

Low-intensity Vibration (LiV) improves musculoskeletal health



Bones and muscles in the human body respond to dynamic loading and forces. Due to age, lifestyle or disability the forces our bodies are exposed to can decrease, which begins a process known as deconditioning. The most common effects of deconditioning are experienced in the musculoskeletal system and include diminished muscle mass and strength, loss of bone density and quality, and marked loss of leg strength that can limit mobility and postural control. Scientific research has demonstrated that Low-intensity Vibration (LiV) can treat these symptoms, slow the process of deconditioning and benefit musculoskeletal health.

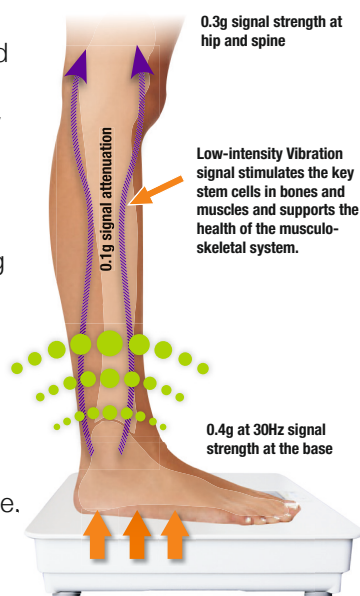
THE RESEARCH

The deconditioning of the musculoskeletal system is linked to an increased risk of falls, general functional decline, frailty and immobility. Each of these factors can lead to bone fractures and a reduced quality of life. Exercise, such as walking and running, is known to be beneficial in maintaining good bone and muscle health. However, these activities may not be possible for those who are frail, disabled, elderly or infirm – but there is an alternative.

LiV is a scientifically proven, safe and effective treatment for deconditioning. A recent review article, published in the prestigious journal *Nature*, concluded that: “Mechanical signals, such as those induced through Low-intensity Vibration, need not be large in magnitude, or long in duration, to influence bone or fat phenotypes,” (Pagnotti et al., 2019).

The process of ageing causes the faster contracting muscle fibres in our bodies to decline. This can lead to greater musculoskeletal instability and an overall poorer quality muscle structure. LiV acts as a replacement for the lost muscle fibres, replicating their small, high-frequency forces to improve musculoskeletal health.

Scientists have conducted human trials evaluating the effects of LiV upon age-related musculoskeletal decline, demonstrating a positive impact.



A 2011 bed-rest study followed 29 healthy adults over a three-month period, comparing the impact of using LiV or a placebo for 10 minutes per day against specific measures to indicate musculoskeletal quality. The group using active LiV retained their postural stability and muscle flex strength compared to the placebo group (Muir et al., 2011).

An 18 month study involving 710 women over 60 years of age using LiV demonstrated a significant reduction in the number of falls and fractures among the group using LiV compared to the control group. Furthermore, significant improvements were found in reaction time, movement velocity and balancing ability assessments. The treatment also improved quadricep muscle strength. The study concluded that LiV is effective in reducing falls and associated injuries (Leung et al., 2014).

A study involving 174 elderly women with an average age of 82 years compared the use of LiV and a placebo treatment over 24 months. The women in the active LiV group had a 10% gain in bone in their hips during the trial, a significant finding considering the hip fracture risk in this population. The LiV device was demonstrated to be safe to use for this elderly user group (Kiel et al., 2015).

CONCLUSION

Scientific research has demonstrated that Low-intensity Vibration (LiV) can slow the process of deconditioning and benefit musculoskeletal health. Marodyne LiV is the world's first medically approved, commercially available LiV device.

USER EXPERIENCES

Low-intensity Vibration is already changing the lives across the world. Here are some success stories.

Louise Ely, 67, London, UK (diagnosed with osteopenia, used Marodyne LiV since 2015)

"It couldn't be simpler to use Marodyne LiV: I stand on it for 10 minutes first thing in the morning. It's part of my dressing routine and is the easiest thing in the world to use. I get out of bed, shower, stand on Marodyne LiV and then get dressed. Very occasionally I'll be in a rush in the mornings in which case I simply stand on it in the evening instead."

Belinda, Physical Therapist, Australia

"I can happily report that participants in my previous small trial experienced a 70% improvement in wall squat performance (an index of lower extremity strength and muscular endurance) in their non-dominant limb, and improved their ability to rise from a chair multiple time (an index of balance and mobility) after eight months of twice-weekly 15 minutes low intensity whole body vibration exposure."

Jane Ryan, 68, UK (diagnosed with osteoporosis)

"The beauty of Marodyne LiV is it takes effect in a short space of time – just 10 minutes a day does the trick. For some-one who is busy, like me, that's a real bonus. Every day I can do some- thing about making my bones stronger – and without having to resort to any of these wretched drugs often prescribed."

"I really enjoy the Marodyne LiV treatment: you can feel the vibrations but they're very gentle and you can easily read a book, listen to the radio or watch the morning news on TV at the same time."



BENEFITS OF LOW-INTENSITY VIBRATION (LiV)

Fully approved

- No side effects
- Drug-free treatment

Safe to use

- LiV is safe to use by all, including children, those with osteoporosis and the elderly
- LiV can be used to slow deconditioning in the fit and healthy

Indications for use

- A safe and effective treatment of osteoporosis
- Maintains and increases bone mineral density
- Builds muscle strength and muscle mass in the legs
- Stimulates blood circulation and lymphatic flow
- Improves balance, postural reflexes and coordination

Just 10 minutes of LiV daily is proven to have a positive effect on your bones, muscles and circulation.

LiV is a safe, drug-free, scientific and research-based solution for improving musculoskeletal health and wellness.

REFERENCES

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