



# Tennessee School Health Screening Guidelines

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# Introduction

Unrecognized or untreated health conditions can limit a child’s ability to learn. School health screenings are an effective way to promote health, detect impairments and prevent future health problems. Early identification of health conditions through school health screenings can lead to an effective treatment and can prevent health issues later that may impact learning. Healthy students are better learners.

Students in grades Pre-K, K, 2, 4, 6, and 8 are encouraged to receive vision and hearing screenings and students in grades K, 2, 4, 6, 8 and one grade of high school are encouraged to receive blood pressure (BP) and height/weight screenings. Oral health screenings and scoliosis screenings for female students in grades 5 and 7 and male students in grade 8 are also encouraged.

These updated guidelines are an effective tool to successfully screen students for various health conditions. Resources that can assist with the screening process are included along with helpful sample forms in the [Appendices](#). A caring school health professional taking the time to screen for these types of conditions can result in positive health and educational outcomes.

## General Student Health Screening Guidelines

Historically, school nurses have been in charge of facilitating and/or conducting school health screenings. In order to complement and expand the capacity for health care services in school systems, it may be beneficial to develop community screening partnerships. Potential partners include employees of local universities, health departments, community hospitals, Future Health Professionals, formerly known as Health Occupations Students of America students, and non-profit organizations.

### *Health Screenings*

The Tennessee Department of Education (TDOE) recommends Local Education Agencies (LEAs) conduct each of the following types of health screenings. For each type of health screening, LEAs should ensure that appropriate protocols are followed, and staff/volunteer training is required.

**Vision:** The TDOE encourages LEAs to annually conduct vision screenings for all students in grades Pre-K, K, 2, 4, 6 and 8. LEAs may conduct vision screenings for all students in one year (or class) of high school. The TDOE also recommends that LEAs annually conduct vision screenings for all students that are new to the school system and/or suspected of having a vision problem by their teachers.

**Hearing:** The TDOE encourages LEAs to annually conduct hearing screenings for all students in grades Pre-K, K, 2, 4, 6 and 8. LEAs may conduct hearing screenings for all students in one year (or class) of high school. The TDOE also recommends that LEAs annually conduct hearing screenings for all students that are new to the school system and/or suspected of having a hearing problem by their teachers.

**Blood Pressure (BP):** The TDOE encourages LEAs to annually conduct BP screenings for all students in grades K, 2, 4, 6, 8 and one year of high school (usually wellness class).

**Body Mass Index (BMI) – Height and Weight:** The TDOE encourages LEAs to annually conduct BMI screenings for all students in grades K, 2, 4, 6, 8 and one year of high school (usually wellness class).



**Scoliosis:** The TDOE encourages LEAs to annually conduct scoliosis screenings for all female students in 5th and 7th grade and all male students in 8th grade. Screening female students in 6th grade is a reasonable alternative.

**Oral Health:** The TDOE encourages LEAs to regularly screen students for oral health problems.

**Concussion:** The TDOE encourages LEAs to provide baseline concussion screenings for all students who participate in sports.

## ***Parental/Guardian Consent to Screen***

**If an LEA chooses to conduct any of the screenings listed above, parents/guardians who do not want their child screened for any health concerns have the right to decline the screening for their child.**

All health screenings require active or passive parental/guardian consent. School districts determine if they want to use an “active” or “passive” parental permission form.

- “Active” parent permission requires all parents to return a signed form to the school indicating either they DO want their child to receive health screenings or they DO NOT want their child to receive health screenings.
- “Passive” parent permission assumes parents/guardians want their child screened unless they return a signed form to the school indicating their preference to decline the screening for their child.

School districts are encouraged to develop and post a list of local health resources on their website for parents to access both general health information as well as health care provider contacts to assist in health screening referral follow-up. A reference to this resource should be included in all parent permission forms as well as screening referral communications.

## ***Student Preparation***

Prior to screening, students should receive an explanation on the screening procedures which will take place. This explanation will help to reduce stress and fears students may have regarding the procedure. Additional information about health screenings can be provided to students via health education before and after health screenings occur.

## ***Screeener Preparation***

School systems may utilize trained school personnel, volunteers, or outside agencies to conduct their system-wide screenings. School personnel must follow local school system protocol regarding the use of background checks needed for all non-school volunteers. All volunteers need to sign a confidentiality form prior to assisting with school health screenings. An orientation must be provided to all staff and volunteers that includes a review of the general screening guidelines prior to conducting any school health screenings.

If trained properly, student nurses, community-based nurses, HOSA students, health science instructors, clinical instructors, school nurses and other community-based volunteers, such as members of a local Lions Club, can conduct school health screenings. All volunteers need to understand that after the screenings

have been completed, they will not have access to student identifying information collected during a school health screening and must be counseled regarding confidentiality issues.

*Resource:* [NASN - The Use of Volunteers in School Health Services](#)

## **Confidentiality**

Subject to limited exceptions, the Family Educational Rights and Privacy Act (FERPA) prohibits disclosure of personally identifiable information in a student's education record. Student health information is a form of personally identifiable information, so schools must ensure that such information remains confidential. All school districts should develop a policy regarding student health information and confidentiality.

Furthermore, all school districts should require anyone outside of the school district who has been properly trained to perform school health screenings to abide by the district's policy regarding student health information confidentiality. Student health screening data provided to an external evaluator should **NEVER** contain student names OR student identification numbers.

FERPA permits the disclosure of student health information without prior written parental consent in certain limited circumstances. First, information obtained from a health screening may be disclosed to school officials with a legitimate educational interest in the data. See 34 C.F.R. § 99.31. For example, information obtained from a health screening may be relevant to an Individualized Education Plan (IEP) Team or an Individualized Learning Plan (ILP) Team responsible for developing an IEP or ILP for a student. School districts must ensure that only those school officials with a legitimate educational interest in the data can access the information. School districts can do so by limiting physical or electronic access to the information or by requiring that all school officials request access to the information and disclose the purpose for their request. Second, information obtained from a health screening may be disclosed to outside parties, such as contractors, consultants, or volunteers, if (a) the outside party is performing a service or function that the school district or school would otherwise use its own employees, (b) the outside party remains under the direct control of the school district or school with respect to the use of student educational records, and (c) the outside party agrees not to re-disclose student health information to another party unless it does so in accordance with § 99.33. See 34 C.F.R. § 99.31.

## **Recommendations for Maintaining Confidentiality**

1. Nursing assessment and intervention shall be provided in such a way as to protect student privacy and confidentiality.
2. Nursing feedback to school personnel who refer a student is essential and shall always occur. Share only information that is necessary and that impacts the student's educational experience and safety.
3. Sharing student health information in staffing committees may require written permission for release of confidential information.
4. A "Health Concerns List" is distributed to all school personnel for whom the student's health information might possibly impact the student's educational experience and safety. This information is not sent to anyone whom the parent/guardian checked on the Health History as NOT wanting the information shared with. This Health Concerns List contains all students (listing conditions) who have a moderate to high risk of a major health problem exacerbation while at school.
5. There are situations when confidentiality must not be maintained. If at any time, information has been shared with you that indicates a student or staff member is at imminent risk of harm or is a danger to himself or others, that information must be shared with those who need to intervene in

order to protect the student or staff member (school administrators, parent, child protective agency, police, health care provider, etc.).

- a. It is recommended that your discussion with students or staff include something like, "What you tell me, I will keep in confidence, unless I feel it is necessary to share it with someone to protect you or others or disclosure is required by law."
  - b. In those situations where nursing judgment determines it is necessary to reveal information regarding the student's health without a release from student/parent, it is prudent to share only those details that are essential to achieve resolution of the problem. It is also recommended that the information be shared with as few people as possible.
6. Records of student/nurse communications regarding the personal affairs of the student or his/her family are confidential and may be shared only as the student or parent authorizes except in life-threatening situations. All information is confidential by virtue of nurse/client relationship and under student records law.
- Only the school nurse, approved substitute nurses, and the Director of Nursing may have access to nursing records without written release by student/parent, unless disclosure is authorized by law.
7. Anytime nurse/health records are released to someone, the bottom part of the Release of Information form is to be completed and filed in the student's or staff's nursing file.
8. Nursing records may not be released to another agency/individual unless the parent has signed a "Release of Information" document or the nursing record is subpoenaed by court action or disclosure is otherwise required by law.
- \*\*The non-custodial parent has the right to inspect nursing records but not to sign an authorization to release them.
9. When a record is subpoenaed, the LEA should consult their board attorney for legal advice regarding the disclosure of the requested records.
10. Exercise caution in discussing confidential issues on the telephone. Efforts should be taken to establish the identity of the caller and his/her right to confidential information.
11. Documents released by authorized staff from the LEA should be stamped, "Confidential; Not to Be Forwarded Without Parental Permission."
12. When uncertain who has legal custody of a student, consult with the school administrator and when necessary, the student's Child Protective Service Case Manager.
13. Use the FAX ONLY when there is not sufficient time for mailing records.
- a. Confirm recipient's FAX number before pushing the "send" button.
  - b. Use a cover sheet to facilitate confidentiality and to give directions for destruction of misdirected information.
  - c. Always call the receiver when you suspect a FAX was sent to a wrong place, to confirm the information was destroyed.
14. All health records containing staff or student's names should be kept in a locked location where no one but the school nurse, approved substitute nurses, or nursing supervisor has access.
15. All discarded health records containing staff or student names should be shredded before being discarded.

16. Never discuss health information about a student or staff member with anyone who is not authorized to know the health information. The only individuals authorized to know health information about a student or staff member are<sup>1</sup>
- School Nurse
  - Approved Substitute Nurse
  - Director of Nursing
  - Staff listed on the Health History whom the parent authorized to know the health information
  - EMS if emergency personnel are required
  - Physicians, as listed on the Health History, if the Health History is signed.
  - Persons/agencies authorized by the parent on the Release of Information
  - Coordinated School Health (CSH) personnel
  - Health screening workers/volunteers
18. All school nurses, approved substitute nurses, CSH personnel, teachers, teaching assistants, and health screening workers/volunteers must sign a copy of this policy/procedure.

*Resources:* [NASN - HIPAA and FERPA; Joint Guidance on the Application of the Family Educational Rights and Privacy Act \(FERPA\) And the Health Insurance Portability and Accountability Act of 1996 \(HIPAA\) To Student Health Records](#)

## ***Record Keeping***

If the school system has or plans to utilize a student data collection system, all screening results should be entered in the student health section. The local LEA will need to develop a policy or procedure to address an appropriate plan of action for referrals. See [Appendix A](#) for sample result forms for school records.

*Resource:* [NASN - Electronic Health Records: An Essential Tool for School Nurses to Keep Students Healthy](#)

## ***Post-Screening Referrals and Follow-up***

According to the [American Academy of Pediatrics \(AAP\)](#), the school nurse facilitates referral and follow-up services for screenings done at school. School nurses need to be diligent when performing referrals and follow-up services. For nurses to make referrals, they must be aware of the resources available in their communities. This includes health-care providers, as well as resources to help pay for needed services. School nurses may be able to collaborate with school social workers in making appropriate referrals. In some communities, the United Way compiles lists of service providers and identifies those who accommodate low-income clients. Local and state school nurse organizations may provide additional resources. Hospital social service departments, local health departments and medical, dental, and optometric societies may also be helpful in identifying community resources. The school nurse should keep a list of appropriate referral sources including cost, hours, and transportation options to provide to families.

*The success of a screening program is dependent on the implementation of a systematic follow-up procedure including:*

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<sup>1</sup> The listed authorized individuals only need to be informed of the health information if, and when, it becomes “need-to-know” to them. This means if and when the particular information would affect that person or agency by impacting the student’s or staff’s educational experience or safety.

1. Notification to parent/guardian in writing, listing the results of the screening and making recommendations for further evaluation, if needed. See [Appendix B](#) for sample forms. These may be completed by the screeners or the school nurse.
  - a. The most common method of distributing the referral paperwork is to send it home with the students. Unfortunately, students are not always reliable in giving paperwork to their parents/guardians. Phone calls, parent conferences and/or letters (postal or e-mail) can be used to follow-up on the initial referral. Avoid making any recommendation to a specific individual or a specific class of practitioner.
  - b. It is important to assist parents in overcoming obstacles to understanding the need for and obtaining needed care. These include assistance with locating appropriate providers and transportation, providing resources for financial assistance and interpreters when needed and setting reminders to prevent missing appointments.
  - c. Advise the parent/guardian to take the evaluation form to the appointment with the healthcare professional. Have the completed evaluation form returned to school after the student is evaluated. The information on the form is needed by the school to determine if any adjustments or accommodations need to be made to the student's education program.
2. The school nurse, or other individual designated by the principal, should develop, and implement a system to record screening results, referrals, and outcomes. If a child fails a school health screening, school staff should attempt to notify the parent/guardian at least three times using successively different contact strategies. All attempts to reach parents should be documented. This will help ensure referrals are not forgotten. Maintain contact with the parent/guardian to ascertain if the student has received the needed examination and necessary care. If necessary, refer any parent/guardian in need of financial assistance to an appropriate community resource. Pertinent information should be documented on the student's cumulative health record (CHR) or in the electronic student management system.
3. Consult with teachers and recommend necessary educational adjustments or accommodations to meet individual needs.

A practical example of a follow-up is a child who is referred because of vision difficulty, as assessed during a vision screening. The child is then evaluated, and glasses are recommended by the healthcare provider. If the family cannot afford glasses, the Lions Club may be an excellent resource. Once the child has his/her glasses, it is important to assess whether the child is wearing them during the school day. The goal of school nursing is to assist children in achieving academic success. It would be beneficial to the school nurse to engage the classroom teacher in tracking the student's use of his/her vision corrective devices (glasses or contacts) and any improvements noted in academics. The goal of school nursing is to assist children in achieving both good health and academic success.

### ***School Health Screening Reminders***

- **Annual Wellness Exam:** A comprehensive annual wellness examination should be encouraged by school staff for all students. These visits can be provided through the school system, the county health department or through a primary care provider (PCP). It is important for students and their families to have a medical home where their PCP can monitor and coordinate their ongoing healthcare needs. School nurses should assess and if needed, encourage parents to establish a medical home for their children.
- **Health Insurance:** It is suggested that parents/guardians are asked about the ability to access health care for their children and if they are covered by medical insurance. If they need assistance,

LEAs should provide information about the Affordable Care Act, TennCare, CoverKids and local county health department services and community health centers if available in the local community.

- **Partnerships:** In order to complement and expand the capacity for health care services in school systems, it is beneficial to develop community partnerships. Potential partners include but are not limited to universities, health departments, community hospitals, and non-profits.
- **Correspondence with Parents/Guardians:** Screening referral results for BP, vision and hearing should go out to the parents in a timely manner regarding the specific screen. Body Mass Index results should not be sent as standalone communication. If possible, provide each student with a health report card which includes the results of all screening services provided. It may be necessary to send a specific referral letter for any screening that needs follow-up.

## Vision Screening

[Tenn. Code Ann. § 49-6-5004](#) *Promotion of eye, hearing, and dental care awareness.*

- a) Upon registration or as early as is otherwise possible and appropriate, public schools, nursery schools, kindergartens, preschools, or childcare facilities are encouraged to make reasonable efforts to apprise parents of the health benefits of obtaining appropriate eye, hearing and dental care for children.
- b) A health care professional is authorized to indicate the need for an eye, hearing or dental examination on any report or form used in reporting the immunization status for a child as required under this part. Health care professionals shall provide a copy of the report or form to the parents or guardians indicating the need to seek appropriate examinations for the child.
- c) If the parent or guardian of a child with a need for an eye or hearing examination is unable to afford the examination, an LEA of a county or municipality may use revenues from gifts, grants and state and local appropriations to provide the eye or hearing examinations.
- d) LEAs are encouraged to seek free or reduced-cost eye examinations from optometrists or ophthalmologists and free or reduced-cost hearing examinations from physicians or audiologists willing to donate their services for children who are unable to afford the eye or hearing examinations.
- e) The commissioner shall promulgate rules and regulations in accordance with the Uniform Administrative Procedures Act, compiled in title 4, chapter 5, which are necessary to carry out this section.

### ***Vision Screening Recommendations***

The TDOE encourages LEAs to conduct annual vision screenings for all students in grades Pre-K, K, 2, 4, 6, and 8. If a Pre-K student has already been screened through their primary care provider prior to school entry, the data from their permanent record can be used instead of re-screening these students. LEAs may also conduct annual vision screenings for high school students. If LEAs choose to conduct annual vision screenings in high school, the LEA should screen the same grade-level or class year after year. For example, if the LEA conducts vision screenings for those students enrolled in wellness class, then the LEA should conduct vision screenings for students enrolled in the same wellness class every year thereafter. TDOE also encourages LEAs to conduct annual vision screenings for students that are new to the school system and/or suspected of having a vision problem by their teachers.

According to Prevent Blindness (2015), a screening does not take the place of a comprehensive eye exam and will not detect all potential vision disorders or diseases. Those students who received a comprehensive eye examination from an eye care provider (ECP), an optometrist or ophthalmologist, within the previous twelve months of the vision screening date do not need to be screened. A student may be referred for screening per local school district protocol at any point.

*Source:*

Prevent Blindness. (2015, August 5). *Prevent Blindness Position statement on School-Aged Vision Screening and Eye Health Programs*. <https://preventblindness.org/wp-content/uploads/2020/05/Prevent-Blindness-Statements-on-School-aged-Vision-Screening-Approved-8-2015-1.pdf>

## ***Vision Screening Rationale***

Vision screening programs for those aged five and younger focus on prevention of amblyopia (lazy eye) and the detection of amblyopia risk factors. Screening school-aged children aims primarily to detect refractive errors or other conditions that could potentially impact the students' ability to learn or to affect their academic performance. Vision screening is a cost-effective method to identify children in need of evaluation and treatment by an optometrist or ophthalmologist. Early diagnosis and treatment of vision disorders will allow for more normal visual development; prevent further loss of vision; and may decrease the impact of learning problems, poor school performance, developmental delays, and behavior concerns.

According to the American Optometric Association (2017) and Prevent Blindness (2015),

- Between two and three percent of pre-K-age children suffer from amblyopia.
- Between three and four percent of pre-K-age children suffer from strabismus, which causes the eyes to turn in or out.
- Up to 27 percent of pre-K age children have a refractive error, with hyperopia (farsightedness) being the most common error.
- Nine percent of school-aged children aged 12-19 have visual impairment because of uncorrected refractive error.

Early detection of vision problems is important. Unidentified and uncorrected vision problems and eye conditions can have a devastating impact on children's development. It is estimated that 80 percent of children's learning occurs through visual processing. Vision screenings can detect some conditions that are easier to correct at a young age, before irreversible vision damage occurs.

*Sources:*

American Optometric Association. (2017, February 12). Evidence-Based Clinical Practice Guideline: Comprehensive Pediatric Eye and Vision Exam. <https://www.aoa.org/AOA/Documents/Practice%20Management/Clinical%20Guidelines/EBO%20Guidelines/Comprehensive%20Pediatric%20Eye%20and%20Vision%20Exam.pdf>;

Prevent Blindness. (2015, August 5). *Prevent Blindness Position statement on School-Aged Vision Screening and Eye Health Programs*. <https://preventblindness.org/wp-content/uploads/2020/05/Prevent-Blindness-Statements-on-School-aged-Vision-Screening-Approved-8-2015-1.pdf>

## ***Vision Impairments***

### **Care of students with eyeglasses, contact lenses, or a known vision impairment**



If the student wears lenses or has a known vision impairment, school health personnel should determine whether the school has a record of the student's eye examination. It is recommended that the results of a professional eye examination and any recommendations that might affect school performance be obtained.

