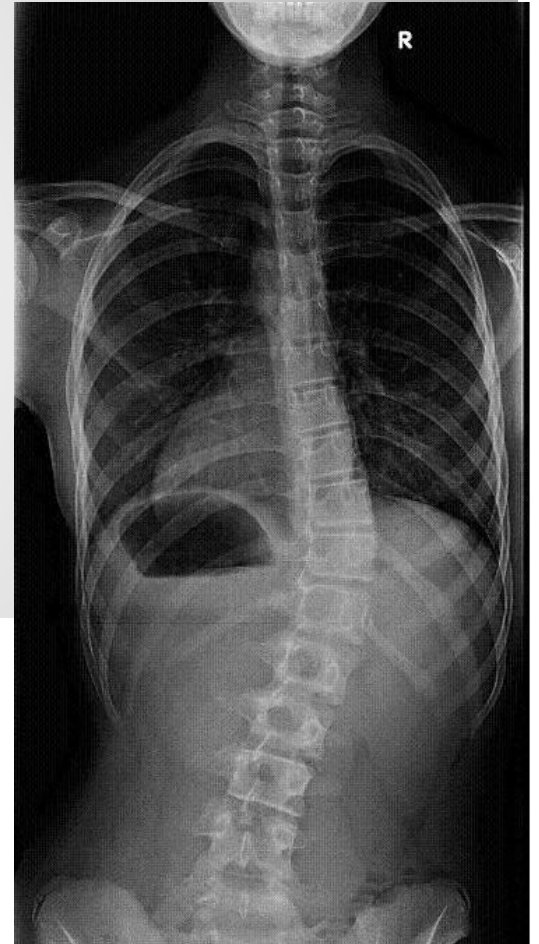
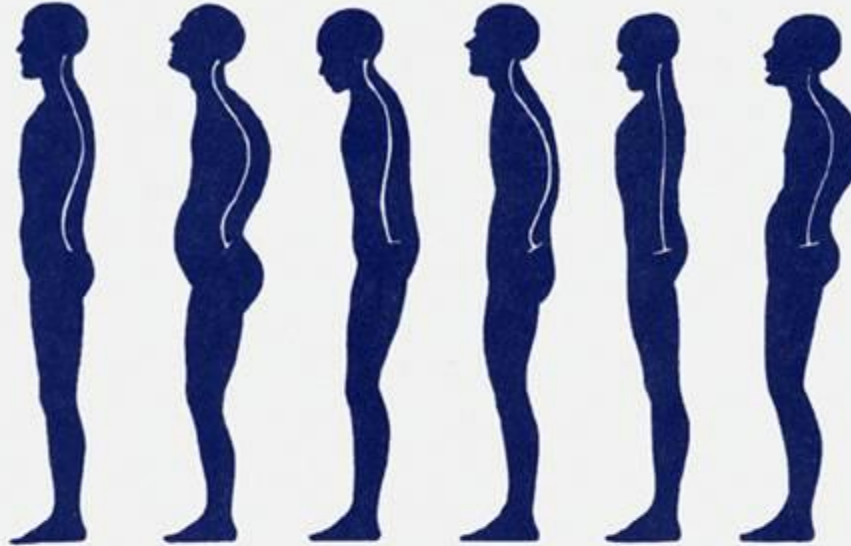


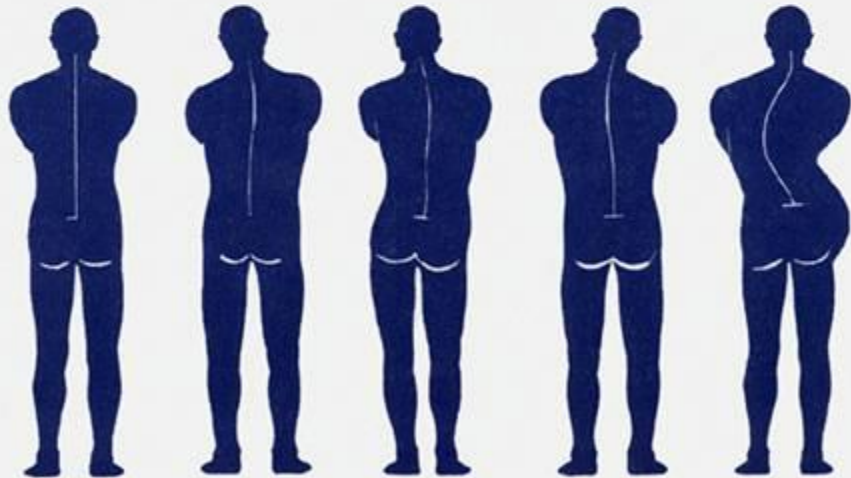
Mod4
Scoliosis



LOOK AT YOUR POSTURE... OTHERS DO



Correct Posture Hollow Back Flat Pelvis Slumping Posture Military Posture Round Shoulders



Correct High Shoulder High Hip Head Tilt Severe Scoliosis

Only 5% of those with scoliosis declared that they had opportunities to discuss their feelings with health professionals, while 90% of them declared that they wanted to have more opportunities to do this. Perceptions of body image, happiness and satisfaction in adolescents wearing a Boston brace for scoliotic equipment.

J Adv Nurs 2001 Sep;35(5):683-90 ñ

By the time that the “rib hump” shows up the patient has between a 15-20 degree lateral curve in most cases.

Kids really need to be checked before the hump appears



Adams Test/Oklahoma Test

Classification of Scoliosis?

Types of **idiopathic scoliosis** are categorized by both age at which the curve is detected and by the type and location of the curve.

When grouped by age, scoliosis usually is categorized into three age groups:

Infantile scoliosis: from birth to 3 years old

Juvenile scoliosis: from 4 to 12 years old girls
4 to 14 years old boys

Adolescent scoliosis: Puberty to Maturity @19yo

Adult

After Maturity

- **Congenital scoliosis.** Caused by an abnormality present at birth.
- **Neuromuscular scoliosis.** A result of abnormal muscles or nerves. Frequently seen in people with spina bifida or cerebral palsy or in those with various conditions that are accompanied by, or result in, paralysis.
- **Degenerative scoliosis.** This may result from traumatic (from an injury or illness) bone collapse, previous major back surgery, or osteoporosis (thinning of the bones).
- **Idiopathic scoliosis.** The most common type of scoliosis, idiopathic scoliosis, has no specific identifiable cause. There are many theories, but none have been found to be conclusive. There is, however, strong evidence that idiopathic scoliosis is inherited.

Sub-categories of Scoliosis

0-9 Degrees	NOT Scoliosis
10-25 Degrees	Watch and Wait
25-40 Degrees	Rigid Brace
40 and up	Surgical Candidate

Current treatment method

**Milwaukee
Brace**



©MMG 2007

**Boston
Brace**



©MMG 2007



CROTCH BANDS

THIGH BANDS

PELVIC BASE

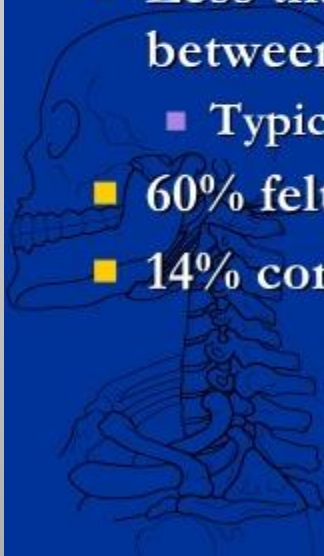
BOLERO

CORRECTIVE BANDS



Bracing

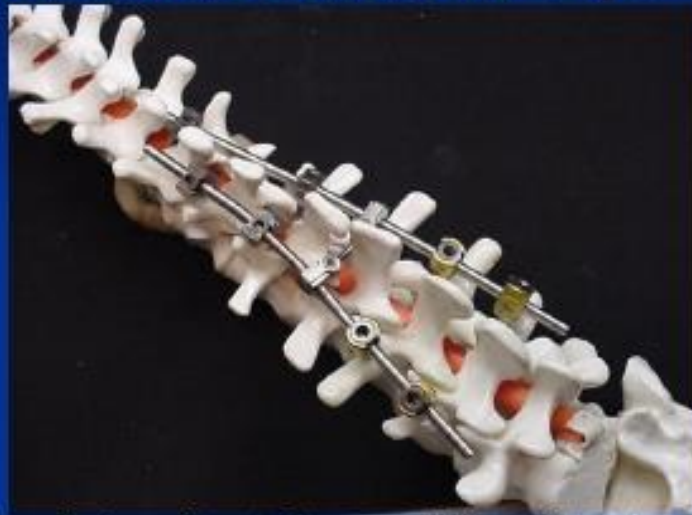
- 44% of bracing attempts are considered failures
 - do not stop the progression
- Less than 30°, there were no significant differences between braced and non-braced patients
 - Typically brace is prescribed when scoliosis is <20°
- 60% felt bracing handicapped their lives
- 14% considered bracing left a psychological scar



Dr. Clayton Stitzel, 1-866-627-3009,
drstitzel@clear-institute.org,
<http://www.treatingscoliosis.com/>

Are They Cured?

