Medication interactions with smoking and smoking cessation

- Smoking interacts with both psychiatric and non-psychiatric medications commonly used by people with mental illness.
- Medication levels can vary if someone starts or stops smoking, or if they change how much they smoke.
- Some people may need dose adjustment when quitting or reducing smoking or when resuming smoking following abstinence.
- Interactions are caused by components of tobacco smoke – not nicotine – and nicotine replacement therapy will not affect changes in medication levels caused by smoking cessation.
- Interactions are often the result of tobacco smoke inducing cytochrome P450 enzymes in the liver, affecting absorption, distribution, metabolism or elimination of the medication.

The table on the following pages summarises possible interactions between common medications and smoking or smoking cessation as described in guidance developed by the former Hunter New England Area Health Service, Mersey Care NHS Trust, UK and Regents University, California.

Psychiatric medication		Degree of effect	Smoking	Smoking cessation
Antipsychotics	Amisulpride	No effect		
	Chlorpromazine	Moderate	Lower serum levels Less drowsiness and hypotension May need higher doses	Increased serum levels May need lower doses
	Clozapine	Moderate	Lower serum levels Will need higher doses	Increased serum levels Will need lower doses Monitor closely for signs of toxicity
	Fluphenazine	Moderate	Serum levels may be lower	May increase serum levels Possible increased drowsiness or extrapyramidal side effects May need lower doses
	Haloperidol	Moderate	Lower serum levels Need higher doses	Increased serum levels May need lower doses Possible increased drowsiness, extrapyramidal side effects, hypotension
	Olanzapine	Moderate	Lower serum levels May shorten half-life	Increased serum levels May need lower doses

(CHA) 110235

Psychiatric medication		Degree of effect	Smoking	Smoking cessation
	Perphenazine		Lower serum levels	May increase serum levels Monitor response May need lower doses
	Quetiapine	No known effect		
	Risperidone	No known effect		
	Thioridazine	High		Risk of cardiotoxicity
	Ziprasidone	No known effect		
	Zotepine	No known effect		
Anticonvulsants	Carbamazepine	None to minimal effect		
	Phenytoin	Moderate	Varying reports	Varying reports
	Valproate	Moderate	Varying reports	Varying reports
Hypnotics and anxiolytics	Benzodiazepines Aprazolam Chlordiazepoxide Clonazepam Diazepam Loprazolam Lorazepam Lormetazepam Nitrazepam Oxazepam Temazepam	Moderate	Lower plasma levels May need higher doses	Possible increased sedation May need lower doses
	Zolpidem		May lower plasma levels Possibly less hypnotic effect Heavy smokers may need higher doses	Increased plasma levels Possible increased sedation May need lower doses
Lithium		Possible indirect effect Smoking increases caffeine metabolism, and significant changes in amount of caffeine may affect serum lithium levels		Theoretically, could indirectly change lithium excretion Check levels especially if deterioration evident
NaSSAs	Mirtazapine	Clinical significance unclear	Lower serum levels	May increase serum levels
Opioids	Methadone	Moderate		Sedation and respiratory depression

Psychiatric medication		Degree of effect	Smoking	Smoking cessation
SNRIs	Duloxetine		Lower plasma levels	Increased plasma levels Possible increased side effects May need lower doses
SSRIs	Fluvoxamine	Moderate	Lower serum levels	May increase serum levels
Tricyclic antidepressants	Amitriptyline Clomipramine Imipramine Nortriptyline	Moderate	Lower plasma levels Serum levels fall but free drug levels rise minimising clinical significance	May increase serum levels Monitor for side effects and consider dose adjustment if appropriate

Non-psychotropic drugs		Degree of effect	Smoking	Smoking cessation
Analgesics	Codeine Dextropropoxyphene Pentazocine		Codeine unknown Dextropropoxyphene and pentazocine are less effective and smokers need higher doses	Improved analgesic response
Anti-arrhythmic drugs	Mexilitine	Minor to moderate		Increased risk of adverse effects
	Beta blockers	Moderate	Less effective May need higher doses	Effectiveness may be enhanced Possible bradycardia and hypotension May need lower doses
	Quinidine	Minor to moderate		Increased risk of adverse effects
Anticoagulants	Heparin Warfarin	Moderate	May need higher doses to achieve anticoagulation	INR / Prothromin time may increase Risk of bleeding Monitor closely Adjust dose according to INR / Prothromin time
Caffeine		Moderate May effect excretion of lithium	Clearance increased	Caffeine levels may increase Increased risk of side effects eg. tremor, nausea Advise patients to reduce caffeine intake when making a quit attempt

Non-psychotropic drugs		Degree of effect	Smoking	Smoking cessation
Insulin			May increase insulin resistance Insulin dependent smokers may need higher doses	Insulin dependent diabetics may need lower doses Improved glycaemic control Monitor for hypoglycaemia Check blood glucose more frequently May need to adjust dose according to individual need
Respiratory medications	Theophylline	Moderate to high Narrow therapeutic range, toxicity is possible with cessation	Increased clearance Shorter half-life Need higher doses	Increased plasma levels Risk of toxicity eg. palpitations, nausea Need lower doses

Adapted from:

Hunter New England Area Health Service. Drug Interactions with Smoking. Hunter New England Area Health Service; July 2008.

Medicines Information Centre, Pharmacy Department, Smoking and Drug Interactions, Mersey Care NHS Trust. June 2007.
http://www.merseycare.nhs.uk/Library/What_we_do/Clinical_Services/Public_Health/Smoking_Interactions.pdf

Regents University of California, Rx for Change, Drug Interactions with Tobacco Smoke. 2003
http://smokingcessationleadership.ucsf.edu/interactions.pdf