If a student has lenses or reduced vision with lenses, school health personnel should do the following:

- School health personnel can assist the student in adjusting to the need for corrective lenses, if newly prescribed, and/or other therapeutic interventions such as patches, or eye drops.
- Engage in direct student counseling regarding eye health and safety.
- Emphasize the importance of continued follow-up by the student's eye care professional.
- Reinforce with the student the reasons for regular eye examinations.
- Teach the student the importance of keeping his/her lenses clean and properly adjusted. Demonstrate how to do this as needed.

### **Care of students with non-correctable vision loss (severe vision impairments)**

Some students have visual impairments that cannot be fully corrected through treatment. In these cases, school health personnel should do the following:

- Counsel parents/guardian regarding severe vision loss.
- Refer students to a teacher of the Visually Impaired and/or Orientation & Mobility specialist.
- Refer to the special education specialist within the school district.
- Refer parents/guardians to the program for students with disabilities in their county for eligible services relating to the student's visual impairment.
- Review the professional eye exam report for information to determine if any adjustments or accommodations need to be made to the student's education program (including participation in physical education, intramurals, and interscholastic sports).
- Maintain identification procedures for students with severe visual impairment as well as referral and follow-up services at periodic intervals.
- Make certain the student is following the eye care professional's recommendations regarding the wearing of protective eyewear for activities at school with a risk of eye injury. This may include assisting the student in obtaining appropriate eyewear and explaining to school staff the importance of the student wearing the eyewear at school.

### ***Vision Screening Program***

School vision screening programs should include:

1. Recording of any signs, symptoms, and relevant history as reported by the student, parent/guardian, and/or school staff that may indicate visual problems.
2. Observation and recording of any unusual features or eye movement of the student during screening.
3. Observation and recording of the student's behavior during screening (i.e., squinting, rubbing eyes, moving forward).
4. Screening and recording of the following visual tests:
  - a. Distance visual acuity: annually in grades Pre-K, K, 2, 4, 6, and 8.
  - b. Color perception: one-time screening to be done at the initial screen.
  - c. Near visual acuity: annually in grades Pre-K, K, 2, 4, 6 and 8.
  - d. Functional tests such as muscle balance and depth perception or ocular motor.
5. The vision screening results including proper notification of the parent/guardian, documentation of follow-up efforts by health office personnel (school nurse or other designated person), and eye care professional evaluation findings, should all be recorded on the student's cumulative health record



(CHR) or in the electronic student management system. Screening results should be printed and sent with record request from other schools when students transfer.

## ***Equipment Needed***

- **Eye Chart** – Sloan Letters chart at ten feet is preferred for distance visual acuity testing in those that know their letters and can verbally respond. A Snellen chart properly calibrated for ten feet may also be used for distance acuity. Pre-K/young students who are unable to recall letters should be tested with either the HOTV or LEA symbols chart at ten feet with matching cards available. Measure the distance between the student and the eye chart. Tape may be used to mark the spot for the student to sit or stand. A reduced Snellen, HOTV, or LEA symbols chart should be used for measuring near acuity. Mechanical vision testers capable of testing both distance vision and near vision are available, but less desirable. If using a mechanical vision tester, it must be calibrated annually or according to the manufacturer’s recommendation.
- **Occluder** - Occlusive patches (which can be as simple as a piece of two-inch paper tape; use new piece for each student), or occluder glasses, are preferred for children 3-10 years old. Those 10 years and older may use a “mardi gras mask” occluder or “lollypop” occluder. Care must be taken to ensure that the student is not peeking around the occluding device used. It is not recommended to have a student, or an assistant hold their hand over the student’s eye.
- **Pointer** – the examiner’s finger, a stick, or a laser pointer may be used to attract the student’s attention to the letter or symbol on the eye chart.
- **Pseudoisochromatic plates** – used to check red-green color vision. A paint brush or cotton swab may be used for pointing or tracing the image (this is useful with younger students).

## ***Setting Up the Screening Area***

In the planning of a vision screening program, attention should be given to the room selection in which to screen. Whenever possible, the health office should be used. It is also important to consider lighting; bright sunlight should be filtered and behind the student. Since some students may be easily distracted, it is advisable to select a room or area that is quiet and free from interruptions. The room needs to include appropriate space to set up screening components. If possible, a waiting area should be included for those students awaiting screening. Ideally, the site selected should not have multiple uses so as not to distract the student during screening at any time before completion. This is not always possible in a school health office and cooperation of the building administration in supporting the health office staff during screening procedures is essential to a smooth process.

1. Place a Sloan letter chart, Snellen chart, or LEA/HOTV chart on a light-colored, uncluttered wall with the 20/40 line of chart at the eye level of the student to be screened.
2. Measure the distance from the chart to where the student will sit or stand and use a piece of tape to mark the student’s place. Maintain an unobstructed floor space between the tape and the eye chart.
  - a. All testing should be at ten feet. If using a Snellen chart at ten feet, the following adjustment in acuity must be made:
    - i. All acuities would then need to be doubled to adjust for the distance (a 20/40 line read at 10 feet would be 20/80 acuity)
3. Arrange table and chairs for screening and recording. Keep out of line of eye chart and ten feet floor mark.
4. Ensure normal lighting on the chart and avoid undue glare.
5. Follow the manufacturer’s instructions if using mechanical vision testers for distance and near vision testing.

## ***Student Interaction when Vision Screening***

### **Explanation to students**

It is important that students understand the purpose of the vision screening and their role in the activity. School health personnel should plan time to review the purpose of periodic vision screening and demonstrate screening procedures prior to the screening for early elementary students. Instruction should emphasize the value of early and periodic screening, the relationship of health and safety practices to the prevention of eye diseases and injuries, the prompt medical treatment of correctable and/or reversible eye health conditions, and environmental factors which are conducive to the maintenance of eye health and safety. Teaching may be enhanced by notifying families of the upcoming screening and asking them to discuss the process with their child, particularly with younger students.

During the procedure, instructions to students should be simple and clear. Students should be told they may not be able to see everything. Students should understand that they must tell you when they cannot see the letters or symbols. The word "test" implies the "need to pass". Using the term "vision screening" may help to prevent students from attempting to guess when they are unable to see the letters or symbols. An alternative to the Sloan letter or Snellen acuity chart for young students would be the use of the HOTV or LEA symbols chart. (The examiner should use the most reliable chart that the student is capable of consistently recognizing.) Sensitivity to individual student needs along with use of appropriate screening procedures, orientation, familiar personnel, and establishing rapport with the student will assist in the success of screening activities.

### **Observations of the student**

When a student is scheduled for screening, whether based on referral or scheduled screening, teacher observations of visual behavior should be gathered and reviewed as warranted. A teacher may also refer a student for a professional eye exam if they feel the student may be having difficulties based on their observations. The teacher should put the referral in writing, including the behaviors they observed that prompted the referral and send to the parent/guardian to be shared with the eye care professional. A copy of this referral letter to the parent is placed in the student's health record. When feasible, school health personnel should observe the student performing a variety of visual tasks.

## ***Vision Screening Procedure***

A sample vision screening results form to retain in school records can be found in [Appendix A](#).

### **Distance Visual Acuity**

1. The distance from the front of the student's face to the chart should be ten feet for the Sloan letter chart and HOTV/LEA charts in Pre-K. Snellen acuity should be calibrated for ten feet as well.
2. Check student to be sure the student understands how to respond to the figures on the displayed chart. Ensure the student can describe the letters or symbols. Move the student closer to the chart for orientation, if necessary. Test both eyes by pointing to a few letters to be sure the student can be screened.
3. Test right (R) eye first; then left (L) eye. Both eyes must be tested individually.
4. If student wears glasses or contact lenses, screen with glasses or contact lenses in place; or
5. If a student has glasses or contact lenses and is not wearing them, screening should be scheduled for another day with glasses or contact lenses.
6. It is optional to test vision both with and without lenses.

7. Cover student's left eye with occluder or another object without pressing tightly. Be sure that the student cannot see around the occluding device. Advise the student not to squint, tilt head, or close occluded eye.
8. Have the student identify the first letter or symbol on each of the rows until difficulty is had or the lowest acuity line is reached, then attempt all symbols from left to right on that row. Use the pointer to point from below to each letter. The examiner should not block out or cover the other letters or symbols on the same line.
9. If the first line is read correctly, proceed to the next smaller line. Continue presenting each smaller line of letters through the 20/20 line as long as the student can identify one more than half the line. To pass a line, the student must be able to correctly identify one more than half the letters on the line.
10. If the student fails to read a line, repeat the line in the reverse order. If the line is failed twice, identify the visual acuity as the next higher line read correctly. For example, if the student fails on the 20/30-foot line, record the visual acuity as 20/40 noting the eye tested: R (or O.D.) indicates the right eye, and L (or O.S.) indicates the left eye.
11. Repeat above procedures (4) through (7) with the right eye occluded and record the results for the left eye as instructed in (7).
12. **Failure Criteria:**
  - a. Inability to read 20/30 (Grades K-12) or 20/40 for Pre-K.
  - b. A two-line or greater difference between the two eyes (e.g., right eye 20/20, left eye 20/40).

If the student fails the vision screening, best practice will dictate re-screening another day. If the student initially failed using a mechanical vision tester, the re-screening should be done with a conventional eye chart. If the student fails the re-screening, notify the parent/guardian in writing, with a written recommendation for an eye examination by an eye care professional. Ideally, a telephone call to the parent/guardian should precede the written referral.

### Near Visual Acuity

1. Have the student sit at a table or desk with adequate lighting. Use the Reduced Snellen Chart (or other appropriate eye chart if the student cannot accurately recognize letters) at a distance per the manufacturer's directions.
2. Have the student cover his/her left eye with an occluder and read the letters on the chart from left to right, starting with the smallest line he/she was able to read on the distance acuity chart. Tell the child to keep both eyes open during the testing. Identify the smallest line read correctly, record as near visual acuity for the right eye, noting any facial or postural behaviors.
3. Repeat procedure (2) with right eye occluded and record the results as near visual acuity for the left eye.
4. **Failure Criteria:**
  - a. Inability to read 20/30 (Grades K-12) or 20/40 for Pre-K.
  - b. A two-line or greater difference between the two eyes (e.g., right eye 20/20, left eye 20/40).

If the student fails the vision screening, best practice will dictate re-screening another day. If the student initially failed using a mechanical vision tester, the re-screening should be done with a conventional eye chart. If the student fails the re-screening, notify the parent/guardian in writing with a written recommendation for an eye examination by an eye care professional. Ideally a telephone call to the parent/guardian should precede the written referral.

## Color Perception Screening

1. Follow manufacturer's directions for use of Pseudoisochromatic plates.
  - a. Options include Ishihara plates or ColorDx Pediatric 15 by Konan Medical.
2. Acquaint the student with the screening materials and method of responding.
3. Have the student keep both eyes open and test both eyes together.
4. Show the student how to use a soft, dry paint brush or cotton swab to trace the symbols on the color plate if unable to verbalize symbols.
5. **Failure Criteria:**
  - a. Follow the manufacturer's instructions for what constitutes failure of the screening.

Inform parents/guardian in writing about a possible color vision abnormality and the importance of discussing the matter with their eye care professional. Ideally, a telephone call to the parent/guardian should precede the written referral.

**NOTE:** Pseudoisochromatic plates in mechanical vision testers are not acceptable for use. However, **it is acceptable** to use the Eye Handbook color testing application which is free for iPad and Android tablets.

## Functional Vision Testing: Muscle Balance or Depth Perception

1. Muscle Balance can be tested using a variety of mechanical vision testing instruments (ex: Keystone Telebinocular) or other apparatus
  - a. **Muscle Balance Failure Criteria:**
    - i. > 4 diopters esophoria, >8 diopters exophoria
2. Depth Perception mechanic testing options include Randot or Wirt Circles or Preschool Assessment of Stereopsis with a Smile 2 (PASS Test 2)
  - a. **Depth Perception Failure Criteria: Randot or Wirt Circles**
    - i. 5 years and younger: worse than 250 seconds of arc
    - ii. 6 years and older: worse than 70 seconds of arc
  - b. **Depth Perception Failure Criteria: PASS test 2**
    - i. 3–4-year-old: pass Card B
    - ii. 5-year-old and older: pass Cards B and C

If the student fails the re-screening, notify the parent/guardian in writing, with a recommendation for an examination by an eye care professional. Ideally, a telephone call to the parent/guardian should precede the written referral.

## Parent/Guardian Notification

The success of the program is dependent on the implementation of a systematic follow-up procedure including notification to parent/guardian in writing (refer to [Appendix B](#) for sample forms). School health personnel may precede this with a telephone call, and/or through a parent conference regarding screening results requiring a professional vision examination. Refer the student to an eye care professional. Avoid making any recommendation to a specific individual or a specific class of practitioner (ophthalmologist or optometrist).

1. Advise the parent/guardian to take the evaluation form to the appointment with an eye care professional. Have the completed evaluation form returned to school after the student is

evaluated by an eye care professional. The information on the form is needed by the school to determine if any adjustments or accommodations need to be made to the student's education program.

2. Maintain contact with the parent/guardian to ascertain if the student has received the needed examination and necessary care. If necessary, refer any parent/guardian in need of financial assistance to an appropriate community resource. Depending on need, such resources may include:
  - Local county department of social services for Medicaid assistance.
  - Lions Club for refractions, glasses, and eye examinations.
  - PTA and other service organizations.
  - The local county physically impaired children's program.
  - Health insurance plans.
  - Vision Service Plan (VSP) program available through the [National Association of School Nurses](#) or your local Boys and Girls Club.
3. Consult with teachers and recommend necessary educational adjustments or accommodations to meet individual needs (e.g., color perception impairment).

## Hearing Screening

[Tenn. Code Ann. § 49-6-5004](#) *Promotion of eye, hearing and dental care awareness.*

- a. Upon registration or as early as is otherwise possible and appropriate, public schools, nursery schools, kindergartens, preschools or childcare facilities are encouraged to make reasonable efforts to apprise parents of the health benefits of obtaining appropriate eye, hearing and dental care for children.
- b. A health care professional is authorized to indicate the need for an eye, hearing or dental examination on any report or form used in reporting the immunization status for a child as required under this part. Health care professionals shall provide a copy of the report or form to the parents or guardians indicating the need to seek appropriate examinations for the child.
- c. If the parent or guardian of a child with a need for an eye or hearing examination is unable to afford the examination, an LEA of a county or municipality may use revenues from gifts, grants and state and local appropriations to provide the eye or hearing examinations.
- d. LEAs are encouraged to seek free or reduced-cost eye examinations from optometrists or ophthalmologists and free or reduced-cost hearing examinations from physicians or audiologists willing to donate their services for children who are unable to afford the eye or hearing examinations.
- e. The commissioner shall promulgate rules and regulations in accordance with the Uniform Administrative Procedures Act, compiled in title 4, chapter 5, which are necessary to carry out this section.

### **Hearing Screening Recommendations**

The TDOE encourages LEAs to conduct annual hearing screenings for all students in grades Pre-K, K, 2, 4, 6, and 8. LEAs may also conduct annual hearing screenings for high school students. If LEAs choose to conduct annual hearing screenings in high school, the LEA should screen the same grade-level or class year after year. For example, if the LEA conducts hearing screenings for those students enrolled in a wellness class, then the LEA should conduct vision screenings for students enrolled in the same wellness classes every year thereafter. The TDOE also encourages LEAs to conduct annual hearing

screenings for students that are new to the school system and/or suspected of having a hearing problem by their teachers. A student may be referred for screening per local school district protocol at any point.

Some students may not need screening as they are already under the care of a medical professional for regular, periodic evaluation for their hearing impairment. Students falling into this category would include:

1. Students with known hearing loss.
2. Any student coded Deaf or Hard of Hearing.
3. Any student enrolled who is unable to respond, for any reason, to screening procedures. The school nursing personnel should follow these students to ensure that they are receiving periodic evaluations and/or care as determined by their hearing care specialist. Documentation of these evaluations should become part of the cumulative health record (CHR) or in the electronic student management system.

## **Hearing Screening Rationale**

The purpose of hearing screening is to identify students with hearing loss to refer for diagnosis and management. Hearing loss is the most common birth defect, with a prevalence of 1.7 per 1,000 babies screened for hearing loss. (CDC, 2019). Hearing loss prevalence increases to an estimated 9 - 10 per thousand in school-age children due to late-identification, late-onset or acquired hearing loss (White, 2010). Hearing loss can impact communication, development, and classroom learning. Children with hearing loss are at increased risk for academic, speech and language, social, emotional, and behavioral problems. According to the CDC, 14.9% of children 6-19 years of age have low- or high-frequency hearing loss of at least 16-decibel hearing level in one or both ears. Even mild or unilateral hearing loss can be impactful, and it is reported that more than one-third of children with minimal or unilateral hearing loss fail a grade.

### *Sources:*

Center for Disease Control and Prevention. (2019, August). *Summary of 2017 National CDC EHDI Data*. <https://www.cdc.gov/ncbddd/hearingloss/2017-data/documents/01-2017-HSFS-Data-Summary.pdf>

McKay, S., Gravel, J. S., & Tharpe, A. M. (2008, March). Amplification considerations for children with minimal or mild bilateral hearing loss and unilateral hearing loss. *Trends Amplif*, 12(1), 43-54.

White, K. (2010). *Twenty years of early hearing detection and intervention (EHDI): Where we've been and what we've learned*. Paper presented at the ASHA Audiology Virtual Conference.

## **Hearing Screening Program**

Screening program guidelines from American Academy of Audiology recommend that training for screeners be managed or supervised by an audiologist whenever possible.

### **Screeners and Volunteers**

Volunteers may assist with the flow of students through the screening procedure and may be trained to conduct the hearing screening (initial sweep screen). Holding a volunteer instruction session is helpful and should be scheduled close to the day of the screening. During the training session, volunteers

should be familiarized with the audiometers, screening forms, and procedures. Having volunteers who feel comfortable with the equipment increases the accuracy of screening results.

Some screeners may opt to complete a formal training program and exam to obtain certification as an Occupational Hearing Conservationist through the [Council for Accreditation in Occupational Hearing Conservation \(CAOHC\)](#).

#### *Sources:*

American Academy of Audiology. (2011, September). *Childhood Hearing Screening Guidelines*.

[https://www.cdc.gov/ncbddd/hearingloss/documents/AAA\\_Childhood%20Hearing%20Guidelines\\_2011.pdf](https://www.cdc.gov/ncbddd/hearingloss/documents/AAA_Childhood%20Hearing%20Guidelines_2011.pdf)

Child Hearing Screening. (n.d.) American Speech Language Hearing Association.

[https://www.asha.org/practice-portal/professional-issues/childhood-hearing-screening/#collapse\\_0](https://www.asha.org/practice-portal/professional-issues/childhood-hearing-screening/#collapse_0)

### **Screening Equipment**

- Audiometer with headphones

### **Setting Up the Screening Area**

1. Schedule a room that is as quiet as possible. Consider all potential nearby noise sources such as plumbing, heating/cooling systems, traffic, office machines, appliances, fluorescent light “buzz”, as well as music or talking in adjoining rooms or hallways.
2. Have a desk or table that will provide space for the audiometer and recording materials. Two chairs will be needed: one for the screener and one for the individual to be screened.
3. The chair for the child should be placed so that the child cannot see the screener during testing (e.g., pushing the presentation button, facial expressions).
4. Leave the audiometer on all day when screening.
5. Set all connections, dials, and switches on the audiometer in the correct position per manufacturer’s instructions.
6. Screen yourself or another person who is known to have good hearing before the screening to ensure the audiometer is working properly.
7. Audiometers should be calibrated annually by a qualified technician.
8. There should be a “standard precautions” policy and procedure in place to ensure earphones are properly cleaned between each child.

