

Dr. Craig Chike Akoh, M.D.

Pediatric ACL Reconstruction Rehabilitation

	Weight Bearing	Brace	Range of Motion	Exercises/Strength
<i>Phase 1 0-6 Weeks</i>	<p>0-2wk PWB with crutches</p> <p>3-6wk: WB as tolerated</p> <p>*If concomitant meniscal repair Toe touch WB w/ crutches 0-6wks</p>	<p>0-2 locked in extension</p> <p>Week 2 unlocked 0-90° with ambulation</p> <p>May remove for sleeping</p>	<p>As tolerated</p> <p>Goal</p> <p>1 wk: Symmetrical hyperextension to contralateral side 90° flexion</p> <p>6 wk: Goal Symmetrical ROM</p>	<p>*SLR for quad activation and Prone hangs for hamstring stretching</p> <p>Wk 2: Strengthening may begin beginning with closed chain exercises. Leg press when ROM is greater than 90 degrees of flexion and quadriceps control improves. Hip and core strengthening involving PREs.</p> <p>Proprioceptive exercise. Rocker board and balance exercise may commence when they are able to bear 50% or more weight. Mini squats and other balancing exercises.</p>
<i>Phase 2 6-12 Weeks</i>	Full WB	D/C PO brace at 6 weeks	Full ROM	<p>May begin pool therapy Continue to progress strengthening from phase 1 adding unilateral strength and balancing exercises</p> <p>Retrograde treadmill walking to assist with quadriceps strengthening</p>

				Stretching of quadriceps, abductors, hamstrings, and calves
<i>Phase 3 12-24 Weeks</i>	Full	Functional Brace	Full	<p>Straight ahead jogging Begin plyometric training focus on proper jumping and landing techniques. Can move on to lateral jumping once proper technique for vertical has been demonstrated.</p> <p>Wk 16: functional exercises may begin along with agility training</p> <p>Wk 20: Full Speed Drills and running</p>
<i>Phase 4 6-8 Months</i>	Full	Functional Brace	Full	<p>Cutting, pivoting, accelerating, and decelerating drills</p> <p>Dynamic sport drills</p> <p>Advanced agility and plyometric training drills</p>
<i>Return to Sport Criteria</i>	Full	Functional Brace	Full	<p>Symptom free running Confidence with jumping and landing (double and single leg)</p>

				Pain free activities Ability to confidently perform cutting and lateral movements and decelerate and change directions Functional Sport Test with good results
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- Rehab is delayed with concomitant meniscal repair procedure
- RTS with M.D. clearance, only after functional sport test and all deficiencies are addressed

For any questions or concerns regarding the protocol or rehabilitation process please contact my Athletic Trainer below.

Dr. Craig Chike Akoh, MD
Pediatric ACL Reconstruction with IT Band Autograft
Rehabilitation Protocol

	Weight Bearing	Brace	Range of Motion	Exercises/Strength
<i>0-2 Weeks</i>	Toe Touch WB	Locked at 0°	CPM 0-30°	Heel slides, SLR, SAQ, calf stretching
<i>2-6 Weeks</i>	Toe Tough WB	Locked at 0°	D/C CPM if apprehension to motion has dissipated ROM 0-90°	Heel slides, SLR, SAQ, calf stretching, Assisted and active seated flexion and extension exercises
<i>6-12 Weeks</i>	Full	D/C Brace	ROM as tolerated	Formal Strengthening can begin at 6 weeks Beginning with Closed Chain Proprioceptive exercises and progressing as tolerated
<i>3-6 Months</i>	Full	Functional Brace RTS Brace	Full	Straight ahead jogging may begin at 3 months Functional sport activities
<i>6-12 Months RTS Criteria</i>	Full	Functional Brace	Full	Symptom free running Confidence with jumping and landing (double and single leg) Pain free activities Ability to confidently perform cutting and lateral movements and decelerate and change directions Functional Sport Test with good results

■ Rehabilitation may be modified if concomitant meniscal or cartilage procedure

- RTS is determined by M.D. only after a functional sport test is conducted and deficiencies are addressed

For any questions or concerns regarding the protocol or rehabilitation process please contact my Athletic Trainer below.

