

CONDITIONS WE TREAT – SCOLIOSIS

SCOLIOSIS

I believe the diagnosis and treatment of scoliosis in this country needs reassessment. This is a bold statement but one well founded through my many years of clinical practice. However, I have seen impressive results in the treatment of scoliosis using methods to level the spine. Below is a discussion of scoliosis and my views as to proper assessment and treatment. Although you will find this discussion of scoliosis to be a long one, it will be of great benefit to you if you or someone you know has been diagnosed with scoliosis.

Scoliosis is a condition that affects young woman over men by perhaps 4:1. Although there are many classifications of scoliosis, the type I will discuss is the most common form. Termed 'idiopathic' this spinal curvature usually affects young children and adolescents and may continue into adulthood. Idiopathic is a term used by the treating doctor/s when they can find no cause for the scoliosis development. As many as 90% of juvenile scoliosis are considered to be idiopathic.

The spinal column is made up of 24 small bones called vertebrae. They stack up one on top of the other to form a straight line when viewed from front to back. When viewed from the side they form three curves, the neck and lower back have a forward curvature, and the mid back has a backward curvature. When the spine curves or twists excessively we have a condition called scoliosis from the Greek work for 'crooked'.

In scoliosis, one sees that the spine has one or more curves when viewed from the rear. Areas of the mid or lower back may appear to be asymmetrical with one side being wider or more prominent as compared to the other. The bending child may demonstrate a humping of tissue usually in the rib cage area. In standing the fingertips of one arm may appear to be hanging down farther than the other arm or one arm may appear to be closer to a given side. In viewing the child from the side, the head may be carried far forward with increased humping of the mid back or increased forward sway of the lower back.



Unfortunately today, in New York State, gym teachers usually perform the primary scoliosis screening for school students. As you might expect, scoliosis is sometimes missed and others falsely reported. If there is an obvious curvature, the child is usually referred to the high school nurse and school physician.

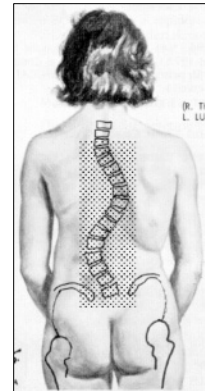


If a child is considered to have scoliosis, they are classified as either having a mild, moderate or severe scoliosis. Individuals falling into the mild group are seldom x-rayed but may be periodically re-examined. Those considered to have more severe curvatures will usually be treated, according to the conventional protocol which has seen little change in the past few decades. This includes x-rays of the spine done with the young patient standing. Unfortunately, these x-rays may be 'tightly collimated'. Typically, collimated x-rays visualize only the spinal vertebrae in the curves themselves and perhaps a small portion of the pelvis and ribs. The entire pelvis hips and upper legs usually remain unseen. In cases where your child's scoliosis is due to leg length differences, or abnormalities of hip or pelvic formation and balance, such information is usually excluded from view due to collimation.

More complete x-ray studies are performed as well. When these are performed, a short leg or pelvic/hip abnormality is often seen. In my experience at such times opinion varies between doctors.

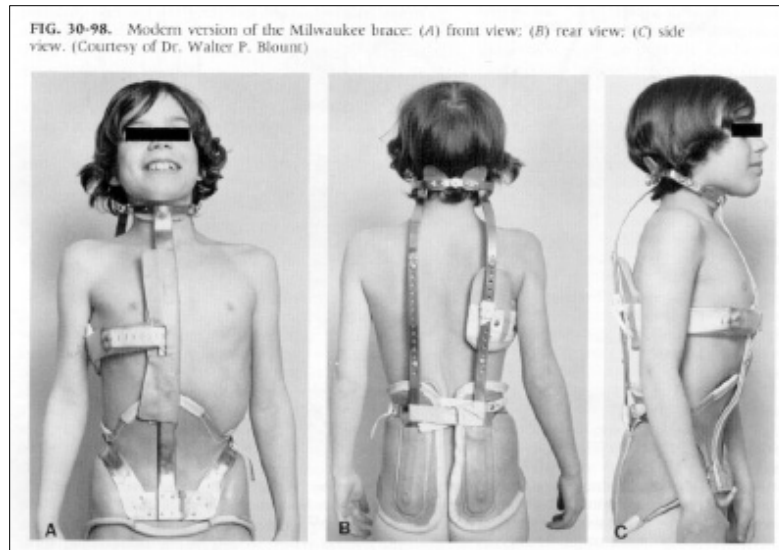
A few practitioners may attempt to use corrective shoe lifts or other means of conservative treatment. The majority however seem to believe and freely state that such abnormalities are the result of the scoliosis. In my experience such an opinion is seldom substantiated.

Leg length differences and other factors which imbalance the spine, are common to children. They often produce and promote scoliosis. Therefore, many of these so called idiopathic or unknown curvatures are misdiagnosed. Such cases are often related to differences in leg length and other postural defects which could, in many cases, be corrected with simple means if evaluated properly. (It seems that the rationale for tightly collimating spinal x-rays is to save the child from excessive radiation. However, x-ray equipment today is so advanced that minimal exposure to children is the norm. Broader x-rays series are certainly safe and far more effective in giving the whole picture of the underlying problems that may be producing scoliosis.)