- Unfortunately, most patients return for 2nd, 3rd, and 4th surgeries
- Rod maintenance
- Side effects
 - Inflexibility
 - LBP
 - Headache
- “40% of operated treated patients with idiopathic scoliosis were legally defined as severely handicapped persons” (4)



4 Gotze C, Slomka A, Gotze HG, Potzl W, Liljenqvist U, Steinbeck J. Long-term results of quality of life in patients with idiopathic scoliosis after Harrington instrumentation and their relevance for expert evidence. Z Orthop Ihre Grenzgeb 2002 Sep-Oct;140(5):492-8

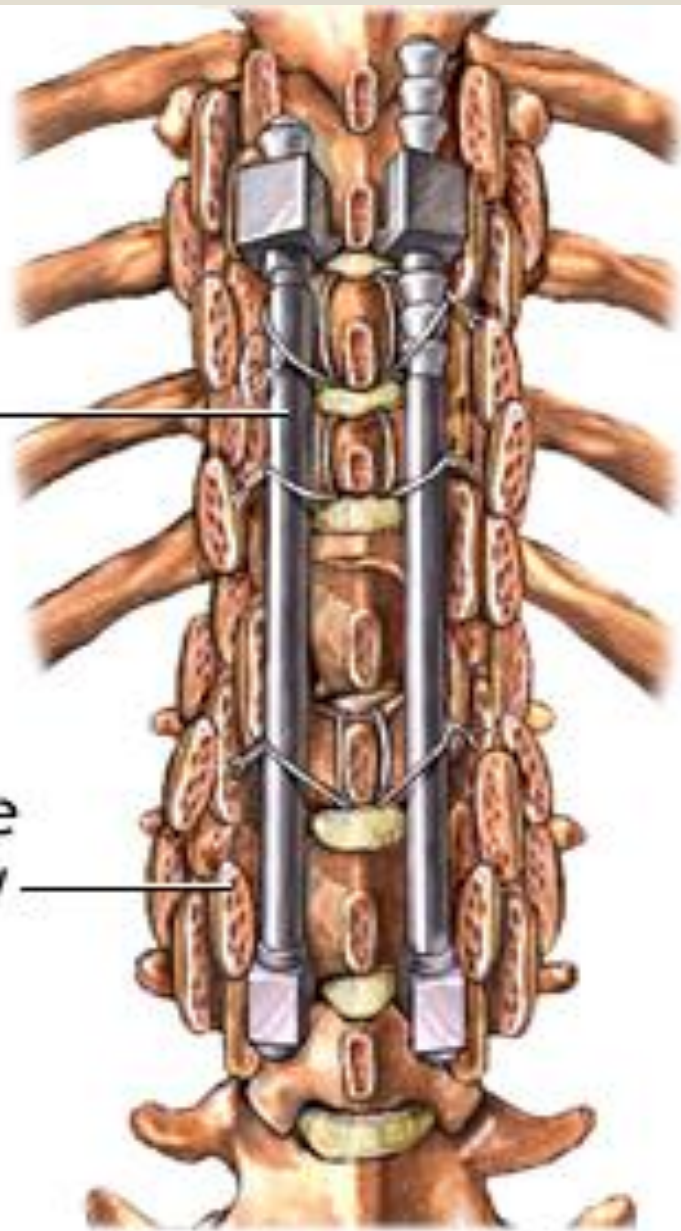


Scoliotic spine

Spinal fusion

Steel rods help support the fusion of the vertebrae

Bone grafts are placed to grow into the bone and fuse the vertebrae





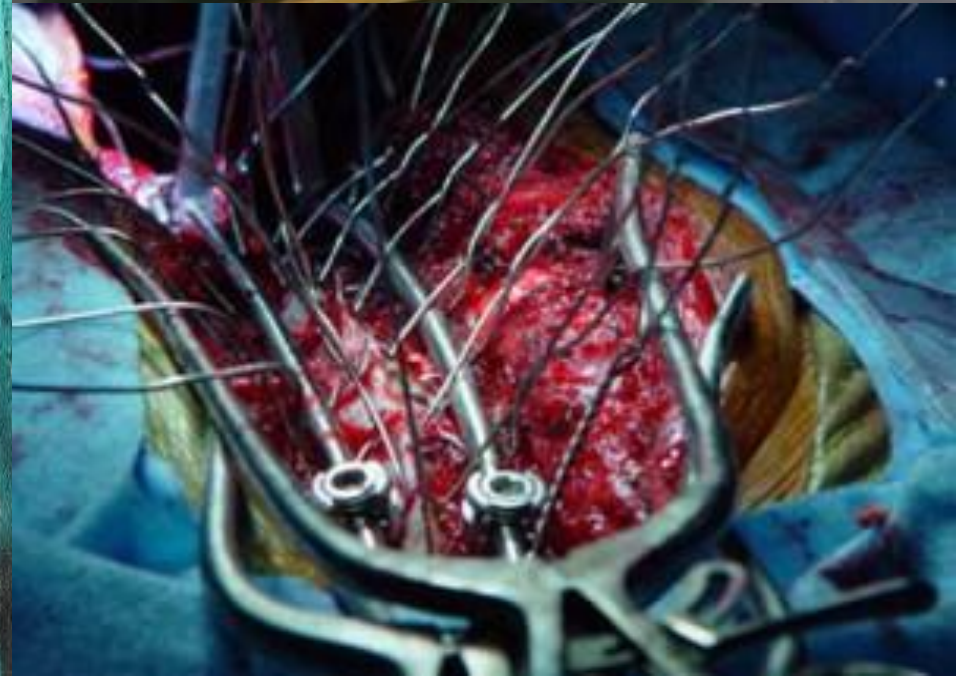
Surgery Images

NEXT SLIDE NO WEAK STOMACHS

Posterior Spinal Fusion and Instrumentation

Scoliosis surgery

Harrington Rods



The Crankshaft Phenomenon

Compression and Rotation!

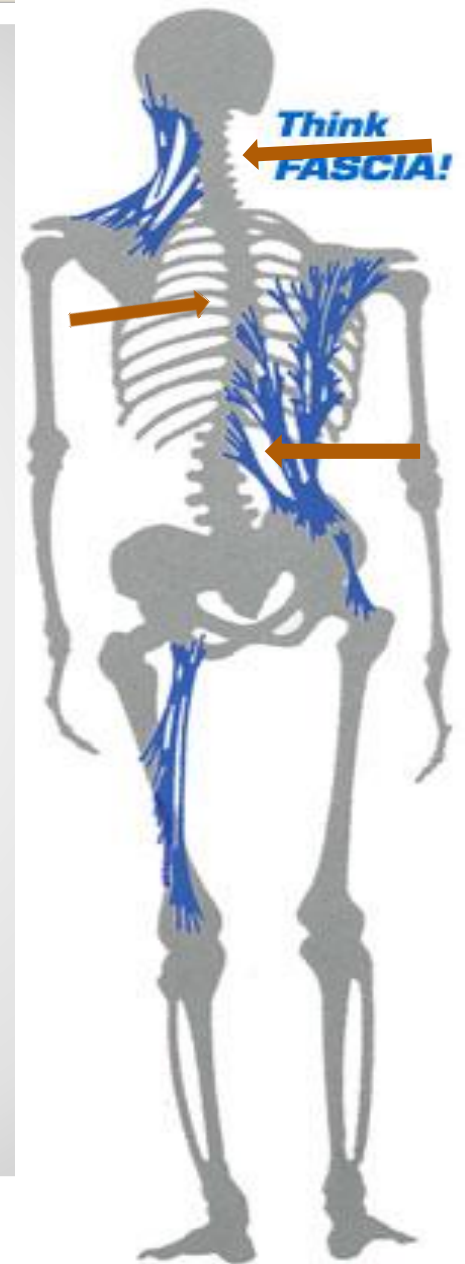
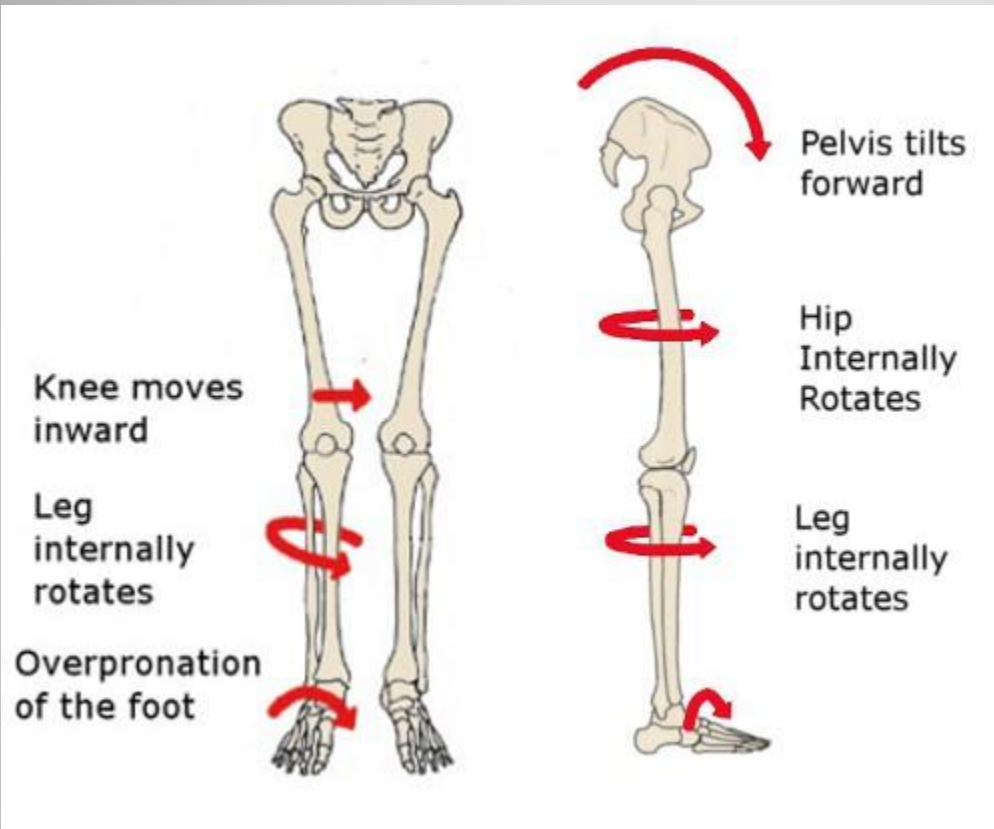


Dr. Clayton Stitzel, 1-866-627-3009,
drstitzel@clear-institute.org,
<http://www.treating scoliosis.com/>



Natural Compressive Rotational Scoliosis can be undone with Traction and De-rotation.





