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## **Post-Operative Physiotherapy Information**

### **Knee Reconstruction** **(Anterior Cruciate Ligaments)**

**SURGEON: MR HAYDEN MORRIS**

#### **CARE OF YOUR KNEE POST SURGERY.**

After your surgery there are a number of things that you can do to optimise recovery time and guarantee success of your new cruciate. These include:

##### **1. REDUCING SWELLING**

Within the first 2 weeks, reducing post operative bleeding and swelling is vital. This can be done by:-

###### **1.1. ICING**

Icing or cryotherapy has the effect of controlling any inflammation, bleeding and thus swelling which your knee is prone to after surgery.

Always use a wet cloth between the ice pack and your skin as ice can burn if directly applied to the skin. We recommend you place Mr. Morris' ice pack on the front of your knee and if you have had a hamstring graft it is advisable you also apply some ice along your hamstring- ideally a gel ice pack.

###### **Application recommendation**

- Within the first week: apply ice for 15-20 minutes, at least every 1-2 hours. A minimum of 4 times/day is recommended eg. Morning, lunch, afternoon and evening.
- From one week onwards: apply after exercises, after activities which may have aggravated your knee, or if your knee is feeling painful and swollen.

###### **1.2. COMPRESSION**

Wear your "tubigrip" (compression sleeve) until all swelling has settled. This may take up to 8 weeks.

###### **1.3. ELEVATE YOUR LEG WHEN ABLE**

Within the early days, keeping your leg elevated will allow for natural drainage of fluid out of your knee. Level with your body on the bed or couch is best.

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## **1.4 USE OF CRUTCHES**

It is recommended that you begin weight bearing on your operated leg immediately post surgery. Obviously you may have some pain, which will affect how much weight you can take on your leg. Use your crutches to take as much weight as you need to try to walk as normally as possible. The crutches are also useful to minimise the risk of overdoing things in the early stages of your recovery.

UP STAIRS - Good leg, operated leg, crutches  
DOWN STAIRS - Crutches, operated leg, good leg

## **1.5 When To Come Off The Crutches**

As a general rule, once you can walk comfortably without a limp then you can stop using your crutches. Generally this will be the 2 weeks of which you are in your splint, plus a little longer to retrain your normal walking pattern. Your Physiotherapist will guide you with this.

## **1.6 DON'T "OVERDO-IT"**

As you increase your activity levels always make note of how your knee reacts to it. If you notice an increase in swelling and pain around your knee it is time to **slow down a little!!!**

## **2. MAINTAINING GRAFT LENGTH**

**IMPORTANT:** One of the crucial points to a successful operation is making sure you maintain the length of the graft.

During the operation Mr Morris obtains the correct length/tension of your graft while your knee is in a straight/locked position. As a consequence it is vital in the early stage of your recovery to make sure you can get and keep your knee straight. This can be achieved by placing a rolled up towel under your heel thus helping to keep your knee straight.

It is recommended that you try and spend as much time as possible with your knee in this position. For example: while sitting on the couch maintain the locked position.

## Information about your operation

### Procedure:

Mr Morris has used a hamstring tendon graft to replace your cruciate ligament. The procedure involves taking a strip of hamstring tendon from the inside of your knee and up the back of your thigh. This is all done through a very small incision.

The graft is then fed through your knee joint and attached to the tibia (shin bone) and femur (thigh bone) by various methods of fixation. (Fig. A)

The new graft will be in exactly the same position as your old cruciate ligament.

FIG. A.

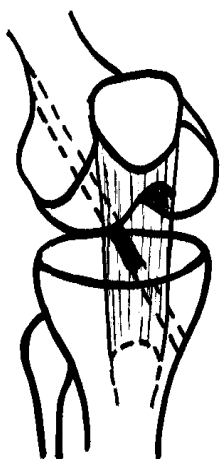


FIG. B.

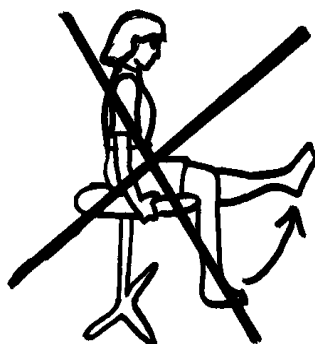
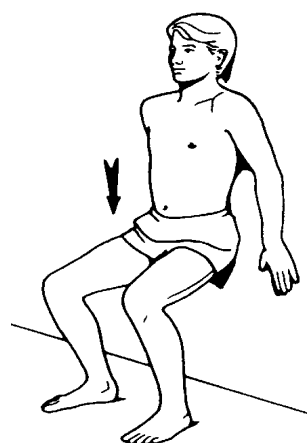


FIG. C.



