

Common Injuries/Illnesses of the Spine

Heaven on Earth Yoga Institute
Yoga Therapist Training

500 Hour YA Certification for RYT-200's

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Common injuries/illnesses of the spine

Disc herniation, spinal stenosis and scoliosis are conditions that I come across frequently while teaching yoga. By exploring them further in this paper, I hope to be better equipped to help my clients help themselves.

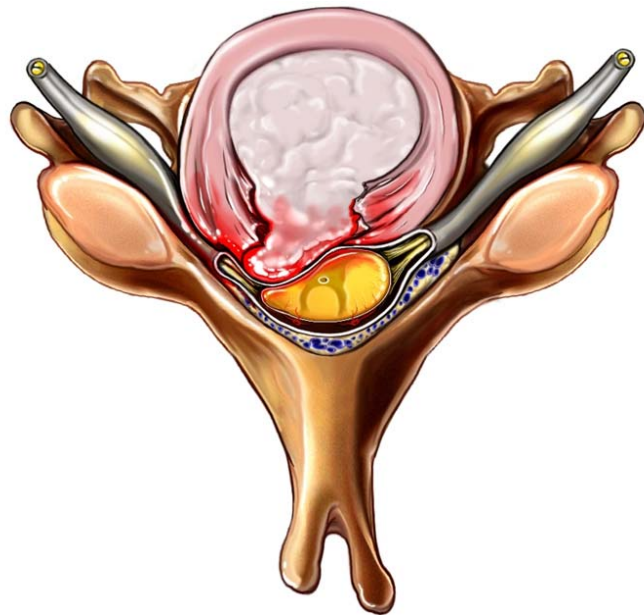
Disc Herniation

Description of disc herniation

The spinal disc can be compared to the jelly part of a jelly doughnut or the soft cushion that sits between each vertebrae of the spine. Since this disc becomes more rigid with age, leaving it more vulnerable to injury, the contents of the disc (nucleus pulposus) can be compressed against the tightly stretched and thinned membrane (annulus fibrosus).

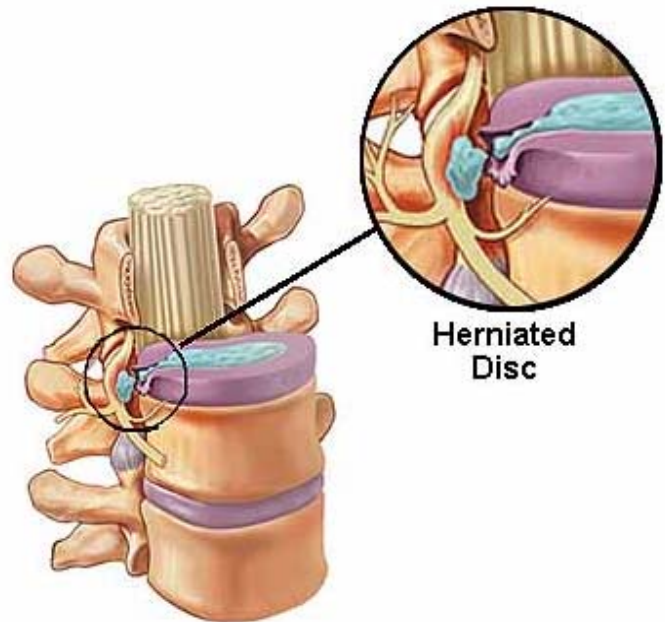
This usually occurs on the posterior side of the disc. The combination of a predominance of seated and forward bending activities in our daily lives along with membrane thinning from increased internal pressure can result in the rupture of the confining membrane. It may also occur suddenly as a result of a fall or an accident.

In the picture to the right the nucleus pulposus (the jellylike contents) move into the spinal canal and are possibly pressing on spinal nerves.



Disc herniations are most common in the lumbar and cervical spine posteriorly. The most common location for a herniated disc to occur is in the disc at the level between the fourth and fifth lumbar vertebrae or between the fifth and the sacrum. This area is the part of the lumbar spine that tends to disproportionately absorb the impact of bearing the weight of the upper body. Cervical herniations most often occur between the fifth and sixth or the sixth and seventh cervical vertebral bodies and can be the result of falls, accidents or poor posture.

There is normally a little extra space around the spinal cord and spinal nerves, but if enough of the herniated disc is pushed out of place, these structures can become compressed. The picture to the right shows how nucleus pulposus is pressing on a nerve.



It often occurs that a person who experiences a herniated disc may also already have spinal stenosis, a condition that causes narrowing of the space between the spinal cord and spinal nerves. When spinal nerves or the spinal cord becomes compressed, abnormal signals may get passed from the compressed nerves or signals may not get passed at all.

