



CERVICAL DISC REPLACEMENT: POST-OP REHABILITATION PROTOCOL

Week	Restrictions & Precautions	Aims of phase	Physio treatment (1-2 x per week)	Rehabilitation exercises Perform daily (can be spread out across the day). NB: Not all exercises appropriate for all clients - ex's & reps determined by the physio.	Criteria for progression to next phase/level
1-2	Avoid neck bending & twisting (flexion/extension/rotation) first 2 weeks No lifting first 2 weeks Log-roll for getting out of bed	Neutral spine awareness in static exercises and daily tasks Diaphragmatic breathing Deep neck muscle activation	Teach exercises Massage for muscle spasm Education on daily task modifications	1. Diaphragm breathing 2. Seated and supine chin-tucks 3. Shoulder blade squeezes 4. Gentle walking (<10-mins per walk)	<input type="checkbox"/> Can activate deep neck flexor muscles <input type="checkbox"/> Neutral neck in ADL's <input type="checkbox"/> 10-mins walking with minimal pain <input type="checkbox"/> Able to use diaphragmatic breathing in daily tasks <input type="checkbox"/> Wound healing satisfactory
2-4	Small range of motion for spinal bending/twist (avoid end ROM) Lifting maximum of 10% bodyweight Avoid prolonged periods in one position (e.g. excessive sitting/lying)	Neutral spine in exercises Diaphragmatic breathing during exercises Commence gentle ROM Improve walking tolerance	Teach rehab exercises Massage for muscle spasm/tone Manual therapy for thoracic mobility	1. Small ROM cat/cow 2. 4pt-kneeling: rocking, single arm lifts, chin tucks, gentle rotation, scapular mobility 3. Light reformer supine and standing leg-work (no upper body) 4. Theraband rows 5. Increase walking tolerance to 20-mins 6. Shoulder and lower limb stretches 7. Upright stationary bike	<input type="checkbox"/> Minimal pain with small ROM spinal movements <input type="checkbox"/> Can maintain neutral spine in exercises <input type="checkbox"/> Able to use diaphragmatic breathing in all exercises <input type="checkbox"/> 20-mins walking with minimal pain <input type="checkbox"/> Can lift up to 10% bodyweight without pain



4-6	<p>Medium range of motion for spinal bending/twist (avoid full/end ROM)</p> <p>Lifting maximum of 15% bodyweight</p> <p>Keep exercises slow</p> <p>Avoid prolonged periods in one position (e.g. excessive sitting/lying)</p>	<p>Increase range of movement</p> <p>Increase exercise demands of core muscles</p> <p>Increase walking tolerance</p>	<p>Teach new rehab exercises</p> <p>Massage for muscle spasm/tone</p> <p>Manual therapy for thoracic and shoulder mobility</p> <p>Low grade manual therapy to cervical segments adjacent to operated levels (avoid surgical segments)</p>	<ol style="list-style-type: none"> 1. Bird dogs 2. 4pt-kneeling knee hovers 3. 4pt-kneeling chin tucks, rotations, scap press 4. Supine chin tucks 5. Supine lower core toe taps 6. Supine and standing reformer exercises (light springs) 7. Upper limb theraband exercises (rows, rotator cuff, bicep, tricep) 8. Glute bridge with neutral spine 9. Increase walking tolerance to 30-40-mins 10. Lower limb and shoulder stretches 	<p><input type="checkbox"/> Minimal pain with larger ROM spinal movements</p> <p><input type="checkbox"/> Can maintain neutral spine in exercises</p> <p><input type="checkbox"/> Able to use diaphragmatic breathing in all exercises</p> <p><input type="checkbox"/> 30-40 mins walking with minimal pain</p> <p><input type="checkbox"/> Can lift up to 15% bodyweight without pain</p>
6-8	<p>Full range of motion for neck movements</p> <p>Lifting maximum of 20% bodyweight</p> <p>Keep exercises slow</p> <p>Minimise sedentary behaviour</p>	<p>Functional movement</p> <p>Introduce light resistance training</p> <p>Progress core and glute strength</p> <p>Commence light cardio stationary bike for cardio</p>	<p>Teach new rehab exercises</p> <p>Massage for muscle spasm/tone</p> <p>Manual therapy for thoracic and shoulder mobility</p> <p>Low grade manual therapy to cervical segments adjacent to operated levels (avoid</p>	<ol style="list-style-type: none"> 1. Bear pose 2. 8-pt plank with neck ROM ex's 3. Supine/prone/s tanding reformer exercises (light-medium springs) 4. Modified side plank 5. Theraband exercises: rows, lateral raises, chest press 6. Bicep curls and tricep press 7. Standing thoracic 	<p><input type="checkbox"/> Minimal pain with full ROM spinal movements</p> <p><input type="checkbox"/> 8-point plank for >30-secs</p> <p><input type="checkbox"/> Modified side-plank >30-secs</p> <p><input type="checkbox"/> 60-mins walking with minimal pain</p> <p><input type="checkbox"/> Can lift up to 20% bodyweight without pain</p>



