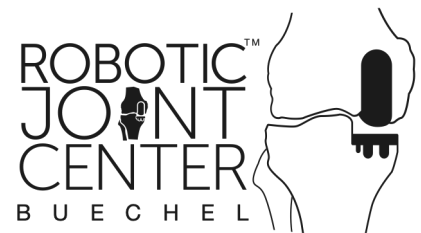


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## Post-Operative Rehabilitation Protocol, Partial Knee Replacement Mako™ Robotic-Arm Assisted

### General Recommendations:

- Full Weight Bearing as tolerated is allowed with the use of an assistive device such as a walker, crutches or a cane until proper balance, strength and gait mechanics that allows patients to walk safely and independent of their walking aide is achieved.
- Progression for each person will vary according to their pre-surgery health condition and knee function.
- Recommendations for progression of rehabilitation activities are approximate and are provided as a guide only. Each patient will progress at their own pace and according to the effort they put into their rehabilitation.
- Focus on achieving early maximal extension close to, or equal to the opposite knee.
- Passive flexion of greater than 100 degrees is not necessary in the first two weeks to avoid potential wound healing compromise.
- No aggressive passive knee flexion. Once swelling has resolved flexion returns.
- Avoid any resisted leg extension machines during the first eight weeks of rehabilitation.
- Non-Operative leg biking resting the operative leg on a chair is okay for the first two weeks.
- Lower extremity manual lymphatic massage is recommended to reduce leg swelling and improve circulation each session.
- Warm therapy can begin each session, and cold therapy is to be used at the end of each exercise session.
- Goals are to return patients to an active lifestyle with good muscular recovery and proper gait mechanics.

### Therapy Week 1:

- Office visit Post Op Day 1 or 2 for dressing change and evaluation.
- Aggressive edema control (i.e. circumferential lymphatic massage)
- Apply Cold Therapy after session.

**Manual Therapy:** Soft tissue massage with lymphatic drainage massage and gentle knee mobilization. Gentle active assistive range of motion to avoid contracture and help with progressing motion. Focus on extension for knee range of motion.

**Exercise:** Perform quadriceps / gluteal sets, gait training, balance/ proprioception exercises. Straight leg raises exercises. Quad sets 3-5 times per day (3 sets of 15). Gentle passive and active range of motion exercises. Upper body conditioning exercises. Well leg stationary cycling with surgical leg rested on chair.

**Goals:** Full weight bearing. Improve gait pattern. Reduce pain and control leg swelling. Range of motion no more than 90°-100° degrees of flexion for first 2 weeks. Work on full extension.

### Therapy Weeks 2-4:

- Dermabond skin glue removal and wound check-up. May be done at home if not local.

**Manual Therapy:** Continue with soft tissue massage and gentle knee mobilization. Gentle active assistive range of motion. Include gentle mobilization of the patella and incisions.

**Exercise:** Begin to increase flexion motion beyond 100 degrees with passive and active assisted manual therapy. Continue gait training, balance/proprioception exercises. Include functional exercises including hamstring slides, sit to stand sets, core stabilizing exercises and gluteal exercises. May begin aerobic exercise to tolerance including the use of stationary bicycle with both legs. Continue with home exercise program daily.

**Goals:** Decreased pain and swelling. Range of motion < 5° extension to 100°-110° flexion. Become independent without assistive device. Tolerate short stair climbing. Begin to normalize gait

## Therapy Weeks 4-6:

**Manual Therapy:** Continue with soft tissue massage and knee mobilization. Increase active assistive and passive range of motion. Include more mobilization of the patella, and incisions to avoid contractures and soften scar and increase incisional mobility.

**Exercise:** Increase the intensity of functional exercises (i.e. increase outside walking, introduce weight machines if possible) Continue balance/proprioception exercises (i.e. heel-to-toe walking, assisted single leg balance). May begin pool work outs if available and if incisions are completely healed.

**Goals:**

Walking without a limp. Range of motion < 5 degrees extension to >110 degrees.

## Therapy Weeks 6-8:

**Manual Therapy:** Continue soft tissue treatment, massage, joint & patellar mobilization to increase range of motion.

**Exercise:** May begin to include lateral training exercises like lateral steps, lateral step-ups and step overs as tolerated. May Incorporate single leg exercises as able at this time with a focus on early eccentrics. May begin golf with easy swinging. May begin tennis to regain swing but no fast pivoting or singles games until 12 weeks.

**Goals:**

Walking without a limp. Range of motion 0 to > 110°.

## Therapy Weeks 8-12:

**Manual Therapy:** Continue soft tissue treatment, joint & patellar mobilization to increase range of motion.

**Exercise:** May begin return to sports activities with low impact. Avoid jumping, hard twisting and turning activity until 10-12 weeks to allow bone to strengthen sufficiently to support such activities. May return to full level activity at 12 weeks.

**Goals:**

Walking without a limp. Range of motion that provides full activity and function. Return to sports and active lifestyle. Maintain a regular self-guided exercise program to maintain strength and flexibility after formal therapy has ended. Enjoy a lifestyle with a more comfortable knee than before replacement.

## Exercise Weeks 12 and Beyond:

- Patients should return to regular healthy lifestyle exercise program
- Include full body strengthening, stretching and cardio program 3-5 times a week
- Include post exercise knee icing program to reduce swelling
- High level functioning requires maintenance of lower body muscle strength to support the knee replacement's proper function.