Recognition is now being generated from the medical community that back pain is not solely the result of compression, but may also be due to something called chemical radiculitis. The word radiculitis is a term used to describe nerve pain. It is called “chemical” radiculitis because this pain is caused by exposure of surrounding neurological structures to the interior gel of the ruptured intervertebral disc. This gel contains a protein called tumour necrosis factor-alpha and has been shown to cause cellular death in laboratory testing.

Signs and symptoms of disc herniation

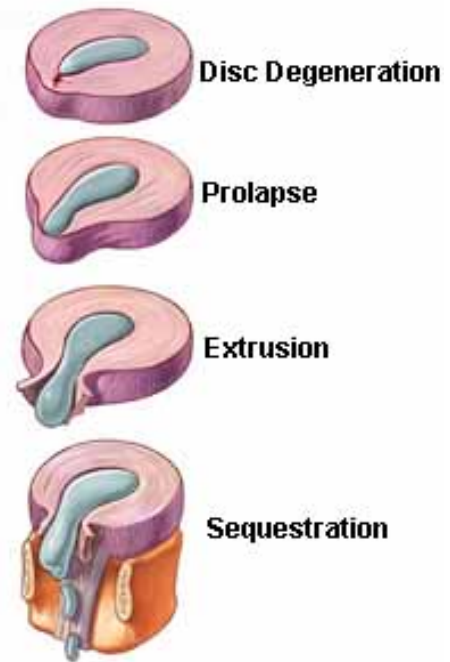
Symptoms of a herniated disc vary greatly. There are many factors involved including the location of the herniation, sensitivity to the protein called tumour necrosis factor-alpha, the types of soft tissue involved in addition to mind-body factors. Initial diagnosis can be difficult since patients will often have pain in the back and/or extremities that are difficult to define. Symptoms include sensations such as tingling, shooting pain, numbness, tingling, aching, muscular weakness, paresthesia and even paralysis. The reflexes in the extremities may also be affected.

In the cervical spine, the person may experience pain and numbness in one or both arms. In the lumbar spine, the person will typically have pain in one or both legs that is worse than their back pain. This may also be accompanied by numbness and muscle weakness in the lower leg or foot. Pain from a herniated disc is usually continuous, at least when the patient assumes a certain position or positions. This is different from the intermittent or pulsating pain

that is often associated with muscle spasm. Bowel and bladder issues may also be involved in disc herniation.

Although some people do not experience pain or dysfunction, there is generally thought to be four stages to the development of a herniated disc (see picture below). The four stages are as follows:

1. The nucleus pulposus undergoes chemical changes with age. This stage is called **disc degeneration**.
2. When the form of the disc begins to change and bulge, this is the second stage and is often called a **prolapsed** disc. For some people, this can cause discomfort in the spinal cord.
3. When the nucleus pulposus actually breaks down and begins to break through the wall of the annulus fibrosus, this is called **extrusion**. In this stage, the nucleus pulposus still remains within the disc.
4. When the nucleus pulposus actually breaks through the annulus fibrosus and leaks out into the spinal canal, this is the final stage of a herniated disc and is called **sequestration**.



The symptoms and intensity of a herniated disc are often not proportionate to the damage that can be seen on MRIs and through other diagnostic tools. Non-symptomatic herniated discs and leaking annular tears are quite common. Particularly in the lumbar and cervical regions of the spine, stress and degeneration is a part of their normal lifecycle. Herniated discs are not always accompanied by pain or any other neurological symptoms.

How come some people experience symptoms with a ruptured disc while others do not? There is quite simply no universally embraced theory within the back pain industry. There are three main schools of thought on this subject. The first is that some people may be genetically more sensitive to chemical substances such as tumour necrosis factor-alpha. The second is that pain is still a poorly understood phenomenon and that there may be factors in pain and other neurological symptoms that have yet to be discovered.

The third school of thought is the mind-body camp which can be further divided into two branches. The first branch would state that all back pain is entirely psychosomatic and that there is no actual irritation of the nerve fibers

at all. The patient's suffering is really psychological in nature. At some point, the patient must have been informed about the possibility of developing certain symptoms from a herniated disc and the physical symptoms have simply developed as a unique symptomatic expression relating to a psychologically induced pain syndrome. The second branch of the mind-body school might state that the irritation does indeed occur, but only because of a type of autoimmune dysfunction that has overly sensitized the nerves in these individuals. Immune issues are often thought to be psychogenic and even though the anatomical evidence can be verified, the source of the problematic concern remains locked in the subconscious mind.

While there is no doubt that many chronic back cases have psychological overlays, the significance of psychology for back problems is often greatly exaggerated. Dr. Ellen Thompson (1997) coined the phrase "bankrupt expertise" when referring to health care practitioners who are unable to guide improvement in their patients/clients and default to blaming the patients/clients and their psychoses.

