

University Orthopaedics/Physical Therapy ACL Reconstruction Rehabilitation Timeline

		<i>Timeline</i>
Brace:	Bledsoe Brace locked at 0 degrees Brace unlocked from 0 - 90 degrees Wean from brace indoors Wean from brace use outdoors	0 - 1 week 1 - 4 weeks 1 - 4 weeks 4 - 6 weeks
Weight Bearing:	WBAT with 2 crutches and extension brace 75% WB with 1-2 crutch(s) 100% WB without assistive device	0 - 1 week 1 - 2 weeks 2 - 3 weeks
PROM:	0 - 90 degrees 0 - 105 degrees Full extension - 120 degrees Full PROM	0 - 1 week 1 - 2 weeks 2 - 3 weeks 6 - 8 weeks
Patellar Mobility:	FAIR Mobility GOOD Mobility Normal Mobility	0 - 2 weeks 2 - 4 weeks 6 - 8 weeks
KT-1000:	Test @ 15lbs. - < 2 mm increase vs. uninvolved Test @ 20lbs. - < 2 mm increase vs. uninvolved Test @ 20lbs. - No change from last test / < 2 mm increase vs. uninvolved Test @ 30lbs. - < 2 mm increase vs. uninvolved Test @ 30lbs. - < 3 mm increase vs. uninvolved	Week 2 Week 4 Week 6 Week 6 Week 12 / 16 / 26 / 52
Muscle Control/ Strength	FAIR quadricep contraction GOOD quadricep contraction No Extension lag present ISOMETRIC STRENGTH TEST (@60 degs knee flexion) Quadricep = 65% of uninvolved Hamstring = 75% of uninvolved ISOKINETIC STRENGTH TEST Quadricep = 75%/80%/85%/100% of uninvolved Hamstring = 85%/95%/100%/100% of uninvolved	End of Week 1 End of Week 2 - 3 Week 3 Week 8 Week 12 / 16 / 26 / 52
Functional Tests:	1) Single Leg Hop for Distance 2) Single Leg Hop for Time 3) Cross over Triple Hop for Distance *** Patient must score >85% on two of three tests ***	Week 12 / 16 / 26 / 52

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University Place Orthopaedics/Physical Therapy
ACL Rehabilitation Protocol
Phase I Weeks 0 -3

Goals	<ul style="list-style-type: none"> • Control inflammation, effusion • FWB without crutches at 3 weeks (Normal Mechanics) • GOOD quadricep control • Protect ligament/ Allow soft tissue healing • ROM 0 - 120 degrees at 3 weeks • KT-1000 < +2mm increase vs. non-involved 	
Evaluation	<ul style="list-style-type: none"> • Pain • Effusion • Quadricep contraction • Patellar Mobility • Joint arthrometer (KT-1000) • ROM • Gait Mechanics 	Goals Controlled Mild Good Good < +2mm translation 0 -120 degs. Normal
Treatment		
<i>Week 1</i>		
3-4 x's/day	ROM Patellar mobilizations Ankle Pumps PROM - off edge of table for flexion and extension (0-90 degs)	2 minutes @ direction x 50 reps x 20 reps/ Hold 10 secs
3-4x's/day	Strengthening Quadricep setting SLR Flexion (if Fair+ quadricep control) (No extensor lag)	x 20 reps/Hold 10 secs x 20 reps/Hold 3 secs
3-4x's/day	Gait Training Crutch training (progress WBAT) Weight Shifts	5 minutes x 20 reps
	Brace (Bledsoe - locked at 0 degrees)	Worn all the time
<i>Week 2-3</i>		
3-4 x's/day	ROM/Flexibility Patellar mobilizations Ankle Pumps PROM - off edge of table for flexion and extension (0-120 degs) Hamstring/Gastrocnemius/ITB Stretches	2 minutes @ direction x 50 reps x 20 reps/ Hold 10 secs x 3 reps/Hold 20 sec
3-4x's/day	Strengthening Quadricep setting SLR (4-way) (PRE- no weight below knee if extension lag present) Multi-angle Isometric Quadriceps/Hamstrings PRE's a) Knee extension (90-40 degs) b) Knee flexion (standing curls) c) Calf Raises Mini squats (0 -30 degs) Initiate stationary bike w/ low resistance when Knee ROM >105 degs. Leg Press (0 - 70 degs) (start 1/2 BW (B)) Wall Sits (at 50 degs)	x 20 reps/Hold 10 secs x 20 reps/Hold 3 secs x 20 reps/Hold 10 secs 3 x 10 reps/Hold 2 sec 3 x 10 reps/Hold 2 sec 3 x 10 reps/Hold 2 sec 3 x 10 reps 10 mins+ 3 x 10 reps/Hold 2 sec x 20 reps/ Hold 10 secs
3 -4 x's/day	Balance/Proprioception Balance Board/BAPS - (two foot balance) (Level 2) Single leg balance on level surface	5 minutes x 5 reps / Hold 20 sec
3-4x's/day	Gait Training Cup Walk	x 5 reps / 10 ft.
	Brace (Bledsoe: ROM 0 - 90 degrees)	Worn all the time
pm	Modalities NMES (for quadricep inhibition) (10 on/20 off) Cold Pack/Interferential Stimulation	12 mins 15 mins

University Place Orthopaedics/Physical Therapy
ACL Rehabilitation Protocol
Phase 2 Weeks 4 - 8

