



**Stadium
Sports Physiotherapy**

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The “Cross ACL Bracing Protocol”

Week	Brace ROM & Criteria for Progression	Aims	Physio treatment	Standard Exercises	Advanced exercises options (if coping with standard)	Functional and Cardio
1-4	<ul style="list-style-type: none"> - Locked 90° NWB with crutches. - No NSAIDs medications - No aspiration injections of knee - Start Xarelto anti-coagulation medication 10mg daily (taken at night) to minimise risk of DVT and stay on this medication from day 1 for 8weeks. 	<ul style="list-style-type: none"> - Maintain knee flexion at 90° in brace 24/7. - ACL healing phase NB. Any excessive movement whilst in the brace can adversely affect potential healing of the ACL. Small movements in the brace is ok. - Minimize local and global muscle atrophy. - Control swelling and pain 	<ul style="list-style-type: none"> - Manual soft tissue therapy weekly, while maintaining 90° knee flexion (Brace can come off for physio) - Cryotherapy is discouraged. - Electrical Muscle stimulator 	<ul style="list-style-type: none"> - Calf TheraBand plantarflexion and seated calf raises to mitigate the risk of DVT - Quadriceps and hamstring co-contractions. - Glut bridges - Hip abduction and extension - Hip adductor isometrics - Contralateral limb; single leg press, leg extension, hamstring curls, calf raise, core activation. 	<ul style="list-style-type: none"> - Isometric leg press (<body weight) - Isometric wall sits - Seated calf raise machine - Wall sit calf raises - Isometric hamstring curls - Hip adductor, abductor, extension, flexion TheraBand - Leg lowers (abdominals) - Birddog 	<ul style="list-style-type: none"> - Upper body gym. - Arm crank - Seated ski erg, battle ropes, boxing - Swimming with brace on

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5-6	<p>Week 5= 60°-90° Week 6= 45°-90° NWB with crutches</p> <p>Continue Xarelto 10mg daily (taken at night).</p>	<ul style="list-style-type: none"> - Minimize local and global muscle atrophy. - Maintain specified knee ROM - ACL remodeling phase. Slow, steady and controlled exercises without fast movements and repetition max range of >8 reps per set 	<ul style="list-style-type: none"> - Manual therapy weekly, exercises in specified range (Brace can come off for physio) 	<ul style="list-style-type: none"> - Quadriceps and hamstring co-contractions at varying angles. - Continue Calf TheraBand plantarflexion and seated calf raises to mitigate risk of DVT. - Knee range of motion exercises. - Weight transfers - Wall squats/holds (Week 5=60°, Week 6= 45°). - Leg press double leg+/- Single Leg (available range and weight close to body weight Double and Single leg <40% of bodyweight). - Body weight Squats within brace limits. - Calf raises - Hip exercises with ankle weights or TheraBand - Hamstring and gluteal bridges. - Continue contralateral limb strength 	<ul style="list-style-type: none"> - Calf raise machine (single leg) - Squats with light weights - Hamstring curl machine - Total hip machine - Single leg bridges 	<ul style="list-style-type: none"> - Upper body gym. - Arm crank - Seated ski erg, battle ropes, boxing - Swimming with brace on
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7-8	<p>Week 7= 30°-FULL FLEXION (WBAT)</p> <p>Week 8= 20°-FULL FLEXION° (Full WB)</p> <p>Continue Xarelto 10mg daily (taken at night)</p>	<ul style="list-style-type: none"> - Minimize local and global muscle atrophy. - Maintain specified knee ROM -ACL remodelling 	<ul style="list-style-type: none"> - Manual therapy weekly, exercises in specified range - Gait retraining. 	<ul style="list-style-type: none"> - As above plus; - Begin stationary bike - Leg press single leg (available range). - Weighted squats - Hamstring curl machine - Standing calf raises 	<ul style="list-style-type: none"> - Hamstring curls single leg - Deadlifts - Crab/monster walks - Lunges - Standing weighted calf raises -Balance on stable surface 	<ul style="list-style-type: none"> -Exercise bike -Arm crank - Standing ski erg, battle ropes, boxing - Swimming with brace on
9	<p>Week 9= 10°-FULL FLEXION</p> <p>Cease Xarelto medication in week 9 when patient is now weight bearing without crutches.</p>	<ul style="list-style-type: none"> - Maintain specified knee ROM - Increase knee range of motion. - Increase muscle strength of lower limbs - Improve proprioception. -ACL remodelling 	<ul style="list-style-type: none"> - Manual therapy weekly, exercises in specified range - if lag of >10 ° off desired extension gentle passive extension exercises - Gait retraining. 	<ul style="list-style-type: none"> - Knee range of motion exercises - Leg press (single leg) - Weighted squats and lunges - Bridges- hamstring and gluteal - Crab walks/ monster walks - Static balance exercises - Standing and seated calf raise machine 	<ul style="list-style-type: none"> - Balance on unstable surfaces 	<ul style="list-style-type: none"> -Exercise bike-intervals -Arm crank - Standing ski erg, battle ropes, boxing - Swimming with brace on

