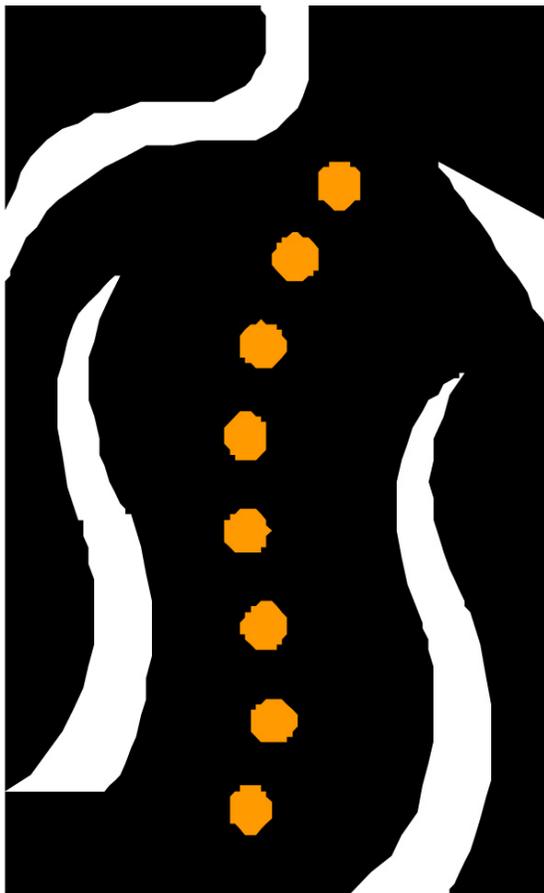


2017

# Utah School Spinal (Scoliosis) Screening Guidelines



Utah Department of Health  
Healthy Living Through Environment, Policy,  
and Improved Clinical Practice

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## **School Spinal (Scoliosis) Screening Guidelines**

### **INTRODUCTION**

School spinal (scoliosis) screening was developed to identify adolescents with small spinal curves and refer them for treatment before these curves become too severe. Many states do some form of spinal screening to assure students needing evaluation and/or treatment get early attention. The State of Utah does not mandate spinal screening, but does require each local school board to implement rules developed by the Department of Health (UCA 53A-11-201).

If the school has one nurse assigned full-time, screening may be considered worth the expense; however, most schools share a nurse with up to 15 other schools. For this reason, along with the high amount of false-positives from screening tests, the time and cost involved, and the minimal need for significant intervention, the Utah Department of Health recommends against routine school scoliosis screening in Utah.

Scoliosis is an abnormal curvature of the spine. The purpose of screening is to detect scoliosis at an early state when it is believed treatment can be most effective in preventing the progression of the disease.

Routine school scoliosis screening began in the late 1950's (Karachalios, Theofilos, Nikolaos, Papageloupoulos, & Karachalios, 2000), but has recently come under fire. In 2004, the U.S. Preventive Services Task Force recommended against routinely screening asymptomatic patients, stating the screening was ineffective finding a number of false-negatives and false-positives (U.S. Preventive Services Task Force (USPSTF), 2004). These false-positives resulted in avoidable expense and anxiety, and has not decreased the likelihood of those students screened needing surgery, with the majority of students identified needing minimal or no follow-up (Jakubowski & Alexy, 2014). Many believe that the routine school scoliosis screening to be based more on tradition than evidence.

Another study found there was insufficient evidence to support school scoliosis screening stating that most cases do not progress enough to require treatment, cases needing treatment are likely to be detected without school screening, and false-positives often result in unnecessary X-rays and medical appointments (Honeyman, C. 2014), as well as painful and unnecessary brace wear (Linker, 2012).

### **SCHOOL SPINAL (SCOLIOSIS) SCREENING**

If school scoliosis screening is to be done, personnel should be educated on the correct way to screen to minimize unnecessary referrals. Currently, the Adams Forward Bend Test with use of a scoliometer is thought to be an effective way to measure abnormalities. The Scoliosis Research Society (SRS) recommends that students found to have a five to seven degree deformity be the threshold for a positive screening (2015). Karachalios, et al. (2000) recommend that eight degrees or more be the criteria for referral, but also don't believe school screenings are the best way to detect scoliosis because over-referral is common, and progressive curves are rare.

The SRS recommends that girls be screened twice at ages 10 and 12 (5<sup>th</sup> and 7<sup>th</sup> grade), and boys be screened once at age 13 or 14 (8<sup>th</sup> or 9<sup>th</sup> grade) (Hresko, Talwalkar & Schwend, 2015), although methods and locations of screenings vary. Screenings can be done in schools by school nurses, PE teachers, or other qualified healthcare professionals; or is often done during a routine physical examination by the student's healthcare provider. Parents can also be made aware of signs to watch for that may indicate a spinal deformity.

