

# 4-Points-of-Leverage™ System

Through the 4-Points-of-Leverage rigid cuff and strap configuration, a posterior force is applied to the tibia preventing anterior movement.

- Significantly reduces ACL strain\*
- Provides a constant dynamic load
- 4-Points-of-Leverage is used on the DEFIANCE®, DEFIANCE® III, DEFIANCE® III FEMALE FOURCE, ARMOR, 4TITUDE®, FEMALE FOURCE™, LEGEND™, and ACL EVERYDAY braces



## Point of Leverage #1

The femur is anchored by a cuff placed at the top of the anterior thigh.

## Point of Leverage #2

The tibia is anchored by a cuff placed at the bottom of the posterior calf.

## Point of Leverage #3

A strap across the back of the lower thigh pushes the femur anteriorly.

## Point of Leverage #4

A strap placed on the anterior tibia applies an active constant load to prevent anterior tibia translation.

*The 4-Points-of-Leverage System is for ACL only. For a PCL brace, the points of leverage are reversed, switching the anterior and posterior straps on both the calf and thigh to generate the constant anterior force required over the posterior aspect of the tibia.*

\* Reference Braden C. Fleming, PhD et al study, "The Influence of Functional Knee Bracing on the Anterior Cruciate Ligament Strain Biomechanics in Weightbearing and Nonweightbearing Knees".

# FourcePoint™ Technology

*The only hinge clinically proven to protect the ACL*

**FourcePoint** hinge technology works to enhance DonJoy's **4-Points-of-Leverage** design by dampening knee joint extension, which improves the mechanical performance of the brace while reducing shear forces at the knee. The FourcePoint hinge utilizes a leaf spring mechanism that gradually applies resistance during knee extension, reducing time spent in the "at risk" position. The resistance, available in five (5) different levels, engages in the last 25° of extension (relative to the extension stop).

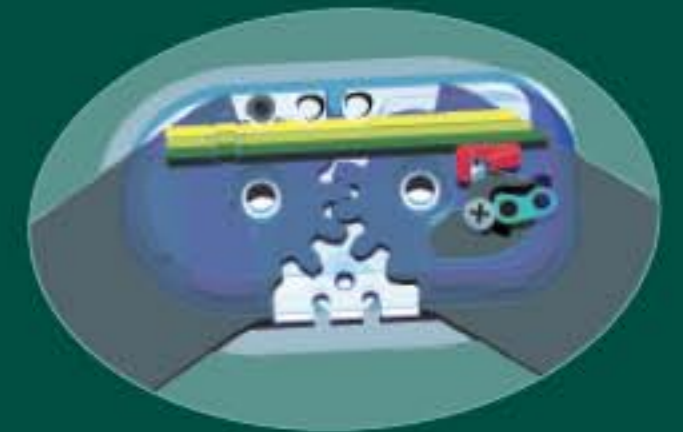
The resistance serves three (3) critical roles:

- ▶ Reduces the time spent near full extension or in the "at risk" position
- ▶ Increases the posterior load applied by the brace on the tibia to prevent anterior tibial translation
- ▶ Eliminates the extension shock felt when a patient extends into a 10° standard rigid stop

Aggressive quadriceps activities or eccentric quad contractions can injure the ACL or permanently stretch out an ACL graft (DeMorat et al., AJSM, 2004). **FourcePoint** technology is clinically proven to control joint range-of-motion by increasing knee flexion angles during landing, resulting in decreased anterior shear forces on the ACL by 9%-13% (Garrett and Yu, AJSM, 2004).

The **FourcePoint** hinge combined with the **4-Points-of-Leverage** cuff and strapping system provides the most widely accepted and clinically proven solution for protecting a healing ACL graft, providing stability to an unstable ACL deficient knee or for prophylactic use.

FourcePoint Flexion



FourcePoint Extension



**NEW!** LoPro FourcePoint Hinge (custom only)



FourcePoint Hinge (Patient-Ready)