### **General Overview of School Screening Procedure**

1. If ears appear clear (no apparent drainage), instruct the child, and position earphones over the ears.
2. Administer an individual sweep screen - presenting tones at 1,000, 2,000, and 4,000 Hz in each ear at 20 decibels. (*Further sweep screen details to follow in [Individual Sweep Screen Procedure Section](#).)*
3. Record responses as Pass or Fail at each frequency.
4. If any frequencies fail in either ear, same-day rescreening should be done immediately, preferably by a different tester using a different audiometer. Reinstruct the child, replace the earphones, and repeat the screening procedure.
5. Record responses as Pass or Fail at each frequency.
  - a. A child that passes the same day rescreen receives a pass.



- b. A child who fails the same day rescreen will be rescreened again in 6–8 weeks (about 2 months).<sup>2</sup>
6. If a 6-8 week (about 2 months) rescreen is needed, use the same procedure. If the student still fails one or more frequencies in one or both ears, they should be referred for further (diagnostic) evaluation. If the school has an audiologist, he/she may be asked to perform an individual threshold test to determine the need for a referral.
7. It is not appropriate to adjust for a noisy environment (e.g., increasing the level of decibels above 20 for the screening). The range of normal hearing is –10 to 20 decibels. Increasing the decibel level during screening could result in passing a child that should be referred for evaluation.

A sample hearing screening result form to retain in school records can be found in [Appendix A](#).

## ***Student Preparation for Hearing Screening***

Do not screen any children with a known hearing loss who receive regular audiologic management. Consider each student individually; some precocious three-year-olds can be screened audiometrically, but some ten-year-old children cannot.

Bypass screening and refer to physician for medical consultation if blood or other discharge is observed in either ear.

1. Visually inspect the ears for signs of drainage or blood. If the ears appear clear, proceed with screening.
2. Seat the student in a chair facing away from the examiner so the person whose hearing is being screened cannot watch the audiometer or the screener's movements and expressions. Children who are shy or difficult to screen may be screened facing the examiner with their eyes closed.
3. Give test instructions and determine how the child will respond to the sounds (e.g., hand raise or conditioned response such as dropping a block in a bucket) before putting on the earphones.
4. Tell the child that they will hear some tones or "beeps" and that they should respond to the sound even if it is "very soft or tiny." The response method should be agreed upon between the screener and the student before beginning. The individual could respond in one of the following ways:
  - a. Raising hand
  - b. Saying "yes" or "I hear it"
  - c. Nodding head
  - d. Holding block, chip, or bead close to ear then dropping it into a container when the sound is heard (for use with young children)

## ***Hearing Screening Procedure***

### **Individual Sweep Screen Procedure**

After the student has been instructed in the procedure, begin the screening:

1. Perform a visual inspection of the ear. If no drainage is observed, proceed with screening.

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<sup>2</sup> ASHA and AAA guidelines recommend a two-tiered screening approach (same-day rescreen followed by subsequent rescreening [6-8 weeks later]) for failures to reduce false positive referrals.



2. Position the earphones over the ears. Adjust earphones so they fit snugly over the outer ear, with the speaker (center) of the earphone over the ear canal. Make sure hair is not under the earphones.
3. The RED earphone should be placed on the RIGHT ear and the BLUE earphone on the LEFT ear.
4. Set the LOUDNESS dial to 20 decibels (dB). If you are in an environment with some ambient noise that cannot be eliminated, the screening should be rescheduled or relocated to a quieter environment.<sup>3</sup>
5. Set control so that the tone comes on when the examiner activates the switch or presses the button.
6. Start screening the RIGHT ear.
7. Present a short tone of approximately 1-2 seconds and note if the child responded. Each tone should be presented a minimum of 2, but no more than 3 times, at each screening frequency.
8. Do not present the stimulus in such a rhythm that the person being screened is given clues as to when to respond. Screen the frequencies in this order:
  - 1,000
  - 2,000
  - 4,000
9. Record the results as Pass or Fail by marking a "P" for those sounds heard at 20 dB on at least two of three presentations; record as "F" for those tones not heard at 20 dB on at least two of three presentations. See [Interpretation of Screening Results](#) for more information.
10. Screen the LEFT ear in the same manner. Tell the child being screened when you are changing to the other ear.

### Rescreening Procedure

Same-day (immediate) rescreening should be completed for children who refer on the initial screening. It is recommended that same-day rescreening be completed by a different screener on an alternate piece of equipment if possible. Children who fail the same-day rescreening should be rescreened a final time 6–8 weeks (about 2 months) later. Prior to the rescreening:

1. Earphones should be removed and repositioned.
2. Instructions should be repeated to ensure students understand the procedure.
3. Complete [Individual Sweep Screen Procedure](#) (above).
4. Refer for medical and/or audiological evaluation for any individual who fails one or more frequencies in one or both ears. In schools, an audiologist may be asked to do an "individual threshold test" prior to referral. This information may be helpful to the professional doing the evaluation.
5. It is estimated that about 3-9% of students will fail a hearing screen and warrant a referral.

### Interpretation of Screening Results

Individuals who pass all frequencies in each ear are presumed to have normal hearing at those pitches.

1. **PASS:** Student reliably responds to at least two of the three presentations at each frequency in both ears.

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<sup>3</sup> Guidelines from the American Academy of Audiology (AAA) (Sept 2011) pertaining to the screening environment indicate that sound level "should not exceed 50, 58, and 76 dB SPL respectively for 1000, 2000, and 4000 Hz as measured by a sound level meter. If no sound level meter is available, the screening environment should be quiet enough for a normal hearing adult to perceive 1000, 2000, and 4000 Hz tones presented at 10 dB HL."

2. **FAIL:** Student misses two of three presentations at any frequency in either ear.
3. Rescreen any individual who fails one or more frequencies in one or both ears.
4. Rescreens may also be done based on observations, symptoms, or for children with responses that are judged to be of fair or poor reliability.

## ***Otoacoustic Emissions (OAE)***

OAE screening may be appropriate for screening children who are difficult to test using pure-tone screening<sup>4</sup>. This may include students who cannot respond to conditioned play techniques (putting a block in a box, putting pegs in a hole or putting a ring on a cone are examples of conditioned play techniques), or traditional pure tone testing. Otoacoustic emissions, the sounds given off by the inner ear when responding to a sound, are measured using a microphone inserted into the ear canal. The microphone puts sound into the ear and measures the sound that returns.

OAE screenings do not technically test hearing, but OAE results determine how well the cochlea, or inner ear, works. It is important to note that OAE screening may miss some cases of mild hearing loss, hearing loss at select frequencies, and Auditory Neuropathy Spectrum Disorder (ANSD). ANSD is a rare condition that affects the transmission of sounds from the ear to the brain, and students with ANSD may present with varying levels of hearing ability.

### **OAE Screening Procedure**

1. Complete visual inspection of ear and make note of abnormalities.
2. Place a small probe in the ear to deliver sound stimuli.
3. Read results. Automated OAE screeners will provide a “pass” or “fail/refer” result. Diagnostic units will require interpretation of the findings by audiologists. Screeners should not change the parameters of the test equipment or provide interpretation of findings.

### **OAE Screening Results**

Use Pre-set stimulus and pass/fail parameters according to manufacturer’s instructions.

*Source: American Speech-Language-Hearing Association (ASHA), 2021*

## ***Parent/Guardian and Teacher Notification***

### **Parent/Guardian**

The success of the screenings is dependent on the implementation of a systematic follow-up procedure. See [Appendix B](#) for a sample form.

Send a referral letter home for a student who fails the hearing screening. See The letter will recommend the student be seen by an audiologist, which may require a physician referral.

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<sup>4</sup> OAE protocols may result in refer rates that are higher than those of pure tone testing.

Maintain contact with the parent/guardian to determine if the student has received the needed examination and necessary care. If necessary, assist the parent/guardian in need of financial assistance through a referral to an appropriate community resource.

### **Teacher Notification**

The nurse should notify the student's teacher(s) if a student refers to the hearing screening. In addition to being alert to the possibility the student is having difficulty hearing, the school personnel are often able to reinforce the need to follow through on the referral. It is important to monitor the student closely and to document any concerns the nurse and/or teacher may have regarding the impact of the suspected hearing impairment on the student's education. These concerns also need to be communicated to the parent/guardian. School personnel are encouraged to explore the reason for failure to follow-up on a hearing screening referral. This may result in the identification of the need for additional resources or information.

Until the student's hearing status is clearly defined by medical and/or audiological evaluation, the following measures should occur:

1. The student should be given preferential seating so that he/she is in the direct line of the teacher's/speaker's voice. Optimum distance is four to six feet from the teacher. If a better ear has been identified, the student's better ear should be closest to the teacher.
2. Teachers should use appropriate clarification strategies to ensure that the student understands oral information (repeat, rephrase, speak louder or closer, etc.).
3. Whenever possible, teachers should avoid:
  - a. Standing in front of a bright window while speaking.
  - b. Speaking while writing on the chalkboard (back to class).
  - c. Positioning themselves so that their faces are not visible to students.
4. Noisy learning environments should be avoided or minimized.

### ***Hearing Loss Symptom Checklist***

If a student has one or more of these symptoms, the student may have difficulty hearing and should have their hearing checked as soon as possible.

#### **Medical Symptoms**

- If a child has an unpleasant odor or smell from his/her ear.
- If a child has repeated bouts of upper respiratory infections, runny nose, chronic cough, or ear infections.
- If a child pulls, rubs or digs in his/her ears.
- If a child's outer ear looks red or feels warm.
- If a child seems off-balance or falls frequently.
- If there is a strong family history of hearing loss (parents, grandparents, cousins, aunts, or uncles).

#### **Listening Symptoms**

- If a child is easily distracted or frustrated in a group.
- If a child does not respond consistently to his/her name or live voice.
- If a child cannot understand you when his/her back is turned.
- If a child has difficulty finding the source of a sound.

- If a child needs verbal instructions repeated several times before he/she understands.
- If a child consistently turns up the volume of the television, music, or computer.

### **Behavioral Symptoms**

- If a child does not particularly like listening to music or television or listening activities such as rhymes, sound games, etc.
- If a child is very inattentive during story time.
- If a child watches your face and eyes for visual cues of meaning.
- If a child depends on visual cues to successfully complete simple verbal tasks.
- If a child has a short attention span for his/her age.

### **Speech/Language Symptoms**

- If a child has poor or delayed language development.
- If a child has poor articulation of speech sounds.
- If a child has poor sentence structure and speech patterns.
- If a child talks in an extremely loud voice or extremely soft voice.

Source: [Vanderbilt Bill Wilkerson Center](#)

## **Body Mass Index (BMI)/Height and Weight**

[Tenn. Code Ann. § 49-6-1404](#) *Nutrition and physical activity programs in schools where aggregate data suggests high rates of obesity.*

Schools where aggregate data suggests that high rates of overweight children may be a problem are encouraged to expand existing or implement new school-based nutrition and physical activity programs designed to reduce those rates. The effectiveness of these results could be determined by completing a BMI-for-age on the school's students whose parents or guardians have not requested exclusion from the testing at the end of the school year.

### **BMI Screening Recommendations**

The TDOE encourages LEAs to conduct annual BMI screenings for all students in grades Pre-K, K, 2, 4, 6, 8, and one year or class of high school (usually wellness class). The LEA should screen the same high school grade-level or class year after year. For example, if the LEA conducts BMI screenings for those students enrolled in a wellness class, then the LEA should conduct BMI screenings for students enrolled in the same wellness classes every year thereafter. Staff training for BMI screenings is required. Specific protocols must be used.

### **BMI Rationale**

Childhood obesity is a serious problem in the United States and is associated with health risks. Since the 1970s, the percentage of children and adolescents affected by obesity has more than tripled. According to 2015-2016 data, the prevalence of obesity was 13.9% among 2- to 5- year olds, 18.4% among 6- to 11- year-olds, and 20.6% among 12- to 19- year olds. Obesity is defined as a BMI at or above the 95th percentile for children and teens of the same age and sex. Overweight is defined as a BMI at or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex.

*Sources:*

Fryar CD, Carroll MD, Ogden CL. (2018, September). *National Center for Health Statistics*. Prevalence of overweight, obesity, and severe obesity among children and adolescents aged 2-19 years: United States, 1963-1965 Through 2015-2016. [https://www.cdc.gov/nchs/data/hestat/obesity\\_child\\_15\\_16/obesity\\_child\\_15\\_16.pdf](https://www.cdc.gov/nchs/data/hestat/obesity_child_15_16/obesity_child_15_16.pdf)

Hales CM, Carroll MD, Fryar CD, Ogden CL. (2017, October). *NCHS Data Brief*. Prevalence of obesity among adults and youth: United States, 2015–2016. <https://www.cdc.gov/nchs/data/databriefs/db288.pdf>

## ***Ten Safeguards to Implement Before Conducting Weight Screening***

Screening children to identify potential weight problems can contribute to positive health outcomes but, if done without sensitivity, can have negative effects on emotional well-being. On the positive side, students at both ends of the weight spectrum can be objectively identified and referred for additional evaluation and possible intervention. On the negative side, weight screening that results in labeling a child as “too fat” or “too thin” can damage self-esteem and may increase susceptibility to eating disorders.

According to the CDC, safeguards are an essential part of a BMI measurement program. They help to ensure respect for student privacy and confidentiality, protect students from potential harm, and increase the likelihood that the program will have a positive impact on promoting a healthy weight. Schools should not initiate weight screening unless the following [ten safeguards](#) are in place:

***SAFEGUARD 1: Introduce the program to parents, guardians, students, and school staff; ensure that there is an appropriate process in place for obtaining parental consent for measuring students’ height and weight.***

To help minimize negative response from the public, programs need to involve parents or guardians early in the planning stages. Before the program begins:

- All parents should receive a clear description of the program to minimize confusion and anxiety.
- Communications with parents should focus on the health implications of obesity, overweight, and underweight, and make it clear that the school will be measuring weight out of concern for a student’s health, not their appearance or a desire to criticize parenting practices.
- Schools should assure parents and students that the screening results will remain confidential.
- In addition, students and school staff should be informed of the purposes and logistics of height and weight measurement, as well as the school’s policy on sharing results.

Parents must be given the option of declining permission to measure their child’s BMI. Some programs use passive parental consent; that is, all students have their BMI measured unless parents send a written refusal. For example, at the beginning of each school year, school districts can inform parents about the school health program and the screenings that are conducted in each grade. Parents can choose not to have their child screened; otherwise, all students are measured. Alternatively, a school district can require active consent from both parents and students; only students who signed the consent form and whose parents have submitted a signed consent form would be screened.

***SAFEGUARD 2: Ensure that staff members who measure height and weight have the appropriate expertise and training to obtain accurate and reliable results and minimize the potential for stigmatization.***

Accurate measurements are those that correspond to the youth's actual height and weight, while reliable measurements are those that produce consistent results when they are repeated.

Measurements are more likely to be accurate and reliable when they are conducted by trained professionals, such as school nurses. Unfortunately, many schools do not have full-time nurses on campus, and many school nurses feel that they cannot add another responsibility to their workload. Staff members involved in the program need the appropriate technical training from people who are experienced in conducting height and weight measurements and calculating and interpreting BMI results.

Conducting repetitive tasks, such as measuring height and weight, can be tedious and may lead an individual to become careless and fail to consistently follow measurement protocols. Quality control checks can be implemented through random visits to measurement sites to oversee the performance of the staff measuring students' height and weight.

Staff members need to ensure that each student takes off his/her shoes and jacket or other heavy clothing items and removes all items from his/her pockets before being weighed. Similarly, staff members must make sure that hair styles do not interfere with an accurate measurement of height.

Each measurement should be taken twice, and the youth should be repositioned prior to each measurement. If the two measurements do not agree within one-fourth of a pound for weight or one-fourth of an inch for height, then two additional measures should be taken until there is agreement. Height errors reduce the validity of BMI substantially.

Staff also need appropriate training to measure height and weight in a sensitive and caring manner. This training should address procedures to maintain student privacy during measurement, increase awareness of groups at increased risk of stigmatization (i.e., larger students, shorter boys, and taller girls), provide information about body size acceptance and the dangers of unhealthy weight control practices, and help staff identify indications of student problems related to weight or body image (e.g., eating disorders).

Staff should be prepared to respond to questions or comments by students. For example, if a student makes a negative comment about his/her own weight, staff members need to be able to respond with supportive statements such as, "Kids' bodies come in lots of assorted sizes and shapes. If other kids are teasing you about your body, let us talk and see what we can do about it." Staff members also need to know how to respond to questions about what the school will do with the measurement results and referrals.

Resources that can assist with training on height and weight measurement include:

- [Health Resources and Services Administration's Maternal and Child Health Bureau](#)

- [CDC's Division of Nutrition, Physical Activity, and Obesity Growth Chart Training Modules](#)

### *SAFEGUARD 3: Ensure that the setting for data collection is private.*

Height and weight measurements must not be conducted within sight or hearing distance of other students. The trained staff member conducting the measurement should be the only person to see the results and should not announce them aloud. To maintain anonymity when collecting data for surveillance purposes, school staff should remove identifying information, including the student's name, from the data collection form as soon as record keeping is complete and prior to calculating BMI and aggregating and analyzing the data.

### *SAFEGUARD 4: Use equipment that can accurately and reliably measure height and weight.*

The preferred equipment to assess students' weight is an electronic or beam balance scale that is properly calibrated to the nearest one-fourth pound according to the manufacturer's directions. Spring balance scales, such as bathroom scales, are not sufficiently accurate. The preferred equipment to assess height is a stadiometer, a wall-mounted or portable unit solely designed to measure height to the nearest one-eighth inch. The stadiometer should include a vertical board, metric tape, and horizontal headpiece that slides down to measure height. All equipment should be maintained and calibrated regularly.

### *SAFEGUARD 5: Ensure that the BMI number is calculated and interpreted correctly.*

The English formula for calculating BMI is:  $(\text{Weight [lb]} \div [\text{Height (in)}]^2) \times 703$

Schools should establish the BMI-for-age percentile using the [CDC growth charts](#). Staff must collect the student's correct age in years and months as well as their gender to properly plot the BMI on the CDC growth charts. Schools conducting BMI screening programs should refer youth categorized as underweight, overweight, and obese to a medical care provider for diagnosis and possible weight management counseling.

*Resource:* [CDC's About BMI for Children and Teens](#)

### *SAFEGUARD 6: Develop efficient data collection procedures.*

To facilitate efficient and accurate data collection, BMI measurement programs should coordinate data collection times with school administrators and employ enough staff members to minimize disruptions to class time.

CDC's [BMI Tool for Schools](#) is an excel spreadsheet that can compute up to 2,000 BMI and BMI percentiles and provide a summary of students' BMI-for-age categories and graphs for the prevalence of overweight and obesity. Software can reduce the time it takes staff to conduct screenings. Other software may be available that can both aggregate the data and produce health report cards.

***SAFEGUARD 7:** Do not use the actual BMI-for-age percentiles of the students as a basis for evaluating student or teacher performance (e.g., in physical education or health education class).*

Many factors beyond physical education and health education courses influence a student's weight, so it is not appropriate to hold students or teachers accountable for changes in BMI percentiles. Using BMI results to evaluate performance might heighten attention to weight and increase stigmatization and harmful weight-related behaviors.

Knowledge, skills, and changes in dietary, physical activity, and sedentary behaviors are more appropriate as performance measures.