Most all cases have no known cause and are referred to as idiopathic scoliosis. It commonly affects young people between the ages of 10 and 16 years of age. Idiopathic scoliosis can go unnoticed in a young person because it is rarely painful in the formative years.

### **SPINAL (SCOLIOSIS) SCREENING PROCESS**

The screening process identifies students that may have some physical findings that suggest a spinal curve. The screening process does not diagnose a spinal deformity. The student showing these findings is referred to a healthcare provider who completes an extensive examination and then will likely take x-rays to confirm whether or not the student has an abnormal spinal curve. At that point, the healthcare provider can provide recommendations for treatment.

Parents must be notified before students can be screened, and have the right to deny screening. This can be done through active or passive permission slips. Students already under treatment should not be screened

The room in which the screening is done should have sufficient lighting and the floor should be level. Boys and girls must be screened separately in an area that accommodates the need for privacy. It is recommended that students wear gym clothes, ideally wearing shorts to allow better visualization of the waist, hips, and legs. Boys should remove their shirts, and girls should be wearing a bra, bathing suit, or camisole. If the girl is wearing a camisole, it should be rolled up so the examiner can visualize the upper back. Girls should keep their shirt on until in a private area, and then can be instructed to either take the shirt off, or pull it up around their neck with their arms out of the sleeves, with the shirt hanging in front of them. Girls not wearing a bra, bathing suit, or camisole should not remove their shirt. There should always be a minimum of two adults present for security/liability concerns. The most common area to conduct the screening is in a middle school or junior high locker room.

1. The student begins by standing erect (shoulders back, head up, gaze ahead, arms hanging loosely at their sides, knees straight, and facing away with their back to the screener). The student should not look backward since this can cause a change in the findings. Long hair should be moved forward to allow full view of the student's back. The screener should check for the following:
  - One shoulder higher than the other
  - One shoulder blade higher or more prominent than the other
  - One hip higher than the other

- Space between arms and body greater on one side
  - Waist creases uneven
  - Obvious lateral curvature of the spine
  - Observe from either left or right side for kyphosis (increased curve of thoracic spine) or lordosis (increased curve in lumbar area)
2. The next position is the Adams Forward Bend Test. With palms together, chin to the chest, the student bends forward until the back is horizontal. Screeners should check for:
    - Asymmetry of two sides of the back
    - Rib prominence
  3. The final portion is using a scoliometer. This is considered best practice and should be used if at all possible. It is similar to a carpenter's level and designed to measure the degree of spinal rotation.
    - Hold the scoliometer with the number "0" directly over the top ridge of the spine
    - Do not press down as this will distort the reading
    - A reading should be taken at both the thoracic and lumbar spine

### **CRITERIA FOR REFERRAL**

To minimize unnecessary referrals, the school nurse should screen those with positive findings a second time. This can be done the same time as the original screening by having the student stand up and reposition, or can be done another day. Criteria for referral include:

- Eight degrees or more on scoliometer
- A combined reading (thoracic and lumbar) of 10 degrees or more
- Obvious curvature of the spine (or kyphosis or lordosis)
- Two or more of the following:
  - Shoulder or scapula asymmetry
  - Space between arms and body greater on one side
  - One hip higher than the other
  - Waist creases uneven

### **DOCUMENTATION**

All results should be documented either electronically or on paper. Those with positive findings (above) should have a referral sent to parent or guardian. Referral should be to a medical physician (MD or DO), and not to a chiropractor. The school nurse should maintain a record of students who were referred for a professional examination, and those that were excluded from screening (for any reason). Sample referral letters are included in the appendix.

Lists of students referred to a medical physician do not need to be sent to the Utah Department of Health.

## **MANAGEMENT**

Management of spinal deformities will typically consist of either observation, bracing, or surgical intervention. The majority of students with scoliosis require no treatment other than observation (Jakubowski & Alexy, 2014). Alternative treatments have not been successful in preventing curves from progressing. These include electrical muscle stimulation, exercise programs, manipulation, massage, and magnets.

### **SHOULD THE SCHOOL PROVIDE THE SCREENING?**

The current Utah law states that the decision for schools to provide the screening should be determined at the local school board level. These guidelines have been established by the Utah Department of Health to help local school boards that choose to implement school scoliosis screening. The local school board, with input from their school nurses, should review the most current research to make the decision whether to screen or not.

