

# Spinal deformity surgery



The aim of this leaflet is to help answer some of the questions you may have about having spinal deformity surgery. It explains the benefits, risks and alternatives of the procedure as well as what you can expect when you come to hospital. If you have any questions or concerns, please do not hesitate to speak to a doctor or nurse caring for you.

## What is spinal deformity surgery?

Your spine is made up of three segments. When viewed from the side, these segments form three natural curves. The 'c-shaped' curves of the neck (cervical spine) and lower back (lumbar spine) are called lordosis. The 'reverse c-shaped' curve of the chest (thoracic spine) is called kyphosis. These curves are important to our balance and they help us to stand upright. If any one of the curves becomes too large or too small, it becomes difficult to stand up straight and our posture appears abnormal. Abnormal curving of the spine is also referred to as spinal deformity. There are two main types of spinal deformity:

- **kyphosis** – a forward bend of the spine
- **scoliosis** – a sideways curve of the spine.

A spinal deformity can be associated with hunchback, swayback or rib humps.

There are many reasons why you can get a spinal deformity. Most commonly it is due to wear and tear of the spine with age, or a deformity which was present when you were a teenager and has persisted into adulthood.

Spinal deformity surgery aims to correct and control your spinal curving, and improve your spinal balance. This is usually done by using metal screws, rods, plates and sometimes cages (known as metalwork) to permanently fuse certain segments of your spine. The metalwork initially acts as a scaffold while your bone gradually fuses (bony union) over a period of nine to 12 months.

There are three types of spinal deformity surgery:

- posterior instrumented fusion to correct the curving of the spine by fusing the vertebrae (bones forming the spine) from the back of the spine
- anterior instrumented fusion to correct the curving of the spine by fusing the vertebrae from the front of the spine
- complex deformity correction where parts of the vertebrae may be carefully 'broken' (this is called osteotomy of the spine) to achieve a better spinal balance.

## Why do I need this procedure?

Your surgeon will have already discussed with you why they think this is the best procedure to help with your condition.

There are many reasons for doing deformity surgery but the most common ones are related to:

- **Progressive spinal imbalance causing pain and discomfort**
- **Risk of progression of spinal curving to a size where internal organs may be affected**

- **Failure of previous spinal metalwork:** please refer to your doctor for any questions
- **Fracture, infection or tumour of your spine:** please refer to your doctor for any questions.

Based on your symptoms and the results of MRI and/or CT scans and x-rays, your surgeon will decide exactly which level of vertebrae need fusing.

## What are the benefits – why should I have spinal deformity surgery?

Deformity surgery is used for therapeutic purposes. The main aim of the operation is to correct, control and achieve spinal balance by fusing your spine. It is not a procedure to improve chronic pain.

It is difficult to predict how much your symptoms will improve after the operation. The real benefit is the improvement in the quality of life.

## What are the risks of spinal deformity surgery?

In general, the risks of spinal deformity surgery relate to the anaesthetic (it will be done when you are asleep under general anaesthetic) and the procedure itself.

For more information about having an anaesthetic please see our leaflet, **Having an anaesthetic**. If you do not have a copy, please ask us for one. If you are having sedation, you will be able to discuss this with the anaesthetist before surgery and he/she will identify the best method for you.

Spinal deformity surgery is commonly performed and is generally a safe procedure. Before recommending the operation, your doctor will have considered that the benefits of the procedure outweigh any disadvantages. However, to make an informed decision and give your consent, you need to be aware of the possible side effects and risks/complications.

**Complications include:**

- **Infection (affects around two out of every 100 patients treated):** this can be serious if the infection gets into your spine or settles on any of your metal elements. If it occurs, you will need an intense course of antibiotics in hospital and washout of your spinal wound.
- **Bleeding (affects less than one out of every 100 patients treated):** very rarely this may include damage to the main blood vessels at the front of your spine.
- **CSF leak (affects less than one out of every 100 patients treated):** occasionally the outer covering of your spinal cord (dura) may be torn causing leakage of spinal fluid (CSF). This is not serious but it can cause a dull headache for up to a week and you will need to lie flat for at least three days after the procedure.

