

# KELOWNA BONE & JOINT HEALTH

## Arthroscopic Knee Surgery: Pre-Operative Rehabilitation Protocol ACL, MPFL, TTO, HTO and Meniscal Surgery

### **The Importance of Pre-Surgery Exercises:**

The surgeons of Kelowna Bone and Joint health recommend an exercise program for knee strength and range of motion prior to surgery. Regaining strength and motion will improve the recovery post operatively.

The benefits:

- Decreased risk of post-operative stiffness
- Increase in muscle strength
  - The more muscle you have before the surgery, will directly contribute to the amount you have after the surgery
- Improvement in balance
- Maintenance of cardiovascular fitness

This protocol can be guided through a physiotherapist, or done on your own. We recommend a daily exercise program as outlined below.

### **Cardio**

- 20-30 minutes of cardio exercises at least 2-3x/week
- Focus on low-impact exercises, straight-line, avoiding pivoting or shifting
  - Elliptical, exercise bike, swimming (standard straight kicking)

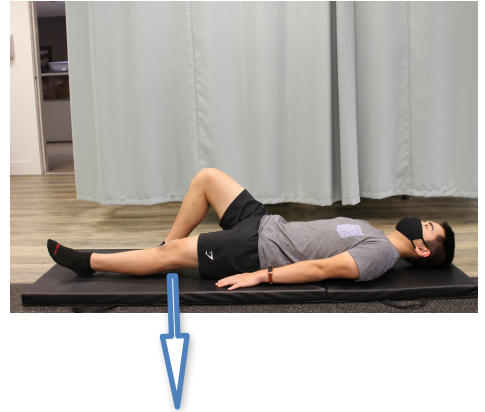
### **Strength Training**

- 15-20 minutes of strength training daily
- See Exercise recommendations below.

# Strengthening Protocol

## Quadriceps Strengthening:

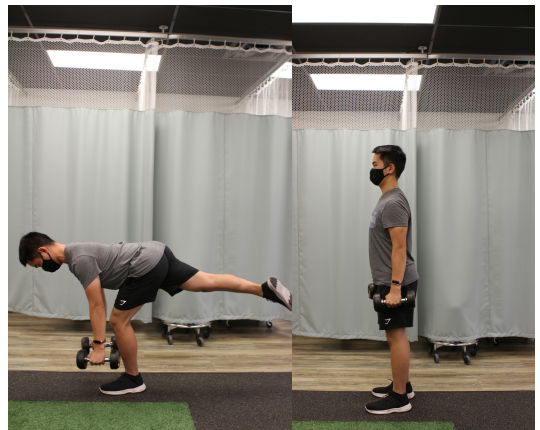
- Quads sustained Contraction
  - Lie or sit on floor with one leg straight
  - Tighten front thigh muscles and try to push knee against floor
  - Hold tension for 5-10 seconds
  - Repeat 10 times
- Straight leg raises
  - Lay on floor with one leg straight and one bent
  - Contract front thigh muscle, and lift leg off floor, keeping knee straight
  - In a controlled manner, return the leg to the floor
  - Repeat 10 times
- Squats
  - Stand tall with feet shoulder width apart
  - Squat down by sitting back, and keeping arms forward
  - Bend knees to maximum of 90°
  - Make sure knees to not go further forward than toes
  - Repeat 10 times
- Single leg squats
  - As above, but repeat standing on one leg
  - Repeat 10 times





## Hamstring Strengthening

- Hamstring curls with resistance bands
  - Can be done sitting in a chair
    - Band wrapped around leg, and attached to table leg or chair
    - Bend knee against resistance
  - Can be done laying down
    - Band wrapped around both legs
    - Bend and curl knee one at a time
  - Repeat 10 times
- Single leg dumbbell dead lifts
  - Stand with dumbbell in one or both hands
  - Hold one leg off the ground
  - Bend at waist until body parallel to ground
  - Repeat for other leg
  - Repeat 10 times
- Swiss ball leg curl
  - Lie on your back, and rest heels on a swiss ball
  - Drive heels into swiss ball and raise hips off floor to curl legs
  - Repeat 10 times



## Gluteal Strengthening

- Lunges
  - Stand tall with feet shoulder width apart
  - Take long step forward
    - With hip extended and back knee bent until knee approaches floor
  - Stand back up pushing through heel to return front foot to starting position
  - Repeat 10 times each leg
- Gluteal Bridge
  - Lay down with knees bent and arms by your sides
  - Squeeze buttocks and lift to create a bridge
  - Keep equal weight on each leg
  - Hold for 10 seconds
  - Repeat 10 times
- Bird dog
  - Begin on all fours with hands under shoulders and knees under hips
  - Keeping torso stable, raise right arm and left leg
  - Return to starting position
  - Repeat for Left arm and right leg
  - Repeat 10 times



## Balance Training

- Single Leg stance (eyes open and eyes closed)
- Double leg squats on an unstable surface (ie foam block, camping mattress)
- Single leg stance on unstable surface
- Single leg squats on trampoline
- Double leg squats on BOSU ball

