

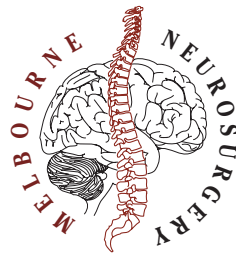
MELBOURNE NEUROSURGERY

SURGICAL PROCEDURE INFORMATION

Prepared
For

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Neurosurgeon

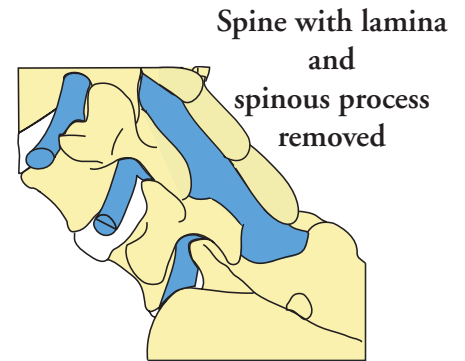
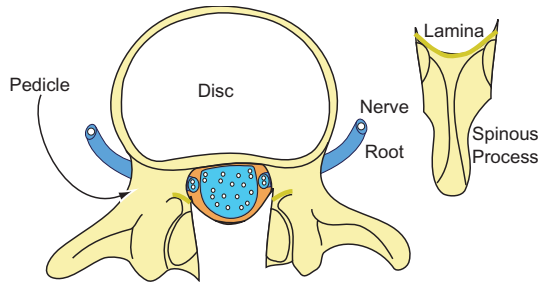
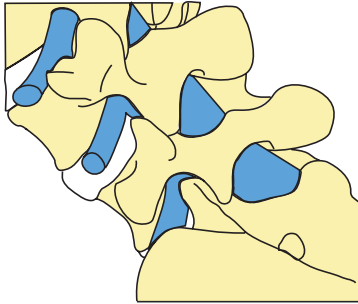
LUMBAR LAMINECTOMY AND INSTRUMENTED POSTERO-LATERAL FUSION



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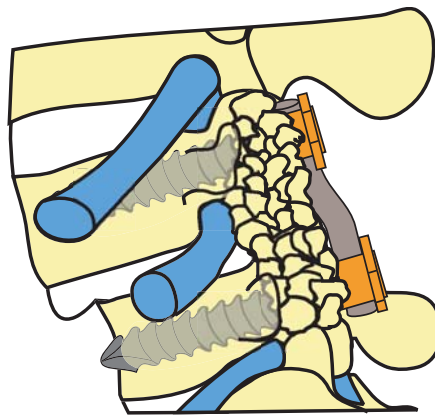
WHAT IS A LAMINECTOMY?

A Lumbar Laminectomy is where the Lamina and sometimes part of the Facet Joints are removed to allow room for the Lumbar nerves. They are usually compressed because of a degenerative process in the back.



WHAT IS A POSTERO-LATERAL FUSION?

The aim of a Lumbar Fusion is to join two or more vertebrae together. This type of fusion is done by placing bone around the outside of the spine to cause the two adjacent vertebrae to fuse. To hold things while this all sets (fuses) we need some scaffolding. This is in the form of Titanium screws and rods. In a building the scaffolding is removed when everything has set. In the body it can stay under the skin as it is not seen and another operation would be needed for removal.



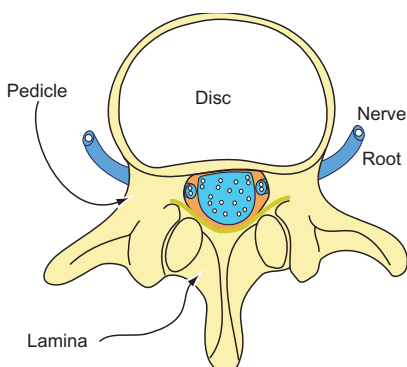
Spine with screws inserted and bone placed around the outside of the spine

WHAT ARE THE REASONS FOR HAVING A LAMINECTOMY?

