University Orthopaedics/Physical Therapy ACL Reconstruction Rehabilitation Timeline

		Timeline
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

Andrew Feldman, M.D. University Place Orthopaedics Todd Wilkowski, PT, OC: University Place Physical Therapy

212-604-1340 212-604-1316

University Place Orthopaedics/Physical Therapy ACL Rehabilitation Protocol

Phase I Weeks 0 -3

Goals	Control inflammation, effusion	
	FWB without crutches at 3 weeks (Normal Mechanics)	
	1. GOOD diagriceb control	
	Protect ligament/ Allow soft tissue healing	
	• ROM 0 - 120 degrees at 3 weeks	
	KT-1000 < +2mm increase vs. non-involved	
C		Goals
Evaluation	· Pain	Controlled
	• Effusion	Mild
	Quadricep contraction	···-
	Patellar Mobility	Good
	Joint arthrometer (KT-1000)	Good
	ŀ ROM	< +2mm translation
	Gait Mechanics	0 -120 degs.
Treatment		Normal
		ľ
Week 1		
	ROM	. ,,
3-4 x's/day	Patellar mobilizations	
	Ankle Pumps .	2 minutes @ direction
-	PROM - off edge of table for flexion and extension (0-90 degs)	x 50 reps
•	extension (0-90 degs)	× 20 reps/ Hold 10 secs
	Strengthening	
3-4x's/day	Quadricep setting	
-	SLR Flexion (if Fair+ quadricep control) (No extensor lag)	x 20 reps/Hold 10 secs
	(No extensor lag)	x 20 reps/Hold 3 secs
3-4x's/day	Gait Training	,
	Crutch training (progress WBAT)	
	Weight Shifts	5 minutes
	YVeight Shints	x 20 reps
	Brace (Bledsoe - locked at 0 degrees)	7 20 10рд
	idexed at 0 degrees)	Worn all the time
Week 2-3		
	ROM/Flexibility	
3-4 x's/day	Patellar mobilizations	
	Ankle Pumps	2 minutes @ direction
	PROM - off edge of table for flexion and extension (0-120 degs)	x 50 reps
	Hamstring/Gastrocnemius/ITB Stretches	x 20 reps/ Hold 10 secs
	5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	x 3 reps/Hold 20 sec
3 4.d- r l	Strengthening	
3-4x's/day	Quadricep setting	
	SLR (4-way) (PRE- no weight below knee if extension lag present)	x 20 reps/Hold 10 secs
	1 man angle roometric Quatricens/Hametronge	x 20 reps/Hold 3 secs
	PRE's a) Knee extension (90-40 degs)	x 20 reps/Hold 10 secs
	b) Knee flexion (standing curls)	3 x 10 reps/Hold 2 sec
	c) Calf Raises	3 x 10 reps/Hold 2 sec
	Mini squats (0'-30 degs)	3 x 10 reps/Hold 2 sec
	Initials stationers bits at the	3 x 10 reps
	Initiale stationary bike w/ low resistance when Knee ROM >105 degs.	10 mins+
	13 · · · · · · · · · · · · · · · · · ·	
	Wall Sits (at 50 degs)	3 x 10 reps/Hold 2 sec
	-	x 20 reps/ Hold 10 secs
A whater-	Balance/Proprioception	
-4 x's/day	Balance Board/BAPS - (two foot balance) // gval 2)	1
	Single leg balance on level surface	5 minutes
4.4-11	·	x 5 reps / Hold 20 sec
-4x's/day	Gait Training	-
	Cup Walk	
	-	× 5 reps / 10 ft.
	Brace (Bledsoe: ROM 0 - 90 degrees)	Worn all the time
	M- 4-114	, vom an me ume
	INIOGAIITIES	
n	Modalities NMES (for quadriceo inhibition) (10 co/20 cfc	
m 	NMES (for quadricep inhibition) (10 on/20 off) Cold Pack/Interferential Stimulation	12 mins

