



Vibration therapy and osteoporosis

Vibration therapy involves standing, sitting or lying on a machine with a vibrating platform. The machine sends vibrations through your body. These vibrations work in the same way as exercise where the muscles pull on bones. This gives bones work to do which helps to keep them strong.

There are two types of vibration therapy – whole body vibration (WBV) and low intensity vibration (LIV).

Vibration therapy is not routinely available on the NHS. But you may see machines in gyms, physiotherapy services or even in homes.

Research has not proven if vibration therapy can help make bones stronger. But it may help to reduce the risk of falls, which can lead to fractures (broken bones).

Who is this fact sheet for?

This information may be helpful if you (or someone close to you):

- want to understand what vibration therapy is
- have osteoporosis or a high risk of fractures (broken bones), and want to know if vibration therapy can help your bones.

It includes the following information:

- What is vibration therapy?
- How does vibration therapy work?
- What types of vibration therapy are there?
- Can vibration therapy make my bones stronger?
- More ways to look after your bones
- Getting more information and support

What is osteoporosis?

Osteoporosis is a condition where the bones become weaker and break easily, even after a minor bump or fall. You might hear these breaks described as fragility fractures. The terms 'fracture' and 'broken bone' mean the same thing.

Fractures can affect almost any bone, but they are most common in the wrists, hips and spine. It's these broken bones that can cause pain, rather than osteoporosis itself. Spinal fractures can also cause height loss and a curved spine.

What is vibration therapy?

Vibration therapy uses mechanical vibrations to contract and relax the muscles in the body. Vibrations pass through your body while you stand, sit or lie on a machine.

It is not routinely available on the NHS. But it is used in gyms, physiotherapy services and even at home. This is because it may improve muscle strength and balance (see page 2).

Vibration therapy is not the same as slimming vibration machines. These are often belts or bands placed around your middle (waist) for weight loss and muscle toning.

How does vibration therapy work?

Exercise is good for bones. When you exercise, your muscles pull on your bones and gives them work to do. This work helps to make your bones stronger.

Vibration therapy is like exercise. It aims to stimulate the same response in your muscles. As the machine vibrates, it sends energy through your body. This causes your muscles to tense and relax (contract).

The intensity of the vibrations can vary. Intensity is created by the height (amplitude) of the vibration. The intensity affects the amount of vibration you feel while you're on the machine. For example, the higher the intensity, the more vibration you feel.

What types of vibration therapy are there?

Two types of vibration therapy are available in the UK. These are:

- whole body vibration (WBV)
- low intensity vibration (LIV).

The main difference between whole body vibration and low intensity vibration therapy is the intensity of the vibrations, or how the vibrations feel. In whole body vibration, the vibrations feel big. But in low intensity vibration, the vibrations feel small and fast.

Whole body vibration (WBV)

Whole body vibration therapy is delivered to the entire body through a large vibrating platform. These platforms usually have a hand rail to hold for comfort and safety. Whole body vibration machines are most commonly seen in gyms and physiotherapy services.

Whole body vibration therapy tends to be high intensity. But you can usually adjust the settings on the machine. Some people may be worried that high intensity vibrations could cause injury or pain, especially in people who are less well. But this may not be the case. Research has shown that they seem to manage the vibration without any injury or pain. You should be careful when getting on and off the machine.

Whole body vibration is not suitable for everyone. It will not be suitable if you:

- have any current or recent blood clots
- have a condition that affects your heart or blood vessels (heart attacks or strokes)
- have a pacemaker
- are pregnant

- suffer with dizziness or inner ear problems
- have had a joint replacement such as in your hip or knee
- have cochlear implants (surgically fitted hearing aid).

Whole body vibration therapy may also not be suitable if you've had spinal fractures or many fractures.

It may be worth talking to a healthcare professional before using a vibration machine to find out if it's suitable for you.

