



ARNOLD & COX KNEE AND SHOULDER CENTER

ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION - REHABILITATION PROTOCOL

INSTRUCTIONS AFTER SURGERY:

- WBAT with crutches and knee immobilizer.
- Use CPM 6-8 hours a day until you have reached 90 degrees of flexion as measured by your physical therapist
- Use the ice machine 15-20 minutes each waking hour (while not on the CPM) for the first 2 weeks, and after each exercise session for the remaining weeks of rehab until swelling is under control. Remember to elevate leg higher than heart to manage swelling several times per day
- Avoid straight leg raises, resisted knee extension machines, lunges, and deep squats throughout the entire course of rehabilitation

POD 1-7

ROM 0-90 degrees

GOALS

- Protect the reconstruction-avoid falling
- Ensure wound healing
- Attain and maintain full knee extension-**VERY IMPORTANT**
- Decrease knee and leg swelling
- Promote voluntary/quality quadriceps contraction

SUGGESTED EXERCISES

EXTENSION STRETCHES

Seated hamstring stretch

Gastrocnemius stretch (seated or standing)

Heel Prop in supine or sitting

FLEXION STRETCHES

Heel slides in supine or long sitting with towel

Active assisted flexion in sitting

STRENGTHENING

Ankle pumps

Quad sets(e-stim. for muscle re-education with poor quad set)

Hip abduction in supine or long sitting, emphasize no ext. lag

Hamstring curls (prone or standing)

Hip flexion(sitting or standing)

Calf raises or resisted plantarflexion in long sitting

WEEK 2-4

ROM 0-120

Discontinue use of crutches as tolerance for weight bearing improves. Continue using immobilizer when walking outside of the home until patient can walk safely and has good muscle control of the leg. Immobilizer is typically discontinued once patient is able to do SLR without an extension lag. During this time, you should focus on progressing patient to a normal gait pattern. Continue to use an ACE bandage or elastic stocking to manage swelling.

SUGGESTED EXERCISES

STRETCHES

Continue as above; add knee flexion stretch with foot placed on 6-12 inch step and a forward weight shift allowing knee to advance forward over toes. Use stationary bike (no resistance) for range of motion. Full knee extension is a high priority. If this has not been attained, consider prone hangs and or heel props with overpressure. As incision heals, you may begin patella mobs.

STRENGTHENING

Continue with quad sets until able to independently generate quality muscle contraction

Bilateral seated hamstring curls(machine)

Multi hip machine 4 way with proximal pad placement(fl,ext,abd,add-if using ankle weights, must be placed above knee)

Prone hip extension

Closed Chain Exercises

Don Tigney(standing TKE)

Leg Press-bilateral (65-10 degrees))

Step ups (2-4 inches) forward and lateral

Stool scoots

Mini/Wall squats (0-40 degrees), feet shoulder width with slight external rotation

Unilateral stance, progress to lock/unlock knee

Bilateral toe raises

BALANCE

Box Drill: 5 steps fwd, 5 steps right, 5 steps back, 5 steps left

Standing bilateral weight shift- left/right, front/back

Single leg balance, level surface-eyes open/closed

Bilateral BAPS of KAT, progress to unilateral on involved LE

WEEK 5-7

Most grafts are at their weakest point during this time, therefore proceed with caution and use your own discretion when selecting an exercise

ROM 0-135

SUGGESTED EXERCISES

STRENGTHENING

Progress closed chain exercises

Stairmaster- short strides with emphasis on quadriceps tightening and control

Stationary Bike- okay to increase resistance, but emphasize endurance

Resisted walking(forward, backward, lateral)

Unilateral quarter squat

Leg press-single leg eccentric

Step ups-increase height to 6 inches

Treadmill (forward/backward) with emphasis on normal gait

Forward step downs with focus on eccentric control

Toe raises-progress to unilateral

Seated hamstring curl, progress to unilateral

BALANCE

Balance board-bilaterally

Plyo-toss/Rebounder-progress to single leg and unstable surface (wobble board, ½ foam roll, etc) as tolerated

Single leg balance activities, no twisting or pivoting

WEEK 8-11

SUGGESTED EXERCISES

Swimming (straight leg flutter kicks)

Elliptical trainer

Progress speed on bike and stairmaster, continue to emphasis endurance over resistance

Outdoor biking on flat surfaces only, no mountain biking or hill climbing

Agility exercises-lateral shuffle, braiding or cariocas (<50% speed))

Mini trampoline-bilateral hopping progressing to unilateral, gentle jogging

Jump rope

Hopping(bilateral)-forward/backward, side to side, 5-spot

Unilateral/vertical step ups-emphasize eccentric control of quadriceps and pelvic stabilization

Plyometrics on shuttle/Total Gym, perturbation training-bilateral progressing to unilateral

Fitter/slide board

WEEK 10, begin bilateral jump downs with emphasis on eccentric control. Land soft “like a feather”, knees should flex to 30 degrees; no “knock knees”. Start from a low height (4”) and increase height as patient can tolerate. Begin slow backward jogging at distances < 50’ with emphasis on form-stay low, knees bent, and well balanced. Single leg hop up and down; keep vertical distance small while emphasizing control and form. Progress single leg hop to left/right, front/back, and 5 spot.

WEEK 11, begin box jumps up, progress to up and down; bilateral progressing to unilateral with emphasis on quality and control as described in week 10.

WEEK 12

After being fitted for ACL functional brace, begin forward straight line jogging

WEEK 16

Straight line forward and backward running: begin with slow starts and stops, progress to quick starts and stops. Operate at 50-75% of full speed. Be careful to avoid pain with running. Continue agility exercises, increase speed to 75%

WEEK 20

Zigzag, figure eight, circle, carioca running

WEEK 24

Sprints, progress to full speed
Pivoting and cutting drills

6 Months

Return to sport's practice

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