Following the surgery, the cruciate ligament has actually weakened compared to when it was first placed inside your knee. You need to be cautious around this time period with activities that may involve changing direction and twisting. The graft then begins to strengthen and continues doing so for the next 6 months or longer.

Rehabilitation post surgery focuses on the use of closed chain activities. These activities will involve weight-bearing exercises, which have been shown to be safe for your new graft.

Example of weight bearing activities (closed chain): (Fig. C)

- lunges
- squats
- bike
- leg press

The most important exercise to avoid is any open chain activities.

Example of open chain activities:

- leg extension (Fig. B)

Your physiotherapist will explain this further to you.

# STAGES OF REHABILITATION

**PHASES:** The Following time frames are guides only. Your progression through the phases should be individually paced as you continue to meet the milestones. Don't be in a hurry to speed up the progress. You should complete the goals of one phase before commencing the main components of the next phase. Your physio will guide you with this.

## PHASE I (0 – 2 WEEKS)

### MAIN GOALS:

- Control swelling
- Knee to full extension
- Quads muscles working well
- Stretch Hamstring

Generally you will perform the following exercises at home until your first review with Mr Morris. During this first 2 weeks, he is most happy for you to focus on Recovery ie. Rest and Ice, and reaching the goals above. Usually you do not need to see a physio during this time, however if you feel you are struggling and need help to achieve these goals, please contact us or your local physio

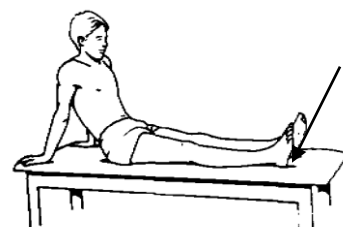
Mobility: Crutches at all times, with splint on

### STRENGTH AND RANGE OF MOVEMENT

**ALL EXERCISES TO BE REPEATED EVERY 3-4 HOURS (ie, morning, lunch, afternoon and evening)**

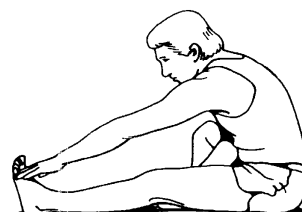
#### 1. QUADS SETS

Gently tighten front thigh muscle and kneecap.  
Practice "flicking" the muscle until you are tightening well, then hold for 3-5 seconds.  
Repeat 10 times and increase reps as comfortable.



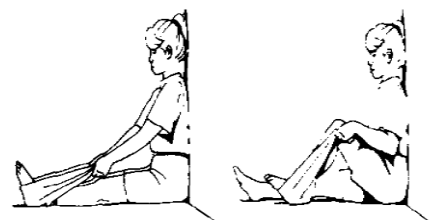
#### 2. HAMSTRINGS STRETCH

With legs out straight, flex your trunk forward at your hips to touch toes.  
Hold the stretch for 10 seconds.  
Repeat 10 times.



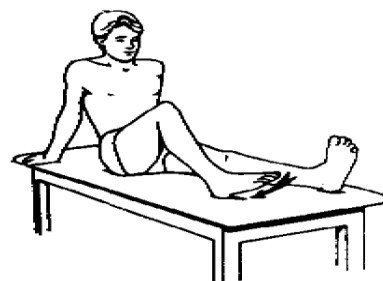
#### 3. HIP/ KNEE FLEXION

With hands supporting thigh or towel around heel, gently bend your knee as far as it feels comfortable. Do NOT force your bend.  
10 – 15 times. Increase reps as comfortable.



#### 4. HAMSTRINGS

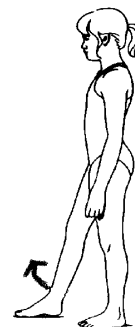
Once you can bend your knee to about 45°, usually a few days post-op Bend your knee slightly. Tighten muscles on the back of your thigh by pulling the heel down into floor. Hold for 3-5 seconds.



