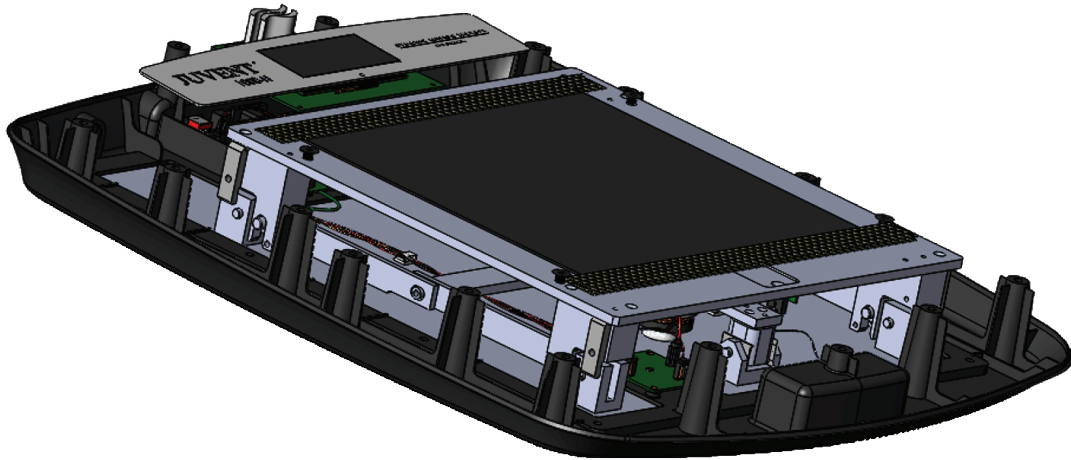


CLINICAL BENEFITS OF JUVENT'S MICRO-IMPACT PLATFORM®



BIOMECHANICAL SIGNALS AND BONE MORPHOGENESIS:

Beyond physical support, the skeletal system serves many physiological functions such as endocrine, stem cell production hematopoietic and mesenchymal (osteo-, chondro-, adipo-, angio, neuro, and myogenic). Proper skeletal health is vital for physical strength and proper maintenance of the endocrine and circulatory systems. Developing optimal bone mineral density (BMD) during childhood and adolescence is essential to establishing sufficient bone mass to support and maintain skeletal health throughout life.

To date, prevention of bone loss has been approached principally through nutrition, vitamin supplements, and pharmacologic intervention. New research shows the developing skeleton can modify its structure and strength in response to biomechanical loading induced by functional activity¹⁻². As a supplement to traditional exercise, brief daily exposure to low-magnitude mechanical stimuli (LMMS) has demonstrated potential as an adjunct bone therapy with anabolic and anti-resorptive properties³. LMMS involves standing on a pure linear displacement platform that transmits vertical accelerations below 1g to weight-bearing bones⁴. These mechanical signals are anabolic to the skeletal system by biasing mesenchymal stem cell populations toward osteoblastogenesis and improved bone mineralization⁵. Animal studies and several human clinical studies and trials have demonstrated LMMS's efficacy in improving bone health through gains in trabecular bone volume fraction and cortical area⁶⁻¹⁴.

JUVENT'S MICRO-IMPACT PLATFORM: THE LEADING LMMS TECHNOLOGY FOR HEALTHCARE AND SPORTS APPLICATIONS

This clinically proven fitness device is the result of \$45-million of R&D and 20+ worldwide patents. Its' unique LMMS is a patented combination of intelligent software, sensors, and a precision mechanism that optimizes a signal personalized to each user's resonant frequency. Its' signal operates within a safe range of frequencies(32Hz-37Hz) and force(0.2-0.4g's). Unlike high power whole body vibration (hpWBV) 'shakers', Juvent provides safe, sub-millimetric micro-impacts. These generate the desired physiological response without risk of injury using energy levels far below OSHA and ISOs safety guidelines allowing use with even children and frail adults.

