Sheridan Orthopædic ASSOCIATES, P.C.

Pediatric ACL Reconstruction/Tibial Spine Fracture

REHABILITATION PROTOCOL

Time	Goals	Precautions/Restrictions	Treatment
Weeks 0–4	• Protect surgical site • Reduce pain and swelling • ROM: 0-90 degree • Full passive extension • Active quadriceps control • Reduce muscle atrophy • Safe use of crutches with altered weight bearing status	• TWB x 4 weeks with crutches in brace • ROM: ○ Full extension week 1 ○ 90 degrees flex week 2-4 ○ As tolerated week 4 • No resisted open chain knee extensions	• Quadriceps recruitment/NMES • Global LE/hip strengthening • TWB gait training with crutches • Modalities as indicated ○ Cryotherapy: 5-7 times per day • Initial Visit: FOTO, LEFS, PSFS • 1-2 week follow up with MD
Weeks 4–8	• ROM as tolerated • Progression to WBAT • SLR without extensor lag • Normalized gait mechanics • Progression of quadriceps strength/endurance • Increase functional activities	• Open kinetic chain is limited to bodyweight leg extensions (weeks 4-8) • No resisted open kinetic chain exercises • No running, jumping, cutting, pivoting, or twisting • Avoid painful activities/exercises	• AAROM - AROM • Gait training progressing from assistive device beginning week 4 • Core stabilization exercises • Global LE strengthening ○ Begin functional strengthening exercises (bridge, mini-squat, step up, etc) • Double limb to single limb balance/proprioception • Aerobic training: ○ Walking program when walking with normal gait mechanics ○ Stationary bike • Optional therapies (if available/as indicated): ○ BFR therapy ○ Aquatic therapy once incision is healed and cleared by surgeon (4 weeks) ○ NMES • Modalities as indicated • Week 6-8: FOTO, LEFS • 6 week follow up with MD (SGYM)
Weeks 8–12	• Full, symmetric and pain-free ROM • Progress quadriceps strength/endurance • Increase functional activities	• May initiate resisted open kinetic chain exercise ○ 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	• 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

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 of their injury and procedure.

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Pediatric ACL Reconstruction/Tibial Spine Fracture

REHABILITATION PROTOCOL

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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Pediatric ACL Reconstruction/Tibial Spine Fracture

Anterior Cruciate Ligament Testing Protocol

Phase	Goals	Surgery	Testing
Week 12 (SGYM)	• Full, symmetric ROM • Y-balance anterior reach asymmetry < 5 cm • Quadriceps strength for isometric test > 80% of uninvolved side	• ACL reconstruction • ACL reconstruction with meniscus repair • ACL Allograft (12 week and 6 month recheck) • ACL revision (12 week and 6 month recheck)	TESTING: • 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)	• Full, symmetric ROM
	• Y-balance anterior reach asymmetry < 3 cm
	• > 80% LSI for isokinetic testing
	• 90% LSI for functional testing
	• ACL-RSI > 56
		• ACL reconstruction
		• ACL reconstruction with meniscus repair
		• ACL Allograft (9 month)
		• ACL revision (9 month)
			TESTING:
			• Knee assessment including assessment for effusion
			• Passive and active ROM
			• Hop Test
			  ○ 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)	• Full, symmetric ROM
	• > 90% LSI for isokinetic and functional testing
	• Y-balance anterior reach asymmetry < 3 cm
	• ACL-RSI > 56
		• ACL reconstruction
		• ACL reconstruction with meniscus repair
		• ACL Allograft (12 month)
		• ACL revision (12 month)
			TESTING:
			• Knee assessment including assessment for effusion
			• Passive and active ROM
			• Hop Test
			  ○ Single Hop
			  ○ Triple Hop
			  ○ Cross-over Hop
			• Isokinetic Test (90°, 180°/s)
			• Y-Balance Anterior Reach
			• Agility T-Test
			• FOTO, LEFS, PSFS, ACL-RSI

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