



# Paul N Morton, MD

Hip and Knee Specialist

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## Knee Replacement Rehabilitation Protocol

The intent of this physical therapy protocol is to provide a guideline of postoperative rehabilitation for the clinician to help treat a patient who has undergone a **Total or Partial Knee Replacement**. It is not intended to be a substitute for clinical decision making. Clinical decision making on a postoperative course includes physical exam and findings, individualized progress, and presence of any complications. If a clinician requires assistance with progression of a postoperative patient, please consult the referring surgeon.

**In Revision Total Knee Arthroplasty or cases where there may be soft-tissue or bone compromise - there may be alterations to phase I and II**

### **Pain Management:**

Appropriate pain management includes an attempt at reducing the amount of narcotics and side effects of various pain medications by using various treatment protocols. Adequate preoperative pain measures include:

- **Anesthetic Blocks** - These are provided by an anesthesiologist preoperatively if clinically indicated
- **Local Analgesics** - Soft-tissue anesthetic injections may be used towards the end of the procedure to reduce post-operative pain
- **IV analgesics** - Postoperative pain medications in the acute postoperative phase may be provided with IV analgesics prior to discharge.
- **Oral analgesics** - Postoperative pain medications include opioids (oxycodone and norco), centrally-acting analgesics (acetaminophen or Tylenol), anti-inflammatory medications (NSAIDs such as meloxicam, celebrex, ibuprofen, or naproxen), and alpha-agonists (Tramadol).
- **Aspirin**: If prescribed may be used as a prophylaxis for deep vein thrombosis or pulmonary embolism as well as pain medication.
- **Cryotherapy** - Ice and cryotherapy may be applied to the affected extremity allows for improvement in pain control.
- **Elevation** - Keeping the affected extremity elevated above the heart while at rest.
- **Compression** - Applying an ace-wrap or other compressive device to the operated extremity can reduce swelling and improve swelling



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## **Deep Vein Thrombosis Prophylaxis**

Deep vein thrombosis and pulmonary embolisms are serious complications following lower extremity surgery. In an effort to avoid deep vein thrombosis or pulmonary embolisms, the following protocol is implemented:

- Low-risk patients: Aspirin 325mg twice daily for 30 days
- High-risk Patients: Arixtra 2.5mg daily for 14 days, followed by 30 days of aspirin
- Alternatives may be provided depending on history of trauma, patient medical comorbidities, or history of thromboprophylaxis morphine. Alternatives include medications such as lovenox, heparin, or warfarin.

## **PHASE I - IMMEDIATE SURGICAL POST-OPERATIVE PHASE (0 - 2 days)**

### *Goals:*

- Weight-bearing as tolerated
- Reduce swelling and manage pain
- Perform bed mobility and transfers with minimal assistance
- Ambulate with assistive device for 25-100 feet. Ascend and descend stairs to allow for household independence
- Regain 80 degrees of passive and active range of motion to perform sit-to-stand transfers
- Gain knee extension to equal or less than -10 degrees
- Perform straight leg exercises
- Verbalize understanding of postoperative activity recommendations and precautions

### *Precautions:*

- Weight-bearing as tolerated with assistive device
- Please keep leg extended while in bed, do not place pillows under knee.
- May place pillow under ankle to help in knee extension while in bed.
- May place a bump under the operative hip to maintain neutral hip rotation and promote knee extension
- No exercises with weights or resistance
- Avoid torque or twisting forces

### *Evaluation:*

- Avoid falls
- Monitor wound healing and drainage - please contact the MD if there is more than a Quarter size of drainage on the dressing
- Monitor for loss of peripheral nerve integrity. Contact Dr. Morton if there are any issues.
- If there is a significant amount of wound drainage, severe pain, or redness to the incision - please return to the orthopaedic surgeon's office for an immediate evaluation
- Maintain appropriate pain control postoperatively



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## *Pain Regimen*

- Continuous cryotherapy for 48 hours after surgery, or for at least 5 times daily.
- Continue cryotherapy 20 minutes before and after exercise program
- Superficial massage to minimize hypersensitivity following surgery
- May maintain compression to the limb to reduce swelling and pain with ace-wraps
- Elevate extremity
- Acetaminophen 650mg every 4 hours, scheduled
- Meloxicam 15mg daily or Naproxen 500mg twice daily or Celebrex 200mg twice daily, **scheduled**, depending on kidney functional status
- Tramadol 50mg every 6 hours as needed for moderate pain
- Oxycodone 5mg every 4 hours as needed for severe pain
- If pain is not controlled with these measures, please contact Dr. Morton.

