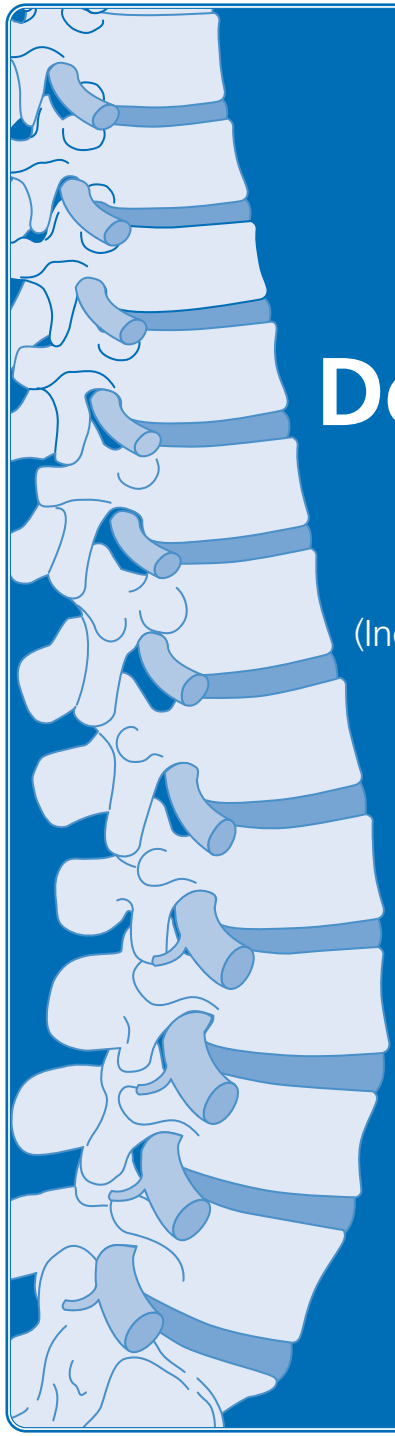


NHS
University Hospitals Birmingham
NHS Foundation Trust

Lumbar Decompressive Surgery

(Including discectomy, decompression and laminectomy)

Information for patients

Contents page

The purpose of this booklet

This booklet provides information about your back, your surgery and your recovery after your lumbar surgery. You might receive this booklet before or after your operation. The booklet is phrased as though your operation has not been done yet.

An understanding of what will happen better equips you to recover from your surgery, become more active and return to your everyday activities.

You and your spinal surgeon or specialist physiotherapist will have discussed surgery and decided that surgery is the best option for you, because treatment that does not involve surgery, such as pain relief, physiotherapy and injections, have not given you sufficient improvement.

Either before you come in to hospital for your operation, or when you are admitted, a member of the neurosurgical team will explain the operation in more detail. They will make sure that you are fully informed before you sign the consent form agreeing to surgery.

Structure of the spine

The spine has four parts, starting from the top they are:

1. Cervical
2. Thoracic
3. Lumbar
4. Sacrum and coccyx

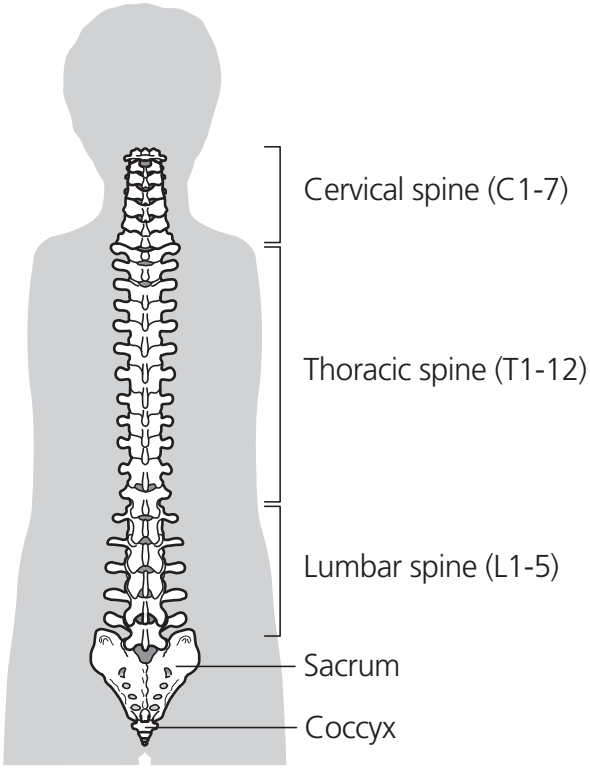


Figure 1: Parts of the spine

The lumbar area has the largest bones and bears the most body weight; it is capable of bending and twisting more than any other part.

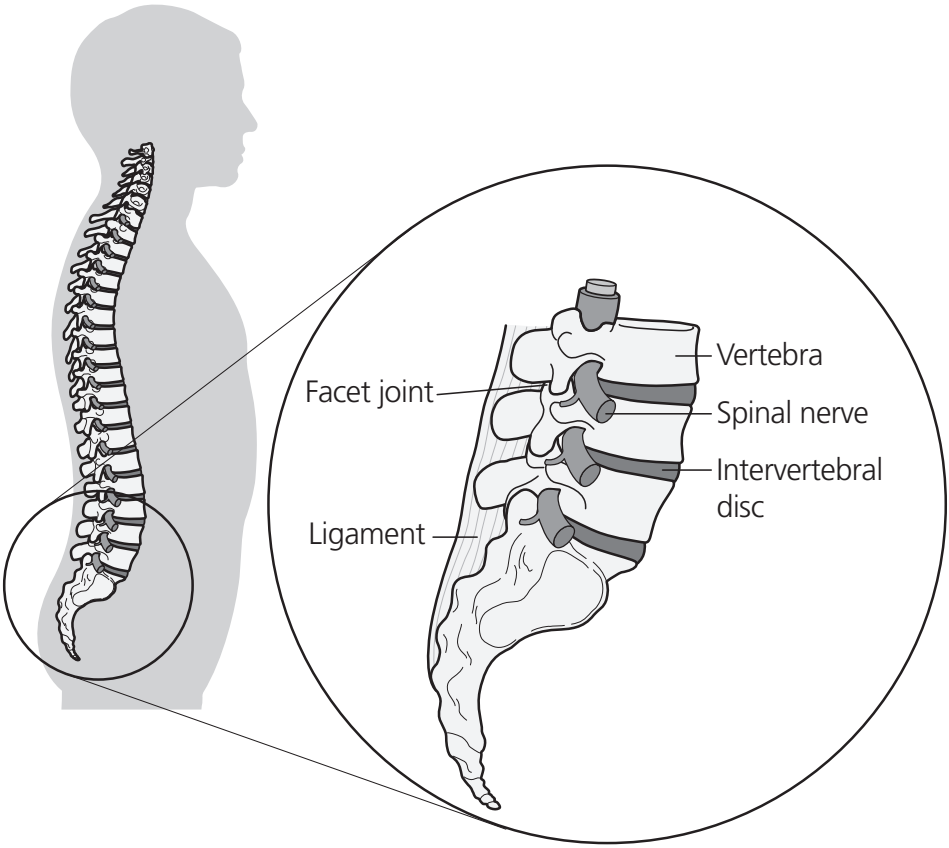


Figure 2: Side view of spine

The normal spinal column has a central canal (or passage) through which the spinal cord passes down. To each side of the canal, spinal nerve roots branch out at every level passing between the spine bones called vertebrae. The spinal cord stops at the top of the lumbar spine and, below that, tiny nerve rootlets splay out like a horse's tail and are called the cauda equina. The spinal cord, nerve roots and cauda equina are surrounded by cerebrospinal fluid (CSF) and are all contained within a membrane, or covering, called the dura mater, rather like the thin layer that covers a boiled egg.

The ligamentum flavum is a tough band of elastic tissue (ligament) that connects the vertebrae and provides stability to control spinal movement and protection for the dura mater.

