

Drug	Transdermal Nicotine Nicoderm	Bupropion Zyban, Wellbutrin	Vanrenicline Chantix
MOA	<ul style="list-style-type: none"> primary effects via autonomic ganglia stimulation ganglionic and central nervous system (CNS) stimulant Biphasic actions are observed depending upon the dose administered. stimulating effect is exerted mainly in the cortex via the locus ceruleus and the reward effect is exerted in the limbic system <ul style="list-style-type: none"> -Low doses, stimulant effect -High doses, reward effects 	<ul style="list-style-type: none"> very weak inhibitor of norepinephrine uptake and a weak inhibitor of dopamine uptake 	<ul style="list-style-type: none"> binds $\alpha 4\beta 2$ neuronal nicotinic acetylcholine receptors stimulates receptor mediated activity at lower level than nicotine blocks the ability of nicotine to activate $\alpha 4\beta 2$ which stimulates the central nervous mesolimbic dopamine system
Efficacy (abstinence)	6 weeks 16.8% vs. 9.6 placebo 24 weeks 8.7% vs 4.3% placebo OR: 2:1	12 weeks 29.8% vs placebo 17.6% 9-24 weeks 20.2% vs placebo 13.2% 9-52 weeks 14.6% vs 10.3% placebo OR: 3:1	12 weeks 43.% vs 17.6% placebo 9-24 weeks 29.7 %vs 13.2 % placebo 9-52 weeks 23% vs 10.3% placebo OR: 4:1
Dosage	TRANSDERMAL patch, smoking history over 10 cigarettes/day: one 21 mg patch/day for 4-6 wk, then use one 14 mg patch/day for 2 wk, then use one 7 mg patch/day for 2 wk	150 mg SR ORALLY in the morning for 3 days, then increase to 150 mg SR ORALLY 2 times a day (MAX dose 300 mg/day) for 7-12 weeks; treatment should begin 1 week before the patient stops smoking	Days 1-3: 0.5mg qd Days 4-7: 0.5mg bid Days 8-end of treatment: 1mg qd Patients should treat for 12 weeks. For patients who have successfully stopped smoking are recommended to take an additional course of 12 weeks treatment. treatment should begin 1 week before the patient stops smoking.
Adverse drug reactions	Skin irritation, Dizziness, headache, insomnia, N/V	Rash, Sweating, Constipation , Nausea and vomiting , Taste sense altered, Xerostomia , Confusion, Dizziness , Headache, Insomnia , Tremor , Agitation, seizure	Nausea , Constipation, flatulence, abnormal dreams , Insomnia , Headache
Weight Gain	1-2 kg (12 weeks)	1-2 kg (12 weeks)	3-4 kg (24 weeks)
Contra-indications	active peptic ulcer disease allergy to adhesive tape cardiovascular and peripheral vascular diseases elderly hepatic disease hyperthyroidism, pheochromocytoma, or insulin-dependent diabetes serious arrhythmias severe or worsening angina severe renal impairment may cause fetal harm when administered to pregnant women	seizure disorders patients undergoing abrupt discontinuation of alcohol or sedatives (including benzodiazepines) prior or current diagnosis of bulimia or anorexia concomitant MAO inhibitor hypersensitivity to bupropion products concomitant use of other bupropion products Pregnancy category C	Renal impairment, hemodialysis Individuals under 18 Pregnancy category C
Major Drug Interactions	Adenosine, Cimetidine, Clozapine, Lobelia, Memantine, Niacin	MAO inhibitors, CYP 2B6 inhibitors, CYP 2D6 substrates (beta-blockers, anti-depressants, anti-psychotics)	OCT2 inhibitors-cimetidine
Cost	\$3-4 per day for 42 days	\$4.00 per day, generic for 90 days	\$4 per day, Brand only for 90 days
Metabolism	Liver, kidney, lung, CYP 1A2 inducer, substrate?	2B6 substrate, 2D6 inhibitor	OCT2 (renal)

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Clonidine (0.1 mg orally three times daily for eight to 12 weeks) and Nortriptyline (Titrate to 75 mg orally at bedtime for 12 weeks)

The Pharmacotherapy of Smoking Cessation

The great majority of regular smokers are dependent on cigarette smoking, and not simply addicted to nicotine.

Smoking is highly contextual and associated with certain rituals.

This bolus of nicotine activates the brain-reward system by increasing dopamine release. This brain reward system is a common pathway for pleasurable activities (sexual activity, eating) and most drugs of addiction.

Dependence arises from the temporal association of the rituals and sensory inputs with the repeated stimulation and relief of withdrawal.

This required association explains why nicotine replacement therapy (NRT) products, that deliver nicotine slowly and do not produce high plasma nicotine levels, have minimal addictive potential

Drug treatments address some of the biochemical aspects of smoking, but are most effective when counseling or behavioral programs are used to redress the associated contextual and ritual elements

Placebo success rates in all published drug treatment trials are typically higher, about 10%–15% at end of treatment and 5%–10% after one year, as participants are self-selected as interested in quitting and receive at least a minimum level of counseling.

Stopping smoking will improve patient health in the short term and long term, but quitting without some support is almost always unsuccessful

Drug treatments are safe and effective, especially when combined with the support.