



# OSTEOPOROSIS

*The Silent Epidemic*

National Osteoporosis Awareness Health Project <sup>SM</sup>

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**Osteoporosis**  
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**Pre-Test / Post-Test**

***Please Circle The Correct Answer***

1. More women die from the effects of Osteoporosis than from any other disease except Heart Disease! True False
2. Osteoporosis is an inevitable part of menopause. True False
3. Men and young women can also fall victims to Osteoporosis. True False
4. A standard X-Ray can easily diagnosis Osteoporosis. True False
5. Osteoporosis is preventable and treatable. True False
6. Only Caucasian women with small frames are at significant risk of Osteoporosis. True False
7. Estrogen Replacement Therapy (ERT) and Hormone Replacement Therapy (HRT) are the safest ways to reduce and/or prevent Osteoporosis. True False
8. All types of exercise are recommended to prevent Osteoporosis. True False
9. For women with Osteoporosis who cannot, or choose not to take ERT/HRT, a doctor may recommend Calcitonin or Alendronate. True False
10. Men and women of all ethnic backgrounds can be at risk of Osteoporosis. True False
11. Younger men and women, age 20 to 50, can be at risk of Osteoporosis. True False

NAME \_\_\_\_\_ DATE \_\_\_\_\_, 20\_\_

## Osteoporosis - General Information

The term *Osteoporosis* comes from the Latin words **Osteo** = Bone and **Porosis** = Porous. Osteoporosis literally means Porous Bones.

Bone is a living, growing tissue. Throughout life, a dynamic process call “**remodeling**” occurs in which old bone is removed (**resorption**) and new bone is laid down (**formation**).

During the **resorption** phase, bone removing cells (**osteoclasts**) carve cavities into the surface of the bone, while in the **formation** phase, bone forming cells (**osteoblasts**) fill in the cavities with new bone until the bone surface is restored.

Beginning in childhood, and continuing through out early adulthood, bone formation normally occurs faster than bone removal, so that bones become larger, heavier, and denser. Maximum bone density and strength is reached between ages 20 and 30. In the early to mid-thirties, bone removal overtakes bone replacement leading to a net loss of bone tissue.

With Osteoporosis, bone formation is inadequate, or bone removal is excessive, or both of these abnormalities occur, and Osteoporosis leads to fragile bones, which break easily.

Osteoporosis is an exaggerated loss of bone tissue, which leads to reduced bone strength, poor bone quality, and an increased risk of fractures, typically in the hip, spine, wrist, and ribs.

Osteoporosis can affect the entire skeleton, and the consequences of Osteoporosis causes more than 1.5 million fractures every year. One in two women, and one in four men, over age 50 will have an Osteoporosis-related fracture in their lifetime. *Osteoporosis causes a fracture every 20 seconds!*

***A woman's risk of hip fracture is equal to her combined risk of breast, uterine, and ovarian cancer!*** Osteoporosis is responsible for over 300,000 Hip fractures each year. An average of 41% of the hip fracture patients age 50 and over leave the hospital to enter a nursing home. Half will be unable to walk without assistance. Complications from surgery correcting hip fractures can sometimes lead to death. ***An average of 24% of hip fracture patients, age 50 and over, 1/3 of whom are men, die in the year following their fracture!***

The spine is made up of a series of small bones called vertebrae. Vertebral compression fractures can result in a loss of height and stooped posture. Osteoporosis is responsible for approximately 700,000 vertebral fractures each year. A study in the January 17, 2001 JAMA (published by the American Medical Association), found almost 20% of women who experience a vertebral fracture will have another fracture within a year!

In 2002, the estimated national direct expenditures, in hospitals and nursing homes, for treating Osteoporosis, and associated fractures is \$17 billion annually; ***that's \$46.6 million each day!***

## Who Is At Risk Of Developing Osteoporosis?

Osteoporosis is a major public health threat for over 44 million Americans, 14 million of whom are men. The National Osteoporosis Foundation predicts that by 2010, 52 million Americans will be at risk.

In the United States today, 10 million individuals already have the disease, and 34 million more have low bone mass, placing them at increased risk for Osteoporosis.

**One out of every two women and one in four men**, over the age of 50, will have at least one Osteoporosis-related fracture in their lifetime. While Osteoporosis is often thought of as an older person's disease, *Osteoporosis can strike at any age*.

Caucasian and Asian women are at highest risk; African-American and Hispanic women are at lower, but significant risk. 10% of African-American women over age 50 have Osteoporosis, and an additional 30% have low bone density that puts them at risk of developing Osteoporosis. Significant risk has been reported in people of all ethnic backgrounds.

Factors that can increase the development of Osteoporosis include:

- Being Female;
- A thin, small-boned frame;
- Broken bones or stooped posture in older family members, especially women;
- Early estrogen deficiency in women who experience menopause before age 45, either naturally or resulting from surgical removal of the ovaries;
- Low testosterone levels in men;
- Estrogen deficiency as a result of amenorrhea (the abnormal absence of menstruation);
- Advanced age;
- Anorexia nervosa or Bulimia;
- A diet low in calcium;
- An inactive lifestyle with little or no exercise;
- Cigarette smoking;
- Excessive use of alcohol.

Prolonged use of certain medications including glucocorticoids, a group of anti-inflammatory medications used to treat conditions such as asthma, arthritis and certain cancers, excessive thyroid hormone and some anti-seizure medications.