Intervertebral discs are flexible structures which lie between the vertebrae and act as both spacers and shock absorbers. Over time, as disc degeneration (wear and tear) occurs, the discs lose water and height and, as such, close down the bony passage (foramen) where the nerve root passes through on leaving the spine. Sometimes if the nerves become trapped or compressed they can produce symptoms of pain, numbness or tingling in the area of the leg that the particular spinal nerve supplies. In rare cases they can produce severe pain and even weakness in the legs, such that the 'legs don't work'.

Why might I need discectomy surgery?

Discs are tough yet flexible structures which allow the spine to bend and twist. They have a central part filled with a gel-like substance called the nucleus pulposus. The outside wall is called the annulus fibrosus which is made from tough and flexible fibres. The annulus is a very strong structure.

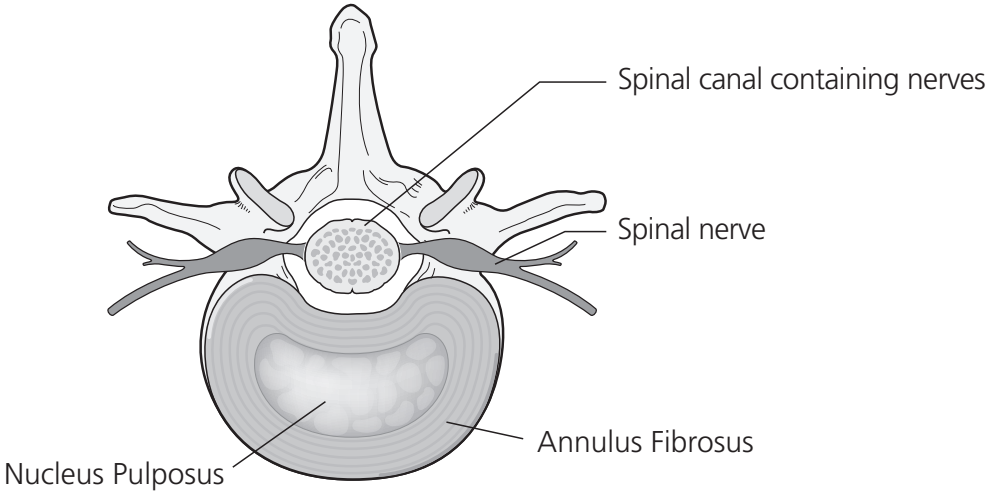


Figure 3: The vertebra, disc, spinal canal and spinal nerve

Over time as part of the natural aging process, degeneration occurs; the intervertebral disc can lose its flexibility, elasticity and shock absorbing characteristics. The tough fibrous wall of the disc may

then weaken and split and no longer be able to contain the gel-like substance in the centre.

If part of the annulus weakens it may bulge, or the nucleus might herniate or protrude through it (figure 4 and 5 below). There are lots of names describing this type of problem; disc herniation, slipped disc, disc bulge, disc protrusion, or prolapsed disc. This disc bulging can occur in lots of people without them knowing it.

However, the annulus or nucleus might press on the nerve that lies next to it (nerve root) and cause pain, sometimes with pins and needles, numbness or weakness in the leg. Secondly, chemicals from the disc can irritate the nerve further. When such leg symptoms develop, this is called sciatica, radiculopathy or lumbar nerve root compression.

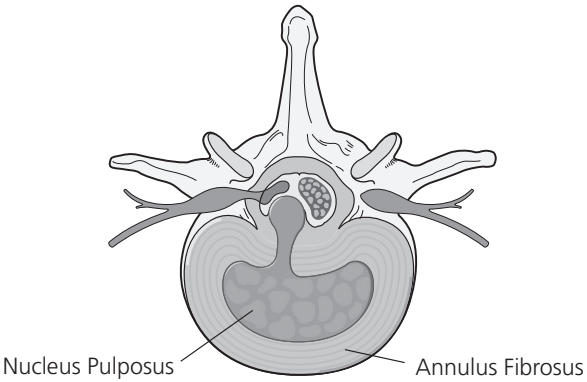


Figure 4: Showing disc protrusion and nerve root compression

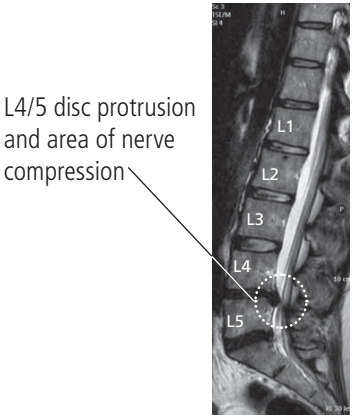


Figure 5: MRI to show lumbar disc protrusion and nerve compression

Images are courtesy of the British Association of Spine Surgeons

Lumbar nerve root pain (or radicular pain) generally goes below the knee and is felt in the area of the leg that the particular spinal nerve supplies. Symptoms also associated with sciatica include altered sensation, pins and needles, burning, numbness or even weakness of the muscles in the leg that the nerve supplies.

Very few people who have a lumbar disc herniation need surgery. It is unusual to operate before 6–12 weeks after the symptoms start because a significant number of people do get better naturally. This can happen if the disc or swelling around a nerve decreases naturally (with time) or is helped by image-guided steroid injection (e.g. nerve root block injection).

6 out of 10 patients can get better spontaneously after 6 weeks, while 7–8 out of 10 patients will feel better by 3 months. In general, most people with leg symptoms will get better over time. Unless there are signs of nerve damage, surgery is usually only considered when the pain is very bad and has not got better with strong pain relief.

There is a balance of waiting while nature gets you better, versus waiting too long which might prolong your suffering and pain or compromise nerve function (weakness, numbness or pain recovery). In rare cases the nerves which control your bladder, bowel and sexual function can be compressed. This is known as cauda equina syndrome (CES) and typically requires urgent surgical intervention. Fortunately, immediate spinal surgery is only necessary in a few cases.

Why might I need spinal surgery if I have spinal stenosis?

Usually as part of the natural aging process we develop degenerative change in the lower back.

Sometimes these changes lead to a partial narrowing, or a "stenosis", of the nerve tunnel within the spine which is called the central canal. This is called "central canal stenosis" - see figures 6 and 7. For others, the smaller side tunnels (foramina) become narrowed. This is called "foraminal stenosis"- see figure 8. The symptoms associated with these two types are essentially the same.

In spinal stenosis, the spinal nerve roots and/or cauda equina become trapped or compressed by the narrowing of these nerve passages.

There can be several reasons for this narrowing which can include arthritic joint swelling and bony overgrowths (osteophytes) which grow into the spinal canal, bunching up (buckling) of the ligamentum flavum (like an elastic band losing tension), or bulging of the intervertebral discs. Rarer causes of stenosis include cysts, fatty collections or tumours in the spinal canal. Narrowing that affects the spinal cord is also sometimes called a myelopathy although this problem most commonly affects the neck.

Spinal stenosis is quite a common problem, particularly with older people. It can also affect younger people but this is much rarer.

