

Total Knee Arthroplasty (TKA) and Unicompartmental Rehabilitation Guideline

Pre-operative Phase Recommendations

GOALS:

- Attend pre-operative group education class
- Maintain and/or increase strength and ROM
- Education of patient on rehab and expectations
- Normalize gait as much as possible (use cane or walker if appropriate)
- All exercises should be performed 20x 5 second hold 2x/day unless otherwise stated
 - Ankle Pumps
 - Gluteal Sets
 - Hamstring Sets
 - Quad Sets
 - Straight Leg Raise (SLR)
 - Short Arc Quads (SAQ)
 - Hamstring Stretch: 5 x 20 second hold

Post-operative Phases

Contra-indications: no resisted wt machines until week 6 post op. (unless otherwise noted per MD. Check prescription, post op note/discharge summary)

Precautions: Optimal ROM should be 110-125 degrees flexion and 0 degrees extension before beginning weight resisted machines. If knee flexion PROM is too aggressive abnormal heterotopic bone on the femur may develop. *Be aware of s/s of a DVT*

General Information: During documentation use only the TKA evaluation, the standard daily note, the TKA progress note and discharge templates. Staples come out 10-14 days after surgery. Blood draws for coumadin are on done on Mondays and Thursdays for 21 days after surgery. Optimally PT is daily x 2 weeks or until 115 degrees flexion and 0 degrees extension, then 3 days/week until return to clinic (RTC/MD appointment) at 6 weeks. Bilateral knees might require 6-8 weeks of PT. The guidelines have been developed to service the spectrum of TKA patients, including unicompartmental replacements. For this reason, approximate time frames post-operatively and example exercises are provided instead of a highly structured rehabilitation program. The attending rehabilitation specialist should tailor the program to each patient's specific needs. It is recognized that some patient's health plans may limit their covered PT, and the program will be adjusted as able. VOI fitness access: \$50 for 3 months total.

Contacts:

Dr. Shinar: e-mail or star panel

Dr. Calendine: (VBJ) e-mail

Dr. Holt: e-mail or star panel

Ortho Outpatient Clinic: 3-5599 (to find MDs when in clinic)

Social Workers: Ginger Ketschke (round wing) 835-5928

NP: Carolyn Aubrey: 4-0836/e-mail

RN: Sandra Shoemaker: 790-3290 ext 142

NP: Annabell Atkinson: 835-5315/e-mail

(May need to contact the social worker if you can't get in touch w/pt for contact information or if the plan of care has changed)

*If ONE visit is cancelled or not kept call the patient that day to find out why. Make sure to get them in ASAP. If you can't get in touch with them contact the social worker or the NP. If they can't come in they may need home health rehab.

Outpatient Day 1- (Day of Outpatient Evaluation)

GOALS:

- Complete initial post-operative evaluation with functional measures (use TKA template)
- Knee ROM 0 to >90
- Healthy incision: If incision is abnormally red contact NP to come and inspect
- Progress knee ROM, neuromuscular re-education / strengthening, control swelling;
Note: Suggested exercises listed below given for home exercise program (HEP)
 - Seated knee flexion stretch and/or wall slides (supine 90/90)- (contract/relax technique, slow and controlled (>30 sec holds to change scar tissue))
 - Quad set (with towel roll/blood pressure cuff; heel on towel roll for stretch)
 - SLR- (SLR w/o knee flexion lag)
 - TKE/SAQ
 - Hamstring stretch/seated hamstring and dorsiflexion stretch w/towel
 - Gait training with walker: focus on knee extension, quad contraction and knee flexion
 - Ice
 - Coumadin draws on Monday/Thursday- prepare lab sheets (check forms on the exercise hand out wall; go to sport medicine desk to get the pt info printed on the form)- lab is on 7th floor MCE North. (For outside referrals they may need blood draws at Vandy as well. Clinician will have to call referring MD with results that day of draw. May find results in Star Panel under Lab tab.

Outpatient Day 2- Day 10: PT 3-5x/week

GOALS:

- Remove staples at 10-14 days after surgery and apply steristrips
- Patient education: scar massage at day 10 post-op or after staples/steristrips removed
- Knee ROM: when 0 to > 115 degrees attained reduce PT to 3x/wk
- Strong quad set
- Progress knee ROM, total leg neuromuscular re-education / strengthening, and control swelling
 - Modalities: Moist heat (PRN) before, NMES (PRN), ice after Rx
 - *Continue above exercises as indicated and gait training*
 - Prone hangs (after staples are out; towel roll proximal to patella for comfort/ROM)
 - Total leg AROM / PROM / Joint and soft tissue mobilization (PRN)
 - Bridging progression and calf strengthening
 - Hip strengthening: Supine hooklying Adduction with ball between the knees, Clamshell with theraband (TB) proximal to knee
 - Hamstring curls sitting with TheraBand
 - Bike- 5-10 min (Upright, Recumbent or Biostep)
 - Coumadin Monday/Thursday- prepare lab sheets- lab is on 7th floor MCE North