# ASSESSING OSTEOPOROSIS

Osteoporosis has no symptoms, and can be determined only by a Bone Mineral Density (BMD) screening.

Medical screenings are available which can measure bone density safely and painlessly. These screenings, known as BMD screenings or Bone Mass Measurements, use small amounts of radiation to determine the bone density of the hip, spine, wrist, heel, or finger.

Routinely used X-rays, while they can detect breaks in bone, are not sensitive enough to detect Osteoporosis until 25 to 40 percent of bone mass has been lost.

There are several different techniques for measuring bone density. The ability of these techniques to detect low bone density is similar. The radiation exposure of these techniques is extremely low and very safe.

The Dual-Energy X-Ray Absorptiometry (DEXA) bone mineral density screening is the “gold-standard” of Osteoporosis tests.

A DEXA BMD screening uses special computer-analyzed x-rays of the hand taken at different settings to determine bone density. These BMD screenings are able to provide information on bone health much sooner, and can detect problems earlier than an ordinary X-Ray can.

The information obtained from a BMD screening should be a part of a complete medical work-up by a knowledgeable healthcare provider. However, **a BMD screening is the only way to detect low bone density**, and is presently the only reliable way to predict the chances of a fracture in the future.

If Osteoporosis is detected early, a program of nutrition and exercise, and possibly medication, can be prescribed, and the risk of fracture reduced.

***Osteoporosis is both preventable and treatable!***

## Ways Of Reducing The Risk Of Osteoporosis

A combination of proper diet, weight-bearing exercise, and, in some situations, medications can help preserve and improve strong bones as one grows older.

The minerals Calcium and Magnesium play an important role in maintaining bone. Calcium and Magnesium alone cannot prevent or cure Osteoporosis, but they are an important part of an overall prevention or treatment program.

One way to increase the amount of Calcium and Magnesium in one's diet is to eat Calcium-rich foods like low-fat milk, cheese, and leafy green vegetables like broccoli, kale, and spinach. If one cannot get enough Calcium and Magnesium through diet, then a healthcare provider can recommend appropriate Calcium and Magnesium supplements.

Getting enough Calcium and Magnesium, whether through diet or supplements, is essential to maintaining bone mineral density and strength, and can play a vital role in preventing Osteoporosis-related fractures.

Vitamin D plays an important role in Calcium absorption and in bone health. The relationship between Calcium and Vitamin D is similar to that of a locked door and a key. Vitamin D is the key that unlocks and opens the door, allowing Calcium to leave the intestine and more easily enter the bloodstream.

Vitamin D is synthesized in the skin through exposure to sunlight. While many people are able to obtain enough Vitamin D naturally, studies show that Vitamin D production decreases in the elderly, in people who are housebound, and during the winter. These individuals may require a Vitamin D<sub>3</sub> supplement to ensure a daily intake of at least 800 IU, but not more than 1600 IU of Vitamin D<sub>3</sub>.

Exercise can also be helpful in building and maintaining strong bones. Exercise that forces one to work against gravity, known as weight-bearing exercises, such as walking or jogging, are very beneficial. Other weight-bearing exercises include racquet sports, hiking, aerobic dance, and stair climbing. The benefits of exercise can last only as long as one maintains the program.

***Osteoporosis is both preventable and treatable!***

# ***National Osteoporosis Awareness Health Project<sup>SM</sup>***

The mission of the National Osteoporosis Awareness Health Project<sup>SM</sup> (NOAH) is to provide an accuDEXA<sup>TM</sup> Bone Mineral Density screening for every person, age 20 and older, of every ethnicity, who may be at risk of Osteoporosis, and to create and maintain an International Database of the results of these tests. This database is being made available for both Clinical Research and Marketing Studies in the subject areas of Osteoporosis awareness, prevention and treatment.

NOAH is a fully-insured, licensed, and registered program-related enterprise of the Accessibility Compliance Team-USA (ACTUSA). ACTUSA is a multi-cultural, community-based nonprofit, US IRS 501(c)(3) tax-qualified Preventative HealthCare and Improved Wellness organization with Independent State Affiliate Organizations in Alabama, California, Kansas, Nevada and Virginia.

ACT/USA sponsors NOAH which is dedicated to providing current Education regarding all aspects of Osteoporosis, and to conducting low-cost Osteoporosis accuDEXA<sup>TM</sup> Bone Mineral Density Screenings for individuals, their family members and friends, and members of community groups, corporate and government wellness programs, small businesses, and other organizations that are interested in Osteoporosis Awareness, Prevention and Treatment.

ACT/USA is actively seeking Churches, Civic Organizations, Clubs, Educational Institutions, Government Entities, Fraternal Groups, Fraternities and Sororities, HealthCare Providers, Small Businesses, Voluntary Health Agencies, Families and Individuals that are interested in using the NOAH Project as a joint Fundraising program locally, regionally, and nationally.

ACT/USA is actively seeking Professional Partnerships with Physicians, and other Health Care Providers, who wish to participate in the NOAH Project at their Medical Practice and Health Care locations.

ACT/USA also is actively seeking Corporate Contributions and Sponsorships to expedite the establishment of the NOAH Project in major cities throughout the United States, and to provide accuDEXA<sup>TM</sup> Bone Mineral Density Screenings for people who cannot otherwise afford a screening.

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