

# Antiretrovirals and Recreational Drugs

Charts revised November 2017. Full information available at [www.hiv-druginteractions.org](http://www.hiv-druginteractions.org)

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	ATV/r	DRV/r	LPV/r	EFV	ETV	NVP	RPV	MVC	DTG	RAL	ABC	FTC	3TC	TDF	ZDV	E/C/F/TAF	E/C/F/TDF
<b>Stimulants</b>	Cocaine	↑ <sup>ab</sup>	↑ <sup>a</sup>	↑ <sup>ab</sup>	↑ <sup>c</sup>	↑ <sup>c</sup>	↑ <sup>c</sup>	↔ <sup>b</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Ecstasy (MDMA)	↑ <sup>d</sup>	↑ <sup>d</sup>	↑ <sup>d</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Mephedrone	↑ <sup>e</sup>	↑ <sup>e</sup>	↑ <sup>e</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Methamphetamine	↑	↑	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Poppers (Amyl nitrate)	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
<b>Depressants</b>	Alcohol	↔	↔	↔ <sup>f</sup>	↔	↔	↔	↔	↔	↔	↑	↔	↔	↔	↔	↔	↔
	Alprazolam	↑ <sup>g</sup>	↑ <sup>g</sup>	↑ <sup>g</sup>	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Codeine	↑ <sup>i</sup>	↑ <sup>i</sup>	↑ <sup>i</sup>	↓ <sup>j</sup>	↓ <sup>j</sup>	↓ <sup>j</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Diazepam	↑	↑	↑	↓	↑	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	GHB (gamma hydroxybutyrate)	↑ <sup>j</sup>	↑ <sup>j</sup>	↑ <sup>j</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Heroin (Diamorphine)	↓ <sup>k</sup>	↓ <sup>k</sup>	↓ <sup>k</sup>	↑	↔ <sup>k</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Hydrocodone	↑	↑	↑	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Hydromorphone	↓	↓	↓	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Ketamine	↑	↑	↑	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Methadone	↓ <sup>b</sup>	↓16%	↓53% <sup>b</sup>	↓52%	↑6%	↓~50%	↓16% <sup>b</sup>	↔	↔	↔	↓	↔	↔	↔	↔	↔
	Midazolam (oral)	↑ <sup>m</sup>	↑ <sup>m</sup>	↑ <sup>m</sup>	↓ <sup>h</sup>	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Morphine	↓ <sup>n</sup>	↓ <sup>n</sup>	↓ <sup>n</sup>	↑	↔ <sup>n</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Oxycodone	↑	↑	↑	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Pethidine (Meperidine)	↓ <sup>l</sup>	↓ <sup>l</sup>	↓ <sup>l</sup>	↓ <sup>l</sup>	↓ <sup>l</sup>	↓ <sup>l</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Temazepam	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Triazolam	↑ <sup>m</sup>	↑ <sup>m</sup>	↑ <sup>m</sup>	↓ <sup>h</sup>	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
<b>Hallucinogens</b>	Cannabis	↑ <sup>o</sup> ↓	↑ <sup>o</sup>	↑ <sup>o</sup>	↑ <sup>p</sup>	↑ <sup>p</sup>	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
	LSD (Lysergic acid diethylamide)	↑ <sup>q</sup>	↑ <sup>q</sup>	↑ <sup>q</sup>	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	
	Phencyclidine (PCP, angel dust)	↑ <sup>r</sup>	↑ <sup>r</sup>	↑ <sup>r</sup>	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	

### Colour Legend

- No clinically significant interaction expected.
- These drugs should not be coadministered.
- Potential interaction which may require a dosage adjustment or close monitoring.
- Potential interaction predicted to be of weak intensity. Additional action/monitoring or dosage adjustment is unlikely to be required.

### Text Legend

- ↑ Potential increased exposure of the recreational drug
- ↓ Potential decreased exposure of the recreational drug
- ↔ No significant effect
- ↑ Potential increased exposure of HIV drug
- ↓ Potential decreased exposure of HIV drug

Numbers refer to increased or decreased AUC of the recreational drug as observed in drug-drug interaction studies.

- a Clinical relevance unknown as cocaine is metabolized by other non-CYP mediated pathways. Ensure patient is aware of signs/symptoms of cocaine toxicity (tremor, seizures, anxiety, headache, increased body temperature).
- b Risk of QT interval prolongation.
- c Concentrations of hepatotoxic metabolite increased.
- d Ensure patient is aware of signs/symptoms of ecstasy toxicity (increased body temperature, dehydration, dry mouth, tense jaw, teeth grinding).
- e Ensure patient is aware of signs/symptoms of mephedrone toxicity (agitation, tachycardia, hypertension).
- f Not recommended with oral solution due to large amount of propylene glycol in the solution which may compete with alcohol elimination.
- g Initial inhibitory effect followed by induction in presence of ritonavir.
- h Contraindicated by manufacturer.
- i Potential opiate withdrawal due to reduced conversion to morphine.
- j Ensure patient is aware of signs/symptoms of GHB toxicity (myoclonic or seizure activity, bradycardia, respiratory depression, loss of consciousness).
- k Heroin is rapidly deacetylated to 6-monoacetylmorphine (6-MAM) by plasma esterases and subsequently to morphine by liver esterases. 6-MAM enters the brain at a much faster rate than morphine and has been correlated to the acute effects of heroin. Pls/EFV are unlikely to alter 6-MAM concentrations but may alter morphine concentrations. Also Pls, ETV, EVG/g could increase the amount of morphine entering the brain (via P-gp inhibition) and thus potentiate the effects of opiate in the CNS.
- l Concentrations of neurotoxic metabolite increased.
- m Increased sedation or respiratory depression.
- n Amount of morphine entering the CNS may be increased due to inhibition of P-gp and thus potentiate the effects of opiate in the CNS.
- o Concentrations of tetrahydrocannabinol (THC, the psychoactive component of cannabis) could be increased, although to a modest extent.
- p Concentrations of tetrahydrocannabinol (THC, the psychoactive component of cannabis) could be increased.
- q Ensure patient is aware of signs/symptoms of LSD toxicity (hallucination, agitation, psychosis, flashbacks).
- r Ensure patient is aware of signs/symptoms of PCP toxicity (seizure, hypertension, increased body temperature).

Abbreviations ATV atazanavir DRV darunavir LPV lopinavir /r ritonavir EFV efavirenz ETV etravirine NVP nevirapine RPV rilpivirine MVC maraviroc DTG dolutegravir RAL raltegravir ABC abacavir FTC emtricitabine 3TC lamivudine TDF tenofovir disoproxil fumarate ZDV zidovudine E/C/F/ Evitegravir/Cobicistat/FTC TAF tenofovir alafenamide

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