

Lumbar herniated (slipped) disc

P a t i e n t I n f o r m a t i o n

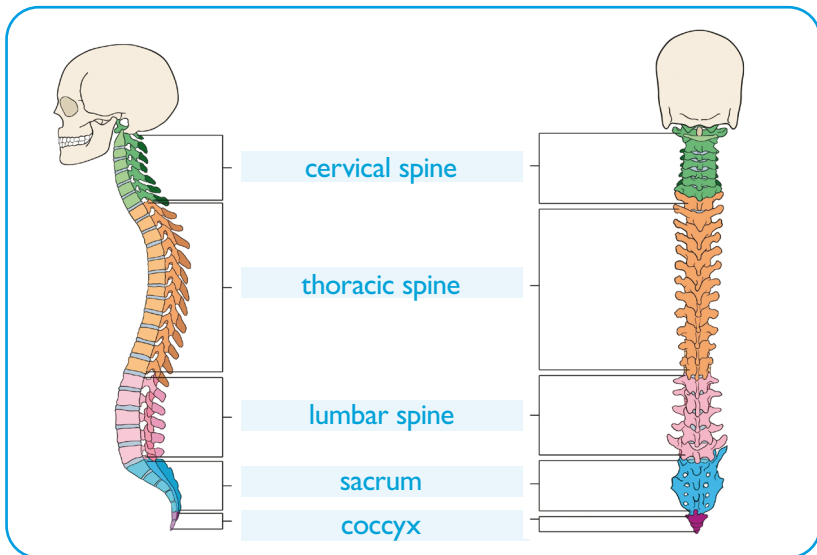
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You are set to undergo surgery on the lower back to remove a herniated lumbar disc. This brochure provides further information on the nature of the disorder, the purpose of the operation and the operation itself. It also includes an overview of the admission procedure and areas requiring specific attention once you are discharged from hospital. Finally, it includes a number of useful contact data you can refer to after you have been discharged from hospital.

The main areas that require attention during the first few days and weeks after the operation are included in the brochure entitled 'Lumbar spinal surgery: posture and movement discipline', which you should receive when you are admitted to hospital. If not, feel free to ask for one.

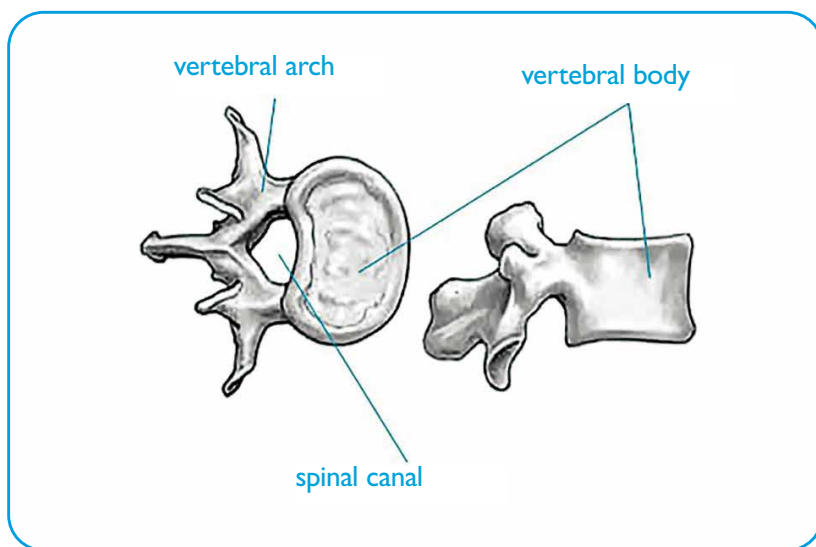
LUMBAR SPINE ANATOMY

The spine is made up of individual vertebrae. Going from top to bottom there are seven cervical or neck vertebrae, twelve thoracic or chest vertebrae, and five lumbar vertebrae. The sacrum is located below the lumbar vertebrae and below that the coccyx (see illustration below). The lumbar spine is also referred to as the lower back.



