Diagnosis: Scoliosis

But what does that actually mean?

This brief guide aims to answer your questions about scoliosis and treatment options.

A MediSpera Publication
www.medispera.com

©MediSpera2017
Have you or someone in your family recently been diagnosed with scoliosis?

Or perhaps you suspect somebody that you know has the condition?

This guide will explain the background to scoliosis and a non-exhaustive overview of treatment options, surgical versus non-surgical, with examples of most of the treatment options.

We suggest using this guide as a starting point in your research and to look further into any of the options which appear to suit.

So before we explain what scoliosis is and how it can be treated, here’s a tiny bit of background about us:
Background

MediSpera Ltd was established to bring leading edge medical devices to help make patients lives easier, more independent and to improve their quality of life.

For this reason we are passionate about medical devices that bring about pain relief and a rapid rehabilitation. We are keen to reduce pain and where possible, to get rid of it altogether. The devices we sell often do so quickly so our patients can get back to living their lives to the fullest, or to being the best they can possibly be under their unique circumstances.

Speaking from personal experience, suffering from any medical condition that causes us to lose our quality of life or to live with pain, can make us forget who we are, lose our dynamic personalities and sometimes become someone we do not necessarily recognise or even like. It impacts our every day life, often losing the ability to work, socialise, and do the things we love. We stop living and become victims of our conditions. Worse, we have the danger of becoming our conditions.

Sometimes this is inevitable, but often we can improve our lives by learning everything we can about our condition and our treatment options. I have found that by researching my conditions, whether acute or chronic, and implementing what I have learnt (thank goodness for YouTube!), I have felt empowered, relieved and mentally strong, able to believe in myself and my ability to get back on top again.
Background continued

Knowledge is power! Once we have the knowledge, we have the ability to make choices to improve our condition. Often all it then takes is will-power, such as doing certain exercises, avoiding certain foods, improving nutrition, changing life-style, etc. This may not resolve the root cause of our condition but it won’t hurt either and it will improve us physically and mentally.

This is why MediSpera only sells devices that we believe improve the client’s condition either by reducing their pain, improving their quality of life, or their independence. We also sell monitoring devices such as medical scales.

We do not sell to everyone - if we do not believe the device will help you, we will advise you of such.

So that’s us! The rest is about you! I do hope this guide provides enough information to help you get started on your quest to improve your condition and relieve your pain, or if you’re a carer, to improve the condition of the person you are caring for.

Feedback and suggestions are gratefully accepted.

Lesley Anne Rubenstein-Pessok
Info@medispera.com
@MediSpera
What is scoliosis?

Scoliosis is quite simply a lateral curvature in the area of the spine that is normally straight. If viewed from the side, you would observe a slight roundness in the upper back and a degree of inward curvature in the lower back.

The difference between a person with a normal spine versus a person suffering from scoliosis, is the former appears to have a straight spine whereas the latter appears to be curved, when viewed from the front or back.

The causes of scoliosis

There are a number of causes of scoliosis:

A person may be born with scoliosis, caused by a bone abnormality (congenital) or as a result of abnormal muscles or nerves (e.g. cerebral palsy or spina bifida (myelomeningcele)).

Idiopathic scoliosis is the most common cause, believed to be inherited but it has no specific identifiable cause (hence the term ‘idiopathic’).

Other causes may be degenerative, caused by trauma (illness, back surgery or other injury), or osteoporosis, often found in the elderly.
Who can get scoliosis?

Approximately 2% to 3% of the population at age 16 have scoliosis which is a relatively high percentage, although less than 0.1% have spinal curves measuring greater than 40 degrees, which is the point at which surgery becomes a consideration. Most people have mild scoliosis and do not need any treatment. Girls are more likely to be affected than boys.

Idiopathic scoliosis is most commonly a condition of adolescence affecting those aged 10 through 16. Idiopathic scoliosis typically progresses during the "growth spurt" years, but will not normally progress during adulthood.

Degenerative scoliosis could happen to anyone since it is caused by illness, back surgery or other injury. If due to osteoporosis, this is normally found in the elderly.
How is scoliosis diagnosed?

Most scoliosis curves are initially detected on school screening exams, by a paediatrician or GP, or by a parent.

Some clues that a child may have scoliosis include:
- a visibly curved spine
- one shoulder being higher than the other
- one shoulder or hip being more prominent than the other
- clothes not hanging properly
- a prominent rib-cage
- a difference in leg lengths

The diagnosis of scoliosis and the determination of the type of scoliosis are then made by a careful bone exam and an X-ray to evaluate the magnitude and degree of the curve.
Treatment for scoliosis

It is very important to seek medical advice upon realising the child or adult is suffering from scoliosis. As mentioned above, in 90% of scoliosis cases, scoliotic curves are mild and do not require treatment.

In growing adolescents, it is very important for curves to be monitored for change by periodic examination and x-rays, as needed. Increases in spinal deformity will require treatment intervention.

