

Antiretrovirals and Recreational Drugs

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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
Stimulants	Amyl nitrate (Poppers)	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Cocaine	↑ ^{ab}	↑ ^a	↑ ^{ab}	↑ ^c	↑ ^c	↑ ^c	↔ ^b	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Ecstasy (MDMA)	↑ ^d	↑ ^d	↑ ^d	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Mephedrone	↑ ^e	↑ ^e	↑ ^e	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Methamphetamine	↑	↑	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Depressants	Alcohol	↔	↔	↔ ^f	↔	↔	↔	↔	↔	↔	↑	↔	↔	↔	↔	↔	↔
	Alprazolam	↑ ^g	↑ ^g	↑ ^g	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Codeine	↑ ⁱ	↑ ⁱ	↑ ⁱ	↓ ⁱ	↓ ⁱ	↓ ⁱ	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Diazepam	↑	↑	↑	↓	↑	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	GHB (gamma hydroxybutyrate)	↑ ^j	↑ ^j	↑ ^j	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Heroin (Diamorphine)	↔ ^k	↔ ^k	↔ ^k	↔ ^k	↔ ^k	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Hydrocodone	↑	↑	↑	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Hydromorphone	↓	↓	↓	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Ketamine	↑	↑	↑	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Pethidine (Meperidine)	↓ ^l	↓ ^l	↓ ^l	↓ ^l	↓ ^l	↓ ^l	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Methadone	↓ ^b	↓16%	↓53% ^b	↓52%	↑6%	↓~50%	↓16% ^b	↔	↔	↔	↓	↔	↔	↔	↔	↔
	Midazolam (oral)	↑ ^m	↑ ^m	↑ ^m	↓ ^h	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Morphine	↓ ⁿ	↓ ⁿ	↓ ⁿ	↑	↔ ⁿ	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
	Oxycodone	↑	↑	↑	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Temazepam	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Triazolam	↑ ^m	↑ ^m	↑ ^m	↓ ^h	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
Hallucinogens	Cannabis	↓ ^o ↓	↓ ^o	↓ ^o	↑ ^p	↑ ^p	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	
	Lysergic acid diethylamide (LSD)	↑ ^q	↑ ^q	↑ ^q	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	
	Phencyclidine (PCP, angel dust)	↑ ^r	↑ ^r	↑ ^r	↓	↓	↓	↔	↔	↔	↔	↔	↔	↔	↔	↔	

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 (<2 fold ↑AUC or <50% ↓AUC). No *a priori* dosage adjustment is recommended.

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

- 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. PIs/EFV are unlikely to alter 6-MAM concentrations but may alter morphine concentrations. Also PIs, ETV, EVG/c 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 decreased, 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).

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

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 E/C/F Efavirenz/Cobicistat/FTC E/C/F/ TAF tenofovir alafenamide

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