			<p>surgical segments)</p> <p>Whole body alignment check</p>	<p>rotations with theraband</p> <p>8. Supine dead bugs (small ROM)</p> <p>9. Increase walking tolerance to 60-mins</p> <p>10. Progress stationary bike</p> <p>1. Shoulder/LL stretches</p>	
8-10	<p>Full ROM</p> <p>Lifting maximum of 30% bodyweight</p> <p>Avoid excessive sitting</p>	<p>Increase strength and endurance</p> <p>Commence light running and swimming</p> <p>Increase lateral and rotational demands</p>	<p>Teach new rehab exercises</p> <p>Perform new objective strength measures</p> <p>Massage & needling for muscle spasm/tone</p> <p>Manual therapy for thoracic and shoulder mobility</p> <p>Low grade manual therapy to cervical segments adjacent to operated levels (avoid op-site)</p> <p>Whole body alignment check</p>	<p>1. 6-pt plank with neck ROM ex's</p> <p>2. Push-ups (knees only)</p> <p>3. Reformer exercises (heavier springs)</p> <p>4. Modified side plank with head mvt</p> <p>5. Theraband exercises (heavier bands): lateral raises, chest press</p> <p>6. Cable machine rows & thoracic twists</p> <p>7. Bicep curls & tricep press</p> <p>8. Light lat pull downs</p> <p>9. Light overhead press</p> <p>10. Supine dead bugs with head lifted</p> <p>11. Increase walking tolerance to >1-hour</p> <p>12. Introduce gentle swimming and jogging</p> <p>13. Progress stationary bike</p>	<p><input type="checkbox"/> No pain with full ROM spinal movements</p> <p><input type="checkbox"/> 6-point plank for >1-min</p> <p><input type="checkbox"/> Side-plank on knees >1-min</p> <p><input type="checkbox"/> >60-mins walking with no pain</p> <p><input type="checkbox"/> Can lift up to 30% bodyweight without pain</p> <p><input type="checkbox"/> If jogging or swimming (optional), can tolerate up to 15-mins without pain</p>



10-12	<p>Full ROM</p> <p>Lifting maximum of 40% bodyweight</p> <p>Care with lifting technique</p>	<p>Increase strength and endurance</p> <p>Increase exercise speed/power</p> <p>Increase lateral and rotational demands</p> <p>Return to pre-injury levels by end of phase</p>	<p>Teach new rehab exercises</p> <p>Retest objective strength measures</p> <p>Massage & needling for muscle spasm/tone</p> <p>Manual therapy for neck, thoracic and shoulder mobility</p> <p>Testing for clearance of return to sport and/or discharge</p>	<ol style="list-style-type: none"> 1. Plank with alt arm/leg lifts 2. Push-ups 3. Reformer Pilates 4. Slowly increase weight training within lifting restriction limits: rows, bicep curl, tricep press, OHP, lat pull-down 5. Standing rotations with cable (increase speed) 6. Sit-ups 7. Supine dead bugs with crunch 8. Side plank (knees up) 9. Walking tolerance unrestricted 10. Light jogging 20-40 mins 11. Progress swimming and stationary bike 12. Lower limb stretches 	<p><input type="checkbox"/> Clearance from Surgeon</p> <p><input type="checkbox"/> No pain with full ROM spinal movements</p> <p><input type="checkbox"/> Can perform all exercises pain free</p> <p><input type="checkbox"/> Can lift up to 40% bodyweight without pain</p> <p><input type="checkbox"/> Discharge testing reflects pre-injury capacity</p>
12+	<p>Await surgeon and physio clearance for high-impact activities such as contact sport</p> <p>No other restrictions, but must continue core strength exercises ongoing</p>	<p>Avoid re-injury</p> <p>Continue to improve capacity</p>	<p>Consolidate ongoing strength and core program</p> <p>Manage any impairments with manual therapy and soft tissue releases</p>	<p>As per week 10-12 program, but increase speed, load, power demands.</p> <p>Sports specific rehab.</p>	N/A