Side and rear view of the spine

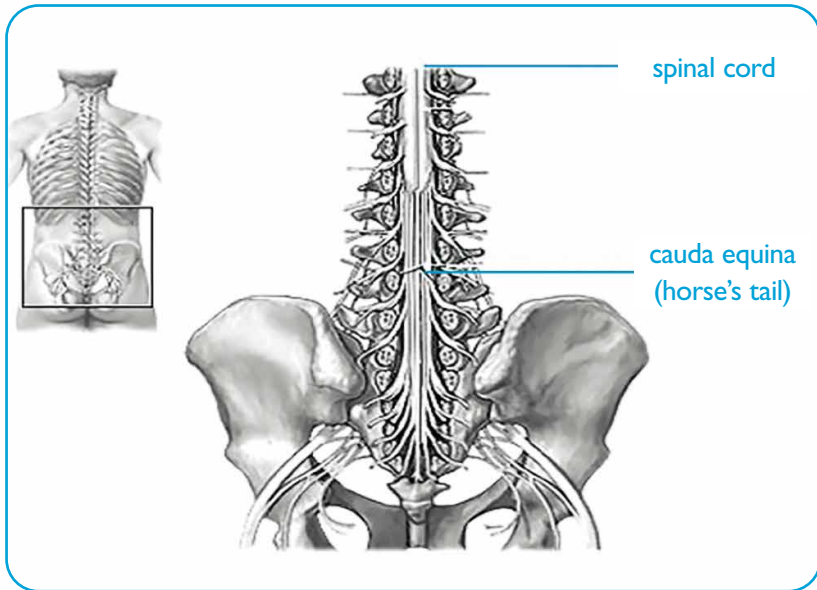
A **lumbar vertebra** consists of a vertebra body and a vertebra arch. The vertebral arch has two **transverse processes**, four joint surfaces that make contact with the adjacent vertebrae and a spinous process that can be felt through the skin at the back. Together the vertebral body and vertebral arch enclose a circle shaped opening (see illustration below). Stacked together the vertebrae thus create a channel: the **spinal canal**.



Top view (left) and side view (right) of a lumbar vertebra

The **cauda equina** (so-called horse's tail), a bundle of spinal nerves running down from the spinal cord, is located in this canal at the level of the lower lumbar spine.

Below the vertebral arch on each vertebra a nerve root protrudes on both sides (see illustration below). Intervertebral discs between adjacent vertebrae act as a shock absorber and joint. **Intervertebral discs** consist of a tough fibrous cartilage exterior (annulus fibrosus) and a soft, gel like core (nucleus pulposus).



Cauda equina and protruding nerves

WHAT IS A HERNIATED DISC AND WHEN IS SURGERY NECESSARY?

Because man walks upright the entire weight of the torso is supported by the lumbar vertebrae and the transition from the lumbar spine to the sacrum. The intervertebral discs in the lower back are consequently subject to a considerable mechanical load. The lower lumbar intervertebral discs are consequently most affected by wear and tear, i.e. sooner or later everyone will suffer some form of degeneration or deterioration in that part of the back. This process of wear and tear, which is usually age related, sometimes leads to a tear in the cartilage (annulus fibrosus) at the back of the intervertebral disc, resulting in protrusion of the soft core material (nucleus pulposus). This protruding soft core is referred to as a herniated disc.

Because a herniated disc often occurs near a protruding nerve root it can in some cases put pressure on the nerve root in question. This is referred to as nerve root or radicular compression, which can cause radiating nerve pain (sciatica). It is an intense pain radiating from the back to the leg at the side of the herniated disc, which often coincides with back pain and is referred to as lumboschialgia.

Other possible symptoms of nerve root compression :

- X numbness in a specific part of the leg
- X loss of strength (e.g. in the muscles that control lifting of the foot)
- X in severe cases problems urinating or passing stools

Severe loss of strength and problems urinating or passing stools are alarm signals that will usually lead to surgical intervention without delay. Fortunately, these symptoms only occur in a minority of patients.

If there are no symptoms that are cause for alarm, i.e. the problem is mainly pain related, the symptoms will usually disappear of their own accord after a few weeks. Nature solves the problem itself so to speak. The mechanics behind this are not yet fully understood. If the sciatica disappears of its own accord, a new scan will sometimes show that the herniated disc has contracted somewhat, although it often remains exactly the same. It is suspected, therefore, that the acute pain phase coincides with inflammation, which can subsequently clear up again. In any case doctors will initially propose a non-surgical solution, examples of which include (temporary) adjustment of day to day activities, painkillers or physiotherapy. If the pain is too severe it may be decided to resort to an epidural infiltration procedure, during which an anaesthetic and cortisone are injected into the site of the nerve root. If the pain persists and doesn't improve after several weeks, surgery may be considered.

Studies have shown that in the long term (one or two years after the onset of the symptoms) patients with a herniated disc who did not have surgery experience the same level of pain reduction as patients who did have surgery. However, some patients, who initially did not have an operation, will have one eventually because of long term incapacitating pain or intolerance to medication. Ultimately you will make the final decision regarding surgery in consultation with your surgeon.

PLANNING OF ADMISSION TO HOSPITAL

If a decision is made to proceed with an operation to treat the herniated lumbar disc, you will be referred to the anaesthesia unit for a **preoperative examination**. You will have to complete a questionnaire in preparation for this consultation, which relates to potential allergies and other disorders, your lifestyle and previous operations you may have had. It would be useful to take a summary of any medication you are taking and results of recent blood, heart or lung examinations to the consultation so that the anaesthetist can check them. Finally, if you have a blood group card, you should also take that with you. It is important that you visit the anaesthesia unit before your admission to ensure that this process runs as smoothly as possible.