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Phase 2 Weeks 4 - 8

Goals	Control inflammation & effusion to prevent scarring	
-	Normal patellar mobility	
÷	Week 8 Isometria strongth to the	
	Week 8 - Isometric strength test (Quad- 65%/ Hamstring- 75%)	
	Discharge brace for indoor use by week 4/outdoor use by week 6 ROM Full RROM by 2 week 6	
	I. VOM - Edil Elvoid by 8 Meeks	
	KT-1000 < +2mm increase vs. non-involved @ 30 lbs translation	
Evaluation	• Pain	Goals
	Effusion	Eliminated
	Isometric Muscle strength (Cybex 6000)	None to Mild
	Patellar Mobility	Q=65% / H.S.= 75%
	Joint arthrometer	Normal
	• ROM.	< +2mm translation
	Gait Mechanics	Full PROM
	- Gait Mechanics	Normal
Treatment	·	
Week 4 - 8		,
	ROM/Flexibility	
1-2 x's/day	Patellar mobilizations	
	PROM - wall slides for flexion, prone hang for extension	2 minutes @ direction
	Hamstring/Gastrocnemius/ITB/Quadricep Stretches	x 15 reps/Hold 10 secs
•	3. Section as A Directnes	x 3 reps/Hold 20 sec
	Strengthening	
1 -2 x <u>'</u> s/day	Cable column 4-way hip or SLR 4-way w/ weights	la
	PRE's a) Knee extension (90-30 degs)	3 x 10 reps/Hold 2 sec
	b) Knee flexion (standing curls)	3 x 10 reps/Hold 2 sec
	c) Calf Raises	3 x 10 reps/Hold 2 sec
	Leg Press (0 - 70 degs)	3 x 10 reps/Hold 2 sec
	Wall Sits (at 50 degs)	3 x 10 reps/Hold 2 sec
	Lateral Stee Downs (and)	x 20 reps/ Hold 15 secs
	Lateral Step Downs (eccentric 4" and progress height)	2 x 20 reps
	Initiate Isokinetics at 10 weeks (if KT-1000 < +2mm)	- K 25 15p5
	Stationary Bike (increase resistance)	15+ minutes
	Stair Master	10+ minutes
	Ralance/Drensie	10 · minutes
l -2 x's/day	Balance/Proprioception	
x 0/44y	Balance Board / BAPS - (two foot balance) (progress height)	5 minutes
) Oligie leg balance on trampoline> to hall toss	3 minutes
	Blue Band resistive walking (fwd &bwd) (lateral)	7 reps each
	·1	1
-2 x's/week	Gait Training	
	Hydrotrack	
		15 mins+
	Brace (Bledsoe: ROM 0 - 120 degrees)	
		Inside till Good Quad contro
	Modalities	Outside till 6 weeks
rn	Cold Pack/Interferential Stimulation	1
	- Carried Carr	15 mins