A majority of adolescents with significant scoliosis with no known cause are observed at regular intervals (usually every 4-6 months), including a physical exam and an X-ray to monitor any changes in the degree of curvature.

What factors determine the treatment plan?

The following factors determine the patient’s treatment plan:

- The patient’s age
- The bone age (the maturation of bone is not necessarily the same as the patient’s chronological age)
- The degree of curvature
- The location of curve in the spine
- The status of menses/puberty
- The patient’s gender
- Any curve worsening
- Associated symptoms such as back pain or shortness of breath
Non invasive, non surgical treatments

‘Conservative treatment’ is the commonly used term to describe the various types of non-surgical treatments. Since almost all people with spine-related problems do not require surgery, conservative treatments play a major role in dealing with spinal disorders. However, there is a wide selection of conservative treatments available, and sometimes it can be very difficult to make sense of all the choices.

It is very important to consider the appropriate conservative treatment for your spine, and this section is specifically designed to provide you with a review of how different health-care professionals, including osteopaths, chiropractors, and physiotherapists, approach spinal disorders. This information will aid you to make a decision of the type of professional who might be able to help you, and with whom you may want to consult.

Conservative treatment should be the first option in order to reduce pain. The most common form of treatment is physical therapy.
Conservative treatments

Conservative treatments include:

- Physiotherapy
- Braces
- Spinal decompression or traction
- Flexibility & strengthening exercise programmes
- Heat
- Electrical nerve stimulation
- Hydrotherapy
- Tissue mobilization & massage techniques
- Back education

**Physiotherapy** affords a wide range of treatments for back problems. Physical therapy treatments have four main goals, to:

- Relieve pain
- Accelerate natural healing processes
- Increase strength and flexibility of back muscles and ligaments
- Help prevent future episodes of back pain

The types of treatment used by the professionals will depend on the nature of the condition being treated. Some treatments have not been scientifically proven, but can still be helpful in certain individuals.
Conservative treatments cont.

**Braces.** Braces are often used in adolescents who have a spinal curve between 25-50 degrees, especially if they have at least 2+ years of growth left, in an attempt to halt curve progression. There is a chance it will afford a temporary correction, but it is more than likely that the curve will assume its original magnitude when the treatment ends.

The brace shown directly above is the Crass Cheneau®. Children wear the brace for 12-16 hours a day and are recommended to combine the treatment with daily Schroth* method exercises and freestyle swimming and is particularly effective in lumbar and thoracolumbar idiopathic scoliosis.

*https://www.youtube.com/watch?v=JUXcQvzx2H0
**Spinal Decompression or Traction Devices.** Spinal decompression in 2D (tables) or 3D (Vertetrac), or spinal stretching equipment has been used to help decrease pressure on the nerve roots and to provide a stretch to tight muscles in the back.

Spinal traction has long been recognized since ancient times as an effective treatment for various spinal disorders. Traction can be performed in 2D (less effective and takes longer), or 3D, for a rapid rehabilitation, where patients are ambulatory (mobile) during treatment. A dynamic brace system (DBS) rail is added to the Vertetrac for the scoliosis treatment.

The treatment regimen is 2-3 times per day, for 30’ per treatment; it is NOT worn continuously. The key advantages of this treatment is the ability for asymmetric application which is crucial for scoliosis treatment, and the fact that the patient walks during the treatment, either at the clinic or in the privacy of their home. For more information on this treatment, visit: https://medispera.com/portfolio/dbs-scoliosis-rail/
Conservative treatments cont.

**Flexibility and strengthening exercise programs.** These types of programs are important for keeping the lower back muscles flexible and strong. They are among the main safeguards for preventing future back injuries. It is important to begin slowly and progress as tolerated, using pain as your guide. The old adage "no pain, no gain" is definitely not the rule of thumb for the recovery of back pain. See these gentle Yoga exercises https://www.youtube.com/playlist?list=PLXTv2S-6_78iS1tBjo0lMsZNdpXa1ydCt

**Heat.** Heat is normally applied when there is a small area of tissue damage or inflammation. Electrical currents can be used to relieve pain and also to stimulate circulation in the deeper tissues.

**Electrical nerve stimulation.** This includes transcutaneous electrical nerve stimulation (TENS), in which electrodes are placed on the back to gently stimulate nerves and helps alleviate pain. TENS appears to be helpful for some people with spinal stenosis, but has not otherwise been found to be generally helpful. An alternative version delivers the electrical stimulation through acupuncture needles. Treatment generally consists of 45 minute sessions, three times a day. Most people hardly feel the electrical sensation.
Hydrotherapy. Hydrotherapy involves the use of water (hydro) to treat physical disorders and may include baths, spas, pools, or shower sprays. See a video of a child being treated with hydrotherapy in the Benner Health Cardon Children’s Medical Center in Arizona, USA https://www.youtube.com/watch?v=v9ZoLg1RPcg

Tissue mobilization and massage techniques. Massage and a variety of soft tissue mobilization techniques are being used more often by therapists who specialize in manual therapy. These techniques may be helpful to increase circulation to the area, release muscle spasms, and stretch back tissues.