***SAFEGUARD 8:** Evaluate the BMI measurement program by assessing the process, intended outcomes, and unintended consequences of the program.*

Data should be collected on concerns about the program, such as stigmatization, cost, parental responses, and displacement of other health-related initiatives. Schools can use the evaluation results to guide improvements to their program. The results should be shared with key stakeholders, parents, the community, school administrators, and policy makers to inform their decisions about school-based BMI measurement.

*Resource:* [CDC Program Evaluation](#)

***SAFEGUARD 9:** Ensure that resources are available for safe and effective follow-up.*

BMI screening programs are not intended to diagnose weight status. Schools should refer students who need follow-up to appropriate local medical care providers.

### **Actions to initiate a screening program:**

#### *Schools*

- Work with the local medical community to ensure that adequate diagnostic and treatment services are available, staffed by employees with appropriate training, and accessible to all students, including those with low family incomes or without insurance.
- Identify school- or community-based health promotion programs that encourage physical activity and healthy eating.



### *School Nurses*

- Be educated, trained, and equipped with the appropriate resources to respond to parents requesting guidance.
- A valuable resource during the follow-up period, school nurses can provide parents with a clear explanation of the results and health risks associated with obesity, develop an action plan for behavior change, and connect the family to medical care in the community.

### *School Health Personnel*

- Establish systematic processes and criteria for referring students to external medical care providers.
- Refer students with signs of underweight, overweight, obesity, disordered eating, or other diet-related health conditions (e.g., sudden weight loss, eating disorders) to a local medical care provider for diagnosis and, if needed, establishment of management or treatment plans. For example, students classified as obese or overweight after BMI screening require further medical examination to determine whether the student in fact has excess body fat or other conditions related to obesity (e.g., diabetes or prediabetes, high blood cholesterol and triglyceride levels, or early pubertal maturation).

### *School Staff*

- Receive guidance on how to recognize early signs of health risks that require urgent attention such as hunger or disordered eating. If a school staff member suspects a student to have these risk behaviors, staff should confidentially refer these students to school health or mental health personnel.

Schools can play a significant role in developing and marketing a referral system for students and families. To establish a referral system, school health personnel should identify health-care services and school or community-based programs that encourage healthy eating and physical activity and address obesity and eating disorders. These services include:

- school-based and/or school-linked health clinics
- local health departments
- universities
- medical schools
- outside health-care providers (e.g., private physicians and dentists, hospitals, psychologists and other mental health workers, pediatric weight management clinics, community health clinics, and managed care organizations)
- community-based nutrition and physical activity providers and services (e.g., dietitians, recreational programs, and cooking classes)

The list of referral services should be based on the health needs of the student population, barriers to health care in the community, past student use of community services, and current community culture. Health, mental health, and social services staff members can assess which services are available at the school and which require outside referral. The list should include services that are accessible to all students, including those with low family incomes or without health insurance or transportation. If feasible, arrangements can be made to bring community-based services to the school. With a comprehensive referral system in place, health, mental health, and social services staff members are

able to respond to requests from families seeking guidance and increase access to care among students.

*Resource:* [CDC School Health Guidelines to Promote Healthy Eating and Physical Activity. MMWR. 60\(5\):1-75](#)

***SAFEGUARD 10:*** *Provide all parents with a clear and respectful explanation of the BMI results and a list of appropriate follow-up actions.*

Parents should be notified of student's BMI results by secure means. To reduce the risk of stigmatizing students, notification should be sent to all parents who have consented to the screening. To avoid giving the impression that a diagnosis has been made, the letters to parents about students who need further evaluation—those classified as underweight, overweight, or obese—should avoid definitive statements about the student's weight category. For example, communication might:

1. State that the student's BMI result "suggests" that he/she "may" be overweight.
2. Identify the student's height, weight, and BMI-for-age percentile, and include a table defining BMI-for-age percentile categories with images.
3. Communicate that the student's weight was found to be low, normal, or high for his/her height and age.

All communication should strongly encourage parents to consult a medical care provider to determine if the student's weight presents a health risk.

Communication to all parents, including those whose children have been classified as normal weight, should include scientifically sound and practical tips designed to promote health-enhancing physical activity and dietary behaviors. For example, the communication might encourage families to consume a healthy diet based on the U.S. Dietary Guidelines for Americans. Parents should also be aware that youth should engage in 60 minutes or more of physical activity each day and reduce sedentary screen time such as television, video games, and computer usage. If written, the communication should be written in appropriate languages and at appropriate reading levels to be understood by parents; the tone should be neutral to avoid making parents feel that they are being blamed for their child's weight status. Motivational messages should be guided by sound communication and health behavior change theories. To ensure comprehension and effectiveness, the letters can be tested with representative parents in advance.

The communication should include:

1. Contact information for the school nurse or other school-linked health care provider;
2. Educational resources for weight, nutrition, and physical activity;
3. Contact information for community-based health programs or medical care providers who treat weight-related health problems (including programs for those without health insurance); and
4. Information on school and community-based programs that promote nutrition and physical activity.

*Source:*

Nihiser AJ, Lee SM, Wechsler H, McKenna M, Odom E, Reinold C, Thompson D, Grummer-Strawn L. (2007, September), Body Mass Index Measurement in Schools. *Journal of School Health*. 77:651-671. <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1746-1561.2007.00249.x>

## **BMI Screening Program**

Collaboration between health care services in school systems and the community is essential for a successful screening program. Before any data is collected, the participation and enthusiasm of the community should be solicited to ensure validation of the process and interest in the results. It is imperative that school system administrators are supportive of the system and willing to participate. The recommended partners are suggested resources for coordination of data collection and management and are not limited to those listed.

### **Potential Partners**

- Local Health Councils
- School administration
- Hospitals
- Local health department
- Health Science Instructors
- HOSA Students
- PTA/PTO
- Parent volunteers
- School psychologist/school counselor
- UT Extension
- Local institutions of higher education

### **Equipment Needed**

Accuracy and reliability are affected by the quality of the screening equipment. It is difficult to perform accurate and reliable screenings with inadequate equipment. Even with the proper screening equipment, care must be taken to properly maintain and effectively implement the use of that equipment.

While proper screening equipment can appear to be prohibitively expensive, the accuracy and consistency of quality equipment is worth the cost. If screening results are not accurate and consistent, then the data cannot be relied upon. High-quality, easily calibrated and well-maintained equipment is a worthwhile investment and will provide years of accurate and reliable service. Because quality equipment is durable, the high initial investment costs for quality equipment can be amortized over 20 or more years of service.

- **Scale** - A properly calibrated, high quality balance beam or electronic digital scale should be used to measure children and adolescents. Spring balance scales such as bathroom scales should not be used. The scale should:
  - be able to weigh in ¼ lb. increments;
  - have a stable platform;
  - have the capacity to be “zeroed” after each weight is taken; and
  - have the capacity to be calibrated.

- **Scale calibration weights**
- **Stadiometer** (measures height) - A portable or wall-mounted stadiometer should be used that
  - can read to  $\frac{1}{8}$  inch increments;
  - has a large stable base; and
  - has a horizontal headpiece that is at least three inches wide that can be brought into contact with the most superior part of the head (i.e., the crown).
 Note: Movable headpiece attached to balance-beam scales are **not** recommended for use.
- **Data collection form**
- **Privacy screen**
- **Parental/guardian permission request form**
- **Parent/guardian notification and referral forms** (see [Appendix B](#) for samples)
- **Quality assurance notebook**

### Maintenance and Calibration of Equipment

1. Check the equipment regularly to ensure accurate measurements.
2. Scales should be calibrated regularly to ensure accurate measurements.
  - a. Re-calibrate if the scale has been moved to a different surface.
  - b. Portable digital scales, frequently moved, should be calibrated before each use.
  - c. For scales that are not moved or used excessively, calibrate at least annually.
  - d. Use known weights (a set of standard weights purchased from a sports store) on the scale or a professional service to check accuracy.
  - e. Send the scale for professional calibration if the standard weight and the scale weight are off by  $\frac{1}{4}$  pound or more. For a digital scale, change the batteries and if it is still off after checking again with the standard weights, send scales for professional calibration and/or check the owner manual for scale instructions.
  - f. Beam balance scales should have “screw type” provision for immobilizing the zeroing weight.
3. Check the stadiometer regularly to be sure the base is stable, and measures are accurate.
  - a. Length rods, a standard measuring test rod, should be used to verify accuracy at least annually.
  - b. Portable stadiometers should be checked more frequently.
  - c. If a discrepancy is found in accuracy, contact the manufacturer for advice.

### Training for Reliable Results

Along with training, data collection personnel must sign a confidentiality statement that will be kept on file. Make sure there is documentation that all volunteers have been trained and that the documentation is on file with the school administrator.

### Data Collection Personnel

A minimum of 2 people is needed with the cooperation of the classroom teacher. Personnel suggestions include, but are not limited to the following:

- Health educators
- Nutrition staff
- School nurse
- PE/Health/Wellness teachers
- Parent/Community volunteers

Train staff involved in the screening process. To improve accuracy, especially for mass screening of students, it is recommended that at least two staff conduct the BMI screening: one to measure the child and one to record the data. This reduces recording errors.

The objectives for training are:

1. Proper use and maintenance of equipment for accurate and precise measurement;
2. Review of forms for the recording of information;
3. Emphasis on the importance of privacy and confidentiality for the students; and
4. Appropriate and sensitive communication with students regarding height and weight measurement (e.g., saying "Let us check your weight" instead of "Let us see how big you are;" reassuring students that kids' bodies come in assorted sizes and shapes; and avoiding labels such as "obese," "overweight," "too thin," or "too short").

### **Children with Physical Disabilities**

Assessing measurement of non-ambulatory students with special health care needs requires special consideration as children may not be able to stand up or lie flat. An example would be a child with a cast or a child in a wheelchair. Measurements may need to be assessed at an alternate time or coordinate with the primary care specialist for the child with special health needs to obtain measurements, if needed. Alternate methods are available for measuring children requiring special accommodations such as sitting heights, segmental lengths, girths, and skin folds but require special skills and equipment.

### ***Process for Weight and Height Measurements***

Accuracy is important in obtaining height and weight measurements because these measurements will be used to calculate the BMI which, in turn, is utilized to assess healthy weight status and/or provide surveillance data.

#### **Prior to screen**

- Calibrate the scales and record data in the quality assurance notebook.
- Set up measurement stations with the appropriate equipment.
- Check that all data is recorded on the data collection form.
- For all children, there is a need to respect privacy. Privacy includes where the measurements are taken, clothing removal, describing the measuring process, and interpreting the numbers.
- Have appropriate gender specific [CDC stature-for-age growth charts](#) available to plot measurements.

#### **Measuring Weight**

1. Set the scale to zero reading.
2. Have the student remove shoes, heavy outer clothing (jacket, vest, sweater, hat), and empty pockets (cell phones, iPods) to extent possible.
3. Have the student step on center of the scale, facing away from the read out ensuring they cannot see their test results; with body weight evenly distributed on both feet, arms hanging naturally at side with palms facing thighs and head is up and facing straight ahead.
4. Make note of the first weight value to the nearest ¼ lb.
5. Have the student step off the scale and take a second measurement, repeating the steps above.
6. The measures are compared; they should agree within ¼ lb.

- a. If the difference between the measures exceeds the tolerance limit, the child should be repositioned and re-measured a third time. The average of the two measures in closest agreement is recorded.
7. For confidentiality and to avoid stigma or harassment, do not call out weight value.
8. Record the weight value immediately on the student data form.
9. If using a balance beam scale, return the weights to zero position.

## Measuring Height

1. Remove the child's shoes, hats, and bulky clothing, such as coats and sweaters. Undo or adjust hairstyles and remove hair accessories that interfere with measurement.
2. Have the student stand erect, with shoulders level, hands at sides, knees, or thighs together and weight evenly distributed on both feet.
3. The student's feet should be flat on the floor or foot piece, with both heels at base of the vertical board. When possible, all four contact points (i.e., the head, back, buttocks, and heels) should touch the vertical surface while maintaining a natural stance. Some students will not be able to maintain a natural stance with all four contact points touching the vertical surface. For these students, at a minimum, two contact points; the head and buttocks, or the buttocks and heels, should always touch the vertical surface.
4. Position the student's head by placing a hand on the student's chin to move the head into the Frankfort Plane. The Frankfort Plane is an imaginary line from the lower margin of the eye socket to the notch above the tragus of the ear. When aligned correctly, the Frankfort Plane is parallel to the horizontal headboard and perpendicular to the vertical measurement board. This is best viewed and aligned when the screener is directly to the side and at eye level with the child.
5. Assure student's legs are straight, arms are at sides, and shoulders are relaxed.
6. Ask the child to look straight ahead, inhale deeply and to stand fully erect without altering the position of the heels.
  - a. Lower the headpiece until it firmly touches the crown of the head with sufficient pressure to compress the hair and is at a right angle with the measurement surface.
  - b. Check contact points to ensure that the lower body stays in the proper position and heels remain flat. Some students may stand up on their toes, but verbal reminders are usually sufficient to get them in the proper position.
  - c. Position yourself so that your eyes are parallel with the head piece, read the measurement to the nearest  $\frac{1}{8}$  inch, and make note of the first measurement.
  - d. Move the headboard away; check the posture, and re-measure the student.
  - e. Measurements should agree within  $\frac{1}{4}$  inch, re-measure and select the average of the two measures that agree the most.
  - f. Immediately record the results in the student health record or data log.

## Calculating BMI

After collecting the student's height and weight, the BMI can be calculated. There are several methods to determine BMI:

- BMI Wheel
- BMI calculation computer software
- [BMI Table](#)
- [The Children's BMI Tool for Schools:](#)

- This Excel spreadsheet can be used by school, childcare, and other professionals who want to compute Body Mass Index (BMI)-for-age for a group of up to 2000 children, such as for a school classroom or grade.
- If using electronic health records, the program may calculate and plot BMI on the growth chart
- [BMI Percentile Calculator for Child and Teen](#)
- BMI calculation by mathematical equation:

BMI =	(weight in pounds) divided by (height in inches X height in inches)	X 703
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### ***Parent/Guardian Notification***

Provide all parents with a clear and respectful explanation of the BMI results and a list of appropriate follow-up actions.

### ***Eating Disorders/Malnutrition***

Although considered to be mental health disorders, eating disorders are remarkable for their association with nutrition-related problems. In anorexia nervosa, nutrition-related problems include refusal to maintain a minimally healthy body weight (e.g., 85% of that expected), dramatic weight loss, fear of gaining weight even though underweight, preoccupation with food, and abnormal food consumption patterns. According to the National Institute of Mental Health, the lifetime prevalence of anorexia nervosa was three times higher among females than males in a national survey. Anorexia nervosa is ten times more common in females, especially just after onset of puberty, peaking at ages 12-13 years. Bulimia nervosa is an eating disorder with food addiction as the primary coping mechanism. In bulimia nervosa, problems include recurrent episodes of binge eating, a sense of lack of control overeating, and compensatory behavior after binge eating to prevent weight gain (e.g., self-induced vomiting, abuse of laxatives or diuretics, fasting). Body weight is often normal or slightly above normal.

Students identified to be at risk for malnutrition, failure-to-thrive or who are suspected to have eating disorders should be referred to a primary care provider for in-depth medical assessment. These nutrition-related conditions must be addressed cautiously and expediently. Aside from psychological disturbances, eating disorders can lead to serious electrolyte imbalances and dehydration. Long-term effects include osteoporosis. Death can occur in extreme cases. Because of the serious nature of these potential conditions, it is imperative that school health personnel communicate observations and concerns directly to the parent/guardian. Effective treatment for eating disorders involves medical and psychological treatment, nutritional counseling, and family and school support. Keep in mind that a diagnosis of an eating disorder can be made only by a physician or an appropriate health care provider.

#### *Sources:*

Massachusetts Department of Public Health. (2014) *BMI Screening guidelines for Schools*.

<http://www.mass.gov/eohhs/docs/dph/com-health/school/bmi-screening-guidelines-for-schools.pdf>.

Maternal and Child Health Bureau. (n.d.). *Accurately Weighing and Measuring: Developing and Rating Your Measurement Technique*. <http://depts.washington.edu/growth/index.htm>

National Institute of Mental Health. (2017, November). *Eating Disorders*. <https://www.nimh.nih.gov/health/statistics/eating-disorders.shtml>

#### *Resources:*

This website list was compiled for parents, school personnel and interested individuals. The websites listed are reliable sources of nutrition, physical activity and weight management.

- [Tennessee Department of Education, Office of Coordinated School Health](#)
- [Tennessee Department of Education, School Nutrition](#)
- [Tennessee Department of Health, School Nutrition Program Resources](#)
- [Academy of Nutrition and Dietetics](#)
- [Center for Health and Health Care in Schools](#)
- [CDC - Adolescent and School Health](#)
- [CDC - Healthy Weight, Nutrition, and Physical Activity](#)
- [CDC - Tips for Parents - Tips to Help Children Maintain a Healthy Weight](#)
- [Fruits and Veggies: More Matters](#)
- [Girls Health](#)
- [Healthier Tennessee](#)
- [MyPlate](#)
- [UT Extension Service](#)
- [NIH, Helping Your Child Who is Overweight](#)

## Blood Pressure (BP) Screening

### ***BP Screening Recommendations***

The TDOE encourages LEAs to conduct annual BP screenings for all students in grades Pre-K, 2, 4, 6, 8, and one year or class of high school (usually wellness class). The LEA should screen the same high school grade-level or class year after year. For example, if the LEA conducts BP screenings for those students enrolled in a wellness class, then the LEA should conduct BP screenings for students enrolled in the same wellness classes every year thereafter.

Additionally, all students who present with signs and symptoms that indicate a need should have their BP status assessed and monitored. Education, counseling, and referral should be offered as indicated by the assessment.

### ***BP Screening Rationale***

1. Mortality due to hypertension (high BP) and heart disease in Tennessee is among the highest in the nation.
2. High BP in youth is associated with health problems later in life. Early identification followed by successful treatment may prevent heart disease, stroke, and kidney failure.
3. Elevated BP may indicate the presence of other diseases.
4. Screening presents an excellent opportunity for health promotion related to cardiovascular health with a population of emerging adults.



5. A CDC study found that more than 1 in 7 U.S. youth ages 12 to 19 had high BP or elevated BP between 2013 to 2016.

## **BP Screening Program**

School staff will organize and implement a BP assessment program which includes screening and education of risk factors associated with hypertension and cardiovascular disease. Screening can be accomplished as a collaborative community effort with qualified staff from other agencies or with appropriately trained volunteers. If volunteers are used, training regarding confidentiality should be a component of the training content.

Work with the appropriate people within the school to coordinate the screening activity. The process for coordination with teachers varies among schools. There may be preferred classes during which screenings are usually allowed.

Develop or obtain forms for recording the results of the screening for each student ([Appendix A](#)). Develop or obtain parent/guardian notification forms ([Appendix B](#)) and educational brochures.

### **Equipment Needed**

A manual or hospital grade BP cuff can be used. The **preferred** method of BP measurement is auscultation (sphygmomanometer and stethoscope). Measures obtained by oscillometric devices (automated BP monitors) that exceed the 90th BP percentile should be repeated by auscultation. When measuring BP, use a stethoscope, sphygmomanometer, and correct size cuffs (pediatric, adult, or large adult).

When measuring the student's height for use in assessing the student's BP a vertical measurement board (stadiometer), metallic measuring tape or yardstick attached to a flat wall with no baseboard should be used. A movable right triangular headboard should be used to site the accurate height. This may be attached to the measurement board or separate if using a metallic measuring tape or yardstick.

