IMMEDIATE POST OP CRITICAL INFORMATION

- □ Weight Bearing
 - ACLR only: WBAT
 - + meniscus repair: TTWB x 6 weeks
 - + meniscus repair: WBAT with knee brace locked at 0 degrees x 6 weeks
- □ ROM Expectations
 - + meniscus repair: 0-90 x 6 weeks
 - o ACLR only
 - 4 weeks: Knee extension ROM within 3-5 degrees v contralateral side ^{3, 27}
 - 12 weeks ROM goals: ^{31, 32, 33}
 - Extension = within 2° versus contralateral limb (Includes hyperextension)
 - ✓ Flexion = within 5° versus contralateral limb
- □ If Hamstring Autograft
 - No resisted and/or isolated hamstring strengthening x 8 12 weeks ^{1, 37}
- □ If Allograft
 - Consider slower progression (delay by at least 1 month) into aggressive activities such as running, jumping, and cutting ^{1, 12, 16, 37}
 - Delay Return to Sport until at least 1-year postoperation ³
- □ If Revision ACLR
 - The initiation of a running progression and functional testing are delayed ¹
- □ If + Meniscus Repair
 - Early return to strenuous activities, including impact loading, jogging, deep knee flexion, or pivoting in the first 4 to 6 months carries a definite risk of a repeat meniscus tear or tear to the transplant. ²⁸

POST-OPERATIVE REHABILITATION PHASES:



PHASE 1: PROTECTION PHASE (1 – 3 MONTHS)

□ Use of Brace and Assistive Devices

- Criteria to Discharge Assistive Device
 - Complete 20 straight leg-raises without an extensor lag
 - Maintain single limb stance with brace locked x 30 seconds without loss of balance
 - No increased pain with FWB

• Criteria to Unlock Brace (with brace unlocked)

- Maintain single limb stance with a slight knee bend for 30 seconds without loss of balance
- Perform 10 single leg mini squats (0-15 degrees) with good mechanics and quadriceps control *with brace on*

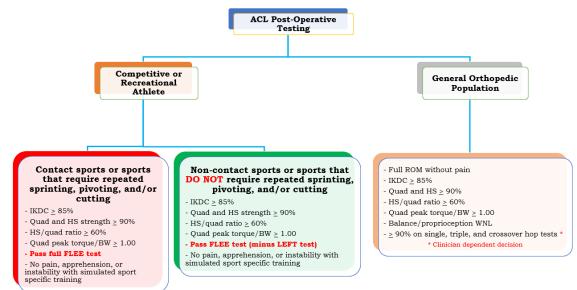
• Criteria to Discharge Brace (with brace off)

- Perform 10 single leg mini squats (0-15 degrees) with good mechanics and quadriceps control *with brace off*
- Normal gait mechanics without brace or assistive devices

□ Criteria to Progress to Phase 2

- 12 weeks ROM goals ^{31, 32, 33}
 - Extension = within 2° versus contralateral limb (includes hyperextension)
 - Flexion = within 5° versus contralateral limb
- Able to ambulate with FWB without an assistive device
- o Ascend/descend stairs with reciprocal pattern (if ROM allows)
- No knee pain or swelling with daily tasks (i.e. walking, standing, stairs, etc.)

□ Refer to ACLR Testing Algorithm to determine the next course of rehab



PHASE 2: STRENGTH AND CONDITIONING (3 – 6 MONTHS)

□ Criteria to be Cleared for FWB Jumping Activities

 Able to squat with symmetrical weight bearing and correct lower extremity alignment^{4, 8, 9, 21, 26}

• Strength:

- HHD: Quads ≥ 80% of uninvolved ^{1, 29}
- 8 RM single leg press with 1 times body mass ⁴
- 8 RM double leg press with 2 times body mass ⁴

□ Criteria to Return to Running

• Strength:

- HHD: Quads \geq 80% of uninvolved ^{1, 17, 24}
- RM leg press testing: 70 80% involved/noninvolved ^{17, 37}
- Single leg press with 1.25 times body mass ⁵

• Dynamic Assessment Options:

- 30 step-and-holds without loss of balance or excessive motion outside sagittal plane ^{17, 37}
- ≥ 90% composite score on Y-balance test ¹⁷
 - ✓ Composite score = (ANT reach + PM reach + PL reach)/(3 x limb length)
- Brigham and Women's Hospital foot contact screen (equivalent foot contacts equal to 2/3 of a mile) ³⁸
 - ✓ 90 sec rest breaks between sets
 - ✓ 3 min rest breaks between exercises

Two-legged ankle hops in place	3 x 30
Two-legged ankle hops: forward/backward	3 x 30
Two-legged ankle hops: side to side	3 x 30
One-leg ankle hops: in place	3 x 20
One-leg ankle hops: forward/backward	3 x 20
One-leg ankle hops: side to side	3 x 20
One leg broad jump	4 x 5
Total foot contacts:	470

□ Criteria to Progress to Phase 3

- Baseline hop test scores <u>> 85%</u> ³⁷
- HHD Quadriceps and Hamstring strength \geq 80% ^{2, 6}
- Displays a normal running pattern that does not increase pain ³⁷
- Able to tolerate various plyometric exercises pain free and with good form

PHASE 3: SPORTS TRAINING (6 – 12[+] Months)

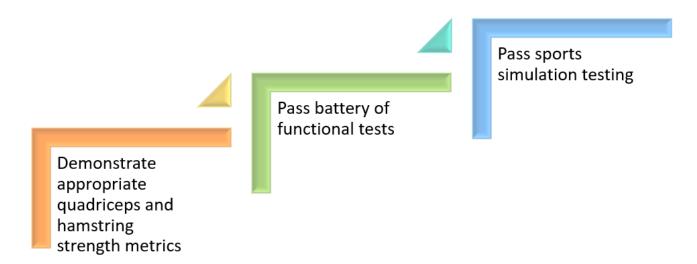
□ Criteria to Return to NON – CONTACT Sports Practice

- Strength:
 - HHD Quadriceps and Hamstring strength > 90% of uninvolved limb ^{2, 23, 25, 34, 37}
 - Quadriceps peak torque to body weight ratio ³⁰
 - ✓ lb x ft/lb bodyweight ≥1.00
 - Hamstring to Quad Ratio
 - ✓ 60% for non-contact sports ^{18, 20}
 - ✓ Consider > 60% for:
 - a. Contact sports and/or sports that require repeated sprinting, pivoting, and/or cutting
 - b. Female athletes ¹⁵
- \circ Single, Triple Hop and Crossover Hop scores between 80-85% of uninvolved leg

• Optional Functional Hop Test Variations:

- Single Leg Vertical Hop > 80 85% ¹⁹
- Medial Side Triple Hop > 80 85% ⁷
- Medial Side Rotation Hop <u>></u> 80 85% ⁷
- Sport Specific: ³⁷
 - Has practiced and displays no hesitation or compensation strategies at 100% effort during:
 - ✓ Agility drills (particularly when decelerating)
 - ✓ Normal loading (no genu valgum) and soft, athletic landings from all jumps and hops
 - ✓ During cutting drills (particularly when decelerating)

□ 3-Step Criteria for Full Return to Sports



- IKDC <u>></u> 85% ³⁶ <u>https://orthotoolkit.com/ikdc/</u>
- FLEE or Modified FLEE passing test scores <u>> 90%</u> ^{6, 13}
 - Includes single leg hop test scores \geq 90% of uninvolved leg ^{2, 25, 37}
- Optional Functional Hop Test Variations:
 - Single Leg Vertical Hop \geq 90% ^{19, 22, 35}
 - Medial Side Triple Hop > 90%⁷
 - Medial Side Rotation Hop \geq 90% ⁷
- No pain, apprehension, or instability with simulated sport specific testing ^{1, 6, 10, 11}

□ Return to Competition Progression (9 – 12 months, allograft 12+)³

- Sudden increases in workload after clearance to RTS may place athletes at an increased risk of reinjury. Therefore, a stepwise progression after RTS clearance and return to competition should be prescribed based on an athlete's individual sport
 - Noncontact practice
 - Small-sided contact practices (1 vs 1, 2 vs 2, 3 vs 3)
 - Full practice
 - Return to competition with restricted workload
 - Return to competition unrestricted

*All without apprehension, pain, instability, effusion, or compensations

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