## *Therapy:*

- Active, Active Assist, Passive exercises seated and supine
- Isometric quadriceps, hamstring and gluteal isometric exercises
- Straight leg raises
- Closed chain exercises (depending on ability to control pain, muscle strength and balance)
- Closed chain exercises should be performed with bilateral upper extremity support
- Gait training on flat surfaces and stairs
- Transfer training

## *Criteria for progression to phase II:*

- Quadriceps contraction and/or able to perform a straight leg raise
- Active knee range of motion of -10 to 80 degrees
- minimal pain and inflammation
- independent transfers and ambulation of at least 100 feet

## **PHASE II - MOTION (2 days - 6 weeks)**

### *Goals:*

- Improve knee range of motion to 0 - 110 degrees
- Strengthening to operative extremity with attention to knee extensor and flexors
- Focus on areas of weakness in the operative extremity as well as any other areas in upper extremity, trunk or contralateral lower extremity.
- Proprioception training to improve spatial awareness
- Endurance training
- Functional - promote independence in activities of daily living
- Gait training - Discontinue assistive devices when patients have appropriate extremity strength and balance between 1 and 4 weeks
- Reduce swelling and inflammation



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## *Evaluation:*

- 10-14 day postoperative visit: Check for any wound complications. There should be no wound drainage.
- Evaluate any erythema or redness

## *Pain Management*

- Cryotherapy 1-3x/day for swelling/pain management
- Other modalities depending on clinical findings
- Wean from narcotic usage. Continue to use NSAID, Tramadol and Tylenol as prescribed

## *Therapeutic exercises (Week 1 - 4)*

- Active, active assist and passive ROM to obtain >90 degrees of flexion and extension
- Stationary bicycle for ROM. Start with partial revolutions. Progress as tolerated to full revolutions without resistance
- Continue isometric quadriceps/hamstring and gluteal isometric exercises
- Supine heels slides and seated long arc quad
- Straight leg raise in 4 planes (flexion, abduction, adduction, extension)
- Neuromuscular electrical stimulation for quadriceps if poor contraction is present.
- Gait training to improve function and quality of performance during swing-through and stance-phases.
- Wean from assistive device by the end of the second week of surgery
- Postural cues/re-education during all functional activities

## *Therapeutic exercises (Week 4 - 6)*

- Continue above exercises
- Front and lateral step up and step down
- 1/4 front lunge
- Sit-to-stand and chair exercises to increase knee flexion during functional tasks
- Continue stationary bicycle for ROM
- May begin pool program if incision healed

## *Criteria for progression to phase III*

- Active ROM of 0 to 110
- Good voluntary quadriceps control
- Independent community ambulation (>800 feet) without assistive device
- Minimal pain and inflammation

**6 Week Visit: X-ray obtained to confirm appropriate implant placement**



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## **PHASE III: - Intermediate (7 - 12 weeks)**

### *Goals*

- Maximize range of motion 0 to 115+
- Good patella-femoral mobility
- Good strength for all lower extremity musculature
- Return to functional activities
- Begin light recreational activities (walking, pool program)
- Active ROM without pain.
- 4+/5 muscular performance of all lower extremity musculature
- Minimal pain or swelling

### *Therapeutic Exercises*

- Continue Phase II exercises with resistance and repetitions
- Evaluate patients with limited hip and knee stability and consider open/closed chain activities based on individual needs.
- Initiate endurance program - walking and/or pool
- Initiate age-appropriate balance and proprioception exercises
- May discontinue neuromuscular electrical stimulation if quadriceps activity is present and good quality

## **Phase IV - Advanced strengthening and higher-level function stage (Week 12-16)**

### *Goals:*

- Return to appropriate recreational sports and activities as tolerated
- Enhance strength, endurance, and proprioception as needed for activities of daily living and recreation

### *Therapeutic Exercises*

- Continue prior exercises
- increased duration of endurance
- Initiate recreational activity: Golf, tennis, progressive walking, biking
- If patient desires to kneel, may initiate kneeling protocol.

