

Bone Health Clinic

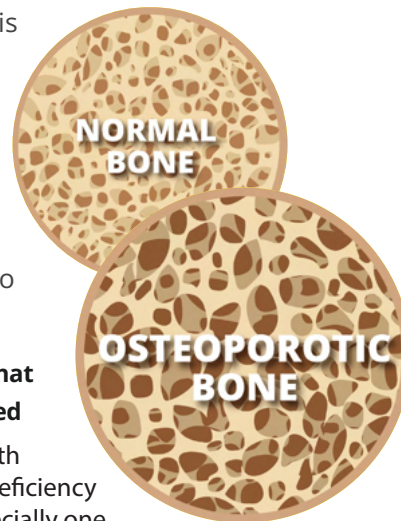
About Osteoporosis

What is Osteoporosis?

Osteoporosis is a medical condition that causes bones to become weak and brittle – so brittle that a fall or even mild stresses such as bending over, coughing or sneezing can cause a fracture. Bone is living tissue that is constantly being broken down and replaced. Osteoporosis occurs when the creation of new bone doesn't keep up with the loss of old bone. There typically are no symptoms in the early stages of bone loss. But once your bones have been weakened by osteoporosis, you might have signs and symptoms that include back pain, loss of height over time, a stooped posture or a bone that breaks much more easily than expected.

Who gets Osteoporosis?

There was a time when people thought osteoporosis was something that happened to everybody when they got old. Fragile bones and a humped back were inevitable. We now know this is not true. Some people are more likely to get osteoporosis than others. These people have “risk factors” for developing weak and easily broken bones. Many of these risk factors can't be changed, but others can. Understanding your risks will help you and your healthcare provider takes steps to ensure strong and healthy bones for a lifetime.



Risk Factors that CANNOT be changed

- » Race/Ethnicity (Caucasian, African American, Asian, or Latino)
- » Aging and Gender
- » Family history of osteoporosis or broken bones
- » Thin, small, or petite body frame
- » History of a broken bone (fracture)
- » Post-menopausal women or Menopause before the age of 40
- » Use of certain medicines like corticosteroids, anticonvulsants, or others
- » Other health conditions like rheumatoid arthritis, celiac disease, overactive thyroid gland
- » History of falls over the past year
- » History of total hysterectomy

Risk Factors that CAN be changed

- » Women with estrogen deficiency
- » Diet – especially one low in calcium and vitamin D
- » Inactive lifestyle
- » Smoking or past history of smoking
- » Excessive alcohol intake
- » Men with testosterone deficiency

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OSTEOPOROSIS TREATMENT GENERAL GUIDELINES

1. Fall Prevention

- Avoid icy, slippery, or wet surfaces
- Be careful on the stairs. Make sure areas are free of clutter, use handrails and be able to see the steps in front of you.
- Be careful around dogs/cats/small children
- Use caution “in the bathroom” because some of the hardest surfaces like the tub, toilet and vanity are in bathroom. Install handrails and slip resistant mats
- Use proper footwear
- Keep a flashlight in the bedroom and turn on the lights when moving from room to room
- Be careful of throw rugs, extension cords and oxygen tubing
- Be careful in unfamiliar homes, parking lots, restaurants; they often have unfamiliar hazards such as loose rocks, curbs and potholes.

2. Vitamin D and Calcium (see page 8 for more details)

- Recommendations to be made based upon lab results
- Vitamin D is very well tolerated
- Calcium may cause some stomach upset, if so we will change to another type of calcium, please let us know
- See page ten for nutritional sources of Vitamin D and Calcium as obtaining your daily value from nutritional sources is optimal

3. Exercise (weight-bearing and muscle-strengthening)

- We will assess when it is safe for you to initiate the above; you may also qualify for our performance training program that is run by our physical therapy problem.
- Improves agility, strength, posture, and balance
- Maintains and improves bone strength (density)
- Reduces risk of falls and fractures
- Weight-bearing examples include walking, jogging, Tai Chi, stair climbing, dancing, and tennis
- Muscle strengthening examples include weight training, yoga, pilates

4. Smoking cessation

- Use of tobacco is detrimental to the skeleton as well as to overall health
- Smoking cessation is considered an osteoporosis intervention
- Inhibits blood flow which interferes with bone healing and strength

