Drug Interactions with Smoking Cessation Medications and Tobacco Smoke*

	Bupropion	NRT	Varenicline	Tobacco smoke
Acetaminophen				**May require decrease in dose upon smoking cessation**
Adrenergic agonists (e.g., prazosin)				**May require decrease in dose upon smoking cessation**
Adrenergic antagonists (e.g., phenylephrine)				**May require increase in dose upon smoking cessation**
Amantadine	**Potentially ↑ incidence of neuropsychiatric adverse events; also ↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			
Antiarrythmics, type 1C (e.g., flecainide, propafenone)	**↓ metabolism of antiarrythmics (inhibition of CYP2D6); consider dose decrease of antiarrythmic**			**Smoking ↑ clearance; may require decrease in dose upon smoking cessation**
Antimalarials (e.g., chloroquine, primaquine)	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			
Antipsychotics, atypical (e.g., clozapine, olanzapine)	**↓ metabolism of antipsychotics (inhibition of CYP2D6); also ↓ seizure threshold; consider dose decrease of antipsychotic; low initial doses and gradual dose increases of bupropion advised**			**Smoking ↑ metabolism (induction of CYP1A2) of clozapine and olanzapine, but not quetiapine; may require decrease in dose of clozapine and olanzapine upon smoking cessation***
Antipsychotics, typical (e.g., chlorpromazine, haloperidol)	**↓ metabolism of antipsychotics (inhibition of CYP2D6); also ↓ seizure threshold; consider dose increase of antipsychotic; low initial doses and gradual dose increases of bupropion advised**			**Smoking decreases serum concentrations; clinical significance is unclear**
Benzodiazepines (e.g., clonazepam, oxazepam)				**Smokers experience less sedation and drowsiness; likely based on pharmacokinetic interaction**
Beta-blockers (e.g., atenolol, metoprolol)	**↓ metabolism of beta-blockers (inhibition of CYP2D6); consider dose decrease of beta-blocker**			**Smoking ↑ clearance; may require decrease in dose upon smoking cessation***
Caffeine				**Smoking ↑ metabolism (induction of CYP1A2); consider reducing intake upon smoking cessation**
Cimetidine			**Avoid concomitant use in patients with severe renal impairment; no dosage adjustment required with mild-moderate renal impairment**	
Clopidogrel	**↑ bupropion and ↓ hydroxybuproprion levels (inhibition of CYP2B6); dose adjustment of bupropion likely necessary**			
Corticosteroids, inhaled				**Smokers may have less response**
Heparin				**Smoking ↑ clearance; may require decrease in dose upon smoking cessation**
Hormonal contraceptives				**Smoking increases risk of cardiovascular adverse events; contraindicated in women >35 who smoke**
Hypoglycemics, oral (e.g., metformin, glyburide)	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			
Insulin	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			**Smoking ↓ absorption; may require decrease in dose upon smoking cessation**

Note: red indicates interactions leading to contraindications; orange signifies those leading to precautions; yellow denotes a change in dosing should be considered; and grey indicates a clinically insignificant interaction.
*All third party trademarks are owned by the respective owners. Extracted from current Product Monograph for education purposes only. Current Product Monograph should be consulted; **For CYP1A2 substrates with a narrow therapeutic range, some experts suggest a daily dose reduction of approximately 10% until the fourth day after smoking cessation, which should be accompanied by therapeutic drug monitoring.
The Canadian Council on Continuing Education in Pharmacy has accredited this program for 6 CEUs (CCCEP File # 1044-2011-221-L-P). Accreditation valid until March 29, 2014.

	Bupropion	NRT	Varenicline	Tobacco smoke
Levodopa	**Potentially higher incidence of neuropsychiatric adverse events; low initial doses and gradual dose increases of bupropion advised**			
Lithium	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			
MAO inhibitors (e.g., linezolid, phenelzine)	**Contraindicated**			
Opioids (e.g., oxycodone, codeine)				**Decreased analgesic effect in smokers; may require decrease in dose upon smoking cessation**
Quinolone antibiotics (e.g., ciprofloxacin, levofloxacin)	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**		**Avoid concomitant use in patients with severe renal impairment; no dosage adjustment required with mild-moderate renal impairment**	
Ranitidine			**Avoid concomitant use in patients with severe renal impairment; no dosage adjustment required with mild-moderate renal impairment**	
Selective serotonin reuptake inhibitors (e.g., fluoxetine, fluvoxamine)	**↓ metabolism of antipsychotics (inhibition of CYP2D6); also ↓ seizure threshold; consider dose decrease of antidepressant; low initial doses and gradual dose increases of bupropion advised**			**Smoking ↑ metabolism of fluvoxamine (induction of CYP1A2); may require decrease in dose upon smoking cessation***
Steroids, systemic (e.g., prednisone, prednisolone)	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			
Stimulants and anorectics, over-the-counter	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			
Theophylline	**↓ seizure threshold; low initial doses and gradual dose increases of bupropion advised**			**Smoking ↑ metabolism (induction of CYP1A2); may require decrease in dose upon smoking cessation***
Ticlopidine	**↑ bupropion and ↓ hydroxybuproprion levels (inhibition of CYP2B6); dose adjustment of bupropion likely necessary**			
Tricyclic antidepressants (e.g., imipramine, nortriptyline)	**↓ metabolism of antipsychotics (inhibition of CYP2D6); also ↓ seizure threshold; consider dose decrease of antidepressant; low initial doses and gradual dose increases of bupropion advised**			**Smoking may ↑ metabolism, but effect not thought to be clinically significant**
Trimethoprim			**Avoid concomitant use in patients with severe renal impairment; no dosage adjustment required with mild-moderate renal impairment**	
Warfarin				**Smoking ↑ clearance but has no effect on prothrombin time**

Note: quitting smoking may also improve conditions such as hypertension, low HDL-C, gastroesophageal reflux disease, erectile dysfunction and insulin resistance, thereby requiring a review of the medications used to control these conditions. On the other hand, smoking cessation may lead to flare ups in individuals with ulcerative colitis, and, in rare cases, preface the initial presentation of ulcerative colitis.

Adapted from: Beaugerie L *et al. Am J Gastroenterol* 2001; 96(7):2113-6; Biovail Corporation. *Zyban (Bupropion Hydrochloride) Product Monograph*. 2008; Kroon LA. *Am J Health-Syst Pharm* 2007; 64(18):1917-21; McNeil Consumer Healthcare. *Nicoderm (Nicotine Transdermal System). Product Monograph*; Motley RJ *et al. Int J Colorectal Dis* 1988; 3(3):171-5; Pfizer Canada Inc. *Champix (Varenicline Tartrate Tablets) Product Monograph*. 2010; Zevin S, Benowitz N. *Clin Pharmacokinet* 1999; 36(6):425-38.

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