

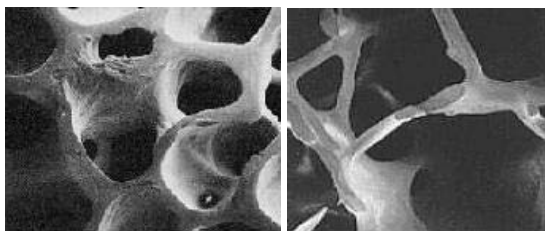
# GMHC's Nutrition & Wellness Program

## BONE HEALTH

People with HIV have an increased risk of two bone disorders: osteoporosis and osteonecrosis. We don't know if these are caused by HIV or by antiviral medications.

### WHAT IS BONE?

Bone is a living, growing material. It has a framework of protein. Calcium strengthens the bone framework. The outer layer of bone has nerves and a network of small blood vessels.



*Normal Bone*

*Osteoporotic bone*

Old bone is removed and new bone is added all the time. Before age 30, our bones get heavier and stronger as more bone is added than is removed. After age 30, more bone is removed which causes our bones to become lighter and more brittle.

### WHAT IS OSTEOPOROSIS?

**Osteoporosis**, or porous bone, occurs when too much mineral is removed from the bone framework. The bones become brittle and fracture more easily. The most common fractures are in the hip, the spine (vertebrae) and the wrist. **Osteopenia** is loss of bone minerals, but is less severe than osteoporosis.

### WHAT CAUSES IT?

As we age, our bones lose their mineral content. You may lose bone mineral faster if you are:

- Over age 50
- Post-menopausal
- Caucasian or Asian
- Slender and lightweight

- Not enough calcium or vitamin D in your diet
- Smoking
- Excessive use of caffeine or alcohol
- Lack of physical activity

### HOW DO I KNOW IF I HAVE BONE LOSS?

You can have bone loss without any symptoms, but there are tests to diagnose it. This is very important if you're at high risk (many HIV-positive women are) or if you've been experiencing bone pain. A special X-ray, called a DEXA scan, is used to measure bone mineral density. DEXA is an easy and painless test.

### HOW DO I REDUCE MY RISK OF BONE LOSS OR FRACTURE?

- **Take a calcium/magnesium/vitamin D supplement.** Vitamin D and magnesium support the absorption of calcium.
- **Eat calcium-rich foods** such as leafy green vegetables, broccoli and kale. Consume dairy products: low-fat milk, cheese and yogurt. Drink calcium-fortified orange juice.
- Vitamin D is also made in the skin from **sunlight exposure**. Depending upon the time of the year and where you live, about 10 to 15 minutes in the sun, two to three times a week with your hands, arms and face exposed helps meet your body's vitamin D requirements.
- **Do weight-bearing exercise:** walking, stair-climbing, soccer and weight-lifting. This seems to signal the bones to retain more mineral content.
- **Reduce your intake of caffeine.**
- **Stop smoking.** Smokers, more than non-smokers, have lower bone density and need to be concerned about their bone health.
- **Avoid alcohol.** In men and pre-menopausal women, alcohol affects certain hormones that cause calcium to be withdrawn from the bone. Over time, this can lead to a large loss in calcium from the bone. Alcoholics often have weak bones, tend to lose their balance,

have trouble walking and therefore are more likely to fall and break a hip.

- **Reduce your risk of falling.** Clear away clutter. Be careful on steps or steep slopes.
- **Monitor bone mineral density** with a DEXA scan.
- **If you have joint pain, talk to your doctor before performing weight bearing exercises.** The pain may be due to osteonecrosis.

### WHAT IS OSTEONECROSIS?

**Osteonecrosis** (avascular necrosis) means bone death. It usually affects the femur, which connects your leg to your hip.

### WHAT CAUSES IT?

Osteonecrosis is caused by a loss of blood supply to the bone, injuries, excessive use of alcohol, and long-term use of corticosteroid drugs (to reduce inflammation).

### HOW IS IT DETECTED?

Osteonecrosis causes pain in the joints. For example, pain in the hip area could be a sign of osteonecrosis. At first the pain might only occur when you put weight on the joint. In more severe cases the pain could be constant. MRI, X-rays and CT scans are used to detect osteonecrosis.

### WHAT CAN I DO ABOUT IT?

A healthy person can sometimes recover from osteonecrosis, especially if it was caused by an accident. The body can repair damaged blood vessels and rebuild damaged bone.

Recommendations include:

- Use alcohol in moderation
- Talk to doctor about steroid use
- If overweight, lose weight to reduce the stress on your joints.
- Avoid weight bearing exercise.

Serious cases require surgery to repair the affected bone or to replace a damaged joint, usually the hip.

### FOR MORE INFORMATION

- National Osteoporosis Foundation, Washington, D.C.; (800) 223-9994; [www.nof.org](http://www.nof.org).
- (In Spanish) Argentine Society for Osteoporosis, Buenos Aires; [www.osteoporosis.org.ar](http://www.osteoporosis.org.ar).

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- Tebas, P., (2004) Osteopenia and Osteoporosis in HIV-infected Adults and Children, The Body [Internet] 9<sup>th</sup> February, Available from: [www.thebody.com](http://www.thebody.com)
- New Mexico AIDS Infonet: [www.aidsinfonet.org](http://www.aidsinfonet.org)
- National Osteoporosis Foundation: [www.nof.org](http://www.nof.org):

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