

Standard Anterior Cruciate Ligament Reconstruction Rehabilitation Protocol

Time	Goals	Precautions/Restrictions	Treatment
Weeks 0 – 2	<ul style="list-style-type: none"> Protect surgical site Reduce pain and swelling Active ROM: 0-90 degree Full passive extension Active quadriceps control Reduce muscle atrophy Safe use of crutches with near normal gait mechanics 	<ul style="list-style-type: none"> Brace locked full extension for ambulation and sleeping 0-1 week Unlock amulation 1-4 weeks WBAT with crutches No resisted open chain knee extensions for six weeks No isolated hamstring strengthening for hamstring autograft surgery 	<ul style="list-style-type: none"> ROM (as tolerated) <ul style="list-style-type: none"> PROM – AAROM - AROM Patella mobilizations Quadriceps recruitment/NMES Global LE/hip strengthening Gait training with crutches Modalities as indicated <ul style="list-style-type: none"> Cryotherapy: 5-7 times per day Initial Visit: FOTO, LEFS, PSFS 2 week follow up with MD
Weeks 2 – 6	<ul style="list-style-type: none"> Full, symmetric and pain-free AROM SLR without extensor lag Normalized gait mechanics DL squat with good mechanics Progression of quadriceps strength/endurance Increase functional activities 	<ul style="list-style-type: none"> Open kinetic chain is limited to bodyweight leg extensions (weeks 2-6) No resisted open kinetic chain exercises Initiate isolated hamstring strengthening for hamstring autograft surgery (6 weeks) No running, jumping, cutting, pivoting, or twisting Avoid painful activities/exercises Discontinue brace at 28 days if patient has no extension lag 	<ul style="list-style-type: none"> AAROM - AROM Gait training progressing from assistive device Core stabilization exercises Closed kinetic chain strengthening as tolerated Global LE strengthening <ul style="list-style-type: none"> Begin functional strengthening exercises (bridge, mini-squat, step up, etc) Double limb to single limb balance/proprioception Aerobic training: <ul style="list-style-type: none"> Walking program when walking with normal gait mechanics Stationary bike Optional therapies (if available/as indicated): <ul style="list-style-type: none"> BFR therapy Anti-gravity treadmill for walking gait Aquatic therapy once incision is healed and cleared by surgeon (2-4 weeks) NMES Modalities as indicated Week 6: FOTO, LEFS
Weeks 6 – 12	<ul style="list-style-type: none"> Full, symmetric and pain-free ROM Progress quadriceps strength/endurance Increase functional activities 	<ul style="list-style-type: none"> May initiate resisted open kinetic chain exercise <ul style="list-style-type: none"> 90-45° at 6 weeks 90-30° at 8 weeks 90-0° at 10 weeks 90-0° with progressive loading at 12 weeks No running, jumping, cutting, pivoting, or twisting Avoid painful activities/exercises Avoid patellofemoral pain 	<ul style="list-style-type: none"> End range flexion and extension Aerobic training on stationary bike, elliptical, stair climber, UBE Core stabilization exercises Progressive double and single limb strengthening Single to multi-plane exercise Progression of balance/proprioception Modalities as indicated Week 12: FOTO, LEFS, PSFS, ACL-RSI 6-8 week follow up with MD (SGYM)



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- Weeks 12-16**
- Full, symmetric ROM
 - No effusion with increased activity
 - Increase intensity and duration of functional LE strength
 - Initiate return to jogging program
 - Begin low level plyometric and agility training
 - Avoid painful activities/exercises
 - Jogging program initiated at 12 weeks if cleared by surgeon
 - No effusion
 - Full AROM
 - >80% LSI
 - No jogging on painful or swollen knee
 - Increase loading capacity for lower extremity strengthening exercises
 - Continue balance/proprioceptive training
 - Week 12: begin return to jogging program
 - If applicable, start with pool/anti-gravity treadmill
 - Begin low level plyometric and agility training at 12 weeks
 - Functional assessment (see attached)
 - 3-4 month follow up with MD (SGYM)

