

because you asked

Osteoporosis risk

Does HIV or HAART put me at greater risk for osteoporosis or other bone problems?

Dr. Silvia Guillemi replies: Osteoporosis is the term for decreased bone density that makes the bones weaker and more likely to break. Osteopenia is a milder degree of reduced bone density. Both of these disorders appear to be more common in adults infected with HIV, compared with adults who are not HIV-infected. Osteopenia has been reported in anywhere from 14% to 84% and osteoporosis in up to 45% of the HIV population. In a study done in HIV-positive adults (mainly men with an average age of 48 years) attending the Immunodeficiency Clinic at St. Paul's Hospital in Vancouver, osteopenia or osteoporosis were found by DEXA scan (a type of X-ray) in approximately 60%. This is surprising, since osteoporosis has traditionally been a disease of older women and is relatively uncommon in young men.

Traditional risk factors for bone loss seen in the general population include smoking, alcohol consumption, significant weight loss, sedentary lifestyle, lack of calcium in the diet, and use of certain medications such as steroids. Additional factors for people living with HIV may include HAART (particularly regimens that include protease inhibitors), lipodystrophy, longer duration of HIV infection, more advanced HIV disease, and lower CD4 cell counts. However, these findings are controversial and results are not always consistent between different studies.

Whether caused by HIV itself, or by HAART, or a combination of factors, bone disorders are quite common in the HIV population. The most important things you can do to avoid them are quit smoking, have enough calcium in your diet, and get regular weight-bearing exercise (e.g. weight lifting, aerobics, jogging or hiking).

Ethnicity and drug effects

How can my genetic or ethnic background affect the side effects from my HIV drugs?

Dr. Elizabeth Phillips replies: Recent research has shed some light on the association between genetic differences (as in different ethnic groups) and HIV-treatment side effects.

Abacavir (Ziagen®) is associated with a hypersensitivity (allergic) reaction which appears to occur only in patients carrying a genetic marker called HLA-B*5701. This gene is present in 8% of Caucasians compared to 0% of most Asian populations and less than 1% of Sub-Saharan Africans. A blood test being developed to identify and avoid treatment in people carrying HLA-B*5701 might help make abacavir safer by flagging people who should avoid it.

Genetic differences appear to be important in the occurrence of peripheral neuropathy and fat wasting, which have been mainly associated with d4T (stavudine, Zerit™). This helps to explain differences in both the tendency to develop these problems, and the time it takes for them to appear.

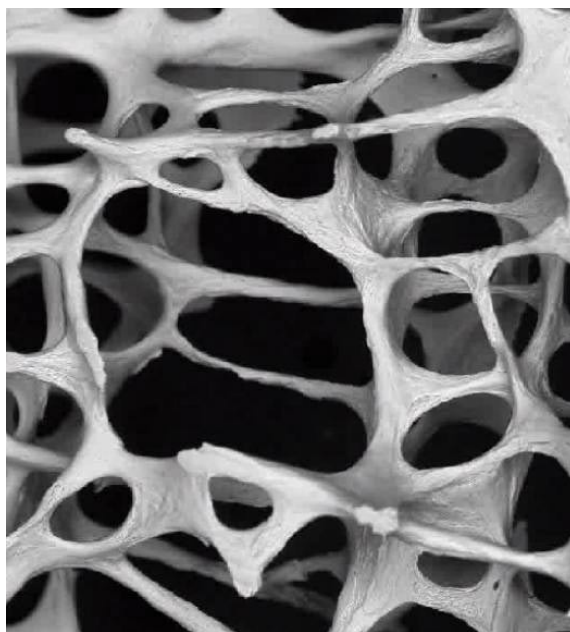
Genetic differences in cytochrome P450, a liver protein that breaks down many drugs, have been shown to lead to slower breakdown of efavirenz (Sustiva®) and nevirapine (Viramune®). Increased levels of these drugs in the blood occur more commonly in Africans (20%) than in Caucasians (3%), leading to increased risk of side effects.

