refer	go on	
13. Other concerns about vision?	refer	recheck*	

* Recheck later means to gather more history, enlisting parents and teachers to complete expanded questionnaires, do more observations and/or repeat the screening next year. If the "?" column is checked, the screening should be repeated mid-year. It is better to err on the side of over referral than under referral

APPENDIX C: Sample Forms

REPORT TO PARENTS

Your child, _____ , has participated in the Vision Screening Program in our school on_____, of this year. At this time, he/she has no apparent visual problems. As your child grows and develops, this ability to see may change.

Please contact us if you have questions about your child's vision.

School Administrator

REPORT TO PARENTS

Your child,_____, has participated in the Vision Screening Program in our school on_____, of this year. At this time, he/she has no apparent visual problems. As your child grows and develops, this ability to see may change.

Please contact us if you have questions about your child's vision.

School Administrator

CHECKLIST FOR VISION

NAME_____GRADE_____DATE_____

SCHOOL_____TEACHER _____

OBSERVATION AND HISTORY

Please check appropriate items and return to the school nurse for review and determination of action to be taken.

Appearance: Do eyes look normal?

_____Eyes turn in or out

_____Crusty or red eyelids

_____Different sizes - pupils or eyes

_____Swelling of eyelids

_____Conjunctivitis (pink eye)

_____Drooping lids

_____Other _____

Behavior: Teacher or parent observation

_____Tilts head, covers or closes one eye for critical seeing

_____Difficulty in keeping place while reading - a "finger" reader

_____Disinterested in activities involving critical seeing

_____Excessive stumbling, awkwardness or daydreaming

_____Holds printed materials in unusual position

_____Other_

Complaints: Student's statements

_____Eyes hurt or blur while reading

_____Headaches when reading

_____Words move or jump about when reading

_____Double vision

_____Eye problems following blow to head

_____Can't see the chalkboard

_____Other _____

Signs or Symptoms of Eye Problems

School personnel should be provided with a list of symptoms and student complaints that might indicate a vision problem, as a basis for referral for screening. If a student exhibits any of the following symptoms over a period, refer the student even if all other vision-screening procedures are normal.

Appearance of eyes:

_____One eye turns in or out at any time

_____Drooping lids

_____Reddened eyes or lids

_____Eyes tear excessively

_____Encrusted eyelids

_____Frequent sties or swollen lids

Behavioral signs of vision problems:

1. Eye movement abilities (ocular motility)

_____Head turns as student reads across page

_____Loses place often during reading

_____Needs finger or marker to keep place

_____Displays short attention span in reading or copying

_____Too frequently omits words

_____Repeatedly omits small words

_____Writes up or down hill on paper

_____Rereads or skips lines unknowingly

_____Orients drawings poorly on page

2. Eye-teaming abilities (binocularity/stereoscopic vision)

_____Complains of seeing double (diplopia)

_____Repeats letters within words

_____Omits letters, numbers or phrases

_____Misaligns digits in number columns

_____Squints, closes or covers one eye

_____Tilts head extremely while working at desk

_____Consistently shows gross postural deviations at desk activities

3. Eye-hand coordination abilities

_____Must feel things to assist in any interpretation required

_____ Eyes not used to “steer” hand movements (extreme lack of orientation, placement of words or drawings on page)

_____Writes crookedly, poorly spaced; cannot stay on ruled lines

_____Miss-aligns both horizontal and vertical series of numbers

_____Uses hands or fingers to keep place on page

_____Uses other hand or fingers to keep place on page

_____Uses other hand as “spacer” to control spacing and alignment on page

_____Repeatedly confuses left-right directions

4. Visual form perception (visual comparison, visual imagery, visualization)

_____Mistakes words with same or similar beginnings

_____Fails to recognize the same word in the next sentence

_____Reverses letters and/or words in writing and copying

_____Confuses the same word in the same sentence

_____Repeatedly confuses similar beginnings and endings of words

_____Fails to visualize what is read either silently or orally

_____Whispers to self for reinforcement while reading silently

5. Refractive status (nearsightedness, farsightedness, focus problems, etc.).

_____Comprehension reduces as reading continues; loses interest too quickly

_____Mispronounces similar words as reading continues

_____Blinks excessively at desk tasks and/or reading, not elsewhere

_____Holds book too closely; face too close to desk surface

_____Avoids all possible near-centered tasks

_____Complains of discomfort in tasks that demand visual interpretation

_____Closes or covers one eye when reading or doing deskwork

_____Makes errors in copying from chalkboard to paper on desk

_____Makes errors in copying from reference book to notebook

_____Squints to see chalkboard or requests to move nearer

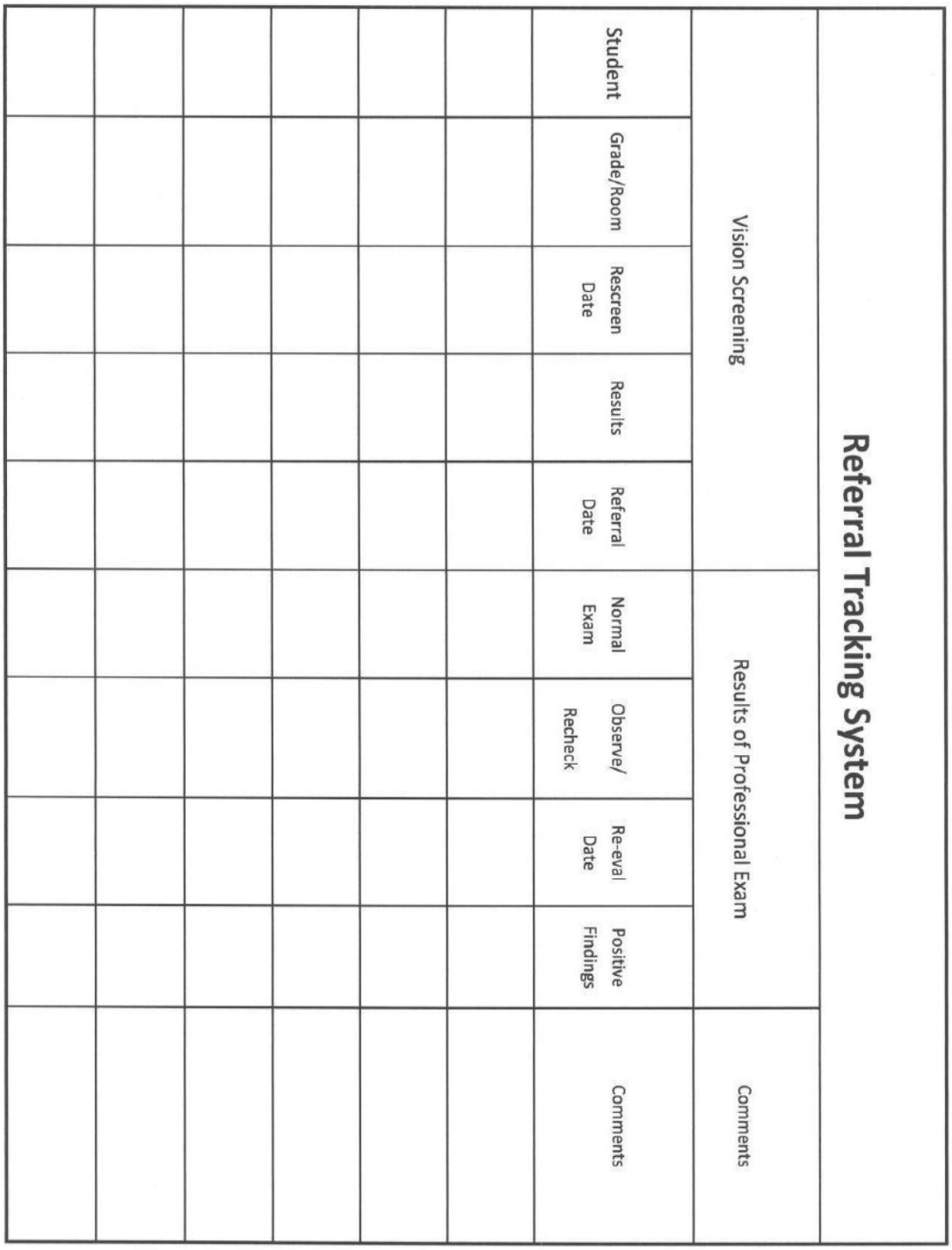
_____Rubs eyes during or after short periods of visual activity

_____Fatigues easily; blinks to make chalkboard clear up after desk tasks

This list was excerpted from “Learning Related Visual Problems,” ERIC Clearinghouse on Handicapped and Gifted Children, 1920 Association Drive, Reston, VA.

Referral Tracking System

(Sample)



SCHOOL VISION REFERRAL

CHILD'S NAME _____ GRADE _____

SCHOOL_____TEACHER _____

Dear Parent:

Your child's eyes were screened by the school nurse as one of the health services provided by this school. The results of the screening test indicate the need for a more complete eye examination. The nurse's findings are attached to this letter.

