

AMERICAN COLLEGE OF Lifestyle Medicine

What Role Does Exercise Play in Bone Health?

Here's what you should know.

BUILDING STRONG BONES WITH MOVEMENT

Different types of exercise help keep bones strong as we age. Some exercises directly strengthen bones, slowing bone loss and increasing bone mineral density over time. Others improve balance and movement, which helps prevent falls. Doing a mix of these activities—and sticking with them over time—gives the best results.

WEIGHT-BEARING ACTIVITIES AND HELPFUL TOOLS

Weight-bearing exercises are activities where your body works against gravity. These can be **low-impact**, like walking or climbing stairs, or **high-impact**, like hopping, jogging, or running. How often, how long, and how hard you exercise all matter for bone health. For example, brisk walking helps bones more than slow walking.

Try to get **at least 30 minutes of weight-bearing activity five days a week**. This can be done all at once or broken into shorter sessions.

Movement throughout the day also matters. Sitting for long periods can harm bone health and may lower bone density. Spreading activity across the day is better than being active only once and sitting the rest of the time.



Exercises without impact—like swimming, biking, or rowing—are great for mobility and overall health. However, they **do not** build bone on their own. To support bone health, they should be combined with weight-bearing and strength exercises. Studies of astronauts and people on long bed rest show that bones need gravity to stay strong.



Tai Chi may help improve bone density and lower the risk of falls when practiced **three or more times per week for at least six months**.



Whole-body vibration training may help reduce fall risk and support bone health, especially in the lower back. Because the equipment is specialized and settings matter, discuss this with a healthcare provider.



Weighted vests increase body weight by about 5–10%. While they have not clearly been shown to increase bone density, they may help with fitness. If you use one, check with a physical therapist or doctor to be sure it is safe for you.

Muscle-Strengthening Exercises

All adults should include **strength training and balance exercises** in their weekly routine. Research shows that even older adults and people with low bone mass or osteoporosis can benefit. If you already have osteoporosis, it is recommended that you work with a physical therapist to ensure proper technique.

RESISTANCE TRAINING

Strength exercises should be done at least **2–3 days per week**. Sessions can work the whole body or different muscle groups, but be sure to work each muscle group at least twice a week.

Maintaining healthy bones and muscles is an ongoing process, and it's important to increase the work as your body adapts to the training. If you're new to strength training or have osteoporosis, consider working with a physical therapist or qualified exercise professional for guidance.

A SIMPLE WAY TO DO THIS IS WITH SIX MAIN MOVEMENTS:

- Overhead push (pushing weight over your head)
- Pulling down (pulling weight down toward your shoulders)
- Pushing forward (pushing weight away from your chest)
- Pulling back (pulling weight toward your belly button)
- Squatting (standing from a chair and sitting again)
- Hip hinge (lifting your hips while lying on your back on the floor)

For most exercises, including core exercises, it's usually best to keep your back straight instead of rounding it.

Exercises can be done using free weights, machines, resistance bands, or body weight. Beginners should start with one set of 6–12 repetitions for each major muscle group; slowly work up to 3–4 sets as you get stronger. Choose a weight that feels challenging but still allows good form. If you can continue past the upper limit of repetitions, increase the weight to stay in the range. Exercises should not cause pain while performing the movements.

Higher-intensity strength training and impact exercises (like controlled jumping movements) have been shown to improve bone density more than lighter exercise.



Balance and Posture

Balance exercises may help reduce fall risk and prevent fractures and should be done at least 1–3 days per week. These can be done on the same days as strength training or on different days.

BALANCE EXERCISES INCLUDE:

- Standing on one foot
- Sitting down and standing up from a chair

POSTURE EXERCISES INCLUDE:

- Lying on your stomach, extend your arms overhead. Keeping your hips and thighs in contact with the floor, lift your arms a few inches.
- Stand with your shoulders against the wall, and your heels as close to the wall as possible. Place arms at shoulder height with elbows bent. Slide arms overhead, keeping contact with the wall. Return to the starting position.

Strong bones support more than your body—they support your independence, confidence, and ability to keep doing what you love.



References