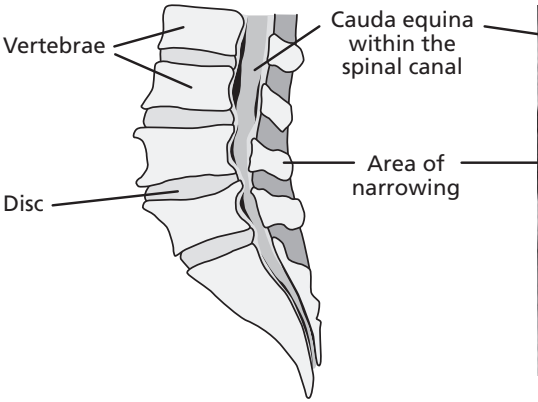


Figure 6: Narrowing of the spinal canal as a result of spinal stenosis

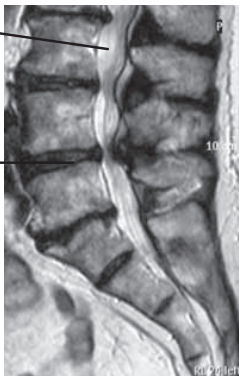


Figure 7: MRI to show narrowing of spinal canal as a result of stenosis

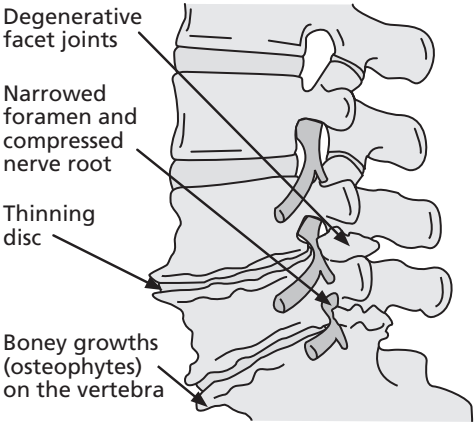


Figure 8: Detailed view to show degenerative changes typical with spinal stenosis

Images are courtesy of the British Association of Spine Surgeons

In most cases of lumbar stenosis, symptoms are produced when standing or walking and are relieved by sitting or bending forward, as this temporarily opens up the nerve passages. In rare cases, the nerves which control your bladder, bowel and sexual function can be compressed. This is known as cauda equina syndrome and typically requires urgent surgical intervention. Fortunately, immediate spinal surgery is only necessary in a few cases.

Usually patients with lumbar stenosis have no pain in the leg at rest (e.g. when sitting). However, back pain is not the same - back pain that increases with walking is not a feature of spinal stenosis.

In general, 1 in 5 people with this condition will improve with time, 3 in 5 people with this condition will stay the same, and 1 in 5 people with this condition will worsen with time. When the problem is worsening, how far people can walk will gradually reduce and sometimes the nerve supply to the leg(s) becomes increasingly affected. This situation often affects quality of life as difficulties with standing and walking will restrict normal activities. However, if your symptoms are acceptable to you then no interventions may be needed.

Deciding to go ahead with surgery is a very personal decision and discussion with the neurosurgery team can help you weigh up the risks versus the likely benefits to help you make the right decision.

The objective of decompression surgery is to remove the material (for example the excess bone and 'thickened' ligament) from the spinal canal to give the nerve roots and/or cauda equina more room - see figures 9 and 10.

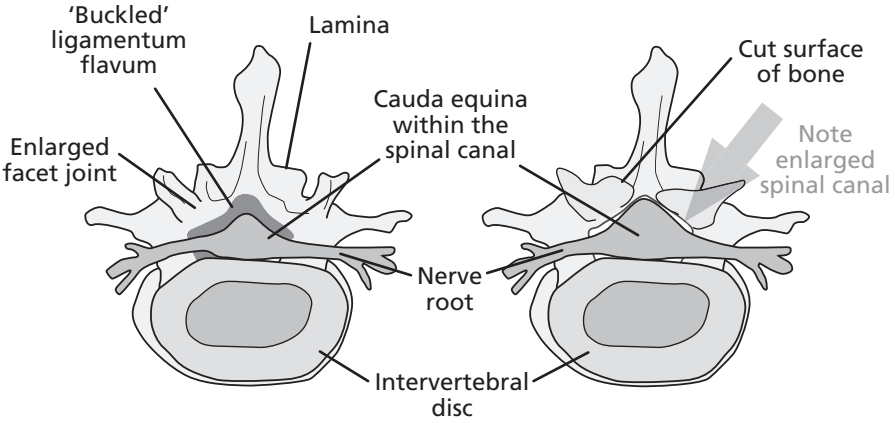


Figure 9: Spinal canal stenosis

Figure 10: Enlarged spinal canal after decompression surgery

Images are courtesy of the British Association of Spine Surgeons

The nature of spinal surgery is not to 'cure' and it cannot prevent further degeneration of the spine, but is aimed to provide benefit with a good percentage improvement and relief of leg symptoms. Good relief from leg symptoms following decompression surgery usually occurs in approximately 70–80% of cases (up to 8 out of 10 people). This is not necessarily felt immediately, but over a period of time, which can often be several months. Sometimes however, numbness or weakness can persist, even with a technically successful operation. This can occur when people have more extensive stenosis before they have surgery. **Rarely, the surgery may make your symptoms worse than before surgery.**

The results of the operation are not nearly as reliable for the relief of lower back pain. Much of the back pain experienced comes from the arthritis and associated muscular spasms, therefore decompression surgery cannot eliminate this and it should not be regarded as the main aim of the surgery.

What are my surgical options?

Your consultant or a member of the neurosurgery team thinks that you will benefit from one of the surgical options explained here to reduce nerve pressure in your lower back, with the aim of reducing your leg symptoms. They will discuss with you which procedure is the best for you and explain it in more detail. In general terms, a discectomy operation is to remove the part of the disc that is producing the nerve pain down the leg. A decompression is to remove bone or soft tissue that is compressing the nerve and producing pain down the leg.

Discectomy

There are several different techniques when performing an operation for lumbar disc herniation. Expected outcomes from all methods of treatment are very similar and the choice of operation will be decided by the surgeon, with consideration of patient's preference and personal circumstances. The operation is commonly called a discectomy and in this operation, only the protruding disc material (the part compressing the nerve) is removed, not the whole disc.

This is performed through an incision in the midline of the lower back (usually a small wound up to 4cm in length but sometimes it needs to be longer). First the muscles are held apart to gain access to the bony arch and roof of the spine (lamina). The surgeon is then able to enter the spinal canal by removing a membrane and ligament in between the lamina and over the nerve roots (ligamentum flavum). Often, a small portion of the inside facet joint is removed, both to enable access to the nerve root and to remove pressure on the nerve. A microscope is used at this point to give greater magnification of the structures and when a microscope is used the operation is called a microdiscectomy.

The nerve root is then gently moved to the side and the disc material is removed from under the nerve root. The disc is then entered, to remove any loose fragments of the disc material within it.

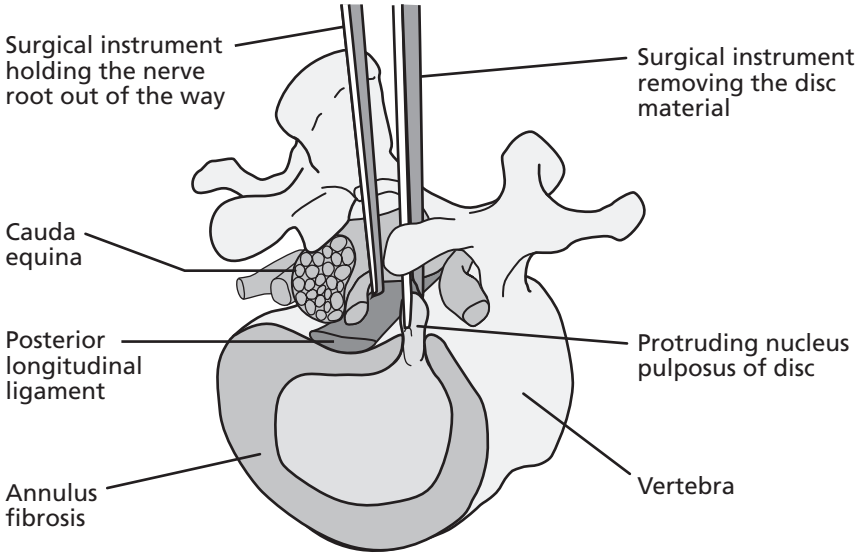


Figure 11: View of the surgical removal of the protruding disc material

Images are courtesy of the British Association of Spine Surgeons

Minimally invasive (tubular) discectomy

With an approach similar to that of microdiscectomy, the surgeon attempts to reduce muscle dissection and injury by working through a narrow tube.