Goals	<ul style="list-style-type: none"> • Control inflammation & effusion to prevent scarring • Normal patellar mobility • Week 8 - Isometric strength test (Quad- 65%/ Hamstring- 75%) • Discharge brace for indoor use by week 4/outdoor use by week 6 • ROM - Full PROM by 8 weeks • KT-1000 < +2mm increase vs. non-involved @ 30 lbs translation 	
Evaluation	<ul style="list-style-type: none"> • Pain • Effusion • Isometric Muscle strength (Cybex 6000) • Patellar Mobility • Joint arthrometer • ROM • Gait Mechanics 	Goals Eliminated None to Mild Q=65% / H.S.= 75% Normal < +2mm translation Full PROM Normal
Treatment		
<i>Week 4 - 8</i> 1-2 x's/day	ROM/Flexibility Patellar mobilizations PROM - wall slides for flexion, prone hang for extension Hamstring/Gastrocnemius/ITB/Quadricep Stretches	2 minutes @ direction x 15 reps/Hold 10 secs x 3 reps/Hold 20 sec
1 -2 x's/day	Strengthening Cable column 4-way hip or SLR 4-way w/ weights PRE's a) Knee extension (90-30 degs) b) Knee flexion (standing curls) c) Calf Raises Leg Press (0 - 70 degs) Wall Sits (at 50 degs) Lateral Step Downs (eccentric 4" and progress height) Initiate Isokinetics at 10 weeks (if KT-1000 < +2mm) Stationary Bike (increase resistance) Stair Master	3 x 10 reps/Hold 2 sec 3 x 10 reps/Hold 2 sec 3 x 10 reps/Hold 2 sec 3 x 10 reps/Hold 2 sec 3 x 10 reps/Hold 2 sec x 20 reps/ Hold 15 secs 2 x 20 reps 15+ minutes 10+ minutes
1 -2 x's/day	Balance/Proprioception Balance Board / BAPS - (two foot balance) (progress height) Single leg balance on trampoline--> to ball toss Blue Band resistive walking (fwd & bwd) (lateral)	5 minutes 3 minutes 7 reps each
1-2 x's/week	Gait Training Hydrotrack	15 mins+
	Brace (Bledsoe: ROM 0 - 120 degrees)	Inside till Good Quad control Outside till 6 weeks
pm	Modalities Cold Pack/Interferential Stimulation	15 mins

University Place Orthopaedics/Physical Therapy ACL Rehabilitation Protocol

Phase 4 Weeks 12 - 16

Goals	<ul style="list-style-type: none"> Functional Hop Tests 85% on 2 of 3 tests Isokinetic Muscle Strength @ 16 weeks (Quad-80%/Hamstring-95%) Return to Sport Specific Training Drills KT-1000 < +3mm increase vs. non-involved @ 30 lbs translation 	
Evaluation	<i>Reassess at 16 wks</i> <ul style="list-style-type: none"> Clinical Examination (ROM, patellar mob., effusion/girth, etc.) Isokinetic Muscle strength (Cybex 6000) Joint arthrometer (KT-2000) Functional Hop Test 	Goals Quad- 80%/HS-95% < +3 mm translation 2 of 3 by 85%
Treatment		
<i>Week 12 - 16</i>	<i>Home/Gym Exercise Program</i>	
3-4 x's/week	Flexibility Hamstring/Gastrocnemius/ITB/Quadricep Stretches	x 3 reps/Hold 20 sec
3-4 x's/week	Strengthening Hip Abduction/Adduction Knee extension (90-30 degs) (Cybex) Knee flexion (Cybex) Calf Raises (with resistance) Leg Press (0 - 70 degs) Lateral Step Downs (eccentric 8-12" height) Treadmill (jog --> run) Stationary Bike (increase resistance) Stair Master	3 x 10-15 reps/Hold 2 sec 3 x 10-15 reps/Hold 2 sec 3 x 10-15 reps/Hold 2 sec 3 x 10-15 reps/Hold 2 sec 3 x 10-15 reps/Hold 2 sec 3 x 10-15 reps/Hold 2 sec 10+ minutes 15+ minutes 15+ minutes
3-4 x's/week	Balance/Proprioception Single leg balance on trampoline or balance board Blue Band resistive jogging (fwd & bwd) (lateral)	3 minutes 10+ reps each
3-4 x's/week	Functional/Sport Specific Drills Lateral two leg hop (4" step) Mini jumps (8" step) (forward/lateral) Single leg hop (involved leg) (forward/lateral) Lateral shuffles Figure of Eight's	3 x 20 reps 3 x 20 reps 10 ft. x 5 reps 20 ft. x 10 reps
prn	Modalities Cold Pack	15 mins

Phase 5 Weeks 16 - 52

Goals	<ul style="list-style-type: none"> Isokinetic Muscle Strength- 100% by 52 weeks Return to Full Sports between 9 - 12 months KT-1000 < +3mm increase vs. non-involved @ 30 lbs translation 	
Evaluation	<i>Reassess at 26 wks</i> <ul style="list-style-type: none"> Clinical Examination Isokinetic Muscle strength (Cybex 6000) Joint arthrometer (KT-2000) <i>Reassess at 52 wks</i> <ul style="list-style-type: none"> Clinical Examination Isokinetic Muscle strength (Cybex 6000) Joint arthrometer (KT-2000) 	Goals Quad- 85%/HS- 100% < +3 mm translation 100% Q/HS < +3 mm translation