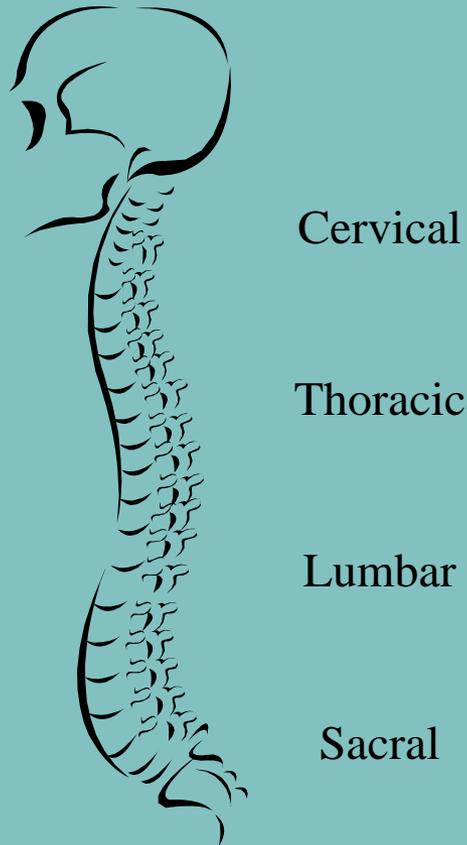




# **SPINAL SCREENING TRAINING**

# The Normal Spine



- The spine is divided into four main areas: the **cervical, thoracic, lumbar and sacral** areas. When viewing the back directly from behind, the spine is straight, the shoulders even, hips are level and the distance between the arms and the body are equal.

# Abnormal Spinal Curvature



- Scoliosis is defined as an abnormal lateral curvature of the spine of 10 degrees or more. Scoliosis is further divided into two categories,
- Structural
- Functional

# Scoliosis (Continued)

## ■ Structural Scoliosis

These curves are the result of changes in the alignment of the vertebrae. This twisting results in the hump on one side of the rib cage when the student bends forward.

## ■ Functional Scoliosis

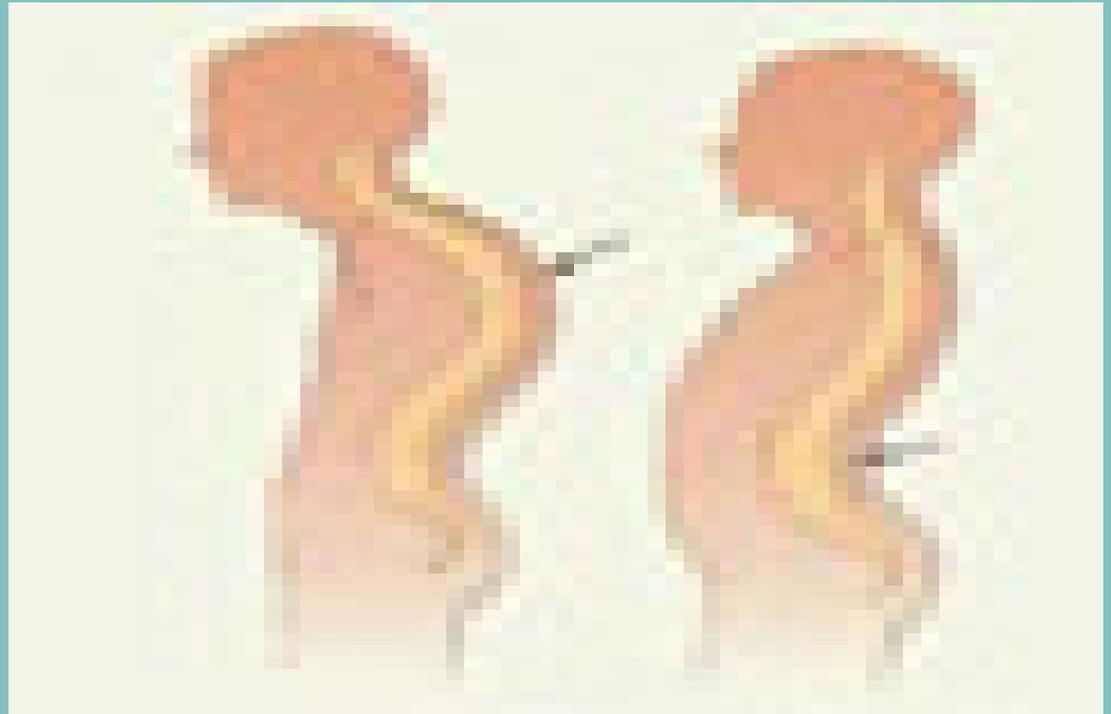
In this type there are no permanent changes in the shape or structure of the spine. It develops secondary to another abnormality usually in the hip or lower extremity.