Pes Planus



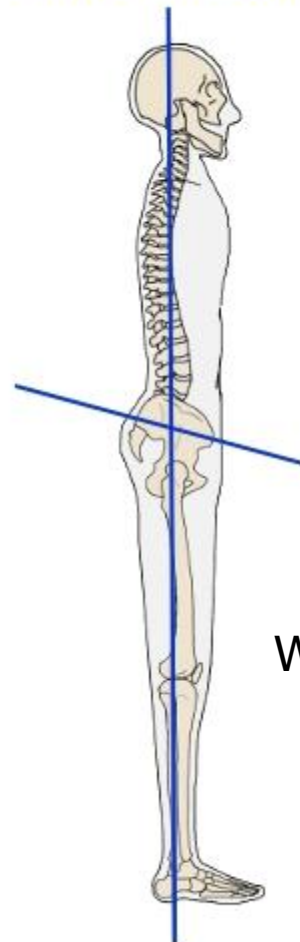
Pelvic Torsion



Pelvit Blocks for Ant R Ilium

GOOD POSTURE

BAD POSTURE



Tight

Weak

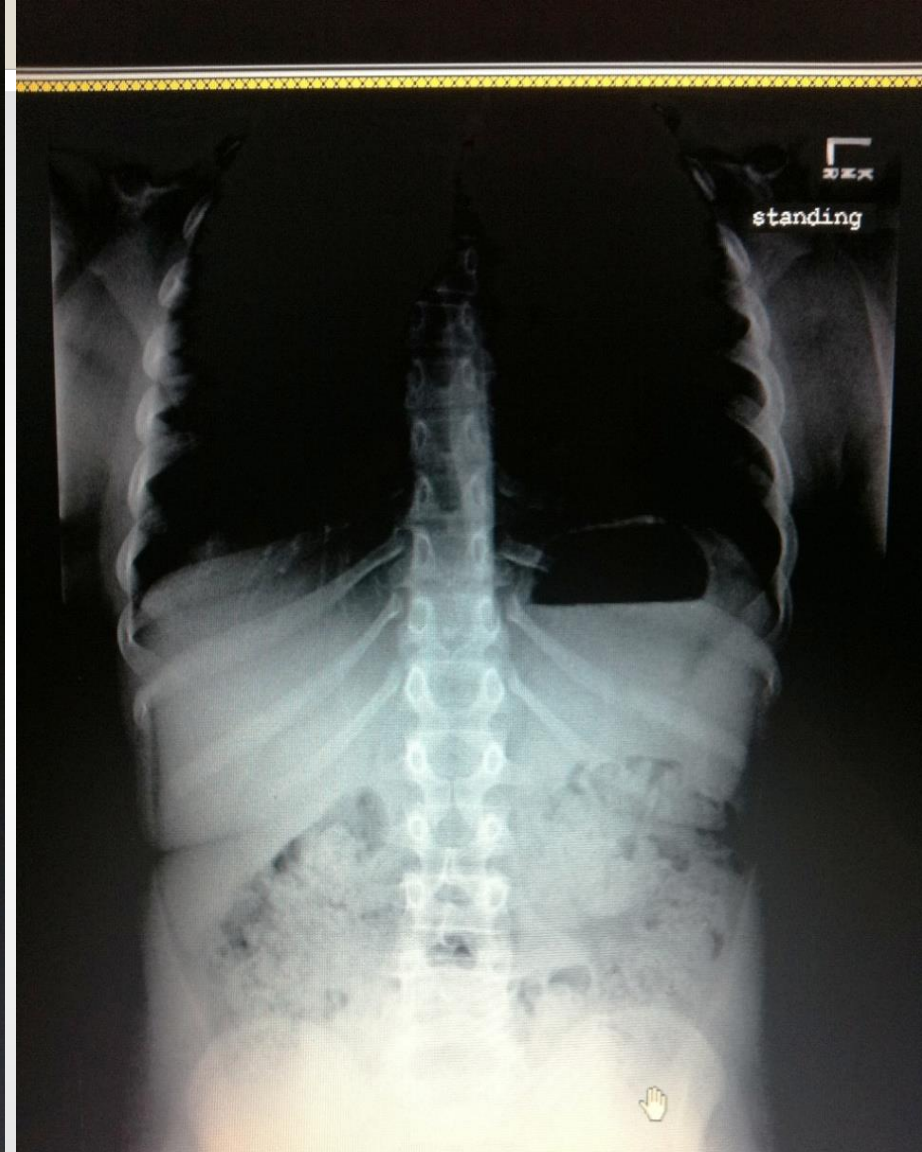
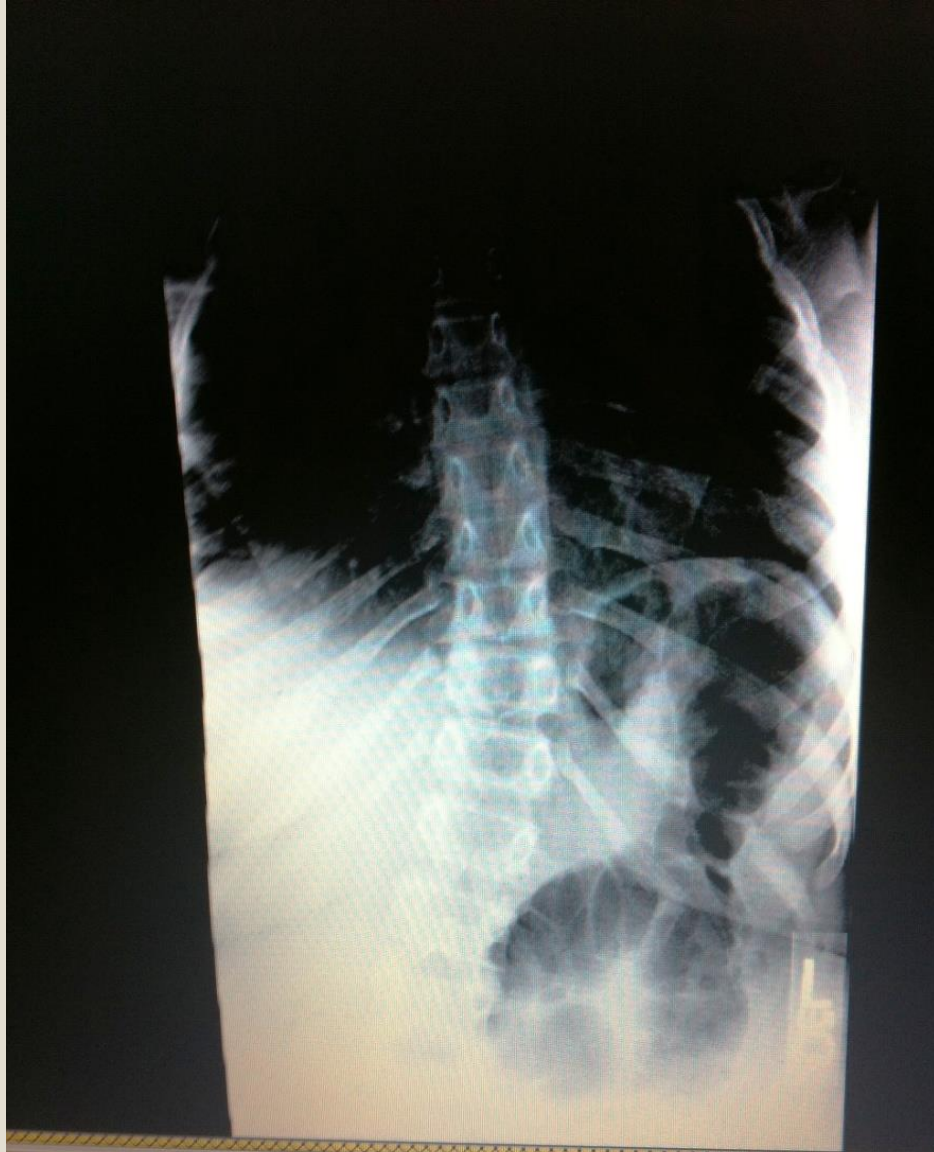
Forward Head

Weak

Anterior Pelvic Tilt

Tight Quads/hip flexors

Patterns



**Actual Scoliosis patient (pre/post
1 month)**



Benefits of Massage Therapy: Scoliosis Massage

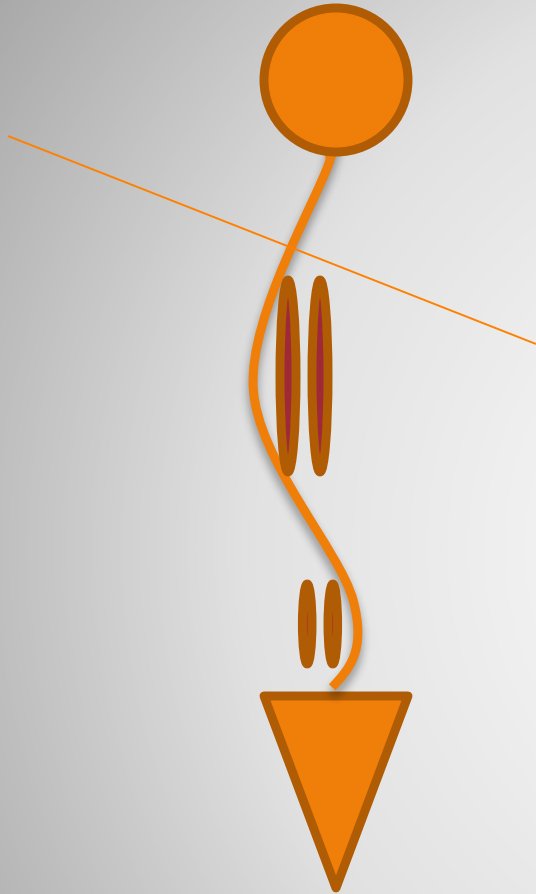
Whether you're dealing with congenital scoliosis that's been present since birth, neuromuscular scoliosis that's caused by muscular weakness or disease, or functional scoliosis that's caused by injury, posture, muscle spasms or body compensation patterns, massage therapy can help.

