The Most Frequently Asked Questions of Scoliosis Specialists

There are many conditions in which scoliosis may occur and some of these are quite rare. Given that 80 to 85 percent of scoliosis falls into the adolescent idiopathic category (AIS), the information given in this FAQ section, and indeed the website in general, relates to that condition. (see About Scoliosis on the website). The figures quoted and the treatments mentioned below refer to the management of AIS in the teenage years.

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Does scoliosis affect my general health?

Scoliosis does not cause any significant problems for the rest of the body. It does not affect the way in which the nerves, the heart or other internal organs work. Thoracic curves larger than 60 degrees may have a small impact on lung function but this is not noticeable, even when exercising. Very large curves (more than 100 degrees) can cause a reduction in lung function that may limit the ability to exercise.

Is scoliosis painful?

Many of those with scoliosis get minor backache. It is normally felt at or near the middle of the curve and it tends to come on after a long day or after vigorous sport. It improves with rest and it does not interfere with normal activities. Most often medication is not required. Discomfort may be also be experienced in the area of the apex of the curve if the curve is developing rapidly. This is understandable because the tissues are being put on stretch.

If there is a clear complaint of pain this is a “red flag” and the matter should be investigated. There is no simple laboratory test whereby the diagnosis of idiopathic scoliosis can be established. As explained on the website About Scoliosis, the diagnosis is one of exclusion.

Clinical medicine is an art based on the laws of probability. If a spinal curve is really painful then the diagnosis is unlikely to be adolescent idiopathic scoliosis, at least in the teenage years.

Will scoliosis stop me playing sport?

No. Many of those with scoliosis excel at sport. Some are even national champions at their game. Scoliosis does not weaken the back. With rare exceptions there are no limits to playing all sports.

Are there some jobs that I won’t be able to do?

As for sport, there are no major limitations. However, it is probably better to avoid jobs involving very heavy physical labour. Some employers, such as the military or the police, may require specialist reports before allowing someone with scoliosis to join.

Can exercise cure scoliosis?

There is no scientifically-proven exercise therapy that will lessen a scoliosis or prevent a curve worsening over the long-term. If this were so, there would be published papers in front-line, peer-reviewed medical journals supporting this form of treatment and such is **not** the case. However, it is to be noted that exercises aimed at improving trunk muscle strength are useful in managing the backache/back pain associated with scoliosis in adult life.

Why is scoliosis treated?

For thoracic scoliosis, the main reason for treatment is to improve the person's appearance. That is, the person's back looks bad now or is going to look bad over time. For thoracolumbar and lumbar curves the principal indication for treatment is to bring the spine back into balance with normal or near normal distribution of forces on the lower lumbar spine to minimise wear and tear changes in later life. In the lower spine, poor alignment of the discs will lead to accelerated wear. This is a bit like poorly aligned car tyres wearing out faster.

What treatment works?

Two things and two things only have been shown to be effective in the management of scoliosis – bracing and surgery. There are many claims put forward by various branches of complementary and alternative medicine in the management of scoliosis and these claims are widespread on the internet. If a given treatment is scientifically-proven to be beneficial then supporting evidence will be found in front-line, peer-reviewed, international medical journals. The medical profession has a responsibility in these regards and it is a responsibility which is carefully guarded.

When is a brace used?

Bracing has a proven role in scoliosis. It is generally used in those who have at least 18 months of growth left and have a curve between 25 and 40 degrees. Some curves won't be suitable to brace. Some teenagers refuse to wear a brace and this is more often seen in boys than girls. A brace will need to be worn for between 16 and 20 hours per day until the person has stopped growing. It will come off for sport, bathing and the like.

Bracing has been shown to be effective in controlling progression of the curve in up to 80 percent of patients where the method is used.

There is no role for bracing after growth has ceased.

When is surgery needed?

Rarely – about 1 in 1,000 adolescent girls has a curve which comes into the surgical category. There are many idiopathic curves which, for one reason or another, are not suitable for bracing and surgery may be the best option for these curvatures.

What is the aim of surgery?

The aim is to reduce the degree of the scoliosis and improve the person's appearance whilst retaining as much mobility in the spine as possible.

What happens in surgery?

The scoliotic part of the spine is straightened and fused, using anchors (screws, hooks or wires) connected to metal rods (stainless steel, titanium or chrome cobalt). The implants (anchors and rods) act as an internal splint. The fusion comes about over a number of months after surgery as each bone joins to its neighbour. During the operation, the surgeon places bone graft along the scoliosis. This graft stimulates the vertebra to fuse to each other. The fusion occurs slowly and the bone graft needs to mature before it can absorb major mechanical stresses.

