

# Postural Screening Program

**Area School Resource**  
**Updated March 2014**



**University Hospitals**



Rainbow Babies  
& Children's Hospital

# Postural Screening Program

To provide more background information for you when viewing this presentation, we have placed notes at the bottom of the slides. If you print a handout with notes, you will be able to read the self instruction text.

# Scoliosis

- Side to Side Curvature
- Rotation



## **Kyphosis (Round Back)**

## **Lordosis (Sway Back)**

# Scoliosis

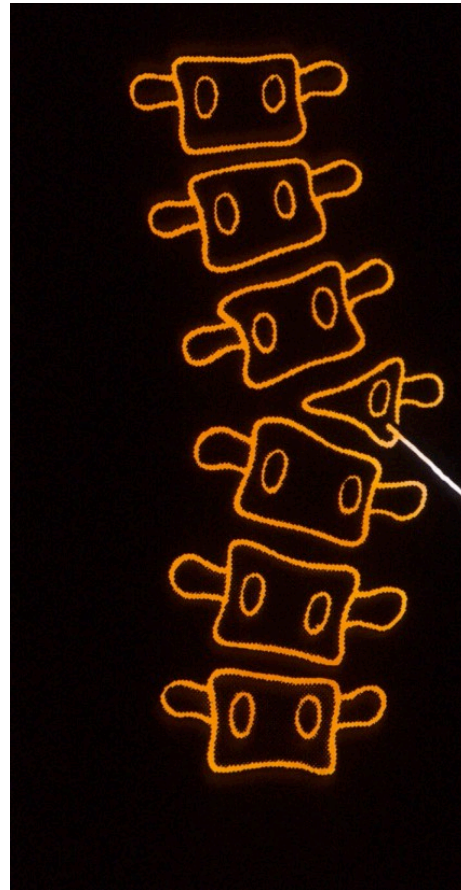
## Normal vs Kyphosis



# Scoliosis - Causes

- **Idiopathic (Unknown Cause) – 80%**
- **Congenital (Abnormal Formation of Vertebrae)**

# Congenital Scoliosis



**Hemivertebrae**

# Scoliosis - Causes

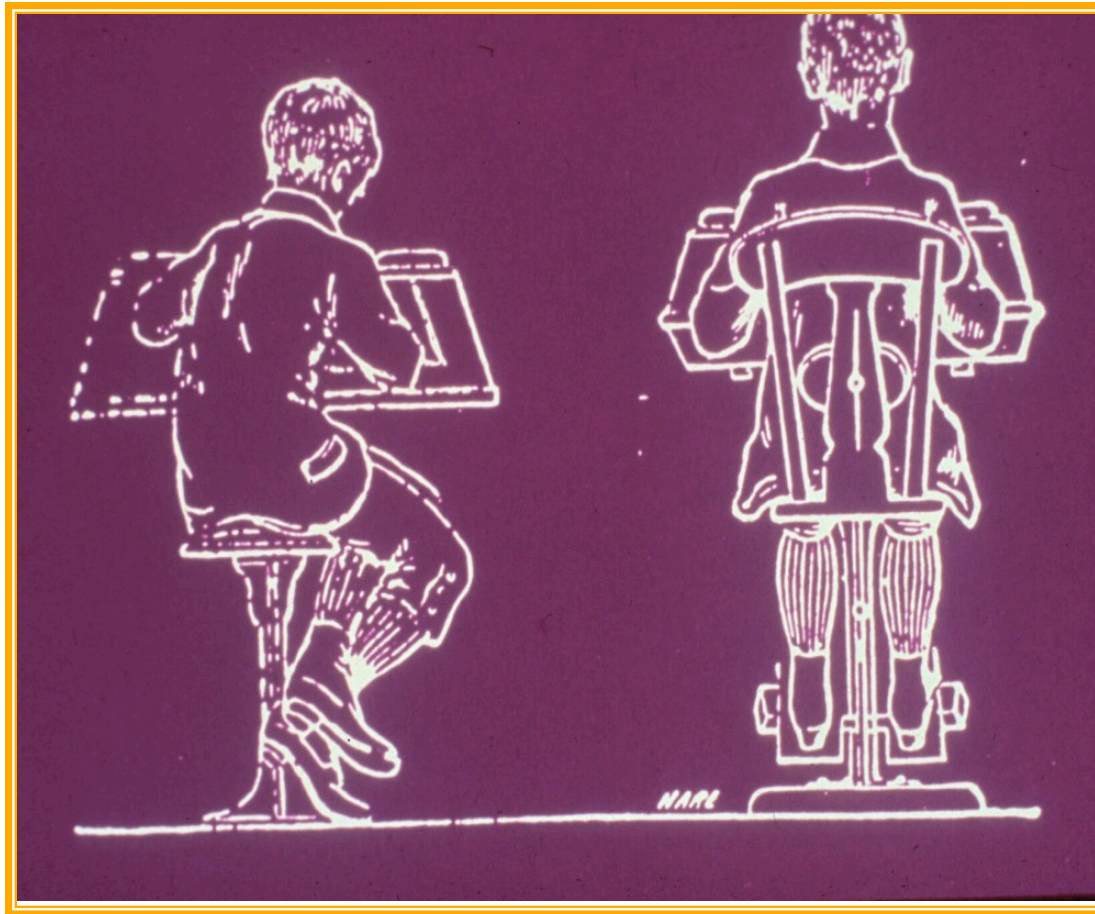
- **Neuromuscular (Muscle Weakness)**
- **Severe Injury (Paraplegia)**
- **Genetics**
- **Leg Length Discrepancy**