Since poor vision can affect learning, it is important to complete this referral.

Please select ONE of the options below:

☐ **Option A: I will take my child for an exam.** Take the attached form with you when you take your child for the examination. Return this letter, the attached form, and the eye exam results to me at the school.

☐ **Option B: My child is already receiving eye care.** If your child is already receiving eye care from a doctor, please let me know the date your child was last seen.

☐ **Option C: I/We disagree with the need and do not wish my/our child to have an eye exam.** If you wish to not have your child examined by an eye doctor, please make a note of that on this form and return the form to me at the school.

If finances are a concern and you do NOT have insurance, or need help in getting the eye exam, please call me at_____. Financial assistance may be available through various agencies.

THANK YOU FOR KEEPING YOUR CHILD HEALTHY

Parent(s) Signature_____Date _____

HIPAA-Compliant Authorization

Exchange of Health & Education Information

ABC PUBLIC SCHOOLS

Patient/Student Name:_____ **Date of Birth**: _____

I hereby authorize_____[*insert health care provider name & title*]

and_____[*insert name & title of school official*] to exchange

health and education information/records for the purpose listed below.

_____[*insert address & telephone of school/school district*]

_____[*insert address and telephone of health care provider*]

Description:
The health information to be disclosed consists of:

The education information to be disclosed consists of:

Purpose: This information will be used for the following purpose(s):

1. Educational evaluation and program planning
2. Health assessment and planning for health care services and treatment in school
3. Medical evaluation and treatment
4. Other:_____

AUTHORIZATION

This authorization is valid for one calendar year. It will expire on_____[*insert date*]. I understand that I may revoke this authorization at any time by submitting written notice of the withdrawal of my consent. I recognize that health records, once received by the school district, may not be protected by the HIPAA Privacy Rule, but will become education records protected by the Family Educational Rights and Privacy Act. I also understand that if I refuse to sign, such refusal will not interfere with my child's ability to obtain health care.

_____

Parent Signature Date

_____

Student Signature* Date

*If a minor student is authorized to consent to health care without parental consent under federal or state law, only the student shall sign this authorization form. In Connecticut, a competent minor, depending on age, can consent to outpatient mental health care, alcohol and drug abuse treatment, testing for HIV/AIDS, and reproductive health care services.

Copies: Parent or student*
Physician or other health care provider releasing the protected health information
School official requesting/receiving the protected health information PSA - Rev. 4/15/03
By CT State Department of Education, Nadine Schwab, & CT Chapter, American Academy of Pediatrics; adapted format from Ohio.

School Vision Screening Form

IDENTIFYING INFORMATION	REASON FOR SCREENING
STUDENT NAME –	OTEACHER REFERRAL 0 ROUTINE SCREENING
GRADE	TODAYS DATE
SCHOOL YEAR	

OBSERVATIONS

APPEARANCE	BEHAVIOR	COMPLAINTS
o RED EYES	o BLINKING	o CAN'T SEE BLACKBOARD
o GRANULATED LIDS	o WATERING EYES	o PRINT BLURS
o STYES	o SENSITIVE TO LIGHT	o DOUBLE VISION
o DISCHARGE	o RUB EYES	o HEADACHE
o SWELLING ABOUT EYES	o EXCESSIVE FROWNING	o NAUSEA
o HEAD TILT	o IRRITABILITY WHEN USING EYES	o DIZZINESS
o DROOPY LIDS	o SQUINTS OR SQUEEZES LIDS	o OTHER
o EYES OUT OF LINE	o HOLDS BOOK VERY CLOSE	
o STUMBLES, TRIPS OVER SMALL OBJECTS	o OTHER	

SCREENING DATE --

0 WEARING GLASSES	0 GLASSES BROKEN/LOST	0 GLASSES AT HOME	0 DOES NOT WEAR GLASSES
DISTANCE ACUITY	RIGHT 20 /	LEFT 20 /	CHART USED
NEAR ACUITY	RIGHT 20 /	LEFT 20 /	CHART USED
BINOCULARITY	TYPE OF TEST		0 PASS 0 FAIL

RE-SCREENING DATE --

0 WEARING GLASSES	0 GLASSES BROKEN/LOST	0 GLASSES AT HOME	0 DOES NOT WEAR GLASSES
DISTANCE ACUITY	RIGHT 20 /	LEFT 20 /	CHART USED
NEAR ACUITY	RIGHT 20 /	LEFT 20 /	CHART USED
BINOCULARITY	TYPE OF TEST		O PASS O FAIL

PASS O **REFER** O **DATE OF REFERRAL** **DATE EYE EXAM REPORT RECEIVED**

If unable to complete vision screening, please conduct a functional vision assessment.

