



# Levitation<sup>®2</sup>

## TRI-COMPARTMENT UNLOADER™

Many patients with knee osteoarthritis (OA) experience increased pain during activities where the knee is bent and bearing weight, such as climbing or descending stairs, rising from a seated position, walking uphill, squatting, and many sports. During these activities, the compressive forces in the knee can increase up to sevenfold. The Levitation<sup>®2</sup> Tri-Compartment Unloader is a unique solution for such patients. By absorbing bodyweight into a patented spring-loaded hinge during weight-bearing knee flexion, Levitation can reduce the total load placed on the knee joint by up to 64%.<sup>1</sup> During leg extension, the spring-loaded hinge provides dynamic extension assistance (or “knee extension assist”) enhancing mobility, muscle strength and neuromuscular retraining.<sup>2</sup>

### INDICATIONS

- Patellofemoral knee osteoarthritis
- Multi-compartment knee osteoarthritis
- Joint pain that increases with knee flexion while weight bearing

### KEY BENEFITS

- Combined tibiofemoral and patellofemoral unloading<sup>1</sup>
- Powerful, customizable knee extension assist<sup>1,2</sup>
- Promotes increased activity and muscle strengthening<sup>1,2</sup>

- 95% of users report reduced pain<sup>3</sup>
- Up to 64% reduction in joint load<sup>3</sup>
- 85% of users report improved function and mobility<sup>3</sup>

### KEY FEATURES

- Spring-loaded hinge
- Adjustable force-output
- Patented no-slip suspension system



### COMPARISON: LEVITATION VS. UNI-COMPARTMENT OFFLOADER

	Functional Stabilization	Joint Alignment	Patellofemoral Unloading	Tri-Compartment Unloading	Knee Extension Assistance	Immediate Pain Reduction	Rapid Functional Improvement
Levitation <sup>®2</sup>	✓	✓	✓	✓	✓	✓	✓
Uni-Compartment Offloader	✓	✓	✗	✗	✗	✗	✗

## THE WORLD'S FIRST TRI-COMPARTMENT UNLOADER™

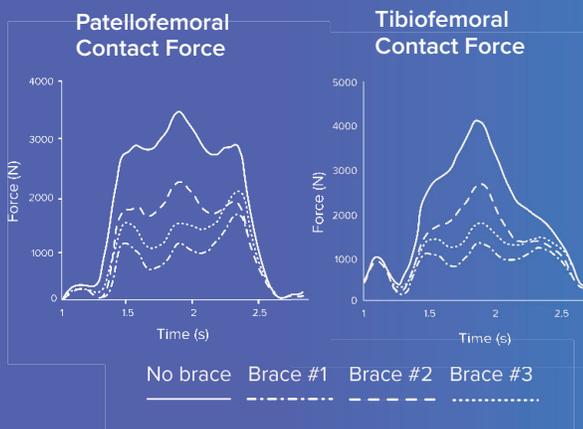
Levitation provides powerful, customizable knee extension assistance and flexion support to unload all three knee compartments simultaneously.

### TRI-COMPARTMENT UNLOADING

Weight-loss and joint load reduction are considered best practice in the non-surgical management of knee OA.<sup>4</sup> Levitation's powerful, customizable knee extension assist provides immediate tri-compartment unloading by reducing the tensile forces placed on the knee joint by the quadriceps.<sup>1</sup> This offers rapid pain reduction and enhanced strength, improving patients' mobility so they can pursue an active lifestyle and rebuild their unassisted natural strength.<sup>1,2</sup>

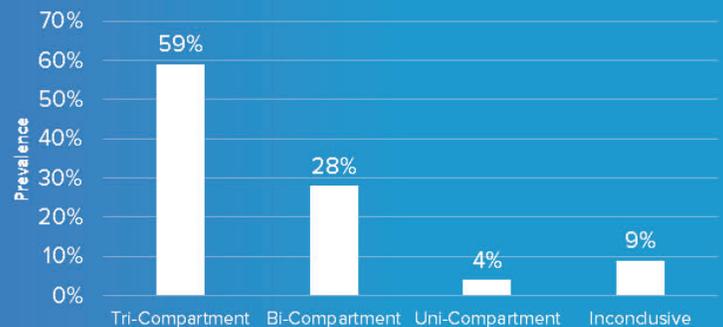
### LEVITATION JOINT LOAD STUDY

A recent independent study investigated the effect of Levitation during a deep knee bend. It showed a joint load reduction of up to 64%.<sup>1</sup> Braces 1 to 3 represent different force outputs of Levitation. All reductions were statistically significant ( $p < .05$ ).<sup>1</sup> Time is from the start to the end of a deep knee bend.



### PREVALENCE OF MULTI-COMPARTMENT OA

Unlike conventional offloader knee braces, Levitation significantly reduces forces in all three compartments of the knee. Offloader braces can provide effective relief for patients with uni-compartment OA affecting the tibiofemoral joint.<sup>5</sup> However, less than 4% of knee OA cases are restricted to a single tibiofemoral compartment, while the vast majority of patients exhibit bi- or tri-compartmental disease.<sup>6</sup>



### References

1. McGibbon, C. & Mohamed, A. Knee load reduction from an energy storing mechanical brace. Canadian Society for Biomechanics (2018).
2. Cherian, J. J. et al. Strength and Functional Improvement Using Pneumatic Brace with Extension Assist for End-Stage Knee Osteoarthritis: A Prospective, Randomized trial. J. Arthroplasty 30, 747-753 (2015).
3. Based on a retrospective systematic survey of Levitation<sup>®</sup> users with knee osteoarthritis.
4. McAlindon, T.E. et al. OARSI guidelines for the non-surgical management of knee osteoarthritis. Osteoarthritis and Cartilage, Volume 22, Issue 3, 363 - 388 (2014).
5. Ramsey, D. & Russel, M. Unloader braces for medial compartment knee osteoarthritis: implications on mediating progression. Sport Health. 1 (5), 416-426 (2009).
6. Heekin, R & Fokin, A. Incidence of Bicompartamental Osteoarthritis in Patients Undergoing Total and Unicompartmental Knee Arthroplasty: Is the Time Ripe for a Less Radical Treatment? J. Knee Surgery 27, 77-81 (2014).

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