



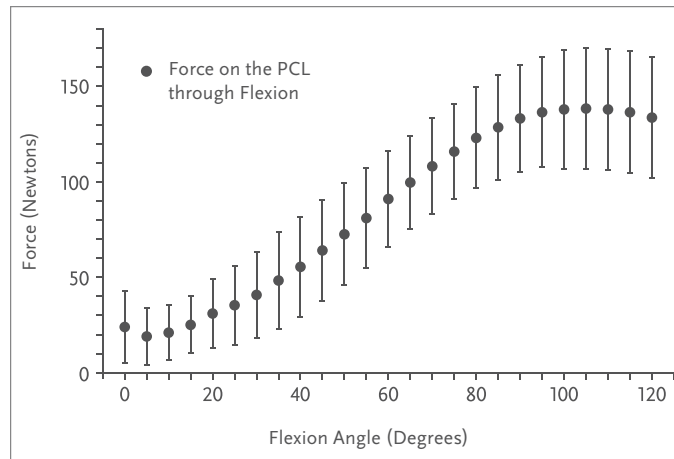
REBOUND® PCL

The world's first
dynamic PCL brace



PCL INJURIES & THE IMPORTANCE OF DYNAMIC LOADING

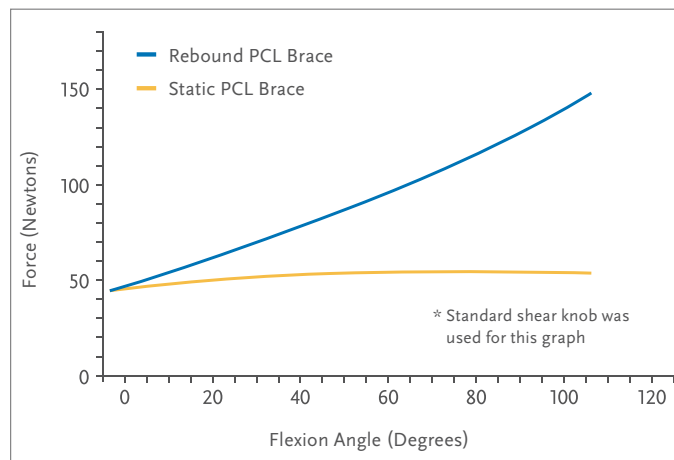
The posterior cruciate ligament (PCL), compared to the anterior cruciate ligament (ACL), has the intrinsic ability to heal and regain continuity after an injury¹. The PCL experiences variable tensile forces during knee flexion². Insufficient healing after a PCL rupture can lead to significant pathologies, such as chronic knee pain or knee OA².



Graph adapted from Marklof et al³ and Jansson et al⁴

In a PCL deficient knee, gravity and the forces on the joint from the hamstring muscles can potentially cause the tibia to be positioned in a posterior subluxed location relative to the femur (posterior sag)¹. Healing of the PCL in an elongated position can lead to chronic instability and disability. Therefore, anatomically correct positioning during conservative or surgical rehabilitation is important.

Current PCL braces either act as a barrier to normal motion or apply a static load. Therefore we developed the custom made Rebound PCL brace to apply a physiologically correct dynamic force to the PCL during rehabilitation.



Comparison of the posterior tibial load provided by a static PCL brace and the dynamic force of the Rebound PCL brace. Graph adapted from LaPrade et al⁵



FUNCTIONAL HEALING™ – WHERE MOBILITY MEANS RECOVERY

Our expertise in Injury Solutions has driven us to take the next step forward by developing indication-specific products which are designed to optimize healing while maintaining function and mobility.

The Functional Healing icon is Össur's seal of approval for more effective, less painful healing, accompanied by improved mobility.

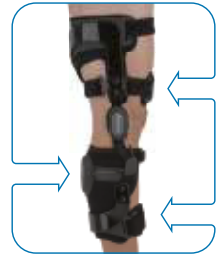
REBOUND® PCL

The world's first dynamic PCL brace

The custom made Rebound PCL brace is designed to apply a physiologically correct, dynamic force, optimum for rehabilitation of posterior cruciate ligament (PCL) ruptures, whether during functional (non-surgical) treatment or post-surgical reconstruction.

Dynamic force

The dynamic load of the Rebound PCL on the tibia is generated by applying an anterior directed dynamic force on the calf area, and opposing counter forces on the anterior aspect of the leg.



Specific load adaptation

The Rebound PCL allows for specific load adaptation according to the patient's individual anatomy and rehabilitation related requirements.



Reduced load on the PCL

The Dynamic Tension System™ (DTS) increases the load on the tibia as the knee goes through flexion, providing an Anterior Drawer force that reduces the load on the PCL, allowing it to heal.



Nothing measures like SmartMeasure.™

An app for iPhone® & iPad® designed to measure custom knee braces, SmartMeasure is Össur's most intuitive, efficient and accurate way to measure for any Össur custom knee brace, including the Rebound PCL brace.