During the consultation the doctor will run through the questionnaire with you. Your general health will be checked; the type of anaesthesia and pain management, and any potential risks, will be discussed with you. The doctor will also tell you which medication you can or cannot take prior to the operation.

If necessary additional examinations may be carried out. If they cannot be done immediately, you will be given an appointment for them.

Once the anaesthetist gives their approval your admission date will be confirmed, usually in writing.

YOUR ADMISSION TO THE WARD

Usually you will be admitted to the ward in the afternoon on the day before, or on the morning of the operation.

We would ask that you only bring essential items to the hospital because storage space is at a premium on the ward. Valuable items should be left at home.

It is advisable to bring the following:

- ✓ Any medication you are currently taking in its original packaging, which the nursing staff will look after on your behalf.
- ✓ Comfortable clothing allowing free movement during exercises on the ward and to go home in.
- ✓ Nightwear, dressing gown
- ✓ Sturdy, enclosed slippers or sports shoes
- ✓ Toiletries, towels and face cloths
- ✓ Razor
- ✓ Books and/or magazines
- ✓ Loose change, for example, to buy magazines
- ✓ Charger for your mobile phone
- ✓ Insurance certificate

Preparation for the operation:

- ✓ The hair on your back will be shaved by the nurse on the ward or in the operating theatre. Your skin has to be as smooth as possible to ensure that it is properly disinfected before the operation. You must not shave these parts of your body yourself.
- ✓ Shower before the operation using ordinary soap. The nurse will be able to assist you.
- ✓ The following drinks are ok up to 2 hours before the operation:
 - water
 - smooth fruit juice
 - carbohydrate drinks
 - carbonated drinks
 - tea or black coffee
- ✓ Six hours before the operation you must stop taking in any solid foods or drinks other than those mentioned above. Ask the nurse or ward doctor when the operation should normally start in order to avoid it having to be postponed.

Before the operation:

- ✓ Remove jewellery, glasses, contact lenses, make-up, dentures, hearing aids, piercings and, where applicable, a wig, place them in the cabinet in your room and give the key to the nurse.
- ✓ You will be given a hospital gown.
- ✓ The nurse will check that you have an identification tag around your wrist.
- ✓ The nurse will tell you which medication you can still take before the operation (with a sip of water).
- ✓ You will then be taken to the operating theatre.

PROGRESS OF THE OPERATION

The **purpose** of the operation is to remove the herniated disc in order to release the nerve root.

Once you have been taken to the operating theatre the anaesthetist will put you under general anaesthetic.

Preventive antibiotics are always administered for a herniated disc operation.

Once under general anaesthetic, you will be turned over and placed on a knee bench so that you are supported by your ribcage and knees throughout the operation, allowing the surgeon to operate on your lower back. The surgeon will then use radioscopy to identify the correct intervertebral disc level and mark the skin on your back accordingly. Your back will then be disinfected and sterile covers applied. The surgeon will make an incision in the skin on the midline between the upper and lower vertebral arch to gain access to the spinal canal. Using optical enlargement a small section of the spinal canal will be opened up to enable the surgeon to identify and pull the nerve root slightly to the middle. This will reveal the herniated disc, which will then be removed using small surgical tongs. In a traditional microdiscectomy, as described above, there is no need to insert some form of replacement for the removed intervertebral disc. The spinal canal has sufficient stabilising elements already.

When all the pieces of the hernia have been removed and the nerve root has been completely freed again, the wound will be re-attached layer by layer. Sometimes a wound drain may be inserted. This is a thin tube connected to a Redon bottle, which collects any



surplus blood or secretions from the wound once the skin has been re-attached.

After the operation the anaesthetist will wake you up and you will be taken to the recovery room (PAZA or post-anaesthesia care unit).

Up to 90% of patients experience excellent results following a microdiscectomy, i.e. the radiating pain in the leg disappears. In many cases the sciatica has completely gone following the operation, in other cases the pain will disappear during the first few days or weeks.

AFTER THE OPERATION

After the operation you will be kept in the recovery room (PAZA or post-anaesthesia care unit) for observation and subsequently taken back to the ward.

Pain management is very important for your recovery. We would ask that during your admission you tell us if you are in pain or suffering persistent pain despite having been given painkillers. Correct pain management reduces the risk of complications and ensures a smoother recovery process.

In most cases you will be able to sit up again immediately after the operation and be allowed to move around quite quickly. The first time you will be supervised by a nurse or physiotherapist, who will also give you instructions on how to move correctly during the first few weeks after the operation.

If a wound drain was inserted, it will be removed one or two days after the operation upon advice from the surgeon.

Usually a 40 mg Clexane® injection will be administered once a day after the operation. This medication protects against thrombosis (DVT), i.e. blood clots in the leg.