Common medical treatments for disc herniation

Since the majority of herniated discs heal on their own, nonsurgical methods are usually tried first. Most physicians would probably prescribe pain medications and anti-inflammatories first so that the patient can start to move again. The purpose of these medications may also be to assist with sleep and relaxing the muscles. The patient would probably be referred to a physical therapist where a variety of modalities such as massage, electrical stimulation, traction, exercise and stretching.

Other possible treatments might include steroids, epidural (cortisone) injections, analgesia assisted traction therapy and intravenous sedation. Physicians may also advise the patient on how issues such as weight, smoking, back supports and other lifestyle factors might affect the healing process.

Yoga therapy view -- Chakra focal point of disc herniation

The location of disc herniation is a key factor in determining what might be an effective chakra practice for your client. Disc herniation in the lower vertebrae would indicate a root chakra imbalance while disc herniation in the cervical spine would indicate an imbalance in the throat chakra.

However, since most herniations take place around L4/L5 or S1/L5 with pain radiating down into the legs, the chakras that would be most often affected are the root and sacral chakras. Regardless of where the disc herniation is taking place, fear about basic survival issues such as finding shelter, food and rest will be present if the pain is severe.

Severe pain and fear about survival issues may cause various challenges in clear discrimination, causing a disconnection to the vijnamayakosha. It is common for people in pain to be afraid that the pain will last forever or even get worse over time. Anxiety about the future creates more tension. Being in a state of fear can also cause some of us to suffer from vata imbalance. If we are unable to work due to the pain, this will cause a shift in our routines and lifestyle patterns, all of which can contribute to more anxiety and can sometimes result in issues regarding elimination. Problems with elimination are generally attributed to vata imbalance and problems associated with the first chakra.

Symptoms related to the subtle body or pranayama kosha have to do with difficulty in feeling the rebound effect of prana flowing to and from the earth.

From a yogic perspective, different symptoms can be an indication of different dosha imbalances. Tingling or pins and needles sensations would be more indicative of vata symptoms, while any shooting pains relating to inflammation are indicative of pitta. Weakness, heaviness or feelings of being unable to move freely are tending more towards kapha symptoms.

Yogic remedies for disc herniation

In order to address this tendency toward vata imbalance it is important to:

1. Choose a sattvic diet which does not result in weight gain. The largest meal should be eaten between 11:00 AM and 3:00 PM when the fire of Agni is at its highest. This will also prevent a build-up of Ama which can spread to other tissues in the body
2. Practice pranayama techniques that help to slow the breath down and create study inhales and exhales, possibly with an emphasis on the exhale
3. Alternate nostril breathing can help with the fear and anxiety related to pain
4. Visualizing rich red or brown roots reaching down into the earth from the sacral area can help with grounding
5. Building reliable routines in relation to basic needs like eating, sleeping, exercising and working can also help to address root chakra issues
6. If constipation is an issue, any practices that increase digestive activity will be helpful. This might include any postures that encourage downward energy flow such as squatting.
7. Practicing svadhyaya by reading Scripture and other yogic methods that help us to differentiate between the real and the unreal will help to

improve the connection to the wisdom body and cultivate a feeling of oneness with the universal self.

8. Practicing yoni mudra (placing the hands on the lower abdomen with thumbs touching the navel area and fingertips meeting just above the pubic bone in a downward facing triangle position) will help to draw vata back into balance.
9. Instruct the client to avoid any repetitive movements with a flexed spine and if possible, sitting, bending and lifting activities.
10. Relaxation exercises such as visualization, yoga nidra and meditation can help to initiate a parasympathetic response and speed up the healing process.

Yoga poses for disc herniation:

1. Spinal stabilization postures (Locust etc.) with particular attention to the transverses and multifidus muscles.
2. Beneficial poses: Locust, tree pose, modified half-moon with one hand, knee to chest pose, lying down hamstring stretch with strap, plank pose, tricky cat, boat pose.
3. Introducing anything that promotes restoration of the neutral, natural curves of the spine will be helpful.
4. Contraindicated poses: initially all forward bending, seated and standing
5. Any isometric strengthening of the spine will be helpful.
6. During the acute phase, flexion and rotation should be avoided.
7. When the client has recovered from the acute phase, flexibility throughout the spine should be reintroduced. Improving the flexibility of the hamstrings, strengthening the core muscles and improving posture is also indicated.

If the lower back or cervical spine is flat, teaching the Anusara principles of opening to Grace, muscular energy, inner/outer spiral and organic energy will be fundamental to restoring these natural, shock absorbing curves. Different aspects of these principles will need to be emphasized depending on the individual and their disc herniation. For instance, if the back is flat, it will be important to teach inner spiral of the thighs in order to restore the natural curve to the lower back. The loss of a lumbar curve is often a major factor in lumbar disc degeneration. However, it is important that your client applies all the principles and in the right order to achieve the full benefits.