The Journal of Bodywork and Movement Therapies published a report on the effects of **massage twice a week for eight weeks**, in which author Michael Hamm concluded: "Reported PLs [pain levels], sleep patterns and functional limitations all showed substantial improvements over the course of treatment. Massage therapy is an appropriate tool."

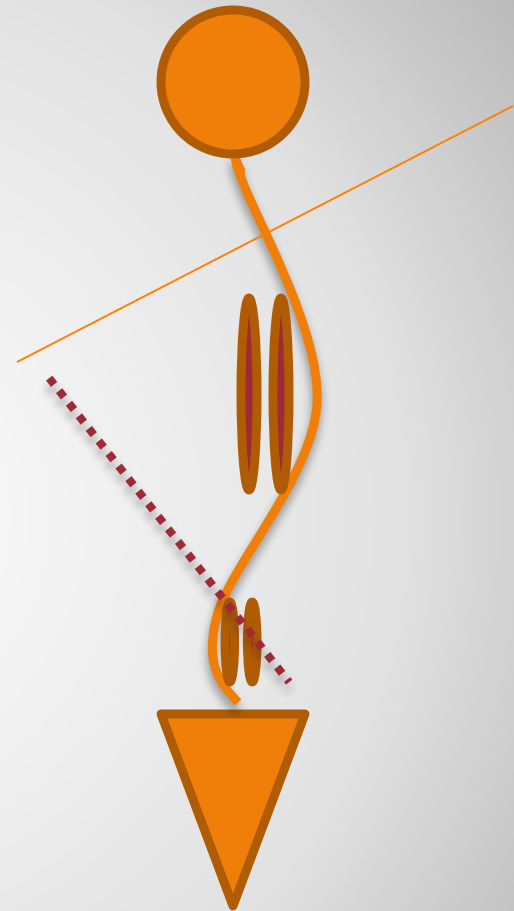
Is it “structural” or “functional?” Spinal curves that improve during forward-bending, sidebending and specific rotational movements are generally referred to as “functional” or “secondary” scoliotic curves. If the curve does not straighten during any of these maneuvers, it is considered a “structural,” “fixed” or “primary” scoliosis.

Erik Dalton PhD

Determining Functional/Structural



L Back R



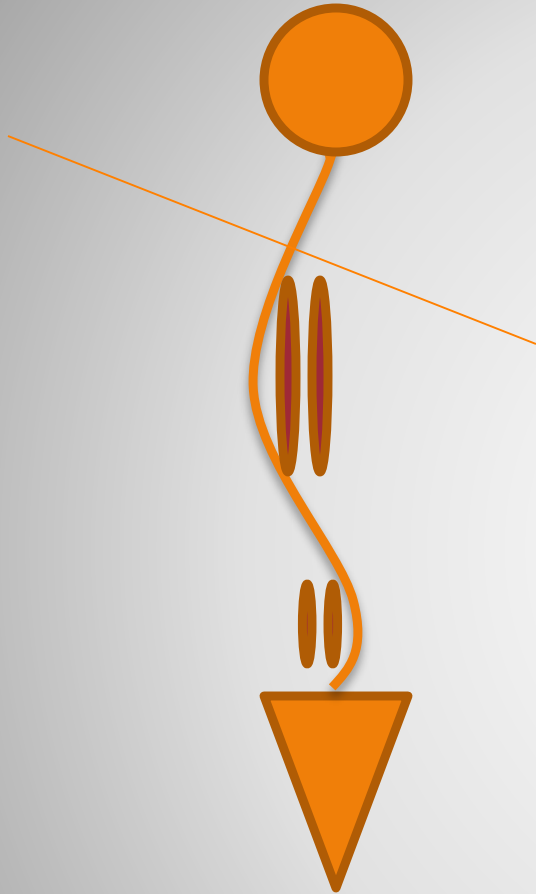
R Front L



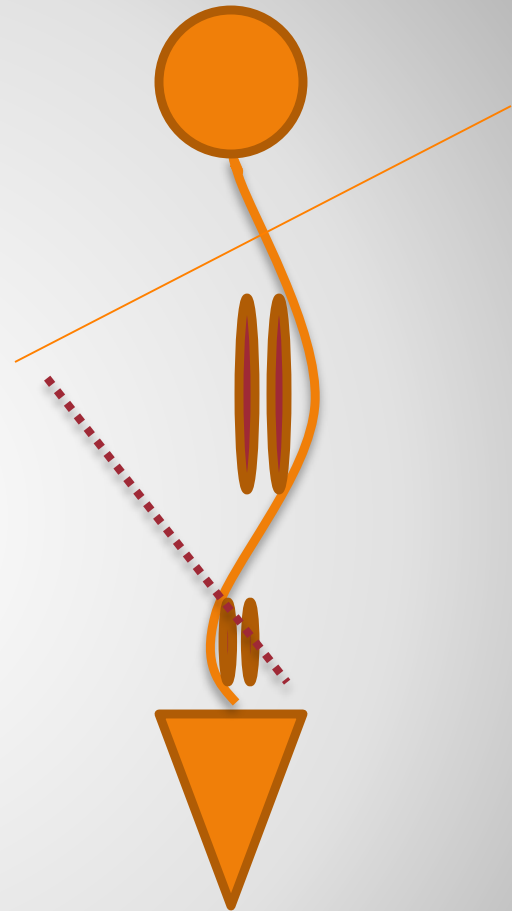
Convexity vs Concavity Muscles

Convex – Faster Work

Concav- Slower work, stretching longer holds



L Back R

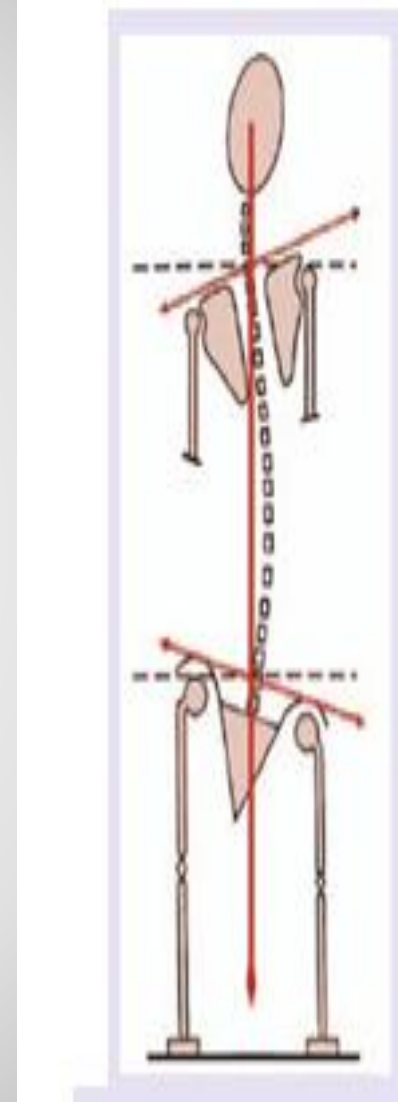


R Front L

Many younger clients develop a long C-shaped lateral curvature with the convexity toward the short-leg side. Most of this population present with only minimal symptoms, if any. Correction of the short leg is usually accomplished by balancing the iliosacral joints which allows the youthful spine to grow straight. Early pelvic-balancing work prevents the development of more severe curves with accompanying secondary musculoskeletal changes later in life.

If the convexity of the curve is opposite the short-leg side, the therapist should look for non-neutral dysfunctions (facets stuck open or closed) in the lower lumbar vertebrae and lumbosacral junction.