# Incidence of Scoliosis

- Eighty-five percent of all cases of structural scoliosis have no known cause and are referred to as **idiopathic scoliosis**. It occurs in 2 to 3 % of the adolescent population. Commonly in ages 10 to 16. Ages 10 to 14 for girls and 12 to 16 for boys. Family history of scoliosis can also be a contributing factor.
- Carrying a heavy load such as books on one side cannot cause idiopathic scoliosis.

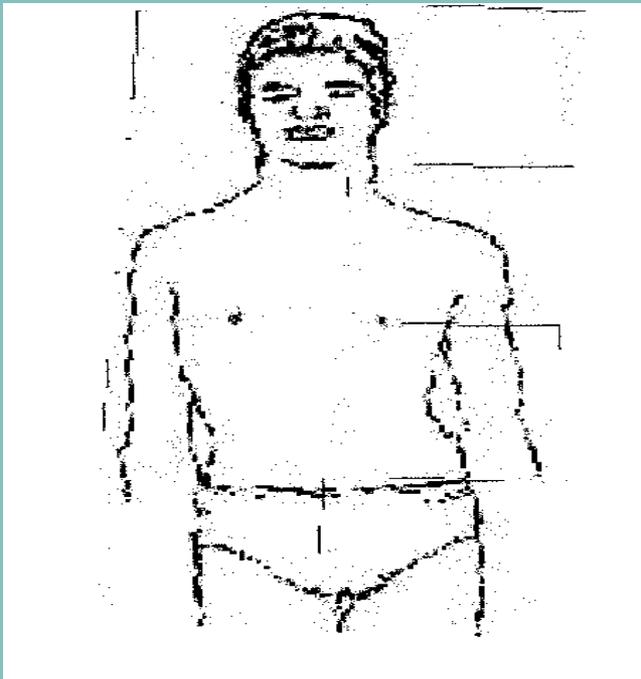
# Kyphosis

- Kyphosis or roundback, is an excessive curvature of the thoracic spine when viewed from the side.



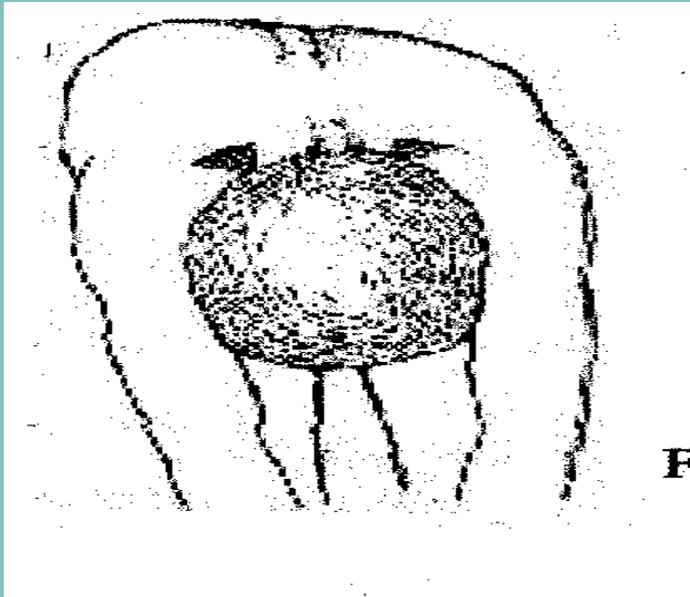
# Screening Steps 1-6

(1) With the student facing **front** in the standing position (Figure 6), the examiner checks for the following signs of a possible abnormal spinal curvature:



- One shoulder higher than the other
- Larger space from arm to the side of the body (compare both sides)
- Uneven waist creases
- Uneven hip levels

(2) The next position is the **Adams forward-bending test**. The student is standing erect with feet slightly apart and knees straight. With the palms of both hands touching, the student bends forward until the back is horizontal (Figure 7). Examine the student in this position to check for:

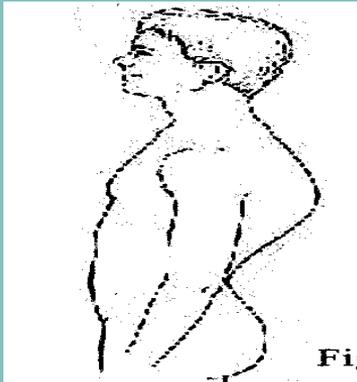


F

Figure 7

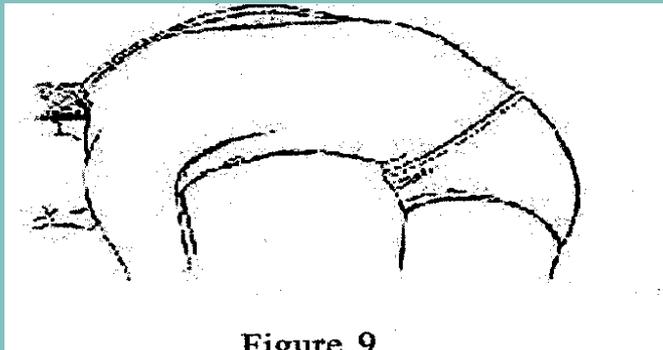
- Uneven contours, humps on one side
- Any curve in the spine

**(3)** View the student from the side in the standing position (Figure 8) and check for:



- Exaggerated roundness in upper back
- Exaggerated arch in lower back

**(4)** Next, view the student from the side in a forward-bend position (Figure 9) checking for:

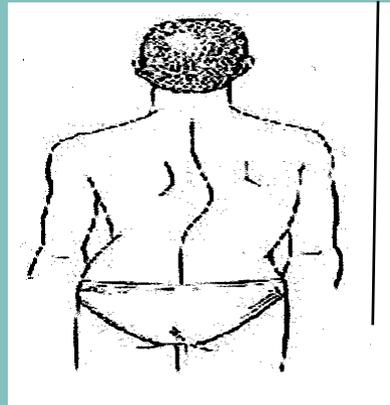


- Uneven contours, humps on one side
- Flexibility – can the student bend forward and touch upper shins or feet

(5) View the student from the **back** in the standing position (Figure 10) and note any of the following:

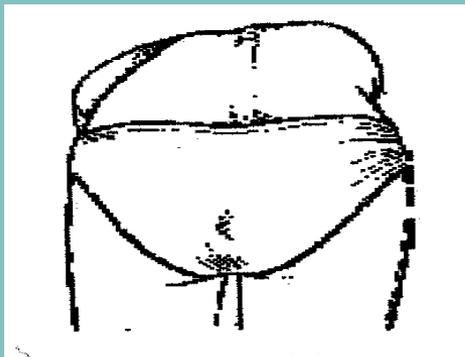
- Head is not centered directly above crease in buttocks

- One shoulder blade wing is higher or stands out more than the other
- Uneven waist creases
- Uneven hip levels



- One shoulder higher than the other
- Larger space from arm to the side of the body (comparing both sides)
- Curved spine

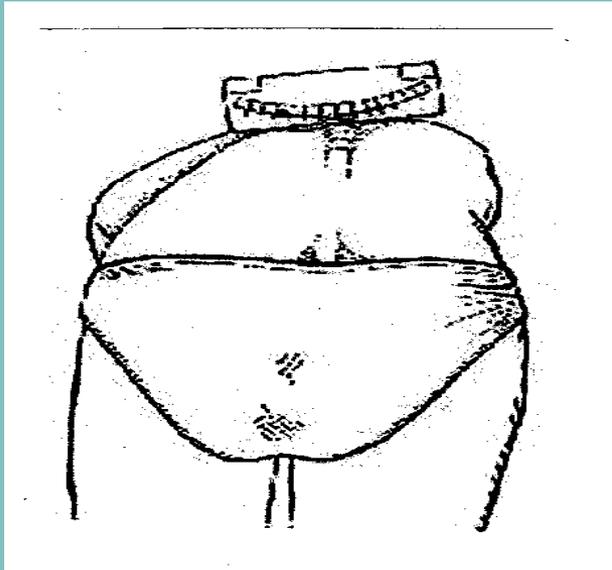
(6) Finally, view the student from the back in the forward-bending position (Figure 11) to check for:



- Uneven contours, humps on one side
- Any curve in the spine

**\*Students with any positive findings should be re-screened prior to referral.**

# ADVANTAGES OF THE SCOLIOMETER



- Easy and convenient to use
- Useful for monitoring small curves
- Reduces over-referrals
- Useful for beginner screeners
- Useful for the second screen only

# Referral Process

- School screening was developed to identify adolescents with small spinal curves and when the student is identified after the second screening a referral must be made using the **Spinal Screening Program Parent Notification and Referral Form** found in Appendix A.
- A referral is considered complete when the physician's evaluation is recorded on the child's health record.



# ■ Management Options



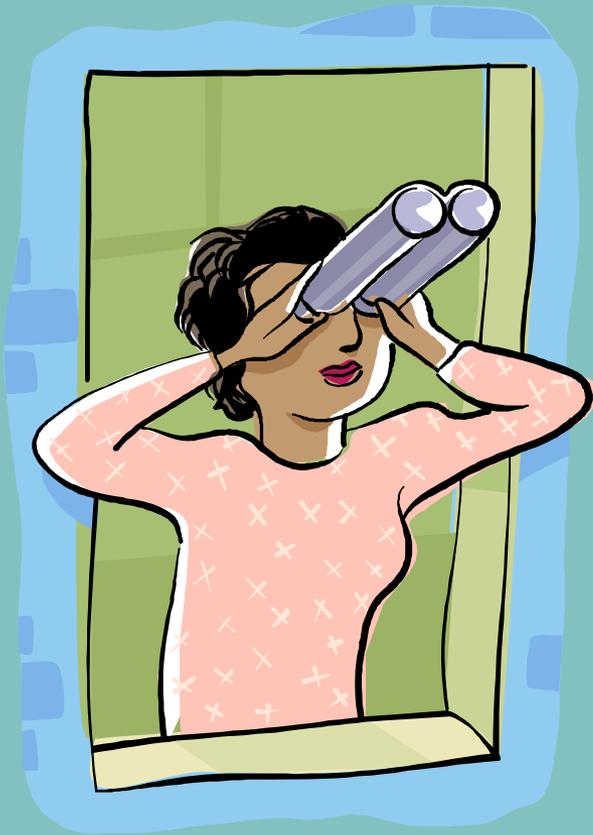
Management options for spinal deformities  
consist of the three “O”s

Observation

Orthosis (Brace)