### *Criteria for Discharge*

- Non-antalgic and independent gait
- Independent step-over-step stair climbing
- Pain-free active range of motion
- at least 4+/5 strength to all lower extremity musculature
- Age-appropriate proprioception
- Patient independent with home exercise program.



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## **Kneeling Protocol**

*Discuss kneeling protocol with Dr. Morton prior to beginning. Revision total knee patients may not be candidates for kneeling postoperatively*

Common reasons for not being able to kneel after surgery include:

1. Pain
2. Discomfort
3. Fear of damaging the implant
4. Stiffness
5. Sensitivity of the scar
6. Recollection of being told not to kneel

68% of patients report the ability to kneel after a total knee without difficulty. Of those with difficulty, the following protocol may allow for kneeling in 81% of those who initially had difficulty kneeling.

## **Kneeling Protocol**

- Week 1 - Kneel 10 min a day on a couch
- Week 2 - Kneel 10 min a day on a couch cushions on the floor
- Week 3 - Kneel 10 min a day on a thin pillow on the floor or on thick carpet
- Week 4 - Kneel 10 min a day on a thin carpet or rug
- Week 5 - Kneel 10 min a day on the floor or on the ground outside

Source: *S.J.S. Wallace, R.A. Berger. Most patients can kneel after total knee Arthroplasty. The Journal of Arthroplasty 34 (2019)898-900*

If you have any questions, please do not hesitate to reach out to Dr. Morton at 808.439.6201

Home Exercise program illustrated on the next few pages. Associated with My Mobility Application. Level 1 or Level 2 will be selected based on patient abilities. for more information, please visit

<https://www.zimmerbiomet.com/en/products-and-solutions/zb-edge/mymobility.html>



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Pre-Operative Exercise Protocol						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Pre-Op Routine Pre-Op Routine (-30)	Pre-Op Routine Pre-Op Routine (-29)	Pre-Op Routine Pre-Op Routine (-28)	Pre-Op Routine Pre-Op Routine (-27)	Pre-Op Routine Pre-Op Routine (-26)	Pre-Op Routine Pre-Op Routine (-25)	Pre-Op Routine Pre-Op Routine (-24)
Pre-Op Routine Pre-Op Routine (-23)	Pre-Op Routine Pre-Op Routine (-22)	Pre-Op Routine Pre-Op Routine (-21)	Pre-Op Routine Pre-Op Routine (-20)	Pre-Op Routine Pre-Op Routine (-19)	Pre-Op Routine Pre-Op Routine (-18)	Pre-Op Routine Pre-Op Routine (-17)
Pre-Op Routine Pre-Op Routine (-16)	Pre-Op Routine Pre-Op Routine (-15)	Pre-Op Routine Pre-Op Routine (-14)	Pre-Op Routine Pre-Op Routine (-13)	Pre-Op Routine Pre-Op Routine (-12)	Pre-Op Routine Pre-Op Routine (-11)	Pre-Op Routine Pre-Op Routine (-10)
Pre-Op Routine Pre-Op Routine (-9)	Pre-Op Routine Pre-Op Routine (-8)	Pre-Op Routine Pre-Op Routine (-7)	Pre-Op Routine Pre-Op Routine (-6)	Pre-Op Routine Pre-Op Routine (-5)	Pre-Op Routine Pre-Op Routine (-4)	Pre-Op Routine Pre-Op Routine (-3)
Pre-Op Routine Pre-Op Routine (-2)	Pre-Op Routine Pre-Op Routine (-1)	NOTES:				



