SPINE SURGERY - LUMBAR DECOMPRESSION

Information Leaflet
Introduction
This booklet has been compiled by the physiotherapy department to help you understand lumbar decompression surgery and post-operative rehabilitation.

Anatomy
The lumbar spine, or lower back, is composed of 5 bones, or vertebrae. These are numbered downwards from 1 - 5 and, because they are part of the lumbar spine they are prefixed by the letter L. Hence, you will hear medical professionals refer to L3 - L4 or L4 - L5, for example. At the very bottom of the lumbar spine is the sacrum. This bone is roughly the shape of an inverted triangle and the top part of this is referred to as S1.

Each vertebra is connected to each adjacent vertebra by 3 joints, 1 at the front and 2 at the back. The larger one at the front is where the body of a vertebra is separated from its adjacent vertebral bodies by an intervertebral disc. The 2 joints at the back are called facet joints and these lie either side of the midline. These joints also serve to connect one vertebra with its adjacent vertebra. In addition to the bony components, there are other important structures as well. The spinal canal is a bony tunnel which the spinal cord sits inside. At each ‘level’ of the spine (that is between 2 individual vertebrae) a pair of nerve roots come out (one on each side). The nerve roots that come out at the levels of the lumbar spine go on to form the nerves of the leg. These nerve roots supply the skin and muscles in your legs. Each different level of nerve root supplies different muscles and different areas of skin. This helps medical professionals decide which part of your back may be causing the trouble. This also explains
why people with low back problems can suffer with leg pain, numbness or tingling. These nerves also supply your bladder and bowel, which is why you may be asked about this.

Diagram of a Vertebra

Vertebral body—disc sits on top
Spinal canal
Nerve root branches off spinal cord and exits here
Transverse process
Facet joint
Spinous process

**Mechanism of Injury - Stenosis**

The need for decompression surgery is most commonly the result of a condition called ‘spinal stenosis’. Referring to the 2 diagrams on the previous pages may help you to understand the information below.

Spinal stenosis is when there is a reduction of space or a narrowing, either in the **spinal canal** (where the **spinal cord** passes to the bottom of L1) or around the **nerve root** as it exits the spinal canal. This narrowing, or stenosis, is often caused by degenerative or arthritic changes of the discs and the **facet joints**. When a joint becomes arthritic it tends to get a little bit bigger and thicker. If the facet joints get bigger and thicker then there is less room for the nerve roots to pass out from the spinal cord, and there is less room for the spinal cord itself. Wear and tear in the discs causes them to narrow. This brings the 2 vertebrae the disc is separating closer together. This also can reduce the room the spinal cord and nerve roots have. Arthritis is also accompanied by thickening of the soft tissues such a ligaments. There is a large ligament called the ‘**ligamentum flavum**’ that sits inside the spinal canal. This can also become thickened and fibrous which will again limit the amount of room available for the spinal cord and the nerve roots.

Some or all of the information above may apply to you - it is important to realise that everyone is different. The end result however, is similar for everyone. The nervous tissue is squashed so it is not able to send its messages properly to the skin and muscles of the legs. The result is leg pain, pins and needles, tingling, numbness, weakness and loss of reflexes. Most patients report that walking is very difficult and painful, and that sitting, or leaning forward can provide some relief. In sitting or leaning the back is bent forwards and this position can give the nerves a little more room.

**Surgery**

A surgeon will operate to relieve leg symptoms only. The operation is done under a general anaesthetic. You are positioned on the operating table in a ‘knee to chest’ position on your tummy. This stretches out the spine and makes access easier for the surgeon. This operation
does vary from person to person. Below is a list of procedures done in the operation that may apply to you:

**Facet joint undercutting**
This is when the facet joints, which have become bigger and thicker with arthritis are trimmed away from the nerves.

**Flavectomy**
The ligamentum flavum is trimmed away if it has become thickened and scarred.

**Laminectomy/laminotomy**
(Refer to the diagram again). The lamina is a particular bony part of the vertebra near to where the nerve roots come out. Part of the lamina is removed to allow the nerve roots more room to move.