Operation

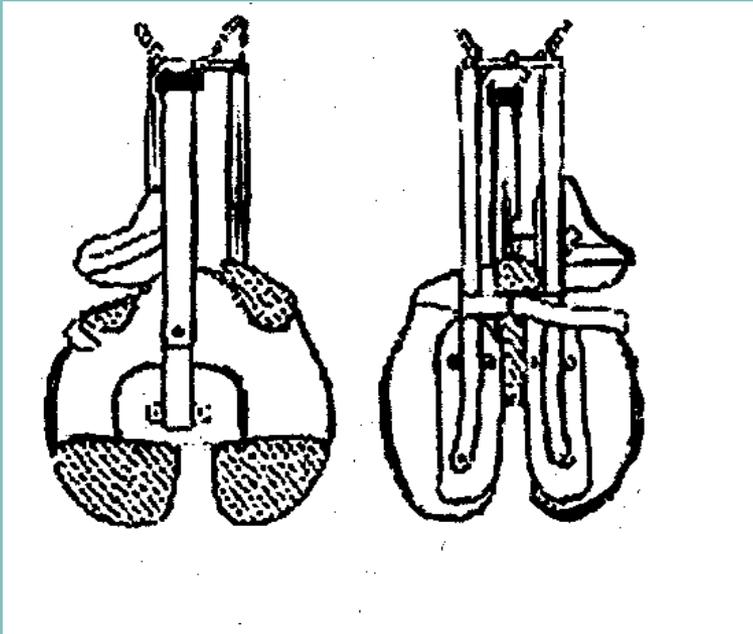
# ■ Observation



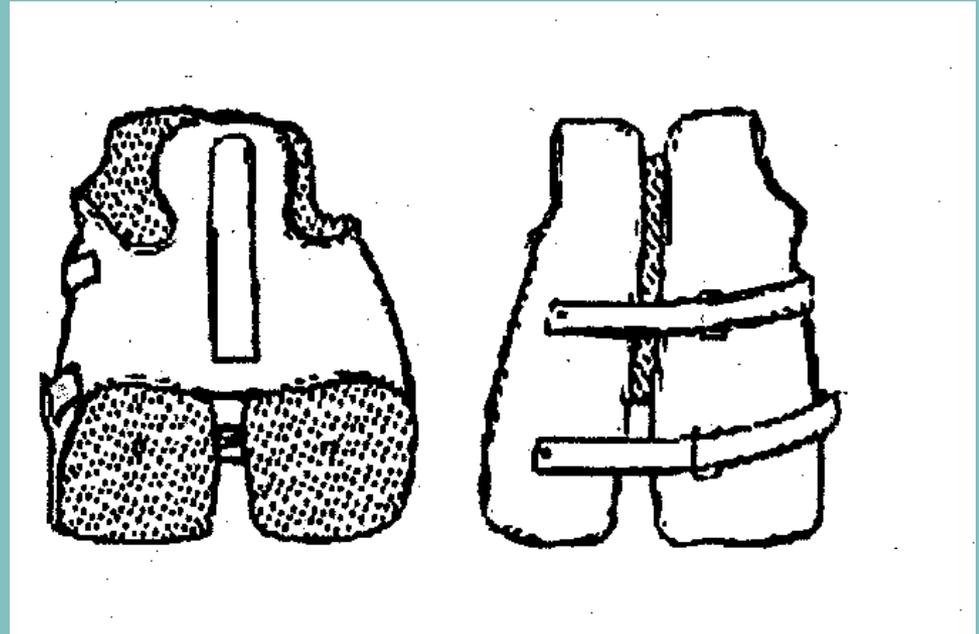
- Routine re-screening or observation by the physician is a form of treatment for mild curves. It is important to note that more than 90% of students with scoliosis require no treatment other than observation.

# Spinal Orthoses

Conventional Milwaukee  
Brace



TLSO Low Profile Orthosis



# Operation

- Spinal Fusion and Instrumentation. Usually surgery is reserved for teens and pre-teens that already have a curve of 45 degrees or more.



# Spinal Screening Programs

- In Texas, spinal screening is mandated by state law.
- Early detection and initiation of treatment can prevent the need for spinal surgery at a cost of tens of thousands of dollars.
- Early treatment also prevents the discomfort, need for physical rehabilitation, and interruption in schedule as surgery can result in a student missing from 2 to 6 weeks of school.

# Frequency of Screening

- The Texas Legislature has mandated all children in **grades 6 and 9** attending public and private schools shall be screened for abnormal spinal curvature before the end of the school year. Schools may implement a program that includes screening in **grades 5 and 8** as an alternative to grades 6 and 9.
- The intent of the state law is to maintain a **three year gap** between student spinal screenings.

Spinal Screening....



# Frequency of Screening

- In addition, the program allows for screeners to re-check students they consider to be at risk for developing an abnormal curve.
- A sign of possible abnormal curvature (though not enough to warrant referral), along with evidence that a student is in a rapid growth phase, would be criteria for rescreening that student on a more frequent interval, such as in six months, or during the next scheduled school spinal screening.