Equipment should be maintained and calibrated according to the manufacturer's guidelines to ensure accurate measurements. Some sources recommend calibration of aneroid manometers on a semi-annual basis. Equipment should be cleaned prior to each use and when necessary to minimize the spread of infection.

### **Setting Up the Screening Area**

1. Every effort should be made to ensure the students' privacy during the screening process.
2. Locate a quiet room for conducting the BP screenings.
3. Prior to conducting the screening, set up the room for screening one student at a time or use a privacy partition if more than one screener will be working in the same room.
4. Preferably, the student being screened should not be able to see or hear other students.
5. The room should have an area without a baseboard for mounting the metallic yardstick or stadiometer that will be used for measuring height.
6. To assist with the flow of students, you may wish to have a teacher or staff assistant monitor students waiting to be screened in an adjacent room or hallway. Once a student has been screened, he/she can join his/her classmates and the next student to be screened can then enter the screening room.

7. Have supplies available to clean equipment per the manufacturers' suggestions between each student.

### **Student Preparation for BP Screening**

Talk with the student using age and developmentally appropriate terms. You may need to use words like "pressure" rather than BP, and "arrow" rather than needle. As appropriate, prior to checking a student's BP, the examiner should ask the caretaker or the student about the student's health history to determine if any risk factors exist that may cause BP readings to vary from the norm. Prior to screening, students should be given an explanation of hypertension, ways to help maintain a normal BP, and an overview of the screening process.

Advise students of the possibility that shoes will need to be removed and hairstyles may need to be adjusted to secure an accurate height measurement. Also advise students of clothing options that allow ease of baring the right arm for BP measurement. This may be done via a classroom instructional unit or if necessary, individually. Explain to the student that you will be measuring his/her BP to determine if it is within a normal range or high range. Let the student know that a person's BP changes during the day depending upon many factors (e.g., activity level, diet, medications). Advise the student that if the measurement is high, you will recheck his/her BP and may want to check it again on another day to see if the BP measurement is still high.

Help the student to understand that if his/her BP remains high after you have checked it several times, you will suggest that the student's parents/guardians have a health care practitioner check to determine if the student has hypertension. The results of the BP screening do not mean that the student has hypertension; it means that the BP measurement was high during the screening activity.

### **BP Screening Procedure**

In children and adolescents, normal BP levels are determined by age, sex, and height. Screening should be conducted in a manner congruent with infection control and standard precautions. Trained personnel should follow standard practices and procedures for measuring BP. Screen for BP using an age and developmentally appropriate screening process.

### **BP Measurement**

1. Check to be sure that the sphygmomanometer has been calibrated in accordance with the manufacturer's suggestions.
2. Check the functionality of all equipment.
  - a. Sphygmomanometer and stethoscope.
  - b. Automated BP monitors (oscillometric devices). Note: The **preferred** method of BP measurement is auscultation.
3. The screener may choose to stand or be seated during the BP measurement phase of the procedure.
4. Assess the BP:
  - a. Prior to measuring BP, stimulant drugs or food should be avoided.
  - b. Prior to measuring BP, allow the student to rest at least 3-5 minutes.
  - c. Explain the process to the student.
  - d. Position student appropriately:
    - i. The student should be seated with feet flat on floor.

- ii. The student should be leaning gently against back of chair, not on arm.
  - iii. The entire arm in which the BP will be measured should be fully supported on a firm surface (table) with the right arm (brachial artery) at heart level.
  - iv. Upper arm should be bare – do not apply cuff over clothing.
- e. Choose appropriate cuff size:
- i. The BP cuff should have a bladder width that is approximately 40% of the circumference of the upper arm midway between the olecranon and the acromion. The length of the cuff bladder should encircle 80 to 100% of the circumference of the upper arm at the same position. Most modern cuffs are marked with range lines to denote the need to use a larger or smaller cuff.
  - ii. Proper cuff size is essential for measuring BP accurately. A cuff that is too small may result in an artificially elevated BP whereas a cuff that is too wide may produce falsely low reading.
- f. Place the BP cuff on the upper right arm.
- i. Leave enough room at the top of the cuff to prevent obstruction to the axilla and enough room at the bottom to place the stethoscope in the antecubital fossa.
  - ii. Position the right arm so that the brachial artery is at heart level.
  - iii. The right arm is preferred for consistency and comparison with standard tables for BP parameters and because of the possibility of coarctation of the aorta, which might result in false low readings in the left arm.
- g. To determine how far to inflate the cuff for measuring the student's BP:
- i. Palpate for the radial pulse.
  - ii. Inflate the cuff while palpating the radial pulse.
  - iii. Note the level at which the radial pulse disappears.
  - iv. Release air from cuff rapidly and wait 15 seconds prior to measuring the student's BP.
  - v. When measuring the BP, inflate the cuff 20–30 mm Hg above the point where the radial pulse disappeared.
- h. After the 15 second wait period, measure the student's BP:
- i. Palpate the brachial pulse.
  - ii. Place the ear tips of the stethoscope in your ears with tips facing forward.
  - iii. Place the diaphragm of the stethoscope over the brachial artery. The diaphragm of the stethoscope should not touch the cuff.
  - iv. Rapidly inflate cuff 20–30 mm Hg above the point at which the radial pulse disappeared.
  - v. Release cuff pressure at a rate of 2–3 mm Hg per second, while auscultating brachial artery.
  - vi. The systolic BP reading is determined at the onset of a clear 'tapping' sound (Phase I Korotkoff sound).
  - vii. The diastolic BP reading is determined at the disappearance of Korotkoff sounds (Phase V Korotkoff sound). After the disappearance of Korotkoff sounds, continue to deflate the cuff slowly for another 10 mm Hg. If no further sounds are heard, rapidly release all air in the cuff and record the BP measurement.
  - viii. If the Korotkoff sounds continue to 0 mm Hg or is very low, repeat the BP measurement with less pressure on the head of the stethoscope. In

some children, Korotkoff sounds can be heard to 0 mmHg. Under these circumstances, the BP measurement should be repeated with less pressure on the head of the stethoscope.

- ix. If the very low 5th Korotkoff sound persists, record the 4th Korotkoff (muffling of the sounds) as the diastolic BP.
- x. At least two BP measurements should be obtained and spaced one or two minutes apart. The values should be less than 5 mmHg apart. BP should be remeasured until a stable value is obtained. The recorded value on the student's chart is the average of the last two measurements.

## Height Measurement

If you do not already have a current height measurement for the student, measure the student's height and plot it on the appropriate gender specific [CDC stature-for-age growth charts](#). Children who are able to stand on their own should be measured standing, without shoes, using a vertical measurement board (stadiometer) or a metallic measuring tape/yardstick attached to a flat wall with no baseboard. A movable right triangular headboard should be used when measuring height. Do not use the measuring rod attached to the platform scale. Prior to starting, check the measurement board to ensure it is working correctly. The headboard should slide easily but should not be so loose or worn that it slips when measuring the height.

1. Remove the child's shoes, hats, and bulky clothing, such as coats and sweaters. Undo or adjust hairstyles and remove hair accessories that interfere with measurement.
2. Have the student stand erect, with shoulders level, hands at sides, knees, or thighs together and weight evenly distributed on both feet.
3. The student's feet should be flat on the floor or foot piece, with both heels at base of the vertical board. When possible, all four contact points (i.e., the head, back, buttocks, and heels) should touch the vertical surface while maintaining a natural stance. Some students will not be able to maintain a natural stance with all four contact points touching the vertical surface. For these students, at a minimum, two contact points; the head and buttocks, or the buttocks and heels, should always touch the vertical surface.
4. Position the student's head by placing a hand on the student's chin to move the head into the Frankfort Plane. The Frankfort Plane is an imaginary line from the lower margin of the eye socket to the notch above the tragus of the ear. When aligned correctly, the Frankfort Plane is parallel to the horizontal headboard and perpendicular to the vertical measurement board. This is best viewed and aligned when the screener is directly to the side and at eye level with the child.
5. Assure student's legs are straight, arms are at sides, and shoulders are relaxed.
6. Ask the child to look straight ahead, inhale deeply and to stand fully erect without altering the position of the heels.
  - a. Lower the headpiece until it firmly touches the crown of the head with sufficient pressure to compress the hair and is at a right angle with the measurement surface.
  - b. Check contact points to ensure that the lower body stays in the proper position and heels remain flat. Some students may stand up on their toes, but verbal reminders are usually sufficient to get them in the proper position.
  - c. Position yourself so that your eyes are parallel with the head piece, read the measurement to the nearest  $\frac{1}{8}$  inch, and make note of the first measurement.

- d. Move the headboard away; check the posture, and re-measure the student.
- e. Measurements should agree within ¼ inch, re-measure and select the average of the two measures that agree the most.
- f. Immediately record the results in the student health record or data log.

## BP Status

In 2017, the guidelines for high BP in children and adolescents, including the definitions of BP categories and stages, were updated (see [Table 1](#)). The diagnosis of hypertension is made when repeat BP values on **three** separate clinical visits are greater than the 95th percentile for the age, sex, and height of the patient, or  $\geq 130/80$  mmHg.

**Table 1: Definitions of BP Status and Categories for Children and Adolescents**

BP Category	For Children Aged 1-13 years	For Children Aged $\geq 13$ years
<b>Normal BP</b>	<90th percentile	<120/<80 mm Hg
<b>Elevated BP</b>	$\geq 90$ percentile to <95th percentile or 120/80 mm Hg to <95th percentile (whichever is lower)	120/<80 to 129/<80 mm Hg
<b>Stage 1 HTN</b>	$\geq 95$ th percentile to <95 percentile +12 mm Hg, or 130/80 to 139/89 mm Hg (whichever is lower)	130/80 to 139/89 mm Hg
<b>Stage 2 HTN</b>	$\geq 95$ th percentile + 12 mm Hg, or $\geq 140/90$ mm HG (whichever is lower)	$\geq 140/90$ mm Hg

### Source:

Flynn JT, Kaelber DC, Baker-Smith CM, et al. (2017, September). Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. *Pediatrics* 2017. 140(3).

<https://pediatrics.aappublications.org/content/pediatrics/early/2017/08/21/peds.2017-1904.full.pdf>

### Using the BP Screening Tool

The 2017 American Academy of Pediatrics (AAP) *Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents* includes a new, simplified table for initial BP screening. This table is designed as a screening tool to identify children and adolescents who need further evaluation of their BP. **The screening tool should not be used to diagnose elevated BP or hypertension by itself.** Values in the table are based on the 90th percentile BP for age and sex for children at the 5th percentile of height, resulting in a negative predictive value of >99%. It's important to note, however, that children with above-average height may be over-identified with the screening tool. For adolescents  $\geq 13$  years of age, a threshold of 120/80 mm Hg is used in the screening tool (regardless of sex) to align with adult guidelines for the identification of

elevated BP.

If the BP values (systolic and diastolic) are less than the values listed in the table, the student's BP does not require further evaluation. If the BP values (systolic and/or diastolic) are  $\geq$  values listed in the table, the student's BP requires further evaluation. Further evaluation includes repeat measurements and utilizing the complete [BP tables](#) based on sex, age, and height.

**Table 2: BP Screening Tool**

BP, mmHg				
	Boys		Girls	
Age	Systolic	Diastolic	Systolic	Diastolic
1	98	52	98	54
2	100	55	101	58
3	101	58	102	60
4	102	60	103	62
5	103	63	104	64
6	105	66	105	67
7	106	68	106	68
8	107	69	107	69
9	107	70	108	71
10	108	72	109	72
11	110	74	111	74
12	113	75	114	75
13	120	80	120	80
14	120	80	120	80
15	120	80	120	80
16	120	80	120	80
17	120	80	120	80
18	120	80	120	80

### Using the BP Tables

The updated [BP tables](#) from the AAP include systolic BP and diastolic BP values arranged by age, sex, height (in centimeters and inches) and height percentile. The BP values are also categorized according to the BP definitions presented in [Table 1](#) as normal (50th percentile), elevated BP (>90th percentile), stage 1 HTN ( $\geq$ 95th percentile), and stage 2 HTN ( $\geq$ 95th percentile + 12 mm Hg).

1. Determine height percentile of the student using the appropriate gender specific [CDC growth chart](#).
2. If the student's height percentile is between two percentiles, use the higher percentile.

3. Measure and record the student's systolic BP and diastolic BP.
4. On the [Sex-Specific BP Levels by Age and Height table](#) find the child's age on the left side of the table. Follow the age row horizontally across the table to the intersection of the line for the student's height or height percentile (columns labeled 5%, 10%, 25%, 50%, 75%, 90%, and 95% – see [BP tables](#)). If the student's height is between percentiles, use the larger height percentile.
5. Now, compare the student's systolic and diastolic BP measurements with the level provided in the BP tables to determine if the measurement falls in a normal or abnormal category. If the initial BP reading is greater than or equal to the 90th percentile, the BP should be repeated twice at the same visit, and an average systolic and diastolic BP should be used. Measures obtained by oscillometric devices that exceed the 90th BP percentile should be repeated by auscultation.
  - a. The **50th percentile** row represents a normal blood pressure value or a blood pressure that is normotensive (NT).
  - b. The **≥ 90th percentile** row represents **elevated blood pressure** and should be repeated within one week.
  - c. The **≥ 95th percentile** row represents **stage 1 hypertension** (Stage 1 HT) and should be repeated within one week. If the BP readings remain at the Stage 1 HT level, referral is required.
  - d. The **≥ 95th percentile plus 12 mmHg** row represents **stage 2 hypertension** (Stage 2 HT) and requires prompt referral for evaluation and therapy. If the patient is symptomatic, **immediate priority referral** and treatment are indicated.

### Assessment and Referral Criteria

In presenting these guidelines we acknowledge that the school nurse may exercise her/his clinical judgment regarding referral decisions.

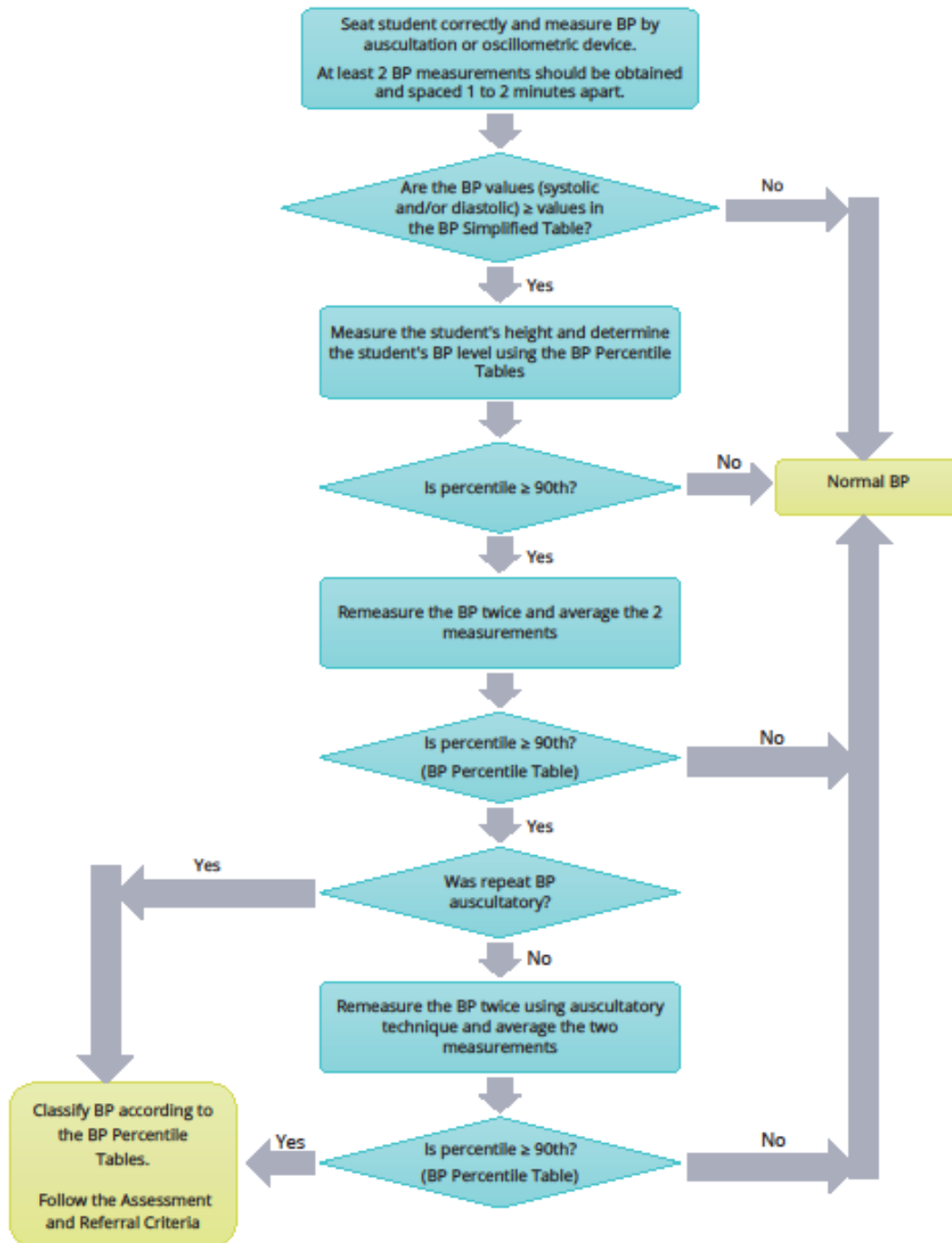
1. If BP (systolic and diastolic) values are less than the screening BP values listed in the [BP Screening Tool](#)
  - a. Provide educational material regarding healthy diet, sleep, and physical activity for maintaining a healthy cardiovascular system.
2. If BP (systolic and/or diastolic) values are ≥ values listed in the [BP Screening Tool](#), but the values are normal (i.e. BP < 90th percentile) in the [BP Tables](#).
  - a. Provide educational material regarding healthy diet, sleep and physical activity for maintaining a healthy cardiovascular system.
3. If the average BP (systolic and/or diastolic), after being repeated at least twice at the same visit, is at an **elevated blood pressure level**, the student's BP requires further evaluation.
  - a. Provide educational material regarding healthy diet, sleep, and physical activity.
  - b. Assess for other symptoms of hypertension (e.g., headaches, blurred vision, feeling faint) and/or other activities that might explain a high BP (e.g., exercise prior to BP measurement, caffeine intake, medications).
    - i. If symptomatic, ask the student to rest for 15 minutes; then recheck the student's BP. Average the two measurements.
      1. Refer for evaluation by the student's health care practitioner.
      2. A telephone call to the student's parent/guardian should be placed immediately to discuss the BP screening results



- and to assist with referral completion.
  - ii. If not symptomatic, recheck the student's BP again within one week, on two separate visits that are a few days apart. Average the measurements.
    - 1. If the average BP (systolic and/or diastolic) remains at the elevated BP level, contact the parent/guardian and refer for an evaluation by the student's health care practitioner.
- 4. If BP (systolic and/or diastolic), after being repeated at least twice at the same visit, is at the **stage 1 hypertensive** (Stage 1 HT) level:
  - a. Assess for other symptoms of hypertension (e.g., headaches, blurred vision, feeling faint) and/or other activities that might explain a high BP (e.g., exercise prior to BP measurement, caffeine intake, medications).
    - i. If symptomatic, ask the student to rest for 15 minutes; then recheck the student's BP. Average the two measurements.
      - 1. Refer for evaluation by the student's health care practitioner.
      - 2. A telephone call to the student's parent/guardian should be placed immediately to discuss the BP screening results and to assist with referral completion.
    - ii. If not symptomatic, recheck the student's BP again within one week, on two separate visits that are a few days apart. Average the measurements.
      - 1. If the average of the measurements is elevated, contact the parent/guardian, and refer for an evaluation by the student's health care practitioner.
  - b. Provide educational material regarding healthy diet, sleep, and physical activity.
- 5. If BP (systolic and/or diastolic), after being repeated at least twice at the same visit, is at the **stage 2 hypertensive** (Stage 2 HT) level, it is a **priority referral**:
  - a. Assess for other symptoms of hypertension (e.g., headaches, blurred vision, feeling faint) and/or other activities that might explain a high BP (e.g., exercise prior to BP measurement, caffeine intake, medications).
    - i. If symptomatic, ask the student to rest for 15 minutes; then recheck the student's BP. Average the two measurements.
      - 1. Immediate referral for evaluation by the student's health care practitioner.
      - 2. Call the student's parent/guardian immediately to discuss the BP screening results and to assist with referral completion.
  - b. Provide educational material regarding healthy diet, sleep, and physical activity.