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Post-Operative Exercise Protocol						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Post-Op Week 1 Post-Op Week 1 Post-Op Week 1	Post-Op Week 1 Post-Op Week 1 Post-Op Week 1	Post-Op Week 1 Post-Op Week 1 Post-Op Week 1	Post-Op Week 1 Post-Op Week 1 Post-Op Week 1	Post-Op Week 1 Post-Op Week 1 Post-Op Week 1	Post-Op Week 1 Post-Op Week 1 Post-Op Week 1	Post-Op Week 1 Post-Op Week 1 Post-Op Week 1
1	2	3	4	5	6	7
Post-Op Week 2 Post-Op Week 2 Post-Op Week 2	Post-Op Week 2 Post-Op Week 2 Post-Op Week 2	Post-Op Week 2 Post-Op Week 2 Post-Op Week 2	Post-Op Week 2 Post-Op Week 2 Post-Op Week 2	Post-Op Week 2 Post-Op Week 2 Post-Op Week 2	Post-Op Week 2 Post-Op Week 2 Post-Op Week 2	Post-Op Week 2 Post-Op Week 2 Post-Op Week 2
8	9	10	11	12	13	14
Post-Op Week 3 Post-Op Week 3 Post-Op Week 3	Post-Op Week 3 Post-Op Week 3 Post-Op Week 3	Post-Op Week 3 Post-Op Week 3 Post-Op Week 3	Post-Op Week 3 Post-Op Week 3 Post-Op Week 3	Post-Op Week 3 Post-Op Week 3 Post-Op Week 3	Post-Op Week 3 Post-Op Week 3 Post-Op Week 3	Post-Op Week 3 Post-Op Week 3 Post-Op Week 3
15	16	17	18	19	20	21
Post-Op Week 4 Post-Op Week 4 Post-Op Week 4	Post-Op Week 4 Post-Op Week 4 Post-Op Week 4	Post-Op Week 4 Post-Op Week 4 Post-Op Week 4	Post-Op Week 4 Post-Op Week 4 Post-Op Week 4	Post-Op Week 4 Post-Op Week 4 Post-Op Week 4	Post-Op Week 4 Post-Op Week 4 Post-Op Week 4	Post-Op Week 4 Post-Op Week 4 Post-Op Week 4
22	23	24	25	26	27	28
Post-Op Week 5 Post-Op Week 5 Post-Op Week 5	Post-Op Week 5 Post-Op Week 5 Post-Op Week 5	Post-Op Week 5 Post-Op Week 5 Post-Op Week 5	Post-Op Week 5 Post-Op Week 5 Post-Op Week 5	Post-Op Week 5 Post-Op Week 5 Post-Op Week 5	Post-Op Week 5 Post-Op Week 5 Post-Op Week 5	Post-Op Week 5 Post-Op Week 5 Post-Op Week 5
29	30	31	32	33	34	35
Post-Op Week 6 Post-Op Week 6 Post-Op Week 6	Post-Op Week 6 Post-Op Week 6 Post-Op Week 6	Post-Op Week 6 Post-Op Week 6 Post-Op Week 6	Post-Op Week 6 Post-Op Week 6 Post-Op Week 6	Post-Op Week 6 Post-Op Week 6 Post-Op Week 6	Post-Op Week 6 Post-Op Week 6 Post-Op Week 6	Post-Op Week 6 Post-Op Week 6 Post-Op Week 6
36	37	38	39	40	41	42





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Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7
Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7
Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7	Post-Op Week 7
43	44	45	46	47	48	49	
Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8
Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8
Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8	Post-Op Week 8
50	51	52	53	54	55	56	
Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9
Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9
Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9	Post-Op Week 9
57	58	59	60	61	62	63	
Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10
Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10
Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10	Post-Op Week 10
64	65	66	67	68	69	70	
NOTES:							



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## Pre-Operative TKA/PKA Routine-Level 1 and Level 2, Right and Left

All routines are completed 2 times/day. Level 1 and Level 2 exercises are the same.