Although diet therapy may not be something that most people would immediately think of as a treatment for herniated discs, a macrobiotic diet may be helpful. The food we eat plays a large role in our biochemistry which will

greatly affect the amount of inflammation and pain that we may experience from something like a herniated disc.

Following a macrobiotic diet involves eating grains as a staple food supplemented with other foods such as beans and vegetables. Refined and processed foods (known to exacerbate inflammation in the body) are avoided. Macrobiotics also emphasizes the importance of eating foods that are appropriate for the season and eating fruits in the right quantity.

Just as the practice of yoga develops a higher level of awareness on all levels of being, the practice of eating macrobiotic foods is said to help in developing an intuitive sense of what we need in order to sustain our health and well-being. In the beginning though, dietary guidelines are provided in order to promote the development of that intuition. Foods that are thought to create balance include:

1. whole grains (brown rice and buckwheat pasta)
2. mild natural seasonings
3. vegetables
4. beans
5. sea vegetables
6. fermented soy products
7. fruit
8. nuts
9. seeds
10. non-stimulating beverages (i.e. bancha twig tea)
11. fish (occasional)

Chewing foods adequately is also of major importance. Foods that are classified as too stimulating or “yin” are thought to exhaust the body and mind and should either be eliminated or avoided entirely. Examples of yin foods include:

1. alcohol
2. coffee
3. chocolate
4. sugar
5. honey
6. refined flour products

7. drugs
8. dairy products
9. very hot spices
10. chemicals and preservatives
11. poor quality vegetable oils

“Yang” foods are considered to be very dense, concentrated and heavy. These foods are difficult to digest and are stagnating, particularly when eaten often and/or in large quantities. “Yang” foods include:

1. poultry
2. meat
3. eggs
4. refined salt

Macrobiotic theorists stress that all foods contain elements of yin and yang. This is similar to the yogic view that we all contain elements of earth, fire and air. Everything is relative and can only be determined by comparison.

Nightshade vegetables (eggplant, tomatoes, peppers, potatoes) are avoided by many macrobiotic practitioners because of the alkaloid solanine which is thought to affect calcium balance. Spinach, beets and avocados are also used sparingly as they are considered to be quite yin.

Spinal Stenosis

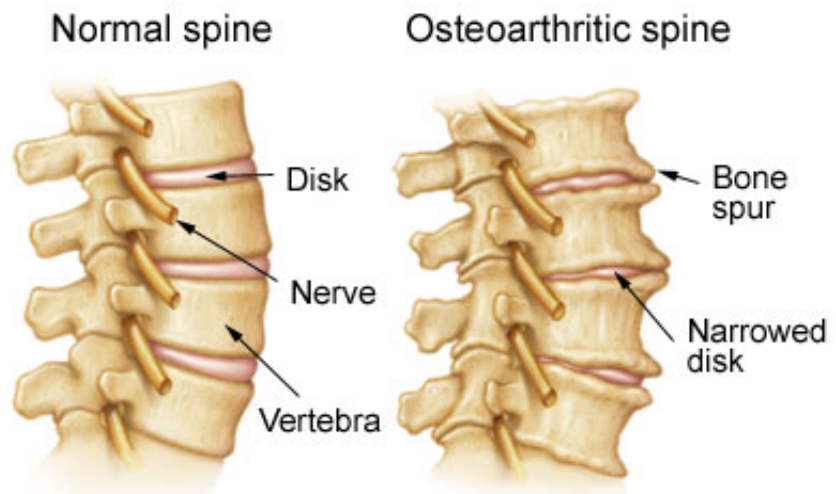
Description of Spinal Stenosis:

Herniated discs are often accompanied by a condition called spinal stenosis. Spinal stenosis is an abnormal narrowing of the central spinal canal or intervertebral foramen (lateral spinal stenosis). Central stenosis is narrowing of the central canal where the spinal cord travels. Lateral stenosis is the narrowing of the openings between vertebrae where the nerve roots exit the spine. This narrowing causes nerves to become compressed, either within the spinal cord or as the nerves exit the spinal cord.

Central stenosis can be the result of spinal disc herniation, osteoporosis, osteophytic enlargement of the inferior articular process, congenitally decreased diameters of the spinal canal, and spondylolisthesis. Lateral stenosis is usually caused by a subluxation of the facets as a result of disc narrowing.

In general, spinal stenosis is caused by any condition which leads to narrowing of the spinal canal, but the most common is arthritis of the spine.

Spinal arthritis causes narrowing because it leads to the formation of bone spurs, thickening joint tissue (as a result of chronic inflammation), calcification of spinal ligaments and general degeneration of the spinal discs. The picture to the right shows how the deformed spine could cause narrowing of the spinal canal and compromise nerve exit openings.



