SEACOAST ORTHOPEDICS & SPORTS MEDICINE

❒ Frisbie Memorial Hospital ❒ Marsh Brook Rehabilitation Services ❒ Wentworth-Douglass Hospital

AQUATIC/LAND CLINICAL PROTOCOL FOR POST-OP LUMBAR, DISCECTOMY, LAMINECTOMY, DECOMPRESSION

FREQUENCY: 2-3 times per week.

DURATION: 4-6 weeks based on Physical Therapy evaluation findings. Estimated length of treatment to discharge is approximately two months. Continued formal treatment beyond meeting Self-Management Criteria will be allowed when:

1) Patient out of work or to hasten return to full work duty.
2) Athlete needs to return to organized athletic program.

DOCUMENTATION: Progress Note to physician at each follow-up appointment. Follow treatment calendar for daily requirements. Discharge Summary within two weeks of discharge.

POST-OPERATIVE EVALUATION (Two Weeks):

GOALS:

1. Evaluation to assess:
   - ADL status.
   - Posture and function.
   - Pain/Inflammation.
   - Incisional integrity.
   - Gross trunk, upper/lower extremity flexibility and strength.

- Initiate nerve root stretches.
- Initiate postural education and body mechanics.
- Initiate edema reduction techniques and home exercise program.

2. Orient to pool program and give information packet.

- Initiate formal rehabilitation 2-3 times per week until Self-Management Criteria have been met. Frequency of weekly appointments will depend on patient's availability, working status, and choice/interest.
- When patient presents with the following SELF-MANAGEMENT CRITERIA:
  1. Compliance with home exercise program and proper body mechanics demonstration.
  2. Independent with clinic strengthening and cardiovascular program.
  3. Independent pain management techniques and stable symptoms.
  4. Trunk active range of motion within functional limits (forward bending to at least 8 in. fingertips to floor, side bending to fibular head, and backward bending 50 degrees).
  5. Trunk and lower extremity strength 4+/5.
  6. Independent with incisional mobility and desensitization techniques.
  7. Progressing toward established functional goals.

  then patient can be progressed to a home exercise program and Transitional Rehabilitation Program at Rehab 3 or local health club with periodic rechecks as needed until Discharge Criteria have been met.

DISCHARGE CRITERIA (2-12 WEEKS POST-OP):

1. Functional trunk range of motion and strength.
2. Demonstrates excellent posture and body mechanics without cues.
3. Independent pain management techniques.
4. Optimal gait pattern.
5. Proficiency in self-management program.
6. 5/5 trunk strength.
7. Functional goals met.
8. Failure to comply.
9. Failure to progress.
10. Chronic pain behavior is present. {As defined by Minnesota Worker's Compensation Treatment Parameter Rules Part 5221.6040, subpart 3. Chronic Pain Syndrome is any set of verbal or non-verbal behaviors that:
    - involve the complaint of enduring pain;
    - differ significantly from the patient's preinjury behavior;
    - have not responded to previous appropriate treatment;
    - are not consistent with a known organic syndrome which has remained untreated; and
    - interfere with physical, psychological, social, or vocational functioning.

- Therapist discussion with physician is necessary for any early or unplanned discharge from Physical Therapy for any reason.

--TREATMENT GUIDELINES--

PHASE II (POST-OP WEEKS 2-4 APPROXIMATELY)

GOALS:

LAND COMPONENT:

1. Develop home exercise program:
    - Avoid all unnecessary motions that increase disc pressure early post-operatively, i.e. no extremes of trunk flexion.
    - Stop all activity that reproduces leg pain or increases post-op pain.
    - Lumbar support for sitting/driving.
    - Stretching to be done b.i.d. in pain-free range of motion.
    - Strengthening exercises every other day on non-therapy days. Goals 30 repetitions each. Recommended exercises may change depending on patient's age and pathology at other spinal levels. See Home Exercise Program Progression.
    - Icing prn for pain.
    - Continue nerve root stretches.
    - Introduce flexion stretches and strengthening per patient tolerance. Initiate in supine position.

2. Establish a walking program.
    - 3 weeks post-op goal = 1 mile in 15-20 minutes.
    - 6 weeks post-op goal = 2 miles in 30 minutes.