TKA/PKA Pre-Op	
Exercise	Reps
Gluteal Squeezes	10
Quad Set Over Towel Roll in Sitting	10
Short Arc Quad	10
Straight Leg Raise with Stabilization in Supine	10
Hamstring Stretch in Sitting	3
Chair Pushup	10



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## Post-Operative TKA/PKA Routines, Level 1 and 2, Right and Left

All routines are completed 3 times/day. Level 2 exercises progress a little faster, and generally ask the patient to complete more repetitions per exercise.

LEVEL 1 EXERCISE PROGRAM		LEVEL 2 EXERCISE PROGRAM	
TKA/PKA Post-Op Week 1 (1)		TKA/PKA Post-Op Week 1 (2)	
Exercise	Reps	Exercise	Reps
Ankle Pumps	10	Ankle Pumps	10
Gluteal Squeezes	10	Gluteal Squeezes	10
Quad Set Over Towel Roll in Sitting	10	Quad Set Over Towel Roll in Sitting	10
Short Arc Quad	10	Short Arc Quad	10
Heel Slide to 90 Deg Assist Sitting in Chair	10	Straight Leg Raise with Stabilization in Supine	10
Heel Slides in Supine	10	Knee Flexion Stretch in Standing at Stair Hold 1 Sec	10
Knee Extension Stretch in Supine Sustained	3	Knee Extension Stretch in Supine Sustained	3

TKA/PKA Post-Op Week 2 (1)		TKA/PKA Post-Op Week 2 (2)	
Exercise	Reps	Exercise	Reps
Short Arc Quad	10	Short Arc Quad	12
Straight Leg Raise with Stabilization in Supine	10	Straight Leg Raise with Stabilization in Supine	10
Heel Slide to 90 Deg Assist Sitting in Chair	10	Heel Slide to 90 Deg Assist Sitting in Chair	10
Knee Extension in Sitting	10	Sit to Stand no Support	10
Sit to Stand with Support	10	Knee Flexion Stretch in Standing at Stair Hold 1 Sec	12
Knee Flexion Stretch in Standing at Stair Hold 1 Sec	10	Bilateral Heel and Toe Raise in Standing w/ Support	10
Knee Extension Stretch in Supine Sustained	3	Band Resisted Terminal Knee Extension Standing	12

TKA/PKA Post-Op Week 3 (1)		TKA/PKA Post-Op Week 3 (2)	
Exercise	Reps	Exercise	Reps
Straight Leg Raise with Stabilization in Supine	10	Straight Leg Raise with Stabilization in Supine	15
Heel Slide to 90 Deg Assist Sitting in Chair	10	Heel Slide to 110 Deg Assist Sitting in Chair	10
Marching in Standing	12	Partial Depth Wall Squat with Hold	10
Bilateral Heel and Toe Raise in Standing w/ Support	10	Bilateral Heel Raise in Standing with Support	10
Knee Flexion Stretch in Standing at Stair Hold 1 Sec	12	Knee Flexion Stretch in Standing at Stair Hold 1 Sec	15
Band Resisted Terminal Knee Extension Standing	10	Band Resisted Terminal Knee Extension Standing	15
Gastrocnemius Stretch in Standing	3	Gastrocnemius Stretch in Standing	3

TKA/PKA Post-Op Week 4 (1)		TKA/PKA Post-Op Week 4 (2)	
Exercise	Reps	Exercise	Reps
Knee Flexion Stretch in Standing at Stair Hold 1 Sec	15	Bridge with Stabilization	10
Band Resisted Terminal Knee Extension Standing	10	Knee Flexion Stretch in Standing at Stair Hold 1 Sec	15
Bilateral Calf Raise with Support	10	Band Resisted Terminal Knee Extension Standing	15
Partial Depth Wall Squat with Hold	10	Backward Walking 4 Steps	10
Side Stepping	10	Wall Squat Full	10
Backward Walking 4 Steps	5	Side Stepping	10
Gastrocnemius Stretch in Standing	3	Hamstring Curl in Standing	10