It is not common to find spinal stenosis in people under the age of 30. When younger people develop spinal stenosis it is usually a result of some kind of trauma to the spine.

Signs and symptoms of Spinal Stenosis

When spinal stenosis is present in the cervical spine, symptoms are often felt in the arms. If the area that is narrowing is in the lumbar spine, the symptoms are usually felt in the legs.

The most common symptoms of spinal stenosis include:

1. numbness
2. pain
3. weakness
4. tingling
5. back pain which is relieved by rest or flexing the spine
6. spinal extension increases pain
7. loss of bladder and bowel control (in severe cases)

Common medical treatments for Spinal Stenosis

Loss of bowel or bladder control is one of the more troublesome symptoms of spinal stenosis and is often treated as a medical emergency. When this occurs, medical professionals generally recommend immediate surgery.

Relieving the pressure on the spinal cord and nerves is the main purpose of any surgery related to spinal stenosis. A surgical procedure called a laminectomy may be performed to lessen the pressure on the spinal cord. This is most commonly performed in the lumbar spine. During this procedure, the lamina and spinous process of the vertebra are removed. Any other areas encroached upon by bone are also trimmed down.



Risks associated with surgery include infection, damage to nerves, tears in the meninges at the place of surgery and deep vein thrombosis. If a tear in the meninges occurs, cerebral spinal fluid can leak through the skin and lead to an infection. Arachnoiditis can also develop as result of a tear in the meninges.

Yoga therapy view -- Chakra focal point of Spinal Stenosis

The focal point for chakra therapy for spinal stenosis will usually be on the area where the client feels the most discomfort. Since there is a narrowing of the spinal canal, it makes sense that the chakra or chakras may be deficient.

If the client is suffering from spinal stenosis in the lower back, visualizing the first three chakras speeding up on the inhale and slowing down on the exhale and/or expanding on the inhale and relaxing on the exhale might help. The same type of visualizations can be done for the heart and throat chakra if the spinal stenosis is located in the upper spine.

In general, most people suffering from painful conditions can benefit from visualizations and meditations focusing on the root chakra. Pain causes fear which causes more tension and so connecting to the earth and the universal self is always beneficial.

Meditation and visualizations where the client watches the chakras blossom one by one along the spine, immersing themselves in the color and nature of that chakra may also be helpful.

Yogic remedies for Spinal Stenosis

Yoga has the potential to improve vertebral alignment, increase range of motion and correct posture, all of which has the potential to slow down the progression of spinal stenosis. Backbends can close off the spinal canal further and may be contraindicated with central stenosis. However, this must be evaluated on a case-by-case basis as it is always beneficial to move within a pain-free range. Encourage your client to be mindful and approach back bending with caution if they suffer from central stenosis.

Side bending and twisting away from the painful side can open up the spaces between the vertebrae and reduce pressure on nerve roots in clients suffering from lateral stenosis.

For both types of spinal stenosis, inversions can help to reduce inflammation. Any poses that bring awareness to a lengthening of the spine in an isometric way such as mountain pose, tree pose, bound angle, and downward dog will usually be beneficial. However, it is particularly important in spinal stenosis to encourage the client to listen to their bodily signals. Any poses that aggravate symptoms can increase damage to the spinal nerves by causing inflammation.

Other poses that might be helpful include:

1. half-moon pose
2. child's pose
3. staff pose
4. standing and seated forward bend
5. happy baby pose
6. wind relieving pose

Poses that might be contraindicated include:

1. camel pose
2. bow pose
3. locust pose
4. dancers pose
5. knee down twist (and possibly all twists)

All types of massage could be beneficial for spinal stenosis. Care must still be taken not to aggravate any symptoms during Thai yoga massage by doing movements which are uncomfortable for the client.

Traditional Swedish massage can also be very effective in the reduction of pain caused by spinal stenosis. Massage can range anywhere from light, energetic enhancement to deep cross friction type movements. With this type of massage as well, the practitioner must be careful to avoid inflaming any joints as this can worsen symptoms.

During structural alignment therapy or while designing an exercise program for someone with spinal stenosis, it is important to remember that spinal extension usually increases pain and flexion of the spine reduces it. Rotation may also exacerbate pain and inflammation in some clients and in this case should then be avoided. However, this can vary from person to person and even from day to day. As long as you encourage the client to work through a pain-free range of motion, all movement is good movement.

In people who have had a laminectomy, stabilization poses are usually helpful in minimizing the postsurgical instability which is often expected.

A macrobiotic diet can help reduce inflammation and therefore the symptoms of spinal stenosis. Alkalizing diets are also popular for their anti-inflammatory properties. Although this diet is controversial and not everyone agrees with it, many people claim to enjoy tremendous benefits from following it.

