

## **Biologic - Femoral-Tibial Articulation/Surgery**

### *Post-Operative Physical Therapy Protocol*

*Philip A. Davidson M.D.*

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#### **0 - 2 Weeks Rehabilitation:**

- Touch weight-bearing with 2 crutches
  - When standing, i.e. brushing teeth, weight bearing for balance
- Brace typically used for 3-4 weeks, or until quad fully active
- Range of motion – free flexion as tolerated aiming for full flexion by 6th week
- Patellofemoral mobilizations
- Assisted knee swings 5 mins 3x/day for first 6 weeks
- CPM - If and when available

#### Post Op day 3 to 10:

- Begin 0-60°
- Increase 5-10° per day as tolerated
- Use machine minimum 4 hours per day
- Once attain maximum flexion for 2 days discontinue machine
- Static bike after 1 -2 weeks when comfortable flexion achieved
  - 500 revolutions 3 x/day
  - No or minimal load
- Cold therapy to be used as tolerated
- Limited strength training is initiated immediately:
  - SLR no lag, IRQs, static quads, hams & glutei
  - Open chain quads no resistance

#### *Initial post-operative goals - Week 2:*

- Full passive knee extension
- Minimal pain & swelling

## **2 - 6 Weeks Rehabilitation:**

- Gradual progression weight bearing from PWB - FWB
- IRQs
- Heel slides
- Knee Flex/ Ext (Gym ball – heel on ball)
- Knee flex/ Ext/ Abd/ Add with knee Ext
- Hamstring/calf Stretch in standing
- Core stability exs (Gym ball)
- Hydrotherapy/swimming (no breast stroke, flutter style kick only ) 2/52 after surgery
- Knee Flex/Ext in standing with theraband to resist (0-30°)
- Proprioception work
- Rowing machine
- Leg press – no resistance (10° - 70°) from 4/52
- Hydrotherapy/swimming – no breast stroke until 8/52

### *Week 6 Goals:*

- FWB, FROM
- Normal gait
- Good knee control

## **7 - 12 Weeks Rehabilitation:**

- Should have FROM
- Gait re-education
- Step ups on 10cm step (40°)
- Mini stepper
- Gym ball:
  - Bridging
  - Knee Flex/Ext sitting on ball, double/ single
  - Sit to Stand
- Rowing machine increasing loading
- Static bike with resistance/ outdoor cycling on level ground
- Treadmill slow walking fwds/bwds
- Increase proprioception
  - Trampoline single leg stands

- Single leg mini squat
- Wobble board
- Lateral step downs on 10cm (40°) step
- Forward step downs on 10cm step
- Hip Abd/Add/Flex/Ext in standing thermaband to resist with knee Ext
- Single leg mini squats on trampette
- Step on/off trampette with operated leg
- Full stepper/cross trainer
- If adequate extension control – can begin fast walk on treadmill, gradually progress to slow jog under supervision.

#### *3-Month Goals:*

- Pain free FROM
- Satisfactory eccentric control to perform 10cm step down with neutral pelvis
- Able to complete 1 hour of light exercise

#### **3 - 4 Months Rehabilitation:**

- Circuit training
- Gentle jog/shuttle runs
- Gentle change of direction
- Single leg hurdle/step over
- Accelerate/decelerate up to 50% speed
- Plyometrics: skipping, hopping, star jumps

#### **4 -6 Months onwards: Return to full sport phase**

- Should have confidence in knee
- Can now run unsupervised if adequate control
- Accelerate/decelerate  $\frac{3}{4}$  speed
- Figure of 8 runs fwds/bwds
- Slalom fwds/bwds
- Gradually introduce cutting/sudden stop
- Run – sit – run

Phil Davidson M.D.  
Tel: (801) 797-8000  
Fax: 855-769-3885



6360 South 3000 East, Suite 200  
Salt Lake City, UT 84121  
davidsonorthopedics.com



- ↑ distance
- Progress to sprints 10m – 20m – 50m
- Can begin sports specific training when agreed with consultant/physiotherapist
- Quads strength should be equal to other leg
- Hamstrings 75% of quads