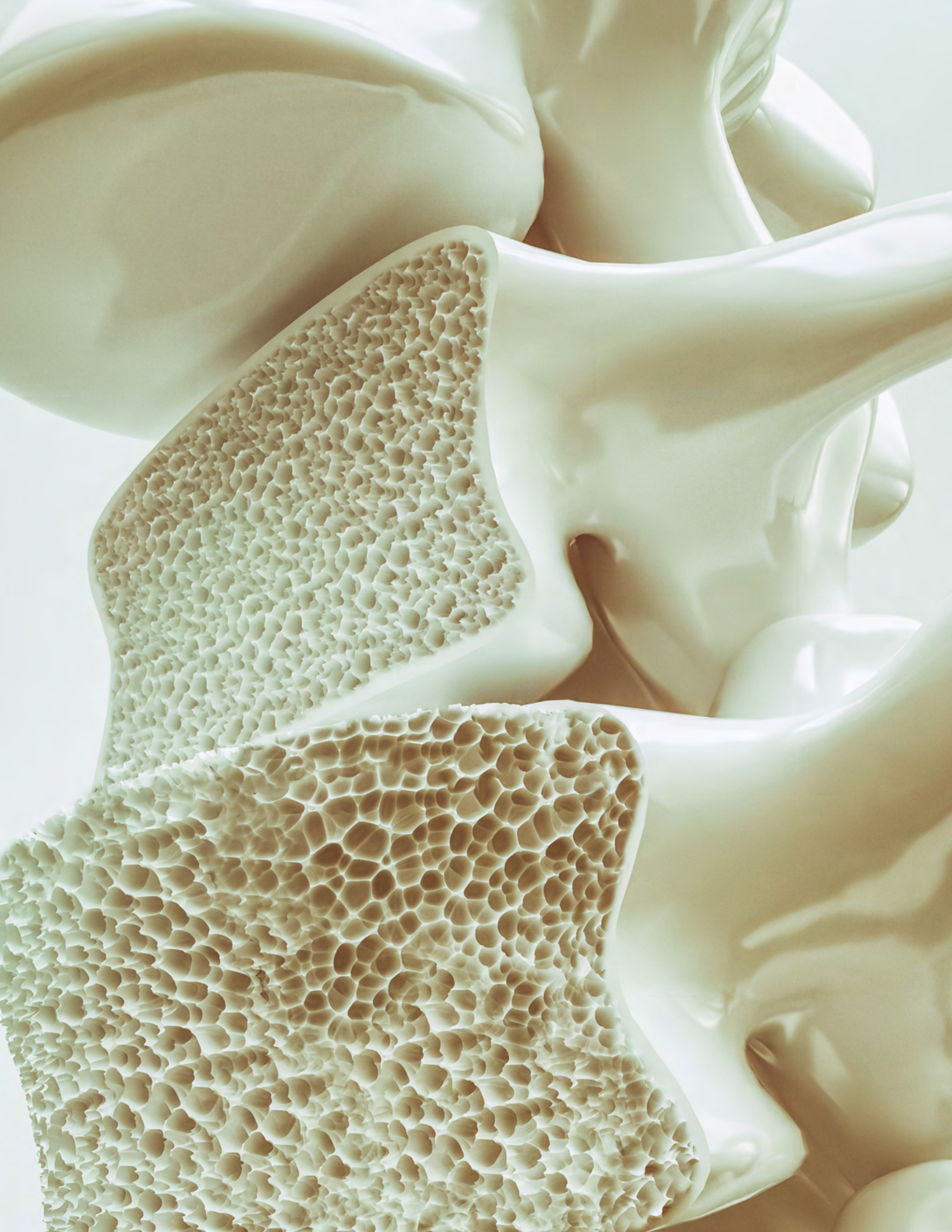
5. Limit excessive alcohol intake

- Alcohol intake of more than 2 alcoholic beverages a day for women or 3 a day for men is detrimental to bone health as well as increases your risk of falls

6. Prescription Medications -

- VERY EFFECTIVE to prevent fractures. We will tailor to your other medical conditions and personal preferences if indicated





25 Facts about Your Bones and Osteoporosis

1. Bone is living, growing tissue that is both flexible and strong.
2. Throughout life, you are constantly losing old bone and forming new bone.
3. Osteoporosis happens when you lose too much bone, make too little of it or both.
4. Bone loss usually speeds up at mid-life in both men and women.
5. Osteoporosis and the broken bones it causes can be prevented.
6. About half of all women and up to one in four men age 50 and older will break a bone due to osteoporosis.
7. Some medicines and some diseases can cause bone loss.
8. Diseases more common in African American women, such as sickle cell anemia and lupus, can lead to osteoporosis.
9. About 20 percent of Asian American women age 50 and older have osteoporosis.
10. By age 80, Caucasian women lose about one-third of their hip bone density.
11. Broken hips among Latinos in the U.S. appear to be on the rise.
12. If your mother or father broke bones as an adult, you may be at risk for osteoporosis.
13. Women lose up to 20 percent of their bone density in the five-to-seven years after menopause.
14. Today approximately 9 million people in the U.S. have osteoporosis.
15. About 1.5 million men and 7.5 million women have osteoporosis.
16. People with osteoporosis cannot feel their bones getting weaker, and many people do not know they have osteoporosis until they break a bone.
17. People with osteoporosis most often break a bone in the hip, spine or wrist.
18. Bones break more easily in people with osteoporosis, sometimes from simple actions such as sneezing, hugging or bumping into furniture.
19. A broken bone in the spine can cause sharp back pain or no pain at all.
20. You need to get enough calcium and vitamin D every day to keep your bones healthy.
21. Eating plenty of fruits and vegetables benefits your bones and overall health.
22. African Americans, Asian Americans, Latinos and Native Americans are more likely to be lactose intolerant than Caucasians, making it difficult to get enough calcium from foods.
23. You should exercise at least 2½ hours every week for strong bones.
24. You are never too young or too old to protect your bones. Now is the time to take action!
25. Find out if you have osteoporosis before you break a bone. Ask your healthcare provider when you should have a bone density test.



Calcium and Vitamin D are Essential for Bone Health

Calcium and vitamin D are essential to building strong, dense bones when you're young and to keeping them strong and healthy as you age. Scientific evidence supports the role of calcium and vitamin D for maintenance of healthy bones at all ages.^{1,2}

Bone is a complex tissue that is composed of a specific type of collagen that is strengthened by the addition of calcium. Ninety-nine percent of the calcium in our bodies is deposited in our bones and teeth. Calcium is also required for a myriad of other functions including muscle contraction, normal functioning of nerves and

heart and thousands of biochemical reactions. Each day, we lose calcium through our skin, nails, hair, sweat, urine and feces. Unless we can replace this calcium through dietary supplementation, the body will begin to leach calcium from bone, resulting in a loss of bone structure and strength. It's important to ingest an adequate amount of calcium in our diet to meet these many needs and to prevent the body from "stealing" calcium from bone. As vitamin D is essential for absorption of ingested calcium from the intestine, it is also important to maintain adequate amounts of this important vitamin.

Achieving recommended intakes of nutrients such as calcium, vitamin D and phosphorus, the most critical nutrients for bone, is necessary for optimum bone health.^{1, 2} To help guide recommendations, BHOFF monitors scientific information about dietary patterns and their relationship to bone health and specific bone health outcomes across the lifespan. We are particularly interested in the impact of dietary ingestion of calcium and vitamin D on bone density and fractures. This approach helps BHOFF to consider the impact of total diet and its component foods and nutrients on bone health outcomes.²

Calcium and vitamin D were recently reaffirmed by the 2015 U.S. Dietary Guidelines Advisory Committee as nutrients of public health concern because their under-consumption has been linked in the scientific literature to adverse health outcomes.²

BHOFF and virtually all other organizations in the musculoskeletal field advocate ingestion of recommended dietary calcium and vitamin D from food sources. When it is not possible to obtain an adequate amount of calcium from dietary sources (preferably combined with vitamin D), it is important that the shortfall be addressed by taking additional calcium in the form of calcium supplements.^{1,3,4}

BHOFF does not advocate that vitamin D supplements be indiscriminately prescribed for the population at large, but does recognize that extensive scientific evidence has shown a link between supplementation in deficient individuals and fall prevention in community-dwelling adults aged 65 years or older who are at increased risk for falls.