Transforaminal endoscopic discectomy (sometimes known as TESS or TESSYS)

With the most minimal approach currently available, the surgeon introduces a telescope into the spine through a short 1cm incision just to one side of the midline of the spine. The scope is connected to a high definition camera system. This procedure is commonly performed under local anaesthetic and intravenous sedation (so you are sleepy, but slightly aware of the surgery).

Interlaminar endoscopic discectomy (sometimes known as ILESSYS)

In a similar way to TESS, a scope is introduced through a short incision in the midline of the spine.

There is sufficient evidence to suggest that discectomy should be considered for a subgroup of people with sciatica who have failed to respond to conservative (i.e. non-surgical) management of their symptoms.

The nature of spinal surgery is not a 'cure', and cannot prevent further disc degeneration and sometimes numbness or weakness persists, even with a technically successful operation. However, good relief from leg pain following disc surgery occurs in approximately 85–90% of cases (up to 9 out of 10 people). This is not necessarily felt immediately but over a period of time, sometimes several weeks. Relief from back pain, however, is less reliable and should not be regarded as the main aim of the surgery.

Surgery seems to get people better quicker but has some risks associated with it.

Disc protrusion can recur with or without surgery. The chance of recurrence is around 10% within 10 years. Surgery seems best when severe or quite bothersome symptoms have not settled to a satisfactory level and have lasted more than 6–8 weeks. Recent studies suggest that waiting until at least 4 months after the onset may be the best timing for surgery in terms of recovery and outcome.

Surgery has less risk and is safer on fit and healthy patients. Patients should take responsibility to reduce the risks whenever possible. Simple measures such as stopping smoking, losing weight and improving aerobic fitness all help.

Older patients may have specific risk factors, such as heart disease.

Tablets used to thin the blood such as warfarin, aspirin or clopidogrel increase the risks of bleeding and you must inform your surgical team if you are taking any of these medicines so that the right advice can be provided to you before you come in to hospital for your operation.

Patients who are diabetic have a slightly increased risk of infection generally and the nerves in diabetic patients may not recover as well as others.

Everyone has different health problems and so there may be other risk factors which apply to you. These would be considered by the neurosurgical team before surgery. Current National Institute for Health and Care Excellence (NICE) guidelines recommend that surgery should be considered for people with sciatica when nonsurgical treatment has not reduced pain or improved function and their radiological findings are consistent with sciatic symptoms.

Current research indicates that discectomy for people suffering from sciatica offers a good prognosis and is successful in providing long-term pain relief. However, it is recognised that sciatic symptoms tend to improve naturally over time without treatment. Despite the good long term prognosis with or without treatment, improving symptoms more quickly through surgical intervention should be an option. In addition there is sufficient evidence to suggest that discectomy should be considered for people with sciatica who have failed to respond to conservative (i.e. non-surgical) management of their symptoms.

Decompression

There are different techniques when performing an operation for stenosis. Expected outcomes from all methods are very similar and the choice of the operation will be decided by your surgeon. Generally this involves removing the lamina which are arches of bone at the back of your spine, to make more room for your trapped spinal nerves - see figure 10.

This is performed through an incision in the midline of the lower back. The position and length of incision is determined by which levels of the spine and how many nerves are involved. The muscles are then held apart to gain access to the lamina. Next, the surgeon needs to gain entry into the spinal canal by removing some bone, either by cutting away the whole area of lamina (laminectomy) or making a small window in the lamina (laminotomy) with a high-speed burr (like a dentist's drill). Further bone and ligament are then removed and often the facet joints, which are directly over the nerve roots, are undercut (trimmed) to relieve the pressure on the nerves and give them a wider passage as they pass out of the spine.

Minimally invasive (tubular) decompression

With this approach, the surgeon attempts to reduce muscle dissection and injury by working through a narrow tube. There may be several small incisions depending on how many nerves are involve.

Lumbar Spine Decompression – what do we know?

The operation of lumbar decompression seems to improve pain in about 65–70% of patients and often improves the distance a patient can walk by a factor of about four. Proceeding with an operation is a very personal decision and requires careful consideration including the likely benefits in relation to the risks; all these factors should be discussed with the neurosurgical team before you decide to proceed with your operation. Not all spinal problems get worse and if your symptoms are acceptable/ tolerable then you may decide against surgery. However, if the symptoms are limiting your quality of life or are worsening then surgery may be more appealing. The overall aim is to improve your quality of life.

What are the risks of lumbar spine surgery?

Your surgeon will discuss with you the potential risks and benefits of surgery specific to you. You will have several chances to discuss the operation with healthcare professionals looking after you. You must

make sure that explanations are given in terms you understand. This is a general information source to complement that information.

No surgery is guaranteed to work and all surgery has risks associated with it. These include:

- Damage to spine nerves/nerve root. The spinal nerve causing the pain may be already damaged by compression. The disc prolapse can cause scarring within the nerve such that it is unable to recover despite technically successful surgery. The nerve can be stretched in trying to remove the disc lying under the nerve. The nerve can also be damaged by direct surgical trauma or by pressure effects necessary to control bleeding. This occurs in less than 1 out of 100 cases of primary surgery but is much more common in revision or 're-do' surgeries where injury can occur in up to 10 out of 100 cases. If this happens, you may get weakness in the muscles supplied by that particular nerve root and/or numbness, tingling or hypersensitivity in the area of skin it supplies
- Tearing of the outer lining or covering which surrounds the nerve roots (dura). In primary sciatica surgery it occurs in 3% of cases. If there has been a previous spinal operation it is even more common because of scarring. Repeat or revision operations have a higher risk of complications than first time operations. In decompression surgery it is more common, happening in 8% of cases. It may occur as a result of the bone being stuck to the lining and tearing it as the bone is lifted off. Again, it is much more common in 're-do' surgery. Usually the hole or tear in the dura is repaired with stitches, a patch or special glue. Sometimes it is safer to leave it to heal. Sometimes the surgeon will insert a drain to divert the fluid. Usually the leak of fluid dries up within a few days and there is no long-term effect. Sometimes, despite precautions, Cerebrospinal fluid (CSF) will leak through the wound. This represents a risk of infection and meningitis and further surgery might be required to correct the situation. If the puncture or hole re-opens you may get (CSF) leaking from the wound, headaches or, very rarely, meningitis. Although rare, the problems of leakage can persist. This could result in you

having to return to theatre to enable the surgeon to revise the repair of the dura but the risk of a second operation being required within a few days or weeks is less than 0.05%

- Recurrent leg pain/sciatica, as a result of scarring or further disc protrusion; occurring in approximately 5 out of 100 cases at any time from a few days to several years later
- Problems with positioning during the operation, which might include pressure problems, skin and nerve injuries, and eye complications including, very rarely, blindness. Special gel mattresses and operating tables are used to minimise this
- Infection: Superficial wound infections are not rare and may occur in up to 4 out of 100 cases. These are often easily treated with a course of antibiotics. Deep wound infections are much more serious but less common and may occur in fewer than 1 out of 100 cases. These can be more difficult to treat with antibiotics alone and sometimes patients require more surgery to clean out the infected tissue as well as a prolonged and extensive course of antibiotics. This risk may increase for people who have diabetes, those with lowered resistance to infection or are taking steroids. To reduce the risks of infection, antibiotics are often given and the surgery is often performed in ultra clean air flow theatres
- Blood clots (thromboses) in the deep veins of the legs (DVT) or lungs (called pulmonary embolus). These occur when the blood in the large veins of the leg forms blood clots and may cause the leg to swell and become painful and warm to the touch. Although rare, if not treated this could be fatal if the blood clot travels from the leg to the lungs, cutting off the blood supply to a portion of the lung. It is reported as happening in less than 1 out of 700 cases. There are many ways to reduce the risk of a blood clot forming. The most effective is to get moving as soon as possible after your operation. Walk regularly as soon as you are able to, both in hospital and when you return home. Perform the leg exercises as suggested later in this booklet and keep well hydrated by drinking plenty of water. Ladies are also advised to stop taking any medication which contains the hormone oestrogen (like the combined contraceptive pill or HRT)

four weeks before surgery, as taking this during spinal surgery can increase the chances of developing a blood clot