Available on the
App Store

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OPTIMIZATION OF REHABILITATION FOLLOWING PCL RUPTURES

The Rebound PCL brace is designed to help optimize the healing process following posterior cruciate ligament (PCL) ruptures, both during functional (non-surgical) and post-surgical rehabilitation.

PCL RUPTURE - FUNCTIONAL (NON-SURGICAL) REHABILITATION PROTOCOL¹

| Item | Phase I (1–6 weeks) | Phase II (7–12 weeks) | Phase III (13–18 weeks) | Phase IV (> 18 weeks) |
|------------------|--|--|-------------------------------------|----------------------------------|
| Rebound PCL | Day & night | Day & night | Discontinue use | |
| ROM [Ext./Flex.] | <ul style="list-style-type: none"> • 0/0/90 week 1-2 • No limitations > week 2 • Avoid tibial hyperextension and post. translation | <ul style="list-style-type: none"> • No limitations • Avoid tibial hyperextension and post. translation | No limitations | No limitations |
| Weight Bearing | PWB week 1-2 PWB → FWB | FWB | FWB | |
| Physio | <ul style="list-style-type: none"> • PRICE • Stretching hamstrings • Gastrocnemius/activation of quadriceps | <ul style="list-style-type: none"> • PRICE • Strengthening of hamstring and quads up to 70° flexion • Proprioceptive and balance exercise | Prepare for sport specific activity | Sports specific agility exercise |

PCL RUPTURE - REHABILITATION AFTER SURGICAL RECONSTRUCTION¹

| Item | Phase I (1–6 weeks) | Phase II (7–12 weeks) | Phase III (13–18 weeks) | Phase IV (19–24 weeks) | Phase V (25–36 weeks) |
|------------------|---|--|--|---|--|
| Rebound PCL | Day & night | Day & night | Use for all activities | Use for all activities | Wean off as tolerated |
| ROM [Ext./Flex.] | <ul style="list-style-type: none"> • 0/0/90 week 1-2 • > Week 2: Progression to full ROM as tolerated • Avoid tibial hyperextension and post. translation | <ul style="list-style-type: none"> • No limitations • Avoid tibial hyperextension and post. translation | No limitations | No limitations | No limitations |
| Weight Bearing | Non weight bearing | PWB → FWBAT | FWB | FWB | FWB |
| Physio | <ul style="list-style-type: none"> • PRICE • Gastrocnemius stretching • Activation of quadricep | <ul style="list-style-type: none"> • PRICE • Gastrocnemius stretching • Light hamstring stretching • Squat progression | <ul style="list-style-type: none"> • Proprioceptive and balance exercises • Progressive weight-bearing strength, incl. progressive hamstring strengthening | <ul style="list-style-type: none"> • Continue OKC and CKC strength and endurance work with progressive weight • Initiate initial sport-specific drills near end of this phase | <ul style="list-style-type: none"> • Continue strength and endurance exercises and OKC for quads and hamstrings • Straight line jogging progression • Sport-specific drills |

* ROM - Range of motion, PWB - Partial weight bearing, FWBAT - Full weight bearing as tolerated, FWB - Full weight bearing, OKC - Open kinetic chain, CKC - Closed kinetic chain, PRICE - Protection Rest Ice Compression Elevation,

REBOUND PCL ORDERING INFORMATION

| Description | Right | Left |
|-------------|-------------|-------------|
| Rebound PCL | B-124501154 | B-124501155 |

*Order using Össur's SmartMeasure iOS App

THE DATA

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2. Strobel MJ, Weiler A, Schulz MS, Russe K, Eichhorn HJ. Arthroscopic evaluation of articular cartilage lesions in posterior-cruciate-ligament-deficient knees. *Arthroscopy* [Internet]. 2003 Mar [cited 2014 Dec 11];19(3):262–8. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12627150>
3. Markolf KL, Feeley BT, Tejwani SG, Martin DE, McAllister DR. Changes in knee laxity and ligament force after sectioning the posteromedial bundle of the posterior cruciate ligament. *Arthroscopy*. 2006 Oct; 22(10):1100–1106. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17027408>
4. Jansson KS, Costello KE, O'Brien L, Wijdicks CA, Laprade RF. A historical perspective of PCL bracing. *Knee Surg Sports Traumatol Arthrosc* [Internet]. 2013 May [cited 2014 Dec 11];21(5):1064–70. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/22622778>
5. LaPrade RF, Smith SD, Wilson KJ, Wijdicks CA. Quantification of functional brace forces for posterior cruciate ligament injuries on the knee joint: an in vivo investigation. *Knee Surg Sports Traumatol Arthrosc* [Internet]. 2014 Aug 22 [cited 2014 Dec 11]; Available from: <http://www.ncbi.nlm.nih.gov/pubmed/25145947>

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