In light of all scientific studies looking at the risks and benefits of vitamin D and calcium, BHOFF reminds the public of the following three steps for bone health:

1. Aim to get the recommended daily amount of calcium you need from food first and supplement only as needed to make up for any shortfall. There is no benefit to taking more calcium than the recommended daily amount and too much may be harmful. Vitamin D may not be present at adequate levels in food, so you may need to take a supplement to get the recommended amount of vitamin D.

- BHOFF recommends that women age 50 and younger get 1,000 mg of calcium from all sources daily and that women age 51 and older get 1,200 mg.
- For men, BHOFF recommends 1,000 mg of calcium daily for those age 70 years and younger and 1,200 mg for men age 71 years and older.
- Most adults under age 50 years need 400-800 international units (IU) of Vitamin D daily and most adults age 50 years and older need 800-1,000 IU daily.
- Some individuals need more vitamin D to maintain healthy blood levels of the vitamin, so be sure to talk with your healthcare provider to determine the amount that's right for you.

2. Maintain an overall healthy lifestyle by eating plenty of fruits and vegetables, exercising and not smoking or drinking too much alcohol.
3. If you are diagnosed with osteoporosis, work with your healthcare provider to determine an appropriate treatment plan. This may include medication, as well as counselling on consuming a bone healthy diet rich in both calcium and vitamin D that includes the amounts recommended above, and exercise regimen. Follow your plan and consult with your healthcare provider before making any changes to your treatment.

BHOFF recognizes that both too little and too much calcium and vitamin D may have deleterious long-term health effects. For this reason our recommendations are conservative and adhere strictly to amounts of these substances that have been proven to be safe and effective.

¹ IOM (Institute of Medicine). 2011. Dietary Reference Intakes for Calcium and Vitamin D. Washington, DC: The National Academies Press.

² Scientific Report of the 2015 Dietary Guidelines Advisory Committee. Available from: <http://www.health.gov/dietaryguidelines/2015-scientific-report/PDFs/Scientific-Report-of-the-2015-Diet-Guidelines-Advisory-Committee.pdf>.

³ National Institutes of Health, Office of Dietary Supplements. Calcium fact sheet for consumers. Viewed 24 July 2015. Available at: <https://ods.od.nih.gov/factsheets/Calcium-Consumer/#h4>.

⁴ National Institutes of Health, Office of Dietary Supplements. Vitamin D fact sheet for consumers. Viewed 24 July 2015. Available at: <https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/>.

⁵ U.S. Preventive Services Task Force. Final Recommendation Statement: Falls Prevention in Older Adults: Counseling and Preventive Medication. Viewed 28 July 2015. Available at: <http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/fallsprevention-in-older-adults-counseling-and-preventive-medication>.

⁶ How Much Calcium Do You Need? Available at: <http://nof.org/calcium#CALCIUM>

Bone Healthy Ingredients

Instructions: Choose (1) EXCELLENT or (2) GOOD Sources of Calcium PLUS at least 2-3 other bone healthy ingredients from those listed per meal

Excellent Sources of Calcium
Milk (1% or fat-free), Low fat buttermilk, non-fat evaporated milk (8oz =300 mg Ca)
Yogurt or Greek yogurt (1% or fat-free) (8oz = 300-400 mg Ca)
Reduced fat swiss cheese or other hard cheeses (containing ≥ 20% DV Calcium & 5 g of fat per serving) - (1oz = 200 mg Ca)
Ricotta cheese (part-skim, low fat, or fat-free) (≥1/3 cup)
Beans: black-eyed peas, white beans, navy beans, soy beans (1cup, well-rinsed)
Collards, okra (1c. cooked) ½ c. can turnip greens = 135 mg Ca
Sardines, canned with bones (3oz include bones in recipe)
Salmon, canned with bones (3oz include bones in recipe)
Fortified Foods: Low-fat almond beverage w/ calcium added (8oz); Low fat coconut beverage w/ calcium added (8oz); Orange juice w/ calcium added (8oz); Low fat rice beverage w/ calcium added (8oz); Low fat soy beverage with calcium added (8oz); or Cereal with 100% DV calcium added (1/4 cup)

Good Sources of Calcium
Reduced fat varieties of the following cheeses: Mozzarella (1oz), blue (1oz), feta (1oz), cottage (1/2 cup)
Low fat or fat-free frozen yogurt or frozen Greek yogurt, or light ice cream (1/2 cup)
Kale, mustard greens, Chinese cabbage (Pak-choi), dandelion greens, okra, peas in pod (1 cup cooked); 1 c. raw broccoli= 45 mg Ca
Canned shrimp or crab (6oz)
Beans: great northern, navy, white (1 cup)
Figs (4 dried)
Tofu, prepared with calcium (80g or half a block)
Fortified Foods: Low-fat almond beverage w/ calcium added (8 oz); Low fat coconut beverage w/ calcium added (8oz); Orange juice w/ calcium added (8oz = 300 mg Ca); Low fat rice beverage w/ calcium added (8oz); Low fat soy beverage with calcium added (8oz)

Lean Protein
Lean cuts of ground beef, lamb, pork, or veal (1oz); skinless poultry (1oz w/o bone)
Game meats - bison, rabbit, venison (1oz)
Quinoa (1 cup)
Eggs (1 egg or 2 egg whites)
Fish - catfish, cod, flounder, haddock, halibut, herring, mackerel, pollock, porgy, sardines, salmon, sea bass, snapper, swordfish, trout, tuna (1oz)
Shellfish -clams, crab, lobster, mussels, octopus, oysters, scallops, calamari, shrimp (1oz)
Dairy Foods (low fat- 5 grams or less per serving or fat free): milk (8oz), cheese (hard, 1oz; cottage or ricotta - 1/4 cup), yogurt (6oz)
Beans and Peas - black beans, black-eyed peas, chickpeas, kidney beans, lentils, lima beans, navy beans, pinto beans, soybeans, split peas, white beans (rinse all beans well) (1/4 cup)
Soy Foods: tofu w/ added calcium (1/4 cup or 2oz), tempeh (1 oz), texturized vegetable protein (1oz); roasted soybeans (1/4 cup)