The Alkaline diet is also known as the alkaline ash diet. It is based on the theory that certain foods leave an alkaline residue or ash after consumption. Minerals like iron, magnesium, calcium, copper and zinc are said to be the principal components of this ash. A food is classified as neutral, alkalizing or acidic according to the pH of the solution created with its ash and water.

Our bodies have an acid-based balance between 7.38-7.45. A more alkaline pH is thought to be healthier. An acidic pH is thought to slow down the healing process and provide an environment that has a tendency to promote to disease. In general, the diet involves eating vegetables, nuts, legumes, fresh citrus and low sugar fruits. Alcohol, mushrooms (fungi) cranes, dairy, meat and sugar should be avoided.

One of the most famous promoters of the diet is Dr. Robert Young who wrote the popular book "The PH Miracle". He claims that a diet that is 80% alkaline and 20% acidic is ideal and can even reverse aging. By eating a diet that keeps the pH levels alkaline, the body does not need to use up mineral buffers and calcium stores. The diet has also been said to reduce inflammation, eliminate food sensitivities and restore us to our ideal weight.

There is also strong mind-body component to the alkaline diet. Positive emotions like love, faith, forgiveness and peace are said to have an alkalizing effect while negative emotions like anger, fear and resentment are said to have an acidic effect.

Scoliosis

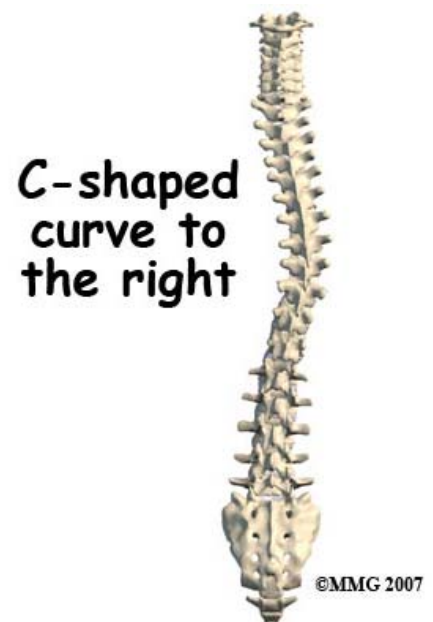
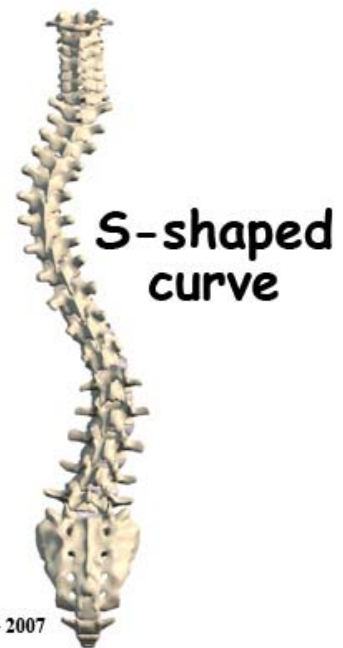
Description of Scoliosis

The word scoliosis comes from the Greek word meaning crooked. Approximately 3 out of every 100 people have some form of scoliosis. Scoliosis is a three-dimensional condition where the spine can take on abnormal positions in the sagittal, frontal and transverse plane. It also involves lateral curvature of the spine with either a C shape or an S shape.

There are two types of scoliosis: structural or idiopathic (approximately 80% of cases) and non-structural or functional. In structural or idiopathic scoliosis changes have occurred in the ligaments, bones, muscles and other surrounding structures. Idiopathic scoliosis can be further classified as either congenital, infantile, juvenile, adolescent, or adult depending on when onset occurred. Congenital scoliosis is often more severe than other types and is usually treated more aggressively.

In structural scoliosis, the spine has a fixed curve that is structurally abnormal. Scoliosis can occur at any age, but onset is most common during adolescence and affects girls more often than boys. If scoliosis is already present at adolescence, it often worsens during the adolescent growth spurt.

Low bone density and amenorrhoea appears to be quite common in people suffering from structural scoliosis. The word idiopathic means “unknown factors” and is generally thought to be a result of many factors, but genetics do play an important role. As a result of a 10 year study that was outlined in the May 2007 issue of the American Journal of human genetics, researchers identified the first gene associated with idiopathic scoliosis, CHD7.



Other causes for this type of scoliosis include:

1. Neuromuscular diseases (such as cerebral palsy, spina bifida, spinal muscular atrophy, polio, or muscular dystrophy)
2. Birth defects
3. Injury
4. Certain infections
5. Tumors (such as those caused by neurofibromatosis)
6. Metabolic diseases
7. Connective tissue disorders
8. Rheumatic diseases
9. Marfan's syndrome (inherited connective tissue disorder).

