

BRITTLE BONES (OSTEOPOROSIS)

Brittle bones, or osteoporosis, is a disease that thins and weakens bones to the point where they break easily. People with osteoporosis most often break bones in the hip, spine (backbone), and wrist. Because you may not notice any symptoms until a bone breaks, osteoporosis is called the "silent disease."

HEALTH NOTES



For more information

Visit kp.org/health

- Read about osteoporosis in the Health Encyclopedia.

kp.org/calculators

- Are you getting enough calcium? Find out when you use the calcium calculator.

kp.org/healthyaging

- Tips on how to live a healthy life as you age

kp.org/fitness

- Tools to help you stay active

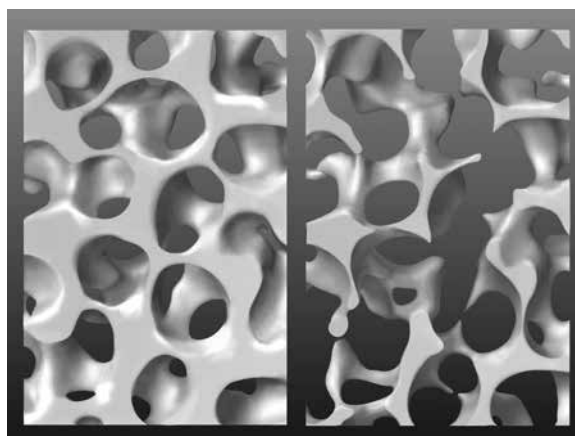
Call Kaiser Permanente Medical Advice

- Talk to your medical advice nurse 24 hours a day, 7 days a week by calling **(703) 359-7878** or **(800) 777-7904** or TTY **711**.

What is bone?

Bone is living tissue. Throughout our lives, our bone is constantly being replaced. Old bone tissue is broken down and replaced with new tissue.

The inside of bone normally looks like a honeycomb. If the spaces in the honeycomb are small, the bones are dense and strong. When you have osteoporosis, the spaces in the honeycomb grow larger because more bone is broken down than is replaced. This means you have less bone density and your bones are weaker.



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Normal (left) and osteoporotic (right) bone structure.

How do bones change with age?

Until about age 30, your bones are growing and getting stronger. After that time, your body slowly starts to lose more bone than it makes. You can improve your bone strength and stop this loss by being physically active and eating a diet rich in calcium and vitamin D.

Who gets brittle bones?

In the United States, about 54 million adults have osteoporosis or low bone mass, making them more likely to develop the disease.*

* National Osteoporosis Foundation, Sept 2018.

Both men and women are at risk of osteoporosis. For women, the risk of developing brittle bones increases if you:

- have a family history of the disease,
- experience early menopause,
- are Caucasian (white) or Asian, or
- have small and thin body frames.

Men do develop brittle bones, although not as often as women.

For women, bone loss occurs more quickly for several years after menopause. Men also lose bone as they age, but it happens more slowly. By age 65 or 70, women and men are losing bone at the same rate.

What are the signs of brittle bones?

In most cases, there are no outward symptoms of osteoporosis. Signs that you may be losing bone include:

- being shorter than you used to be,
- having broken or fractured a bone more easily than you expected, or
- having poor posture.

Your doctor will conduct a full medical exam. You can expect:

- questions about:
 - » any bone breaks you have had,
 - » your eating habits,
 - » your exercise habits,
 - » whether you are a smoker,
 - » medicines you take,
 - » family history of osteoporosis or other conditions,
- a check for loss of height and changes in posture, and
- lab tests, such as blood and urine, to check for other conditions that may affect bone loss.

What is a bone mineral density test?

Mineral is what gives hardness to the bones. A bone mineral density (BMD) test measures how much bone mineral you have and how strong your bones really are. Your doctor can use BMD

tests to see if you have brittle bones. The test can also be used to compare results over time to see if treatment is working to slow your bone loss.

Regular X-rays do not show bone loss until a large amount of bone density is gone. The DXA Scan (dual-energy x-ray absorptiometry) is the most common test to measure bone density. It is painless and similar to having an x-ray. During this test, a scanner passes over your body while you lie on a table.

The results of the test are reported as a T score. The score compares your BMD to the best bone density of a 30-year-old healthy adult.

T score	Results
+1 to -1	Normal healthy bone
-1 to -2.4	Low density bone (thinning)
-2.5 or lower	Brittle bones (osteoporosis)

Your doctor will explain if your results show that you have:

- some bone loss and are at risk of developing brittle bones,
- brittle bones and need additional testing, or
- brittle bones and need to begin treatment.

The results will help the doctor decide which prevention or treatment options are right for you.

Treatment options could include:

- medicines,
- calcium and vitamin D supplements, and
- lifestyle changes.

You can prevent bone loss

There are many lifestyle changes you can make to prevent brittle bones. If you are at risk, your doctor may recommend that you:

- eat more foods rich in calcium and vitamin D,
- become physically active,
- quit smoking, and
- limit the amount of alcohol you drink.

