*Please realize that no two individuals or surgeries are alike. Keep in mind that:*

“As tolerated” means be safe and use common sense; pain, a limp, and swelling are indicators that you are doing too much too soon. If any of these should occur, decrease activity level, ice and elevate the leg.

Ice is your friend. Please ice for 20 minutes following each exercise, therapy, or training session. While your knee remains swollen icing should also be done separate from exercise at least three times per day.

Progression through the protocol should be based upon criteria as opposed to dates listed and will vary depending on each individual patient. These are merely guidelines.

Progress should be agreed upon by the patient and his/her team of providers.

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***Phase 1 – Weeks 0 - 6***

**Brace:**

Weeks 0 – 4: Locked in full extension

Weeks 4 – 6: Open to 30 degrees if quad activity allows

Off for bathing, dressing, and exercises only.

**Crutches/Function:**

Weeks 0 – 4: Two crutches, non-weight bearing

Weeks 2 – 4: Partial weight bearing (15%) with two crutches

Weeks 4 – 6: Progress weight bearing as tolerated with brace locked in extension

**ROM**

Weeks 0 – 2:0 to 90 degrees

Weeks 4 – 6: 0 to 110 degrees

**Therapeutic Exercise:**

Quad sets

Straight leg raises with brace

Ankle and foot ROM and strengthening (non-weight bearing)

Initiate weight shifting after week 4 as tolerated

**Manual:**

Scar and soft tissue massage, patella mobilizations

**Proprioception:**

Weeks 4 – 6: Seated BAPS board

**Cardio:**

UBE (arm bike)

**Modalities:**

NMES (neuromuscular electrical stimulation) for quadriceps atrophy, strengthening as needed

HVPC (high volt pulsed current) for effusion (swelling) reduction as needed

Cryotherapy six to eight times per day for 15 to 20 minutes each

**Progression to Phase 2:**

No pain

ROM: 0 – 110 degrees

Hip flexion SLR without knee extension lag

Minimal joint effusion

Ability to perform straight leg raise without quad lag

Adequate interval bone healing as determined by x-ray

***Phase 2: Weeks 6 - 10***

**Brace**

Open to 60 degrees as muscle strength allows

**Crutches/Function:**

Progress full weight bearing with locked brace to unlocked to 60 degrees as muscle strength allows

**ROM:**

0° to 120° - Active and passive

**Therapeutic Exercises:**

Initiate closed chain strengthening in pain free ROM (no >90°),

Initiate OKC knee strengthening – isometrics first – in pain-free ROM

Core strengthening

**Manual:**

Scar and soft tissue massage, patella mobilizations

**Proprioception:**

SLS (single limb stance)

BAPS, unstable surfaces

**Cardio:**

UBE

**Modalities:**

NMES for quadriceps atrophy

HVPC for effusion reduction as needed

Cryotherapy: After activity and therapy and twice more per day for 15 to 20 minutes each

**Progression to Phase 3:**

Knee ROM 0°-120°

No effusion

No pain

Good eccentric control of involved knee

Isokinetic hamstring strength 75% of non-involved

Isokinetic quad strength 75% of non-involved side

Isometric hamstring/quad ratio >50%

***Phase 3: Weeks 10 - 16***

**Brace**

Discontinue when strength adequate to control knee flexion

**Therapeutic Exercises:**

Continue closed chain exercises

OKC isotonic knee strengthening in pain-free ROM

Hip and core strengthening

**Proprioception:**

SLS, BAPS, unstable surfaces

Perturbation training (balance against resistance)

**Cardio:**

UBE, stationary bike, treadmill ambulation

**Plyometrics:**

Frontal (forward) and sagittal (side) plane double-leg plyometrics, plyometric leg press

Progress from double to single limb plyometrics after 12 weeks

**Modalities:**

Cryotherapy after activity for 15 to 20 minutes

**Progression to Phase 4:**

Isokinetic quad strength 85% of non-involved side

Isokinetic hamstring strength 85% of non-involved side

Isokinetic Hamstring eccentric strength to quad eccentric strength ratio of at least 70%

***Phase IV: Return to Sport***

**Recommend pursuing Transitional Therapy for return to sport activities during this phase**

Transitional Therapy – a strength and conditioning program that is led by medical professionals with a sports medicine background with the goal of transitioning from therapy back to sport

Contact PRISM Sports Medicine for details

In addition to ongoing strength, balance, agility, and cardio conditioning, initiate sport specific plyometric activities as tolerated such as:

Soccer/Football: Two foot ankle hop, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, and cycled split squat jump

Basketball/Volleyball: Two foot ankle hop, double-leg hop, squat jump, double-leg vertical jump, single-leg hop, single-leg vertical jump, power skip, backwards skip, double-arm alternate-leg bound, alternate leg push off box drill, and side-to-side push off box drill

Baseball/Softball/Overhead throwing sports: Two foot ankle hops, double-leg hop, front barrier hop, lateral barrier hop, single-leg hop, power skip, backward skip, double arm alternate leg bound, cycled split squat jump, and return to throwing program