# Students with Physical Limitations

- If for some physical condition a student cannot stand in the manner necessary for the Adam's forward-bend test, do not attempt to screen that student. Ask the parents or legal guardian to request a medically appropriate spinal screening from the student's primary physician.
- You will need to request the results of this screening for the school's records and the DSHS Spinal Screening Report.
- On the Spinal Screening Report, indicate this student as a referral. Once the parents return the results of a physician's exam, enter the data into the diagnosis/treatment section as appropriate.

# Students Under Prior Treatment

- On receiving verification that a student is receiving on-going treatment for scoliosis, kyphosis or other spinal abnormality, then it is not necessary to screen that student. Record this student in the Under Prior Treatment column of the Spinal Screening Report.
- Do not record the student's diagnosis or treatment on the form.
- If unable to verify a student is under prior treatment for a spinal abnormality, then include the student in the school spinal screening.



## RESPONSIBILITIES OF THE DEPARTMENT OF STATE HEALTH SERVICES

- Provide certification training to non-health practitioners
- Approve spinal screening training programs
- Approve instructors
- Establish guidelines
- Coordinate activities with schools, voluntary organizations, etc.



## RESPONSIBILITIES OF THE DEPARTMENT OF STATE HEALTH SERVICES

- Monitor the quality of spinal screening activities
- Issue reporting forms
- Provide educational and other materials
- Keep a roster of approved instructors and screeners

# RESPONSIBILITIES OF THE SCHOOLS



- Screen in Grades 6 and 9 or  
Grades 5 and 8
- Obtain Affidavit of Exemption

# RESPONSIBILITIES OF THE SCHOOLS



- Parent notification and referral form (*Form M-53*)
- Provide proof of screening
- Submit annual report to the Department of State Health Services (*Form M-51*)

# SUSPENSION OR TERMINATION OF SCREENER STATUS

- Failure to maintain screeners status
- Failure to follow department guidelines
- Failure to report screening results
- Making unethical referrals
- Violation of the Family Educational Rights and Privacy Act

# ESTABLISHMENT OF A SCHOOL SCREENING PROGRAM

- Coordinate with school administration.
- Verify screeners are state-certified.
- Conduct an in-service educational program for school system resource personnel/administrators, pupil personnel, school physician nurses, physical educators, parent, and student representatives.

# ESTABLISHMENT OF A SCHOOL SCREENING PROGRAM

- Determine screening date and site
- Obtain necessary forms.
- Publicize screening program via local medical meetings, media, PTA, student groups, parent letter.
- Arrange and perform screening
- Complete follow-up activities.

# PREPARATION FOR SCREENING

- Students will be screened individually in an environment offering privacy. If possible, locate private area where students can remove shirt or change clothing.
- You may choose to have 2 adults participate in the screening process for security/liability concerns.
- Conduct orientation sessions for each class of students to be screened and determine whether separate days (one for boys; one for girls) or only one day will be needed.
- Send out pre-screening letter to parents (A, page 26).

# PREPARATION FOR SCREENING

- **Have a roster of students available using the Spinal Screening Worksheet (Appendix B, pg. A-30).**
- **Only children whose parents have submitted an affidavit of exemption may be excused from screening.**
- **If a parent chooses to have the screening done by their family doctor, verification from the doctor must be submitted.**
- **On the day before the scheduled screening, remind the students of the purpose of spinal screening. Instruct boys to wear gym shorts or swim trunks and girls to wear two-piece swimsuits or shorts and a halter-top.**

# SCREENING

- The screener may use a chair. There should also be a table nearby for use in recording information.
- Check students with no shirts on – Girls are examined with halter-top, swim top or sports bra on.
- Record the name of each student in the class on the Spinal Screening Worksheet or use the classroom roster.

# SCREENING

## Continued

- Arrange to re-screen students with positive or abnormal findings within two weeks, and screen those who missed the original sessions.
- Record all positive findings next to the student's name on the Spinal Screening Worksheet. If some students DO NOT get screened, note the reason next to his/her name.

# Spinal Screening Information

The most important factor in the treatment of spinal problems is early detection.

When screening, the student will be viewed both standing and bending over from front, side and back.

A referral is considered complete when the physician's evaluation is recorded on the child's health record.

Students who have been diagnosed with a spinal deformity should be encouraged to follow their treatment plan.

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## ■ For More Information

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