## BP Screening in Schools Algorithm

The following algorithm is based on the modified BP measurement algorithm from the American Academy of Pediatrics' *Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents*.



## ***Parent/Guardian Notification***

Parents/guardians should be notified of their child's screening results and provided information regarding cardiovascular health maintenance. Education and counseling should be provided about normal findings, deviations from normal, and for any specific concerns identified during the visit. Referrals for assessment, treatment, and follow-up may be made using an appropriate parent notification form found in [Appendix B](#).

All students with a BP assessment that varies from normotensive should receive a referral to their health care practitioner for evaluation and treatment as indicated. Efforts should be made by the school nurse to assist parents/guardians with referral completion. All findings, referrals, and follow-up should be documented in the student's school health record.

### *Sources:*

Centers for Disease Control and Prevention, (2010, September). *Growth Charts*.

<https://www.cdc.gov/growthcharts/>

Jackson SL, Zhang Z, Wiltz JL, et al. Hypertension Among Youths — United States, 2001–2016. *MMWR Morb Mortal Wkly Rep* 2018;67:758–762.

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Flynn JT, Kaelber DC, Baker-Smith CM, et al. (2017, September). Clinical Practice Guideline for Screening and Management of High Blood Pressure in Children and Adolescents. *Pediatrics* 2017. 140(3).

<https://pediatrics.aappublications.org/content/pediatrics/early/2017/08/21/peds.2017-1904.full.pdf>

## BP Tables

### BP Levels for Boys by Age and Height Percentile<sup>5</sup>

Age (years)	Systolic BP (mmHg)							Diastolic BP (mmHg)							BP Percentile
	Heigh Percentile or Measured Height							Heigh Percentile or Measured Height							
	5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th	
2	33.9	34.4	35.3	36.3	37.3	38.2	38.8	33.9	34.4	35.3	36.3	37.3	38.2	38.8	Height - inches
	87	87	88	89	89	90	91	43	43	44	44	45	46	46	NT
	100	100	101	102	103	103	104	55	55	56	56	57	58	58	Elevated BP
	104	105	105	106	107	107	108	57	58	58	59	60	61	61	Stage 1 HT
	116	117	117	118	119	119	120	69	70	70	71	72	73	73	Stage 2 HT
3	36.4	37.0	37.9	39.0	40.1	41.1	41.7	36.4	37.0	37.9	39.0	40.1	41.1	41.7	Height - inches
	88	89	89	90	91	92	92	45	46	46	47	48	49	49	NT
	101	102	102	103	104	105	105	58	58	59	59	60	61	61	Elevated BP
	106	106	107	107	108	109	109	60	61	61	62	63	64	64	Stage 1 HT
	118	118	119	119	120	121	121	72	73	73	74	75	76	76	Stage 2 HT
4	38.8	39.4	40.5	41.7	42.9	43.9	44.5	38.8	39.4	40.5	41.7	42.9	43.9	44.5	Height - inches
	90	90	91	92	93	94	94	48	49	49	50	51	52	52	NT
	102	103	104	105	105	106	107	60	61	62	62	63	64	64	Elevated BP
	107	107	108	108	109	110	110	63	64	65	66	67	67	68	Stage 1 HT
	119	119	120	120	121	122	122	75	76	77	78	79	79	80	Stage 2 HT
5	41.1	41.8	43.0	44.3	45.5	46.7	47.4	41.1	41.8	43.0	44.3	45.5	46.7	47.4	Height - inches
	91	92	93	94	95	96	96	51	51	52	53	54	55	55	NT
	103	104	105	106	107	108	108	63	64	65	65	66	67	67	Elevated BP
	107	108	109	109	110	111	112	66	67	68	69	70	70	71	Stage 1 HT
	119	120	121	121	122	123	124	78	79	80	81	82	82	83	Stage 2 HT
6	43.4	44.2	45.4	46.8	48.2	49.4	50.2	43.4	44.2	45.4	46.8	48.2	49.4	50.2	Height - inches
	93	93	94	95	96	97	98	54	54	55	56	57	57	58	NT
	105	105	106	107	109	110	110	66	66	67	68	68	69	69	Elevated BP
	108	109	110	111	112	113	114	69	70	70	71	72	72	73	Stage 1 HT
	120	121	122	123	124	125	126	81	82	82	83	84	84	85	Stage 2 HT
7	45.7	46.5	47.8	49.3	50.8	52.1	52.9	45.7	46.5	47.8	49.3	50.8	52.1	52.9	Height - inches
	94	94	95	97	98	98	99	56	56	57	58	58	59	59	NT

<sup>5</sup> The 90th percentile is 1.28 SD, the 95th percentile is 1.645 SD, and the 99th percentile is 2.326 SD over the mean. **NT** = normotensive (50th percentile). **PreHT** = pre-hypertensive (90th percentile). **HT** = hypertensive (95th percentile for stage 1 and 99th% + 5 mmHg for stage 2).

	106	107	108	109	110	111	111	68	68	69	70	70	71	71	Elevated BP
	110	110	111	112	114	115	116	71	71	72	73	73	74	74	Stage 1 HT
	122	122	123	124	126	127	128	83	83	84	85	85	86	86	Stage 2 HT
8	47.8	48.6	50.0	51.6	53.2	54.6	55.5	47.8	48.6	50.0	51.6	53.2	54.6	55.5	Height - inches
	95	96	97	98	99	99	100	57	57	58	59	59	60	60	NT
	107	108	109	110	111	112	112	69	70	70	71	72	72	73	Elevated BP
	111	112	112	114	115	116	117	72	73	73	74	75	75	75	Stage 1 HT
	123	124	124	126	127	128	129	84	85	85	86	87	87	87	Stage 2 HT
9	49.6	50.5	52.0	53.7	55.4	56.9	57.9	49.6	50.5	52.0	53.7	55.4	56.9	57.9	Height - inches
	96	97	98	99	100	101	101	57	58	59	60	61	62	62	NT
	107	108	109	110	112	113	114	70	71	72	73	74	74	74	Elevated BP
	112	112	m	115	116	118	119	74	74	75	76	76	77	77	Stage 1 HT
	124	124	125	127	128	130	131	86	86	87	8	88	89	89	Stage 2 HT
10	51.3	52.2	53.8	55.6	57.4	59.1	60.1	51.3	52.2	53.8	55.6	57.4	59.1	60.1	Height - inches
	97	98	99	100	101	102	103	59	60	61	62	63	63	64	NT
	108	109	111	112	113	115	116	72	73	74	74	75	75	76	Elevated BP
	112	113	114	116	118	120	121	76	76	77	77	78	78	78	Stage 1 HT
	124	125	126	128	130	132	133	88	88	89	89	90	90	90	Stage 2 HT
11	53.0	54.0	55.7	57.6	59.6	61.3	62.4	53.0	54.0	55.7	57.6	59.6	61.3	62.4	Height - inches
	99	99	101	102	103	104	106	61	61	62	63	63	63	63	NT
	110	111	112	114	116	117	118	74	74	75	75	75	76	76	Elevated BP
	114	114	116	118	120	123	124	77	78	78	78	78	78	78	Stage 1 HT
	126	126	128	130	132	135	136	89	90	90	90	90	90	90	Stage 2 HT
12	55.2	56.3	58.1	60.1	62.2	64.0	65.2	55.2	56.3	58.1	60.1	62.2	64.0	65.2	Height - inches
	101	101	102	104	106	108	109	61	62	62	62	62	63	63	NT
	113	114	115	117	119	121	122	75	75	75	75	75	76	76	Elevated BP
	116	117	118	121	124	126	128	78	78	78	78	78	79	79	Stage 1 HT
	128	129	130	133	136	138	140	90	90	90	90	90	91	91	Stage 2 HT
13	57.9	59.1	61.0	63.1	65.2	67.1	68.3	57.9	59.1	61.0	63.1	65.2	67.1	68.3	Height - inches
	103	104	105	108	110	111	112	61	60	61	62	63	64	65	NT
	115	116	118	121	124	126	126	74	74	74	75	76	77	77	Elevated BP
	119	120	122	125	128	130	131	78	78	78	78	80	81	81	Stage 1 HT
	131	132	134	137	140	142	143	90	90	90	90	92	93	93	Stage 2 HT
14	60.6	61.8	63.8	65.9	68.0	69.8	70.9	60.6	61.8	63.8	65.9	68.0	69.8	70.9	Height - inches
	105	106	109	111	112	113	113	60	60	62	64	65	66	67	NT
	119	120	123	126	127	128	129	74	74	75	77	78	79	80	Elevated BP

	123	125	127	130	132	133	134	77	78	79	81	82	83	84	Stage 1 HT
	135	137	139	142	144	145	146	89	90	91	93	94	95	96	Stage 2 HT
15	62.6	63.8	65.7	67.8	69.8	71.5	72.5	62.6	63.8	65.7	67.8	69.8	71.5	72.5	Height - inches
	108	110	112	113	114	114	114	61	62	64	65	66	67	68	NT
	123	124	126	128	129	130	130	75	76	78	79	80	81	81	Elevated BP
	127	129	131	132	134	135	135	78	79	81	83	84	85	85	Stage 1 HT
	139	141	143	144	146	147	147	90	91	93	95	96	97	97	Stage 2 HT
16	63.8	64.9	66.8	68.8	70.7	72.4	73.4	63.8	64.9	66.8	68.8	70.7	72.4	73.4	Height - inches
	111	112	114	115	115	116	116	63	64	66	67	68	69	69	NT
	126	127	128	129	131	131	132	77	78	79	80	81	82	82	Elevated BP
	130	131	133	134	135	136	137	80	81	83	84	85	86	86	Stage 1 HT
	142	143	15	146	147	148	149	92	93	95	96	97	98	98	Stage 2 HT
17	64.5	65.5	67.3	69.2	71.1	72.8	73.8	64.5	65.5	67.3	69.2	71.1	72.8	73.8	Height - inches
	114	115	116	117	117	118	118	65	66	67	68	69	70	70	NT
	128	129	130	131	132	133	134	78	79	80	81	82	82	83	Elevated BP
	132	133	134	135	137	138	138	81	82	84	85	86	86	87	Stage 1 HT
	144	145	146	147	149	150	150	93	94	96	97	98	98	99	Stage 2 HT

### BP Levels for Girls by Age and Height Percentile<sup>6</sup>

Age (years)	Systolic BP (mmHg)							Diastolic BP (mmHg)							BP Percentile
	Heigh Percentile or Measured Height							Heigh Percentile or Measured Height							
	5th	10th	25th	50th	75th	90th	95th	5th	10th	25th	50th	75th	90th	95th	
2	33.4	34.0	34.9	35.9	36.9	37.8	38.4	33.4	34.0	34.9	35.9	36.9	37.8	38.4	Height - inches
	87	87	88	89	90	91	91	45	46	47	48	49	50	51	NT
	101	101	102	103	104	105	106	58	58	59	60	61	62	62	Elevated BP
	104	105	106	106	107	108	109	62	63	63	64	65	66	66	Stage 1 HT
	116	117	118	118	119	120	121	74	75	75	76	77	78	78	Stage 2 HT
3	35.8	36.4	37.3	38.4	39.6	40.6	41.2	35.8	36.4	37.3	38.4	39.6	40.6	41.2	Height - inches
	88	89	89	90	91	92	93	48	48	49	50	51	53	53	NT
	102	103	104	104	105	106	107	60	61	61	62	63	64	65	Elevated BP
	106	106	107	108	109	110	110	64	65	65	66	67	68	69	Stage 1 HT
	118	118	119	120	121	122	122	76	77	77	78	79	80	81	Stage 2 HT
4	38.3	38.9	39.9	41.1	42.4	43.5	44.2	38.3	38.9	39.9	41.1	42.4	43.5	44.2	Height - inches
	89	90	91	92	93	94	94	50	51	51	53	54	55	55	NT
	103	104	105	106	107	108	108	62	63	64	65	66	67	67	Elevated BP
	107	108	109	109	110	111	112	66	67	68	69	70	70	71	Stage 1 HT
	119	120	121	121	122	123	124	78	79	80	81	82	82	83	Stage 2 HT
5	40.8	41.5	42.6	43.9	45.2	46.5	47.3	40.8	41.5	42.6	43.9	45.2	46.5	47.3	Height - inches
	90	91	92	93	94	95	96	52	52	53	55	56	57	57	NT
	104	105	106	107	108	109	110	64	65	66	67	68	69	70	Elevated BP
	108	109	109	110	111	112	113	68	69	70	71	72	73	73	Stage 1 HT
	120	121	121	122	123	124	125	80	81	82	83	84	85	85	Stage 2 HT
6	43.3	44.0	45.2	46.6	48.1	49.4	50.3	43.3	44.0	45.2	46.6	48.1	49.4	50.3	Height - inches
	92	92	93	94	96	97	97	54	54	55	56	57	58	59	NT
	105	106	107	108	109	110	111	67	67	68	69	70	71	71	Elevated BP
	109	109	110	111	112	113	114	70	71	72	72	73	74	74	Stage 1 HT
	121	121	122	123	124	125	126	82	83	84	84	85	86	86	Stage 2 HT
7	45.6	46.4	47.7	49.2	50.7	52.1	53.0	45.6	46.4	47.7	49.2	50.7	52.1	53.0	Height - inches
	92	93	94	95	97	98	99	55	55	56	57	58	59	60	NT
	106	106	107	109	110	111	112	68	68	69	70	71	72	72	Elevated BP
	109	110	111	112	113	114	115	72	72	73	73	74	74	75	Stage 1 HT
	121	122	123	124	125	126	127	84	84	85	85	86	86	87	Stage 2 HT
8	47.6	48.4	49.8	51.4	53.0	54.5	55.5	47.6	48.4	49.8	51.4	53.0	54.5	55.5	Height - inches

<sup>6</sup> The 90th percentile is 1.28 SD, the 95th percentile is 1.645 SD, and the 99th percentile is 2.326 SD over the mean. **NT** = normotensive (50th percentile). **PreHT** = pre-hypertensive (90th percentile). **HT** = hypertensive (95th percentile for stage 1 and 99th% + 5 mmHg for stage 2).

	93	94	95	97	98	99	100	56	56	57	59	60	61	61	NT
	107	107	108	110	111	112	113	69	70	71	72	72	73	73	Elevated BP
	110	111	112	113	115	116	117	72	73	74	74	75	75	75	Stage 1 HT
	122	123	124	125	127	128	129	84	85	86	86	87	87	87	Stage 2 HT
9	49.3	50.2	51.7	53.4	55.1	56.7	57.7	49.3	50.2	51.7	53.4	55.1	56.7	57.7	Height - inches
	95	95	97	98	99	100	101	57	58	59	60	60	61	61	NT
	108	108	109	111	112	113	114	71	71	72	73	73	73	73	Elevated BP
	112	112	113	114	116	117	118	74	74	75	75	75	75	75	Stage 1 HT
	124	124	125	126	128	129	130	86	86	87	87	87	87	87	Stage 2 HT
10	51.1	52.0	53.7	55.5	57.4	59.1	60.2	51.1	52.0	53.7	55.5	57.4	59.1	60.2	Height - inches
	96	97	98	99	101	102	103	58	59	59	60	61	61	62	NT
	109	110	111	112	113	115	116	72	73	73	73	73	73	73	Elevated BP
	113	114	114	116	117	119	120	75	75	76	76	76	76	76	Stage 1 HT
	125	126	126	128	129	131	132	87	87	88	88	88	88	88	Stage 2 HT
11	53.4	54.5	56.2	58.2	60.2	61.9	63.0	53.4	54.5	56.2	58.2	60.2	61.9	63.0	Height - inches
	98	9	101	102	104	105	106	60	60	60	61	62	63	64	NT
	111	112	113	114	116	118	120	74	74	74	74	74	75	75	Elevated BP
	115	116	117	118	120	123	124	76	77	77	77	77	77	77	Stage 1 HT
	127	128	129	130	132	135	136	88	89	89	89	89	89	89	Stage 2 HT
12	56.2	57.3	59.0	60.9	62.8	64.5	65.5	56.2	57.3	59.0	60.9	62.8	64.5	65.5	Height - inches
	102	102	104	105	107	108	108	61	61	61	62	64	65	65	NT
	114	115	116	118	120	122	122	75	75	75	75	76	76	76	Elevated BP
	118	119	120	122	124	125	126	78	78	78	78	79	79	79	Stage 1 HT
	130	131	132	134	136	137	138	90	90	90	90	91	91	91	Stage 2 HT
13	58.3	59.3	60.9	62.7	64.5	66.1	67.0	58.3	59.3	60.9	62.7	64.5	66.1	67.0	Height - inches
	104	105	106	107	108	108	109	62	62	63	64	65	65	66	NT
	116	117	119	121	122	123	123	75	75	75	76	76	76	76	Elevated BP
	121	122	123	124	126	126	127	79	79	79	79	80	80	81	Stage 1 HT
	133	134	135	136	138	138	139	91	91	91	91	92	92	93	Stage 2 HT
14	59.3	60.2	61.8	63.5	65.2	66.8	67.7	59.3	60.2	61.8	63.5	65.2	66.8	67.7	Height - inches
	105	106	107	108	109	109	109	63	63	64	65	66	66	66	NT
	118	118	120	122	123	123	123	76	76	76	76	77	77	77	Elevated BP
	123	123	124	125	126	127	127	80	80	80	80	81	81	82	Stage 1 HT
	135	135	136	137	138	139	139	92	92	92	92	93	93	94	Stage 2 HT
15	59.7	60.6	62.2	63.9	65.6	67.2	68.1	59.7	60.6	62.2	63.9	65.6	67.2	68.1	Height - inches
	105	106	107	108	109	109	109	64	64	64	65	66	67	67	NT
	118	119	121	122	123	123	124	76	76	76	77	77	78	78	Elevated BP
	124	124	125	126	127	127	128	80	80	80	81	82	82	82	Stage 1 HT
	136	136	137	138	139	139	140	92	92	92	93	94	94	94	Stage 2 HT



	59.9	60.8	62.4	64.1	65.8	67.3	68.3	59.9	60.8	62.4	64.1	65.8	67.3	68.3	Height - inches
16	106	107	108	109	109	110	110	64	64	65	66	66	67	67	NT
	119	120	122	123	124	124	124	76	76	76	77	78	78	78	Elevated BP
	124	125	125	127	127	128	128	80	80	80	81	82	82	82	Stage 1 HT
	136	137	137	139	139	140	140	92	92	92	93	94	94	94	Stage 2 HT
17	60.0	60.9	62.5	64.2	65.9	67.4	68.4	60.0	60.9	62.5	64.2	65.9	67.4	68.4	Height - inches
	107	108	109	110	110	110	111	64	64	65	66	66	66	67	NT
	120	121	123	124	124	125	125	76	76	77	77	78	78	78	Elevated BP
	125	125	126	127	128	128	128	80	80	80	81	82	82	82	Stage 1 HT
	137	137	138	139	140	140	140	92	92	92	93	94	94	94	Stage 2 HT

## Scoliosis Screening

The Scoliosis Research Society (SRS), American Academy of Orthopedic Surgeons (AAOS), Pediatric Orthopedic Society of North America (POSNA) and American Academy of Pediatrics (AAP) recommend that scoliosis screening be performed twice for females at age ten and twelve years, while males should be screened once at age 13 to 14 years. It is recommended to screen females twice and at younger ages because females reach puberty earlier and have scoliosis requiring treatment more frequently than males.