10-12	Unrestricted ROM brace Full weight bearing END OF WEEK 12- Follow-up MRI and Specialist Doctor clinical review.	<ul style="list-style-type: none"> - Brace off for sleep - Increase knee range of motion. - Increase muscle strength. - Improve proprioception. 	<ul style="list-style-type: none"> - Weekly manual therapy - Gait retraining. - Week 12 post brace physical testing 	<ul style="list-style-type: none"> - Continue strengthening quad/hamstring calf etc.. - Addition of single leg squatting/Bulgarian squats - Dynamic balance exercises - Single leg RDL's 	<ul style="list-style-type: none"> - Sport specific balance and strengthening exercises 	<ul style="list-style-type: none"> - Exercise bike/spin class - Standing ski erg, battle ropes, boxing - Swimming with brace off
13-14	Removal of brace Full weight bearing (Brace/ Genutrain-S for high-risk situations where the knee might be accidentally injured)	<ul style="list-style-type: none"> - Increase muscle strength. - Improve proprioception. 	<ul style="list-style-type: none"> - Weekly manual therapy - Gait retraining. 	<ul style="list-style-type: none"> - Build towards running - Light Skipping - Jogging on spot/mini tramp 		<ul style="list-style-type: none"> - Elliptical/cross trainer
15-16	Criteria for running: <ul style="list-style-type: none"> - No effusion - Full ROM - Quad and hamstring strength >80% LSI (leg press/hamstring curl). 	<ul style="list-style-type: none"> - Increase muscle strength. - Improve proprioception - Introduce Running 	<ul style="list-style-type: none"> - Manual therapy - Running analysis - Consider use of ALTER-G treadmill to re-introduce running. 	<ul style="list-style-type: none"> - Straight line running only 		

	-SEBT >90% LSI (Melbourne return to sport criteria).					
17	Criteria for faster running: - Completion of slower running with no pain or effusion	- Increase muscle strength. - Improve proprioception - Introduce faster running -Introduce hopping	- Manual therapy as required	- Faster running - SL hopping drills -Jumping/landing drills		
18	Criteria for agility: - Adequate control with jumping and landing, double and single leg - Completion of faster straight line running with no pain or effusion. (Melbourne return to sport criteria)	- Increase muscle strength. - Improve proprioception - Introduce Agility	- Manual therapy as required	- Agility - Introduce multidirectional hopping/landing drills		
20	No Brace Begin training if all criteria of Melbourne return	- 6 weeks of training	- Manual therapy as required	Return to training if; - Single leg hop 90% of other side - Knee extension strength		

	to sport are met.			<p>90% of other side</p> <ul style="list-style-type: none"> - Hamstring 90% of other side - Good dynamic knee control on single leg land from step - SEBT 90% of other side 		
26 to 9 mths	<p>No Brace</p> <p>Follow-up MRI and clinical review at 9 or 12 months after successfully passed Return to play testing</p>	<p><u>Return to play</u></p> <p>NOTE: Depending on each individual patient's progress in their rehabilitation each patient's "Return to play" and full activities is estimated to take anywhere between 9-12 months from the date of injury for high demand sports.</p>		<p>Return to play (minimum requirements, add sports specific tests/contact);</p> <ul style="list-style-type: none"> - If SEBT 95% of other side - Triple Hop/lateral hop/single hop 90% of other side - Single leg press 1.8x BW <p>Pass criteria for Melbourne return to play testing</p>		