

Lumbar Microdiscectomy PostOperative Physiotherapy and Rehabilitation

Phase I (0 to 2 Weeks): Protective Phase

Precautions

- Avoid twisting back , lifting and carrying objects of greater than 10kg
- Sitting needs to be no longer than 30 mins and broken up with standing breaks. Patient needs to be taught to sit in correct posture.

Goals

- Reduce pain and inflammation around the back and radiating pain down into the lower limbs. Via (education, ice, modalities , TENS , soft tissue)
- Patient understands and can do correct bio-mechanics, transfers, positioning.
- Able to have correct muscle firing for transverse abdominals, multifidus and gluteal muscles.
- Able to have a daily walking program and can tolerate 10 minutes of walking.

Education

- **Postural Education:** Upright sitting posture, correct standing posture
- **Sleeping Education:** Sleeping positions that limit discomfort and can help prevent future problems

Exercises

- **Walking Program:** Start aiming to walk for 10 mins at least 1-3 times a day
- **Transverse Abdominal contraction:** 7-10 seconds of a isometric contraction
- **Multifidus** 7-10 seconds of an isometric contraction (if able to tolerate)
- **Glute Squeezes:** 7-10 seconds of a isometric contraction, teach correct gluteal firing pattern, to prevent overactive hamstrings
- **Light Stretching:** Hip Flexors, quads, hamstring, calves, adductors

Phase 2 (2 to 6 Weeks): Initial Strengthening Phase

Precautions

- Strengthening should be performed in neutral spine.
- During exercise there should be a focus on neuromuscular control. Progression in difficulty should be stopped limited if neuromuscular control is poor.
- **Lifting:** start lifting above 10kg but caution needs to be taken and a review from the therapist needs to be completed to see if patient is suitable.

Goals

- Patient able to complete light resistance exercise, while maintaining correct bio-mechanics and good muscle contraction of core and gluteal muscles.

- Improve patient's cardio-vascular endurance, able to do a form of exercise for 20-30 mins
- Improve soft tissue function and prevent muscle tightness, joint stiffness and scar tissue formation.
- Independent and safe lifting mechanics

Cardio

- **Walking:** At least 30 minutes (depends on patient's pre-op level)
- **Stationary Bike:**
 1. **Recumbent bike: Can start in 2 weeks**
 2. **Upright bike (no resistance): 4 weeks**
 3. **Upright bike (resistance): 6 weeks**

Strength

Only commence phase 2, once the patient can complete exercises given in phase 1. Then begin with light resistance and progress in conjunction with patient's level of fitness, compliance, pain levels and mood. Persistent emphasis on ideal bio-mechanics during each exercise and correct muscle contraction of core and gluteal muscles.

- **Matt work** (supine, prone, bird dog) isometrics (Trans abdominals and Multifidus)
- Progress with **lower/upper limb movements** (eg, leg raises variations, upper limb circles, etc.)
- Progress to weight bearing, balance, gym Ball, reformer, proprioceptive exercises, hydrotherapy etc.
- Progress glut med/max strengthening Eg.: prone hip extensions (with correct firing patterns, clams, side lying abduction, donkey kicks, bird-dog, hip hitches, crab walks , balancing exercises etc
- **Upper body and lower body strength training:** squats variations, leg press, steps ups, upper body light resistive exercises (machines, Theraband, free weights, use of gym ball)
- **Balance (emphasis on core muscle activation):** single leg stand, tandem, toe and heel walking, dynamic walking, standing on foam
- Pilates is recommended over yoga. Instructors need to be experienced with spinal conditions

Flexibility

- **Stretching Lower body:** Hamstrings, gastroc/soleus, quadriceps, hip flexors, piriformis, etc.
- **Stretching upper Limb :** latissimus Dorsi, pectoral muscles, anterior neck muscles, Upper fibres of traps
- **Neural Mobilisation:** Performed as needed, gentle with caution

Manual therapy

- **Soft tissue:** improve tissue length, reduce muscle fatigue, improve pain, improve muscle spasms
- **Joint mobilisations:** Should be performed on hypo-mobile joints, do not mobilise vertebrae that have gone under surgery
- **Cross Friction:** prevent scar tissue formation
- **Passive stretches:** muscles that have undergone shortening due to compensation and pathology

Phase III (6 to 8 Weeks): Progression to Advanced Strengthening

Therapy

Goals

- Able to independently and safely complete home exercise program (HEP), to aid progression back to sport/hobbies
- Continue to progress strengthen whole body: while continuing to correctly activate spinal stabilisers and gluteal muscles.
- Able to go back to baseline function
- Possible phased returned to work if their job requires frequent: heavy lifting, sitting or travelling
- Possible requirements need to be met before, work re-commences e.g: desk space alterations, frequent breaks or extra assistance etc.

Education

- Patient should be aware that once having lower back pain, they are always under risk of having exacerbations and so need to be cautious and monitor their back consistently.
- **Stiffness** tends to be the first sign of exacerbations. If stiffness occurs patient should go back to initial exercise and pain management plan, if continues see physiotherapist or surgeon.
- Patient should understand that they need to look after their back by: continuing their exercise plan, not staying in a rested position for long periods, avoid frequent heavy lifting and understand good bio-mechanics and posture

Cardio

- When initiating running and sports below, slowly increase in the 8 to 12 week time frame.
- Make sure there has been an emphasis on correct form and machine set up when starting to increase cardio vascular set up.

	No Earlier Than:
Walking	Continue to progress
Stationary Bike	Add resistance

Swimming	Six weeks
Pilates	four weeks (start with low level classes or one to one sessions)
Hiking	Six weeks
Elliptical	Five weeks
	No Earlier Than:
Outdoor Biking	Six weeks
Skiing	Eight weeks
Yoga	Eight weeks
Running	8 to 12 weeks
Soccer/Basketball/netball	8 to 12 weeks
Golf	8 to 12 weeks

- Each patient is will have different levels of fitness, strength, attitude, recovery and compliance. Due to this each patients return time to hobby or sport can vary

Strength

- Advanced core strength training
- Progress to weight bearing, balance, Swiss Ball, reformer, bosu ball etc.
- Progress upper body and lower body strengthening
- Increase complexity with increased multi-planar movements of the upper and lower limbs
- Begin running program with progression and education on form.
- Start agility drills
- Plyometric exercises