To be congruent with age-specific scoliosis screening recommendations, schools are encouraged to screen all 5th grade girls, 7th grade girls and 8th grade boys for scoliosis once a year. Screening girls in only 6th grade is a reasonable alternative. Staff training for scoliosis screenings is required and specific LEA protocols must be used. If your school system chooses to screen for scoliosis, it is recommended to partner with a local orthopedic doctor, osteopathy doctor or other trained professional to provide specific training for school staff and/or volunteers.

### **Scoliosis Screening Rationale**

Scoliosis is a physical condition characterized by an abnormal curvature of the spine. Its cause is unknown in most cases. The amount of curvature is measured in degrees after an X-ray and can vary from mild to severe. It is most often seen in the middle school age group when rapid growth is occurring. Both girls and boys may be affected, but the risk of curve progression is ten times higher in females. Treatment ranges from observation to bracing to corrective surgery in severe cases. After scoliosis is identified or suspected, follow-up is essential to measure the degree of curvature and determine treatment options. Kyphosis, an accentuated spinal hump, and lordosis, or swayback, may occur independently or in conjunction with scoliosis.

### **Scoliosis Screening Program**

Scoliosis screening consists of a primary screen by school personnel. Specially trained PE (Physical Education) teachers, clinic personnel, or volunteers can complete or assist school nurses with primary screening. Female examiners are preferable for female students. A second screening of those who appear to deviate from normal shall be performed at a separate session

by someone other than the original screener. The same screening procedure will be used for both the primary screening and for those students with positive findings selected for rescreening.

Screening involves examination of the student's unclothed back. Female students can be screened wearing just a bra above the waist (preferred) or can wear a bathing suit under their clothes for the day of screening. The student will be asked to stand straight, and then bend forward while the examiner looks from the front, the back, and the side. The screener looks for obvious curves, rib humps, uneven shoulders, waist, or hips.

### **Tips for setting up a Successful Scoliosis Screen**

1. Training for volunteers and new staff, and a refresher for experienced screeners should be done shortly before the screening date.
2. Schedule the screening so that there are no conflicts with testing, field trips, etc.
3. Schedule when secondary screeners will be available if possible.
4. Many middle schools schedule screenings during PE or exploratory periods on one day and reschedule lunch periods, if necessary, to complete screenings.
5. Send letters/permission forms home one to two weeks before the screening is scheduled.
6. Have teachers collect and save the "Do Not Screen" letters.
7. Prepare students the day before screening, discussing the procedure that will be followed. Every effort should be made to minimize their anxieties.
8. Remind female students the day before to wear bras or bathing suits under clothes.
9. It is strongly recommended to have 2 screeners present.
10. It is strongly recommended that girls be examined by females. If this is not possible, it is mandatory that a female chaperone attend all times when girls are being examined.
11. Students or teachers should complete the personal information on the screening forms and the student should bring the completed form to the screening.
12. It is very important to manage the screening area so that the student's privacy is maintained i.e., utilizing boys' and girls' locker rooms, shower areas, screens, etc. This practice will make screening go more smoothly and quickly.
13. The setting chosen for screening should be checked for good lighting; the floor should be free of uneven areas; and the temperature of the room should be comfortable for students who will be undressing.
14. It is important to screen with the student's entire back exposed (no T-shirts around the neck, bra is OK). An adequate exam cannot be done otherwise.
15. Volunteers will be helpful to control "traffic," call classes down, get students to secondary screeners, etc.

A sample scoliosis screening result form to retain in school records can be found in [Appendix A](#)

#### *Resources*

[National Scoliosis Foundation](#)

[National Institute of Health](#)

#### *Sources:*

Georgia Department of Human Resources, Division of Public Health, Children's Healthcare of

Atlanta & Georgia Association of School Nurses (2019). *Georgia School Health Resource Manual: Chapter 8 Screening Guidelines in the School Setting*. <https://www.choa.org/-/media/Files/Childrens/medical-professionals/nursing-resources/ch-8-screening-considerations-in-the-school-setting.pdf?la=en&hash=09301D5E5B89DFE97C8B7EB80FD0141919C67B5D>

Hresko, M., Talwalkar, V., Schwend, R. (2015, September 2). American Academy of Orthopedic Surgeons and Scoliosis Research Society. Position Statement: Screening for Idiopathic Scoliosis in Adolescents. Scoliosis Research Society. <https://www.srs.org/about-srs/news-and-announcements/position-statement---screening-for-the-early-detection-for-idiopathic-scoliosis-in-adolescents>

## **Scoliosis Screening Outcome**

Refer students with questionable findings to the school nurse, public health nurse or other consultants for secondary screening. This can be done easily on the same day if secondary screeners are available.

Students who need to be rescreened include those with:

- Any visible prominence in the thoracic and/or lumbar area when student is flexed at the waist (forward bend position) – other deviations are usually insignificant.
- Exaggerated hump of upper back (kyphosis) on flexion, viewed from the side.
- Any student the screener is unsure of or concerned about.

## **Parent/Guardian Notification**

Parents/guardians should be notified of their child's screening results and provided information regarding scoliosis. A personal contact by the nurse discussing the screening procedure and results can help reduce apprehension in parents. The thought of a spinal deformity is disturbing to both the student and the family. The nurse should also inform the parents about the referral criteria used and the need for a medical evaluation. Parents should understand that a referral does not constitute a diagnosis of scoliosis or kyphosis, but simply indicates the need for further evaluation.

After personal contact, a referral form can be sent to the parents which encourages a medical evaluation for their child (sample parent notification form in [Appendix B](#)). It is extremely important for the nurse to follow through on referrals as time is a factor in the progression of a curve. Each student's screening results, referral, and follow-up should be documented in the student's school health record.

# **Oral Health Screening**

[Tenn. Code Ann. § 49-6-5004](#) *Promotion of eye, hearing, and dental care awareness.*

- a) Upon registration or as early as is otherwise possible and appropriate, public schools, nursery schools, kindergartens, preschools, or childcare facilities are encouraged to make reasonable efforts to apprise parents of the health benefits of obtaining appropriate eye, hearing, and dental care for children.
- b) A health care professional is authorized to indicate the need for an eye, hearing or dental examination on any report or form used in reporting the immunization status for a child as required under this part. Health care professionals shall provide a copy of the

report or form to the parents or guardians indicating the need to seek appropriate examinations for the child.

- c) If the parent or guardian of a child with a need for an eye or hearing examination is unable to afford the examination, an LEA of a county or municipality may use revenues from gifts, grants and state and local appropriations to provide the eye or hearing examinations.
- d) LEAs are encouraged to seek free or reduced-cost eye examinations from optometrists or ophthalmologists and free or reduced-cost hearing examinations from physicians or audiologists willing to donate their services for children who are unable to afford the eye or hearing examinations.
- e) The commissioner shall promulgate rules and regulations in accordance with the Uniform Administrative Procedures Act, compiled in title 4, chapter 5, which are necessary to carry out this section.

### ***Oral Health Screening Rationale***

Oral health plays a vital role in determining an individual's quality of life. Poor oral health can influence an individual's school performance and attendance. Children with poor oral health may miss more school and may receive lower grades. A child in pain cannot properly attend school nor learn. Tooth decay is a prevalent, infectious, transmissible disease that can be prevented. The CDC states "Although tooth decay is preventable, it is one of the most common chronic diseases throughout the lifespan. About one-fourth of young children, half of adolescents and more than 90% of adults experience tooth decay."

Primary prevention is the first level of oral health care, it is designed to prevent diseases, such as tooth decay, and promote good health. Education and oral health screenings are primary prevention. The American Dental Association states it is never too early to begin oral health education and screenings. Teaching children of all ages the importance of dental health is the key to good oral hygiene habits for a lifetime. Educators and school nurses play an important part in a student's oral health and overall health, through education and resources. They are tasked with the responsibility of providing dental health education, advocating for nutritious meals, and intervening in dental emergencies.

School-based dental prevention programs are designed to assist the school nurses and educators with oral health education, healthy nutrition and the prevention of oral disease and injury. These programs provide oral health education, oral health screenings, silver diamine fluoride, dental sealants, fluoride, and oral health referrals. These primary prevention services have been proven to be highly effective in improving oral health. The mission of the Tennessee Department of Health is to protect, promote, and improve the health and prosperity of people in Tennessee, and the school-based prevention programs operate within this mission. Where access to dental care and school-based prevention programs are limited, the Tennessee Department of Health Oral Health Services section may be able to offer additional resources to school nurses and educators. More information can be found on the department's website: [TDH Dental-Oral Health Services](#).

*Source:* Oral Health Services, Division of Community Health Services, Tennessee Department of Health

## ***Oral Health Screening Program***

All schools are encouraged to screen students for oral health problems. If your school system chooses to implement oral health screening it is recommended to partner with a local trained professional to provide specific training for school staff and/or volunteers. Specific LEA protocols must be used.

A dental screening is an appraisal activity and identifies individuals with pain or imminent pain. It also creates awareness about the importance of good oral health. Please note that a dental screening does not replace a regular dental examination by a dentist. Routine dental screenings will assist in securing every student with dental services and education to prevent pain, infection, premature loss of teeth and/or malocclusion.

A Dental Health Screening Program is designed to preserve the health of children and provides a procedure where a program in preventive dental hygiene is presented. The benefits of an oral health screening program include:

1. Dental defects may be discovered early so they can be corrected with the least amount of discomfort to the child.
2. Early symptoms of oral disease may be detected and corrected.
3. Irregularity of tooth position may be observed, and preventive measures instituted.
4. Referral for early treatment before problems become magnified, keeping the cost of dental care to a minimum.

The Tennessee Department of Health, Oral Health Services provides a School Based Dental Prevention Program. This program is a statewide, school-based preventive dental program targeting children in grades kindergarten through eighth in schools with 50% or more free and reduced lunch. Portable equipment is used by dental staff to provide dental screenings, referrals, and follow-up to dental providers to address unmet dental needs in this population. Health education and preventive sealants are provided to the target school population as well as information regarding TennCare eligibility and the application process. More information is available [here](#). Also, contact your local health department to ascertain what types of oral health services are available for your community.

## ***Oral Health Screening Procedure***

Oral health screening is performed using a tongue depressor, disposable gloves, and flashlight. Gauze pads may be helpful if the tongue needs to be manipulated.

An overall visual inspection is performed to view the outer and inner aspects of the oral cavity, including the lips, outer cheeks, and all inner tissues, floor of the mouth, tongue, palate, oropharynx, uvula, and teeth. Prior to the oral health screening, view the student's face and neck for swollen and/or tender lymph nodes in the neck and/or jaw. If the student's breath is highly odiferous, seek the cause. Also, observe the quality of the voice.

## ***Oral Health Referral (With or Without Screening)***

1. Visibly decayed and/or fractured teeth, broken filling(s) and/or missing permanent teeth.
2. Toothache, swelling and/or bleeding gums.

3. Ulceration, lesions, inflammation or draining of oral mucosa, palate, tongue, gums.
4. Malocclusion, mal-position, or supernumerary teeth.
5. Protrusion of upper/lower jaw; deviate swallowing (tongue thrust).
6. Leukoplakia (thickened white patches) on tongue or cheek, seen in known tobacco user.
7. Broken or ill-fitting orthodontic appliance.
8. Difficulty in eating; e.g., chewing or swallowing food.
9. Swollen or tender lymph nodes in neck and jaw.
10. Dental-related injuries obviously require treatment.
11. Unusual lip conditions such as fissures, drooping, or color (e.g., pale or bluish).
12. Nasal voice quality can suggest a health problem such as enlarged adenoids.

*Resource:* Tennessee Department of Health, [Oral Health Services](#)

### ***Parent/Guardian Notification***

Parents/guardians should be notified of their child's screening results and provided information regarding oral health maintenance. All students who require a dental referral should receive a referral to their dental provider for evaluation and treatment as indicated. If needed, assistance should be provided to help the student's family find dental treatment resources. Each student's screening result, referral, and follow-up should be documented in the student's school health record.

## **Concussion Screening**

### ***Concussion Health History: All students***

Approximately 90% of concussions are non-sport related. Therefore, it is important to identify and manage concussions in **all students**.

1. All student health history forms include concussion questions. Such as: did the child have a concussion and how did the injury occur.
2. TN Department of Health, [Return to Learn/Return to Play Concussion Management Guideline](#) encourages school nurses to be a part of the concussion management team to ensure return to school and physical education for all students and return to sports for student athletes.
3. If symptoms persist:
  - a. Refer to family and primary care physician for treatment (evidence-based, symptom-specific treatments now exist for concussion symptoms).
  - b. Consult with the school concussion management team for possible environmental and/or academic adjustment needs.
4. Inform counselors & school psychologist of the injury. According to the CDC, factors that might delay recovery include:
  - a. A history of a previous concussion or other brain injury,
  - b. Neurological or mental health disorders
  - c. Learning difficulties, and/or
  - d. Family and social stressors

## ***Concussion Baseline Screening: Student Athletes***

In April 2013, Tennessee became the 44th state to pass a sports concussion law designed to reduce youth sports concussions and increase awareness of traumatic brain injury.

[Tenn. Code Ann. § 68-55-502](#) *Application to school youth athletic activity-Minimum Requirements of school's governing authority* has three key components:

1. To inform and educate coaches, youth athletes and their parents and require them to sign a concussion information form before competing.
2. To require removal of a youth athlete who appears to have suffered a concussion from play or practice at the time of the suspected concussion.
3. To require a youth athlete to be cleared by a licensed health care provider before returning to play or practice.<sup>7</sup>

Note: The law does not direct schools to administer baseline concussion screens. The screening is a recommendation but not required.

Schools are encouraged to administer a baseline concussion screen for all student athletes. If a school district decides to implement a baseline concussion screening program, the individual school's athletic department is responsible for program implementation and funding. Staff training for screenings is required and specific LEA protocols must be used. If your school system chooses to administer a baseline concussion screen, it is recommended to partner with local trained professionals to provide specific training for school staff and/or volunteers. Baseline tests should only be conducted by a trained health care professional.

### ***Concussion: Baseline Screening***

According to the Tennessee Secondary Sports Athletic Association (TSSAA) and the Tennessee Department of Health Return to Learn/Return to Play Guidelines, return to physical education and sports should occur in gradual steps. See page 4 of the [TSSAA Concussion Policy](#) for more information.

### ***Concussion: Baseline Screening Rationale: Student Athlete***

According to the Centers for Disease Control and Prevention, a concussion is a type of traumatic brain injury that changes the way the brain normally works. Most concussions occur without loss of consciousness. Students who have, at any point in their lives, had a concussion have an increased risk of another concussion. Young children and teens are more likely to get concussions and take longer to recover than adults. The concussion law is an opportunity to make playing sports safer for Tennessee's young athletes.

For student athletes, baseline testing takes place during the pre-season, ideally prior to the first practice and is conducted by a trained health care professional. Baseline tests are used to assess an athlete's balance and brain function (including learning and memory skills, ability to pay

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<sup>7</sup> "Health care provider" means a Tennessee licensed medical doctor, osteopathic physician, clinical neuropsychologist with concussion training, or physician assistant with concussion training who is a member of a health care team supervised by a Tennessee licensed medical doctor or osteopathic physician.



attention or concentrate, and how quickly he or she thinks and solves problems), as well as to check for the presence of any concussion symptoms. Results from baseline tests (or pre-injury tests) can be used and compared to a similar exam conducted by a health care professional during the season if an athlete has a suspected concussion.

It is important to note that some baseline and concussion assessment tools are only suggested for use among athletes ages 10 years and older. Results from baseline testing can be used if an athlete has a suspected concussion. Comparing post-injury test results to baseline test results can assist health care professionals in identifying the effects of the injury and making more informed return to school and play decisions.

*Sources:*

CDC. (2020, August 31). *Heads Up*. <http://www.cdc.gov/HeadsUp/>

CDC. (2015, February 16). FAQs about Baseline Testing.

[http://www.cdc.gov/headsup/basics/baseline\\_testing.html](http://www.cdc.gov/headsup/basics/baseline_testing.html)

## **Concussion: Baseline Screening Program: Student Athletes**

If baseline testing is used, research suggests that most components of baseline testing be repeated annually to establish a valid test result for comparison. Baseline computerized or paper-pencil neuropsychological tests may be repeated every two years. However, more frequent neuropsychological testing may be needed if an athlete has sustained a concussion or if the athlete has a medical condition that could affect the results of the test. Baseline testing should include a check for concussion symptoms, as well as balance and cognitive (such as concentration and memory) assessments. Computerized or paper-pencil neuropsychological tests may be included as a piece of an overall baseline test to assess an athlete's concentration, memory, and reaction time.

### **Tips for setting up a Successful Baseline Concussion Screen**

1. When creating the Baseline Concussion Screening program involves the school health personnel, community partners and athletic department personnel (athletic directors, coaches, coaches' assistant, athletic trainers etc.) in the process.
2. Information sheets should be provided by the individual school's athletic department to parent/guardians regarding baseline testing.
3. Each student-athlete's baseline concussion test results are kept on file with the school.
4. Schools may begin testing at any time prior to the season. Ideally tests should be administered prior to the first practice. However, tests for individual student-athletes must be completed prior to participation in their competition against another school, whether it is a scrimmage or game.
5. Only a trained health care professional with experience in concussion management should interpret the results of a baseline exam.
6. Any player who exhibits signs or symptoms consistent with a concussion shall be removed from the practice or contest and shall not return to play until cleared by an authorized health care provider. The clearance must be signed.
7. The player's parent/guardian shall be informed that their child may have suffered a concussion and shall be advised to take their child to an authorized health care provider as soon as possible.



8. Appropriate school personnel, including administrators, athletic director, athletic trainer, school nurse, and classroom teacher, will be informed of the injury.
9. Appropriate follow-up will be initiated, including potential academic accommodations.
10. Education should always be provided to athletes and parents/guardians if an athlete has a suspected concussion. This should include information on safely returning to school and play, tips to aid in recovery such as rest, danger signs, and when to seek immediate care, and how to help reduce an athlete's risk of a future concussion.

*Resources:*

[CDC Heads Up](#)

[HEADS UP to Schools: School Nurses](#)

[HEADS UP to Schools](#)

[HEADS UP to High School Sports: Online Training](#)

[HEADS UP to Youth Sports: Online Training](#)

[TBI Toolkit for School Nurses](#)

[TBI Training Channel for School Nurses](#)

### ***Parent/Guardian Notification***

Parents should be informed that their child may have suffered a concussion and be advised to take their child to an authorized health care provider as soon as possible. The parents will be issued a form for medical clearance for a suspected head injury. If the child is a student athlete, then refer to the [Tennessee Sports Concussion Law](#) which requires a youth athlete to be cleared by a licensed health care provider before returning to play or practice.

The form should include procedures on how the student-athlete may obtain clearance to resume participation in physical education classes and sports activities. The form must be completed and signed by an authorized health care provider. The completed form is returned to the designee over the program when the student-athlete returns to school. Each student's screening result, referral, and follow-up should be documented in the student's school health record.