The conventional treatment of scoliosis has not changed much in the last 60 years. In fact, if one looks at the studies that have tried to determine what produces 'idiopathic' scoliosis, one will be confused by the many conflicting opinions. Some studies attempt to suggest that the scoliosis is related to abnormal muscle tissue or to abnormal discs in the spinal vertebrae. (No supportive evidence has ever been found). Many studies talk about the effects of ligamentous contractions or other bizarre and unsubstantiated mechanisms as the driving force behind scoliosis. However, of the studies that have had the most success in terms of restoring proper curvatures to scoliosis sufferers, those studies have been centered around unleveling of the spine, leg length differences and their correction. In studies done by Giles and others, it was found in a group of Australian children, that of the thousands measured, the majority of those that demonstrated scoliosis had a leg length discrepancy and that with additions of shoe lifts, exercises and other leveling methods a good proportion of those children had

their spinal curvatures reduced. (Few of these children progressed to need further bracing and/or surgical procedures.)



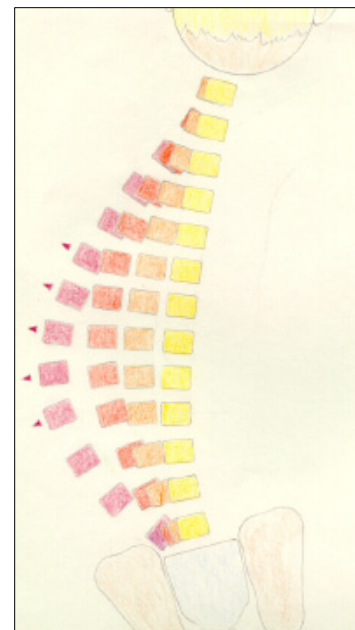
One can easily understand that the 24 movable spinal bones are constantly balanced atop the pelvis. Minor differences in the level of the pelvis due to injuries or growth abnormalities affecting leg length, hip position, or pelvic balance can unlevel the spine, producing a corresponding spinal curve which can progress to a marked scoliosis with time and overstretching of spinal ligaments. As the leg length or pelvic problem continues the scoliosis can worsen.

Initially it was hoped that bracing would provide lasting improvement in scoliosis. When bracing was followed in the long term, however, a gradual loss of correction was observed particularly when the patient was weaned from treatment. All the important studies of bracing show similar results. First there may be an improvement of the curve (especially seen with the brace on), after which there is a gradual lessening in the improvement. When use of the brace is discontinued the average curve is often slightly better than before bracing. After 5 years the average curve is about the same as it was prior to bracing. (These figures however, are averaged. Some patients are much better after bracing, some much worse.)

When I entered the local area in 1981 asking for my first Bell Thompson leg length scanogram to be performed, I was surprised to find that some health care facilities were unfamiliar with this scanning technique to determine equal leg length in children. I was surprised to find that little attention was being given to determine if children had a leg length difference or pelvic/hip asymmetry by some practitioners who treated scoliosis. When I reviewed x-rays of young patients with mild to severe curves I was routinely seeing collimated x-rays without any way to access contributing factors such as those mentioned above. (By the way, children who have pelvic or leg length defects don't usually limp or demonstrate obvious signs as has been mentioned by some practitioner's. They will often wear their shoes abnormally however and have shin splints, foot, knee or other leg pain.)

In my experience, relatively minor pelvic or hip distortions and differences of less than one half inch in leg length is sufficient to unlevel the spine or an adolescent or teen. This can produce a mild scoliosis that worsens with time. Similarly these problems can be responsible for pain anywhere in the lower extremities or back. (In contrast many individuals with significant leg length differences have no scoliosis what-so-ever.)

Unfortunately, scoliosis is a progressive condition in many cases. Ligaments that lie on the convex side of a small spinal curvature may stretch over time. That curvature can increase with continued stress and stretching of the ligaments over time. The immature skeleton of the adolescent which is still composed of cartilage may then begin to change shape or remodel as constant abnormal pressure on the young vertebrae distorts their shape. In this fashion, scoliosis can actually change from a functional scoliosis to a structural or deforming type scoliosis. One can see that in the treatment of scoliosis not only is knowledgeable care a must but the clock is always ticking. Expedient treatment is extremely important. Small curves due to unleveling may progress quickly.



The traditional treatment of scoliosis is to do nothing with curvatures that are less than 20 degrees. At the point where a 20 degree curvature is obtained, usually a Milwaukee brace or other rigid, uncomfortable, self-containing brace is worn by the scoliosis patient. It should be understood that braces often do not halt curvatures. When spinal curves reach 40 degrees internal fixation through surgical implantation of metal rods or other devices is performed. This procedure produces extreme fixation of the spinal segments. These surgically altered spines can break in adult life and are often the site of substantial pain. Many of these children can be noted in adult life as those individuals with substantial reductions in spinal motion. My experience indicates to me that many children who have surgical fixation have the types of underlying and undiagnosed problems we have discussed above.

As scoliosis often begins secondary to spinal unleveling it is extremely important to:

1. Examine the spine, pelvis and leg length
2. Perform such exams as early as possible since scoliosis can rapidly worsen
3. Perform the correct x-ray series
4. Receive an exam by someone expert in the mechanics of the spine
5. Receive an exam at any age, (spinal stress due to unleveling takes its toll and can be improved regardless of age)

In my experience in having worked with a number of scoliotic children over the years chiropractic orthopedic methods of detection and leveling of the immature spine in scoliosis have been effective in reducing curvatures and insuring that scoliosis bracing and surgical fixation are either not indicated or certainly less often needed.

Chiropractors are dedicated and well educated health care providers who spend 4 years of focused study on the problems and pathologies of the spine. This includes complete assessment and diagnosis of all phases of spinal pathologies with an intimate knowledge of scoliosis. The chiropractic orthopedist is board certified in his field, certified by the State of New York and receives another 5 years of intensive study focused on spinal abnormalities, their causes and treatment.