WHAT IS OSTEOPOROSIS?
Osteoporosis, or porous bone, occurs when too much mineral is removed from the bone framework. The bones become brittle and break (fracture) more easily. The most common fractures are in the hip, the spine (vertebrae) and the wrist. Osteopenia is a mild or moderate loss of bone minerals.

WHAT CAUSES IT?
As we age, our bones lose their mineral content. There are many factors that increase your risk for osteoporosis. Some you can control; others you can’t.

Factors you cannot control include:
- Age older than 50
- Being a woman who has passed menopause
- Being Caucasian or Asian (African-Americans and Hispanics have lower risk)
- Having a parent who fractured a hip
- Being slender and lightweight

Factors that you can control include:
- Having low levels of calcium or vitamin D in your diet
- Smoking tobacco
- Drinking more than 3 alcoholic drinks a day
- Drinking a lot of coffee
- Being physically inactive. However, excessive physical activity also increases the risk of osteoporosis

Some health conditions also increase the risk of osteoporosis:
- Severe malnutrition
- Low testosterone levels
- Hepatitis C infection
- Rheumatoid arthritis and related diseases
- Advanced kidney disease
- Thyroid disorders
- Use of corticosteroid (anti-inflammatory) drugs such as prednisone or hydrocortisone for more than 3 months

HIV AND OSTEOPOROSIS
HIV infection causes a loss of bone mineral density. It is not clear how this happens. Studies suggest that HIV itself, chronic inflammation, other medical conditions or certain medications may contribute to bone disease.

Tenofovir (Viread, see fact sheet 419) is a drug used to fight HIV. Tenofovir use is linked to a reduction in bone mineral density.

ANTACIDS AND BONE MINERAL DENSITY
Long-term use of the antacids known as proton pump inhibitors can reduce bone mineral density. Common brands include Prevacid, Prilosec, and Nexium.

On the other hand, you might increase your calcium levels if you use calcium carbonate antacids such as Tums and Rolaids.

DO I KNOW IF I HAVE OSTEOPOROSIS?
Unfortunately, there may be no signs of osteoporosis until you break a bone. The only way to tell how fast your bones are losing mineral content is through tests. A DEXA scan, or Dual Energy X-ray Absorptiometry, is the most common test to measure bone mineral density. DEXA scans are quick, painless scans. DEXA scans are recommended for HIV+ people 50 years of age or older.

Bone mineral density is reported as grams per square centimeter. This is compared to the maximum bone mineral density for a healthy 30-year-old of the same sex. A T-score measures how far your bone mineral content is below the peak value. Osteoporosis is defined as a T-score of −2.5 or lower. T-scores between −1.0 and −2.5 indicate osteopenia.

Bone density results can also be reported as a Z-score. This compares your bone mineral content to people of your same age and sex.

WHAT CAN I DO ABOUT OSTEOPOROSIS?
To prevent osteoporosis, get plenty of calcium while you are building bone (up to age 30). The higher your peak bone density, the better.

If you have osteopenia or osteoporosis, you can reduce your risk of fractures:
- Make sure you are getting enough calcium. Recommended levels vary by age:
  - 9-18 years old: 1300 mg / day
  - 19-50 years old: 1000 mg / day
  - Over age 50: 1200 mg / day
- You might get enough calcium from your food, especially if you eat yoghurt or cheese, or drink milk. Almonds, beans, figs, broccoli, and many other foods are good sources of calcium.

Several studies showed that alendronate (Fosamax) increases bone mineral density in HIV+ individuals. Fosamax is a bisphosphonate medication. Some drugs of this type can be taken just once a month or once a year. The FDA has noted bone problems in the jaw and thigh as possible long term side effects of these drugs. Review with your doctor how long you should continue bisphosphonate therapy.

FOR MORE INFORMATION
- myHIVclinic, Osteoporosis, Key considerations for people living with HIV. http://myhivclinic.org/osteoporosis
- Information on bisphosphonates from the FDA

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