DISTRIBUTION.SCHOOL TO RETAIN INFILE

SCHOOL FUNCTIONAL VISION ASSESSMENT FORM

IDENTIFYING INFORMATION	**REASON FOR ASSESSMENT**
STUDENT NAME	OTEACHER REFERRAL 0 ROUTINE SCREENING
GRADE	TODAYS DATE
SCHOOL YEAR I REASON FOR FUNCTIONAL SCREENING	

OBSERVATIONS		
PUPILLARY REACTION	O YES	O NO
FIXATES ON 4" OBJECT AT 12-18 INCHES	O YES	O NO
FIXATES ON 4" OBJECT AT 10 FEET	O YES	O NO
CONVERGES	O YES	O NO
SHIFTS GAZE	O YES	O NO
REACHES ON VISUAL CUE	O YES	O NO
TRACKS LIGHT HORIZONTALLY	O YES	O NO
TRACKS LIGHT VERTICALLY	O YES	O NO
TRACKS OBJECT HORIZONTALLY	O YES	O NO
TRACKS OBJECT VERTICALLY	O YES	O NO
PERIPHERAL AWARENESS		
RIGHT EYE	O YES	O NO
LEFT EYE	O YES	O NO

COMMENTS:

PICKS UP OR TRACKS OBJECT LESS THAN 1" IN SIZE (LIST RESULTS BELOW):		
OBJECT	O YES	O NO
EYE PREFERENCE	O RIGHT O LEFT	O NONE

PASS O **REFER** O **DATE OF REFERRAL** **DATE EYE EXAM REPORT RECEIVED**

DISTRIBUTION. SCHOOL TO RETAIN IN FILE

APPENDIX D: Resources

Numerous companies market vision screening equipment. Possible sources for charts, card screeners, and vision screening equipment include:

• Good-Lite Company	1-800-562-5200	www.good-lite.com/
• School Health	1-800-323-1305	www.schoolhealth.com
• MacGill School Health	1-800-323-2841	www.macgill.com
• School Nurse Supply	1-800-485-2737	www.schoolnursesupplyinc.com
• Moore Medical	1-800.234.1464	www.mooremedical.com
• School Kids Healthcare	1-866-558-0686	www.schoolkidshealthcare.com

Additional informational Websites:

- Information for parents, teachers, and students
  www.kidshealth.org

Primary vision information websites:

- Healthy People 2030 – Sensory or Communication Disorders Objectives
  www.healthypeople.gov

Links to national organizations concerned with the eye and vision:

- National Eye Institute
  www.nei.nih.gov/
  For Information about eye conditions, research results, and vision education resources. Free materials are available upon request.

- Prevent Blindness America
  www.preventblindness.org
  Formerly the National Society for the Prevention of Blindness - Provided community vision education, certified vision screening training, service programs, and national and state research.

Websites for general vision education and availability of eye care information:

- American Optometric Association
  www.aoa.org
  Public vision education and availability of eye care.

- Missouri Optometric Association
  www.moeyecare.org

- American Academy of Pediatrics
  www.aap.org

  Position statements for professionals and guidelines for child vision care.
- Center for Health and Health Care in Schools
  http://www.healthinschools.org/

  Information on child health issues for school health professionals; operated by The George Washington University, School of Public Health and Health Services, Graduate School of Education and Human Development, Washington, D.C.
- Medicaid and Medicaid Services
  www.medicaid.gov

  Information about Medicaid eligibility and current Federal Poverty Guidelines.
- The Foundation of the American Academy of Ophthalmology
  www.aao.org

  Resources for vision education, eye care and community outreach.

Resources for children with visual impairments:

- American Foundation for the Blind
  www.afb.org
- Vision Impairment and Blindness (National Library of Medicine and NIH)
  www.nlm.nih.gov/medlineplus/visionimpairmentandblindness.html

APPENDIX E: Glossary

Amblyopia – An ocular condition in an otherwise healthy eye, in which there is an abnormality of cortical response in the occipital lobe of the brain due to insufficient or inadequate stimulation of the fovea, neural pathway and cortex that may result in unilateral vision loss if untreated. (Also known as lazy eye or weakness of sight)

Astigmatism – A refractive error of the eye in which, with accommodation suspended, the refracting power of the eye is not uniform in all directions such as that incoming rays of light in a single eye do not come together to focus at a single point but rather are focused at two or more points that usually results in blurred or partially blurred vision.