Vitamin D
Fish (3-4 oz): Eel, trout, swordfish, catfish, mackerel, salmon, light tuna, halibut, sardines, flounder or sole
Fortified cows milk, 1% or fat free (1 cup)
8oz - Almond, rice, coconut or soy beverages, fortified with 25% or more DV vitamin D
Orange juice with vitamin D (1 cup)
Shiitake mushroom (fresh - 1 cup per serving; sundried - rehydrate to 1 cup)

Magnesium
Substitute for refined, white flours: buckwheat flour, whole wheat flour, corn meal, oats (steel cut or whole), bulgur (1/2 cup or more)
Sweeteners: unsweetened baking chocolate 1 square; dates (1 cup)
Nuts and Seeds: brazil nuts, cashews, peanuts, almonds, hazelnuts, filberts, pumpkin seeds, sesame seeds, sesame butter (1 oz)
Certain Vegetables: spinach, swiss chard, okra, collards, artichoke, plantain, sweet potato, potato

Vitamin K

Kale, Collards, Spinach, Turnip Greens, Mustard Greens, Beet Greens, Dandelion Greens (1 cup)

Vitamin C

Fruits and Fruit Juices (1 cup juice or 1 cup fruit) - Apricot nectar, unsweetened; Cantaloupe melon; Grapefruit juice, unsweetened; Kiwifruit; Mango; Orange; Orange juice, unsweetened (fresh or frozen concentrate); Papaya; Pineapple; Strawberries

Vegetables and Vegetable Juices (1 cup) - Broccoli; Brussels sprouts; Cauliflower; Collards; Kale; Kohlrabi; Peas; Peppers, sweet, red or green; Pepper, hot chili, green or red; Tomato juice, low sodium; V8 juice, low sodium

Potassium

Vegetables (350 mg per 1 cup): Artichokes; Beet greens, beets; Broccoli, cooked; Brussels sprouts; Carrots, carrot juice; Cucumber with peel; Kohlrabi; Lettuce: iceberg, bibb, boston; Onion; Mushrooms; Parsnips; Plantains; Potato, white or sweet with skin; Pumpkin; Rutabagas; Spinach; Sweet potato; Tomatoes, tomato paste, puree, sauce, canned tomatoes, tomato juice (low sodium); Turnip greens, cooked; Winter squash, all varieties

Protein Foods: Beans: white, soybeans, lima, pinto, lentils, kidney, split peas, navy, lima, cowpeas (1 cup); Fish: Cod, haddock, halibut (Atlantic and Pacific), rockfish, salmon, swordfish, yellowfin tuna, trout (3 oz); Milk, fluid, evaporated, or dry instant (choose 1% or less) (8oz); Yogurt (choose 1% or less)

Fruits (1 cup juice or 1 cup fruit or as listed): Apricots, dried; Bananas; Dates (5); Grapefruit and grapefruit juice, unsweetened; Mango; Melon: cantaloupe, honeydew; Oranges, orange juice, fresh or frozen, unsweetened; Papaya; Peaches; Pineapple; Prunes, Prune juice (1/2 cup); Raisins (2 tablespoons or more)

Grains: Buckwheat flour; Bulgur; Barley

Omega 3 Fats

Oils (1 Tbsp): Flaxseed, Canola (Grapeseed), Perilla seed, Tahini Seeds (1oz): Flax, Chia, Hemp Nuts (1oz): Walnuts, Soy nuts

Other Plant-based Omega 3: Spirulina, Seaweed, Purslane, Edamame (1 cup)

Oily Fish (3 oz): Anchovies, Bass, Bluefish, Capers, Halibut, Herring, Oysters, Mackerel (Atlantic and Pacific), Salmon, Sardines, Smelt, Swordfish, Trout, Tuna





30 Safety Tips and Ways To Prevent Falls

1. Remove all loose wires, cords and throw rugs.
2. Keep all rooms free from clutter, especially on the floors.
3. Be sure all carpets and area rugs have skid-proof backing or are tacked to the floor, including the carpeting on stairs.
4. Do not use slippery wax on bare floors.
5. Keep furniture in its accustomed place.
6. Install grab bars on the bathroom walls beside the tub, shower and toilet.
7. Use a non-skid rubber mat in the shower or tub.
8. If you are unsteady on your feet, consider using a plastic chair with a back and non-skid legs in the shower or tub, and use a hand-held shower head to bathe.
9. Use non-skid mats or rugs on the floor near the stove and sink.
10. Clean up spills as soon as they happen (in the kitchen and anywhere in the home).
11. Place light switches within reach of your bed and a night light between the bedroom and bathroom. Keep a flashlight with fresh batteries beside your bed.
12. Keep stairwells well lit, with light switches at the top and the bottom. Mark the top and bottom steps of stairs with bright tape.
13. Install sturdy handrails on both sides of stairs.
14. Cover porch steps with gritty, weatherproof paint.
15. Install handrails on both sides of porch steps.
16. Place items you use most often within easy reach. Avoid stooping or bending.
17. Use assistive devices to help avoid strain or injury. Use a long-handled grasping device to pick up items and use a pushcart to transfer hot or heavy items.
18. If you must use a step-stool, use a sturdy one with a handrail and wide steps.
19. Consider wearing a personal emergency response system (PERS) or keeping a portable telephone with you so you can call for help immediately should an accident occur (it also prevents you from rushing for your phone when it rings).
20. Don't get up too quickly after eating, sitting, lying down or resting. To help avoid dizziness when getting out of bed, sit on the side of the bed for a minute or two before getting up and standing.
21. Talk to your healthcare professional or pharmacist about the side effects of drugs you take. Some can make you feel dizzy or drowsy.
22. If you are unsteady on your feet, use a cane or walker at all times.
23. Wear supportive, low-heeled shoes inside and outside your home.
24. Use at least 100 watt bulbs (or LED bulbs) in your home to have ample light.
25. Add ceiling fixtures to rooms lit by lamp only, or install a lamp that can be turned on by a switch near the room entrance. Voice or sound activated lighting is another great option.
26. Reorganize work areas and storage to minimize the need for stooping or excessive reaching.
27. Avoid sitting in chairs or on stools that have wheels.
28. Adjust nighttime thermostat to be greater than 65 degrees as this is known to cause drops in body temperature which in turn leads to dizziness and falling.
29. Arrange with a family member or friend for daily contact. Always have at least one person who always knows where you are.
30. Consider contracting a monitoring company that will respond to your call 24 hours a day if you live alone. Many home security systems provide this as well.

