



Laminectomy Rehabilitation Guidelines

Indications:

- Back pain with leg pain
- Weakness in the legs due to spinal claudication

Possible complications of surgery:

- Infection
- Dural tear
- Nerve damage
- On-going back pain possibly requiring further surgery

Expected outcome:

- Patient reports good relief of leg pain and a significant decrease in back pain
- Back pain can persist and walking tolerance can be decreased. Improvements can continue for up to 18 months post operatively

Post-operatively

Always check operation notes and post-op instructions.

Discuss any deviation from routine guidelines with the surgeon.

NB: If dural tear intra-operatively, patient may complain of intense, severe low pressure headache (i.e. worse on sitting up). In this instance, mobilise as comfort allows, only after period of flat bed rest prescribed by surgeon (usually between 48 hours and 5 days).

On discharge home from hospital

The patient should aim to achieve:

1. Independent and safe mobility, including stairs if appropriate
2. Independent and safe in home exercise programme
3. Independent in transfers

Initial Rehabilitation phase: 0 – 4 weeks

Goals:

1. Mobilise independently and safely
2. Understand good posture and spinal mechanics
3. Independent in home exercise programme (HEP)
4. Understand self-management and pacing concept particularly with ADL and PDL
5. Return to driving at 4-6 weeks

Precautions

For the first 4 weeks, whilst the initial post operative pain settles and the disc begins to heal, it is advised to be careful with some activities. A sensible approach is advised and a gradual increase in activities recommended. Current evidence supports a steady paced up increase in activity whilst respecting post operative soreness, disc healing times, neural sensitivity and patient's previous level of fitness.

1. **Sitting** should be gradually built up during activities such as eating or relaxing and should be guided by the development of symptoms. A limit of 15-20 mins is sensible for the first few days, and once this is comfortable it can be increased gradually. If a long journey is unavoidable e.g. to get home from hospital, the patient can recline as a passenger and ensure breaks every 20-30 minutes to mobilise.
2. **Avoid prolonged-sitting** [>1 hour] for about 4 weeks until neural sensitivity has settled and strength improved and can then try with care, e.g. in the bath.
3. **Walking** is unrestricted, and should be increased day by day as comfort allows.
4. **Caution with flexion in sitting and standing** for the first 4 weeks.
5. **Avoid driving** until about 3-4 weeks post-operation, or longer if there is a significant loss of function or sensation in one or both legs/feet. The patient should be able to sit comfortably in the driving position, drive safely, turn to look in the mirror and have 100 % reaction times for an emergency stop.
6. **For the 1st few days only lift about 1kg** (a $\frac{1}{2}$ full kettle) and then slowly increase.
7. **Continue to log-roll** until neural sensitivity has settled and strength improved which takes about 2-4 weeks.

Treatment

Pain relief: Ensure adequate analgesia; suitable positioning.

Patient education: Advice given on sitting relating to patient's function. Reinforce self-management and building up of activities appropriately. Precautions as above

Postural awareness: Advice given on the importance of good posture especially in sitting.

Exercises: Teach core stability exercises in lying and in functional positions. Teach lying to standing through side-lying. Teach exercises from patient information leaflet.

Mobility: Ensure patient is independent with transfers and mobility, including stairs if appropriate. Pre-operative status will affect outcome. If a walking aid is given and was not used pre-operation, the surgical team will be informed.

Milestones to progress to next rehab phase:

1. Adequate pain relief
2. Basic core stability
3. Starting to build-up normal activities
4. Normal gait pattern
5. Increasing sitting tolerance

Recovery/Rehabilitation phase: 4 – 20 weeks

Goals:

1. Increase normal activity and function
2. Return to work at 4 weeks (see restrictions below)
3. Return to sport/gym at 4 weeks (see restrictions below)
4. Optimise normal movement
5. Increase lifting

Restrictions

These are designed to allow the disc to continue to heal and the neural sensitivity to settle. It is balanced against the evidence supporting the return to early function and activity which decreases the risk of a poor outcome.

1. An appropriate return to work should be planned for about 4 weeks and it should be phased /part time if appropriate especially if there is a lot of travelling/sitting. If the job involves heavy manual work the aim would be to return by 3 months with a planned phased return if appropriate
2. Avoid heavy lifting [>10 kg] until 12 weeks post-operation or until the surgeon advises.
3. Contact sports should be avoided until about 3-4 months or at the surgical team's discretion

Treatment

Pain relief: Ensure appropriate amount of exercise and activity with appropriate analgesia.

Patient education: Pacing activities within appropriate restrictions. Ensure patient not over or under exercising. Exercise cautiously particularly with previously aggravating activities. Postural awareness and encourage normal movement patterns. Advice on healing times of disc; not smoking and body weight control.

Postural awareness: Reinforce importance of good posture especially when sitting, e.g. at work, driving and in the bath. Advise on good practice of changing posture regularly.

Exercise: Progress core stability to include leg slides, gym ball, balance work and proprioceptive training. Progress functional range of movement, avoiding sustained flexion and extension. General fitness advice, e.g. swimming-start initially with backstroke and add in other strokes as long as comfortable. Can attend gym and return to sport (see restrictions). Trunk, upper and lower limb conditioning as relevant to patient's goals.

Manual therapy: Soft tissue/joint mobilisations/neurophysiology treatment as appropriate.

Milestones to achieve by 20 weeks

Recovery can continue up until 18 months so expectations must be individual and realistic:

1. Achieve realistic goals set by patient
2. Return to normal activities
3. Minimal leg pain
4. Continuing with paced exercise programme and good posture

Failure to meet milestones:

- Refer back to surgeon
- Continue with outpatient Physio whilst still making progress

Failure to progress

If a patient is failing to progress, then consider the following:

Possible problem	Causes	Action
Leg pain	Neural sensitivity	Can take up to 4 weeks to decrease Ensure adequate analgesia Keep exercises pain-free Decrease sitting times slightly Progressing activities too quickly or too slowly If persists, refer back to surgical team
Neurological deterioration	Further disc complications	Review pre-operative neuro status Closely monitor and inform surgical team
Inflamed wound	Possible infection	Refer to surgical team or GP
Exercises painful	Poor technique Irritable back still	Alter exercise programme and correct technique Ensure exercises are focussed and relate to function
Patient not exercising regularly enough or following restrictions	Poor patient compliance	Explain importance of good muscle function and posture to avoid flare-ups
Altered neuropathodynamics		Assess and treat accordingly
Back pain	Common. Spinal motion segment changes. Check not returning to activities too quickly. Check technique	Ensure adequate analgesia Ensure exercises are appropriate and not increasing too quickly or too slowly. Not sitting or walking too much. Reassure it can be common
Headaches	Dural tear (1st 4 weeks) Postural or Altered neuropathodynamics other pathology	If has dural tear during surgery, this can take up to 2 weeks to settle If onset is after 4 weeks post-op, assess and treat if appropriate and liaise with referrer