# Causes - Myths



# Causes - Myths

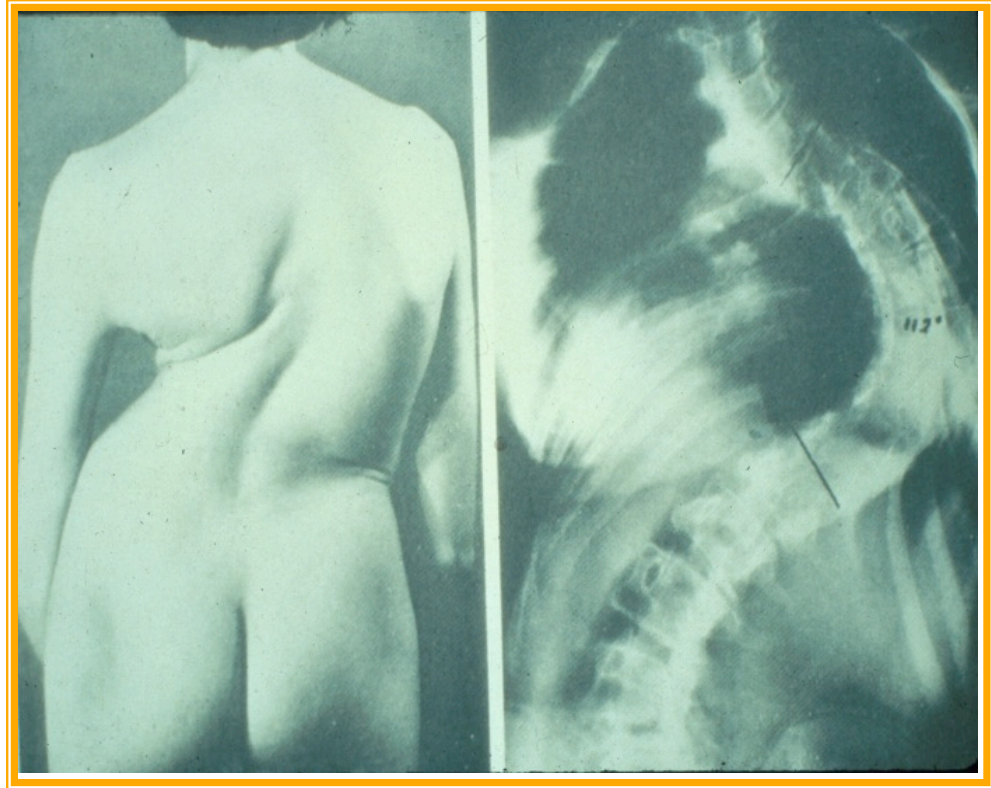


# Incidence

- **5% (1 in 20) Adolescents**
- **5% With Scoliosis Need Tx**
- **Boys = Girls**
- **20% Family History**