Outpatient Day 10-Day 21: PT 2-5x/week depending on ROM

GOALS:

- ROM 0 to 115: If ROM goal **not** met contact MD/NP b/c manipulation may be indicated
- Evaluate and treat proximal and distal joints for mobility, flexibility and strength
- Improve gait for progression from walker to cane
- Normalize sit to stand mechanics
- Progress knee ROM, ambulation and strength, initiate dynamic stability exercises, introduce closed kinetic chain (CKC) exercises
 - Bike- 5-15 min at beginning of Rx
 - *Continue above exercises and manual therapy as indicated and gait training*
 - 4-way SLR (on mat or standing with TheraBand/cuff weight progression)
 - Hamstring curls (with TheraBand progression) (seated or prone)
 - TKE standing with TheraBand or single pulley
 - Closed Kinetic Chain exercises: Standing Wall squats (0-45 degrees); Step-ups- 2" (focus on knee positioning) and stair training
 - Gait training: focus on knee extend/quad contraction and knee flexion; progress to cane when appropriate; backwards/heel walking to facilitate knee extension
 - Balance: Single Leg Stance, tandem walk, side steps, weight shifts, hurdles
 - Coumadin until day 21 after surgery.
 - Ice

Outpatient Week 3-6: PT 1-3x/week depending on state of recovery

GOALS:

- Maintain ROM, progress total leg strength, dynamic stabilization and gait activities, educate regarding lifelong fitness / maintenance of healthy lifestyle, prepare for discharge to independent exercise program (preferably at VOI fitness center or other fitness / wellness facility of patient's choice).
- Wean away from assistive device during gait when appropriate/safe.
- If patient has not achieved 115° knee flexion ROM by week 4, please contact NP/MD
 - Bike , summit trainer, elliptical, biostep
 - *Continue above exercises and manual therapy as indicated and gait training*
 - Knee flexion/extension stretches PRN and discontinue if knee ROM 0-120 or >
 - Progress stair and gait training, wean away from assistive device (if appropriate/safe)
 - Progress balance exercises: SLS (Folded towel, wobble board, Dynadisc, bosu)
 - Progress step-ups to 4" or 6" (with correct knee positioning and control during concentric and eccentric)
 - Progress static hold for standing wall squats (0-60 degrees)
 - Resisted tandem walking / side-stepping (with sport cord if patient is ambulatory without assistive device)

- Life Fitness / Hammer Exercise Machines (Begin no sooner than Week 6)
 - Parameter for progressing to weight machines:
 1. Patient able to complete green TheraBand with resistance exercises
 2. Determination made to use Life Fitness vs. Hammer based on individual patient needs and general health status:
 - ❖ Perform a 1rep max/8 rep max test to determine safe level to begin weights on machines. Then begin at 70% of 8RM for reps at next session.
 - Knee flexion/ extension, Leg Press, Hip Adduction / Abduction and Extension, Calf Extension
 - Instruct patient in machine settings and if patient interested, enroll in VOI Fitness Center (\$50 for 3 months total). Give Fitness booklet to patient with settings to take to VOI.
- Ice as needed
- Week 6: typically return to driving, but per MD

Advanced Phase beyond week 6:

GOAL:

- Long-term fitness program to maximize the survivorship of your new joint
- Progress out of outpatient PT to home program/independent fitness program
 - ❖ Advance and continue leg
 - Functional strength and endurance
 - Flexibility and balance
 - Focus on quality of exercises and avoid compensations
 - Higher level training/Sports activities if appropriate
 - Aquatics based exercises if accessible
- Acceptable activities: swimming, biking, walking, dancing, golfing and bowling
- Lifelong restrictions
 - ❖ NO high impact activities (for example: running and jumping)
 - ❖ No continual carrying heavy loads >40 pounds (for example: 20 times a day, 5 days a week. Occasional lifting IS allowed)
- Travel guidelines: see total joint booklet

Summary of the 2010-2011 Modifications to the Total Knee Replacement Guidelines

- Format changes for easier reading
 - Due to changes in insurance limitations, more flexibility noted w/frequency of physical therapy attendance (i.e.: 3-5x/wk vs. 5x/wk)
 - Page 1 is now a summary of pre-operative and post-operative expectations and information, along with contact information for total joint physicians, nurse practitioners and social workers.
 - Each post-operative time phase has specific ROM goals and more variability in treatment options to allow for each patient's specific needs, while respecting recovery time and precautions/contraindications.
 - Further guidelines were listed for care past the 6 week mark of surgery, for improved long-term recovery.
 - Some of these modifications were incorporated from Dr. Calendine's TKA guideline
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- All precautions and contraindications remain the same. Unless noted by the surgical team (MD or NP) weight machines will only begin after week 6 post-operatively.