Leg Length





Mirror Image curve
elongation/opening

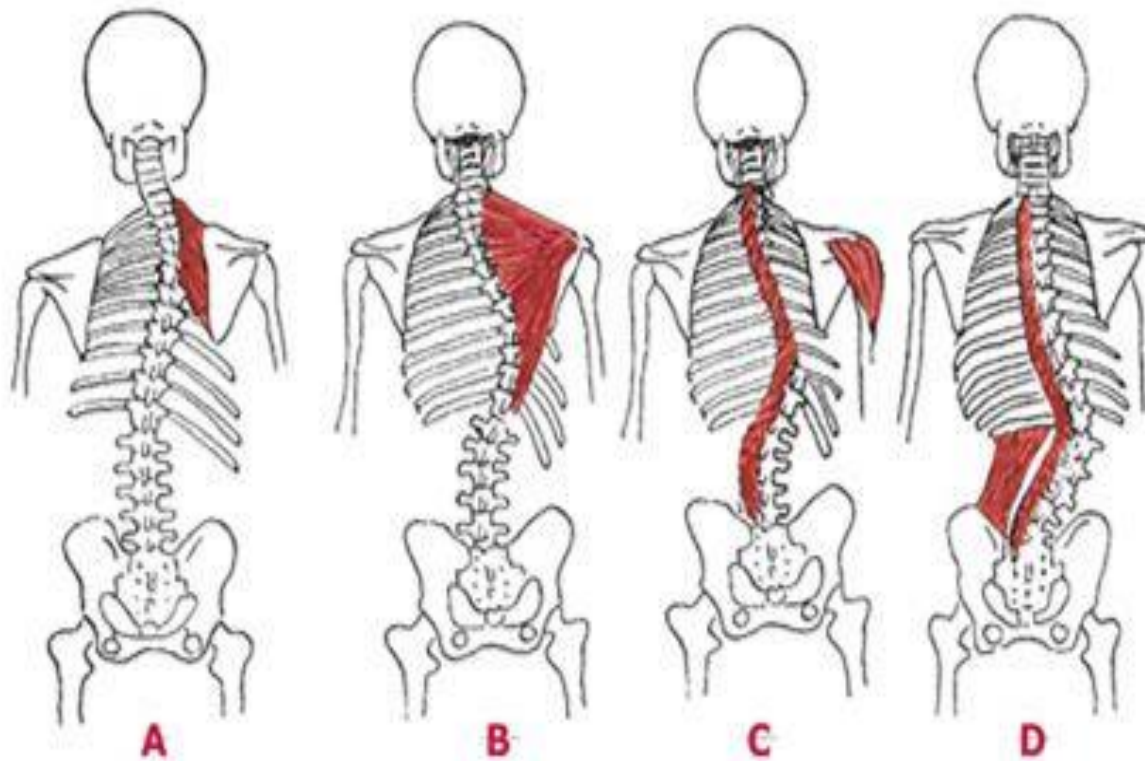
Shroth
CBP
Rolf (10 1 hr sessions)

Menenge's/ Dura

Cranial Sacral Therapy

By gently addressing restricted tissue patterns surrounding and within the spinal column, adipose tissue and the dural tube, cranial-sacral therapy's mobilization of fascia, gentle traction and enhancing mobility of the body can help bring some balance to the spine.

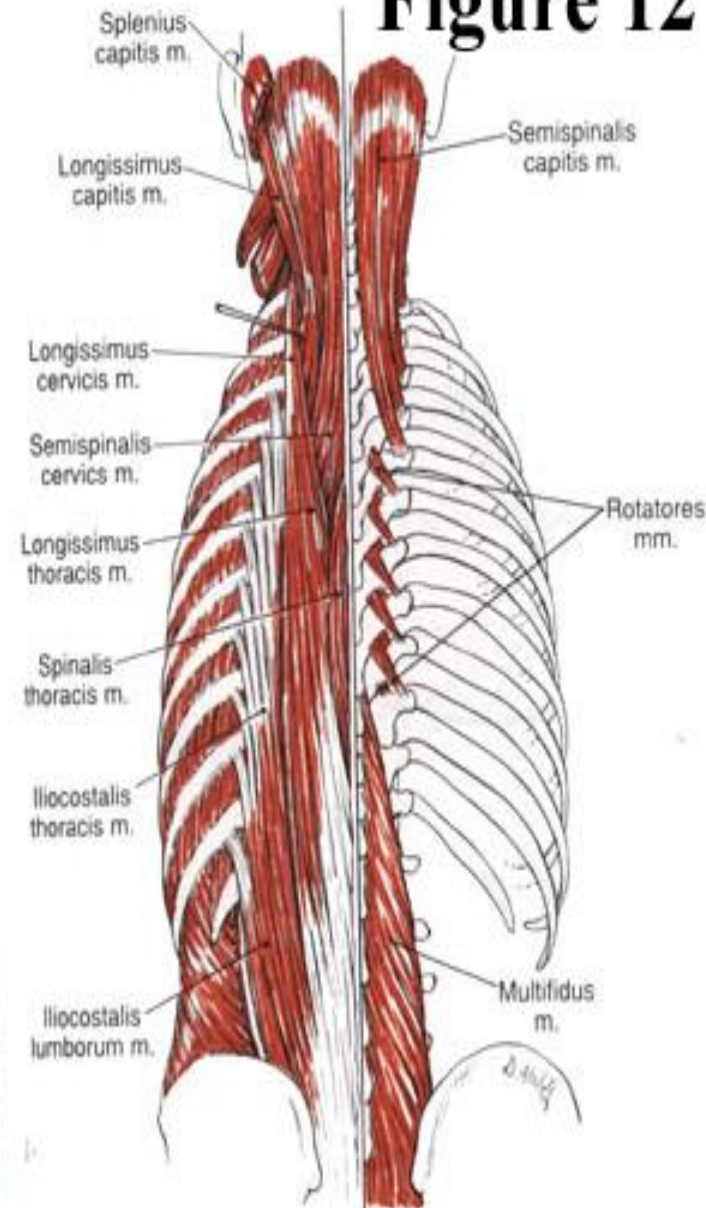


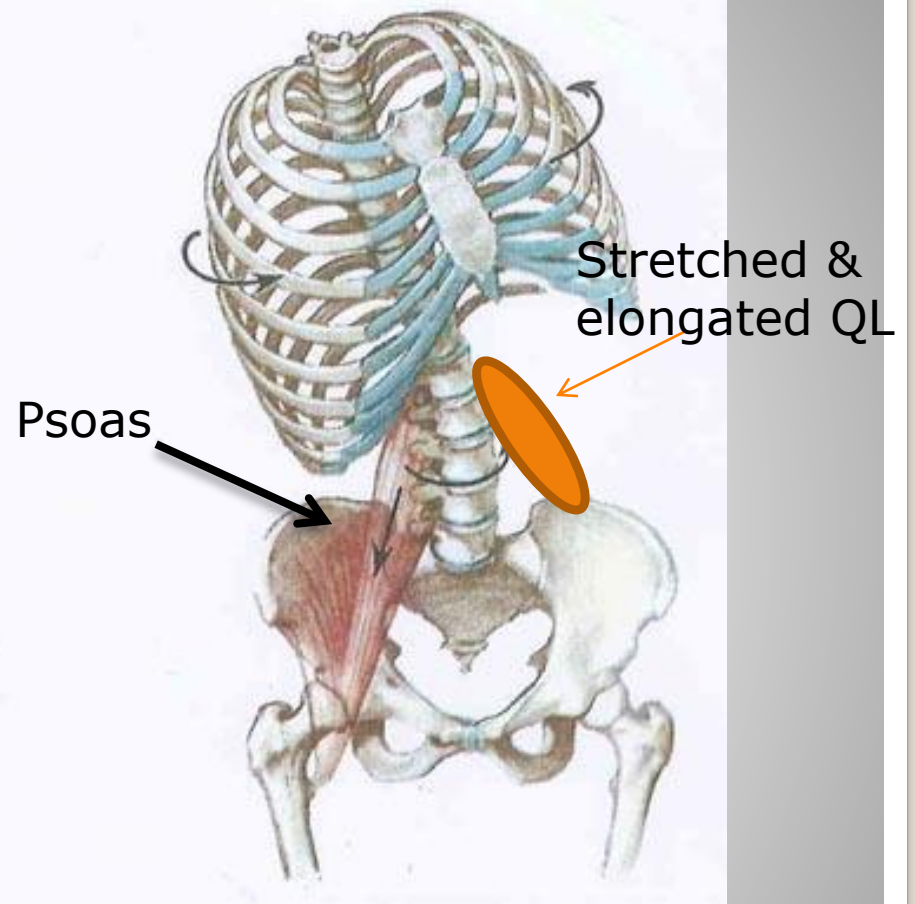
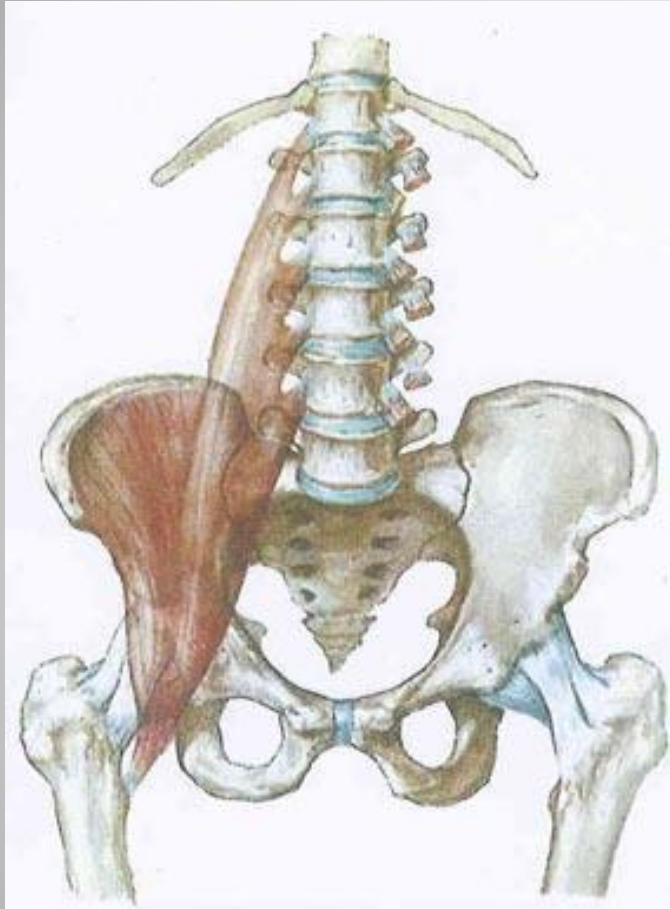


- A. Unilateral rhomboid hypertonicity
- B. Unilateral trapezius hypertonicity
- C. Unilateral hypertonicity in erector and posterior deltoid
- D. Unilateral hypertonicity in erectors and quadratus lumborum muscles

Deep Back Muscles

Figure 12





Often Overlooked Muscle

Since the diaphragm inserts in the last thoracic and first 3 lumbar vertebrae, tightness in the diaphragmatic pillars can pull on these vertebrae.