Non-structural scoliosis

When the spine is structurally normal but appears curved as the result of another cause. There may be small structural changes in the spine, but these tend to be minor. This type of scoliosis can be caused by postural habits or single handedness. When caught early, this type of scoliosis is more easily treated. It can be caused by an underlying condition such as:

1. A difference in leg length
2. Muscle spasms
3. Inflammatory conditions, such as appendicitis.
4. Poor posture
5. Nerve root irritation
6. Contracture around the pelvis

Signs and symptoms of scoliosis

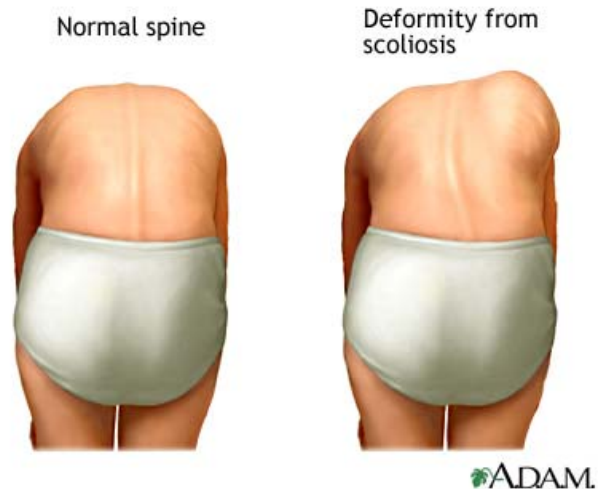
In structural scoliosis, the lateral curvature is accompanied by rotation in one or more of the vertebra at the point of the curvature. The body of the vertebra rotates to the side of the convexity and the spinous processes rotate to the side of the concavity.

The ribs attached to the body of the vertebra go with them causing the ribs to bulge out in the back on the side of the convexity, be depressed on the side of the concavity and in the front to bulge out on the side of the concavity. The

sternum is drawn to the convex side. The disc space and vertebral canal narrows on the concave side. It is most common in the thoracic spine.

On the side of the convexity, the muscles are long and weak because they are overstretched. On the side of the concavity, the muscles are short and tonic as they have been firing within a shortened range of motion.

When viewed from behind there is a visible curve in the frontal plane. When the client assumes a forward bend, the ribs often bulge on the convex side where the ribs have rotated posteriorly. Spinal mobility is restricted and breathing patterns on the compressed side are compromised. There is a prominence of the ribs on the posterior side (side of convexity). Uneven iliac crest, shoulder and scapular heights are also often present as well as asymmetry from right to left between the space between the arm and torso.



A person with functional scoliosis can often reverse the curves of the spine when the underlying problem is corrected. In functional scoliosis, the ribs do not bulge while forward bending.

Scoliosis can produce symptoms such as:

1. muscle tightness
2. fatigue, back pain
3. decreased lung capacity
4. dizziness
5. numbness
6. tingling
7. pressure on the heart

Some of the signs of scoliosis include:

1. uneven musculature
2. asymmetrical location or size of breasts
3. slow nerve action
4. rib prominence

5. shoulder blade prominence
6. rotation of the rib cage

Common medical treatments for scoliosis

A teenager afflicted with structural scoliosis will usually have the curves of her spine periodically checked by a physician and if at maturity the curve is 30° or more and is progressing, surgical correction is often recommended.

The general view within the mainstream medical community is that individuals with progressing and uncorrected scoliosis are at risk for pulmonary complications secondary to advanced rib compression, spinal pain and gait abnormalities as they age. Bracing and surgery are still considered to be the only two scientifically proven treatment methods for scoliosis.

For people suffering from progressive scoliosis, braces, surgical correction and the placement of a rod up the spine is often recommended. Many people with scoliosis receive help and advice from osteopaths.

These pictures below show bracing and surgery of an S-shaped scoliosis:



Other medical treatments for structural scoliosis include:

1. traction
2. comprehensive manipulative medicine (CMM)
3. physical therapy

Doctors treat non-structural scoliosis by correcting the underlying problem.

Yoga therapy view -- Chakra focal point of scoliosis

Chakra therapy for scoliosis can involve visualization and meditation on each chakra, starting at the base of the spine and moving upward. If the client experiences pain or tightness in specific chakra areas, then extra time and attention can be spent focusing on these areas. In addition to meditation and visualization, chakra therapy can include sounds, mantras and yantras.

Another approach might be to focus the chakra therapy on the parts of the spine where there is the most curvature. For instance, if the greatest curvature and rotation of the vertebrae occur at the heart chakra and the belly chakra, then it might be appropriate to lead your client through meditation and visualizations on the chakras.