# Long Term Effects

- **Cosmetics**
- **Pulmonary**
- **Cardiac**
- **Functional Disability**

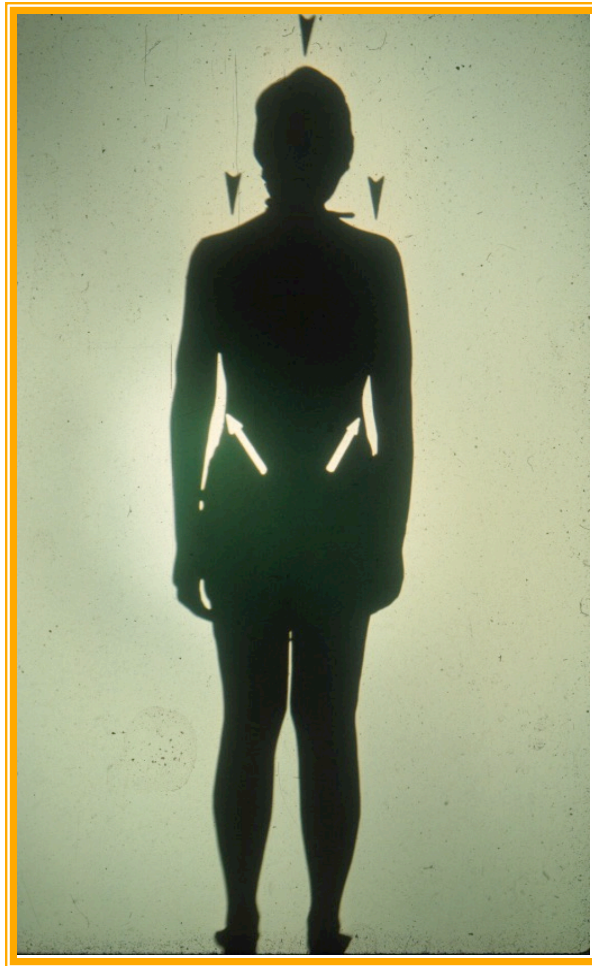


# Screening Procedure

- **Have Child Stand With Feet Together**
- **Knees Straight**
- **Arms at Side**
- **Facing Forward**
- **With Palms Together, Bend Forward**



# Normal Standing



**Head above buttocks**

**Shoulders level**

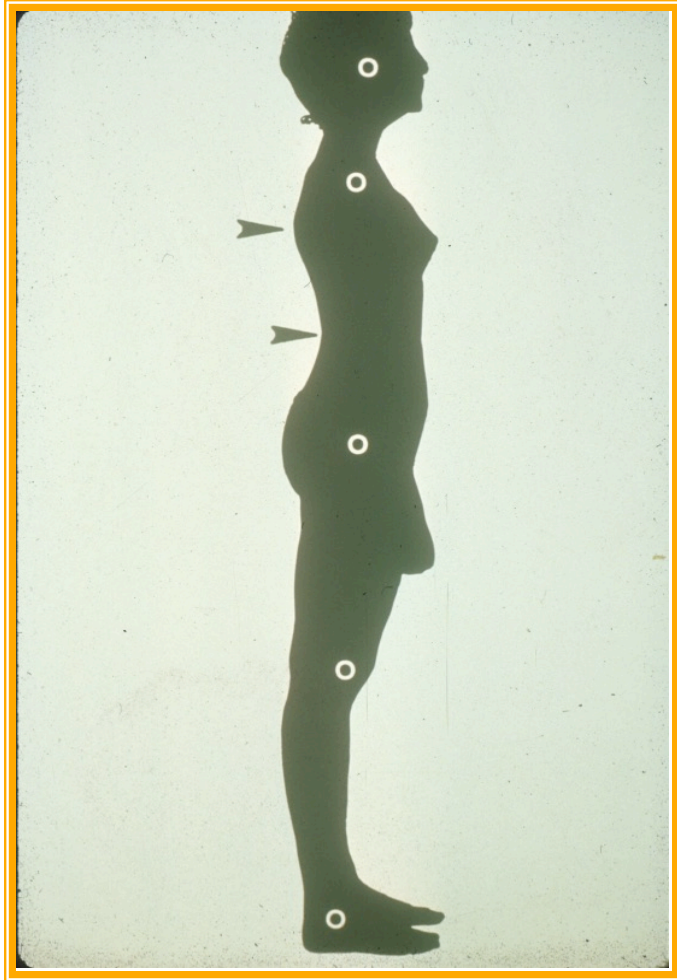
**Waistline symmetrical**

# Normal – Bending Forward



**Both sides  
Symmetrical**

# Normal – Lateral



**Shoulders above hips,  
knees and ankles**

**No increase Kyphosis  
No increase Lordosis**



## Normal Bend – Side



**Smooth arch of  
thoracic spine**

## Possible Signs of Scoliosis

- **Head is Not Centered Over the Buttocks**
- **A Shoulder or Shoulder Blade Higher**
- **A Curve in the Spine or Midline**
- **An Increase Space Between One Arm and Body (Uneven Waistline)**
- **Uneven Hips**
- **On Forward Bending a “Rib Hump” or Hump in the Back Area**

