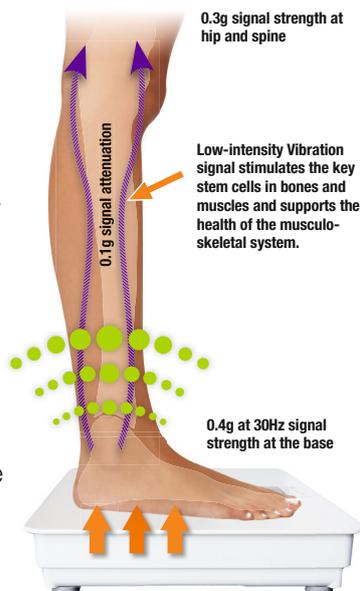


# Low-intensity Vibration (LiV) is a safe and effective treatment for osteoporosis

Low-intensity Vibration (LiV) therapy was developed by Prof. Dr. Clinton Rubin, one of the world's foremost biomedical engineers. LiV is a scientifically proven treatment for the development of bones and muscles for those with osteoporosis. Vibration therapy utilises very small mechanical movements to stimulate growth, replicating the natural impulses in a young and healthy body. The technology was developed in collaboration with NASA and the National Institutes of Health (NIH) and represents almost 40 years of research.

## THE PRINCIPLE

Bone responds to both large low-frequency and small high-frequency forces. These forces encourage bone growth and maintain bone health. The Marodyne LiV device provides a very precise low-level vibration (0.4g) which is transmitted at a high frequency (30Hz) to the person standing on the device. This stimulates osteoblast (bone building) activity while inhibiting osteoclast (bone resorption) activity. Studies have established that just 10 minutes a day can help to keep bones strong and healthy.



A study involving frail elderly participants showed a 10% greater femoral BMD compared to the placebo group. No adverse events were reported in this two-year study, which included subjects up to 102 years of age (Kiel, et al., 2015).

Another study among young adult females with low BMD showed that short bouts of LiV increased bone and muscle mass in the weight-bearing skeleton (Gilsanz et al., 2006).

Evidence has established that this non-pharmacologic approach represents a physiologically based means of inhibiting the decline in BMD. There is consensus among scientists that LiV is relatively simple to apply and often needs only short periods of stimulation to show some effect. Compliance is maintained, even in elderly groups (Hannan, M. et al., 2004), and is suitable for those with fragile bones or limited motion (Muir et al., 2013).

## THE RESEARCH

A one-year placebo-controlled research study of post-menopausal women demonstrated that low-level vibration effectively inhibits bone loss in the spine and femur. The placebo group lost 2.13% in femoral neck bone mineral density (BMD) over the year, whereas the active cohort recorded a 2.17% increase in BMD. The researchers concluded that: "If used regularly, the progress of osteoporosis can be slowed down, stopped or even reversed" (Rubin et al., 2004).

## CONCLUSION

**Scientific research has demonstrated that Low-intensity Vibration stimulates osteoblast (bone building) activity while inhibiting osteoclast (bone resorption). Marodyne LiV is the world's first medically approved, commercially available LiV device for successfully treating osteoporosis.**

# USER EXPERIENCES

*Jane Ryan, 68, UK (diagnosed with osteoporosis)*

"I was fascinated by the fact the treatment had been developed for NASA to help astronauts overcome loss of bone density when in zero-gravity conditions. I feel much better these days and think the Marodyne LiV treatment is part of that. It gives me a great start to each day and sets me up nicely to eat well, get my walk and Pilates sessions in and feel that I'm doing all I can to address my osteoporosis without have to resort to any medication."

*Madeline, USA*

"I have been using the Marodyne LiV for about a year now and this week I had my follow up DEXA exam. I wanted to let you know that my bone density statistics have increased significantly since my last exam in 2012! My overall T-score is -2.4 and the bone density in the lumbar spine has increased by 6.5% and in the right femur it has increased by 8.3%."

*Jane, USA*

"I bought my mom a Marodyne LiV last year. Her bone scans have improved significantly by nearly 8%."

*Alice L, USA*

"Many, many thanks to you for this great platform. I am so grateful. I never could tolerate the pills; and now, in light of recent information about their side effects, I am doubly grateful you offer this alternative. I just wish more people knew about it and would use it."



## 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.**

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