- Bleeding: You **must** inform your consultant if you are taking anticoagulant tablets used to 'thin the blood', such as Warfarin, Aspirin, Rivaroxiban or Clopidogrel. It is likely you will need to stop taking them before your operation as they increase the risk of bleeding. Please make sure you have clear instructions about when and which medications should be stopped temporarily before you come into hospital for your operation. Taking medication like non-steroidal anti-inflammatories (NSAIDs) could also increase your risk of bleeding and your surgeon will advise you if you need to stop taking these before your operation. If your operation is scheduled with only a week's notice, please check with your consultant or a member of the neurosurgery team if any medications you take need to be stopped to prevent your surgery being delayed
- Damage to blood vessels: This can result in significant bleeding which can be life threatening. Damage to the main blood vessels at the front of the spine (the aorta) has been known to occur. The main blood vessels to the legs can also be damaged which could result in loss of limb. Events of this nature are rare, occurring in less than 1 per 10000 operations
- Damage to vital organs: The liver, kidneys and bowel are in front of the discs and are theoretically at risk of injury. This again would be life threatening but rare
- Rarely, the surgery may make your symptoms worse than before
- The wrong operation - the spine has many discs and vertebra. During the operation the surgeon will commonly carry out X-rays to check they are operating at the correct place in the spine. Many safety checks occur to make sure that the patient has the correct procedure. Occasionally the X-rays will show that the wrong disc space has been opened, in which case the correct level will then be approached. Intra-operative checking like this is essential to avoid wrong level or wrong site surgery

There are also very rare but serious complications that in extreme circumstances might include:

- Damage to the cauda equina and paralysis with loss of use of the legs, loss of sensation, loss of control of the bladder and bowel and sexual dysfunction. This probably occurs in less than 1 per 300 operations. It could occur through bleeding into the spinal canal after surgery (an extradural spinal haematoma). The risk of paralysis is higher if patients are taking blood thinning medication or if there is an incidental durotomy (CSF leak). If an event of this nature were to occur, every effort would be made to reverse the situation by returning to theatre to wash out the haematoma. Sometimes, however, paralysis can occur as a result of damage or reduction of the blood supply to the nerves or spinal cord and this is, unfortunately, not reversible
- Stroke, heart attack or other medical or anaesthetic problems
- Extremely rarely, death can occur. This can result from damage to the major blood vessels or vital organs around the spine and it is reported as happening in 1 out of 10,000 cases. Fatal general anaesthetic complications have also been reported in 1 out of 250,000 cases

What is the British Spine Registry (BSR)?

The British Spine Registry aims to collect information about spinal surgery across the UK. This will help us to find out which spinal operations are the most effective and in which patients they work best. This should improve patient care in the future. The Registry will enable patient outcomes to be assessed using questionnaires. These will allow surgeons to see how much improvement there has been from treatment. This has worked for hip and knee joint replacements through the National Joint Registry (NJR). We need your help to improve spinal surgery in the UK.

What data is collected?

Your personal details allow the BSR to link you to the surgery you have had. You will be asked to complete questionnaires both before

and after your surgery. The BSR allows us to link together all the questionnaires you complete and therefore helps assessment of how successful you feel your operation has been. If you need any further spinal surgery in the future, details of previous operations will be available to your surgeon. Personal details needed by the BSR are your name, gender, date of birth, address, email address and NHS number. Your personal details are treated as confidential at all times and will be kept secure. This data is controlled by the British Association of Spine Surgeons (BASS) and held outside the NHS. Personal details will be removed before any data analysis is performed, retaining only age and gender. Your personal data and email address will not be available to anyone outside BASS and its secure IT provider. Anonymised data may be released to approved organisations for approved purposes, but a signed agreement will restrict what they can do with the data so patient confidentiality is protected. Your personal data is very important, as this will allow us to link details of your diagnosis and surgery with any problems or complications after surgery. You may also be asked to complete questionnaires before and after surgery to work out how successful the surgery has been. This will only be possible if we can connect you to questionnaires through your personal details.

How do I give consent?

You will be offered information on BSR and a consent form to complete either by a member of the spinal surgery team in clinic, by post within your admission pack or at your pre-admission screening clinic appointment. Should you have any questions, please email **BSR@uhb.nhs.uk**

Do I have to give consent?

No, your participation in the BSR is voluntary. Your medical care will be exactly the same, whether or not you consent to participating. Your personal details cannot be kept without your consent. You can withdraw your consent at any time or request access to your data by:

- Going to the patient section of the BSR website at **www.britishspineregistry.com**; or
- Writing to the BSR centre (see address below). Please state if you are happy for us to keep existing data, but do not want to be contacted, or whether you want your data to be anonymised (so it cannot be identified).

Research

Your consent will allow the BSR to examine details of your diagnosis, surgical procedure, any complications, your outcome after surgery and your questionnaires. These are known as service evaluations or audits.

Operation and patient information, including questionnaires in the BSR, may be used for medical research. The purpose of this research is to improve our understanding and treatment of spinal problems. The majority of our research uses only anonymised information which means it is impossible to identify individuals. From time to time, researchers may wish to gather additional information. In these cases we would seek your approval before disclosing your contact details. You do not have to take part in any research study you are invited to take part in and saying no does not affect the care you receive.

All studies using data from the registry will be recorded on the BSR website **www.britishspineregistry.com**

Further information

The BSR website at **www.britishspineregistry.com** contains more information, including details of any studies and any information obtained through the registry data.
To contact the BSR, write to:
The British Spine Registry
Amplitude Clinical Services
2nd Floor Orchard House
Victoria Square, Droitwich
Worcestershire WR9 8QT

What will happen before the operation?

Pre-admission Screening clinic

You will be invited to a pre-admission screening clinic in the weeks before your operation. The aim of this appointment is to ensure that all the investigations you need have been completed including blood tests, X-rays and ECG (heart reading), to check that you are fit to have your surgery. A nurse and sometimes an anaesthetic doctor will assess you and explain what happens during your operation and hospital stay. The nurse will also talk to you about going home after your surgery and decide whether you need more help in your home.

Please bring with you a list of any regular medication you are taking, even if this is not to do with your spinal surgery. This includes any supplements, vitamins or inhalers.

Consent

We must by law obtain your written consent to any operation and some other procedures beforehand. Staff will explain all the risks, benefits and alternatives before they ask you to sign a consent form. If you are unsure about any aspect of the treatment proposed, please do not hesitate to speak with a senior member of staff.

Day of admission

Your admission letter will give you the information you need on the date, time and where to go to on arrival.

For most people, final tests will have been completed at pre-admission screening clinic. However, if this is not the case then you will be checked by a nurse and examined by a doctor when you come into the hospital for your operation.

We will tell you the approximate time of your operation, which might be the same day or the next day. Sometimes timings on the day of surgery will vary. These situations are unavoidable and it might be useful to bring a book, magazine etc. as you may have time to wait

before your operation. You must not eat or drink anything for a while before your surgery, so we will tell you when to stop.

You usually meet your anaesthetist before going into surgery.

Medications

Please bring with you a supply of any regular medications you take. These will be stored securely by the nurses and given to you at the right times. When you leave hospital, we will return to you any medication which you have not taken during your stay.

Valuables

Please do not bring in valuables, jewellery or large sums of money. If you have to bring in any of these, please ask a relative or friend to take them home for you. If this is not possible, please hand in any valuables to the nurse in charge of your ward when you arrive. They will be listed and locked in a safe and you will be given a receipt. You will be asked to sign a disclaimer as the hospital cannot accept liability for the loss of items that are not handed in for safekeeping. Any sum of money over £50 will be taken to the cashiers office.

Getting ready for surgery

Before you go to the operating theatre, you will be asked to change into a hospital gown and remove or tape all jewellery. Any valuables will be locked away. You may be measured and issued with surgical stockings to wear.