# Scoliosis



**One shoulder higher**

**Asymmetry of hips**

**Unequal distance  
between arms & body**



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# Scoliosis – Forward Bend



**Asymmetry on  
forward bend**

# Possible Signs of Kyphosis

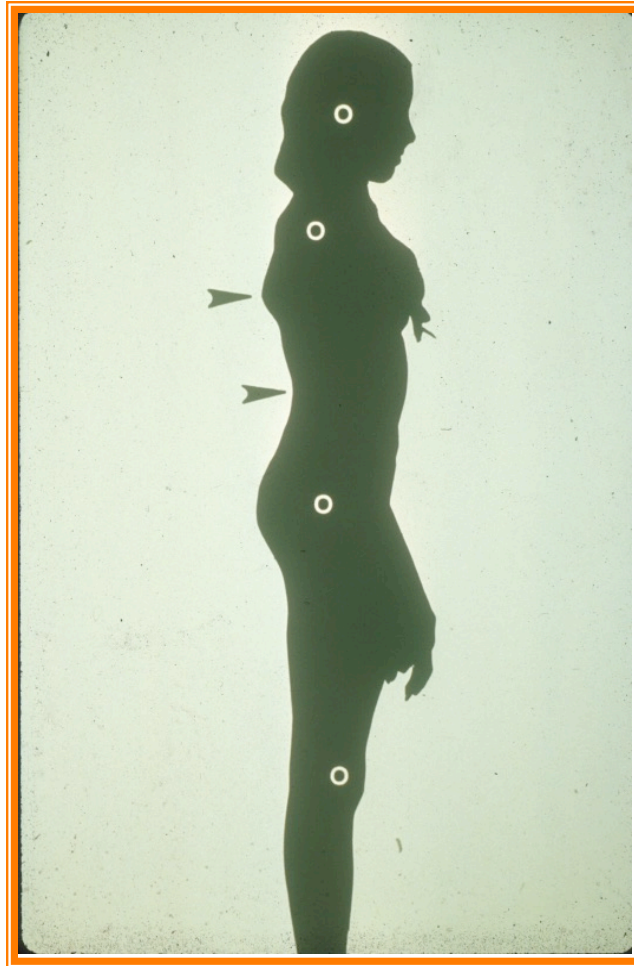
- Shoulders Hunch Forward Excessively
- Increase Rounding Of Spine in Thoracic Region
- Rounding is More Prominent On Forward Bending
- Increase Swayback

# Kyphosis

Head forward  
from body

Increase rounding

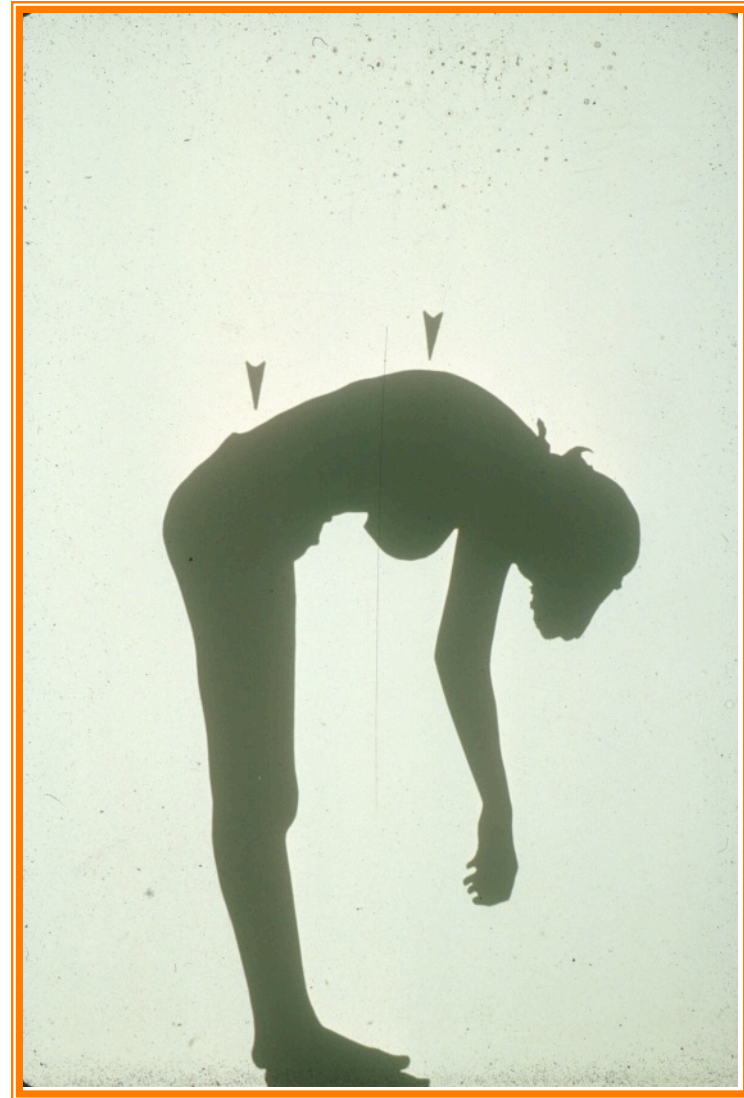
Increase lordosis





# Kyphosis – Forward Bend

Rounding prominent  
on Forward Bend



# Hands on, Clothes on Screen

- Look At and Feel With Your Hands
- Place Hands On Both Shoulders
- Place Thumbs Under The Shoulder Blades
- Place Hands On Both Sides Of Waistline
- Assist Child to Place Palms Together and Bend Forward



# Hands on, Clothes on Screen

- Boys *and* Girls Can Be Screened at the Same Time
- Decrease Anxiety with the Kids
- Screeners Feel More Confident With Results

# Place Hands on Shoulders

Look at your hands

Feel with your hands

Is one hand higher?



