

# BONE BASICS

# 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 Can't Be Changed**

We can't change the basic biological facts of our lives - things like sex, age, and genetic heritage. Some of these factors are strongly linked with weak bones and osteoporosis. If you have any of these risk factors, you may be more likely to break a bone and/or develop osteoporosis:

- Thin/small body type
- Female gender

Menopause

- Broken bones (as adult)
- Older age
- Family history

Height loss

#### **Risk Factors That Can Be Changed**

While our basic biology cannot be changed, many other risk factors for weak bones are within our control. This includes things like nutrition, exercise, and healthy living. If any of the following risk factors applies to you, take action now to protect your bones.

- Not getting enough calcium and vitamin D
- Not eating enough fruits and vegetables
- Eating too much protein, phosphorus, sodium, and/or caffeine
- Not getting enough exercise
- Drinking too much
- Dieting too much
- Smoking (at all)

# MEDICAL RISK FACTORS

Many diseases, medications, and physical conditions upset your body's calcium balance. Some make it hard to absorb calcium from the foods we eat. Others cause our bones to release too much calcium or take in too little. Some conditions make it hard to walk or be active. Bone, like muscle, needs to be used to stay strong. Anything that keeps you off your feet weakens muscle and bone. Many conditions have more than one damaging impact on bone. For example, both lupus and rheumatoid arthritis are typically treated with bone-damaging drugs (steroids). They also cause pain and disability, making a person less active.

#### **MOBILITY ISSUES**

- BED REST FOLLOWING INJURY/SURGERY
- FATIGUE DISORDERS
- MUSCLE WEAKNESS
- PARALYSIS
- PARKINSON'S DISEASE
- STROKE

### **STEROID TREATMENT**

- INFLAMMATORY BOWEL DISEASES (IBD)
- LUPUS ERYTHEMATOSUS
- ORGAN TRANSPLANT
- RHEUMATOID ARTHRITIS
- SICKLE CELL DISEASE

## **FOOD INTAKE & MALABSORPTION**

- CELIAC DISEASE
- INFLAMMATORY BOWEL DISEASES (IBD)
- POOR DIET
- WEIGHT-LOSS SURGERY

## HORMONAL IMBALANCES

- PROSTATE CANCER TREATMENT
- DIABETES (TYPES 1 AND 2)
- EATING DISORDERS
- BREAST CANCER TREATMENT
- LOW MALE SEX HORMONES (ANDROGENS)
- MISSED OR IRREGULAR PERIODS
- THYROID AND PARATHYROID IMBALANCE

# PREVENTING FRAGILITY FRACTURES

If your bones are weak due to any of the reasons we have talked about here, they are much easier to break. This type of broken bone is called a "fragility" fracture. This is because it only happens in very weak bone under conditions that would not break normal bone. Most fragility fractures occur in the spine, at the wrist, and at the hip. All of these fractures cause pain and loss of function. They also make it more likely that you will become very ill, disabled, or even die. An estimated 20% of people who break a hip die in the following year. Preventing broken bones is critical to a long and healthy life.

The most common fragility fractures occur in the small spinal bones called vertebrae. Vertebrae carry a lot of our weight. When they get weak, they collapse. This is called a vertebral compression fracture, or VCF. Vertebral compression fractures may be painless ("silent VCF"). They may not be discovered until a person has developed extreme curvature of the spine (so-called dowagers hump). Even when a VCF is "silent," its potential impact is serious. Risk for death goes up 15% in the six months following a vertebral fracture.





## MEDICATIONS TO PREVENT FRAGILITY FRACTURES

There are many medications on the market proven to preserve bone. These drugs reduce the likelihood of having fragility fractures. You have your choice of daily, weekly, or monthly tablets, daily injections, yearly IV infusions, and other options. There is no best medication for everyone. The one that works for you depends on many factors. Your health history and preferences are considerations. Talk it over with your doctor.

## **CALCIUM AND VITAMIN D**

Whatever medication you are prescribed to protect your bones, it won't work without enough calcium and vitamin D. Calcium tablets are good for filling in when you can't get enough in your diet, but it is always better to get calcium from food. Because there aren't many food sources of vitamin D, supplements are recommended for people who need them.



## **SAFE MOVEMENT**

Certain positions and movements are dangerous for people with fragile bones. These include slouching; forward bending and twisting; motions that are abrupt or jarring; and lifting heavy objects, either from the floor or from overhead. Preventing future fractures usually requires learning new ways to perform tasks of daily life. In physical therapy you can learn spine-safe posture, body dynamics, and exercises to improve balance, strength, and stamina.

# **SUMMARY**

A strong adult skeleton starts in childhood with optimal diet, exercise, and sunshine. Even if you don't achieve your full skeletal potential, fragility fractures can be prevented. Universal recommendations for bone health include adequate vitamin D and calcium, weight-bearing exercise, and avoidance of smoking and excess alcohol intake. Additional fracture preventive measures may be needed. If you have had previous fractures, have a family history of fragile bones, or have been diagnosed with osteoporosis, you and your healthcare provider should discuss options for effective anti-fracture treatment.



## **PREVENTING FALLS**

Falls are the leading cause of broken bones in older people. If you prevent falls, you prevent most fractures. Many factors contribute to falling. These include bad eyesight, balance problems, weak legs, dizziness, and slow reflexes. A lot can be done to reduce risk for falls. Safety proof your home. Install grab bars in bathrooms. Get rid of tripping hazards. Put in brighter light bulbs. Keep your glasses prescription up to date. Exercise for muscle strengthening and balance training. Let your doctor know right away if you are feeling dizzy. The bottom line is that you should stay as active as possible to build endurance and agility.



## FOR ADDITIONAL INFORMATION, VISIT THE NOF WEB SITE AT NOF.ORG

There you will find newsletters, handbooks on exercise and safe movement, anti-fracture medications, access to support groups, and more.



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