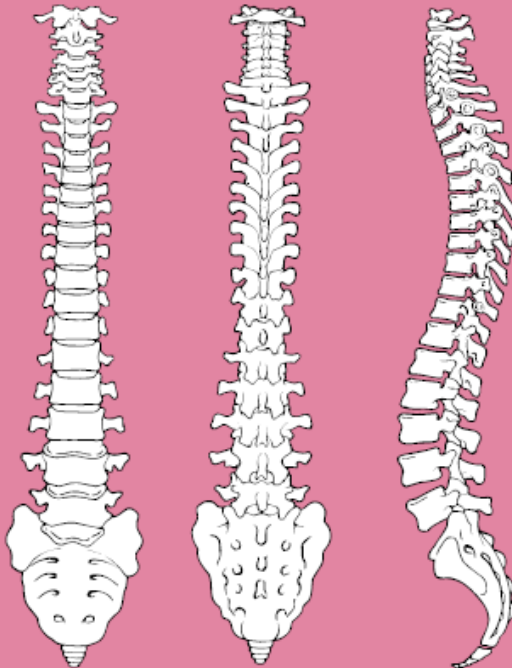




BASS
British Association of Spine Surgeons

Lumbar Decompression



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Following your recent MRI scan and consultation with your spinal surgeon you have been diagnosed with a narrowing of your lumbar spinal canal (stenosis). This is usually related to the wear and tear of the spine.

The spinal column has a central canal (or passage) through which the spinal cord passes. The spinal cord stops at the top of the lumbar spine (low back) and below that individual nerves continue to travel down and splay out like a horse's tail (cauda equina). The lumbar spine is made up of 5 bones with a disc between one which acts as both a spacer and a shock absorber. At each disc level, a nerve leaves the spine on the right and left side to go into the leg. The nerves are surrounded by cerebrospinal fluid (CSF) and are contained within a membrane, or covering, called the dura, which is the thickness of a sausage skin.

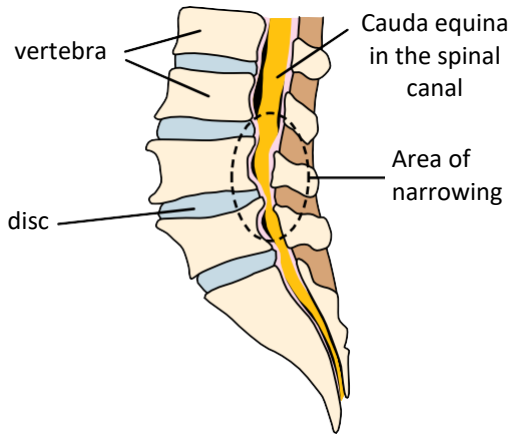
As we get older, degeneration (wear and tear) occurs, and the disc space narrows. Also, the joints at the back of the spine (facet joints) become arthritic causing them to increase in size. The disc space height loss and swelling of the joints narrows the space for the central tube of nerves (cauda equina) and the nerves leaving the spine. The joints can produce small cysts which adds to the narrowing. Nerve trapping from these wear and tear changes are common and do not always give symptoms. When the nerves do give symptoms they can be:

- Stenosis. This is where the legs feel heavy, weak and numb with altered sensation usually after standing and walking; and/or
- Sciatica. This is where a trapped nerve gives pain in the place the nerve supplies after it leaves the spine—buttock and leg. Rarely, this can cause weakness.

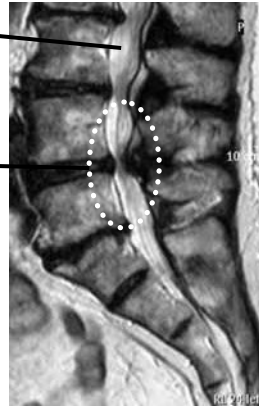
In rare cases the nerves which control your bladder, bowel and sexual function can be compressed. This is known as cauda equina syndrome (CES) and requires urgent surgical treatment. Fortunately, immediate spinal surgery is only necessary in a few cases.

Narrowing of the spinal canal from spinal stenosis as seen in diagram 1 and MRI scan

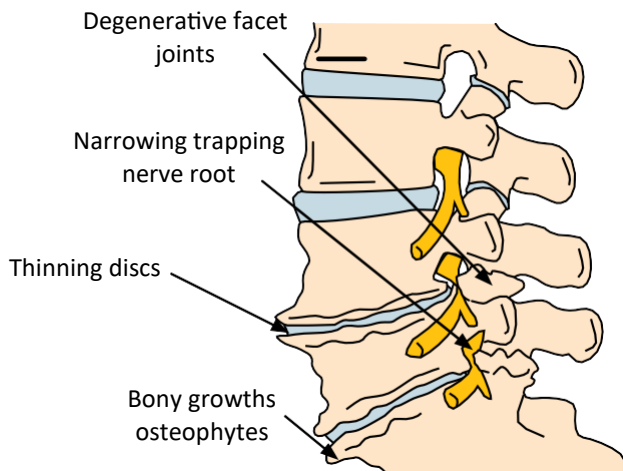
Diagram 1



MRI scan



Narrowing of the nerve root canal



Treatment options

Unfortunately, most conservative treatments (manipulation, physiotherapy, medication or injections) are unlikely to be of much long-term benefit, and the symptoms rarely improve permanently without surgery to take the pressure off the nerves (decompression).