One of the ward team will take you to the anaesthetic room where you will be given a general anaesthetic.

What will happen after the operation?

Immediately after the operation you will be taken on your bed to the recovery ward where nurses will regularly monitor your blood pressure and pulse. Oxygen will be given to you through a facemask for a period of time to help you to recover from the anaesthetic. You will have an intravenous drip giving you fluid until you are able to drink adequately. The recovery team will take you back to the ward.

Usually you can eat when you are fully awake, but we advise you to start by drinking water and you'll be offered a hot drink and then a light meal.

A drain (tube) may be placed near the surgical incision if there has been significant bleeding during the operation. This removes any excess blood or fluid collecting under the wound. The drain will be removed when the drainage has stopped, usually the next day, after surgery.

It is very normal to experience some level of discomfort or back and leg pain after the surgery. The nursing and medical staff will help you to control this with appropriate medication. The symptoms in your legs may fluctuate due to increased swelling around the nerves. If you have any other symptoms such as nausea (feeling sick) or constipation, your nurse will help you with this too.

Because you have had a general anaesthetic you may feel drowsy, disorientated and might experience a dry, sore throat. You might experience discomfort in your back and hips after spending a long time in one position and your wound site might be painful. These are consequences of the surgery you have had and will disappear.

As the nerves become less irritated and swollen, your leg pain should settle. This can take 6–8 weeks, or longer. Normal feeling and strength in your legs is likely to take a lot longer and is likely to improve slowly over the next year or so. For some people, strength and sensation may not fully recover. It is important not to suddenly stop taking certain

pain relief medication such as morphine or neuropathic medication (gabapentin, pregabalin or amitriptyline). It will be necessary to gradually 'wean' yourself off them – your GP can advise you if necessary.

You will be encouraged to get out of bed and walk around soon after your surgery. This is often on the same day or the day after your operation. Patients undergoing TESS and ILESSYS are generally asked to rest in bed for two hours, then gently mobilise for a further two hours, before being discharged home. It is advised to have a member of staff with you when you first get up out of bed as sometimes you might feel weak, lightheaded or experience pain around your wound site. It is important that you start moving freely, both in and out of bed, as soon as you are allowed to. Post-operative discomfort is normal and as time goes by this should gradually become less and less. A therapist will only come and meet with you if you are having problems getting up and walking or if you had problems with mobility before your operation. Please ask a member of staff if you particularly wish to meet with a physiotherapist when you are in the hospital ward to make sure this is arranged.

Once you have recovered from the anaesthetic and your condition is stable, you will be allowed home, usually on the day of surgery or day after.

Please arrange for a friend or relative to collect you as driving yourself or taking public transport is not advised in the initial stages of recovery. If you qualify for patient transport and are likely to require this service, please let one of the nurses know as soon as you can as this may need to be pre-arranged or your discharge home could be delayed.

Following discharge, all patients will be reviewed post-operatively in an outpatient setting.

Your rehabilitation will involve setting your own goals and being more

and more active each day. Changing your lifestyle after surgery and reaching your goals is very much in your hands.

What's the best way to look after myself at home?

You will probably feel a little anxious about managing at home after your operation. The advice we give here should help you. If there is anything we have not covered in this manual, please ask before you go home. You will need to take things easy for several weeks and it is advised to take some time off work to allow recovery. It can take at least 6 weeks for healing at the operation site and we have included a variety of exercises that patients describe as helpful during the first phase of recovery.

It is advised to avoid heavy/ more manual work, including housework, for at least 4–6 weeks after your operation. Ask friends or family to help you with chores such as carrying shopping, vacuuming or gardening. You can gradually start doing these activities again when you feel able.

Being mobile as soon as possible improves your circulation and helps the healing process, leaving you with a stronger and more flexible back.

Progress is individual and is largely dependent on your activity and fitness levels before surgery. In general, if you start with a daily routine, this will give you the best chance to lead the life you want after the surgery. An early return to activities has been shown to give better results. Within a few weeks you should be back to most basic activities. Keep moving - pace your activity. Do a little more every couple of days. It will hurt but you will not harm your back. More specific guidance is provided in the sections below.

Timescales to guide you

Everyone wants to know how soon they can start doing things – which is great. Timescales of when to start doing things can be helpful, but everyone is different. A common sense approach is best. Use the times below as guidelines, rather than exact timescales. You might be able to do more or less than it suggests against each timescale.

0–4 weeks after surgery

Start the exercises in this manual as soon as you have read about them.

During this period the tissues involved in the surgery are healing. You can expect your leg symptoms to be improving.

It is advised to sit only for short periods to begin with as longer periods can result in stiffness and discomfort. Move about before you stiffen up.

Often it is useful to start walking at a distance slightly shorter than you were managing before your surgery. When you can comfortably repeat this distance then you can gradually increase. Regular daily walks are a good way to increase your general fitness and activity level. If any discomfort increases, your back is telling you to take a short rest, but then carry on. Make a note of how far or long you walked and try to improve next time.

It may be helpful to start planning your return to work within the first few weeks after surgery. Discuss returning gradually, for example beginning with shorter days or less manual tasks. Speak to your workplace's Occupational Health department if you think this might be best for you. It often takes longer if your work involves a lot of manual work (e.g. repetitive heavy lifting) especially if you were not able to work and/or your activities were very limited before your operation.

Make sure you take your painkillers at regular intervals. This is helpful to keep any discomfort at bay and enable you to move and begin your exercises.

4–8 weeks after surgery

You might still experience periods of tiredness. This is normal and will disappear as time goes on.

The exercises in this booklet should be getting a lot easier now. Keep doing them.

If you have not done so already, think about returning to work. Practise work-related tasks at home to see if you are ready. Many people who have office-based jobs are able to return to work about this time. Speak to your employer about how your absence might affect any benefits you may be receiving during your time off.

Start returning to hobbies, recreation and sport. Be guided by how your back feels, not how you think your back might feel.

Take painkillers only when you are in discomfort.

8–12 weeks after surgery

The exercises in this booklet should now be very easy but still be part of your life.

You should be able to do most activities normally now.

Think about returning to work if you have an active job involving pulling, pushing and lifting. Practice work related tasks at home to see if you are ready and to build up your fitness to return to these activities.

Think about returning to more vigorous hobbies, recreation or sport. A gradual return to activities is recommended to build up your fitness.

You should be using painkillers infrequently now, if at all.

12 weeks onwards

Think about returning to more vigorous hobbies, recreation or sport. A staged return is best and you should pace yourself during the activity.

Think about a gradual return to heavy lifting if this is required as part of your job or life.

How big will my wound be?

This depends on which operation you had and your body size. The incision (cut) needed to do a microdiscectomy can be as small as 2.5cm (1in) long; the cut will be longer if you have a laminectomy.

How do I care for my wound?

Skin wound closure depends on your surgeon's preference, and include absorbable sutures (stitches), removable sutures or clips (surgical staples). Check with the ward staff before you go home to make sure you know what type of wound closure you have had and to ensure you are clear about plans for removal of clips or stitches. If you have removable sutures or clips, you will be advised to arrange an appointment with your GP's practice nurse, usually 10–14 days after the operation, for them to be removed.

If you have absorbable sutures, you will be advised by the ward nurse whether you need to make an appointment with your GP's practice nurse to have a wound check or when you can take off the dressing yourself.

Please contact your GP if you think your wound might be infected. Symptoms could include:

- Redness around the wound
- Wound leakage
- You have a high temperature

Once the wound has been checked and if the scar is sensitive to touch, you can start to massage around the scar using an unperfumed cream or oil to encourage normal sensation and healing.

How soon can I shower or have a bath?

Keep your wound clean and dry. Do not have a bath until your clips/ stitches have been taken out. You may shower 48 hours after surgery if you are careful but must avoid getting the dressing too wet. Most dressings used are 'splashproof', but if water gets underneath, it will need to be changed. A simple dry dressing from a pharmacy is sufficient to use. We will give you a supply of dressings before you go home.

