HIV and Your Bones

Eating right, exercising and cutting back on alcohol and smoking can slow bone loss.

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Strong bones help maintain mobility and enhance quality of life. People with HIV are more prone to bone loss and fractures, but you can take steps to improve bone health.

Bone is living tissue largely made up of minerals and collagen. Cells called osteoblasts continually add new bone tissue, while osteoclasts dissolve old bone. As people age, bone resorption starts to outpace bone formation, and bone mass naturally declines. Osteopenia is an earlier stage of bone loss, which can progress to osteoporosis.

Older age is the biggest risk factor for osteoporosis. Bone density in women decreases dramatically after menopause, while men experience a slower decline. White and Asian people are more prone to develop osteoporosis, but Black and Latino people are also at risk. Other risk factors include family history, low estrogen or testosterone levels, poor nutrition, heavy alcohol use, smoking, certain medications and inadequate physical activity.

HIV and its treatment can increase bone turnover. People living with HIV are more likely to develop osteoporosis and sustain bone fractures, and they tend to do so at an earlier age. The virus can alter metabolism, hormone production and cytokine levels and cause chronic inflammation, all of which can lead to bone loss.

Some HIV meds also have adverse effects. Tenofovir disoproxil fumarate (TDF), a component of Truvada and older single-tablet regimens, is most often associated with bone loss. A newer formulation, tenofovir alafenamide (TAF), a component of Descovy and Biktarvy, is easier on the bones.

Prevention and Treatment

Bone loss is often asymptomatic, and osteoporosis may only be diagnosed after a person sustains a fracture after a minor fall or even normal activity. Guidelines recommend that HIV-positive postmenopausal women and men 50 and older should receive dual energy X-ray absorptiometry

(DEXA) scans to screen for low bone mineral density.

Some osteoporosis risk factors—like age and sex—can't be changed, but people can take steps to slow bone loss, including quitting smoking and limiting alcohol consumption, both of which suppress bone formation.

A balanced diet is key to maintaining bone health. Getting enough calcium is particularly important. Foods rich in calcium include milk, cheese, canned fish and leafy green vegetables. Vitamin D is necessary for calcium absorption. The skin produces vitamin D when exposed to sunlight, but many people don't make enough. Food sources include fortified dairy products, egg yolks, some fish and liver. Calcium and vitamin D supplements are widely available, but too much can be harmful.

Physical activity builds bone mass, strengthens muscles that support the skeleton and improves balance and coordination, which helps prevent falls. Both weight-bearing activities and resistance exercises are beneficial.

There is no cure for osteoporosis, but several medications can slow, halt or partially reverse bone loss. Some drugs, including bisphosphonates, work by decreasing bone resorption, while others promote bone formation. For postmenopausal women, hormone replacement therapy can help stave off bone loss; testosterone can do the same for men with low levels.

Many of these meds have not been studied in people with HIV, but alendronate (Fosamax) and zoledronic acid (Reclast or Zometa) have been shown to improve bone density in HIV-positive people in randomized clinical trials.
