

because you asked

Smoking

**Does smoking affect the immune system?
Is it worse for you if you have HIV?**

Dr. Paul MacPherson responds: Simply put, smoking is bad for you. It's directly related to the development of many cancers including lung cancer, as well as heart disease and emphysema. Tobacco smoke is made up of hundreds of toxic compounds, including carbon monoxide, lead, formaldehyde and at least 19 known cancer-causing

increasing the risk of heart attack and stroke. The chronic inflammation produced by HIV replication also results in damage to blood vessels and the development of plaque, though these effects are mild compared to the damage caused by tobacco smoke. Many antiretrovirals, which effectively suppress HIV replication and allow for recovery of immune function, have been associated with increases in cholesterol, another well known cause of damage to the arteries and plaque formation.

Smoking, HIV and antiretroviral medications have all been associated with damage to the blood vessels and may increase your risk of having a heart attack or stroke

agents. It shouldn't surprise us that such toxins poison the immune system, and researchers at McMaster University have in fact shown that cigarette smoke suppresses immune cells.

When it comes to smoking and HIV, the other important issue is cardiovascular disease. Smoking, HIV and antiretrovirals can all affect the heart and blood vessels. Tobacco smoke contains toxic compounds which directly injure the cells lining the blood vessels. This repeated injury over time leads to plaque formation within the arteries,

Smoking, HIV and antiretroviral medications have all been associated with damage to the blood vessels and may increase your risk of having a heart attack or stroke. Of the three, smoking causes by far the greatest damage. For now, there's no way to eliminate HIV from the body and ongoing antiretroviral therapy is necessary to suppress HIV and prevent the development of AIDS. Smoking, however, can be eliminated.

Stopping smoking is challenging but you can do it. Talk to your doctor about smoking cessation aids and support groups. Eliminating tobacco smoke from your body makes you feel better, increases your endurance, improves your immune function, and greatly reduces your risk of stroke and heart attack, lung disease and cancer.

Anti-anxiety meds

I suffer from panic attacks, which have become worse since I was diagnosed with HIV. My doctor has prescribed an anti-anxiety medication. Do these drugs interact with ARVs?

Danielle Gourde responds: The drugs commonly prescribed (along with psychotherapy) for panic disorders include antidepressants and anxiolytics called benzodiazepenes. These two classes of medication interact

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with many ARVs, but especially with protease inhibitors (PIs) and, to a lesser extent, with non-nucleoside reverse transcriptase inhibitors (NNRTIs). This doesn't mean you can't take these medications if you're on ARVs, but you generally have to take a lower dosage to avoid unwanted side effects.

Blood levels of several antidepressants, including venlafaxine (Effexor®), fluoxetine (Prozac®), paroxetine (Paxil®) and sertraline (Zoloft®) increase in the presence of PIs, especially PIs boosted by ritonavir (Norvir®) such as lopinavir/r (Kaletra®), atazanavir (Reyataz®), fosamprenavir (Telzir®) but also nelfinavir (Viracept®). However, another PI, darunavir (Prezista®) causes blood levels of these same antidepressants to decrease. Tipranavir (Aptivus®) and the NNRTIs efavirenz (Sustiva®) and nevirapine (Viramune®) can produce either an increase or a decrease in antidepressant levels, and the effects are therefore less predictable.

Similar effects are seen with benzodiazepines such as clonazepam



(Rivotril®), diazepam (Valium®) and alprazolam (Xanax®). Their concentration increases, especially with PIs. However, there are three benzodiazepines that aren't affected by ARVs: lorazepam (Ativan®), oxazepam (Serax®) and temazepam (Restoril®). These drugs can be used without dosage adjustments alongside ARVs.

Despite these interactions, the vast majority of antidepressants and benzodiazepines aren't contra-indicated (meaning you shouldn't take them) for people taking ARVs. The general rule in using anti-anxiety medications that interact with PIs and NNRTIs is to start with a lower dose (about half the usual recommended dose) and increase it according to the appearance of side effects and the achievement of the desired effect (a reduction in panic attacks).

It's important that you tell your doctor what medications you're taking. Failing to do so can result in interactions that decrease the effectiveness of your anti-anxiety medication and jeopardize your health by causing confusion, memory loss, drowsiness, dizziness, nausea, etc. The effectiveness of your ARVs won't, however, be affected. Your doctor can check for possible interactions with your pharmacist. Don't hesitate to ask! 