

SCOLIOSIS

By Don McCann, MA, LMT, LMHC, CSETT

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As massage therapists we see a considerable number of clients with neck and back pain. The constant with these clients is an imbalance of the pelvis and exaggerated curvatures of the spine. The argument can be made that the majority of back pain is due to a degree of scoliosis. Understanding scoliosis and where it comes from has keys for the effective treatment and rehabilitation of our clients.

SCOLIOSIS – according to Taber’s Medical Dictionary: lateral curvature of the spine usually consists of 2 curves – the original abnormal curve a compensatory curve in the opposite direction. Commonly there are congenital scoliosis – present at birth, coxitic in the lumbar spine due to tilting of pelvis in hip diseases, habit scoliosis due to habitually assuming improper posture or position, inflammatory scoliosis due to disease of the vertebrae, ischiatic scoliosis due to hip disease, myopathic scoliosis due to weakness of spinal muscles, ocular scoliosis from tilting the head because of visual defects, paralytic scoliosis due to paralysis of the muscles, rheumatitic scoliosis due to rheumatism of the dorsal muscles, sciatic scoliosis due to sciatica, and static scoliosis due to difference in length of legs.

From the definitions of scoliosis and its causes we can see that spinal musculoskeletal conditions that include scoliosis are more common in our culture due to a variety of factors, some included in the definitions. As a culture one of the most important contributing factors is a sedentary nature of today’s population and lack of musculoskeletal strength building exercises for people in all walks of life. This not only takes place with adults who due to work, overall tiredness and dislike of exercise become sedentary, but also with children due to computers, TVs and electronic games being a main source of recreation. When children do not exercise and develop strength in their musculoskeletal system they are at risk of developing increased curvatures of the spine that lead to scoliosis. Add to the lack of exercise spending too much time in inappropriate furniture including school desk chairs, couches, beds, computer chairs and desk, there is an increase of diagnosed scoliosis from school screenings. An additional issue is that as children enter the rapid growth teenage years the curvatures already existing will worsen due to the lack of strengthening and coordination of spinal muscles. The increasing number of clients with scoliosis presents unique challenges. It is possible with lack of understanding structure and inappropriate treatment protocols to make the conditions including pain and structure worse.

When viewing our clients all of them have some curvatures of the spine, so we need to view scoliosis in terms of the degree of curvature. From Yokum’s accumulation of radiographic knowledge of x-rays of children normal rotations of the acetabulum are already present at 0-3 months and increase by 12 months. This we call the core distortion pattern. Also evident when viewing the x-rays is that with the rotation of the iliums there is a tippage of the sacrum, the base of the spine. The greater the rotation of the iliums the greater is the tippage of the sacrum with resulting increased curvatures of the spine. There is a correlation here that relates directly to the degree of scoliosis. Thus here is a foundation that has to be addressed if the curvatures of the spine (scoliosis) are to be reduced. It is necessary to provide support and leveling of the sacrum by reducing the rotations of the iliums.

Some of the rotations of the iliums is congenital, but a surprising degree is functional and can be reduced. The functional rotation of the iliums also produces a functional long leg and short leg. When this happens both legs whether it is the long one or the short one distort to try to minimize the overall structural imbalance. If we view the functional long leg that results from anterior rotation of the ilium pressing the hip joint down we will observe how the leg has tried to absorb the extra leg length. Some of the most common compensations are hyperextension, medial rotation of the knee, lateral rotation of the foot and lower leg, and eversion of the arch. Specific muscles that attach to the ilium that will be over developed and over contracted tend to be anterior and medial fibers of the gluteus medius, tensor fascia latae, and iliacus. For long term support to balance the rotation of the iliums specialized soft tissue protocols need to address the rotation of the iliums and distortions in the leg. This is necessary to support a reduction of rotation with the ilium.

The posteriorly rotated ilium which produces a short leg also has specific distortions in the structure and soft tissue of the leg. Specifically there is a tendency for lateral rotation from the hip to the knee, either hyper or hypoextension, and a shifting of weight back to the lateral heel. Additionally overcontraction and overdevelopment in the gluteus max, piriformis and rotators.