# Appendix A: Screening Results for School Record

## Sample Screening Results Forms for School Records

### SCREENING RESULTS

School: \_\_\_\_\_ Birthdate: \_\_\_\_\_

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_

Routine Screening  Special Ed Request  
 Teacher/Parent/Guardian Request  Rescreening

---

**Vision:**  Glasses  Contacts

**Last Exam:**  > One Year  < One Year

**Glasses:**  Broken  Lost  Not Wearing  Refuses to Wear

**R FAR:** Acuity 20/\_\_\_\_ **L FAR:** Acuity 20/\_\_\_\_

**R NEAR:** Acuity 20/\_\_\_\_ **L NEAR:** Acuity 20/\_\_\_\_

**Muscle Balance:**

Passed  Failed

Comment: \_\_\_\_\_

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**Hearing:**  History of hearing loss/surgery  PE Tubes

Hearing Aid (s)  Rescreening

**Audiometry:**  Pass  Fail

**Otoscope:**  Cerumen  Drainage  Erythema  Infected/Ruptured Eardrum

R Hz Freq 1000\_\_\_\_ R Hz Freq 2000\_\_\_\_ R Hz Freq 4000\_\_\_\_

L Hz Freq 1000\_\_\_\_ L Hz Freq 2000\_\_\_\_ L Hz Freq 4000\_\_\_\_

Comment: \_\_\_\_\_

---

**Dental:**

\_\_\_\_ 1. Immediate Care is recommended for:

Pain  Extensive Decay  Severe Gum Inflammation

\_\_\_\_ 2. Care is recommended as soon as possible for:

Obvious Decay  Gum Inflammation  Damaged Filling

\_\_\_\_ 3. Care is recommended when possible for:

Symptoms of Early Decay  Routine Cleaning/Exam needed

Comment: \_\_\_\_\_

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**Vital Statistics:**

**Blood** \_\_\_\_\_ **Pressure:** \_\_\_\_\_ **Height:** \_\_\_\_\_ inches **Weight:** \_\_\_\_\_ lbs.  
\_\_\_\_\_/\_\_\_\_

**Pulse:** \_\_\_\_\_ **BMI:** \_\_\_\_\_

---

<b>Vision</b>	<b>Hearing</b>	<b>Dental</b>	<b>BP</b>	<b>BMI</b>	<b>Scoliosis</b>
Passed <input type="checkbox"/>	Passed <input type="checkbox"/>	Passed <input type="checkbox"/>	Passed <input type="checkbox"/>	Normal for age/height <input type="checkbox"/>	Passed <input type="checkbox"/>
Failed <input type="checkbox"/>	Failed <input type="checkbox"/>	Failed <input type="checkbox"/>	Failed <input type="checkbox"/>	Low for age/height <input type="checkbox"/>	Failed <input type="checkbox"/>
Referred <input type="checkbox"/>	Referred <input type="checkbox"/>	Referred <input type="checkbox"/>	Referred <input type="checkbox"/>	High for age/height <input type="checkbox"/>	Referred <input type="checkbox"/>
Retest <input type="checkbox"/>	Retest <input type="checkbox"/>	Retest <input type="checkbox"/>	Retest <input type="checkbox"/>		Retest <input type="checkbox"/>

## Scoliosis Medical Screening Form for School Records

Date of Screening: \_\_\_\_\_

Scoliosis Screening Findings: \_\_\_\_\_ Within Normal Limits      \_\_\_\_\_ Referred (indicate findings below)

L	R	L	R
		Shoulder blade more prominent than other	High Shoulder blade
		Obvious curve of spine in upper back	Rib hump
		Obvious curve of spine in lower back	High shoulder
		Obvious curve of spine in aera of rib cage	Hip higher than other side
		Waist to arm space greater	Other:

\_\_\_ Rounded back      \_\_\_ Uneven on best test by \_\_\_ degrees

Screener's name (print): \_\_\_\_\_

Check one:    \_\_\_ Volunteer            \_\_\_ Teacher            \_\_\_ Clinic Asst.            \_\_\_ School Nurse  
                   \_\_\_ Health Dept. Employee    \_\_\_ Other (Specify) \_\_\_\_\_

Comments from screener:

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## Hearing Screening Form for School Records

Student Last Name: \_\_\_\_\_ First: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_ School: \_\_\_\_\_

School System: \_\_\_\_\_ Date: \_\_\_\_\_

Pure Tone Screening			
	1000 Hz	2000 Hz	4000Hz
<b>RIGHT EAR:</b>			
<b>LEFT EAR:</b>			
<b>Screening Level</b>	(20db HL)	(20db HL)	(20 db HL)

√ = Pass

\_\_\_\_\_ Pass \_\_\_\_\_ Could not screen

\_\_\_\_\_ Rescreen \_\_\_\_\_ Absent

\_\_\_\_\_  
(Screener's Signature)



Rescreen Date: \_\_\_\_\_

Pure Tone Screening			
	1000 Hz	2000 Hz	4000Hz
<b>RIGHT EAR:</b>			
<b>LEFT EAR:</b>			
<b>Screening Level</b>	(20db HL)	(20db HL)	(20 db HL)

√ = Pass

\_\_\_\_\_ Pass

\_\_\_\_\_ Further testing indicated

\_\_\_\_\_  
(Screener's Signature)

## Hearing Screening Program Re-Screening Worksheet for School Records

Name: \_\_\_\_\_ Age: \_\_\_\_ Grade: \_\_\_\_ Teacher: \_\_\_\_\_

Parents: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Healthcare Provider: \_\_\_\_\_

Conditions Indicative of Possible Hearing Loss: (teacher observations and health history)

Frequent earaches: R \_\_\_\_ L \_\_\_\_ Both \_\_\_\_

Date of re-screen:		
Frequency	R	L
1000		
2000		
4000		
6000 (optional)		

- \_\_\_\_ Repeated colds
- \_\_\_\_ Cold today
- \_\_\_\_ Sore throat today
- \_\_\_\_ Discharge from ear more than once
- \_\_\_\_ Discharge from ear today
- \_\_\_\_ Complains of loud, constant ringing in ears
- \_\_\_\_ Hearing problems or deafness in family
- \_\_\_\_ Inattentive
- \_\_\_\_ Slow responding
- \_\_\_\_ Repeating grade
- \_\_\_\_ Says "huh?" or "what?" often
- \_\_\_\_ Speech defect "baby talk"
- \_\_\_\_ Omits letters
- \_\_\_\_ Substitutes letters
- \_\_\_\_ Garbled speech
- \_\_\_\_ Too soft
- \_\_\_\_ Too loud
- \_\_\_\_ Too high pitched
- \_\_\_\_ Too low pitched

Referred by nurse to:

- \_\_\_\_ Family
- \_\_\_\_ Primary Care Provider
- \_\_\_\_ ENT Specialist
- \_\_\_\_ Speech/Language Pathologist
- \_\_\_\_ Audiologist
- \_\_\_\_ Other

# Appendix B: Parent/Guardian Notification and Referral Forms

## ***Parent/Guardian Screening Results Notification Form***

\_\_\_\_\_ School System

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_

School: \_\_\_\_\_

Dear Parent/Guardian:

Your child recently participated in a vision, hearing, body mass index and blood pressure encouraged by the State of Tennessee. They are effective in revealing common vision and hearing deficiencies, dental problems, and developmental trends. Our school system also screens for scoliosis and oral health issues. It does not substitute for a professional examination.

YOUR CHILD **SCREENED WITHIN NORMAL LIMITS** THE FOLLOWING:

- Vision
- Hearing
- Body Mass Index (BMI)
- Blood Pressure
- 
- Scoliosis
- Dental

If your child did not screen within normal limits on one or more of the above screens, you will be notified by phone and a referral form.

# Parent/Guardian Screening Results Notification Form

\_\_\_\_\_ SCHOOL SYSTEM  
Address: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Student Name: \_\_\_\_\_ Date: \_\_\_\_\_  
Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

Dear Parent/Guardian:

Your child recently participated in a vision, hearing, body mass index and blood pressure encouraged by the State of Tennessee. These screenings are effective in revealing common vision and hearing deficiencies, dental problems, and developmental trends. Our school system also screens for scoliosis and oral health issues. These screening do not substitute for a professional examination.

YOUR CHILD **SCREENED WITHIN NORMAL LIMITS** THE FOLLOWING:

- Vision     Hearing     Body Mass Index (BMI)     Blood Pressure     Scoliosis     Dental

A **RESCREEN** WILL BE PERFORMED BY NURSING SERVICES FOR:

- Vision     Hearing     Blood Pressure

WE HAVE ISSUED A **REFERRAL** FOR **VISION**

For the above REFERRAL our observations for your child are listed below. If your child is not under the care of a medical provider, we strongly encourage you to make an appointment for a complete examination and any needed treatment. If your child has already been seen for the above referral, please ask them to fax a report to

\_\_\_\_\_. If your child does not have a medical provider or if you need financial assistance, please call our office. Thank you for your prompt attention to this matter.

Please have the eye doctor complete the form below and mail or fax to the address above. Thank you.

---

**VISION RESULTS:**    Distance Acuity:    20/    20/                      Near Acuity (optional):    20/    20/

- Failed Functional Vision Testing: Muscle balance  
 Failed Functional Vision Testing: Depth Perception  
 Failed Color Perception Screening

**WE RECOMMEND YOUR CHILD RECEIVE AN EXAMINATION FROM AN EYE DOCTOR.**

**To be completed by eye doctor:**

This student was seen by me on \_\_\_\_\_ as per your referral. The following recommendations were made:

\_\_\_\_\_  
Glasses prescribed? Yes or No    Comments:

\_\_\_\_\_  
Vision Specialist Signature

\_\_\_\_\_  
Vision Specialist Phone Number



## Parent/Guardian Screening Results Notification Form

\_\_\_\_\_ SCHOOL SYSTEM

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

Dear Parent/Guardian:

Your child recently participated in a vision, hearing, body mass index and blood pressure encouraged by the State of Tennessee. These screenings are effective in revealing common vision and hearing deficiencies, dental problems, and developmental trends. Our school system also screens for scoliosis and oral health issues. These screening do not substitute for a professional examination.

YOUR CHILD **SCREENED WITHIN NORMAL LIMITS** THE FOLLOWING:

Vision  Hearing  Body Mass Index (BMI)  Blood Pressure  Scoliosis  Dental

A **RESCREEN** WILL BE PERFORMED BY NURSING SERVICES FOR:

Vision  Hearing  Blood Pressure

WE HAVE ISSUED A **REFERRAL** FOR **HEARING**

For the above REFERRAL our observations for your child are listed below. If your child is not under the care of a medical provider, we strongly encourage you to make an appointment for a complete examination and any needed treatment. If your child has already been seen for the above referral, please ask them to fax a report to

\_\_\_\_\_. If your child does not have a medical provider or if you need financial assistance, please call our office. Thank you for your prompt attention to this matter.

Please have the hearing specialist complete the form below and mail or fax to the address above.

Thank you.

**HEARING RESULTS:**  Failed Audiometry

Signs of Infection:  Pain  Discharge  Wax  Erythema

\_\_\_\_1. Immediate Care is recommended for the acute symptoms marked above

\_\_\_\_2. Follow-up is recommended as soon as possible for a suspected hearing problem

**WE RECOMMEND YOUR CHILD RECEIVE AN EXAMINATION FROM A PHYSICIAN OR AUDIOLOGIST.**

**To be completed by physician or audiologist:**

This student was seen by me on \_\_\_\_\_ as per your referral. The following recommendations were made:

Medication/PE Tubes/Hearing Aids prescribed: Circle One: Yes or No

Comments: \_\_\_\_\_

\_\_\_\_\_  
Hearing Specialist Signature

\_\_\_\_\_  
Hearing Specialist Phone Number

## Parent/Guardian Screening Results Notification Form

\_\_\_\_\_ SCHOOL SYSTEM

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

Dear Parent/Guardian:

Your child recently participated in a vision, hearing, body mass index and blood pressure encouraged by the State of Tennessee. These screenings are effective in revealing common vision and hearing deficiencies, dental problems, and developmental trends. Our school system also screens for scoliosis and oral health issues. These screening do not substitute for a professional examination.

YOUR CHILD **SCREENED WITHIN NORMAL LIMITS** THE FOLLOWING:

Vision     Hearing     Body Mass Index (BMI)     Blood Pressure     Scoliosis     Dental

A **RESCREEN** WILL BE PERFORMED BY NURSING SERVICES FOR:

Vision     Hearing     Blood Pressure

WE HAVE ISSUED A **REFERRAL** FOR **BODY MASS INDEX (BMI)**

For the above REFERRAL our observations for your child are listed below. If your child is not under the care of a medical provider, we strongly encourage you to make an appointment for a complete examination and any needed treatment. If your child has already been seen for the above referral, please ask them to fax a report to \_\_\_\_\_. If your child does not have a medical provider or if you need financial assistance, please call our office. Thank you for your prompt attention to this matter.

Please have the doctor complete the form below and mail or fax to the address above. Thank you.

### **BMI RESULT**

Call the Coordinated School Health Office \_\_\_\_\_ for your child's results.

**WE RECOMMEND YOUR CHILD RECEIVE AN EXAMINATION FROM A PHYSICIAN**

### **To be completed by physician:**

This student was seen by me on \_\_\_\_\_ as per your referral. The following recommendations were made:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Physician Signature

\_\_\_\_\_  
Physician Phone Number

## Parent/Guardian Screening Results Notification Form

\_\_\_\_\_ SCHOOL SYSTEM

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

Dear Parent/Guardian:

Your child recently participated in a vision, hearing, body mass index and blood pressure encouraged by the State of Tennessee. These screenings are effective in revealing common vision and hearing deficiencies, dental problems, and developmental trends. Our school system also screens for scoliosis and oral health issues. These screening do not substitute for a professional examination.

YOUR CHILD **SCREENED WITHIN NORMAL LIMITS** THE FOLLOWING:

Vision  Hearing  Body Mass Index (BMI)  Blood Pressure  Scoliosis  Dental

A **RESCREEN** WILL BE PERFORMED BY NURSING SERVICES FOR:

Vision  Hearing  Blood Pressure

WE HAVE ISSUED A **\*REFERRAL** FOR **BLOOD PRESSURE**

For the above REFERRAL our observations for your child are listed below. If your child is not under the care of a medical provider, we strongly encourage you to make an appointment for a complete examination and any needed treatment. If your child has already been seen for the above referral, please ask them to fax a report to

\_\_\_\_\_. If your child does not have a medical provider or if you need financial assistance, please call our office. Thank you for your prompt attention to this matter.

Please have the doctor complete the form below and mail or fax to the address above. Thank you.

---

### BLOOD PRESSURE RESULT

Date of screen: \_\_\_\_/\_\_\_\_/\_\_\_\_ Blood Pressure Reading: \_\_\_\_/\_\_\_\_

### WE RECOMMEND YOUR CHILD RECEIVE AN EXAMINATION FROM A PHYSICIAN

\*Referral was based on the American Academy of Pediatrics' guidelines for screening and management of high blood pressure in children and adolescents.

#### **To be completed by physician:**

This student was seen by me on \_\_\_\_\_ as per your referral. The following recommendations were made:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Physician Signature

\_\_\_\_\_  
Physician Phone Number

## Parent/Guardian Screening Results Notification Form

\_\_\_\_\_ SCHOOL SYSTEM

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

Dear Parent/Guardian:

Your child recently participated in a vision, hearing, body mass index and blood pressure encouraged by the State of Tennessee. These screenings are effective in revealing common vision and hearing deficiencies, dental problems, and developmental trends. Our school system also screens for scoliosis and oral health issues. These screening do not substitute for a professional examination.

YOUR CHILD **SCREENED WITHIN NORMAL LIMITS** THE FOLLOWING:

Vision     Hearing     Body Mass Index (BMI)     Blood Pressure     Scoliosis     Dental

A **RESCREEN** WILL BE PERFORMED BY NURSING SERVICES FOR:

Vision     Hearing     Blood Pressure

WE HAVE ISSUED A **REFERRAL** FOR **SCOLIOSIS**

For the above REFERRAL our observations for your child are listed below. If your child is not under the care of a medical provider, we strongly encourage you to make an appointment for a complete examination and any needed treatment. If your child has already been seen for the above referral, please ask them to fax a report to

\_\_\_\_\_. If your child does not have a medical provider or if you need financial assistance, please call our office. Thank you for your prompt attention to this matter.

Please have the specialist complete the information below and mail or fax to the address above.

Thank you.

### SCOLIOSIS SCREEN RESULT

Your child was given a posture check to screen for curvature of the spine. Your child has signs of a possible curve listed below. This does not mean your child has scoliosis. Only a physician can make that diagnosis. It is recommended that your child have a complete evaluation by your pediatrician or family physician. After the doctor has examined your child and completed this form, please return it to school.

#### School Screening Findings:

L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	Shoulder blade more prominent than other	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Obvious curve of spine in upper back	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Obvious curve of spine in lower back	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Obvious curve of spine in area of rib cage	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Waist to arm space greater	<input type="checkbox"/>
			High Shoulder blade
			Rib hump
			High shoulder
			Hip higher than other side
			Other:

\_\_\_ Rounded back    \_\_\_ Uneven on best test by \_\_\_ degrees

Other: \_\_\_\_\_

**To be completed by physician:**

This student was seen by me on \_\_\_\_\_ as per your referral. The following recommendations were made:

---

---

\_\_\_\_\_  
Physician Signature

\_\_\_\_\_  
Physician Phone Number

## Parent/Guardian Screening Results Notification Form

\_\_\_\_\_ SCHOOL SYSTEM

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Student Name: \_\_\_\_\_ Date: \_\_\_\_\_

Teacher: \_\_\_\_\_ Grade: \_\_\_\_\_ School: \_\_\_\_\_

Dear Parent/Guardian:

Your child recently participated in a vision, hearing, body mass index and blood pressure encouraged by the State of Tennessee. These screenings are effective in revealing common vision and hearing deficiencies, dental problems, and developmental trends. Our school system also screens for scoliosis and oral health issues. These screening do not substitute for a professional examination.

YOUR CHILD **SCREENED WITHIN NORMAL LIMITS** THE FOLLOWING:

Vision  Hearing  Body Mass Index (BMI)  Blood Pressure  Scoliosis  Dental

A **RESCREEN** WILL BE PERFORMED BY NURSING SERVICES FOR:

Vision  Hearing  Blood Pressure

WE HAVE ISSUED A **REFERRAL** FOR **DENTAL**

For the above REFERRAL our observations for your child are listed below. If your child is not under the care of a medical provider, we strongly encourage you to make an appointment for a complete examination and any needed treatment. If your child has already been seen for the above referral, please ask them to fax a report to

\_\_\_\_\_. If your child does not have a medical provider or if you need financial assistance, please call our office. Thank you for your prompt attention to this matter.

Please have the specialist complete the form below and mail or fax to the address above. Thank you.

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### ORAL HEALTH RESULT

\_\_\_\_ 1. Immediate Care is recommended for:

Pain  Extensive Decay  Severe Gum Inflammation

\_\_\_\_ 2. Care is recommended as soon as possible for:

Obvious Decay  Gum Inflammation  Damaged Filling

\_\_\_\_ 3. Care is recommended when possible for:

Symptoms of Early Decay  Routine Cleaning/Exam needed

**WE RECOMMEND YOUR CHILD RECEIVE AN EXAMINATION FROM A DENTIST**

**To be completed by dental provider:**

This student was seen by me on \_\_\_\_\_ as per your referral. The following recommendations were made:

\_\_\_\_\_  
Physician Signature

\_\_\_\_\_  
Physician Phone Number