AQUATIC/LAND CLINICAL PROTOCOL
FOR TOTAL HIP ARTHROPLASTY

FREQUENCY: 2-3 times per week.

DURATION: 6-12 post-operative weeks based on Physical Therapy evaluation findings. Continued formal treatment beyond meeting Self-Management Criteria will be allowed when patient out of work or to hasten return to work full duty.

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 – WEEKS 1 TO 2

GOALS:
1. Active range of motion as follows:
   - Flexion 90°
   - Abduction 25°
   - Extension 5°.
2. Independent ambulation with assistive device.
3. Independent with transfers per Total Hip Arthroplasty Precautions.
4. Understands Total Hip Arthroplasty precautions.
5. Oriented to pool program and given information packet.

When patient meets the following SELF-MANAGEMENT CRITERIA (estimated at 4-6 weeks post-op):
   - Minimal effusion.
   - 4+/5 hip strength with 4+/5 knee and ankle strength.
   - Active range of motion as follows: Flexion 90°, abduction 30°, extension 10°, adduction to midline only, internal rotation to neutral only.
   - Incisions healing well, mobile, and not tender to palpation.
   - Minimal to no pain.
   - Independent gait pattern with appropriate assistive device.

then patient can be instructed in either home exercise program, Transitional Rehabilitation Program, or program to be performed at a local health club with follow-up appointments every 1-2 weeks until DISCHARGE CRITERIA has been met. If patient does not initially meet above SELF-MANAGEMENT CRITERIA, then a course of formal rehabilitation will be initiated 2-3 times per week until criteria has been met. Frequency of weekly appointments will depend upon patient’s availability, working status, and choice/interest.
**DISCHARGE CRITERIA**

- Hip active range of motion as follows: Flexion 90°, abduction 40°, extension 10-15°.
- 5/5 strength of knee/ankle musculature with 4+/5 strength of hip musculature.
- No effusion.
- Normal gait pattern.
- No incisional hypersensitivity/adherence.
- Good understanding and performance of home exercise program.
- Met, or consistently progressing toward, established functional/objective outcomes.
- Failure to progress.
- Failure to comply.

**--TREATMENT GUIDELINES--**

**POST-OPERATIVE WEEKS 2 TO 5**

**GOALS:**
1. Weight bearing as tolerated gait pattern with appropriate assistive device (weight bearing status determined by physician).
2. Independent with transfers.
3. Demonstrates good understanding of Total Hip Arthroplasty Precautions.
4. Active range of motion as follows: Flexion 90°, abduction 20-30°, extension 5°.

**PRECAUTIONS/CONTRAINDICATIONS:** Will depend upon type of surgical approach. If anterior approach, contraindicated motions are simultaneous hip extension and external rotation. For lateral approach, motions to be avoided are simultaneous hip flexion/adduction and internal rotation. For posterolateral approach, contraindicated motions are simultaneous hip flexion/adduction and internal rotation.

**LAND COMPONENT:**
- Initiate high level gait training/stair training/balance/proprioception activities. (Gait pattern with use of appropriate assistive device with weight bearing status determined by surgical approach utilized and physician.)
- Initiate incision mobilization and desensitization techniques.
- Initiate strengthening program emphasizing straight plane exercises for straight leg raise, hip extension, hip abduction (if not contraindicated). Begin active assisted range of motion progressing to active range of motion and then light resistive exercises.
- The patient to be performing self-home flexibility/strengthening program as well as standing exercises, weight shift activities.

**WATER COMPONENT** (May add hydrofit cuffs, if tolerated.)

**Shallow Water:**
- Multi-directional gait training with emphasis on heel ↔ toe and equal weight bearing. (The patient may hold onto barbell or side of pool edge for assistance.)
- Walking forward/backward/sideways with clap under, clap behind, straight leg walk, and 4-count walking kick forward/backward for balance/proprioception.
- Stretching of hamstrings and gastrocsoleus complex.
- Modified squats.
- Toe raises.
- Knee flexion/extension.
- Hip flexion/extension. (Limit range of motion dependent upon surgical approach.)
- Hip abduction/adduction.
- Begin balance/proprioception activities with hand hold assist on pool side/barbell initially.
Initiate step-ups on pool stairs forward/lateral.

POST-OPERATIVE WEEKS 2 TO 5

Deep Water:
- Vertical floatation (VF2) with lower extremities slightly abducted with emphasis on hip stabilization.
- Hamstring stretches.
- Dorsiflexion/Plantar flexion.
- Splits/Spreads {Limit range of motion}
- Single knee to chest, double knee to chest. dependent upon surgical approach.
- Knee flexion/extension. surgical approach.
- Bicycling.

POST-OPERATIVE WEEKS 5 TO 6

GOALS:
1. Independent ambulation/stair negotiation with appropriate assistive device (weight bearing status determined by physician).
2. Minimal effusion.
3. No incisional adherence/hypersensitivity.
4. Demonstrates good understanding of home exercise program and Total Hip Arthroplasty Precautions.
5. Hip active range of motion as follows: Flexion 90°, abduction 40°, extension 10-15°.

PRECAUTIONS/CONTRAINDICATIONS:
As per Weeks 2 to 5.

LAND COMPONENT:
- Continue with gait training/stair training, if needed, with appropriate assistive device dependent upon weight bearing status.
- Continue with incisional mobilization/desensitization techniques, if appropriate.
- Continue with range of motion/flexibility program, if required.
- Progress resistive strengthening program within precautionary level. Avoid combined motions dependent upon procedure.
- Continue with home exercise program progression.

WATER COMPONENT (Continue with water treatment as outlined in Post-Operative Weeks 2 to 5. Progress hydrofit cuffs to patient’s tolerance.)

Shallow Water Additional Exercises:
- Continue with balance/propiroception – Clap unders, clap behinds, straight leg walk, four-count kicks, lunges forward/ backward, one-leg balance (limit range of motion dependent upon surgical procedure). Can perform exercises with eyes open/eyes closed.
- One-legged squats. (May perform hand hold assist on pool side/barbell initially.)
- Forward/Lateral step-ups (DO NOT exceed 6-8" step dependent upon patient's height and restrictions).

Deep Water Additional Exercises:
- Flutter kicking (may add fins for increased resistance, if tolerated).
- Deep water running.
POST-OPERATIVE WEEKS 6 TO 12

GOAL:  
1. Meet SELF-MANAGEMENT CRITERIA.
2. Transition to Land Based Program or Transitional Swim/Gym Program at this time.

PRECAUTIONS/CONTRAINDICATIONS: Dependent upon surgical approach and/or physician.

LAND/WATER COMPONENTS:
- Continue with treatment as indicated in Post-Operative Weeks 5-6.
- Continue with home exercise program progression.
- Continue with gym/swim program dependent upon physician recommendations.
- Orient patient to Transitional Swim/Gym Program regarding weight program and equipment selection.

POST-OPERATIVE WEEKS 12 TO DISCHARGE

GOAL: Meet DISCHARGE CRITERIA.

PRECAUTIONS/CONTRAINDICATIONS: Determined by physician.
- Continue with treatment as indicated.
- Continue with independent flexibility, strengthening, balance/proprionception program. Progress weights as indicated.

For advanced exercises, please refer to Advanced Lower Extremity Aquatic Exercise Protocols.