How long will my wound take to heal?

Wound healing goes through several stages. You might feel tingling, numbness or some itching around the wound. The scar might feel a little lumpy as the new tissue forms and it might also feel tight. These are all normal. Do not be tempted to pull off any scabs as this is a protective layer and removing it will delay healing.

What tablets will I be given to take home?

We will give you back any medications that you brought into hospital when you are discharged.

We will also give you some painkillers to take home with you, depending on the type of operation you had and how much, if any, pain you are in. This usually includes a mix of:

- **Paracetamol** – a first-line painkiller which you should use regularly at home if you are still in pain. You can take only a maximum of eight tablets in any 24 hours
- **Codeine/Tramadol** – mild opioid-based painkillers which you can take as well as paracetamol if you are still in pain. Common side effects include drowsiness and constipation
- **Ibuprofen/Diclofenac** – these painkillers also reduce swelling (anti-inflammatory). You usually use them for a relatively short time. You must take them with food. You can take them as well as paracetamol, codeine and tramadol. Avoid taking them if you have had stomach ulcers in the past

Because **Codeine/Tramadol** can cause constipation, we may also give you laxatives such as:

- **Senna** – this usually works within 12–24 hours of taking it.
- **Lactulose** – you need to take this regularly for up to 72 hours for it to work. You should also drink plenty of fluids while taking lactulose. You can use one or both of these laxatives depending on your symptoms. Ask your GP for advice if you have constipation for more than three days after taking the laxatives.

Where can I get a sick note (statement of fitness to work)?

The hospital can provide you with a note for your hospital stay. Please ask the nursing staff or ward clerk. You will have to ask your GP for any further notes.

Will I see my consultant again after I am discharged home?

Your GP will be sent a full summary of your care and they should be your first point of contact if you have any medical problems after hospital discharge. They will liaise with us at QEHB if necessary.

We aim to schedule your follow-up appointment for 6–8 weeks after your operation but appointments with the consultants can be later.

How long will it take to recover?

This depends a lot on you, your attitude and the goals you set yourself. Set small goals, pace yourself during activities, get into a routine as soon as possible and make every effort to go out normally.

What should I do if I am worried about my symptoms once I have left hospital?

It is not uncommon to experience setbacks or "bad days" with fluctuating pain levels, try not to stop activity all together, but reduce it slightly and allow the pain to settle. Once it has settled you can start slowly increasing your activity once again.

After surgery if you develop sciatica in both legs together, or have new problems passing urine, or controlling your bowels, or altered sensation around the back passage or genitals, you should immediately attend the Emergency Department at QEHB without any delay.

Recovery from surgery

Physiotherapy advice and exercises

Your spine has many components – ligaments, muscles, joint and nerves. The main aim of surgery is to alleviate pressure on the nerves and therefore reduce symptoms radiating into your leg due to nerve compression. As part of the natural healing process after surgery, some scar tissue will form and this can contribute to feelings of stiffness in your lower back as well as local pain and discomfort. This happens not only on your skin but also on the tissues underneath, including your muscles, ligaments and particularly around the nerve root.

For best results from your surgery, it is useful to:

- Start moving your spine and its structures to reduce the potential effects of scar tissue
- Get back your muscle strength and good posture. These are often poor because of longstanding symptoms
- Improve your knowledge of how your spine works and how to look after it

Exercises

The aims of a daily exercise programme are to:

- Maintain and improve your general mobility
- Improve your strength and fitness
- Help you to get back to normal activities

It is suggested that you do these exercises three times a day. We recommend you do them for at least 6 months. They should not increase your pain or symptoms such as numbness, pins and needles or weakness. However, while you are exercising you may feel a little discomfort, stiffness, pulling or twinges of pain; this is normal straight after your operation.

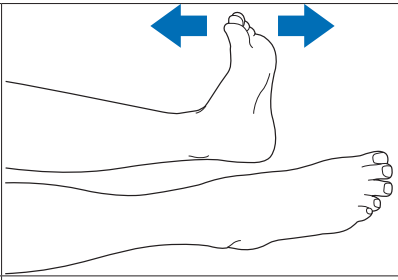
It is recommended that you use your level of function in the 2–4 weeks prior to your surgery as an initial guide for your level of function. From here you can start slowly increasing your activities and the amount of exercise that you are able to do.

Following spinal surgery it is important that you continue to look after your back and your general health. Please see further information available at **www.nhs.uk/live-well** or visit the health and wellbeing section on your local authority's website.

These are some exercise you may find useful to help you progress following your operation.

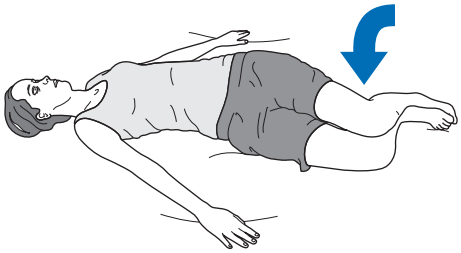
Ankle movements

In sitting or lying, point your toes up to the ceiling and then down to the floor. Aim for full range of movement to stretch the ankle.



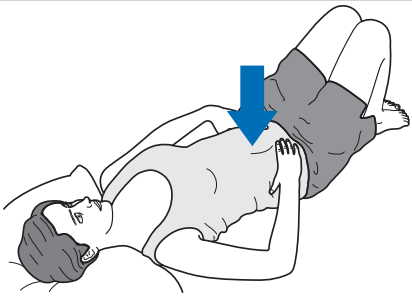
Knee rolling

Lying on your back with your back pressed into the floor or bed. Bend both knees up so your feet are on the floor. Slowly take both knees over to one side and then return them to the middle. Repeat on the other side.



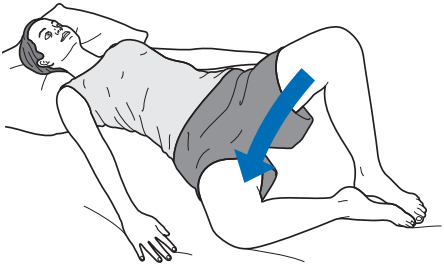
Flatten your back down into the floor

Lying on your back, squeeze your back slowly down into the floor, flattening the arch of your back. Hold for a few seconds and then repeat.



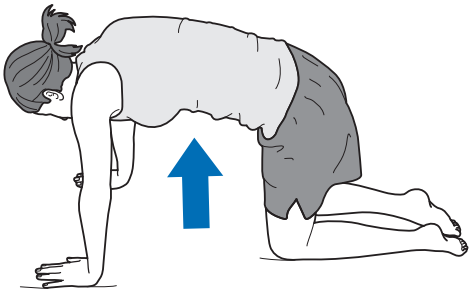
Bent knee fall out

Lying on your back with your back pressed into the floor or bed. Bend both knees up so your feet are on the floor. Slowly lower one knee out to the side and then return to the middle. Repeat on the other leg.



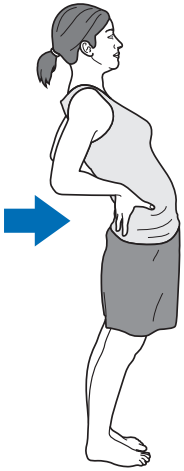
Back arches on all fours

On all fours, curl your back up towards the ceiling and hold. Then reverse then and push your back down towards the floor.



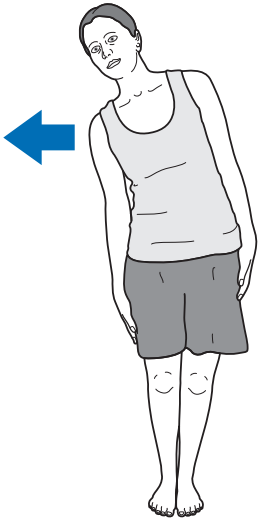
Back arching

Standing up tall, place both hands into the small of your back and slowly arch backwards.



