

# Factsheet Interactions between HIV treatment and recreational drugs

## Key points

- A drug interaction can affect the drugs' effectiveness and side-effects.
- The anti-HIV drugs ritonavir and cobicistat have the most interactions.
- A frank discussion with your HIV doctor or HIV pharmacist is recommended.



When two drugs are taken at the same time, their interaction can affect the drugs' effectiveness and side-effects.

This is the case both for prescribed medicines and recreational drugs, although there is much less medical research on drug interactions with illicit drugs. But we do know that some anti-HIV drugs and some recreational drugs are metabolised (processed) by the same pathways in the body. This can alter the effect of one or both drugs when they are combined.

This applies to some, but not all anti-HIV drugs. Similarly it only affects some recreational drugs.

Nonetheless, recreational drugs are rarely sold in a pure form, so it is hard to know what they contain. They may have been 'cut' with other substances and may contain larger or smaller quantities of the active ingredient than expected. Predicting how recreational drugs will interact with HIV medications is not straightforward.

## Ritonavir and cobicistat

The two anti-HIV drugs most likely to be involved in harmful interactions with recreational drugs are ritonavir (*Norvir*) and cobicistat (*Tyboost*).

Both of these are boosting agents, taken to boost levels of other antiretrovirals. Adding a small dose of one of these agents makes the liver break down the primary drug more slowly, so that it stays in the body for longer or at higher levels. Without the boosting agent, the prescribed dose of the primary drug would be ineffective.

The boosting mechanism can also affect recreational drugs. The liver processes the recreational drug more slowly, resulting in the recreational drug staying in the body for longer or in greater

concentrations. Sometimes this can cause serious side-effects or an overdose.

*"The interaction may increase the intensity of the effect of the recreational drug, sometimes to unpleasant or dangerous levels."*

If your HIV treatment includes a protease inhibitor, you are probably taking either ritonavir (*Norvir*) or cobicistat (*Tybost*). Protease inhibitors include darunavir (*Prezista*), atazanavir (*Reyataz*) and lopinavir (*Kaletra*).

Cobicistat is also taken with the integrase inhibitor elvitegravir (*Vitekta*). It is included in the combination pills *Stribild* (with elvitegravir, tenofovir disoproxil and emtricitabine), *Rezolsta* (with darunavir) and *Evotaz* (with atazanavir).

Ritonavir is also in a combination pill used to treat hepatitis C called *Viekirax* (with ombitasvir and paritaprevir).

If you are not sure which medications you are taking, staff at your HIV clinic can tell you.

## Recreational drugs of concern

A dangerous interaction is possible between ritonavir or cobicistat and several recreational drugs:

- Crystal methamphetamine (crystal, tina, meth)
- MDMA (ecstasy, X, mandy)
- Mephedrone (miaw miaw, plant food, bath salts)
- Ketamine (K, vitamin K, special K)
- Erectile dysfunction drugs (*Viagra*, *Cialis*, *Levitra*)
- Benzodiazepines (benzos, *Valium*, *Xanax*)

The interaction may increase the intensity of the effect of the recreational drug, sometimes to unpleasant or dangerous levels.

Experts judge the potential for interactions with the first three drugs listed to be 'moderate' and with the last three to be 'high'. There have been a handful of documented cases of deaths and serious side-effects in people taking ritonavir alongside crystal meth, MDMA or ketamine.

Heavy use of ketamine can lead to damage to the liver and bile ducts. Overdoses of erectile dysfunction drugs are dangerous for the heart. An overdose of benzodiazepines could result in the person passing out.

Poppers may also interact with erectile dysfunction drugs, causing a potentially dangerous drop

in blood pressure. This may be more likely if you are also taking ritonavir or cobicistat.

For GHB (gamma-hydroxybutyrate) and GBL (gamma-butyrolactone), the risk of interactions is unknown.

## Non-nucleoside reverse transcriptase inhibitors

Concerning non-nucleoside reverse transcriptase inhibitors (NNRTIs), a different type of interaction is expected as these drugs are metabolised in a different way. The interaction may result in levels of the recreational drug being *lower* than would normally be expected.

This applies specifically to efavirenz (*Sustiva*, also a component of *Atripla*), nevirapine (*Viramune*) and etravirine (*Intelence*). In contrast rilpivirine (*Edurant*) is not thought to interact with recreational drugs.

The interaction may occur with cocaine, ketamine and erectile dysfunction drugs.

## Drugs without significant interactions

The potential for interactions with several other substances is considered to be low. This includes alcohol, cannabis, poppers, heroin and other opioids.

Similarly, several antiretroviral drugs are not thought to have problems with interactions. These include:

- All nucleoside reverse transcriptase inhibitors (NRTIs)
- Rilpivirine (*Edurant*), a non-nucleoside reverse transcriptase inhibitor (NNRTI)
- Raltegravir (*Isentress*) and dolutegravir (*Tivicay*), both integrase inhibitors
- Maraviroc (*Celsentri*), a CCR5 inhibitor

The University of Liverpool's HIV Drug Interactions website ([www.hiv-druginteractions.org](http://www.hiv-druginteractions.org)) publishes a [table summarising the likely interactions](#).

## Practical advice

The first four weeks of taking a new HIV treatment combination, when your body gets used to the new drugs, are likely to be the riskiest time for interactions.

A frank discussion with your HIV doctor or HIV pharmacist can give you a better understanding of the risks, based on your own situation. If you don't want to stop or can't stop using recreational drugs, switching to an HIV treatment with less potential for interactions might be an option.

Recreational drugs have a wide range of impacts on physical and mental health, both in the short and long term. You can find more detailed information on their effects and legal status on the FRANK website ([www.talktofrank.com](http://www.talktofrank.com)).

Drug use can interfere with sleeping patterns and routines, making missed doses of your HIV treatment more likely.

**In sexual situations, drug use can affect your judgement about what is safe or appropriate. You may be more likely to put yourself or others at risk of hepatitis C, HIV or other sexually transmitted infections.**

If you inject drugs, it's important not to share or re-use equipment with others (including water, swabs, filters, spoons and tourniquets).

If you are concerned about your drug use, there's information and support available. You could start by talking to staff at your HIV clinic. You can also look for local services on the [FRANK](#) website. In London, specialised services are available at the [56 Dean Street](#) clinic and (for LGBT people) the [Antidote drugs and alcohol service](#).

## Find out more

**Taking your HIV treatment** Information booklet

**Alcohol** Simple factsheet

**Talking points** Online interactive tool