Inhalation the Diaphragm contracts and is pulled downward. At the same time the intercostal muscles contract and elevate the rib cage.



The diaphragm
is shaped
like a parachute



Video “Me” Dr Hawley

https://www.youtube.com/watch?v=ZDHPfyW_wzc&feature=youtu.be

https://www.youtube.com/edit?o=U&video_id=BY6FMvpaZyk



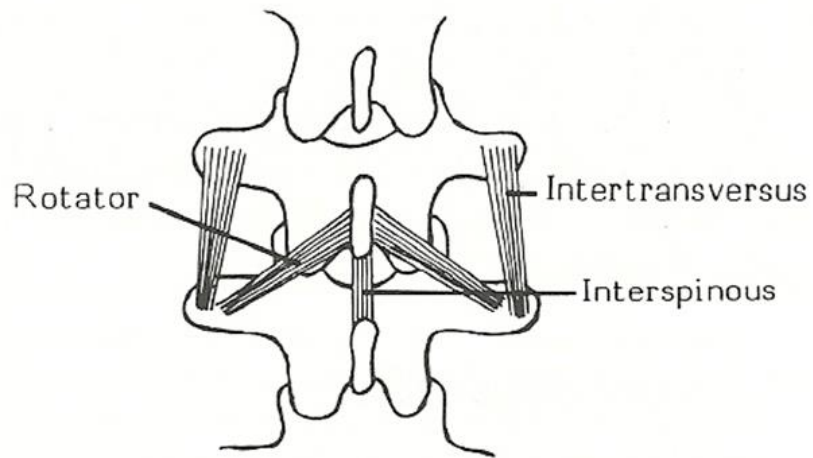


Figure 5.14. Schematic of the deep spinal extensor muscles (Courtesy ACAP).

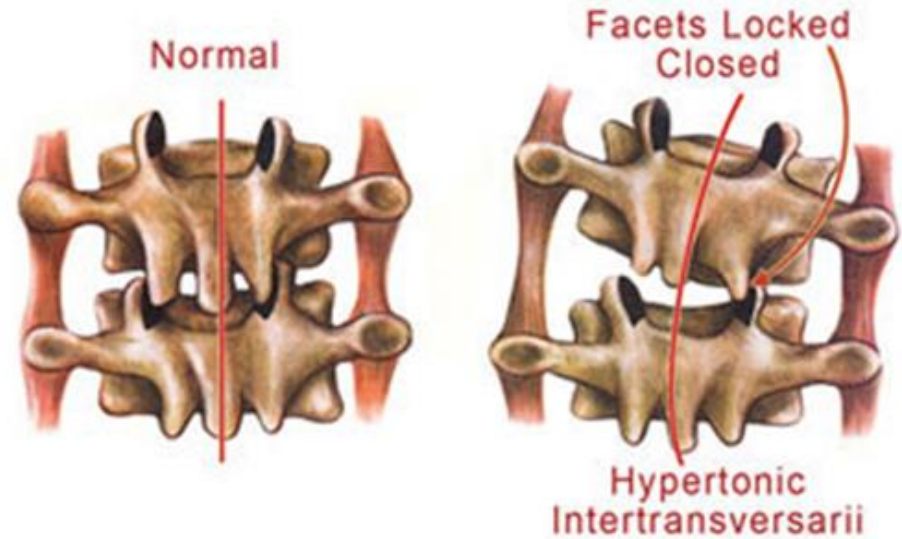
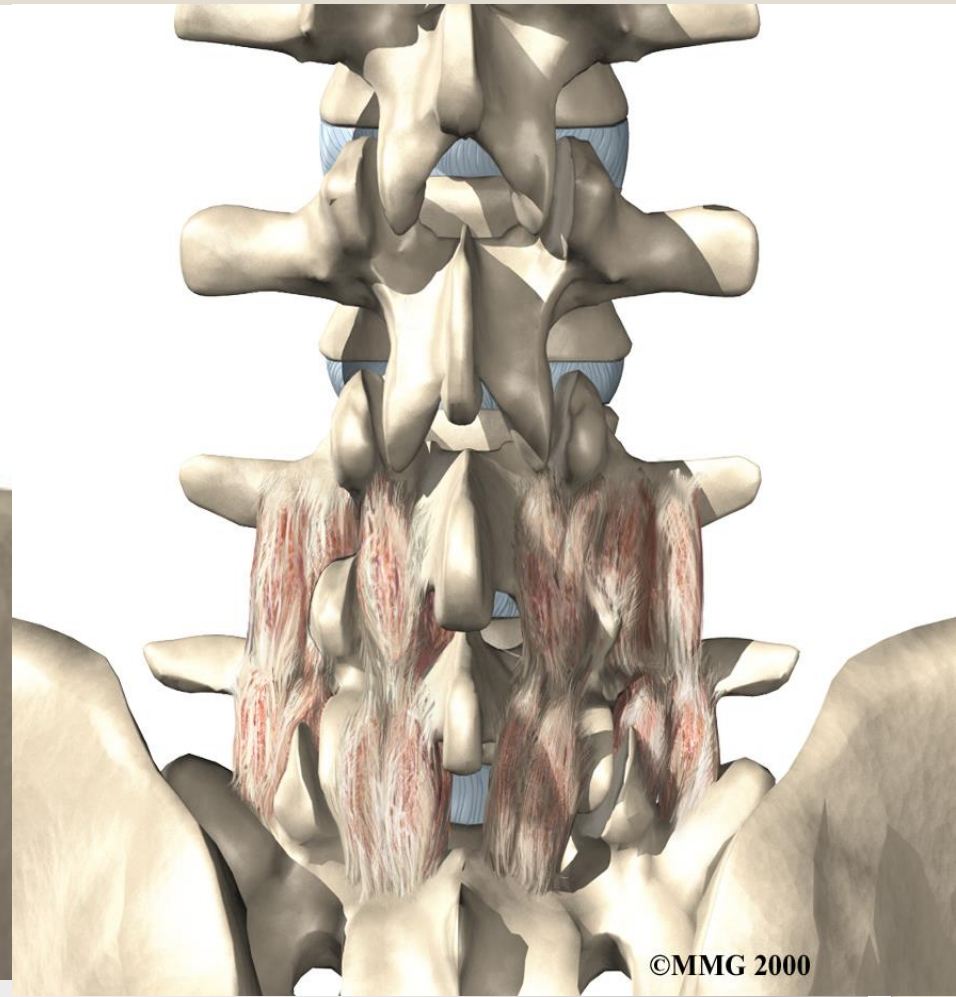
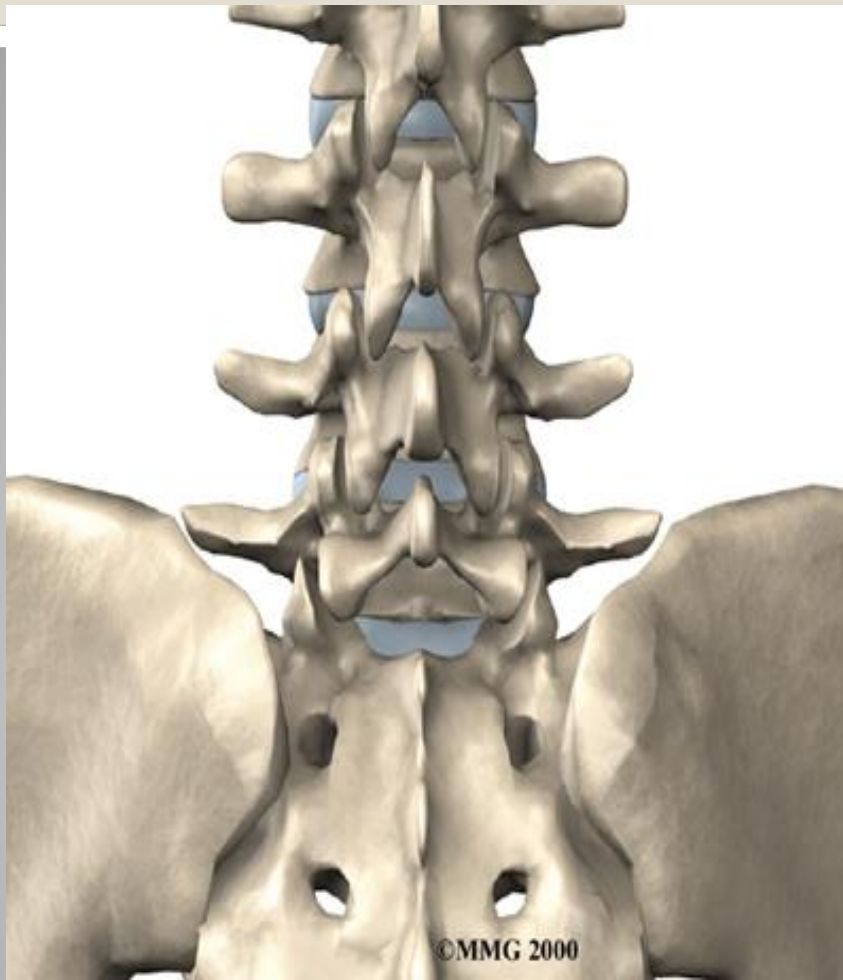