The commonest reason is because you are suffering from leg pain (called SCIATICA) you may also have numbness or weakness in your leg. If you are having surgery it usually means that the symptoms have not gone away with other therapies such as physiotherapy, rest, anti-inflammatories, nerve root blocks or epidurals. Some patients will get better with time but up to 15% may need surgery if the symptoms do not resolve. The cause of your symptoms is usually a degenerative process in the back where the facet joints enlarge, the disc bulges and the yellow ligament thickens. This all reduces the space for the nerves to the legs and causes your symptoms. Some times the surgery is done to try to improve any weakness or numbness that you may have in your leg.

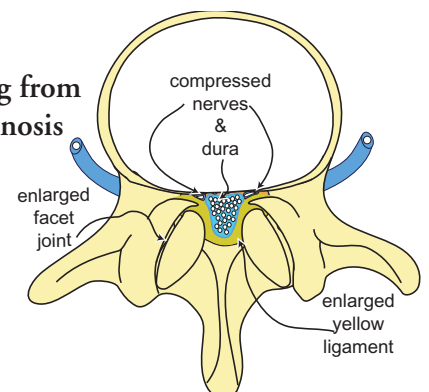
Some patients will have a mechanical problem with their back called Lumbar Canal Stenosis. This means that the path that the nerves take through the spine is too narrow.

A laminectomy is not normally performed for back pain alone as this generally does not improve with this type of surgery.



Normal spine

Spine showing narrowing from lumbar canal stenosis

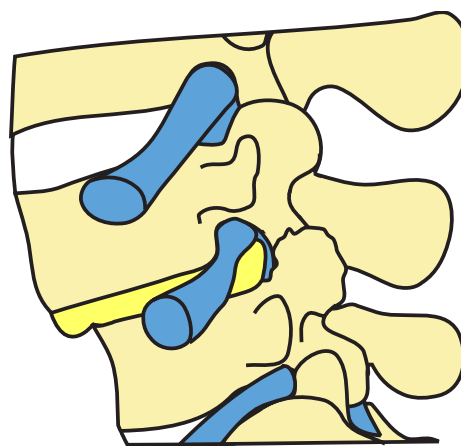


WHAT ARE THE REASONS FOR HAVING A LUMBAR FUSION?

The commonest reason is because you have a SPONDYLO - LISTHESIS. The spondylolisthesis may be caused by a break in the bone or by failure of the facet joints on the back of the spine (see picture).

If you are planned to have a laminectomy but we feel that the amount of bone that needs to be removed will make the spine unstable then a fusion is recommended as well.

We would not normally perform a fusion for back pain alone as this generally does not improve with this type of surgery.



WILL ALL YOUR SYMPTOMS GET BETTER WITH SURGERY?

This depends on the patient. Most will get substantially better and some will get complete resolution. This may depend on the amount of damage done to the nerve from the compression. Typically any leg pain is the first to improve. The muscle strength will then get better next but any thinning of the muscle may not improve. The strength does not always return back to normal. Numbness should improve but may not. It may take 9 months for this to be evident. Some patients will get increased low back pain after the surgery. Chronic pain may not improve. It may take years for a good result from the surgery.

WILL YOU GET BACK TO NORMAL?

Again this depends on the patient. Some will and some will not. The aim is to make a substantial improvement in your symptoms but some patients see no change at all. Not all your symptoms may be able to be treated with surgery.

COULD YOU NEED FURTHER SURGERY?

The spine is in a continual process of degeneration and the same surgery at the existing level may need to be repeated if you do not fuse. It is not unusual to need surgery at an adjacent level depending on the reasons for your fusion. It is felt that in some cases the fusion may put added strain on an adjacent level and cause deterioration that may need further treatment. If fusion does not occur the screws may work loose or the rods may break. This may need further surgery to correct. Some patients may develop a disc prolapse at the level above or below a fusion.

WILL THE SURGERY ALWAYS BE DONE AS DESCRIBED PRE-OPERATION?

Some times while the surgery is being performed it may be felt that to get adequate control of the situation or to prevent further deterioration in the future that a different type or more extensive procedure may need to be performed. This may just be a further extension of the existing procedure or a much more involved procedure. A smaller procedure may be done to reduce the risk of a later deterioration or because the operative findings are not as bad as suggested by your imaging. This may also occur it is felt that your bone may be too soft for any screws. Some parts of the surgery may not end up being technically possible or safe.