Keeping Good Posture, Body Mechanics and Alignment

Good posture and proper body mechanics are important throughout your life, especially if you have osteoporosis. “Body mechanics” refers to how you move throughout the day. Knowing how to move, sit and stand properly can help you stay active and prevent broken bones and disability. Keeping good posture can also help to limit the amount of kyphosis, or forward curve of the upper back, that can result from broken bones in the spine.

One of the most important things about body mechanics and posture is alignment. Proper alignment of the body puts less stress on the spine and helps you have good posture. Alignment refers to how the head, shoulders, spine, hips, knees and ankles relate and line up with each other. To keep proper alignment, avoid the following positions or movements:

- Having a slumped, head-forward posture
- Bending forward from the waist with straight legs
- Twisting or bending the torso (trunk) to an extreme
- Twisting the torso (trunk) and bending forward when doing activities such as coughing, sneezing, vacuuming or lifting
- Anything that requires you to reach far. An example is reaching up for items on high shelves when you could lose your balance and fall
- Strenuous overhead lifts or carrying packages that are too heavy

Some exercises can do more harm than good. If you have osteoporosis or have broken bones in the spine, you should avoid exercises that involve bending over from the waist. Some examples of movements you should **NOT** do include toe touches, abdominal crunches and sit-ups (see images below).

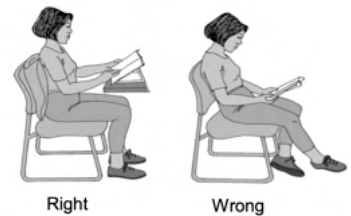
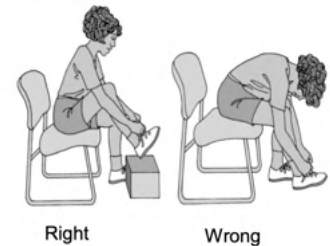


DO NOT PERFORM THESE

In addition to these movements, many exercises and activities such as yoga, Pilates, tennis and golf may need to be avoided or adjusted because they often involve twisting and bending motions. Bending forward during routine activities also puts stress on the spine and can increase the chance of breaking a bone in the spine. Since bending forward puts strain on the spine, it's safer if you're able to keep your back flat. In the following pages we will discuss how you can keep good posture, body mechanics and alignment when you perform your daily activities.

Sitting

- When sitting in a chair, try to keep your hips and knees at the same level. Place your feet flat on the floor. Keep a comfortable posture. You should have a natural inward curve to your lower back and a tall, upright upper back.
- When tying your shoes or drying your feet, sit in a chair. Place one foot on a footstool, box or on your other leg. Lean forward at the hips to tie or dry. Do not bend over or slouch through your upper back. Keep the natural inward curve of your lower back and a straight upper back.
- Use a footstool or footrest when seated for long periods of time.
- When sitting in bucket seats or soft couches or chairs, use a rolled up towel or pillow to support your lower back.
- When sitting at a desk, prop up a clipboard so it slants toward you, like a drafting table.
- When reading, do not lean or slump over. Set your reading material on a desk, table or on pillows on your lap.
- When standing up from a chair, move your hips forward to the front of the chair, and use your leg muscles to lift yourself up.
- When driving, use the head rest.



Standing

- Keep your head high, chin in, shoulder blades slightly pinched together.
- Maintain the natural inward curve of your lower back as you flatten your abdomen (tummy) by gently pulling it in.
- Point your feet straight ahead with your knees facing forward.
- While standing in one place for more than a few minutes, put one foot up on a stool or in an open cabinet (if in kitchen). Switch to the other foot every so often. You'll find this much less tiring for your back and legs.



Walking

- Keep your head high, chin in, shoulder blades slightly pinched together.
- Keep your feet pointed straight ahead, not to one side (note arrows).
- Your knees should face forward. Keep them slightly bent.
- Avoid letting your knees lock as you bring your weight over your feet.
- Wear rubber or other non-slip soles when walking, and land lightly on your foot.
- Don't wear loose slip-on shoes or slippers.



Climbing Stairs

- Use the stairs for exercise and to help maintain your bone density, but only if your healthcare provider says it's safe for you. Build up gradually with this exercise.
- Keep your head high, chin in, shoulder blades slightly pinched together and abdomen (tummy) gently pulled in.
- Keep your feet pointed straight ahead, not to one side. Your knees should face forward. Keep your knees slightly bent.
- Instead of putting one foot directly in front of the other, keep your feet a few inches apart, lined up under the hip on the same side.
- For safety, hold the rail while going up and down but try to avoid pulling yourself up by the railing. Be especially cautious going downstairs to avoid a serious fall.



Right

Getting Into and Out of Bed

A. Getting Into Bed

- First, sit down on the side of the bed. Lean toward the head of the bed while supporting your body with both hands.
- Then lie down on your side, bringing both feet up onto the bed at the same time.
- Keep your knees bent and arms in front of you. Then roll onto your back in one motion. Pull your abdomen (tummy) in as you roll to support your back and to help prevent twisting.
- Keep nose, knees and toes pointing in the same direction. Do not lift your head and upper back to move in bed. This puts a great deal of strain on your spine and could cause breaks in the spine.