Should I have an operation

Worsening of the symptoms does not always occur so only consider surgery if your leg symptoms are bad enough now. There is no evidence that the outcome of surgery is affected by the length of time you have had your symptoms.

The aim of surgery is to improve your leg symptoms and a cure is rarely achieved. It cannot prevent further degeneration. Good relief from leg symptoms following decompression surgery usually occurs in approximately 70–80% of cases (7-8 out of 10 people). This is not necessarily felt immediately, but over a period of time, often several months.

Sometimes however, numbness or weakness can persist, even with a technically successful operation. **Rarely, the surgery can make your symptoms worse than they were before.**

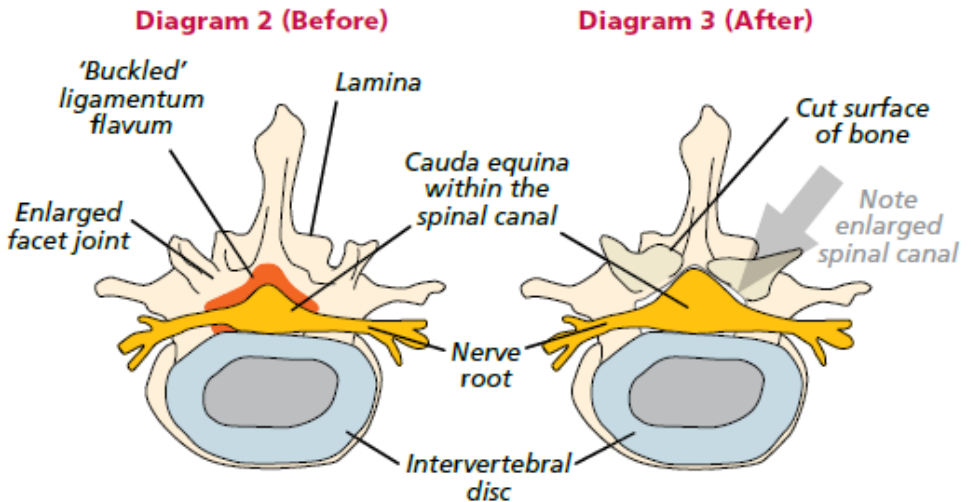
The results of the operation are not nearly as reliable for the relief of lower back pain. Much of the back pain experienced comes from the arthritis and associated muscular spasms, therefore, decompression surgery cannot eliminate this and it should not be regarded as the main aim of the surgery.

The operation: lumbar decompression

The operation is called a lumbar decompression. First the muscles are held apart to gain access to the bony arch at the back of the spine. The surgeon enters the spinal canal by removing a membrane in between the bones (ligamentum flavum). The objective of surgery is to remove the 'thickened' lining of the joint and the excess bone which are directly over the nerves. This gives the nerves and / or cauda equina more room.

The surgery may just be done on one side of the spine if your symptoms are thought to be from a single trapped nerve.

Below is a cross-sectional (axial) view of the disc (front of the spine), cauda equina, nerve roots and facet joints of the spine. Note the size of the spinal canal after surgical decompression (diagram 3).



Risks and complications

As with any form of surgery, there are risks and complications associated with this procedure. These include:

- Damage to a nerve. 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 nerve and/or numbness, tingling or hypersensitivity in the area of skin it supplies;
- Tearing of the outer lining or covering which surrounds the nerve (dura). This occurs in less than 5 out of 100 cases. It is more common in 're-do' surgery where it can occur in 1 out of 10 cases. Usually, the tear in the dura is repaired with stitches, a patch or a special glue. If the tear does not heal, you may get cerebrospinal fluid (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 is less than 1 out of 2000;
- recurrent leg pain, either from arthritis causing further trapping of the nerve which may require further surgery (occurs in about 10 out of 100 case) or as a result of scarring for which further surgery would not be possible (occurs in about 2 out of 100 cases);
- 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 reduce this;
- infection. Superficial wound infections may occur in 4 out of 100 cases. This is often easily treated with a course of antibiotics. Deep wound infections may occur in fewer than 1 out of 100 cases. This can be more difficult to treat with antibiotics alone and sometimes patients require more surgery to clean out the infected tissue. This risk may increase for people who have diabetes, impaired immune systems or are taking steroids;

- **Bleeding.** You **must** inform your consultant if you are taking tablets used to 'thin the blood', such as warfarin, aspirin, rivaroxaban or clopidogrel. It is likely you will need to stop taking these before your operation. Taking non-steroidal anti-inflammatories (NSAIDs) medication such as ibuprofen and naproxen could also increase your risk of bleeding and your surgeon will advise you if you need to stop taking these in advance of your operation;
- **Blood clots (thromboses) in the deep veins of the legs (DVT) or lungs (PE).** These occur when the blood clots in the large veins of the leg and may cause the leg to swell and become painful and warm to touch. Although rare, if not treated this could be a fatal condition 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 fewer 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 shown to you by the physiotherapist and keep well hydrated by drinking plenty of water. Female patients 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.