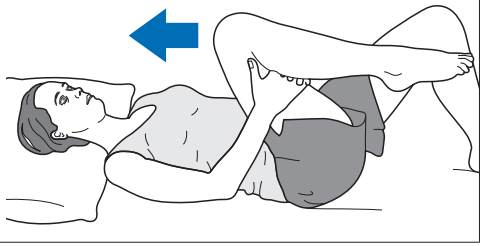
Back side bends

Standing up tall, place your hands by your side and slowly bend to one side, sliding your hand to your knee.



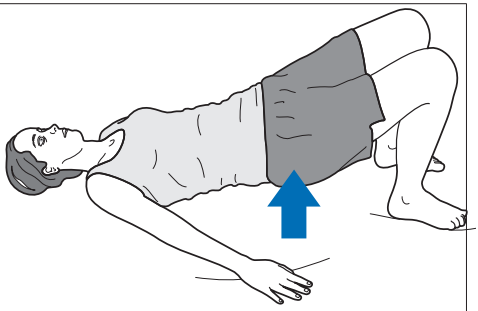
Hip and knee bends

Lying on your back and keeping the small of your back pressed into the floor. Slowly pull one knee towards your chest.



Bridging

Lying on your back with your knees bent and feet on the floor, slowly press your back into the floor and then lift your bottom off the floor until your hips are in line with your chest.



Day-to-day advice – prevention is better than cure

Quite often, discomfort will build up if you are in one position for too long.

You can change position wherever you are and whenever you think about it – sitting in work, on the train, in front of the television or in the car.

Start a daily routine. The lower back can become stiff overnight making getting up awkward and painful. Start your exercises before getting up and then give yourself one or two easy jobs to do.

It is important not to become socially isolated when you are getting better. Invite friends and family round and arrange to meet friends. No one says you have to stay at home.

Pace yourself

Being back at home after a hospital stay can sometimes be overwhelming and you may be unsure of what you can do.

Pick an activity, something you will do regularly and for the foreseeable future (for example walking outside). Choose a 'comfortable' level (intensity) and time for which you can do this activity without causing too much discomfort the next day.

Start the activity by doing 20% less than your 'comfortable' level and do it regularly (2–3 times a week).

Slowly increase either the intensity or time of your activity.

Do not increase it in sudden, huge steps, even if you have a good day. Always stick to your exercise plan. Avoid overdoing things when you are feeling enthusiastic.

Accept that there will be less comfortable periods when you can do less than planned. If you experience this, reduce the intensity/time, but try to continue with a comfortable level.

Advice on lifting

The fibrous wall of the disc cannot be repaired during surgery and will heal at different times for everybody, so you will be advised to avoid lifting anything heavy, certainly for the first 2–3 weeks, but maybe for as long as 3 months, after your operation.

When restarting lifting you need to be strong enough and be able to walk far enough to carry your load. Once you know this, practice at home. Don't start by carrying a heavy shopping bag, sport bag or suitcase. Start light and build up; pace yourself.

Having surgery does not prevent you from developing further disc degeneration.

Advice on sex

You can resume sexual activity when you feel comfortable. Moving your pelvis can help you to maintain strength and flexibility in your lower back, choose a position based on comfort and we advise you to take a more passive role in the early stages.

Try talking to your partner about your concerns to reduce any worries about causing pain. Try alternative positions and use pillows to support your back.

Advice on work

It is recommended to take time off work after your surgery. The hospital will issue you with a Fitness to Work Certificate (off work) or you may ask your GP. Returning to work is dependent on both your recovery and your job. Most people are off work for an initial 2–4 weeks, but if you are in a strenuous job you may need up to 6–8 weeks. It is always sensible to discuss with your employer if you can return on 'light duties' or reduced hours at first. There is usually nothing to stop you doing computer/office work at an earlier date, as long as you can keep moving about.

Advice on driving

- Normally you will be advised to avoid driving for 2–4 weeks depending on the type of surgery you have had and on your recovery. If you have no sensation loss or weakness in your legs at that point then you may resume driving if you feel safe to do so but you must be confident to do an emergency stop. It is useful to sit in your car and try steering to make sure you are comfortable to drive before you resume driving.
- Please check with your car insurance company before driving.
- It is advisable not to travel for long distances initially (no longer than 20 minutes), without taking a break to 'stretch your legs' and increase your sitting tolerance over 4–8 weeks.

Advice on returning to recreational activities

It is important to keep mobile after surgery. You will find you get stiff if sitting for longer than about 20 minutes, so get up and walk about regularly. Walking outside is fine but again, increase your walking distances gradually.

Please check with your consultant or physiotherapist when you are able to resume specific activities, such as swimming or running, as the advice could range from between 2 weeks to 3 months.

Your surgeon may advise you avoid flying for 6 weeks (and long-haul flights for up to 3 months) because of the increased risk of DVT after surgery.

Advice on returning to low impact exercise and sport

Low impact exercise, such as walking (in training shoes) and static cycling can be started in the initial post-op phase. Swimming, aqua walking or aqua jogging can be started once your wound has fully healed. Begin hobbies, recreation and sport when your back allows you to; you don't have to wait until you are completely pain free. Practice the activity at home to see if you are ready. Be guided by how your back feels, not how you think your back might feel. A common sense approach is best.

Advice on returning to high impact exercise and sport

High impact exercise is anything that involves running, jumping, twisting, for example, jogging, heavy gardening and some aerobics. You need time to heal which takes round 4 weeks. You then need to build up your back muscles ready to start high impact hobbies, recreation and sport. You don't have to wait until you are completely pain free. Build up slowly and practise the related tasks to see if you are ready. A common sense approach is best with progress depending a lot on your fitness and activity level before your operation.

Advice on relaxation

Rest and relaxation should be part of your daily routine. Choose the method that suits you from the many books, apps, web based audio and video that are available. Your physiotherapist may be able to advise you about this.

Support groups and organisations

British Association of Spine Surgeons
BASS actively promotes the study of spinal disorders with particular attention to the surgical treatment of spinal disease and disorders.
www.spinesurgeons.ac.uk

Backcare
Offers information about back pain and how to manage it.
www.backcare.org.uk

Brain and Spine Foundation
Advice and support for people with brain and spine conditions.
Helpline: **0808 808 1000**
www.brainandspine.org.uk

Outsiders
Sex and disability advice.
Helpline: **07770 884 985**
www.outsiders.org.uk

More information and advice

For more information about microdiscectomy go to:
www.spine-health.com/video/lumbar-microdiscectomy-surgery-video

For more information about TESS/ILESSYS go to:
www.joimax.com/en/patients/treatments/herniated-disc-treatment/

Drivers' Medical Enquiries
DVLA
Drivers Medical Group
Swansea SA99 1TU
Tel: **0300 790 6806**
www.gov.uk

Disability Benefits Centre
Information about disability benefits.
www.gov.uk

Acknowledgments

This booklet has been compiled by the physiotherapy and neurosurgery staff at Queen Elizabeth Hospital Birmingham and we kindly acknowledge the use of the patient information from the British Association of Spine Surgeons' website, Kings College Hospital NHS Foundation Trust as well as Queen Elizabeth Hospital Birmingham Charity who supported an earlier version of this patient information leaflet.

How did we do?

If you have recently used our services we'd love to hear about your experience. Please scan the QR code or follow the link to share your feedback to help us improve our services. **Thank you.**
www.uhb.nhs.uk/fft

Accessibility

To view this information in a different language or use text-to-speech reader visit **www.uhb.nhs.uk**, click the yellow and black circular icon in the bottom right of the web page to open the ReachDeck toolbar and then use the search bar to search by the name of the leaflet. If you require this information in another format such as braille or audio please email **interpreting.service@uhb.nhs.uk**

Spinal Surgery
Queen Elizabeth Hospital Birmingham
Mindelsohn Way, Edgbaston
Birmingham, B15 2GW
Telephone: 0121 371 2000

PI25/2109/03 Author: Lucy Clackett
Date: September 2025 Review date: September 2028