How much can the curve be straightened?

This varies, depending of the curve type and flexibility and other factors. As a guide, most curves can be corrected by 65-70 percent. For example, a 50 degree thoracic scoliosis could be corrected to less than 20 degrees. It is rare to be able to straighten a curve completely, nor is it necessary. An excellent cosmetic result can be achieved in most cases. By contrast, curve correction by surgery in congenital scoliosis is much less, usually in the order of 25-30 percent because the curves are more rigid.

Can the rib prominence be fixed?

The rib prominence is caused by the backward rotation of the ribs. With modern techniques the spine is derotated and with this correction of rib rotation takes place. If rib rotation is still prominent, sections of the ribs can be removed to flatten the prominence. This procedure is called costectomy and is done at the same time as the scoliosis operation. It does not lengthen the recovery time.

What are the dangers associated with surgery?

Scoliosis surgery is complex and challenging. It requires an experienced team of surgeons, anaesthetists, nurses and other staff. As with any surgery there are risks but these are usually small. Your surgeon will discuss these with you in detail.

How do you protect the spinal cord?

Any surgery around the spine has a risk of injury to the spinal cord or the nerves leading from it. The surgeon is extremely careful to protect them. Before the operation, neurological tests are done to ensure there are no abnormalities. An MRI scan of the spine is also usually done to make sure the cord is normally formed. During the operation it is usual to monitor spinal cord function by electrical tests. This way, the surgeon knows that the nerves are working normally. If necessary, a “wake-up” test may be carried out towards the end of the operation. In this manoeuvre the anaesthesia is lightened to a point that the patient can obey a command to move fingers and toes. Once satisfactory movement has been observed the anaesthesia is deepened again. The patient has no memory of the event.

Is it better to wait until I stop growing before having scoliosis surgery?

Generally not. Growth does not cause scoliosis but it certainly makes it worse. So, it is better to straighten the spine and fuse it before you stop growing rather than wait. Surgery will usually make you several centimetres taller as the curved spine has been straightened.

Can you feel the implants under the skin?

In thin people it is sometimes possible to feel parts of the implant. This will usually be between the shoulder blades.

Are the metal implants used in spinal surgery safe?

At present, there have been no confirmed cases of definitive systemic toxicity in humans due to chromium, nickel or titanium exposure as a result of spinal surgery implanted metal. Clearly, the potential health effects of chronic low-level systemic metal exposure are a concern. Spine Society of Australia members have contributed almost half of the current worldwide literature in this field and, amongst others, their research is ongoing to ensure that the safety of spinal surgery is more completely understood for current and future patients.

Can the implants be removed?

Yes. The implants are acting like a jelly mould or scaffold. They are holding the spine in the corrected position until the fusion is solid. This normally takes about 6 to 12 months. After this point, the implants aren’t really needed. They can be removed, but only if they are causing problems like pain, or prominence. Infections around the rods can also occur, sometimes years after they were put in. For information on this topic see Removal of Correction Rods on our website.

How long does the operation take?

This depends on the severity of the scoliosis and the type of surgery planned. The typical scoliosis operation would take between 3 and 5 hours.

How long will I be in hospital?

The hospital stay depends on many factors. Most patients are in hospital for approximately one week. At discharge patients are walking independently and able to look after all their activities of daily living.

What will I be given for pain after the operation?

You will be on a drip that gives a controlled dose of morphine or a morphine- like drug (opiate). Sometimes, epidural infusions are used. After a few days, the pain is less and tablets or liquid analgesics are started. You will go home on these. Most patients have stopped taking medication within a few weeks.

When will my stitches come out?

Most often, dissolving stitches are used so there is nothing to remove except the overlying dressing. The dressing remains in place for about 10-14 days after the operation.

When can I go back to sport?

Contact/collision and high impact sports are to be avoided. Your surgeon will advise you on those sports which will be safe for you to play and when you can commence doing so.

When can I go back to school?

Most teenagers are back to school within four weeks after leaving hospital. Experience shows that it is safe for a patient to return to school when the mother thinks her child is up to it. At the beginning, part-time attendance may be in order.

What about X-ray exposure?

X-rays are an essential investigation in the assessment of spinal deformities. However, they should only be done when absolutely necessary. In some cases, that could mean up to 2 - 3 times a year, such as in young children, whose curves can worsen rapidly. In teenagers, the frequency of X-rays also depends on a number of factors. In general, the following guidelines are reasonable:

1. When a child or teenager is first seen for scoliosis, a standing (erect) X-ray is taken “PA and lateral”. This gives a good view of the spine from the back and the side. In many cases, no more lateral (side) views are needed.