Back education. This involves teaching the correct posture and lifting techniques as part of a total back care program. This information helps people to adapt and adopt the right attitudes about the body and its functional use.
Invasive treatments

All efforts to correct scoliosis non-invasively, using conservative treatments, should be investigated before resorting to surgery, if the curve is up to 50 degrees.

**Surgery.** Patients with curves of 40° to 50° or above are often considered for scoliosis surgery. The goal is to make sure the curve does not get worse, but surgery is highly unlikely to straighten the spine perfectly. During the procedure, metallic implants are utilized to correct some of the curvature and hold it in the correct position until a bone graft, placed at the time of surgery, consolidates and creates a rigid spinal fusion in the area of the curve. This means joining the vertebrae together permanently.

In young children, a technique that does not involve spinal fusion may need to be used because fusion stops growth of the fused part of the spine. In these cases, a brace must always be worn post-surgery, until the child stops growing.
Factors influencing surgery recommendation

The factors that influence the decision for surgery are:

- Area of the spine involved
- Severity of the scoliosis
- Presence of increased or decreased kyphosis
- Pain (rare in adolescents, more common in adults)
- Growth remaining
- Personal factors
Risks of back surgery. According to the www.LaserSpineInstitute.com website, about 400,000 people in the United States of America that undergo open neck or back surgery experience between 30-40% postoperative complications. This is often caused by the formation of excessive scar tissue, adherence, infection or nerve damage during surgery or during the healing process.

It therefore makes sense to make best efforts to avoid surgery if at all possible. If this is not possible, see suggested questions to ask your surgeon in the following pages.
Questions to ask your surgeon

The factors that influence the decision for surgery are:

- What are the risks inherent in this type of surgery?
- What will the surgery involve exactly?
- How many spinal surgeries has this particular surgeon performed and what is the incidence of complications?
- Who will be on the team?
- Is this a teaching hospital and if so, will anyone other than the designated surgeon be performing the surgery?
- If the surgery is for a child, is a neurosurgeon part of the operating team?
- How long will the surgery last?
- Will there be in a lot of pain? What medication is given to help with the pain?
- Should I or someone else donate blood? Will I need a transfusion?
- How long will the patient be in hospital? If surgery is for a child or adolescent, are there parent facilities?
- What kind of physical limitations will I have post-op?
Questions to ask your surgeon - cont.

- If the patient does not have the op, what kind of physical limitations will I suffer as a consequence?
- Will the patient need to wear a brace after surgery?
- Will the patient require physical therapy? If so, for how long?
- How soon after surgery can the patient shower or wash their hair?
- How long before return to school or work?
- How long before the patient can be active again (i.e., play sports)?
- Will surgery limit flexibility (e.g., bending over, ability to walk, range of motion?). If so, for how long?
- Which is preferable? Allograft bone or own bone harvested?
- If spinal fusion or implants is part of the op, will the patient need to take antibiotics before dental work?
- Will the metal detectors go off in airport security if rods are placed in my spine?
- Will more than one surgery be required?
- Who can I speak with or what can I read to better prepare for surgery?
- What pre-op testing is needed before surgery?
Dental work & spinal implants or fusion

Patients with a history of spinal surgery with implants (fusion, disk replacement, stabilization with metallic or plastic hardware) need to be pre-treated with an antibiotic if dental work is needed within 24 months of surgery.

Routine dental procedures for the first 3 months following a spinal fusion are best avoided.

For 24 months post surgery, antibiotic therapy is often recommended. After 24 months, no antibiotics are necessary.
What happens if we do nothing?

Two factors can strongly predict whether a scoliosis curve will get worse: young age and a larger curve at the time of diagnosis.

Children younger than 10 years with curves greater than about 35 degrees tend to get worse without treatment.

Once the child reaches adulthood and has stopped growing, it is very rare for a curve to progress rapidly.

It is well documented that once a patient is fully grown, scoliosis less than 30 degrees tends not to get worse, while those with curves greater than 50 degrees can get worse over time, by about 1 to 1.5 degrees per annum.
Would you like more information on 3D Spinal Decompression treatment?

Thank you for taking the time to read this guide on scoliosis. We do hope it had given you ideas on which treatment or combination of treatments are most likely suitable.

If you have any questions or concerns or would you like to learn more about our 3D non-invasive, non-surgical ambulatory spinal decompression treatment devices for home or clinic use, please visit our website at www.medispera.com and check out the videos, clinical information and testimonials.

Or if you prefer, contact us via the chat facility on our website or simply call us on +44 (0)20 8868 3163.