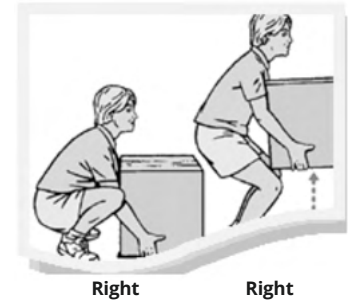
B. Lying Down and Getting Out of Bed

- When lying on your side in bed, use one pillow between your knees and one under your head to keep your spine aligned and increase your comfort.
- When lying on your back in bed, use one or two pillows under your knees and one under your head.
- Try to avoid using extra pillows to prop your head and upper back since this will put you into a rounded upper back position. But, if you have a rounded upper back posture with a forward head, you may need two pillows to support your neck comfortably.
- When getting out of bed, reverse the steps you took to get in bed (above):
 1. Keep both arms in front of you.
 2. Pull your abdomen (tummy) in and breathe as you roll onto your side.
 3. Keep your abdomen (tummy) pulled in and use your hand to raise your upper body as you carefully place your legs over the side of the bed in one motion.
 4. Sit on the edge of the bed for a moment or two before you stand up.



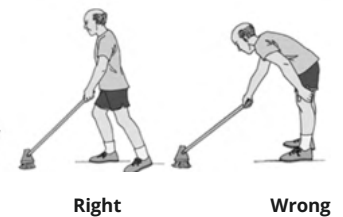
Lifting and Carrying

- Don't lift or carry objects, packages or babies weighing more than 10 pounds. If you're unsure about how much you can lift, check with your healthcare provider.
- If you are picking up a heavy object, never bend over so that your back is parallel to the ground. This places a lot of strain on your back.
- To lift an object off the floor, first kneel on one knee. Place one hand on a table or stable chair for support if you need it.
- Bring the object close to your body at waist level. Gently pull your abdomen (tummy) in to support your back and breathe out when you are lifting an object or straightening up. Do not hold your breath. Stand using your leg and thigh muscles.
- When carrying groceries, request that your bags be packed lightly. Divide heavy items into separate bags. Hold bags close to your body. Balance the load by carrying the same amount in each hand.
- When unpacking, place bags on a chair or table rather than on a high counter or floor. This prevents extra lifting and twisting of the spine.
- Instead of carrying a heavy pocketbook or purse, consider a fanny pack.



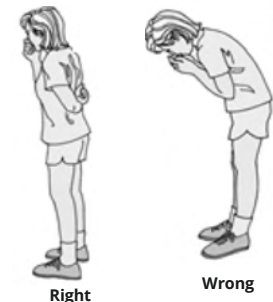
Pushing and Pulling

- When you vacuum, rake, sweep or mop, keep your feet apart with one foot in front of the other. Face your work directly to keep from twisting your back.
- Shift your weight from foot-to-foot in a rocking movement. With knees bent and shoulder blades pinched together, move forward and back, or from side to side rhythmically. Do not bend forward from the waist.



Coughing and Sneezing

- Support your back with one hand whenever you cough or sneeze.
- Place your hand behind your back or on your thigh. This protects the spine from damage caused by a sudden bend forward.



Bending and Turning

- Keep your feet flat and about shoulder-width apart from one another.
- Let both upper arms touch your ribs on the sides, unless you're using one hand for support .
- As you bend, keep back upright and straight and shoulder blades pinched together .
- Bend only at the knees and hips. Do not bend over at the waist since this will put your upper back into a rounded position which can cause broken bones in the spine.
- Even when standing to brush your teeth or wash dishes, try not to bend over at the waist, but rather bend at the knees and hips while keeping your back straight.
- When changing direction, move your feet with your body. Do not twist the spine. Pivot on your heels or toes with your knees slightly bent. Keep nose, knees, and toes pointing in the same direction.



Balance Exercises

Balance and leg strengthening exercises can help improve balance while decreasing the risk of falls. Many fitness centers, community centers and other organizations offer balance exercise programs, such as Tai Chi classes. Balance exercises can also be done at home.

Who should do balance exercises? Balance exercises are especially important if you have fallen during the past year or if you lose your balance while doing regular daily activities.

How often should you do balance exercises? You can do balance exercises every day. You can perform these exercises at one time or spread them throughout the day. Below is an example of a balance progression exercise you can do at home.

Balance Training Progression Exercise.* Before beginning the progression exercise, keep in mind that your legs and feet should feel a little wobbly to show that balance is being challenged. However, you should never feel like you could fall. Make sure to read all of the information about the Balance Training Progression before beginning the exercise.

- **Level 1 Feet together:** Stand with feet tight next to each other.
- **Level 2 Semi-tandem:** Stand with one foot in front but slightly to the side of the other with the inside edge of the front heel touching the inside edge of the back foot's big toe.
- **Level 3 Tandem:** Stand with one foot directly in front of the other like being on a tight rope.
- **Level 4 Single leg stance:** Stand on one leg only.



*This exercise should not hurt in any way while it is being done or cause muscle soreness lasting more than two days. All individuals should obtain permission from their healthcare provider before beginning a new exercise program.

At first, you may need to hold onto a stable chair or table with both hands. When you no longer wobble, hold on with one hand only. Then progress to doing the exercise while touching the chair or table with one fingertip only. As you become steadier, you should hold both hands two inches above the chair or table or do the exercise with your eyes closed.

Start with Level 1 and try to hold the position for 20 - 30 seconds. Once you can do this, progress to the next level. As you are able to master each level, progress to the next level until you can stand on one leg with your eyes closed with your hands two inches above the chair or table.

This exercise can be done once each day. Stop the exercise immediately if you feel like you could fall.

Posture Exercises

Good posture includes keeping your ears over your shoulders, your shoulders over your hips, your hips over your knees and your knees over your ankles. Posture exercises can also help you reduce rounded or “sloping” shoulders. These exercises can also help you reduce the chance of breaking bones in your spine. Doing a variety of posture exercises can help to stretch and strengthen the muscles in your upper body, abdomen (tummy), back and lower body.

Who should do posture exercises? Good posture is important for everyone. Posture exercises are especially important if your head is slumping forward, your shoulders are rounded or your spine is curving forward.

How often should you do posture exercises? You can do posture exercises every day. You can perform these exercises at one time or spread them throughout the day.