Even with reducing the distortions of the iliums, the long/short leg through soft tissue protocols the weight bearing support at the SI joint for the spine needs to be addressed. The only long term therapeutic correction that I have found is to include Cranial/Structural work. The Core Distortion of one anterior, one posterior ilium and tipped sacrum relates directly to the distortions found in the movement of the cranial bones. It is well documented through osteopathic work and craniosacral that a strong relationship exists between the cranial motion and the sacrum. CS addresses this relationship by reducing the soft tissue restrictions of the cranial motion that relate directly to the anterior/posterior rotation of the iliums. This produces an almost immediate observable and with kinesiology testing provable change in the rotation of the iliums. The weight bearing separation between the tipped sacrum and the rotated ilium are immediately reduced allowing the sacrum to level, thus the base of the spine has a level support and the exaggerated curvatures start to unwind.

There are additional benefits from the CS therapy. When the rotation of the iliums is over 15 degrees there is a dramatic lessening of muscle strength and function. Thus the greater the rotation the greater the loss of muscle strength and function. This continues down the legs due to the leg length changes, and up the spine due to the exaggerated curvatures. It continues through the neck, shoulders and arms again due to the curvatures of the spine producing rotations of the thorax and internal rotation down the arms. Approx 50% of the muscles of the body are dramatically reduced in strength and function with the core distortion rotations. Once this is released these muscles (50% that were weakened) are able to achieve a dramatic increase in strength and function.

Jackie was a 5'10" 14 year old volleyball player. She was screened at the volleyball physical and referred to an orthopedist for evaluation of a probable scoliosis. The evaluation showed a 38 degree scoliosis with recommendations for continuously wearing a brace or Harrington rods to straighten her back. Her parents brought her for therapy with hopes of avoiding the surgery or brace and allowing her to continue with the sport she loved. Upon structural evaluation it was evident not only the curvatures of her spine but also the rotation of her iliums with the left being anterior and the right being posterior. The left ilium anterior rotation was producing a functional long leg with a medial knee rotation, hyperextension, lateral foot and lower leg, and everted arch. The right posteriorly rotated ilium was producing a functional short leg with significant tension and overdevelopment in the gluteus max, vastus lateralis, and weight shifted to the outside back of her right heel.

Kinesiology muscle testing verified this along with dramatically weakened left leg gluteus medius, quadriceps, soleus fibers, and flexor inverter muscles. Additional testing around the ilium showed weakened iliacus and TFL. On the right posterior rotated ilium the hamstrings and gluteus max and piriformis and quadratus lumborum, lower psoas, peroneus longus, and obliques diaphragmatic arch were dramatically weakened. These findings are normally found before the CSCDR correction. CSCDR was applied and there was an immediate lessening of the degree of the rotation of the iliums with resulting normalizing of leg length. Kinesiological testing showed an immediate increase in strength and function of the muscles associated with the iliums and long and short legs. A structural evaluation revealed visible improvements in the rotations and the distortions of the legs and upper body. This was followed with a specialized soft tissue myofascial protocol treating the distortions in the soft tissue from the long leg and rotated ilium which were specific to the muscles and soft tissue described above. This further brought the iliums into balance and released additional soft tissue distortion in the legs, the diaphragmatic arch, and thorax. The session ended with strokes to release the spinal musculature from its old myofascial holding pattern and allowing a normalization of the articulation of the vertebrae. Jackie received 8 sessions on a weekly basis that incorporated CS therapy and specialized myofascial protocols. In addition the muscles that had been returned to strength and function continued to strengthen and help support the structural changes. Jackie was again evaluated for volleyball and cleared to play with a 25 degree scoliosis – the

high norm. Jackie continue to receive monthly sessions for 6 months, then on session every 6 months while competing through high school. Jackie went onto have a successful collegiate volleyball career.

The keys to treating Jackie's scoliosis were first to see the cd as the basis of the problem. 2nd to gain a significant change in the weight bearing structure of the rotation of the iliums and sacrum by using CSCDR. This not only gave her weight bearing support and dramatically reduced the rotation of eth ilium s and leveled the sacrum but also brought a significant number of weakened muscles back to full strength and function that were necessary for her to maintain structural changes. 3rd was to address the whole structure, but start with specialized myofascial therapeutic protocols to further bring the iliums into balance , release the distortions int ehleg due to long leg/short leg, release the diaphragmatic arch and thoracic up into the head neck and shoulders, and finally to release the old spinal musculature holding patterns of the scoliosis. These were the keys to her long term rehabilitation of her scoliotic pattern.