# Hands under Shoulder Blades

Is one hand looking more prominent?

Is one hand higher than the other?

Are thumbs pointing to each other?



# Hands on Waistline

Is one hip higher than the other?





# Scoliosis?

Head above buttocks?

Shoulders level?

Scapula symmetrical?

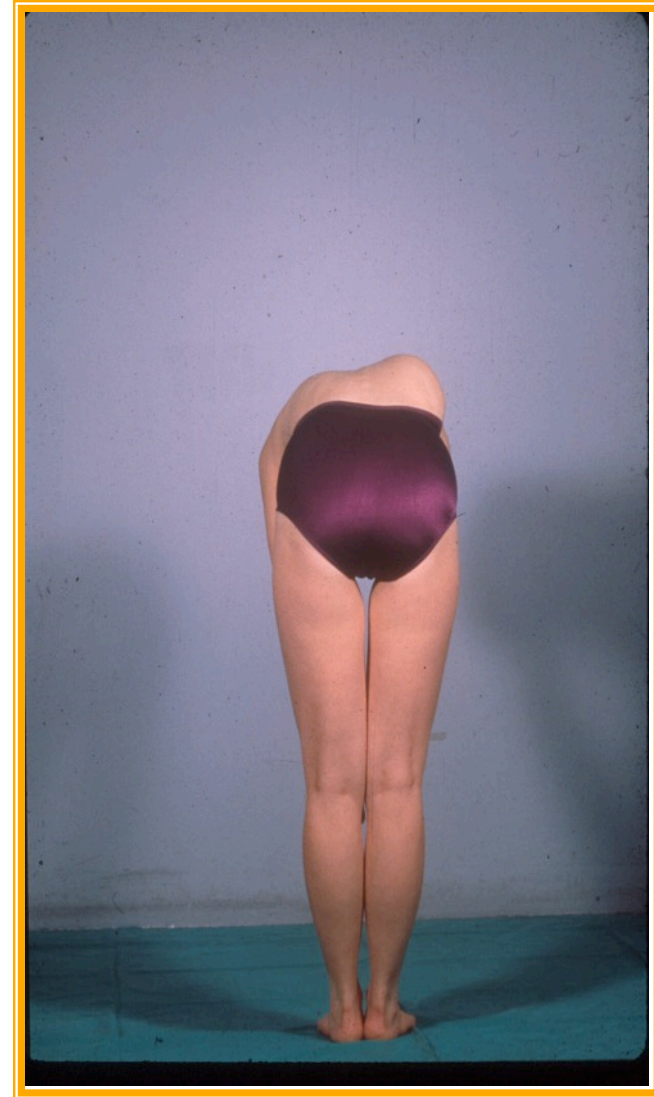
Waistline even?

Scoliosis suspected?



# Scoliosis

Rib hump  
confirms scoliosis



# Scoliosis?

Shoulders level?

Scapula symmetrical?

Waistline even?

Scoliosis suspected?



# Scoliosis?

Rib hump  
Confirms scoliosis





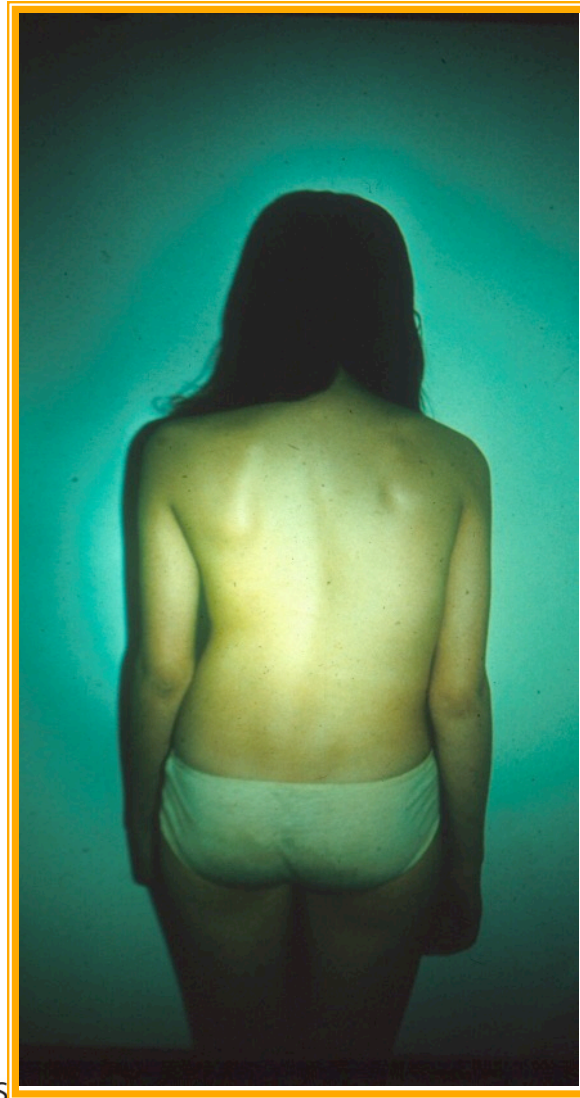
# Scoliosis?

