



Dr. John M. Kunkel

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Patient may progress to each phase as long as all goals met from previous phase. Please notify Dr. Kunkel's team if patient unable to perform any items specified.

Phase 1 (weeks 0-6):

WB: TTWB x 2 weeks, PWB x 2 weeks then gradually advance to WBAT

Brace: on full time x 4 weeks (0-60) then on when standing and ambulating x 2 weeks advancing 30 degrees weekly

ROM:

Extension: Focus should be on obtaining full extension, symmetric to contra-lateral side unless patient has hyper-laxity

Flexion: POW 0-2: 0-60 degrees

Can gradually advance flexion to full after POW 2. Do not force flexion

- Swelling control (Including GameReady and patient ed)
- Quad sets ensuring proper form
- Straight leg raises with calf taps, ensuring constant quad contraction and minimizing lag
- Prone hangs, HS, and calf stretches
- Patellar mobilizations: Use gentle soft tissue techniques for areas such as anterior interval/fat pad, quadriceps, hamstrings, and scar management
- Core exercises, TKEs, calf raises, static balance, chair squats, step ups, static lunge, HS curls, hip machine (abduction), bridges
- D/C crutches after 4 weeks when $\geq 0^\circ$ knee extension & 90° knee flexion, can easily perform repetitive SLR without lag, minimal effusion, and can ambulate without a limp
- Begin stationary bike when $\geq 110^\circ$ flexion
- Weeks 3-6: When ambulating, the foot on the operative leg should be directed straight forward, rather than the natural 10 degrees of external rotation. This will protect the MCL.
- Post-op week 4 can begin Double leg (DL) mini squats and leg press from 0° to 60° initially, then progress to 90° as tolerated at post-op week 6. Avoid valgus forces and loaded hip adduction.

Phase 2 (weeks 6-12):

Strengthening and preparation for in-line running

- Can begin single leg (SL) squats POW 6 as long as patient demonstrates good glute and quad activation and good form with 90 degree (DL) body weight squats and has minimal effusion and is able to avoid valgus stress
- Squat progressions as follows: DL leg press, DL mini squats, DL chair squats, DL body weight squats, SL leg press, SL step ups, Static lunge split squat, SL step downs, SL squats, SL split squat with elevated back leg, walking lunges, SL sit to stands, SL slide outs
- Leg press, step ups, step downs, RDLs, lunges, Bulgarian squats, wall sits
- Advance hip abduction & glut strength: band walks, lateral lunge, reverse lunge
- Core exercises: planks, side planks, v-ups, Russian twist, superman
- Continue stationary bike and begin rowing machine
- Can begin interval training on bike
- Balance training: foam pad, balance board
- Instruct on dynamic warm-ups: frankenstein kicks, leg swings, knee hugs, heel sweeps, heel/toe walks, oil rigs, lateral lunge, hip rotation, inch worm, speed squats
- Swimming: straight kick, no flip turns

Goals to attain before initiation of jogging/in-line running at POW 12:

- symmetric knee extension and flexion to 120
- Minimal effusion and pain
- Quad and HS strength at least 65% normal
- Can perform SL squat with good form for at least 1 minute
- Symmetric SL squat

Phase 3 (weeks 12-24):

- May begin progressive advancement of gym training (barbell squats, deadlifts, Olympic lifts)
- SL strengthening: SL squats, sit to stands, ball slams, step ups/downs
- Dynamic core exercises: mountain climbers, planks, pikes, pale off press
- Integrate interval strength circuits & work/rest timed intervals
- Intermittently increase the tempo of regular strengthening exercises to align with the timing requirements of jogging and jumping

Running prep exercises:

- focus on the deceleration phase such as DL speed squats, DL drop squats, DL “bounce bounce bounce squat”, then progress to alternating SL drop squats.

Initiate jogging and progress to in-line running:

- Begin on treadmill with 2- 3 days per week. Begin with 1:1 or 2:1 walk to jog ratios, (ie. 1 min walk to 1 min jog or 2 min walk to 1 min jog). Then progress each week by 1 min jog until 12-15 min of jogging is achieved.

Criteria to begin agility and double leg plyos:

- Quad & HS strength > 80% normal

- > 50% H/Q ratio for females
- can perform at least 3 minutes of single leg squats
- jogging > 15 minutes on treadmill with no pain or swelling

Agility and DL Plyos: (NO single leg Plyo's until at least POW 20)

- Ladder drills, footwork agility drills, cone drills
- Double leg plyos: jump rope, line jumps, cone jumps, depth jumps, box jumps
- High intensity predictable patterned movements, incorporate sport specific drills

Phase 4 (weeks 24 - 28):

Advanced strengthening, agility, and initiation of speed work, SL plyo's. Can begin after able to perform all of phase 3 exercises and able to jog on track for 15 minutes or greater.

- Continue to advance barbell squats, deadlifts, Olympic lifts
- Dynamic eccentric loading: double & single leg
- Dynamic core: rotational and anti-rotational drills
- Tuck jumps, squat jumps, bounding, SL hop, SL triple hop, SL cross over hop
- Change of direction drills: begin with < 90°, progress to 90° and greater
- Introduce unpredictable agility movements
- Non-contact sports specific drills
- Begin track workouts: gradually advance linear speed and sprinting drills

Phase 5 (28 weeks +): Return to Play

Progression through all sport specific drills including unpredictable agility and cutting and complex movement patterns.

- Advance strengthening, speed, and conditioning to performance level preparedness.
- Max effort DL and SL jumps

Can begin RTP progression as long as the following criteria is met:

- Quad & HS strength > 95% normal
- > 60% H/Q ratio for females
- 95% LEAP Test

If all of the above met will advance with return to practice → return to contact practice → return to scrimmage → return to interval play → return to full play