WHAT WILL HAPPEN IF YOU DO NOT HAVE THE PLANNED SURGERY?

Usually the longer that you wait the more likely you are to get better so you may improve enough to not need the surgery. In the case of fusion for spondylolisthesis and canal stenosis the surgery may be inevitable.

The symptoms may not improve or may get worse.

If the situation worsens you may find that the symptoms of pain, numbness or weakness get worse.

If the compression becomes very severe you may develop compression of all the nerves to your bladder and bowel as well as the nerves to your legs. This produces paraplegia and loss of control of the bowel and bladder and is called a Cauda Equina syndrome and needs to be treated as an emergency.

Sometimes if the compression to the nerves is left too long before decompression it reduces the chances of a complete or any improvement following surgery.

WHAT YOU NEED TO TELL THE DOCTOR BEFORE SURGERY?

If you have clotting problems

Any recent new Health problems or heart disease

If you are taking blood thinning agents

E.g. Warfarin / aspirin/anti- inflammatory

If you have improved from the time you decided to have surgery

Drug allergy

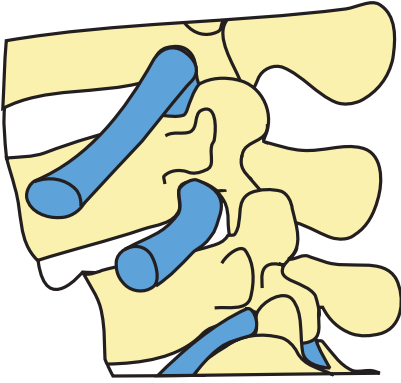
Any thing that you think is important for the doctor to know in making his decision to offer you surgery.

WHAT ARE THE STAGES IN THE SURGERY?

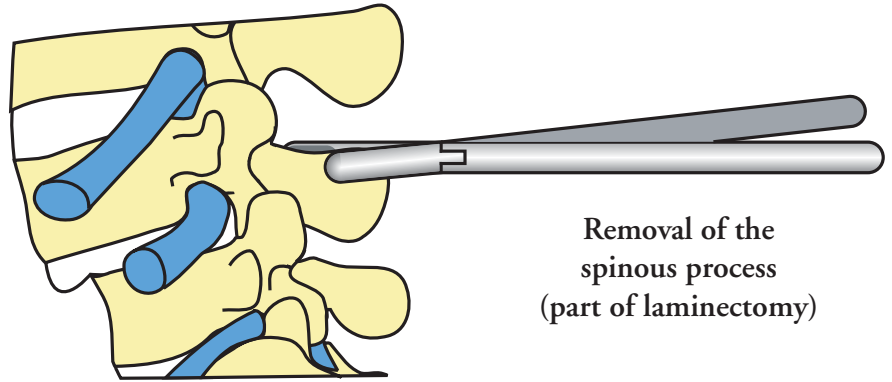
1. The exposure of the areas of the spine that need to be fused.
2. The decompression of the squashed nerves by the removal of the offending bone / joints/ discs called a laminectomy.
3. Preparing the area for the bone grafts
4. Insertion of the screws
5. Insertion of the bone graft around the spine.
6. Bolting the construct together
7. Getting control of any bleeding and closing up the wound.

WHERE DOES THE BONE FOR THE FUSION COME FROM?

We save and use the bone from the laminectomy. If we need more we may take some bone from the back of the pelvis (hip region) called iliac crest. We may use cow bone or synthetic bone if we cannot or you do not want us to use you hip bone. We usually add a synthetic bone growth promoting substance to the bone to encourage a quicker and more solid fusion.