3. Initiate cardiovascular training.
    - Utilize treadmill and/or UBE.

4. Attend spine education program.

5. If making good progress, can start strengthening on upper body machines including lat pull, row, and triceps.

PHASE II (POST-OP WEEKS 2-4 APPROXIMATELY) – CONTINUED

GOALS:

WATER COMPONENT:
Early Phase – Post-Op Weeks 2-3:

Shallow Water Exercises:

- Warm-up: Walking forward, backward, sideways with semi-squats with emphasis on proper postural alignment.
- Gait training in waist deep water.
- Controlled nerve root stretches on bench/stair. May add minimal floatation to lower extremities, if tolerated.

Deep Water Exercises:

- Emphasis should be placed on only mid-range flexion and extension of spine during this phase.
- Vertical stabilization VF2.
- Stretches: Hip flexor, hip flexor/hamstring with gentle dorsiflexion for nerve root stretch, if tolerated.
- Strengthening: Splits and spreads, single knee to chest, double knee to chest, heel to butt, corkscrews, pendulums, and hula's if tolerated.
- Cardiovascular Training: Bicycling.

Late Phase – Post-Op Weeks 3-4:

Shallow Water Exercises (may add cuffs at this phase):

- Warm-up: Walking forward, backward, sideways with semi-squats.
- Clapping under and clapping behind, straight leg raise walk forward/backward with emphasis on proper posture, balance, and proprioception.
- Gait training.
- Upper extremity push/pull and/or trunk stabilization with kickboard, upper extremity kickboard push down, may add diagonals, if tolerated. May add walking push/pull trunk stabilization forward/backward with possible added rotation, if tolerated.

Deep Water Exercises (may add cuffs, if tolerated):

- Vertical stabilization VF2.
- Continue with strengthening as previously listed in early phase (Weeks 2-3).
- May begin vertical to supine or vertical to prone exercises with lower extremity strengthening. Attention should be placed upon alignment and mid-range spinal mobility.
- Propulsion while sitting on kickboard or barbell.
- Cardiovascular training: Bicycling and/or deep water running with floatation belt and tethers if tolerated by patient.

PHASE III (POST-OP WEEKS 4 TO DISCHARGE APPROXIMATELY)

GOALS:

1. Discuss with patient the possibility of Transitional Swim Program if necessary.
2. Develop weight training program.
   Requirements:
   1) Aquatic exercises completed properly with minimal/no pain.
   2) 30 repetitions on home strengthening program.
   3) Stable radicular symptoms.
   4) No nerve root tension signs.

   Avoid all exercises which reproduce or increase pain.

PHASE III (POST-OP WEEKS 4 TO DISCHARGE APPROX.) – CONTINUED

GOALS (continued):

3. Weight lifting technique:
    A. Each machine must be properly fitted to the patient's trunk and limb length.
    B. Resistance should be adjusted so that the patient can perform 15 repetitions with moderate muscle fatigue, single set.
    C. Weights should be lifted up within 2 seconds, held there for 1 second, and then lowered slowly within 4 seconds.
    D. All exercises done through pain-free range of motion only.

4. Weight training progression:
    A. Progress repetitions to 3 sets of 10. When patient can complete repetitions at a given resistance, using good technique for 3 workouts in succession, the resistance may be increased by 1 plate.
    B. The patient will be scheduled to weight train 2-3 times per week. They will be expected to walk and perform home stretching program on non-weight training days.
    C. PT staff may limit the maximal amount of weight that a patient may lift on any machine.
    D. Symptom changes and complaints should be evaluated by therapist before the session begins so that the program may be adapted appropriately.

5. Specifics:
    A. Initiate back strengthening: Lat pull down, upright rows, back extension, do not flex beyond 90 degrees on return phase.
    B. Lower extremity machines: Knee extension, seated leg curl avoiding full leg extension, leg press, and calves on Magnum II or Total Gym.
    C. Upper extremity exercises: Chest press and fly with assistance to use foot pedal, triceps press on lat pull, and bicep curls unilaterally in sitting or standing with dumbbells.
    D. No rotational torso machine.

6. Continue with cardiovascular training.

Avoid unnecessary forward bending at waist.

When patient independent and able to appropriately progress program weights, progress to Transitional Rehabilitation Program.

At discharge, the patient should be independent with and understand the importance of continuing with a comprehensive flexibility, strengthening, and cardiovascular program at home or at a local health club.