Figure 4

© 2010 Erik Dalton.com

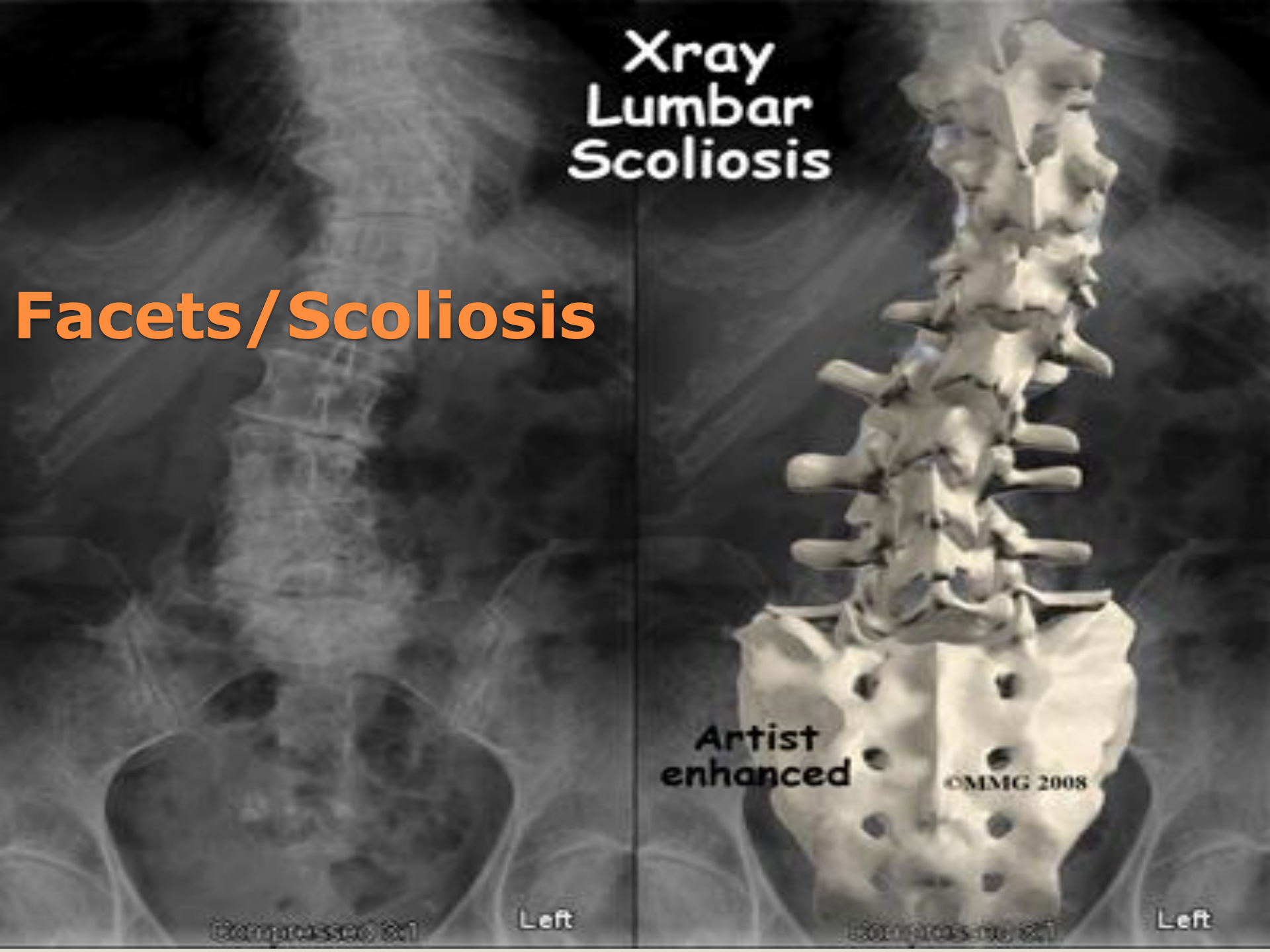
Deep supporting muscles



Facet joints

Xray Lumbar Scoliosis

Facets/Scoliosis



Artist
enhanced

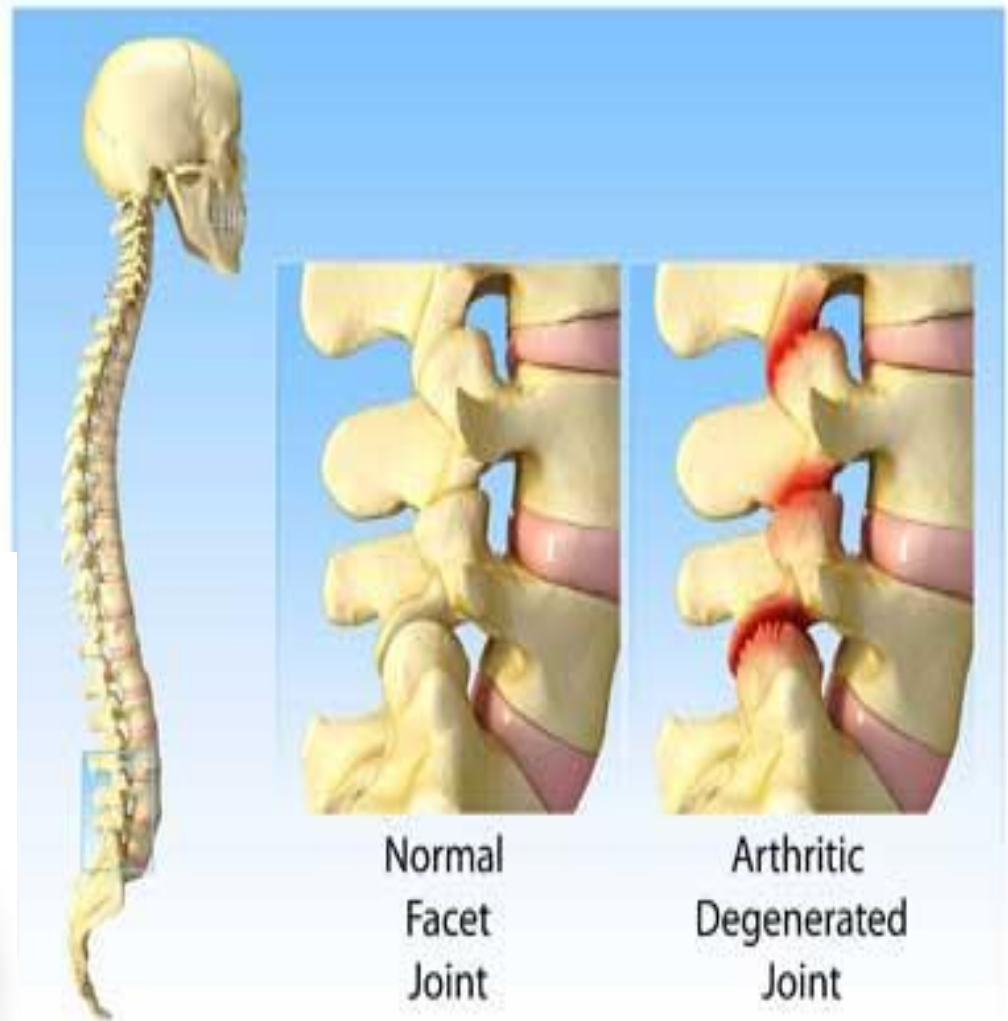
©MMG 2008

Compressed 8x1

Left

Compressed 8x1

Left



© Healthwise, Incorporated

Facet Syndrome and Scoliosis

"200 micrograms of **selenium** (L-selenomethionine to be exact) may turn out to be a key factor in slowing or eliminating the risk of rapid progression in adolescents with scoliotic curves. Yet-to-be-released research has found the high levels of a cytokine called osteopontin (OPN) is very highly correlated with rapid curve progression. I'm not sure if they have been able to determine if the increased OPN is a trigger or a signal, but in either case, therapeutic doses of selenium (200 micrograms) a day may have a significant effect on naturally driving down levels of OPN.

A few words of caution. Don't exceed 200 micrograms of selenium a day. While the upper tolerable levels are closer to 400 micrograms a day, more isn't necessarily better and there are side-effects to over doses of selenium.

Also, I would definitely recommend taking the selenium following a full meal. Like any mineral supplement, it could cause an upset stomach if you take it on an empty stomach."

Supplements/Dr. Clayton Stitzel

1. Brazil Nuts
2. Sunflower Seeds
3. Fish (tuna, halibut, sardines, flounder, salmon)
4. Shellfish (oysters, mussels, shrimp, clams, scallops)
5. Meat (Beef, liver, lamb, pork)
6. Poultry (chicken, turkey)
7. Eggs
8. Mushrooms (button, crimini, shiitake)
9. Grains (wheat germ, barley, brown rice, oats)
10. Onions

10 Selenium Rich Foods

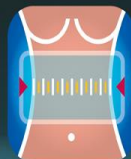
<http://www.healthaliciousness.com/articles/foods-high-in-selenium.php>