Below is an example of a posture exercise that stretches the shoulders, flattens the upper back and improves rounded shoulders:

Corner Stretch Exercise Example*

1. Stand in the corner of a room with your arms bent at a 90 degree angle at shoulder level and hands touching the walls (see picture below for proper position of head, arms and legs).
2. Step one foot forward, letting that knee bend.
3. Lean onto your front leg, bringing your head and chest toward the corner. You should feel a light stretch in your shoulders. Look at the corner of the wall at chest level to avoid overextending the neck.
4. Hold for 20-30 seconds.
5. Stand up straight and switch feet.
6. Repeat the exercise on the other side



*This exercise should not hurt in any way while it is being done or cause muscle soreness lasting more than two days. All individuals should obtain permission from their healthcare provider before beginning a new exercise program.

The Corner Stretch exercise should be done twice on each side about three times per week.

Functional Exercises

Functional exercises are similar to the activities you do each day. These exercises can help you stay strong when doing these activities, such as getting in and out of a chair.

Who should do functional exercises? If you struggle to do every day activities, such as standing up from a chair or climbing stairs, you should do functional exercises. Also, if you have recently been inactive due to a broken bone, surgery, an illness or other reason, you may also benefit from these exercises.

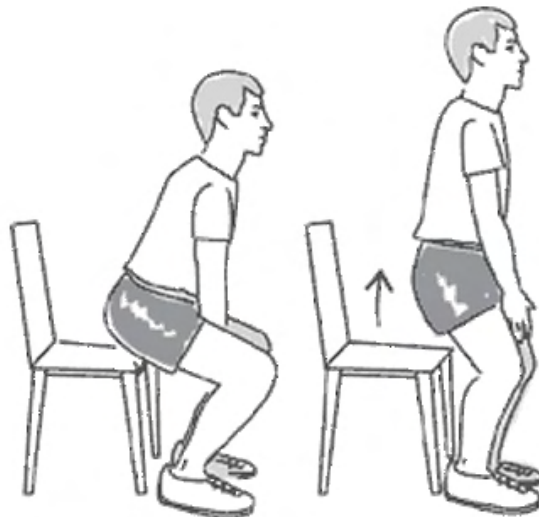
How often should you do functional exercises? You can do functional exercises every day. You can do these exercises at one time or spread them throughout the day. Below is an example of a functional exercise that helps with safety when getting up from a chair to a standing position. It also helps strengthen legs.

Chair Rise Exercise Example:

1. Sit on the front edge of a chair and rise to the standing position. Then gently sit back down without using your arms. It may be helpful to cross your arms over your chest to prevent using them.
2. Keep your knees and feet hip-width apart at all times.
3. Use the strength of your legs to stand and sit.
4. If this can't be done without using your arms, place a pillow on the seat of the chair (underneath you) to make it a bit easier.
5. The goal is to stand and sit 10 times in a row. Once a set of 10 can be comfortably completed, remove the pillow or move the exercise to a lower chair to make it harder.

*This exercise should not hurt in any way while it is being done or cause muscle soreness lasting more than two days. All individuals should obtain permission from their healthcare provider before beginning a new exercise program.

The Chair Rise Exercise can be done once each day.





Preventing Falls Is Important

Each year about one-third of all people age 65 and older will fall. Preventing falls is important for older people and anyone with osteoporosis. If you have osteoporosis, you are more likely to break a bone from a fall, especially in your hip, spine or wrist. A broken bone is also called a fracture. Most hip fractures are associated with osteoporosis and the majority of broken hip bones in older people happen after a fall. Broken bones can limit your ability to lead an active, independent and pain free life.

Many of us face winters with shorter days, cold temperatures, snow and ice. While this weather can be dangerous for anyone, it is a special concern for people with osteoporosis. In addition to having fragile bones, older people often lose much of the muscle and body fat that help to cushion and protect the bones. Loss of padding in the hip area may make the hip more likely to fracture.

Luckily you can help prevent falls by giving attention to safety both indoors and outside, by being aware of physical changes with advancing age and by engaging in appropriate lifestyle behaviors.

Outdoor Safety Tips

- Wear low-heeled shoes with rubber soles for added traction, and wear warm boots in winter.
- Use hand rails as you go up and down steps and on escalators.
- If sidewalks look slippery, walk in the grass for better traction.
- In winter, carry a small bag of rock salt, kosher salt or kitty litter in your pocket or car. You can then sprinkle the salt or kitty litter on sidewalks or streets that are slippery.
- Look carefully at floor surfaces in public buildings. Many floors are made of highly polished marble or tile that can be very slippery. When these surfaces are wet, they may become dangerous. When floors have plastic or carpet runners in place, stay on them whenever possible.
- Keep your porch, deck, walkways and driveway free of leaves, snow and debris and keep them in good repair.
- Cover porch steps with a gritty, weather-proof paint
- Turn on the porch light before leaving your home in the early evening so that you have outdoor light when you return after dark.
- Use a shoulder bag, fanny pack or back pack to leave your hands free.
- Use a walker or cane as needed for added stability.
- Identify community services that can provide assistance, such as 24-hour pharmacies and grocery stores that take orders over the phone and deliver, especially in poor weather.
- Stop at curbs and check the height before stepping up or down. Be cautious at curbs that have been cut away to allow access for bikes or wheelchairs. The incline may lead to a fall.
- Consider wearing hip protectors or hip pads for added protection should you fall.





Physical Changes

As we age, we tend to experience changes in our reflexes, balance, hearing and vision. These changes can lead to falls. So can having certain illnesses and taking certain medicines. Here are some explanations of these changes as well as some tips that can help you reduce the chances of falling:

Reflexes. Reflexes are automatic responses to stimuli in the environment. Examples include slamming on your car brakes when a child runs into the street or moving out of the way quickly when something falls in front of you. As you age, your reaction time slows and regaining your balance following a sudden movement may be difficult. This decreased ability to control your movements can result in a fall.

To improve body control, keep up an active lifestyle. Activity maintains muscle tone and flexibility and slows bone loss. Regular weight-bearing exercises and weight training can build and tone muscles even in older persons. Keeping up the strength in your arms and legs can go a long way to improving how well you move. Talk to your healthcare provider about activities that are safe and beneficial for you, keeping in mind your individual situation.