2. On subsequent visits, X-rays are not always needed. They could be done as infrequently as once a year or two in someone whose curve seems stable. They might be needed every six months, if treatment such as a brace is being used. If surgery is being planned, special “bending” X-rays are often done.

X-rays should not be done without good reason. There is certainly no scientific reason to have one regularly as part of chiropractic treatment.

3. Spine X-rays should be taken “PA” - that is, with the person’s back to the radiation source (the tube) with the film cassette in front. The reason for this is that a lot of the X-rays “bounce” or scatter off the outer layers of body without passing straight through. The most sensitive tissues to radiation in the field of a spine X-ray are not the ovaries or testes, but breast and thyroid. An X-ray taken PA reduces the radiation dose to those tissues by up to 6 times, compared to an AP (front to back) film. You should make sure your child has X-rays taken in this manner.

4. Ovaries tend to sit low in the pelvis and are usually out of the field of the x ray beam. Most spine X-rays only need to see the upper part of the pelvis, above the ovaries. Therefore, shielding is usually not necessary.

5. For most girls and boys with an adolescent idiopathic scoliosis only a few X-rays over number of years are ever needed. That is because most people with scoliosis need no treatment for it. Only 1 : 100 of those with a curve will be facing brace or surgical treatment. It is that group, with progressive curves, that will usually need the most X-rays. Even then, the doses are relatively low (and reducing, due to better technology). The risk of a cancer or other damage forming due to a series of spinal X-rays over a few years is extremely low. However, as noted above, there should always be a good reason to take an X-ray.

6. X-rays, like photographs, can be taken in different ways. The exposure/dose can be reduced, but the quality of the picture may be not as good. Some X-ray practices are very good at lowering the dose for children’s X-rays but still getting a good image. If your city has an EOS scanner and your child is likely to

need a number of X-rays, due to a progressive scoliosis, it might be worth the effort to go to that centre. Ask your doctor.

Some notes on X-rays:

We are exposed to X-rays (ionising radiation) every day of our lives. In Australia, the average yearly exposure is 2 - 3 milliSieverts (mSv). One-third comes from cosmic radiation, two-thirds from sources on earth, such as some foods, mineral water, rocks such as granite and so on. In some parts of the world, the levels are much higher (Sweden 6msV, France 5mSv, Kerala, India 50mSv). Cancer rates in these countries are no higher than in places with lower exposures. Air travel exposes us to more radiation, as it increases with altitude. A return flight from Sydney to Perth gives more radiation than a chest X-ray.

Medical radiation sources (X-rays and CT scans) give varying radiation 'doses', depending on the type of scan being done. A Chest X-ray uses little radiation (0.03mSv) as the chest is mainly air. A spine X-ray (depending on views taken) gives a dose between 1.5 and 2.5mSv. That dose represents about 6 to 9 months background radiation.EOS scanners, present at some major centres, use far less radiation than standard machines.

CT scanners use higher energy X-rays and in some circumstances, can give doses equivalent to several years background radiation.

Is scoliosis caused by carrying heavy school bags?
A categorical no. There is no scientific evidence whatsoever that AIS is caused by carrying heavy objects such as school bags, or by playing any particular sports.

Why do people get scoliosis?

The term idiopathic literally means a condition that occurs without any associated abnormality. For most children and adolescents with scoliosis a cause is never found. We do know that it is much more common in girls and that it runs in families. There is certainly a genetic tendency to develop scoliosis. This continues to be the subject of basic research. For more information see About Scoliosis on our website.

Do gynaecological disorders such as a retroverted uterus or fibroids cause lumbar pain in subjects with and without scoliosis?

It is important to distinguish between lumbar pain, that is pain in the hollow of the back and the lower part of this hollow, and pain which occurs over the sacrum and tailbone. Back pain is a very nondescript and sometimes misleading term. Gynaecological disorders do not cause lumbar pain. However, lumbar pain may be experienced in the early stages of labour. The dilatation of the cervix in the early stages of labour is linked with the lumbar pain.

In the male, inflammation of the prostate gland is not uncommon in younger men and occasionally lumbar pain is attributed to prostatitis. When patients with this complaint are questioned carefully, almost invariably the pain they experience is over the lower part of the sacrum and coccyx which is termed the peri-anal area.

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