The spine
before surgery



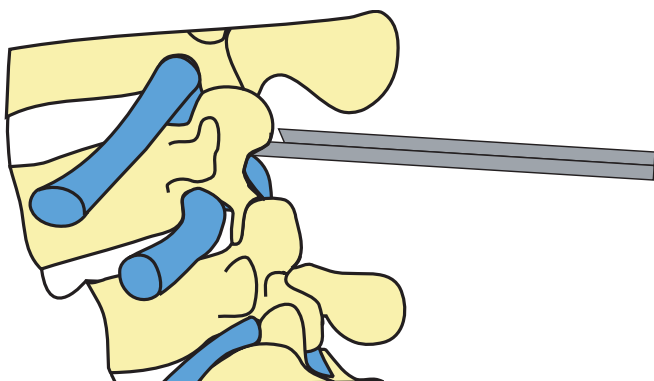
Removal of the
spinous process
(part of laminectomy)

HOW IS IT PERFORMED?

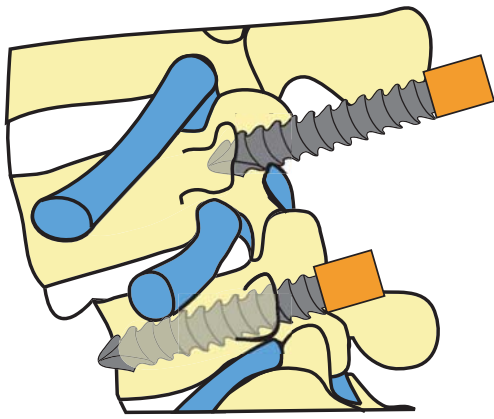
In the operating theatre you are given a general anaesthetic. A catheter is inserted into your bladder. You are then positioned face down on a special frame. An incision is marked out and the area prepared with antiseptic. You are covered in drapes so that only the incision can be seen. The level is checked with X-ray. A cut is made through the skin down to the spinous process. The muscle is dissected from the lamina and Facet joints all the way out to the tips of the transverse processes of the vertebra. A retractor is used to hold the muscle out of the way. Using a special tool the bone of the spinous process is removed. Using a bone punch and a high speed drill the bone of the lamina and part of the facet joint is removed. This leaves the yellow ligament which is removed to expose the dura and the compressed nerves. All the nerves are decompressed. The bone removed is saved for use later.

The transverse process of the vertebra of each vertebra is cleaned to help encourage fusion. Identifying the insertion point for the screws, these are then inserted and X-ray is used to confirm the position. There are two screws to each vertebra. With everything aligned the rods are placed between the screws on each side to allow the construct to be locked into position. The bone fragments with a substance to encourage bone growth are the packed down the side of the spine. Special attention is given to the nerves to make sure all pressure is removed. The openings under the facet joints that let the nerves out of the spine are checked and opened up if necessary.

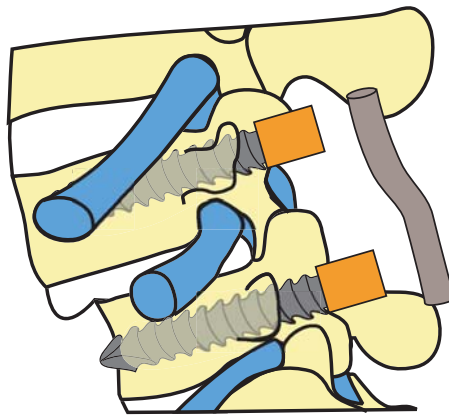
Once this has been done and all bleeding is stopped the layers are then all sewn back to their normal positions. The skin may be closed with a nylon removable suture or with a dissolvable suture.



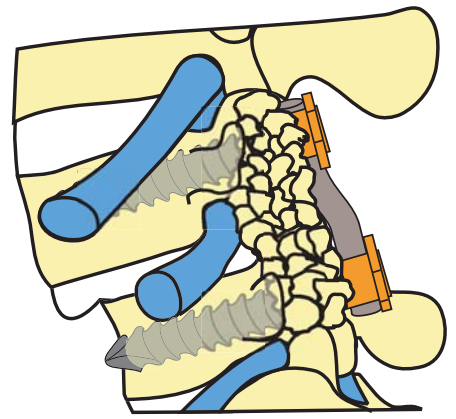
Removal of the
lamina
(part of laminectomy)



The screws being placed into the pedicles of the vertebral bodies



The rod placed on the screws



The final step with bone placed around the outside of the spine

WHAT HAPPENS NEXT?