Dr. Craig Chike Akoh, M.D.
PEDIATRIC ACL RECONSTRUCTION WITH MENISCAL REPAIR
REHABILITATION PROTOCOL

	WEIGHT BEARING	BRACE	ROM	EXERCISES
<i>PHASE I</i> 0-2 weeks	Full in Brace locked in extension	Locked in full extension for sleeping and all activity* Off for exercises and hygiene	0-90° when non-weight bearing	Heel slides, quad sets, patellar mobs, SLR, SAQ No weight bearing with flexion >90°
<i>PHASE II</i> 2-6 weeks	2-6 weeks: Full in Brace unlocked 0-90°	2-6 weeks: Unlocked 0-90 ° Off at night Discontinue brace at 6 weeks	As tolerated	Addition of heel raises, total gym (closed chain), terminal knee extensions Activities w/ brace until 6 weeks; then w/o brace as tolerated No weight bearing with flexion >90°
<i>PHASE II</i> 7-12 weeks	Full, progressing to normal gait pattern	Discontinue at day 28 if patient has no extension lag	Main full extension and progressive flexion	Progress Phase I Begin toe raises, closed chain quads, balance exercises, hamstring curls, stationary bike, step-ups, front and side planks, hip/glute/core, pool

<i>PHASE III 12-16 weeks</i>	Full, without use of crutches and with a normalized gait pattern	None	Gain full and pain-free	Advance closed chain strengthening, progress proprioception activities Begin stair-master, elliptical and running straight ahead
<i>PHASE IV 16-24 weeks</i>	Full	None	Full and pain-free	16 wks: Begin jumping 20 wks: Advance running to sprinting, backward running, cutting/pivoting/changing direction, initiate plyometric program and sport-specific drills 22 wks: Advance as tolerated FSA completed at 22 wks

<i>PHASE V</i> > 6 <i>months</i>	Full	None	Full and pain-free	Gradual return to sports participation after completion of FSA Maintenance program based on FSA
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- Brace may be removed for sleeping after first post-operative visit (day 7-10)
- Completion of FSA (Functional Sports Assessment) not mandatory, but recommended at approx. 22 weeks post-op for competitive athletes returning to play after rehab

For any questions or concerns regarding the protocol or rehabilitation process please contact my Athletic Trainer below.

Dr. Craig Chike Akoh, M.D.
Complete Transphyseal Hamstring Autograft ACL Reconstruction
Rehabilitation Protocol

	Weight Bearing	Brace	ROM	Exercises/Strength
<i>0-2 weeks</i>	WB as tolerated *If concomitant meniscal repair toe touch WB w/crutches 0-6wks	Locked in extension	Goal by wk 1-2 Symmetrical hyperextension - 90° flexion	Prone hangs, SLR, SAQ, patellar mobs
<i>2-6 Weeks</i>	WB as tolerated	Locked in extension w/ ambulation Unlocked 0-90° while sitting	ROM 0-125° PROM, AAROM, AROM No forced passive flexion	Isometrics, limited closed chain PREs, leg press from 90° to 40° degrees in an eccentric fashion

		Removed when sleeping		Short crank bike *Avoid active resisted hamstring exercises (due to harvest)
6-12 Weeks	Normalization of gait pattern	D/C PO Brace when good quad control demonstrated Functional Sport Brace	Full symmetrical ROM	squat/step program, wall slides, leg press Proprioception balance board, single leg stance, other balance maneuvers. Nordic track or elliptical trainer Quadriceps isotonic with a

				proximal pad are allowed in a 90- to 40- degree arc.
<i>12- 24 Weeks</i>	Full	Functional Brace	Full	Regain full LE strength and proprioception Jumping and landing aggressively advance agility and functional exercises Begin and progress a running program.
<i>6-12 Months RTS Criteria</i>	Full	Functional Brace	Full	Symptom free running Confidence with jumping and landing