- Months 4-6**
- Continue to progress functional strengthening
 - Successful progression of the return to running program
 - Initiate higher level plyometric and agility training
 - No jogging on a painful or swollen knee
 - Avoid painful activities/exercises
 - Avoid patellofemoral pain
 - No participation in sports unless specified by care team
 - Progression of return to jogging program
 - Gradually increase lifting loads focusing on form, control, and tissue tolerance
 - Progress as tolerated:
 - Core Stability
 - Strength
 - Endurance
 - Proprioception/Balance
 - Increase intensity of plyometric and agility training
 - Foot speed and change of direction
 - Functional assessment at 6 months (see attached)
 - Month 6: FOTO, LEFS, PSFS, ACL-RSI

- Months 6 – 9**
- Continue to progress functional strengthening
 - Sport-specific training
 - No participation in sports unless specified by your care team
 - Avoid painful activities
 - Progress as tolerated:
 - Core Stability
 - Strength
 - Endurance
 - Proprioception/Balance
 - Begin sport-specific training
 - Single-to multi-task
 - Reactionary drills
 - Perturbation training
 - Closed to open environment

- Months 9+**
- Pass return to play criteria (re-test at 12+ months, if necessary)
 - Begin gradual return to sport
 - Gradual return to full participation in sports
 - Progress as tolerated:
 - Core Stability
 - Strength
 - Endurance
 - Proprioception/Balance
 - Plyometric training
 - Agility drills
 - Sport-specific activities
 - Gradual return to sport progression
 - Month 9: FOTO, LEFS, PSFS, ACL-RSI
 - Functional assessment (see attached)
 - 9+ month follow up with MD (SGYM)



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Phase	Goals	Surgery	Testing
Week 12 (SGYM)	<ul style="list-style-type: none"> • Full, symmetric ROM • Y-balance anterior reach asymmetry < 5 cm • Quadriceps strength for isometric test > 80% of uninvolved side 	<ul style="list-style-type: none"> • ACL reconstruction • ACL reconstruction with meniscus repair • ACL Allograft (12 week and 6 month recheck) • ACL revision (12 week and 6 month recheck) 	TESTING: <ul style="list-style-type: none"> • Knee assessment including assessment for effusion • Passive and active ROM • Y-balance anterior reach • Isometric knee extension at 60° and 90° • FOTO, LEFS, PSFS, ACL-RSI
Month 6 (No SGYM)	<ul style="list-style-type: none"> • Full, symmetric ROM • Y-balance anterior reach asymmetry < 3 cm • > 80% LSI for isokinetic testing • 90% LSI for functional testing • ACL-RSI > 56 	<ul style="list-style-type: none"> • ACL reconstruction • ACL reconstruction with meniscus repair • <u>ACL Allograft (9 month)</u> • <u>ACL revision (9 month)</u> 	TESTING: <ul style="list-style-type: none"> • Knee assessment including assessment for effusion • Passive and active ROM • Hop Test <ul style="list-style-type: none"> ○ Single Hop ○ Triple Hop • Isokinetic Test (90°, 180°/s) • Y-Balance Anterior Reach • Agility T-Test • FOTO, LEFS, PSFS, ACL-RSI
Month 9-10 (SGYM)	<ul style="list-style-type: none"> • Full, symmetric ROM • > 90% LSI for isokinetic and functional testing • Y-balance anterior reach asymmetry < 3 cm • ACL-RSI > 56 	<ul style="list-style-type: none"> • ACL reconstruction • ACL reconstruction with meniscus repair • <u>ACL Allograft (12 month)</u> • <u>ACL revision (12 month)</u> 	TESTING: <ul style="list-style-type: none"> • Knee assessment including assessment for effusion • Passive and active ROM • Hop Test <ul style="list-style-type: none"> ○ Single Hop ○ Triple Hop ○ Cross-over Hop • Isokinetic Test (90°, 180°/s) • Y-Balance Anterior Reach • Agility T-Test • FOTO, LEFS, PSFS, ACL-RSI

This protocol is not meant to be prescriptive but a recommendation to guide the rehabilitation process.
 Each patient's progress may vary based on specifics to their injury and procedure.



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