- **Nerve root or spinal cord injury (affects less than one out of every 100 patients treated):** your nerve root or spinal cord may be stretched, bruised or damaged. This can lead to a total loss of feeling or muscle weakness (paralysis) affecting your arms and legs or bladder and bowel function. These symptoms can be permanent.
- **Injury to bowel, bladder or lungs (affects around one out of every 100 patients treated).**
- **Failure of union (affects around one out of every 100 patients treated):** if this happens, you may need to have further operations. The risk increases in patients who smoke (up to seven out of 10 smokers), therefore we strongly advise that you should stop smoking before your operation.
- **Metalwork becoming loose or breaking (affects less than one out of every 100 patients treated):** it normally happens if your bones do not unite, if there is an infection or if your bone quality is poor.
- **Increased leg pain (affects around one out of every 100 patients treated):** although rare, this can sometimes happen due to scar tissue build-up around your nerves (more common if you have had a previous spinal procedure).
- **Increased back pain (affects around one out of every 100 patients treated):** although rare, this can happen if many segments in your spine are worn.
- **Blood clot in your legs or lungs (affects less than one out of every 100 patients treated):** this can happen if your mobility is restricted. In rare cases, it can cause death.

- **Prolonged hospital stay (affects less than one out of every 100 patients treated):** this can occur if you are susceptible to chest infections.
- **Further procedure (affects around one out of every 100 patients treated):** this includes spinal injections, removal of metal elements and extension of fusion.

## Are there any alternatives?

There are other pain-relieving therapies that can help ease back pain and sciatica, such as pain-relieving medicines, spinal injections and TENS (transcutaneous electrical nerve stimulation) machine. Exercise, acupuncture, yoga/pilates and relaxation therapy may also help ease back pain.

## How can I prepare for spinal deformity surgery?

Please refer to the following leaflet which will provide information on how to prepare for your operation:

- **The surgical admission lounge (SAL) at Guy's Hospital**

If you do not have a copy, please ask us for one or see our website at **[www.guysandstthomas.nhs.uk](http://www.guysandstthomas.nhs.uk)** (type SAL in the search box).

During your pre-assessment, you should tell your nurse about any health conditions you have, such as diabetes, or bleeding disorders, and about any medicines that you may be taking, including blood-thinning and over-the-

counter medicines. You may be asked to stop taking certain medicines for several days before the procedure.

If you are a woman of child-bearing age, you must tell your nurse if you could be pregnant. If unsure, you will be asked to have a pregnancy test. This is because x-rays are usually used during the procedure. They are safe for adults, but may harm your developing baby. If you are pregnant, your doctor will talk about alternatives to the procedure.

## Giving my consent (permission)

We want to involve you in decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This states that you agree to have the treatment and you understand what it involves.

You should receive the leaflet, **Helping you decide: our consent policy**, which gives you more information. If you do not, please ask a member of staff caring for you for a copy.

## What happens during the operation?

On your day of admission you will be seen by a doctor who will mark the site of the surgery and ask you to sign the consent form. The anaesthetist may also review your fitness for surgery and finalise the planned anaesthetic regime. You will then be taken to the operating theatre.

If you are having anterior instrumented fusion, you will lie on your side. If you are having posterior instrumented fusion, you will lie on your stomach on a special mattress.

Your surgeon will make an incision (cut) on your skin after the level of vertebrae that need fusing has been confirmed.

During posterior fusion, the metal screws are inserted into your vertebrae and are held together by rods. If a cage is used, this is inserted into the space where your disc is found (intervertebral disc space).

During anterior fusion, a portion of your rib will be cut and your lungs will be moved aside. The discs at the side where your spine is curved will be removed and filled with bone graft (transplanted bone tissue). Then screws are placed into the vertebrae and connected with a rod or plate.

After your procedure, your doctor may choose to insert a suction drain (a thin tube attached to a measuring bottle that helps to remove fluids collected after an operation) before closing the skin with absorbable sutures (stitches). Local anaesthetic may sometimes be applied to the operated area to relieve pain. You will also have pressure dressings.

The operation normally takes between four and six hours depending on the level of vertebrae that need fusing and complexity of your spinal problem. You will need to stay in hospital for seven to 10 days after this procedure.

## Will I feel any pain?

You should expect to have some tenderness at the operation site which will last up to 72 hours. You may have more back pain initially but this will settle down with time.

The local anaesthetic should keep you relatively pain-free for a while, but it is best to take things easy for the first 24 hours.

You will also be given painkillers when staying in hospital but please let the doctors and nurses know if you are still in pain.