Calcium and Vitamin D

Your body depends on calcium and vitamin D to build new bone. However, your needs change over time. Kaiser Permanente recommends the following daily calcium and vitamin D intakes for women and men:

Age	Calcium Mg/day	Vitamin D (I.U.)
Adult men and women (19 to 50 years)	1,000	1,000
Adults over 50 years	Men = 600 Women = 1,200	Men = 1,000 Women = 1,000

NOTE: Ask your doctor about your recommended intake. Calcium intakes greater than 2,000 mg and vitamin D intakes greater than 2,000 I.U. per day are not recommended.

Calcium

To get the calcium you need, choose foods high in calcium as part of your daily diet. Some healthy foods that have a lot of calcium are:

- Low-fat dairy foods, such as
 - » cheese,
 - » yogurt, and
 - » milk.
- For milk substitutes (soy, almond, cashew milks etc.) make sure they are Vitamin D and Calcium fortified.
- Canned fish with bones, such as
 - » salmon and
 - » sardines.
- Dark-green leafy vegetables, such as
 - » kale,
 - » collards, and
 - » broccoli.
- Foods that have added calcium, such as fortified orange juice, bread, and cereal.

Try to get 3-4 servings each day from the dairy group. A serving is one cup of milk, pudding, or yogurt, or one ounce of cheese.

To find out how much calcium you get from the foods you eat, use the online calculator at kp.org/calculators.

Talk with your doctor about Calcium supplements.

Vitamin D

Vitamin D helps your body absorb and use calcium. Good dietary sources include:

- eggs,
- saltwater fish, such as salmon, mackerel, and sardines, and
- foods that have added vitamin D, such as fortified milk and cereal.

You can get 100 IU of vitamin D from one 8-ounce glass of milk. Also, check the label on your multivitamin or consider adding one to your daily regimen. Many multivitamins have 400 IU of vitamin D and it is one of the best ways to make sure you are getting enough of the vitamin.

Talk with your doctor about vitamin D supplements.

Physical activity

It is never too late to begin an exercise or physical activity program. Physical activity makes bones and muscles stronger and helps prevent bone loss. It also helps you keep fit and active in your daily life.

- **Try to do weight-bearing exercise three to five times each week for at least 30 minutes** – Weight-bearing exercise is any activity you do on your feet and that forces you to work against gravity, such as:
 - » walking,
 - » jogging, or
 - » stair climbing.
- **Try to do at least two strength training and balance sessions each week** – These sessions include:
 - » weight training with dumbbells and weight machines,
 - » body weight movements such as wall push-ups and curl-ups, and
 - » other resistance exercises using elastic bands.

Talk with your doctor before you start an exercise program to avoid injury.

Medicines

Some medicines can cause you to lose bone.

These include:

- glucocorticoids, that help control conditions, such as arthritis and asthma,
- anti-seizure drugs,
- cancer drugs, and
- thyroid medicines.

If you are taking these medicines, talk with your doctor about what can be done to protect your bones.

Other health promotion steps

- **Try to quit smoking** – If you smoke, we can help you quit. Talk to your doctor about a quit plan or visit kp.org/quitsmoking for more support.
- **Limit the amount of alcohol you drink** – Too much alcohol can damage your bones and put you at risk for falling and breaking a bone.
- **Wellness Coaching** – Wellness coaching is available at no charge for Kaiser Permanente members. Coaching is offered in English and Spanish, and no referral is needed. Call **(866) 862-4295**, Monday through Friday, from 7 a.m. to 8 p.m. Eastern time, to make an appointment.

Falls can lead to fractures

When bones are weakened by osteoporosis, a simple fall can cause a fracture or break. This can lead to a trip to the hospital, surgery, and possibly a long-term disabling condition.

Hip fractures may put an end to independent living. You may be at risk of a hip fracture if you:

- are unable to rise from a chair without using your arms,
- are on your feet less than four hours a day,
- do not walk for activity,
- have problems with vision, or
- have a resting heart rate of 80 or more beats per minute.

Some things you can do to prevent a fall:

- Use glasses or a hearing aid, if needed.
- Use a cane or walker if your walking is unsteady.
- Wear rubber-soled and low-heeled shoes so you don't slip.
- Remove throw rugs or attach them firmly to the floor.
- Ask your pharmacist if any of the medicines you take may make you dizzy or unsteady on your feet.
- Install grab bars on the bathroom walls near the tub, shower, and toilet.
- Keep your rooms well lit and the floor free of clutter.
- Remove all loose wires and cords.
- Use nightlights.
- If you feel as though you are at risk for falling, speak with your doctor about ways to keep you safe and healthy.
- Refer to the health note *Checklist for preventing falls at home*.

Additional resources

- NIH Osteoporosis and Related Bone Diseases National Resource Center
bones.nih.gov
- National Osteoporosis Foundation.
nof.org
- Refer to *Get Moving: Physical Activity Resource Guide for Seniors* for local recreation and physical activity options.

The information presented here is not intended to diagnose health problems or to take the place of professional medical care. If you have persistent medical problems, or if you have further questions, please consult your personal physician or member of your health care team.

REGIONAL HEALTH EDUCATION, HEALTH PROMOTION

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