JUVENT'S MICRO-IMPACT THERAPY: THE MOST CLINICALLY STUDIED LMMS PLATFORM IN THE WORLD

Juvent's Micro-Impact therapy is unlike any other vibration platform technology. It's a clinically proven device differentiated by research. **Table 1** We have provided specific differences in **Table 2**

Table 1 - Completed clinical studies using Juvent's Micro-Impact Platform®

CLINICAL STUDY, YEAR (LIT. CITED)	CLINICAL RESULTS
POSTURAL INSTABILITY CAUSED BY EXTENDED BED REST IS ALLEVIATED BY BRIEF DAILY EXPOSURE TO LOW MAGNITUDE MECHANICAL SIGNALS, 2011 ⁽¹⁵⁾ - 29 healthy adults - 10 min daily for 90 days - Clinical Trial	- Ankle, knee and back strength - Knee endurance decreased between 10.2% and 20.0% in the control group - Knee endurance decreased between 2.4% and 14.2% in the LMMS group
PLANTAR VIBRATION IMPROVES LEG FLUID FLOW IN PERIMENOPAUSAL WOMEN, 2005 ⁽¹⁶⁾ - 18 Women aged 46-63yr. free of acute illness - 12 months - Clinical Trial	- Plantar vibration serves to significantly enhance peripheral and systemic blood flow, peripheral lymphatic flow, and venous drainage, which may account for the apparent ability of such stimuli to influence bone mass.
PREVENTION OF POST-MENOPAUSAL BONE LOSS ⁽¹³⁾ - 31 patients - Randomized double placebo controlled - 20 min/daily for 6 months	- Treatment group with high compliance had significant relative BMD increase in femoral and spine outcomes
MUSCULO-SKELETAL HEALTH IN YOUNG WOMEN WITH LOW BMD, 2006 ⁽¹²⁾ - 48 patients - 10 min/daily for 12 months	- Cancellous and cortical bone density increased by 2.1% and 3.4% respectively in the treatment group - No adverse effects
BMD* IN PEDIATRIC CANCER SURVIVORS, 2016 ⁽⁸⁾ - Randomized double placebo controlled - 10 min/twice daily for 12 months - Clinical Trial	- Effective in improving whole body and tibial BMD - Tibial BMD increased by a mean of 11. 2% in highly compliant group - No adverse effects with twice daily 10 min use
BMD IN PEDIATRIC CROHN'S PATIENTS, 2016 ⁽⁹⁾ - Randomized double placebo controlled - 10 min/daily for 6 months - Clinical Trial	- Trabecular BMD and cortical area outcome measures improved significantly - No adverse effects
BMD IN THALASSEMIA PATIENTS, 2012 ⁽¹⁰⁾ - 18 patients - 20 min/daily for 6 months - Pilot Study	- Whole body BMD and serum markers of bone formation increased significantly - No reported adverse effects
BMD IN PEDIATRIC CEREBRAL PALSY PATIENTS, 2010 ⁽¹¹⁾ - 31 patients - 10 min/daily for 6 months	- Greater increase in the cortical bone outcome measurements during the vibrational treatment period - No adverse effects
LOW MAGNITUDE MECHANICAL LOADING OSTEOGENIC IN CHILDREN WITH DISABLING CONDITIONS, 2004 ⁽¹⁴⁾	- 11% increase in trabecular bone density in the tibia following six months of treatment, in contrast to the 6% loss of bone mineral density in children standing on placebo devices

