

ACL Reconstruction/MCL Reconstruction

The Gundersen Sports Medicine ACL Reconstruction with MCL Reconstruction Rehabilitation Program is an evidence-based and soft tissue healing dependent program allowing patients to progress to vocational and sports-related activities as quickly and safely as possible. Individual variations will occur depending on surgical technique and the patient's response to treatment. Please contact us at 1-800-362-9567 ext. 58600 if you have questions or concerns.

Phase I: 0-6 weeks	Immediate post op maximum protection phase
Goals	<ul style="list-style-type: none"> • Protect anatomic repair • Minimize knee joint effusion • Gently increase ROM per guidelines, emphasis on extension • Encourage quadriceps function • Prevent negative effects of immobilization
ROM	<ul style="list-style-type: none"> • wk 0-2: 0-90 deg • wk 2-6: 0-120 deg.
WB	<ul style="list-style-type: none"> • wk 0-6: NWB with brace locked into extension
Precautions	<ul style="list-style-type: none"> • Emphasis on regaining extension ROM ASAP to decrease stress to the PF joint during ambulation.
Modalities	<ul style="list-style-type: none"> • Cryotherapy 15 minutes in duration 3x/day • IFC for pain/effusion if needed • NMES quadriceps if needed
Treatment Recommendations Guidelines for progression based on tolerance Adequate pain control No excessive swelling SLR without a quadriceps lag	<ul style="list-style-type: none"> • Active warm-up: bike (well leg biking 1-6 wks) or Nustep per ROM guidelines with no resistance • ROM: Wk 0-2: Gentle stretching to attain full extension and 90 degrees of flexion. Emphasis on full return of knee extension ASAP. <ul style="list-style-type: none"> Low-load long duration stretching for extension with heat if needed (1st TERT= Total End Range Time) Manual stretching for extension with overpressure or recurvatum Patellar mobilizations PROM / AAROM / AROM Wk 2-6: progress range of motion 0-120 deg • Flexibility exercises for hamstring, gastroc-soleus • Scar tissue massage • Therapeutic exercises. Exercise in a pain-free manner. Encourage quadriceps activation. <ul style="list-style-type: none"> wks 1-6 Biofeedback QS, SLR Short arc 0-30 quadriceps with biofeedback with no weight Hip NWB: 4 way SLR, sidelye resisted ER Gastroc soleus strengthening NWB Hamstring curls 0-90 deg Core stability and upper body exercises if desired • IFC for pain/effusion, NMES for quadriceps activation and control as needed • Ice (in stretch for extension if needed) 2nd TERT • HEP for 3rd TERT

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Phase II: 6-12 weeks	Moderate protective phase
Goals	<ul style="list-style-type: none"> Progress ROM as tolerated Progress WB (per MD approval) and promote a normal heel-toe walking program Gradual progression of therapeutic exercises for strengthening, stretching, and balance
ROM	<ul style="list-style-type: none"> wk 6+: progress to full ROM as tolerated. Goal of full ROM by 8-12 weeks
WB	<ul style="list-style-type: none"> Wk 6-8: WBAT per MD. Brace unlocked for ambulation if good SLR without lag. Utilize crutches as needed until patient demonstrates a normal heel-to-toe pattern.
Brace	<ul style="list-style-type: none"> Patient will use the post-op brace until wk 7-8. Replace with a functional ACL brace.
Modalities	<ul style="list-style-type: none"> Cryotherapy 15 minutes in duration 1-2x/day IFC for pain/effusion if needed NMES quadriceps if needed
Precautions	<ul style="list-style-type: none"> No WB stretching into flexion until 8 wks Avoid descending stairs reciprocally until adequate quadriceps control and lower extremity alignment
Treatment Recommendations Guidelines for progression based on tolerance	<ul style="list-style-type: none"> Active warm-up: Bike (with no resistance weeks 7-9) with resistance (weeks 10+), Nu Step, Treadmill walking (weeks 9+), Aquajogging (weeks 9+) wk 12: Elliptical Trainer Stretching for full extension and flexion PROM / AAROM / AROM Patellar mobilizations if needed Manual stretching for extension and flexion Low-load long duration stretching with heat if needed (1st TERT= Total End Range Time) wk 8: WB knee flexion stretch on leg press with light resistance Flexibility exercises for hamstring, gastroc-soleus, iliopsoas, quadriceps if indicated Therapeutic exercises: Exercise in a pain-free manner. Gradual progression with avoiding medial collapse during strengthening and functional activities (focus on hip abductor and external rotator strengthening). Incorporate total leg strengthening and balance / proprioception exercises. Biofeedback QS SLR, CKC knee extension Hip 4 way SLR Hamstring OKC isotonic , double leg bridge Beginning cord exercises (week 7+) CKC exercises: Progress from 0-60 deg to 0-90 deg: leg press (DL) (double leg), wall squats, lateral step-overs, step-ups, bridges wk 8: Resisted sidestep with T-band, leg press (DL) 1:1, partial lunges with UE support as needed wk 9: Progress to squats to 90 deg, BOSU partial squat 0-60 prone hamstring curls, Stair master wk 10: Progress to full lunges, leg press (SL), Deadlift Gastroc soleus strengthening Total leg strengthening Balance / Proprioception training: Double leg, single leg