Low intensity vibration (LIV)

Low intensity vibration machines look like large bathroom scales and release tiny up and down vibrations, 30 times every second. These vibrations travel through the feet, up the legs and into the hip and lower spine.

Low intensity vibration therapy is suitable for most people and doesn't appear to cause side effects. You can buy low intensity vibration plates. These plates can cost between £100 and £3000.

Can vibration therapy make my bones stronger?

People often want to know if they can improve their bone health without taking a drug treatment. But it is not clear if vibration therapy can help make bones stronger and less likely to break.

Scientists first developed vibration therapy to help astronauts. Astronauts lose bone and muscle when they spend months in space. The scientists found that astronauts could prevent bone loss by standing on lightly vibrating plates for 10 to 20 minutes a day.

Since its discovery, researchers have looked into vibration therapy. There has not been enough research to be sure of the benefits. Most research has looked at whole body vibration therapy, rather than low intensity vibration therapy. In other words, we don't know a lot about vibration therapy and how it affects bone health.

We do know whole body vibration therapy may help improve muscle strength and balance. This means it may reduce the risk of falls, which often lead to broken bones.

Some research has found whole body vibration therapy may help improve bone density. But other studies have found no benefit at all.

Research also isn't clear if vibration therapy can reduce the risk of broken bones. Most research has looked into the use of vibration therapy in people without osteoporosis. So we can't be certain if vibration therapy can help improve bone density or reduce the risk of broken bones if you have osteoporosis.

There are other types of exercise you can do to help make your bones stronger. Find out how to exercise for your bones at theros.org.uk/exercise

More ways to look after your bones

A healthy lifestyle is important for your bone health. This includes:

- a well-balanced, varied and calcium-rich diet
- safe exposure to sunlight, so that your skin makes vitamin D
- regular weight-bearing impact exercise and muscle-strengthening exercise
- not smoking
- not drinking more than the recommended levels of alcohol
- taking steps to lower your risk of falling, as falls can lead to broken bones.

Osteoporosis drug treatments are also available to help strengthen and protect your bones, making you less likely to break a bone in the future. Your doctor can talk to you about your different treatment options. For information about drug treatments for osteoporosis, visit our website at theros.org.uk/treatment

Calcium and vitamin D

Getting enough calcium and vitamin D is very important for your bones. Your doctor may advise you to:

- aim to consume around 1,000mg of calcium a day
- take a daily 20 microgram (20µg or 800IU) supplement of vitamin D.

This is more than the usual recommended amount, to make sure you are getting enough for your bones. Your doctor may sometimes recommend higher or lower doses, depending on your own situation.

For more information on healthy living, including our calcium and vitamin D-rich food choosers, tips for preventing falls, and our films and fact sheets on how to exercise safely for your bones, visit our website at theros.org.uk/healthy-bones

Getting more information and support

We hope this fact sheet will help you feel more informed and confident when discussing your bone health with your medical team.

For more information about osteoporosis and bone health, including fact sheets on all available drug treatments, visit our website at theros.org.uk/info or order more of our printed publications.

If you need more information or support about vibration therapy, talk to your healthcare professional. You can also call our specialist Helpline nurses with any questions or concerns about bone health, for free, on **0808 800 0035** or email them at nurses@theros.org.uk



Content reviewed: October 2023

This information is based on the latest evidence and clinical practice. It should not replace advice from your own healthcare professionals.

To give us feedback on this fact sheet, email us at health.info@theros.org.uk

We provide our information free of charge. To make a donation or become a member, visit theros.org.uk or call 01761 473 287.

© Royal Osteoporosis Society 2023

Royal Osteoporosis Society is a registered charity in England and Wales (1102712), Scotland (SC039755) and Isle of Man (1284). Registered as a company limited by guarantee in England and Wales (04995013), and foreign company in Isle of Man (006188F).

To view or order more information about osteoporosis and bone health:

 theros.org.uk/info

 01761 471 771

 info@theros.org.uk

To contact our specialist nurses:

 0808 800 0035

 nurses@theros.org.uk