				<p>(double and single leg)</p> <p>Pain free activities</p> <p>Ability to confidently perform cutting and lateral movements and decelerate and change directions</p> <p>Functional Sport Test with good results</p>
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- Rehabilitation program is delayed with concomitant meniscal repair procedure
 RTS clearance by M.D. only after a functional sport test is performed and all deficiencies are addressed

Dr. Craig Chike Akoh, M.D.
Tibial Tubercle Avulsion Fracture with ORIF
Rehabilitation Protocol

	Weight Bearing	Brace	ROM	Exercises/Strength
<i>0-4 Weeks</i>	NWB w/ crutches	Cast Cast is changed at 2 weeks and suture removal is performed	None	None
<i>4-6 Weeks</i>	Weight bearing progression	No bracing required	As tolerated	Strengthening and proprioceptive exercises
<i>6-12 Weeks</i>	Full	No bracing required	Full pain free	Progress strengthening and proprioceptive exercises. Functional Sport Activities, including running, agilities, and plyometric exercises once radiographically and clinically cleared
<i>3+ Months</i>	Full	No brace required for RTS	Full pain free	Return to sport once cleared by M.D.

For any questions or concerns regarding the protocol or rehabilitation process please contact my Athletic Trainer below.

Dr. Craig Chike Akoh, M.D.

**Complete Transphyseal Hamstring Autograft ACL Reconstruction With Meniscal Repair
Rehabilitation Protocol**

	Weight Bearing	Brace	ROM	Exercises/Strength
<i>0-2 weeks</i>	PWB w/ crutches	Locked in extension	Goal by wk 1-2 Symmetrical hyperextension - 90° flexion	Prone hangs, SLR, SAQ, patellar mobs No weight bearing with flexion >90°
<i>2-6 Weeks</i>	2-4 weeks: 50% WB with crutches 4-8 weeks: Progress to full WB	2-6 weeks: Unlocked 0-90 ° Off at night Discontinue brace at 6 weeks	ROM 0-125° PROM, AAROM, AROM No forced passive flexion	Isometrics, limited closed chain PREs, leg press from 90° to 40° degrees in an eccentric fashion Short crank bike

				<p>No weight bearing with flexion >90°</p> <p>*Avoid active resisted hamstring exercises (due to harvest)</p>
<p>6-12 Weeks</p>	<p>Begin progression to full WB</p> <p>Normalization of gait pattern</p>	<p>D/C PO Brace when good quad control demonstrated</p> <p>Functional Sport Brace</p>	<p>Full symmetrical ROM</p>	<p>Proprioception balance board, single leg stance, other balance maneuvers.</p> <p>Quadriceps isotonic with a proximal pad are allowed in a 90- to 40-degree arc.</p>

				Toward end of phase, squat/step program, wall slides, leg press
12-24 Weeks	Full	Functional Brace	Full	<p>Nordic track or elliptical trainer</p> <p>Regain full LE strength and proprioception</p> <p>Towards end of phase:</p> <p>Jumping and landing</p> <p>aggressively advance agility and functional exercises</p> <p>Begin and progress a</p>

				running program.
<p><i>6-12 Months</i></p> <p><i>RTS Criteria</i></p>	Full	Functional Brace	Full	<p>Symptom free running</p> <p>Confidence with jumping and landing (double and single leg)</p> <p>Pain free activities</p> <p>Ability to confidently perform cutting and lateral movements and decelerate and change directions</p> <p>Functional Sport Test with good results</p>

- Rehabilitation program is delayed with concomitant meniscal repair procedure
 - Avoid any tibial rotation for 8 weeks to protect meniscus
- RTS clearance by M.D. only after a functional sport test is performed and all deficiencies are addressed