**Removal of adhesions**
If there has been a history of trauma or injury to the back, it will have repaired itself with scar tissue, the same way a cut will heal with a scar. Scar tissue is made up of a lot of fibres. This fibrous tissue can be very thick and can stop certain structures such as nerves moving and stretching (nerves are elastic and stretchy and like to move). If this is the case, its referred to as an adhesion and the surgeon will endeavour to cut away the thickened fibrous tissue to ‘free’ stuck down nerve roots.

**Post-Operatively - What To Expect**
Some people come round from the anaesthetic and feel an immediate relief of their leg symptoms. Pain often settles fairly quickly. Numbness and tingling sensations usually take longer to settle though - this may be days, weeks or months. It varies considerably from person to person. Some people may always have an area of numbness that never fully recovers. Do not worry if your leg pain is still present - it is not a sign the surgery has failed. Nerves take a long time to recover from being squashed. They also have a tendency to ‘remember’ what’s happened to them. Also, consider the fact a surgeon has opened you up. Bruising and swelling will be present which will settle, but can also irritate the delicate nerve tissue initially.

**Following Your Surgery**

**DAY 1**
The physio will come to see you and, if you are feeling well enough, then the plan will be to get you up and walking about. A zimmer frame may be used initially.

You will be taught a technique called ‘log-rolling’ for getting into and out of bed. Starting from a position of supine (lying on your back), log-rolling involves bending your knees a little then allowing your knees and your arms to go over to one side, so the body moves as a unit without too much twisting. From that position of side lying, allow your lower legs to drop of the edge of the bed and pivot yourself up with your arms. You should now be sat on the edge of the bed. If needed, you will be given support to stand up.
You may feel a little light-headed or shaky on your legs initially, but this will settle.

You will also be shown some exercises by the physio. It is important that you try to do these, about 4 times a day

You will also be advised about sitting. It is important to sit with good posture - your physio will advise you on this. If you feel up to it you will be able to sit in your chair for your meals.

DAY 2 - 5
The physio will review your exercises and ensure there are no problems. Your walking will be progressed - hopefully by Day 3 you will be able to walk without assistance. If appropriate, you will be assessed on the stairs to ensure you can manage those. You will be allowed to sit for a maximum 20 - 30 minutes at one time

Once the surgeon has inspected your wound, most patients are discharged home between Day 3 - 5 (depending on your home circumstances).

THE FIRST 2 WEEKS
The physio department will contact you with an appointment in the out-patient physiotherapy department for 2 weeks after your operation. The out-patient physio will progress your exercises and help you get back to your previous level of activity.

In the meantime, you need to continue with your exercises at home. Aim to do them 4 times a day. Gradually increase your walking. A few shorter walks a day can be more comfortable than one longer one in the first few days.

Avoid ‘half-lying’ - that is lying on your back with your trunk propped up by lots of pillows. Sit for a maximum of 30 minutes at any one time. Avoid heavy lifting for 12 weeks.

Troubleshooting!
Below are some common complaints/questions and answers

“I've had a back surgery - surely I must rest completely?”
No, most definitely not! Your back is designed to move and it important to get it moving well again as soon as possible. The surgery wound will heal with scar tissue and it is important that the scar tissue is not allowed to become a disorganised tangle of fibres. By stretching and moving you will encourage to scar tissue fibres to ‘line up’ where they are needed. You may need to reassure your family as well, as some well-meaning family members can treat you like an invalid! Avoid being in any one position for a long time. Look after your posture and ensure you bend your knees when picking things up. You will feel twinges in your back and legs—this is perfectly normal and nothing to worry about. It is simply your back adjusting to being stretched and moved for the first time in a while. If you went running, and hadn’t run for some time, the likelihood is you would ache after. It’s not a sign you’ve damaged anything, just simply a sign you’re not used to it. The same principal applies to your back!
“**When can I drive?**”
If the surgery and recovery has been routine, you may resume driving at 3-4 weeks. Check with your insurance company.

“**When can I return to work/sport?**”
The earliest you can return to work is 6 weeks after your operation. If your job is very physically demanding, it may not be until week 12. Swimming and cycling are both excellent forms of exercise (as well as walking which you should be doing!) and can be gently introduced once your wound is completely healed and dry.

**Contact us**

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