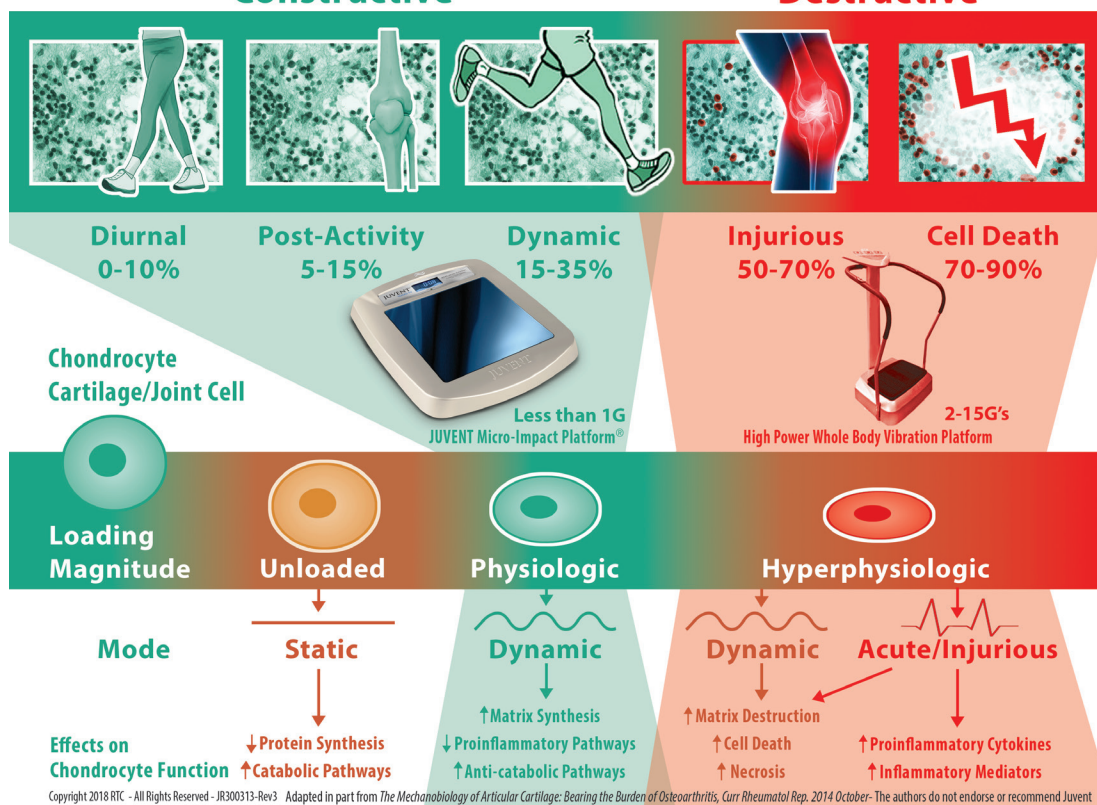
*Bone Mineral Density

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Table 2 - Specific differentiating features of Juvent's Micro-Impact technology

FEATURES	Whole-body vibrators	Juvent Technology
Delivered stimulation type	High to Mid Magnitude High Frequency High Displacement	Low Magnitude High Frequency Micro Displacement
Amplitude type (levels)	Variable (1g-12g)	Micro-impacts (0.3 g)
Machine software-induced stable posture	✗	✓
User's body composition-calibrated amplitude/frequency adjusting	✗	✓
Induce uncontrolled & variable frequency	✓	✗
Stable and uniform resonance with active feedback	✗	✓
Induces unnecessary pain & inflammatory signaling	✓	✗
Stable positive dose-response on bone-neuromuscular anabolic signaling	✗	✓

Physiologic Strain Magnitudes and their Effects



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Juvent 1000N System Specifications

System Weight	22 lbs (9.97 Kg)	Signal Parameters	
System Dimensions		Displacement frequency	32-37 Hz - +/- 2%
Height	3.75 in (9.53 cm)	Acceleration "g" force	0.3 g (amplitude) (+/-20%)
Width	21.1 in (53.6 cm)	Vertical displacement	~57 µm (0.057 mm)
Depth	23.7 in (60.2 cm)	Treatment time	10-20 minutes daily
Power Supply		Duty cycle	Continuous
Input power	100-240 volts ac 50-60 Hz	System Load	
Power supply output voltage	15 volts DC	Normal operating load	>35 lbs to 275 lbs (>15.8 Kg to 125 Kg)
Power consumption	less than 10 watts	Maximum operating load	275 lbs (125 Kg)
Medical Device Materials		Maximum limit, non operating	310 lbs (140 Kg)
Displacement platform module	Aircraft Grade Aluminum		
Housing module	ABS plastic, flame-retardant		
Mat	Biocompatible TPE		

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