

⇒ **Exercise:**

- Low-moderate weight bearing activities are suggested for those with osteoporosis. Minimal to moderate weight bearing exercises include tai chi, swimming, walking, and resistance training with therabands. These activities should vary and be performed for 30-40 minutes per session, a minimum of 3 times a week (preferable 4-6 days of the week).
- Consistent and vigorous exercise is required to stimulate bone density (for those without osteoporosis). Good weight bearing exercises include but are not limited to fast walking, jogging, dancing, tennis, volleyball, and resistance training with free weights. The parameters for exercising are the same as above.
- Fall reduction strategies are recommended for those with a history of falls. See a physical therapist for exercises designed to challenge and improve your balance.
- BMD score will determine either the suggested intensity of exercise or level of weight bearing. It is recommended an exercise regimen should be initially supervised by a qualified health care professional such as a physical therapist. Other health conditions should be taken into consideration prior to exercising.
- Seek osteoporosis screening via a wellness center or your physician.



Additional Resources

- Nof.org (National Osteoporosis Foundation)
- iofbonehealth.org (International Osteoporosis Foundation)
- <http://www.niams.nih.gov/> (National Institute of Arthritis and Musculoskeletal and Skin Diseases)
- <http://www.cdc.gov/tobacco/campaign/tips/quit-smoking/> (Smoking Cessation)
- <http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm> (BMI Calculation)

**REFERENCES/
DISCLAIMER**

A copy of all resources can be furnished upon request, as well as a copy of the cited pamphlet information.

Please follow up with a physician as needed; as this pamphlet is not intended to replace full medical treatment.

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What's the 411 on Osteoporosis

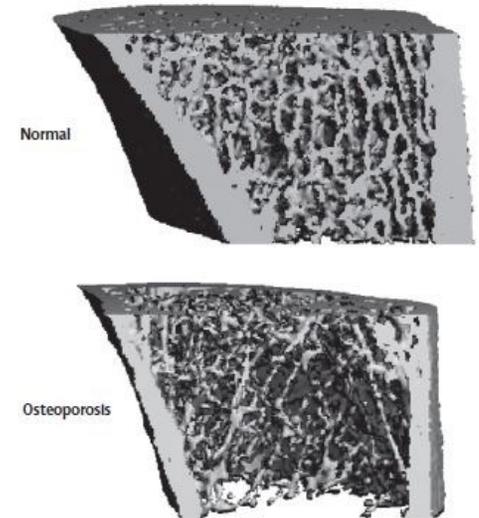


Figure 1

What is Osteoporosis?

Osteoporosis means “porous bones” indicating bones with a lot of space or holes compared to normal, healthy bone (Figure 1). It is a bone disease categorized by bone deterioration (losing too much bone), low bone mass (making too little bone), or a combination of both. Osteoporosis is referred to as the “silent disease” as symptoms are not evident until a fall or negligible incident causes a bone fracture (break). Typically the hip, vertebra (of the spine), and wrist are commonly fractured, although any bone can be affected.

What causes osteoporosis?

Osteoporosis can be of unknown cause or it may be attributed to another condition such as hyperthyroidism or celiac disease or a medication like steroids.

Am I at risk?

Osteoporosis affects both men and women over the age of 50 regardless of ethnic background. Caucasian women have a one in six lifetime risk of a hip fracture.

Risk factors for increasing the likelihood of developing osteoporosis include:

- Low bone mineral density (BMD)
- Being female and a petite body build
- Old age
- Family history
- Amenorrhea (missing 3 or more menstrual periods) or low levels of estrogen
- Men with low levels of testosterone and estrogen
- Poor diet (including but not limited to excessive intake of protein, sodium, and caffeine, low calcium and vitamin D intake)
- Inactive lifestyle
- Smoking
- Excessive alcohol intake (3 or more drinks per day)

Risk factors continued:

- Some medications such as steroids or anticonvulsants
- Certain disease and conditions including but not limited to anorexia nervosa, rheumatoid arthritis, gastrointestinal diseases

Osteopenia vs. osteoporosis

Around middle age bones begin to thin. Osteopenia is when the BMD is lower than the normal peak density but not as low as those with osteoporosis. Having osteopenia puts an individual at a greater risk for developing osteoporosis.

Re-evaluation of bone mineral density has been recommended annually if you have started taking any medications or supplements, and every 2 years if your BMD is approaching a T-score of -2.5 or less. Follow up with your physician to determine the effectiveness of the received treatment and your next step.

How do I know if I have osteoporosis?

The gold standard in testing osteoporosis is via a dual x-ray absorptiometry (DXA), which are x-rays. The DXA are will produce a T-score. If the T-score is between 2.5 and -1 this is considered normal bone density. Osteopenia is when the T-score is between -1 and -2.5 (low bone density). Osteoporosis is diagnosed if your T-score is below -2.5.

Quantitative ultrasound (QUS) and quantitative CT (QCT) techniques that allow doctors to visual the make up of the bone which allows them to determine the likelihood of their fracture. QUS has shown to detect the difference between individuals with osteoporosis versus osteopenia.

How can I prevent osteoporosis? How can I manage it?

Optimal treatment may reduce risk of developing osteoporosis by as much as 50%.

How can I prevent osteoporosis? How can I manage it? (continued):

⇒ Healthy lifestyle:

- Maintain a healthy weight and body mass index (BMI) (refer to additional resources)
- Quit smoking via a cessation program (refer to additional resources)
- Limit any excessive alcohol consumption
- Adequate and safe amounts of sun exposure to obtain vitamin D
- Regular exercise routine (see reverse side of page)

⇒ Diet/nutrition:

- Adequate amounts of calcium and vitamin D daily via food and/or supplements. When these supplements are taken together it has been shown to increase the effectiveness of osteoporotic drugs.

⇒ Medication:

- Antiresorptive drugs: reduce the rate of bone resorption
 - ◇ The most commonly prescribed drugs, Bisphosphonates, assist in maintaining the structure and composition of bone. It helps to increase mineral density in the area and helps to decrease the chance of fracturing a bone.
 - ◇ Some commonly known bisphosphonates include but are not limited to Fosamax, Reclast and Boniva.
 - ◇ Other available antiresorptive drugs include Raloxifene, Strontium Ranelate (women only), and Denosumab.
- Anabolic drugs: increase bone formation which reduces the risk of fractures
 - ◇ Parathyroid hormone (PTH 1-84)
 - ◇ Teriparatide (PTH 1-34)
- Hormone Therapy: It has been shown to decrease the chance of fractures in postmenopausal women. Men can also use hormone therapy to prevent bone loss. Hormone therapy is not recommended for long term use.