Screening App

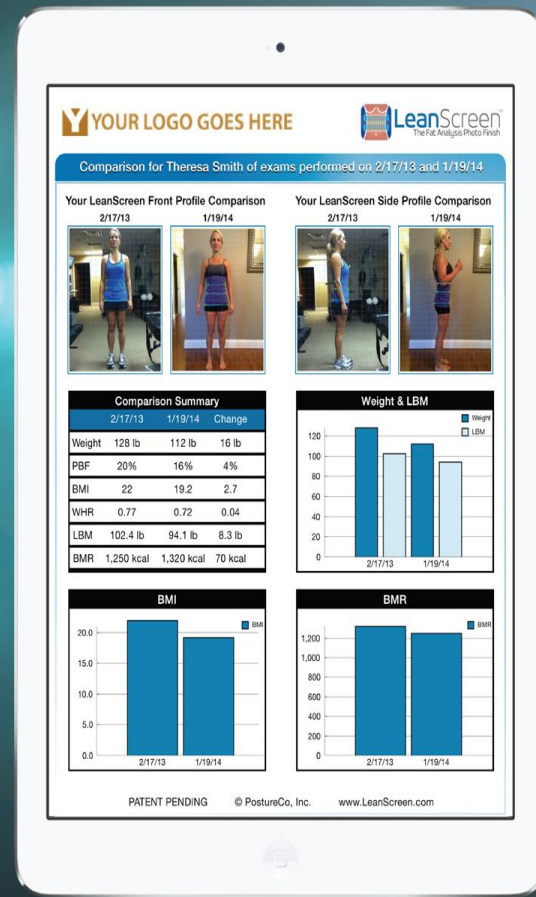
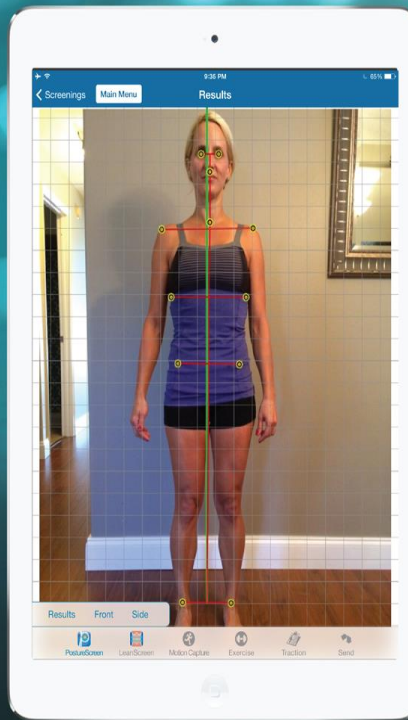


PostureScreen Mobile[®]

Accurate Postural Assessment



LeanScreen[™]



Available on the
App Store



ANDROID APP ON
Google play

PostureScreen Exam for Cheryl Smith performed on 7/12/12

Good posture is simple and eloquent by design in form and function. The body is designed to have the head, rib cage, and pelvis perfectly balanced upon one another in both the front and side views. If the posture is deviated from normal, then the spine is also deviated from the normal healthy position. Unfortunately, abnormal posture has been associated with the development and progression of many spinal conditions and injuries including: increased muscle activity and disc injury, scoliosis, work lifting injuries, sports injuries, back pain, neck pain, headaches, carpal tunnel symptoms, shoulder and ankle injuries as well as many other conditions. Additionally, postural abnormalities in adolescent years have been recognized as one of the sources of pain syndromes and early arthritis in adulthood. Therefore, posture should be checked and corrected in children before more serious problems can occur.

Normal



Your Posture from Front



Your Posture Viewed from the Front

Head is shifted 0.65" left and is not tilted

Shoulders are shifted 0.22" right and are tilted 5.2° left

Ribcage is shifted 0.41" right

Hips are shifted 1.51" left and are not tilted

Any measurable deviation from normal posture causes weakening of the spine as well as increased stress on the nervous system which can adversely affect overall health.

Normal



Your Posture from Side



Your Posture Viewed from the Side

Your head weighs approximately 9.5 lb and is shifted 2.33" forward

Based on physics, your head now effectively weighs 31.7 lb instead of 9.5 lb

Shoulders are shifted 1.94" backward

Hips are shifted 2.51" forward

Knees are shifted 0.83" forward

PAIN SCALE

0 1 2 3 4 5 6 7 8 9 10

During this assessment, you noted that your pain was 5 out of 10 (worst possible pain). Remember that pain and symptoms can be directly associated abnormal faulty body structure - ie. Abnormal Posture

Your PostureScreen evaluation demonstrates that you have postural abnormalities. In the future, structural deviations could cause you symptoms of pain as well as a myriad of other health problems. Consequently, it is advised that you complete a thorough clinical evaluation with a health care and/or fitness professional trained in postural corrective techniques.

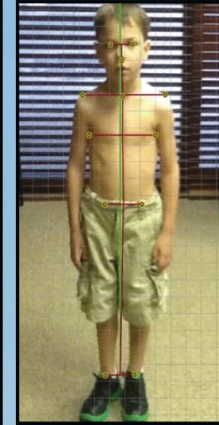
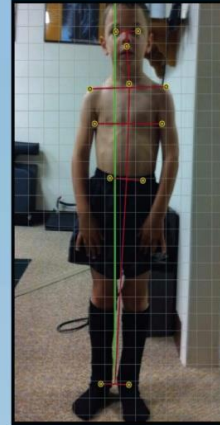
PostureScreen Comparison Report for Dmitry Smith performed on 6/11/11 and 7/13/12

The purpose of this PostureScreen report is to objectively demonstrate the measurable changes in your standing neutral posture. Since posture can be considered the window to the spine, specific abnormal postural displacements are associated with specific spinal positions. If your posture is left uncorrected, then your spine skeletal system, discs, ligaments, blood vessels, muscles and spinal nerves will be under constant asymmetrical stress and will eventually adapt with pathological changes. The benefits of near normal posture is obvious. It is advisable to

Your Posture Comparison from the Front View

6/11/11 2:00 PM

7/13/12 2:04 PM



Body Region	Shift (Translation)		Rotation (Lateral Flexion/Bending)	
	6/11/11 2:00 PM	7/13/12 2:04 PM	6/11/11 2:00 PM	7/13/12 2:04 PM
Head	0.31" right	0.15" right	0°	0°
Shoulders	0.11" left	0.03" left	0°	0°
Ribcage	0.26" left	0.14" right	N/A	N/A
Hips/Pelvis	1.59" left	0.45" left	4.0° left	0°
Total Deviations	2.26"	0.77"	3.0°	0°

6/11/11 2:00 PM

0 1 2 3 4 5 6 7 8 9 10

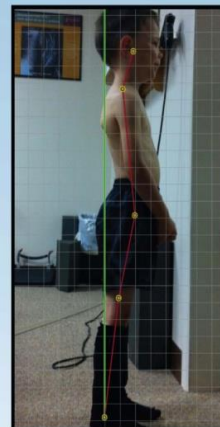
7/13/12 2:04 PM

0 1 2 3 4 5 6 7 8 9 10

Your Posture Comparison from the Side View

6/11/11 2:00 PM

7/13/12 2:04 PM

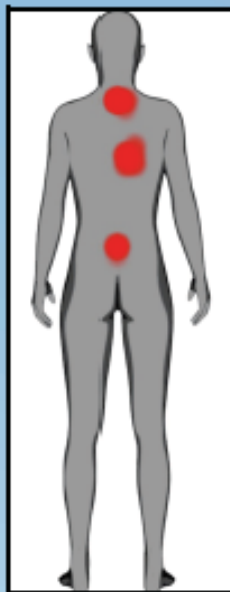
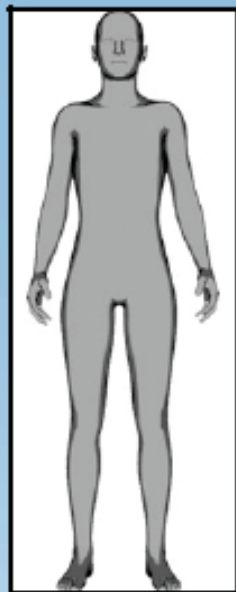


Body Region	Shift (Translation)	
	6/11/11 2:00 PM	7/13/12 2:04 PM
Head	1.46" forward	1.02" forward
Shoulder	1.67" backward	1.14" backward
Hips/Pelvis	2.20" forward	0.78" forward
Knees	1.93" forward	0.03" backward
Total Deviations	7.25"	2.98"

Your head weighs approximately 3.4 lb, however, due to the physics of your postural deviations, your 'effective head weight' changes, which means it 'feels heavier' to your body. The effective weight of your head for the exam on 6/11/11 was 8.4 lb and on the follow-up exam dated 7/13/12 it weighed 6.9 lb, accounting for a total change of 121.4%.

PostureScreen Stress Survey Report for Cheryl Smith on 7/12/12

In health, symptoms are usually the last finding to manifest and the first finding to leave. However, symptoms can resolve, but the cause may still persist. As an example, think of tooth decay and a cavity not always being symptomatic but yet persistent until corrected. Below on the diagram you noted areas of symptoms/pain which is denoted in the color red. It is important to note that spinal/postural displacements known as subluxations can contribute or even be the root cause of these symptoms that you reported and thus should be investigated by a health care professional.



PAIN SCALE



During this assessment, you noted that your pain was 5 out of 10 (worst possible pain). Remember that pain and symptoms can be directly associated abnormal faulty body structure - ie. Abnormal

Below you will see a list of your reported stress related symptoms which in many cases can be traced back to levels in your spine and posture. Consequently, these are listed by spinal regions.

Cervical Spine

- Neck Pain
- Headaches
- Thyroid Conditions
- High blood pressure
- Numbness in arms/hands
- Allergies/Hay fever
- Tingling in arms/hands
- Low energy/fatigue

Thoracic Spine

- Midback/Shoulder blade pain
- Asthma/Wheezing
- Indigestion/Heartburn/Reflux
- Tired/Irritable w/out eating
- Heart attacks/Angina
- Pain in ribs/chest

Lumbar Spine

- Low back pain
- Muscle cramps in legs/feet
- Pain into hips/legs/feet
- Weak in legs/feet
- Sciatica

As noted above, in many cases, spinal and postural mal-alignment (termed subluxation) can contribute or even be the root cause of the symptoms you have described above. It is thus recommended consult a health care professional and strive to improve your spinal and postural structural alignment to as near normal plumb as possible.

End Scoliosis

Mod 4