Balance. Improving your balance helps to prevent falls. There are several ways to enhance your balance. Consider joining a class or group that practices Tai Chi. It is an exercise that can improve balance and coordination. Lack of exercise not only robs your bones of density, but it can lead to muscle weakness, which increases your risk of falling. Here are some additional tips to help with balance:

- Do muscle-strengthening exercises.
- Make sure you have maximum vision correction and practice exercising with your bifocal or trifocal glasses.
- Stay informed about the side effects of your medicines and follow the instructions for taking them.
- Do balance exercises regularly.

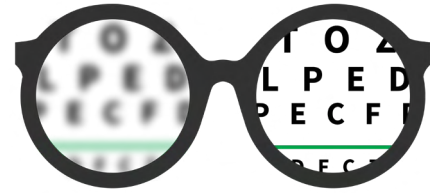
Balance exercises to practice:

- While holding the back of a chair or counter top, practice standing on one leg at a time for a minute. Gradually increase the time. Then try balancing with your eyes closed. Then try balancing without holding on.
- While holding the back of a chair or counter top, practice standing on your toes. Then rock back to balance on your heels. Hold each position for a count of 10.
- While holding the back of a chair or counter top with both hands, make a big circle to the left with your hips. Then repeat to the right. Do not move your shoulders or feet. Repeat five times.

Hearing. Changes in hearing occur as we age. Sounds around us help orient us to where we are and when we are in danger. If you do not hear as well as you used to, or if you are always asking those around you to repeat themselves, it is time to have a hearing test. If you have hearing loss, be sure to wear a hearing aid.



Vision. Vision also changes with age. Cataracts or glaucoma can develop. Your eyes may take longer to adjust to changes in the light and glare. Changes in depth perception or peripheral vision can decrease your ability to judge the steepness of stairs and curbs or to avoid obstacles in your path. Have regular eye exams, and if needed, wear prescription glasses or contact lenses.



Illnesses and Medication. Some people have illnesses that affect circulation, sensation or mobility. Stay informed about your medical conditions. Certain medications, such as blood pressure pills, heart medicine, diuretics, sleeping pills, sedatives, antidepressants, muscle relaxers and tranquilizers, can cause confusion, dizziness, disorientation and slowed reflexes. Talk to your healthcare provider or pharmacist about the side effects of the drugs that you take and how they may affect your coordination or balance. Be aware that the use of multiple medicines can increase your risk of falling. Never change or skip medications without first talking with your healthcare provider.

Lifestyle Behaviors. Certain lifestyle behaviors can make a person more susceptible to a fall, for example:

- Alcohol slows reflexes and may cause confusion, dizziness or disorientation.
- People in a hurry need to slow down. Accidents are more likely to happen when you do things in haste.
- It's important to stay alert and focused when in public places.
- Exercising regularly helps maintain bone density. A physical therapist can help you develop a safe and appropriate exercise program.
- Physical training can increase muscle strength and size which helps to support the bones and prevent injury.
- If you need glasses, wear them.
- If you need a hearing aid, use it.
- Remember to wear appropriate shoes both indoors and out.
- Good nutrition with an adequate daily intake of calcium and vitamin D are important for bone health at all ages.

Summary

Taking precautions inside and outside your home as well as in your daily routine can help you prevent falls and broken bones. These measures can also help you lead an active and productive life.

For more information about osteoporosis, fall prevention and more, visit the BHOF website at bonehealthandosteoporosis.org



Mr. James W. Johnson, 1234 Main St., Suite 500, New York, NY 10001
Date of Birth: 01/15/1975
Patient ID: 123456789
Referring Physician: Dr. Robert M. Smith, MD
This patient was referred to the Radiology Department for a chest X-ray.
The patient is of legal age and is capable of understanding the nature and consequences of the examination and is giving consent for the examination.
I have interpreted the X-ray as follows:
The X-ray shows a normal chest X-ray with no evidence of pneumonia, pleural effusion, or other acute pathology.
Interpretation and the information given by the Radiologist:
I have interpreted the X-ray as follows:
Interpretation: Normal chest X-ray.
Date: 01/15/2025
Signature: _____



Bone Health & Osteoporosis
FOUNDATION™

THE BONE HEALTH & OSTEOPOROSIS FOUNDATION (BHOFF) IS THE LEADING HEALTH ORGANIZATION DEDICATED TO PREVENTING OSTEOPOROSIS AND BROKEN BONES, PROMOTING STRONG BONES FOR LIFE AND REDUCING HUMAN SUFFERING THROUGH PROGRAMS OF PUBLIC AND CLINICIAN AWARENESS, EDUCATION, ADVOCACY AND RESEARCH.

Established in 1984, BHOFF is the nation's only health organization solely dedicated to osteoporosis and bone health.

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 minor bumps.

Osteoporosis is common: Approximately 54 million Americans have osteoporosis and low bone mass. An estimated one in two women and up to one in four men age 50+ will break a bone during their lifetime due to this debilitating disease.

TAKE ACTION

SIMPLE STEPS TO PROTECT YOUR BONES

- ✓ Get enough calcium and vitamin D.
- ✓ Eat a well-balanced diet with foods that are good for bone health, like fruits and vegetables.
- ✓ Exercise regularly; weight-bearing exercises are critical for bone health.
- ✓ Don't smoke and limit alcohol intake.

PATIENT SUPPORT

USE THESE RESOURCES TO CONNECT WITH FELLOW OSTEOPOROSIS PATIENTS OR TO GET INVOLVED IN HELPING THOSE SUFFERING FROM THE DISEASE.

- ➔ **JOIN OUR ONLINE COMMUNITY**
www.bonehealthandosteoporosis.org/patients/patient-support/osteoporosis-support-community
- ➔ **JOIN A BHOFF SUPPORT GROUP**
www.bonehealthandosteoporosis.org/patients/patient-support/bhof-support-groups
- ➔ **LEARN FROM OTHERS' INSPIRATIONAL EXPERIENCES**
www.bonetalk.org/articles/category/Voices+of+Osteoporosis
- ➔ **PARTICIPATE IN OUR HEATHY BONES, BUILD THEM FOR LIFE® PATIENT REGISTRY**
www.bonehealthandosteoporosis.org/hbfl

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2406 East 81st Street, Suite 290
Tulsa, OK 74137

(918)927-3322

aook.com