The USPSTF (2004) states that most cases of scoliosis are obvious and would be found in the student's regular visits with their healthcare provider. If the school has one nurse assigned full-time, routine school scoliosis screening may be considered worth the expense; however, most schools share a nurse with up to 15 other schools. For this reason, along with the high amount of false-positives, the time and cost involved, and the minimal need for significant intervention, the Utah Department of Health recommends against routine school scoliosis screening in Utah.

If the local school board decides to implement screening, the above guidelines should be followed. If the decision is made to not provide school scoliosis screening, a letter or flyer should be sent home with students in 5<sup>th</sup> or 6<sup>th</sup> grade containing more information on scoliosis (sample in appendix).

APPENDIX

**SAMPLE ACTIVE PERMISSION LETTER**

**SCOLIOSIS SCREENING PERMISSION LETTER**

XXXX School

PRINT Student Name: \_\_\_\_\_ Grade \_\_\_\_\_

Scoliosis screening will be conducted in the \_\_\_\_\_ grade P.E. classes under the direction of the District's School Nurses.

The purpose of scoliosis, or postural screening, is to detect signs of spinal curvature at the earliest stages so that the need for treatment can be determined. Scoliosis is a side-to-side curve of the spine and is the most common spinal abnormality. It is usually detected in childhood or early adolescence by the student's primary care provider. Some schools may choose to have the school nurses also screen for spinal abnormalities. Most cases of spinal curvatures are mild and require only ongoing observation by a physician after the diagnosis has been made. Mild curvatures are often noticeable only to those trained in the detection spinal abnormalities. Others may become progressively more severe as the child continues to grow. Early treatment can prevent the development of a severe deformity which can later affect the health and appearance of the child.

The procedure for screening is simple. Screeners who have been specially trained will look at your child's back while he/she stands and then bends forward. **For this screening, *boys and girls will be seen separately and individually in a private area.***

**Boys must remove their shirt. Girls must also remove their shirt and must wear a bra (or camisole, or bathing suit top) or they cannot be screened. It is necessary for the entire back to be visible during the screening process. Shoes must also be removed.**

**You will be notified ONLY if medical follow-up is necessary.** This screening does not replace your child's need for regular health care and check-ups.

Please have your student return this form to his/her P.E. teacher before the screening day. If a student does not have a permission form, he/she will not be screened.

\_\_\_\_\_ I **DO** WANT MY STUDENT SCREENED FOR SCOLIOSIS

\_\_\_\_\_ I **DO NOT** WANT MY STUDENT SCREENED FOR SCOLIOSIS

Parent Signature \_\_\_\_\_ Date \_\_\_\_\_

\*\*\*\*\*

**For School Use:**

Scoliosis Screening Findings: \_\_\_ Within normal limits \_\_\_ Possible problem noted (indicate findings below)

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

\_\_\_\_\_ Rounded back (K=kyphosis, L=lordosis) \_\_\_\_\_ Uneven on bend test by \_\_\_\_\_ degrees  
 \_\_\_\_\_ upper back \_\_\_\_\_ middle back \_\_\_\_\_ lower back

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

Nurse \_\_\_\_\_ Date \_\_\_\_\_

## SAMPLE INFORMATION LETTER

### Scoliosis Information

What is Scoliosis? Scoliosis is a side-to-side curving of the spine. It is a developmental defect and not the result of poor posture habits. 80% of scoliosis cases are idiopathic (no known cause) but it is known to be more common in some families, suggesting hereditary factors.

Idiopathic scoliosis starts as a slight bend in a growing child's spine. It may remain slight and non-progressive, or it may progress over time, sometimes rapidly during the adolescent growth years, ages 10 to 15. About 10% of people have a very mild form of scoliosis that will need no treatment and many times is unnoticeable to anyone not trained to examine for it. About 1% will have a progressive condition and need some medical treatment. In the developing stage the spine stays flexible and there is no pain to indicate progression.

Significant curves that are unstable will continue to advance in adulthood. Left untreated, scoliosis can cause obvious physical deformity, pain, arthritic symptoms, and heart and lung complications and can also limit physical activity.

If detected early, scoliosis can be treated before it becomes a physical or emotional disability. Frequent signs of scoliosis are: a prominent shoulder blade, uneven hip and shoulder levels, unequal distance between arms and body, uneven hemlines, and clothes that do not hang right.

Home screening tests can be done with the child having no shirt on. For girls, a bra or a swimsuit that is low enough in back to show the lumbar spine (lower back) will be OK.