Shoulders level?

Scapula symmetrical?

Waistline even?

Scoliosis suspected?



# Scoliosis

Rib hump  
Confirms scoliosis



# Scoliosis?

Shoulders level?

Scapula symmetrical?

Waistline even?

Scoliosis suspected?



# No Scoliosis

No rib hump  
No scoliosis



# Kyphosis?





# Kyphosis

Bending forward  
Confirms kyphosis



# What About Obese Children?



# Screening

Look at each person individually





# Screening

Scoliosis?



# Screening Handicapped Children

- Sit child in chair to level the pelvis
- Bend forward with arms between legs

# Scoliosis?

**If patient *ONLY* has an  
elevated shoulder,  
do not refer**

# Scoliosis?

**Pain is usually *NOT*  
associated with scoliosis.**

**There may be *Discomfort* with  
Kyphosis in the mid-thoracic  
spine.**

# Screening Organization

- Names By Grades (or Classes) in Alphabetical Order
- 3 Persons (2 Volunteers)
  - One To Screen
  - One To Document
  - One To Line Up Children
- Pass, Refer, Recheck, Absent



# Places to Screen

- Protect Privacy.....
- End of Lockers in Locker Room
- End of Bookshelves in a Library
- Nurses Office
- Hallway Outside Classroom
- Other

# Spinal Growth Females

- 11 yr - Spurts Begins  
(before breast and pubic hair)
- 12 yr – Peak
- 13 yr – Menarche (2/3 growth spurt over)
- 14yr – Spurt Over

# Spinal Growth Males

- Two years behind

## Observation/Exercise

- Mild Curves (10-25 Degrees)
- Clinical Examination Periodically Until End of Growth
- Exercise Alone Does *Not* Affect The Curve

# Bracing

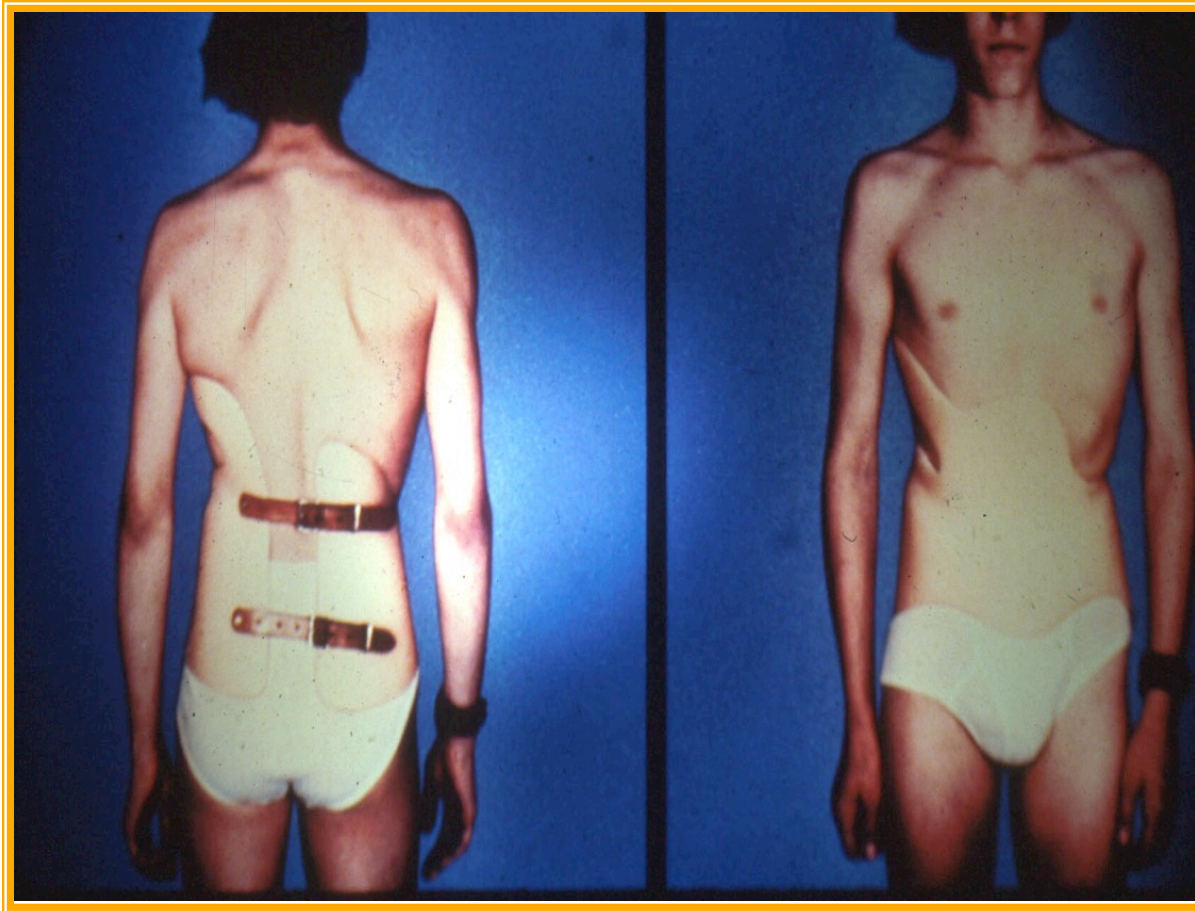
- Moderate Curvatures (25- 45 degrees)
- Purpose – To Prevent Moderate Curves From Growing Worse *While the Child is Still Growing*
- Does Not Improve The Curve
- 70% Effective