Meditations on the heart chakra can include anything from techniques to connect with the universal self to meditations on love, nature and forgiveness. Meditations on the belly chakra generally involve techniques to improve self-esteem. Meditating on the sun or the color yellow can be beneficial for the third chakra.

Yogic remedies for scoliosis

Inflating the inner body of the weaker structures in the back and melting/relaxing the stronger structures are important techniques in any yoga therapy program for someone with scoliosis. The yoga therapist places her hands on the hollower portion(s) of the client's back. The client is then asked to try to breathe/puff into those parts of the back, inflating them energetically. The yoga therapist can then place her hands on the tighter portion(s) of the client's back and ask her to feel this part of her back softening and melting.

This can help to shift/turn the alignment of the torso and spine. Over time and with guidance, the client can continue with this technique on their own, breathing into the weaker parts of the back and focusing on melting and relaxing the tighter structures. Hugging and kneading the more dominant structures is also helpful and will generally relieve discomfort.

Yoga therapy also involves stretching the contracted, tight side (concave side) and strengthening the weak, overstretched side (convex side). When there are two curves, one is usually called the primary (first curve) and the other a secondary curve. The secondary curve has usually developed to compensate and try to balance the spine. From a structural alignment perspective, correcting the primary curve is the more logical starting point. Once the

primary curve has lessened, the secondary curve will also tend to improve as well.

This can make symmetrical movement difficult and less effective as corrective exercise. Nonetheless it is usually advised that it be done along with unilateral exercise.

Aryurvedic and macrobiotic diets which recognize the need for adequate calcium, vitamin B6, vitamin C, tryptophan, vitamin D and manganese intake may help to combat low bone density issues. Although a more mainstream approach to nutrition would ascertain that the consumption of meat and dairy products are necessary to obtain the vitamins and nutrients mentioned above, there are many excellent plant sources from which we can obtain everything our bodies need.

Thai yoga massage can be very beneficial for people suffering from scoliosis. It is the combination of the energetic and physical components which make Thai yoga massage particularly effective. People suffering from scoliosis often have a sensation of extreme tightness in the contracted areas of the back. Using a combination of gentle yoga stretches, the client's body is brought into a state of complete relaxation where the tight structures are given the opportunity to stretch out and release their grip. Thai yoga massage can also restore the flow of energy running throughout the body through the application of acupressure along the energy lines of the body.

Pranayama will help to stretch the intercostal muscles (between the ribs), improving lung capacity and sometimes even the alignment of the rib cage. Dirga pranayama (three-part breath) can help to improve awareness of the breath and increase lung capacity. Three-part breath can be practiced before, during and/or after the practice of yoga postures. During pranayama, emphasis should be placed on breathing into the tight structures of the body.

Core strengthening poses such as sunbird, plank and boat pose may also be helpful as well as teaching the client to stand and lie down in a neutral spinal position. Neutral spine can be perfected in mountain pose, equal standing and corpse pose.

With a structural or idiopathic scoliosis, it can be important to set expectations. The yoga practitioner may find it appropriate to let the client know that although they may be able to help them with the muscle and soft tissue surrounding the bony structure, it will be much more difficult and perhaps even impossible for them to make lasting or complete changes in the curves and rotations of the bones.

Strengthening yoga postures for scoliosis:

1. downward facing dog pose to check alignment of spine

2. downward facing dog on one leg and/or one arm to build equal strength on both sides of the body
3. plank pose
4. plank pose lifting one arm and one leg to build equal strength on both sides of the body
5. side arm balance if possible
6. locust pose
7. tricky cat
8. boat pose
9. triangle pose
10. warrior II
11. warrior III
12. mountain pose
13. thunderbolt
14. staff pose

Yoga poses to create more spinal mobility and improve posture include:

1. seated head to knee
2. supine diamond
3. high lunge
4. pigeon pose
5. wind relieving pose

Twisting yoga poses that can help to naturally realign the spine and decrease posterior rotation include:

1. knee down twist
2. half lord of the fishes pose
3. pelican
4. revolved triangle

Chest opening poses stretch the intercostal muscles, improve lung capacity and create better alignment of the rib cage. Backbends can also help to strengthen back muscles, providing support for the weaker structures in the back.

Examples of some good chest opening poses include:

1. little bridge pose
2. wheel
3. camel pose
4. dancers pose

With scoliosis it is important to make sure your client knows it is important for them to do the posture on both sides of the body even if they are more proficient on one side than the other. If they like, they can do the pose twice on the same side if it is helpful for strengthening the weaker structures or stretching the tight structures.

Educating the client on the importance of knowing how to move in and out of neutral spine will always be beneficial. All information and help regarding structural alignment and good posture are usually very helpful. Finding a balance between activity and rest and having people with whom you can communicate your needs are also important aspects of managing pain.

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