Providing there are no complications, you will usually be allowed to go home the first or second day after the operation. Obviously, this will vary depending on the speed of your recovery after the operation. In most cases the leg pain will disappear quite quickly after surgery. The impact of an operation on back pain, however, is more difficult to predict. Back pain may be alleviated after the operation, but it may also still be there or, in rare cases, actually get worse.

When you are discharged from hospital the ward doctor will provide you with the following:

- ★ A letter for your GP containing a brief, preliminary report of the operation and your stay in hospital.
- ★ A letter addressed to you detailing any medication you may have to take (e.g. painkillers). If you also have to take other medication we will provide you with a small amount of this medication so you don't have to go to the pharmacy on the day you are discharged. If necessary we will give you a prescription for the pharmacy.
- ★ A letter detailing your check-up appointment with the surgeon who treated you. This usually happens about four to six weeks after your discharge from hospital. Following on from this check-up a consultation may be arranged with the doctor at the physical medicine and rehabilitation unit, to help determine the most appropriate rehabilitation programme after the operation. Depending on a number of variables, a period of 4 to 6 weeks of incapacity for work will be prescribed.
- ★ A brochure entitled 'Lumbar spinal surgery: posture and movement discipline' ('Lumbale wervelkolomchirurgie: bewegings- en houdingsdiscipline').

POTENTIAL COMPLICATIONS

Surgery on a herniated disc is quite common and in most cases proceeds without any complications. The following is a summary of the main discomforts and complications that might occur. This brochure is not intended to provide a full summary of any possible (rare) complications.

NERVE DAMAGE

Because the operation is conducted near the nerves in the spinal canal, patients sometimes fear it may result in paralysis. However, the risk of nerve damage is very small (< 1%). If it does happen, it might result in a specific muscle losing some of its strength.

INFECTION

An infection at the operating site, particularly at the site of the intervertebral disc, is also rare (< 1%). If an infection does occur antibiotics will have to be administered long term. A further operation is rarely required. A single dose of antibiotics is, therefore, administered as a preventive measure with surgery on a herniated disc.

HAEMORRHAGING AFTER THE OPERATION

Haemorrhaging at the operating site urgently requiring another operation is very rare.

TORN MEMBRANES

Sometimes a tear may occur in the membranes around the cauda equina or nerve root, resulting in cerebrospinal fluid leaking from the back into the operating site. A leak of this kind is immediately sealed during the operation. To prevent further leakage after the operation your surgeon will usually ask you to remain lying down for at least 24 hours. The risk of this kind of tear in a membrane is less than 5% with a first herniated disc operation. It is higher with a second or third herniated disc operation at the same vertebral level due to scarring and adhesions. Leakage of cerebrospinal fluid into the wound following an operation that requires another operation to seal the leak is very rare.

RECURRENT DISC HERNIATION

There is a risk of recurrent herniation at the same site even if the herniated disc has been removed completely. This is referred to as recurrent disc herniation, which occurs in approximately 5 to 10% of patients. Recurrent herniation may occur as soon as a few weeks after the operation, although in some patients it can be many years after the operation. The same treatment principles apply to a recurrent disc herniation as to a first herniated disc, i.e. in the event of symptoms causing alarm or permanent pain a new operation may be considered. If this problem occurs repeatedly, a more extensive operation may be conducted in some cases, during which the entire intervertebral disc is removed and the vertebrae in question are fused together. This is referred to as lumbar fusion surgery.

WHEN SHOULD YOU MAKE CONTACT?

As mentioned earlier in this brochure, serious complications are very rare.

However, you should contact the surgeon in the following instances:

- ✓ New or worsening signs of neurological complications such as
 - loss of strength in the legs
 - loss of feeling or abnormal sensations in the legs or pubic area
 - problems walking, feeling of instability
 - problems urinating or passing stools
- ✓ Worsening back or leg pain
- ✓ Wound problems (e.g. secretions, blood loss, swelling, redness, opening of wound edges)
- ✓ Fever during the first 3 weeks after the operation

Obviously, you can always contact the nursing unit should you be worried for any other reason.

The hospital has a 24/7 emergency service, which is manned even at night and at weekends and can be contacted concerning spinal problems. Or, in the event of acute problems, you can go directly to our A&E department. It is advisable to always contact your GP first, who can then refer you if necessary.

USEFUL CONTACT DATA

Doctor on call for spinal problems (via central switchboard)	tel. 016 33 22 11
A&E UZ Leuven Gasthuisberg Campus	tel. 016 34 39 00
Neurosurgery Department	tel. 016 34 45 20
Orthopaedics Department	tel. 016 33 81 10
Neurosurgery Secretariat	tel. 016 34 42 90
Orthopaedics Secretariat	tel. 016 33 88 27

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