# Milwaukee Brace



# Lumbar Sacral Orthosis - LSO



# Nighttime Bending Brace



# Spine Fusion

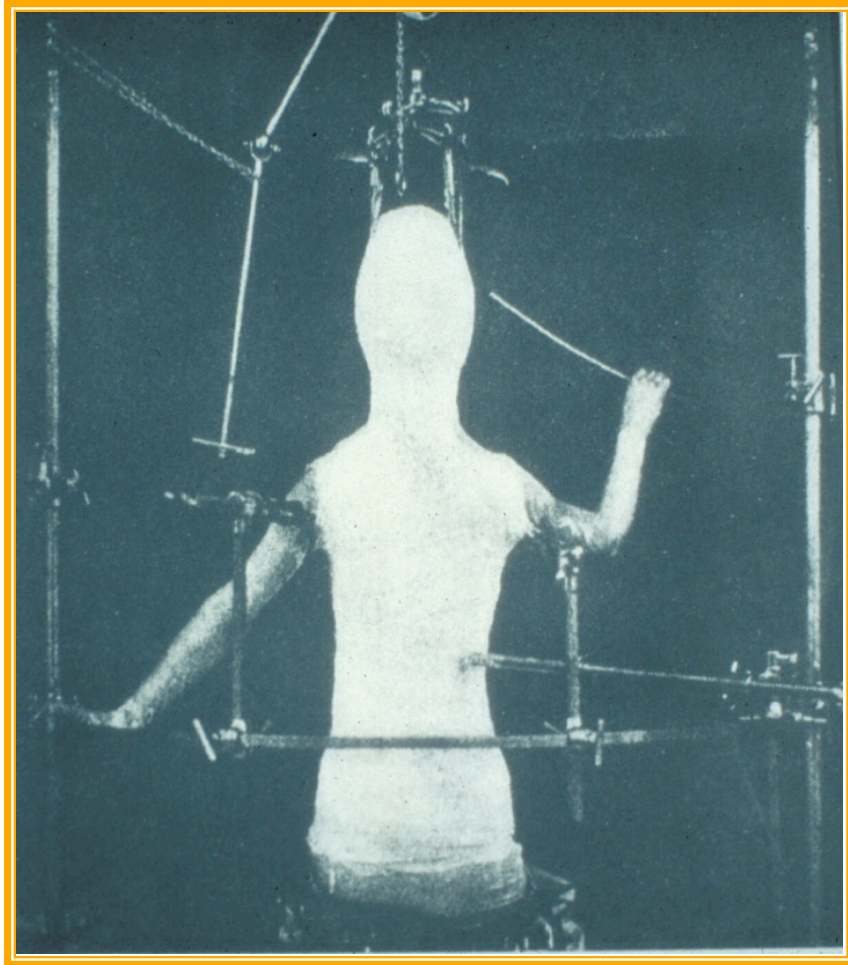
- Large Curves ( >45 degrees)
- Recommended When No Other Treatment Can Prevent The Curve From Getting Worse