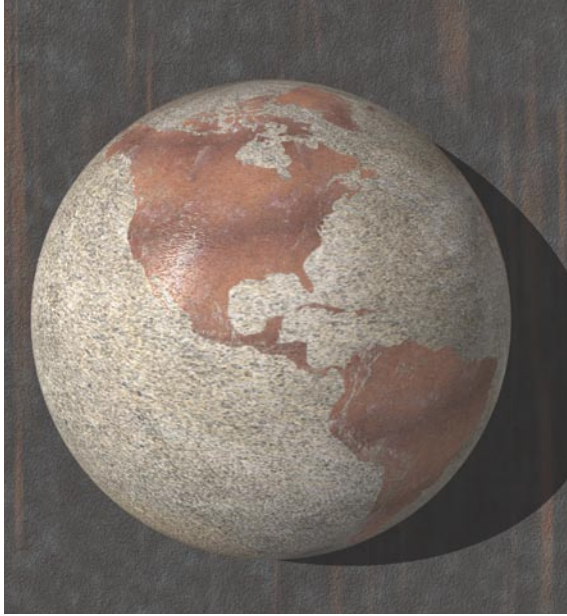
The protease inhibitors indinavir (Crixivan®) and atazanavir (Reyataz™) have been associated with high blood levels of bilirubin that can make the skin and eyes yellow (jaundice). Both of these drugs inhibit a protein called UGT1A1, which normally would allow bilirubin to be cleared from the blood. Jaundice associated with these drugs is

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Dr. Howard Turner is Attending Staff and Assistant Professor at the McGill AIDS Centre at the Montreal General Hospital. He specializes in Internal Medicine with a subspecialty in Immunology.





much more likely to occur in people who already have a genetic defect in UGT1A1.

Although routine genetic screening is currently not widely available, hopefully we can look forward to such tests guiding safer treatment in the future.

If you suffer from symptoms of depression, low energy, low libido or a loss of muscle mass, I would suggest having your testosterone levels measured

Steroid strength

Can steroids help me feel stronger and more energetic?

Dr. Howard Turner replies: Exercise, nutritional supplements and in certain cases, anabolic steroids can all help enhance quality of life for people living with HIV. Low levels of testosterone are found with increased frequency in HIV, particularly in advanced disease. Anabolic steroid supplementation has been shown to increase muscle mass and body weight, relieve depressed mood, restore libido and energy levels, and improve overall quality of life.

The greatest controversy over anabolic steroids surrounds their abuse. If overused, steroids can have adverse effects including liver and heart damage, stimulation of the prostate gland, depression, elevated blood pressure and androgenic side effects such as scalp hair

loss, aggressive behaviour, acne, masculinization of women (voice changes, unwanted body hair) and the lowering of HDL, the “good” cholesterol. Always consult with your doctor about whether steroids are appropriate for you and stick to prescribed dosages.

The common anabolic steroids studied in HIV include:

- transdermal formulations of testosterone: Androderm®, Androgel®
- injectable anabolics: testosterone cypionate, Deca-Durabolin® (nandrolone)
- oral anabolics: Andriol® (testosterone undecanoate), Oxandrin® (oxandrolone), Anadrol™ (oxymethalone) and DHEA (dehydroepiandrosterone).

Of the oral anabolics, the latter three are available in Canada by way of Health Canada’s Special Access Program.

Deca Durabolin has fewer androgenic side effects, may have less beneficial effects in restoring libido, but may have a greater effect on muscle and weight gain compared to testosterone. Anadrol has the greatest effect on muscle/weight gain but has the highest risk for liver toxicity, high blood pressure and androgenic side effects. Both Oxandrin and DHEA are considerably safer than the other anabolic steroids and both have been used in HIV-

positive men and women. Oxandrin has shown only mild effects on increased muscle mass whereas DHEA replacement has recently been shown to significantly improve mild to moderate depressive symptoms with little to no toxicity.

None of the anabolic steroids have conclusively been shown to reverse altered body changes or metabolic changes seen in lipodystrophy, but only a few studies have assessed the use of these steroids in this syndrome.

If you suffer from symptoms of depression, low energy, low libido or a loss of muscle mass, I would suggest having your testosterone levels measured. Under the supervision of a physician knowledgeable in the use of anabolic steroids, hormonal replacement can offer many benefits to selected individuals. **R**