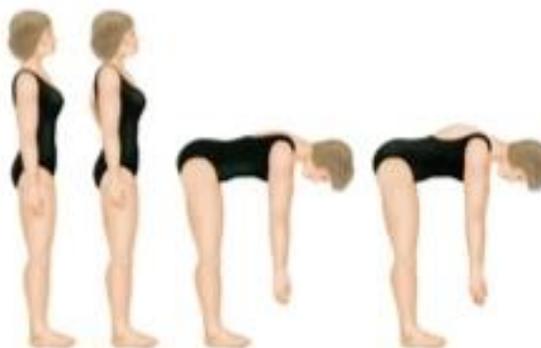
While your child is standing facing away from you look at the child's back and answer these questions:

1. Is one shoulder higher than the other, or is one shoulder blade more prominent?
2. When his/her arms hang loosely at her sides, does one arm swing away from the body more than the other?
3. Is one hip higher or more prominent than the other?
4. Does the child seem to tilt to one side?
5. Do you see an obvious curve?

THEN: ask your child to bend forward, with arms hanging down and palms together at knee level. Can you see a hump on the back at the ribs or near the waist?

If your answer to any of these questions is "yes", you should contact your doctor to verify your findings.

Screenings are routinely done by your healthcare provider at a well-child exams, and are recommended twice for girls at age 10 and 12, boys once at age 13-14.



**SAMPLE PARENT REFERRAL LETTER**

Spinal Screening Program  
Parent Notification and Referral

Parent or Guardian of: \_\_\_\_\_ Grade: \_\_\_\_\_ Date: \_\_\_\_\_

Students in our schools were recently screened for a curve of the spine that can appear during the years of rapid growth between ages 10 and 16 years. Your child has signs of a possible curve listed below.

This does not mean your student 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. If you cannot afford a doctor or have questions, contact the school for information.

Thank you for your cooperation,

School Screening Findings:

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 area of rib cage			Hip higher than other side
		Waist to arm space greater			Other:

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

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

<p><b>Physical Examination Report</b></p> <p>Diagnosis: _____</p> <p>Recommendation:</p> <p>___ No treatment</p> <p>___ Observation only                      Follow-up appointment scheduled (date): _____</p> <p><u>Treatment</u></p> <p>Describe: _____</p> <p>Activity limitations: _____</p> <p>Additional</p> <p>Comments: _____</p> <p>Doctor's Signature/stamp: _____ Date: _____</p> <p>Doctor's Mailing Address/Phone: _____</p>	
<p><b>For School Use:</b></p> <p>Form completed and returned (name/date): _____</p> <p>Form not returned (reason): _____</p>	

## **UTAH LAW**

53A-11-201. Rules for examinations prescribed by Department of Health -- Notification of impairment.

- (1) (a) Each local school board shall implement rules as prescribed by the Department of Health for vision, dental, abnormal spinal curvature, and hearing examinations of students attending the district's schools.
  - (b) Under guidelines of the Department of Health, qualified health professionals shall provide instructions, equipment, and materials for conducting the examinations.
  - (c) The rules shall include exemption provisions for students whose parents or guardians contend the examinations violate their personal beliefs.
- (2) The school shall notify, in writing, a student's parent or guardian of any impairment disclosed by the examinations.

53A-11-202. Personnel to perform health examination.

A local school board may use teachers or licensed registered nurses to conduct examinations required under this chapter and licensed physicians as needed for medical consultation related to those examinations.

## DEFINITIONS

**Abnormal spinal curvature:** an anatomic, structural deviation from the normal spine curve, such as scoliosis, kyphosis, or lordosis.

**Cervical spine:** neck portion of the spine

**Forward Bend Test:** procedure used to assess the possible presence of abnormal spinal curvature (also known as the Adams Forward Bend Test).

**Idiopathic:** a condition with no known cause.

**Kyphosis:** abnormally increased roundness in the spine of the upper back as viewed from the side; also known as round back, hunchback, or humpback.

**Lordosis:** abnormally increased curvature in the spine of the lower back as viewed from the side; also known as sway back.

**Lumbar spine:** portion of the spine in the small of the back, or lower back.

**Scoliometer:** an apparatus for measuring the clinical deformity of patients with scoliosis.

**Screening:** a test or procedure to determine the need for a professional diagnostic examination.

**Thoracic spine:** the chest area or upper part of the spine.

## **RESOURCES**

Scoliometers can be obtained from most school supply companies.

Shriners Hospitals for Children – Salt Lake City

<http://www.shrinershospitalsforchildren.org/en/Locations/saltlakecity>

## REFERENCES

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These guidelines were written in conjunction with UCA 53A-11-201 and replace previous guidelines from 2009.



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