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Phase 3 Weeks 8 - 12

Goals	Prepare patient for independent exercise program	
	Normal ROM and patellar mobility	
	• Week 12 - TEST Isokinetic strength test (Quad- 75%/ Hamstring- 85%)	· ·
	Functional/ sport specific training drills	
	KT-1000 < +3mm increase vs. non-involved @ 30 lbs translation	ł
		Goals
Evaluation	Effusion	Eli t
	Isokinetic Muscle strength (Cybex 6000)	Eliminated
	Patellar Mobility/ROM	Q=75% / H.S.= 85%
	Joint arthrometer	Normal
	Balance / Proprioception	< +3 mm translation Good
Treatment		,
Week 8 -12		
	ROM/Flexibility	
1-2 x's/day	Patellar mobilizations	
	PROM - wall slides for flexion, prone hang for extension	2 minutes @ direction
	Hamstring/Gastrocnemius/ITB/Quadricep Stretches	x 15 reps/Hold 10 secs
	5 Additional Strategy	x 3 reps/Hold 20 sec
	Strengthening	
3-4 x's/week	Cable column 4-way hip	
	PRE's a) Knee extension (90-30 degs)	3 x 10-15 reps/Hold 2 sec
	b) Knee flexion (standing curls)	3 x 10-15 reps/Hold 2 sec
	c) Calf Raises	3 x 10-15 reps/Hold 2 sec
	Leg Press (0 - 70 degs)	3 x 10-15 reps/Hold 2 sec
	Lateral Step Downs (eccentric 8" height)	3 x 10-15 reps/Hold 2 sec
	Isokinetics (spectrum 60 deg/sec> 300 deg/sec)	3 x 10-15 reps/Hold 2 sec
	Treadmill (progress to fast walking speed)	2 x 10-12 reps @ speed
	Stationary Bike (increase resistance)	10+ minutes
•	Stair Master	15+ minutes
	· ·	15+ minutes
	Balance/Proprioception	
3-4 x's/week	Balance Board / BAPS - (two foot balance) (eyes closed)	F
	Single leg balance on trampoline or halance board	5 minutes
	Blue Band resistive fast walking (fwd &bwd) (lateral)	3 minutes
		7 reps each
	Functional/Sport Specific Drills	1
3-4 x's/week	Lateral two leg hop	
	Mini jumps (4" step) (Forward/Lateral)	3 x 20 reps
	Single leg hop in place (involved leg)	3 x 20 reps
	· ·	3 x 20 reps
-2 x's/week	Gait Training/Endurance	
	Hydrotrack (light jog)	15 min.
	Banda tata	15 mins+
rn	Modalities Cold Deals	
···	Cold Pack	15 mins

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Phase 4 Weeks 12 - 16

-	Phase 4 Weeks 12 - 16	
Goals	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	
	At 1995 1 Shift increase vs. flori-involved @ 30 lbs translation	
Evaluation	Reassess at 16 wks	Goals
	 Clinical Examination (ROM, patellar mob.,effusion/girth, etc.) Isokinetic Muscle strength (Cybex 6000) 	-*
	Joint arthrometer (KT-2000)	Quad- 80%/HS-95%
	• Functional Hop Test	< +3 mm translation
	- Literatura Prost	2 of 3 by 85%
Treatment		
Week 12 - 16 ·	Home/Gym Exercise Program	
	Flexibility	
3-4 x's/week	Hamstring/Gastrocnemius/ITB/Quadricep Stretches	x 3 reps/Hold 20 sec
	Strengthening	
3-4 x's/week	Hip Abduction/Adduction	
	Knee extension (90-30 degs) (Cybex)	3 x 10-15 reps/Hold 2 sec
	Knee flexion (Cybex)	3 x 10-15 reps/Hold 2 sec
	Calf Raises (with resistance)	3 x 10-15 reps/Hold 2 sec
	Leg Press (0 - 70 degs)	3 x 10-15 reps/Hold 2 sec
9	Lateral Step Downs (eccentric 8-12" height)	3 x 10-15 reps/Hold 2 sec
	Treadmill (jog> run)	3 x 10-15 reps/Hold 2 sec
	Stationary Bike (increase resistance)	10+ minutes
	Stair Master	15+ minutes
		15+ minutes
	Balance/Proprioception	l i
3-4 x's/week	Single leg balance on trampoline or balance board	
	Blue Band resistive jogging (fwd &bwd) (lateral)	3 minutes
	,	10+ reps each
	Functional/Sport Specific Drills	•
3-4 x's/week	Lateral two leg hop (4" step)	3 × 30
	Mini jumps (8" step) (forward/lateral)	3 x 20 reps
	Single leg hop (involved leg) (forward/lateral)	3 x 20 reps
	Lateral shuffles	10 ft. x 5 reps
	Figure of Eight's	20 ft. x 10 reps
	Modalities	
orn	Cold Pack	
		15 mins

Phase 5 Weeks 16 - 52

Goals	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	Reassess at 26 wks Clinical Examination Isokinetic Muscle strength (Cybex 6000) Joint arthrometer (KT-2000)	Goals Quad- 85%/HS- 100% < +3 mm translation
	Reassess at 52 wks Clinical Examination Isokinetic Muscle strength (Cybex 6000) Joint arthrometer (KT-2000)	100% Q/HS < +3 mm translation