

Bone Density Testing

A bone density test is a measurement of how much mineral, such as calcium, you have in your bones. The most common and most versatile test is with dual-energy X-ray absorptiometry (DXA). The test is non-invasive and painless. There is very little radiation – far less than what you would get on a cross-country airplane flight.

Who Should Have a Bone Density Test?

- Women aged 65 and older
- Men aged 70 and older
- Anyone who has had a fracture after age 50
- Adults 50+ with osteoporosis risk factors (e.g. smoking, family history, and steroid use)

How Is Osteoporosis Diagnosed?

- Bone Mineral Density (BMD) – A DXA scan provides a T-score:
 - Normal: -1.0 or above
 - Osteopenia (low bone mass): -1.0 to -2.4
 - Osteoporosis: -2.5 or below
- Fracture History – A major fracture (spine, hip, wrist, etc.) after age 50 suggests osteoporosis, even if BMD is normal, especially from low impact trauma
- FRAX Score – A tool that estimates a 10-year fracture risk based on multiple factors.
 - A 20%+ major osteoporotic fracture risk or 3%+ hip fracture risk indicates osteoporosis

Exercise/Safe Movement

Staying active and exercising are essential for strengthening muscles and improving bone health. Two key types of exercises for building and maintaining bone density are weight-bearing and muscle-strengthening exercises.

- **Weight-bearing exercises** involve activities that require you to move against gravity while upright and can be categorized as high-impact (e.g., jumping, jogging, tennis) or low-impact (e.g., brisk walking, elliptical training). High-impact exercises are beneficial for bone strength but may need to be avoided if you have osteoporosis or a history of fractures.
- **Muscle-strengthening exercises** involve moving your body or weights against resistance, such as lifting weights, using resistance bands, or performing bodyweight exercises like squats and lunges. Proper body positioning is crucial, especially for those with osteoporosis, to minimize the risk of injury.

Preventing falls and unintentional injuries is particularly important for individuals with osteoporosis to protect against fractures, especially in the spine. Consulting with a healthcare provider or exercise specialist can help ensure safe exercise practices.

<https://www.bonehealthandosteoporosis.org/patients/>

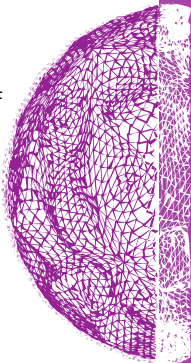
What is Osteoporosis?

Osteoporosis is a bone disease that occurs when the body loses too much bone, makes too little bone, or both.

As a result, bones become weak and may break from a fall or, in serious cases, from sneezing or just minor bumps. Osteoporosis is often called a silent disease because one can't feel bones weakening. Breaking a bone is often the first sign of osteoporosis. Other signs may include getting shorter or developing a forward-curving upper back. **Studies suggest that one in two women and up to one in four men aged 50 and older will break a bone due to osteoporosis.**

Osteoporotic fractures most commonly occur in the hip, spine, or wrist but can affect other bones as well.

Osteoporosis-related fractures can cause chronic pain, loss of height, and a stooped posture. Hip fractures are particularly serious—20% of seniors who break a hip die within a year due to complications.



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Calcium

Calcium is a mineral that is necessary for building bones and keeping them healthy.

Our bodies cannot produce its own calcium. That's why it's important to get enough calcium from the food we eat. When we don't get the calcium our body needs, it is taken from our bones. This imbalance causes bones to get weak, making them easier to break.

Too many Americans do not consume enough and that can lead to bone loss, low bone density, and even broken bones.

How much calcium do you need?

- o Women aged 50 and younger need 1,000 mg of calcium daily, while those 51 and older need 1,200 mg
- o Men aged 70 and younger need 1,000 mg daily, and those 71 and older need 1,200 mg, including intake from food and supplements.

Sources of Calcium

Calcium-Rich Food Sources:

- Dairy products, such as milk, yogurt, and cheese are high in calcium.
- Some juices, breakfast foods, cereals, snacks, breads and bottled water have added calcium.
- If you consume soymilk, almond/oat milk, or another liquid that is fortified with calcium, be sure to shake the container well as calcium can settle to the bottom.

Calcium Supplements:

The amount of calcium you need from supplements depends on your dietary intake. Be careful, consuming too much calcium offers no additional benefits and may pose risks such as constipation and kidney stones.

- Read the product label carefully to determine the amount of elemental calcium and pay close attention to the “amount per serving” and “serving size”.
- Calcium is absorbed best when taken in amounts of 500 – 600 mg or less. Try to get your calcium-rich foods and/or supplements in small amounts throughout the day.
- Take (most) calcium supplements with food. Eating food produces stomach acid that helps your body absorb most calcium supplements. The one exception to the rule is calcium citrate, which can absorb well when taken with or without food.
- Side effects from calcium supplements, such as gas or constipation, may occur or worsen. If increasing fluids in your diet and obtaining enough fiber does not solve the problem, try another type or brand of calcium.

Vitamin D

Vitamin D is a vitamin that protects your bones by helping your body absorb calcium and by supporting muscles needed to avoid falls.

How much Vitamin D do you need?

Adults under 50 need 400-800 IU (international units) of vitamin D daily, while those 50 and older need 800-1,000 IU.

Sources of Vitamin D

Sunlight: Your skin produces vitamin D when exposed to sunlight, but factors such as time of day, season, latitude, skin pigmentation, and age can affect this production. Aging skin and use of sunscreen lead to less efficient generation of vitamin D.

Food: Vitamin D is found in few foods, primarily fatty fish (like mackerel, salmon, and tuna) and fortified products such as milk, orange juice, and cereals. It can be challenging to meet vitamin D needs through food and sunlight alone.

Supplements: Individuals with osteoporosis or low bone mass should consult their healthcare provider about their vitamin D levels and consider supplements if necessary. There are two types of vitamin D supplements: D2 (ergocalciferol) and D3 (cholecalciferol), both beneficial for bone health.