You will wake up in recovery and after about 1 hour you will be transferred to the ward. The nursing staff will be continually checking your pulse/blood pressure/and leg strengths looking for any changes to indicate a complication. During the first night on the ward you will be woken for these observations. You will have intravenous analgesia that you will control by pushing a button (this will be explained pre-op).

The next day the drip in your arm will be removed after your first walk and then you will be given regular analgesia by mouth. Gradually over the next 2-3 days you will be able to get around as normal. When you are comfortable you will be able to go home.

It is important after the operation to walk as much as possible. Prolonged rest in bed can produce hip pain and clots in the legs.

All patients are generally fitted with a lumbar brace that will need to be worn for at least 3 months after the surgery.

Sometimes a couple of days after the operation the discomfort in your legs may return, this is due to swelling and usually settles with anti-inflammatory tablets.

If you have removable sutures then they are removed between 5 and 10 days.

WILL YOU LOSE MUCH BLOOD AND NEED A TRANSFUSION?

Some blood will be lost. We often use a machine (called a Cell Saver) to catch any blood that we spill and this cleans it and we can give you back your own blood as a transfusion. Rarely patients will need a blood transfusion of blood from the blood bank.

HOW LONG WILL YOU BE IN HOSPITAL?

You may be admitted on the day of surgery or the day before. You will fast from midnight on the day of surgery. You will be discharged about 5-7 days post-operatively. On discharge you will be able to perform most tasks of daily living (e.g. showering/dressing/etc.)

WHAT YOU SHOULD NOTIFY YOUR DOCTOR OF AFTER SURGERY?

- Weakness in the legs
- Difficulty passing your urine
- Abdominal pain
- Increasing leg pain or numbness
- Fever
- Increasing back pain
- Swelling or infection in the wound

WHAT HAPPENS WHEN YOU GO HOME?

(See the postoperative leaflet for more information)

You will need to wear a lumbar brace for at least 3 months

You should avoid Heavy lifting

Twisting

Prolonged sitting

You will not be able to drive for at least 6 weeks

You should be able to return to some sort of work at about 2 months.

It is important to walk as much as is comfortable.

You will be reviewed at 6 weeks and will have follow up X-rays regularly.

If you smoke it is best to try to give this up.

If you are overweight then loss of weight is important

WHAT ARE THE RISKS?

(Discuss these and anything important to you with your surgeon)

Some of the possible complications are:

Infection (treated with antibiotics)

Damage to the nerve that is compressed by the disc.

This may cause weakness, numbness and/or chronic pain

Damage to the dural sac containing the nerves and producing a fluid leak.

Stops with bed rest but may need surgery to repair

Damage to structures in front of the disc

Bowel / ureter (tube from the kidney to the bladder) / Aorta (major blood vessel)

Post operative blood clot requiring drainage

Wound breakdown

Bone graft site pain and infection

Paraplegia +/- loss of bowel and bladder function (very rare)

Impotence

Screw or Cage misplacement or movement

Surgery on the wrong disc

Blindness

Death

Symptoms may be made worse

Further surgery may be required

Blood transfusion complications

Medical complications not related directly to the surgery

e.g. Clot in the legs (can travel to the lungs [uncommon])

Pneumonia

Heart attack

Urine infection

Kidney failure

Stroke

Drip or catheter infection

WHAT ARE THE COSTS OF THE SURGERY?

Discuss this with your surgeon

There are out of pocket costs for the surgery above the amount you will get back from your health fund. It is important to discuss this with your doctor and to contact your fund to understand not only the cost of the surgeon but also the costs of the hospital admission and other people involved. The assistant will send an account for 20% of the value of the surgeons' fee.

If you have no health insurance and wish to have the surgery privately then you should discuss with the office staff to organize an estimate.

YOU WILL BE ASKED TO SIGN A CONSENT FORM TO SAY THAT YOU UNDERSTAND ANY RISKS.

IF YOU ARE NOT SURE ASK BEFORE YOU SIGN.

If you feel that you need a second opinion we recommend that you ask your local doctor to arrange an independent opinion for you.

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