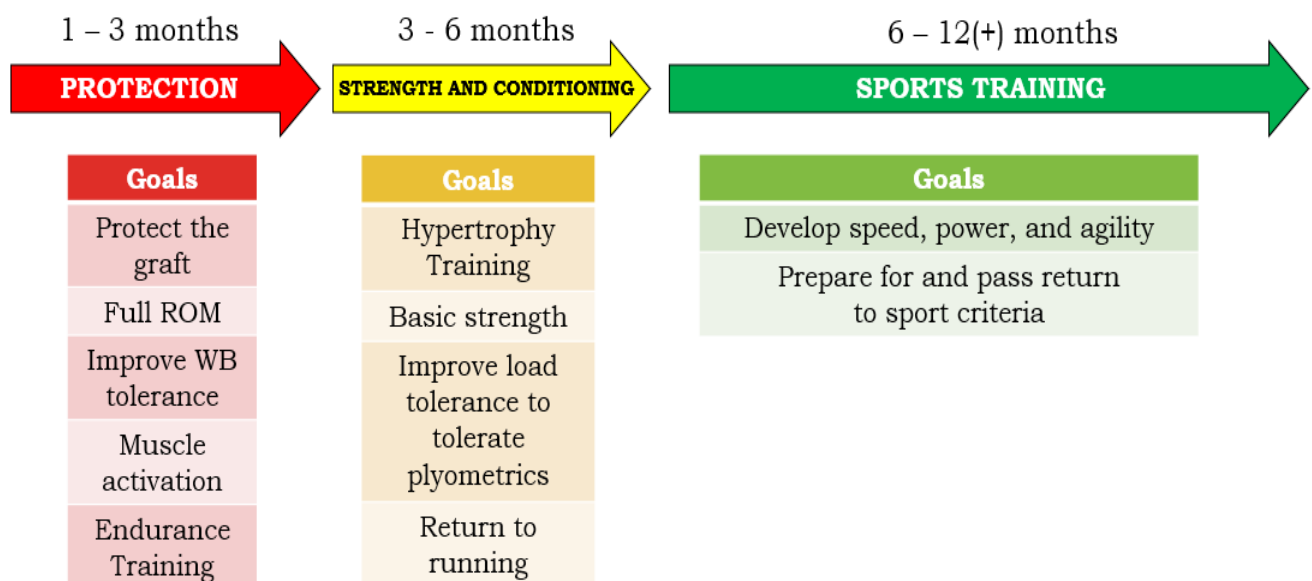


# ACLR Criteria Based Progression

## 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
  - ACLR only
    - 4 weeks: Knee extension ROM within 3-5 degrees v contralateral side <sup>3, 27</sup>
    - 12 weeks ROM goals: <sup>31, 32, 33</sup>
      - ✓ 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 <sup>1, 37</sup>
- ☐ If Allograft
  - Consider slower progression into aggressive activities such as running, jumping, and cutting <sup>1, 12, 16, 37</sup>
- ☐ If Revision ACLR
  - The initiation of a running progression and functional testing are delayed <sup>1</sup>
- ☐ 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. <sup>28</sup>

## POST-OPERATIVE REHABILITATION PHASES:



# ACLR Criteria Based Progression

## **PHASE 1: PROTECTION PHASE (1 – 3 MONTHS)**

### ☐ **Use of Brace and Assistive Devices**

- **Criteria to Discharge Assistive Device**
  - Straight leg-raise without extension lag x 20 repetitions
  - Single limb stance with brace locked x 30 seconds with good balance
  - No increased pain with FWB
- **Criteria to Unlock Brace (*with brace unlocked*)**
  - Single leg balance and a slight knee bend x 30 seconds
  - Able to perform a TKE while in a single leg balance
- **Criteria to Discharge Brace (*with brace off*)**
  - Single leg balance with knee slightly bent and arm and contralateral leg swings x 30 seconds
  - Single leg mini-squat/knee bends x 10 repetitions with good quad control, “no buckling”
  - Normal gait mechanics without brace or assistive device

### ☐ **Criteria to Progress to Phase 2**

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

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

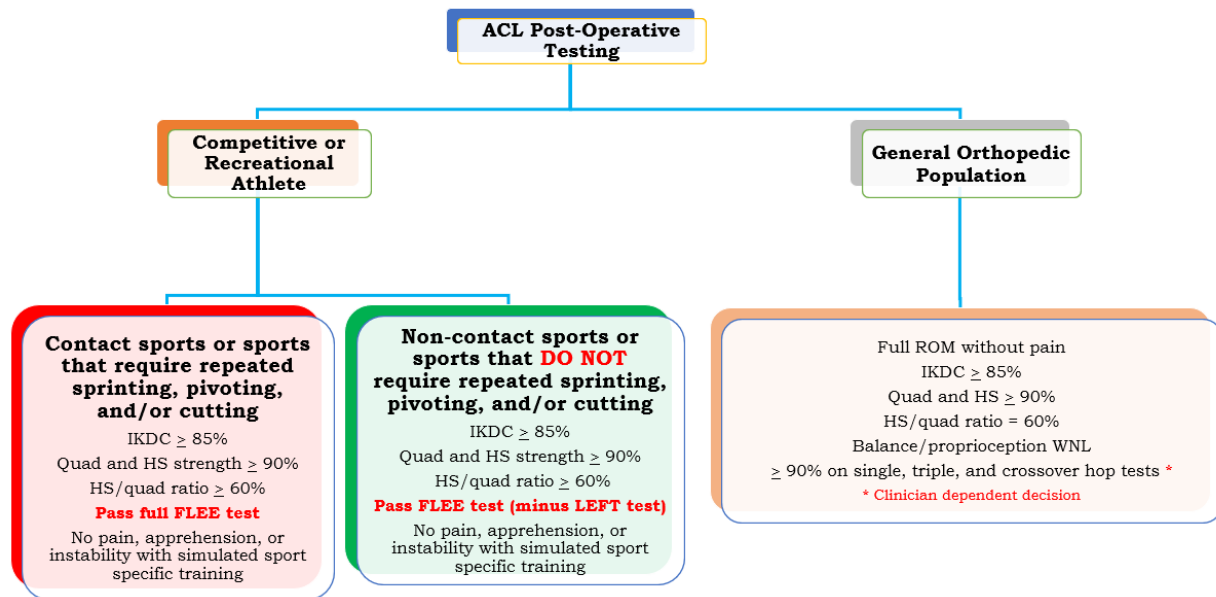
### ☐ **Criteria to be Cleared for FWB Jumping Activities**