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

- **Damage to the cauda equina resulting in paralysis (the loss of use of the legs, loss of sensation and loss of control of the bladder and bowel).** This can occur through bleeding into the spinal canal after surgery (a haematoma). If this happens every effort will be made to reverse the situation by returning to theatre to remove 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; and
- Extremely rarely, death; as a result of damage to major blood vessels or vital organs at the front of the spine, which is reported as happening in 1 out of 10,000 cases; or general anaesthetic fatal complications which have been reported in 1 out of 250,000 cases.

Before surgery

You will have a 'pre-operative assessment' before your surgery. The aim is to make the surgery as safe as possible for you. You will be asked to discuss any medical problems and any tablets you take. You will also have blood test and swabs taken.

Instructions will be given if you need to stop any tablets before your surgery.

Your hospital stay

You will be admitted on the day of your surgery and your surgeon will see you before 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.

It is very normal to experience some level of discomfort or pain after the surgery. The nursing and medical staff will help you to control this with medication. The symptoms in your leg may vary due to increased swelling around the nerve. As the nerve becomes less irritated and swollen, your pain should slowly start to settle. This can take up to three months.

It is important not to suddenly stop taking certain pain relief medication, such as morphine, or 'nerve pain killers' (gabapentin, pregabalin or amitriptyline). It will be necessary to gradually 'wean' yourself off them – your GP can advise you if necessary.

The ward physiotherapist will visit you after the operation to teach you exercises and make sure you are confident and safely mobile. You will be encouraged to practice climbing stairs with the physiotherapist if this is appropriate. Once you are safe enough to manage at home you will be discharged, usually the next day after surgery. 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.

Wound care

Skin wound closure will usually be with absorbable sutures (stitches) although the ends may need trimming. You will be advised by the ward nurse to arrange an appointment with your GP's practice nurse, usually 10-14 days after the operation, for them to be trimmed. The dressing can be removed after 3 days.

You may shower 48 hours after surgery if you are careful but you must avoid getting the dressing too wet. Most dressings used are 'splash-proof', but if water gets underneath, it will need to be changed. A simple, dry dressing from a pharmacy is sufficient to use. Bathing should be avoided for two weeks.

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

- redness around the wound;
- wound leakage; or
- 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.

Follow-up

You will see your surgeon in clinic 6 to 8 weeks after your surgery. If you have any queries about the information in this booklet, please contact the secretarial team on 0114 2632115

Driving

Normally you will be advised to avoid driving for 2–4 weeks, depending on the type of surgery you have had. If you have no altered sensation or weakness in your legs, you may resume driving if you feel safe to do so, but you must be confident to do an emergency stop. It is advisable not to travel for long distances initially (no longer than 20 minutes), without taking a break to ‘stretch your legs’. Gradually increase your sitting tolerance over 4–6 weeks.

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. The fibrous wall of the disc cannot be repaired during surgery and will heal at different times for everybody, so you are advised to avoid lifting anything heavy, certainly for the first 2–3 weeks after your operation. Having surgery does not prevent you from developing further disc degeneration.

You can return to light recreational activities such as swimming and gentle fitness exercises after 6 weeks. You can return to all sporting activities after 3 months. If appropriate, a graduated return to sport is the advisable. Avoid flying for six weeks (and long-haul flights for three months) because of the increased risk of deep vein thrombosis (DVT) after surgery.

Work

Returning to work is dependent both on your recovery and your job. Most people are off work for an initial two weeks but if you are in a strenuous job you may need up to six 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. The hospital will issue you with a fitness to work (off work) certificate or you may ask your GP.

Please feel free to write any questions you may have on this page, which can be answered on your next visit



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. 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. They also allow us to link together all the questionnaires you complete. 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. These will only be possible if we can connect you to the questionnaires through your personal details.

Do I have to give consent?

No, your participation in the BSR is voluntary and whether you consent or not, your medical care will be the same. Your personal details cannot be kept without your consent. This will be obtained either by asking you to physically sign a consent form or electronically sign one through an email link to a questionnaire or at a questionnaire kiosk in the out-patient clinic.

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 us at the BSR centre (see address opposite). 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

Children

Parents are asked to consent for data to be collected from their child. Looking at the outcome of spinal surgical procedures is just as vital in children as it is in adults.

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

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