	<p>static progressing to dynamic activities</p> <p>CV conditioning / Core Stability</p> <ul style="list-style-type: none"> • Ice (in stretch if needed) 2nd TERT • HEP for 3rd TERT if needed
Independent strengthening	wk 12-16: Progress to independent strengthening program with monthly or bimonthly rechecks if good ROM, minimal effusion or pain, and good muscle control
Phase III: 12+ wks	Advanced strengthening and Gradual Return to activity phase
Goals	<ul style="list-style-type: none"> • Progress muscle strength, endurance, and balance activities. Ideally 3x/week of exercises at a fitness center, step-down, or home program • Progress to higher level activities depending on functional demands and MD approval • Return back to vocational, recreational, and sport activities
Brace	<ul style="list-style-type: none"> • Your MD may recommend continuing with the knee brace to be used until 12 months from your surgery for higher level activities
Modalities	Cryotherapy 15 minutes 1x/day or after strenuous activity
Treatment Recommendations	<ul style="list-style-type: none"> • Active warm-up: Bike, Elliptical Runner, Nu Step, Treadmill walking, Stair Stepper • Continue with stretching and flexibility exercises as needed • Strengthening and endurance exercises: Advance as tolerated with emphasis on functional strengthening. Avoid medial collapse during strengthening and functional activities. <ul style="list-style-type: none"> Total leg strengthening Single leg strengthening Hip strengthening Heel raises Hamstring full ROM isotonic. Quadriceps isotonic in ROM without chondrosis, if needed CKC exercises: Leg press, multiple direction lunges, step-ups, squats, Gastroc soleus exercise Isokinetic quadriceps/hamstrings in ROM without chondrosis Stairmaster, • Dynamic balance exercises • Foot placement drills submax (16 weeks): agility ladder / line jumps /submax anterior-lateral hop to stabilization • CV conditioning and core stability
Return to running	<ul style="list-style-type: none"> • Wk 16: (4 months): Return to running program if meets criteria – see next page
Return to sport	<ul style="list-style-type: none"> • 5 months: Plyometric program – submax with gradual progression • 6-9 months: Return to play if meets criteria – see next page • Golfing, outdoor hiking, biking (16 weeks)

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Testing and Return to Running/Sports Recommendations

Testing:

12 weeks (3 months)

SL 60 deg Stork test

Hip strength:

Abduction MMT

Hip Abduction Side plank test

Biodex test :

30 deg block

2 speeds: 180 deg/sec (5 reps) 300 deg/sec (30 reps)

Y balance test

FOTO

16 weeks (4 months) – RETURN to RUNNING

Repeat previous tests not passed

Anterior lateral hop to stabilization

Trial of running.

Jump test: no arm swing – submax for apprehension/technique

Single Hop test: no arm swing- submax for apprehension/technique

20 weeks (6 months)

Biodex test: Full ROM with no ext block

3 speed test: 60 deg/sec (5 reps),

180 deg/sec (5 reps),

300deg/sec (30 reps)

Single Hop test: no arm swing

Triple hop/Cross over hop test: arm swing-

Tuck Jump or Landing Assessment

Agility Test: LEFT test components or time

FOTO

Return to Running Criteria:

Return to Running Requirements:

Time: at least 4 months post-op

MD / PT clearance

No knee joint effusion

ROM: limb symmetry:

extension within 5 deg

flexion within 10 deg

Biodex:

Limb symmetry of PT:

Quad: 75%

Hams: 80-90%

Proper running form: Treadmill running (6-10 mph, 5 min) with equal audibly rhythmic foot strike

Anterior lateral hop to stabilization drill completed with no apprehension and good movement control

Return to Running Recommendations:

Biodex:

180 deg/sec:

Quad PT/BW: Males: 65%

Females: 55%

H/Q ratio: 65%

300 deg/sec:

Quads Power :Limb symmetry:75%

Hams Power: Limb symmetry: 75%

SL 60 deg stork test:

Limb symmetry: 90%

Hip Abduction Side Plank test:

Level II or greater

Y balance: Limb symmetry: < 4cm

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Testing and Return to Running/Sports Recommendations

Return to Play Criteria:

Return to Play Requirements:

Time: at least 6-9 months

MD/ PT clearance

No knee joint effusion

ROM: limb symmetry:

extension within 5 deg

flexion within 10 deg

Biodex:

Limb symmetry of PT:

Quad: 90%

Hams: 90%

Tuck Jump or Landing Assessment: no faulty movement patterns

Single Hop test: Limb symmetry: 90%,

Triple Hop test or Cross-Over Hop Test Limb symmetry: 90%

LEFT test or Agility Test with no compensation

Return to Play Recommendations:

Biodex:

60 deg/sec:

Quad PT/BW: Males: 100%

Females: 80%

Hams PT/BW: Males: 60%

Females: 60%

H/Q ratio: 60 deg/sec : 60%

180 deg/sec: 70%

300 deg/sec: 80%

300 deg/sec:

Quads Power : Limb symmetry:90%

Hams Power: Limb symmetry: 90%

Hip Abduction Side Plank test:

Level III or greater

Y balance: Limb symmetry: < 4cm