- Able to squat with symmetrical weight bearing and correct lower extremity alignment <sup>4, 8, 9, 21, 26</sup>
- **Strength:**
  - HHD: Quads ≥ 80% of uninvolved <sup>1, 29</sup>
  - 100% BM single leg press and/or 150% BM double leg press/squat <sup>5, 26</sup>

# ACL Criteria Based Progression

## □ Discharge or Continue Rehab?

### ACL Testing Algorithm



## □ Criteria to Return to Running

- **Strength:**
  - HHD: Quads  $\geq 80\%$  of uninjured <sup>1, 17, 24</sup>
  - RM leg press testing: 70 - 80% involved/noninvolved <sup>17, 37</sup>
- **Dynamic Assessment Options:**
  - 30 step-and-holds without loss of balance or excessive motion outside sagittal plane <sup>17, 37</sup>
  - $\geq 90\%$  composite score on Y-balance test <sup>17</sup>
    - ✓ 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) <sup>38</sup>
    - ✓ 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
<b>Total foot contacts:</b>	<b>470</b>

# ACLR Criteria Based Progression

## ☐ Criteria to Progress to Phase 3

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

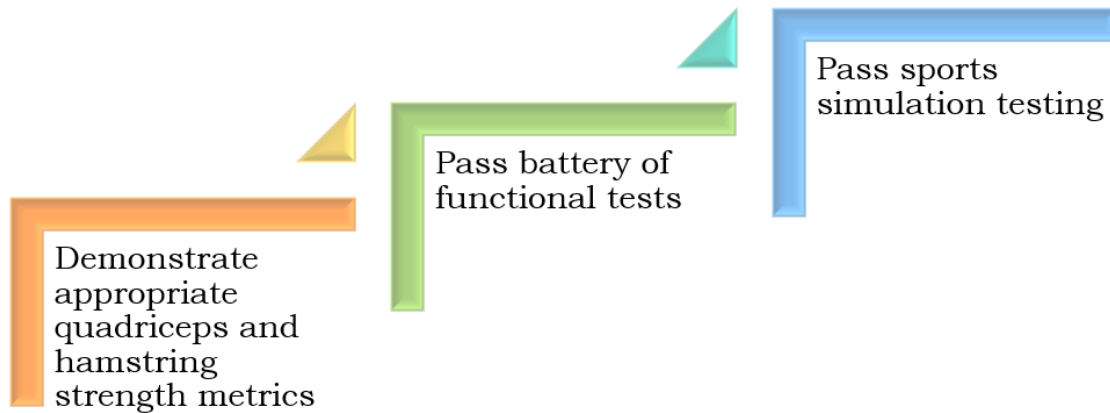
## **PHASE 3: SPORTS TRAINING (6 – 12[+] Months)**

### ☐ Criteria to Return to NON – CONTACT Sports Practice

- **Strength:**
  - HHD Quadriceps and Hamstring strength  $\geq 90\%$  of uninvolved limb <sup>2, 23, 25, 34, 37</sup>
  - Quadriceps peak torque to body weight ratio <sup>30</sup>
    - ✓ lb x ft/lb bodyweight  $\geq 1.00$
  - Hamstring to Quad Ratio
    - ✓ 60% for non-contact sports <sup>18, 20</sup>
    - ✓ Consider > 60% for:
      - a. Contact sports and/or sports that require repeated sprinting, pivoting, and/or cutting
      - b. Female athletes <sup>15</sup>
- **Single, Triple Hop and Crossover Hop scores between 80-85% of uninvolved leg**
- **Optional Functional Hop Test Variations:**
  - Single Leg Vertical Hop  $\geq 80 - 85\%$  <sup>19</sup>
  - Medial Side Triple Hop  $\geq 80 - 85\%$  <sup>7</sup>
  - Medial Side Rotation Hop  $\geq 80 - 85\%$  <sup>7</sup>
- **Sport Specific:** <sup>37</sup>
  - 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)

# ACLR Criteria Based Progression

## □ 3-Step Criteria for Full Return to Sports



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

## □ Return to Competition Progression (9 – 12 months, allograft 12+) <sup>3</sup>

- *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**

# ACLR Criteria Based Progression

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