



## TOOL 5: Quick guide to drug interactions with smoking cessation



**Medication levels can vary if someone starts or stops smoking, or if they change how much they smoke. There is currently limited evidence regarding the interactions between nicotine e-cigarettes (vapes) and various drugs.**

- Cigarette smoking induces the activity of certain cytochrome P450 enzymes, particularly CYP1A2. These enzymes are involved in the metabolism of many medications.
- These effects are caused by components of tobacco smoke other than nicotine. There is some evidence that products that include combustion/heating nicotine e-cigarettes can affect drug levels. Hence, some nicotine vapes could, in theory, affect drug levels, depending on what other components are involved in that particular brand and type of vape.
- Standard nicotine replacement therapy does not change medication levels.
- Decreased CYP1A2 activity after smoking cessation increases the risk of adverse drug reactions thus requiring adjustment to the dose of some medications.
- CYP1A2 enzyme has a half-life of 36 hours, so dose adjustment needs to be made within 2-3 days of smoking cessation.
- The change in metabolism/drug dose can occur with anyone who is reducing smoking. Even low-dependence smokers may still need dose adjustment depending on the way they smoke (e.g. compensatory smoking – inhaling more deeply).
- Predicting the required adjustment to medication can be challenging – the table over the page is a guide. Therapeutic drug monitoring and consulting with a pharmacist should be used where possible.

**If unsure, please access Electronic Therapeutic Guidelines or 'UpToDate' to understand the impact of smoking cessation on a patient's medication.**

**An addiction specialist/ psychiatrist should be involved with adjusting doses of psychiatric medications.**

## Common Drugs Affected by Smoking Cessation

Drug	Effect of smoking cessation	If patient stops smoking, then:	Clinical importance
<b>Benzodiazepines</b> (e.g. diazepam, lorazepam, alprazolam)	Possible increased sedation due to loss of CNS stimulation by nicotine.	May need lower dose. May be more sedated if dose remains the same	Moderate
<b>Beta blockers</b> (e.g. propranolol, metoprolol)	Serum levels may rise, and effects enhanced.	May need lower dose.	Low
<b>Chlorpromazine</b>	Serum levels rise	May need lower dose	Moderate
<b>Clopidogrel</b>	Effectiveness is significantly reduced when smoker stops smoking	Recommend smoking cessation and consider alternative medications if patient stops smoking.	Moderate
<b>Clozapine</b>	Serum levels rise significantly	Closely monitor drug levels and reduce dose as required to avoid toxicity.	An average 50% dose reduction may be required, as adjusted by the psychiatrist.
<b>Duloxetine</b>	Serum levels may rise	May need lower dose	Moderate
<b>Flecainide</b>	Serum levels may rise	Monitor for side effects (e.g. dizziness, shortness of breath, arrhythmias). May need lower dose if clinically appropriate.	Low
<b>Fluvoxamine</b>	Serum levels may rise	May need lower dose	Moderate
<b>Haloperidol</b>	Serum levels may rise	Be alert for increased side effects. Consult psychiatrist as may need lower dose	Low
<b>Heparin</b>	Unclear though levels may rise	Monitor APTT and adjust dose if needed as may need lower dose	Low
<b>Imipramine</b>	Serum levels may rise	Monitor for side effects. May need lower dose	Low
<b>Insulin</b>	Possible increased subcutaneous absorption due to peripheral vasodilation after quitting. Smoking can also increase insulin resistance.	Advise patient to be alert for signs of hypoglycaemia and to test their blood. May need to reduce dose if clinically appropriate.	Moderate
<b>Olanzapine</b>	Serum levels rise significantly	Be alert for increased side effects (e.g. dizziness, sedation and hypotension). Consult a psychiatrist as dose reductions may be required if clinically appropriate.	High

## Common Drugs Affected by Smoking Cessation (cont.)

Drug	Effect of smoking cessation	If patient stops smoking, then:	Clinical importance
<b>Theophylline</b>	Serum levels rise	Monitor theophylline levels and reduce dose if clinically appropriate. Advise patient to monitor for signs of toxicity (e.g. palpitations, vomiting, nausea). It may take several weeks for enzyme induction to dissipate.	Moderate
<b>Warfarin</b>	Serum levels increase by 15% on average	Monitor for side effects. Monitor INR closely. Reduce dose if clinically appropriate.	Moderate
<b>Methadone</b>	Serum level may rise	Monitor for signs of opioid toxicity (e.g. sedation, dizziness, respiratory depression, pinpoint pupils). Consult a specialist as dose reductions may be required if clinically appropriate. Methadone also attenuates (reduces) nicotine withdrawal.	Moderate

Please note that while the main MND guide refers to e-cigarettes, this tool has been updated to refer to vapes and vaping in-line with recent terminology changes in legislation.