TKA/PKA Post-Op Week 5 (1)		TKA/PKA Post-Op Week 5 (2)	
Exercise	Reps	Exercise	Reps
Bridge with Stabilization	10	Heel Slide to 110 Deg Assist Sitting in Chair	10
Heel Slide to 110 Deg Assist Sitting in Chair	10	Squat with Support	10
Hamstring Curl in Standing	10	Lateral Step Up w/ Support	10
Hip Abduction in Standing	10	Hip Abduction in Standing	10
Hip Flexion in Standing	10	Hip Flexion in Standing	10
Wall Squat Full	10	Tandem Stance	2



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TKA/PKA Post-Op Week 6 (1)		TKA/PKA Post-Op Week 6 (2)	
Exercise	Reps	Exercise	Reps
Band Resisted Terminal Knee Extension Standing	10	Squat	10
Squat	10	Hip Band Resisted Flexion in Standing w/ Support	10
Hip Abduction in Standing	15	Hip Band Resisted Abduction in Standing w/ Support	10
Hip Flexion in Standing	15	Forward Step Up w/ Support	10
Lateral Step Up w/ Support	10	Hamstring Curl Band Resisted in Standing	10
Narrow Stance Balance	2	Single Leg Balance	2

TKA/PKA Post-Op Week 7 (1)		TKA/PKA Post-Op Week 7 (2)	
Exercise	Reps	Exercise	Reps
Squat	15	Hip Band Resisted Flexion in Standing w/ Support • involved	12
Hip Band Resisted Flexion in Standing w/ Support	10	Hip Band Resisted Extension in Standing w/ Support • involved	12
Hip Band Resisted Extension in Standing w/ Support	10	Hip Band Resisted Abduction in Standing w/ Support • involved	12
Hip Band Resisted Abduction in Standing w/ Support	10	Hip Band Resisted Flexion in Standing w/ Support • uninvolved	10
Forward Step Up w/ Support	10	Hip Band Resisted Extension in Standing w/ Support • uninvolved	10
Tandem Stance	2	Hip Band Resisted Abduction in Standing w/ Support • uninvolved	10
Single Leg Balance	1	Single Leg Balance	3

TKA/PKA Post-Op Week 8 (1)		TKA/PKA Post-Op Week 8 (2)	
Exercise	Reps	Exercise	Reps
Hip Band Resisted Flexion in Standing w/ Support	12	Hip Band Resisted Flexion in Standing w/ Support • uninvolved	12
Hip Band Resisted Extension in Standing w/ Support	12	Hip Band Resisted Extension in Standing w/ Support • uninvolved	12
Hip Band Resisted Abduction in Standing w/ Support	12	Hip Band Resisted Abduction in Standing w/ Support • uninvolved	12
Forward Step Up w/ Support	12	Forward Step Up w/ Support	15
Hamstring Curl Band Resisted in Standing	10	Hamstring Curl Band Resisted in Standing	15
Tandem Stance	2	Single Leg Balance	2
Single Leg Balance	2	Standing Balance on Pillow	2

TKA/PKA Post-Op Week 9 (1)		TKA/PKA Post-Op Week 9 (2)	
Exercise	Reps	Exercise	Reps
Hip Band Resisted Flexion in Standing w/ Support • uninvolved	10	Anterior Lunge Partial Depth	10
Hip Band Resisted Extension in Standing w/ Support • uninvolved	10	Forward Step Over • involved	10
Hip Band Resisted Abduction in Standing w/ Support • uninvolved	10	Forward Step Over • uninvolved	10
Hamstring Curl Band Resisted in Standing	10	Standing Balance on Pillow w/ Eyes Closed	2
Single Leg Balance	2	Single Leg Balance	2
Standing Balance on Pillow	1	Bilateral Heel Raise on Step w/ Support	10

TKA/PKA Post-Op Week 10 (1)		TKA/PKA Post-Op Week 10 (2)	
Exercise	Reps	Exercise	Reps
Forward Step Over • involved	10	Right Forward Step Down w/ Support	10
Forward Step Over • uninvolved	10	SLS w/ Eyes Closed	2
Hamstring Curl Band Resisted in Standing	10	Bilateral Heel Raise on Step w/ Support	12
Standing Balance on Pillow	2	Anterior Lunge Partial Depth	10
Single Leg Balance	2	Lateral Lunge Partial Depth	10