Binocularity – The characteristic of the eyes when binocular vision is intact. Used interchangeably with *binocular vision* and requires both ocular alignment and stereoacuity.

Denominator – The bottom half of the fraction that shows how far away a person with normal visual acuity can stand from the chart and still read the symbol.

Diplopia – Double vision or the perception of two images, one by each fovea, experienced when the eyes are intentionally crossed or out of alignment due to imbalance of the extraocular muscles.

Distance vision – The ability of the eye to see images clearly at a distance (often a great distance). The inability to see a distant object clearly is called *myopia.*

Esophoria – A type of heterophoria in which the eye deviates inward or nasally when covered, that is, when fusion is suspended.

Esotropia – A type of strabismus in which one or both eyes deviate inward toward the nose from a parallel axis of vision. (Also called *convergent strabismus)*

Exophoria – A type of heterophoria in which the eye deviates outward or laterally when covered, that is, when fusion is suspended.

Exotropia – A type of strabismus in which one or both eyes deviate outward away from the nose from a parallel axis of vision. (Also called *divergent strabismus)*

Heterophoria – A latent alignment disorder in which the eyes are not parallel during monocular vision, that is, when only one eye is seeing and binocularity and fusion are disrupted. (Also referred to as *phoria)*

Heterotropia – A manifest alignment disorder, or *strabismus*, in which one or both eyes deviate from parallelism when attempting to focus on a target while both eyes are open. (Also referred to as *tropia*)

Hypermetropia – A refractive error in which the light rays from an incoming visual image have not converged by the time they reach the retina. Used interchangeably with the term *hyperopia*. (Formerly called “farsightedness,” a sometimes confusing term no longer used.)

Hyperopia – A refractive error in which the light rays from an incoming visual image have not converged by the time they reach the retina. Used interchangeably with the term *hypermetropia*. (Formerly called “farsightedness,” a sometimes confusing term no longer used.)

Hypophoria – A type of heterophoria in which the eye deviates downward, when covered, while fusion is suspended.

Hypotropia – A type of strabismus in which one or both eyes deviate downward from a parallel axis of vision.

Legal blindness –Is defined as the best-corrected central vision of 20/200 or less, and peripheral vision of 20 degrees or less.

Myopia – The most common of the refractive errors in which light rays from an incoming visual image converge before they reach the retina, or preretinally. (Formerly called "nearsightedness," a confusing term no longer used.)

Near vision – The ability of the human eye to see objects with clarity at close range, also termed *near point acuity* or *near acuity*. Optimal near vision requires both accommodation and convergence.

Nearsightedness – See Myopia.

Numerator – The top half of the fraction that stands for the distance the examinee is away from the chart.

Nystagmus – An involuntary, jerky movement of one or both eyes suggestive of primary ocular or systemic disease. (Also known as dancing eye or jerky eye)

Occluder – An object that temporarily obstructs vision during vision screening, preventing an eye from visualizing a focal target (e.g., paper cup, paper patch, palm of hand with tissue).

Ocular alignment – A positioning of both eyes by the extra ocular muscles so they are targeting the same focal object simultaneously with the result that two images, one from each eye, fall on the respective foveae. The eyes are said to be *orthotropic* or *parallel.*

Ocular motility – The ability of the eyes to move together smoothly and fluidly, in all directions, at will.

Ocular tracking – The movement of the eyes together, at will, following a target in any direction. Also termed *tracking*.

Sensitivity – The ability of a screening to correctly identify those who actually have a disease, health problem, or condition.

Sloan letters chart – A vision acuity chart named after ophthalmologist, Dr. Louise Sloan, composed of ten letters of the Roman alphabet intentionally selected, placed and ordered on the chart. Sloan letters are sans (without) serif and employ uniform fonts in all charts, and for this reason are now the preferred charts.

Specificity – The ability of a screening to correctly identify all those who do not have a disease, health problem, or condition.

Stereopsis – Depth perception or three-dimensionality possible only when both eyes are in alignment and perceive the same image clearly.

Strabismus – A manifest deviation of one or both eyes from the visual axis of the other so they arenot simultaneously directed to the same object. (Also referred to as *heterotropia* or *tropia*)

Visual acuity – The state, condition or effectiveness of central vision.

Missouri Department of Health and Senior Services

Division of Community and Public Health
Section for Community Health Services & Initiatives
Bureau of Community Health and Wellness
School Health Program
P.O. Box 570 Jefferson City, MO 65102-0570
(573) 522-2822