# Purpose

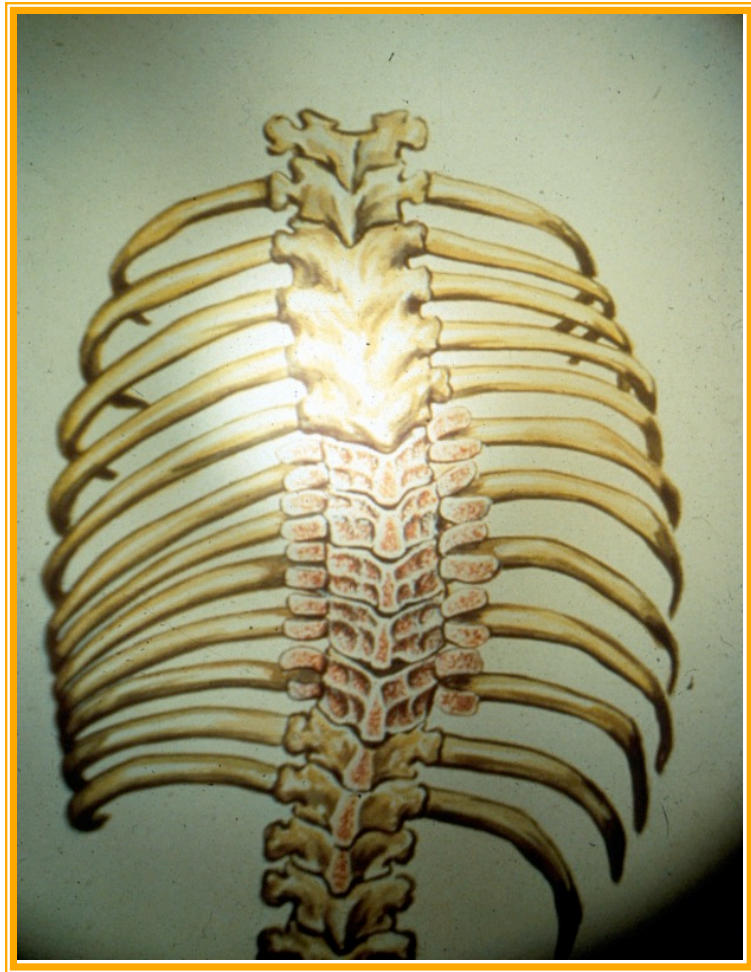
- To Stop The Curve From Getting Worse
- Straight vs Straighter
- Balance



# We've Come a Long Way



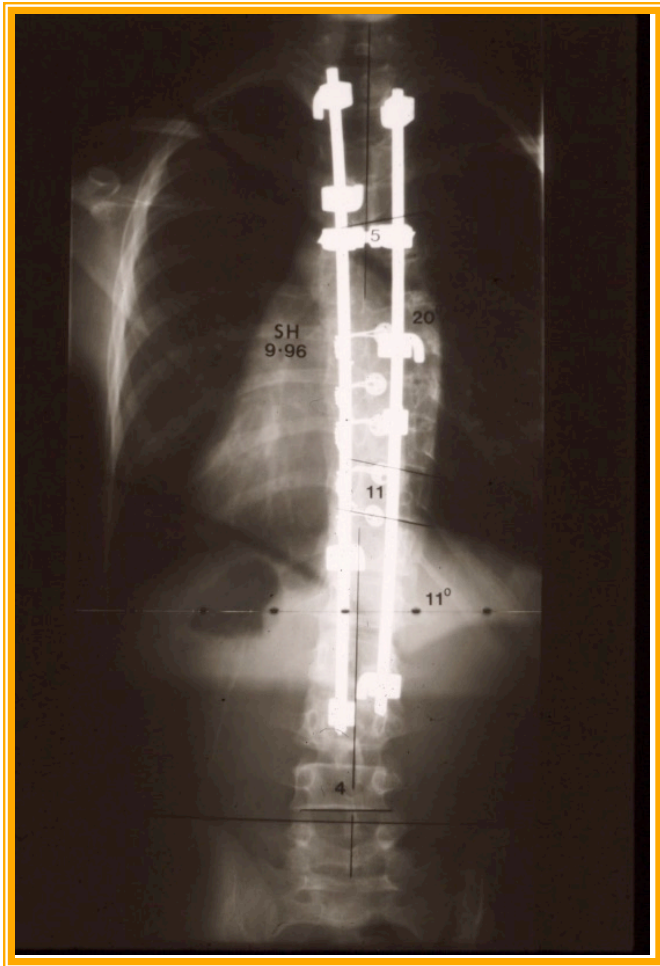
# Posterior Spine Fusion



# Pre-Op – Scoliosis



# Post-Op – Scoliosis





# Brown Belt Post-Op



# What Grades Should You Screen?

## Depends on Availability of Resources

- 4 Grades – 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>
- 3 Grades – 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>
- 2 Grades – 6<sup>th</sup>, 7<sup>th</sup>
- 1 Grade – 7<sup>th</sup>



## Resources

- National Scoliosis Foundation  
[www.scoliosis.org](http://www.scoliosis.org)  
1-800-673-6922  
“Growing Straighter and Stronger”
- Scoliosis Association, Inc  
[www.scoliosis-assoc.org](http://www.scoliosis-assoc.org)  
1-800-800-0669

## Resources

- Scoliosis Research Society  
[www.srs.org](http://www.srs.org)  
414-289-9107
- American Academy of Orthopaedic Surgeons  
The Orthopaedic connection  
[www.aaos.org](http://www.aaos.org)

# Resources

## **University Hospitals Rainbow Babies & Children's Hospital**

Division of Pediatric Orthopaedics

Connie Poe-Kochert CNP

216-844-5420