10 Repetitions. Increase reps as comfortable

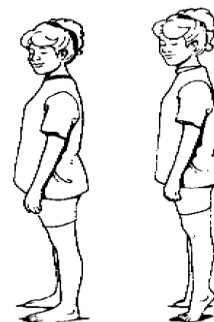
#### 5. STRAIGHT LEG RAISES

Standing upright and holding onto your crutches for balance, tighten your thigh muscles of your operated leg. Lock your knee straight and lift it forwards off the ground. Lower slowly.  
10 Repetitions.



#### 6. CALF RAISES

When standing with feet apart, rise up onto your toes and then slowly lower. Have as much weight as comfortable on your operated leg.  
3 x 10 REPETITIONS



#### ICING YOUR KNEE

We recommend you continue icing your knee after completing your exercises

### PHASE 2.1 (2 - 4 WEEKS)

At your 2 week review with Mr. Morris he will recommend that you start on phase 2 of your rehabilitation by beginning to see a physiotherapist. It is strongly advised that you seek the guidance of an experienced physiotherapist in this phase so that an appropriate programme is set out for you. Following are the progression of desired goals that need to be aimed for by your physiotherapist.

#### MAIN GOALS:

- Control swelling: Swelling is an important sign. Swelling should be avoided as much as possible. Activity modification, compression, ice and anti-inflammatories may be required
- Progress quads exercises (closed chain)
- Ensure full knee extension, progress knee flexion
- Hamstring stretching
- Hamstring strengthening

#### MOBILITY

Progress to full weight-bearing without crutches

#### COMPONENTS OF REHABILITATION

- Strength & range of movement

- Balance & coordination
- Aerobic fitness (introduce exercise bike)
- Continue to ice after exercise or if swollen

## PHASE 2.2 (4 - 6 WEEKS)

### MAIN GOALS:

- Same as previous stage
- Gradual increase in knee bend
- Increase balance retraining (neuromuscular control and alignment)
- Increase intensity of exercises
- Review with Mr. Morris' physiotherapist at 6weeks post op to check your progress

### ICING YOUR KNEE

15 - 20 minutes after exercise or if swelling persists

## PHASE 2.3 (6-12 weeks)

### MAIN GOALS:

- Full range of movement
- No swelling
- Increased quads and hamstring strength and endurance exercises
- Dynamic proprioceptive retraining / increase neuromuscular control in single leg stance
- Begin and progress impact based exercises in preparation for jogging
- Review with Mr. Morris' physiotherapist at 12weeks to check your progress

## PHASE 3 (3-6 months)

### MAIN GOALS:

#### PART A)

- Higher level single leg exercises, eg. Single leg squat, leg press, jump and land
- Progression of impact exercises, then commencement of jogging

#### PART B)

- Once straight line jogging has progressed and been tolerated then structured conscious agility training may begin and be progressed, as can faster paced running
- Full strength, endurance, neuromuscular control, balance on the operated side

#### PART C)

- Once jogging, running and controlled agility training has progressed, a functional program of non-competitive graduated activities can begin
- Non-competitive solo sports from 5months onwards, once all other goals have been achieved



You will have a review with Mr. Morris' physiotherapist at 6months post-op to check your progress.

## SIX MONTHS ONWARDS and RETURN TO SPORT

-If you are aged over 18 years, when you see Mr. Morris' physiotherapist at 6 months and they have determined that you have reached an adequate level of rehabilitation they will discuss with you the process for progressing sport-specific training and get you preparing for the official Return to Sport Test.

-If you are aged 18 years or younger, you will continue to build your rehab as per Phase 3, and have another review with Mr. Morris' physio at 9 months post-op where you will discuss the return to sport process. It is important that younger athletes are progressed slower in their return to sport as their musculoskeletal systems require more time to safely rebuild.

-The Return to Sport Test will be completed before your final review with Mr. Morris (which is at 9 months if you are aged over 18, and at 12 months if you are aged 18 and under). This test will check the performance of your operated leg in several tasks as compared to your un-operated leg eg. Hopping and landing, agility running, lower limb strength and alignment ie. That you have achieved all of the goals from the previous phases and obtained equal measures. Mr. Morris

will use these results at your final surgeon's review to ensure you are ready to safely progress to the Return to Sport Phase. Once permitted, this phase involves a structured progression towards unrestricted sports training, and then an official return to competition. During this phase it is important to continue your strength, control and balance exercises to ensure you maintain high levels throughout your return to sport. Your physiotherapist can continue to guide you with this progression