## What happens after the procedure?

Following the operation you will be taken to the Intensive Care Unit (ICU). This is where you are monitored for the initial post-operative period. You will be transferred to an orthopaedic ward when your pain is under control and there are no concerns about your recovery.

You will need to lie on your back for up to eight hours after your operation. This will allow pressure to be applied to the operated site to reduce the amount of bleeding.

The morning after the operation, you can sit up at any angle. You will be seen by a physiotherapist who will help you walk depending on your pain and confidence. You will only be allowed to move around by yourself when the physiotherapist feels it is safe for you to do so. You will also be shown some simple exercises that you can do when you are at home. If you have any concerns about your walking, numbness or controlling your bladder/bowel, please tell a member of staff.

The pressure dressing and drain, if you have one, will be removed before you go home. You will be given antibiotics and blood-thinning injections after your operation to minimise the risk of infection and blood clots. You will need an x-ray of your spine before you leave hospital.

You will need to arrange for a responsible adult to collect you from hospital, preferably in a car. Travel on public transport is not recommended.

## **What do I need to do after I go home?**

It is essential that you continue to take painkillers as advised after your surgery. Your pharmacist and nurse will discuss with you the management of your painkillers before you go home.

The dressing needs to be kept on until your wound is reviewed by your GP's practice nurse seven to 10 days after the procedure. Once this has happened, you can have a bath or shower as normal without the dressing. If you have any concerns about the wound, please contact your GP or the ward staff immediately.

Bending and lifting should be avoided for six months. You can generally get back to light work after eight to 12 weeks (check with your employer), and can do heavier work and sports after 12 months. You are usually safe to drive within six to eight weeks provided that you are able to do an emergency stop (please refer to your insurance provider).

When you leave hospital you may be referred for physiotherapy either at Guy's or St Thomas', or at your local hospital. Physiotherapists will teach you specific exercises to help tone and control the muscles that stabilise the lower back.

If you have been referred for physiotherapy, you should expect to have an appointment four to six weeks after your surgery date. If you are due to have physiotherapy at your local hospital and have not heard from them by this time regarding your appointment, please contact your GP.

If your pain does not settle within four to six weeks, you can either be reviewed in your scheduled outpatient appointment or you can contact your GP for advice and pain management.

## What should I do if I have a problem?

Please contact your GP if you experience any of the following:

- **excruciating pain unlike your normal symptoms**
- **increasing redness, swelling or oozing around the operation site**
- **fever (temperature higher than 38.5°C)**
- **sudden weakness or numbness which is not resolving**
- **sudden loss of bowel or bladder control**
- **severe headache which is not improved with painkillers.**

## Will I have a follow-up appointment?

Yes, six to eight weeks after your surgery. We will send you an appointment letter but if you have not heard from us within four weeks after leaving hospital, please contact us. At this appointment you will have an x-ray of your spine, and you will be seen by a physiotherapist or a doctor, depending on your pre-operative symptoms.

### Contact details

If you have any concerns about your operation, please contact the following (Mon – Fri, 9am – 5pm):

- **Mr Lucas' and Mr Ember's** secretary on  
**020 7188 4468**
- **Mr Lam's, Mr Fakouri's and Mr Liantis'** secretary on  
**020 7188 4467**

Please contact your GP or attend your local A&E department if you have any urgent medical concerns outside these hours.

## Notes

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## Contact us

### Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

**t:** 020 7188 8748 9am to 5pm, Monday to Friday

### Patient Advice and Liaison Service (PALS)

To make comments or raise concerns about the Trust's services, please contact PALS. Ask a member of staff to direct you to the PALS office or:

**t:** 020 7188 8801 at St Thomas' **t:** 020 7188 8803 at Guy's **e:** [pals@gstt.nhs.uk](mailto:pals@gstt.nhs.uk)

### Knowledge & Information Centre (KIC)

For more information about health conditions, support groups and local services, or to search the internet and send emails, please visit the KIC on the Ground Floor, North Wing, St Thomas' Hospital.

**t:** 020 7188 3416

### Language Support Services

If you need an interpreter or information about your care in a different language or format, please get in touch using the following contact details.

**t:** 020 7188 8815 **fax:** 020 7188 5953

### NHS Choices

Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

**w:** [www.nhs.uk](http://www.nhs.uk)

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