

Smoking Cessation Pharmacology 2006: Nicotine Replacement Therapy (NRT)

General NRT recommendations: 1) Use sufficient to replace 65%-75% of nicotine from daily cigarettes (1 cig = 1mg nicotine); 2) use every few hours to maintain steady state; 3) use more rather than less (overdosing is very unlikely; under dosing is common); 4) Combination therapy may be necessary for heavier smokers to achieve replacement levels and/or manage withdrawal. NRT may be less effective for women than for men.

	PATCH (OR = 1.9)*	GUM (OR = 1.5)*	INHALER (OR = 2.5)*	NASAL SPRAY (OR = 2.7)*	LOZENGE (OR = 1.95 (2 mg); 2.76 (4mg)*)
Length of Treatment	8-10 weeks	Up to 12 weeks Taper over last few wks.	3-6 months	3-6 months	12 weeks
Replacement <i>1 cig = 1 mg nicotine</i>	21 mg. patch=10-13 cig.	2 mg= 1 cig 4 mg = 2 cig	10 mg cartridge = 4 cig	1 dose (2 squirts) = 1 cig.	2 mg.= 1.2 cig 4 mg. = 2.4 cig
Dosing	<ul style="list-style-type: none"> Once daily in am Peak level in 2-8 hr. 21 mg. for 4-6 wks 14 mg. for 2 wks. 7 mg. for 2 wks 15 mg. for 8 weeks (no tapering) 	<ul style="list-style-type: none"> One piece every 1-2 hours (10-15 pieces per day up to 24 per day). Peak level in 15-20 min. Important to use enough to control symptoms. 	<ul style="list-style-type: none"> 6-16 cartridges per day Peak level in 15-20 min. Need to inhale about 80 times per cartridge. Can use part of cartridge and save rest for later. 	<ul style="list-style-type: none"> Dose = one squirt to each nostril Peak level in 11-13 min. Dose 1-2 times each hour as needed Min dose = 8/day Max = 40/day 	<ul style="list-style-type: none"> Wks 1-6: 1 every 1-2 hrs. Wks 7-9: 1 every 2-4 hrs. Wks 10-12: 1 every 4-8 hrs. Peak level in 15-20 min. Use at least 9 per day during first 6 wks.
Pros	<ul style="list-style-type: none"> Easy to use Steady dose (even when sleeping) 	<ul style="list-style-type: none"> Can control own dose Helps with predictable urges (e.g. after meals) Keeps mouth busy 	<ul style="list-style-type: none"> Can control own dose Helps with predictable urges Keeps hands and mouth busy. 	<ul style="list-style-type: none"> Can control own dose 	<ul style="list-style-type: none"> Can control own dose. Helps with predictable urges. Keeps hands and mouth busy.
Cons	<ul style="list-style-type: none"> May irritate skin May disturb sleep Can't adjust dose 	<ul style="list-style-type: none"> Need to use correctly – "chew and park" May cause nausea, hiccups, coughing, heartburn, headache and flatulence. 	<ul style="list-style-type: none"> May irritate mouth and throat (improves with use). Does not work well below 40 degrees. 	<ul style="list-style-type: none"> Need to use correctly (DO NOT INHALE). Nasal irritation is common. May cause dependence 	<ul style="list-style-type: none"> May cause insomnia. May cause some nausea, hiccups, heartburn, coughing, headache and flatulence.
Comments	<ul style="list-style-type: none"> Do not use with severe uncontrolled eczema or psoriasis Remove at night for sleep disturbances 	<ul style="list-style-type: none"> No eating or drinking 15 min. prior to use: reduces efficacy. May stick to dental work. 	<ul style="list-style-type: none"> Do not use with severe reactive airway disease (asthma) 	<ul style="list-style-type: none"> Do not use with severe reactive airway disease (asthma) 	<ul style="list-style-type: none"> Do not use more than one at a time or one after the other. Do not use > 5 in 6 hours or > 20 per day. Do not chew Do not eat or drink 15 min. prior to use
Availability	Over-the-counter or prescription	Over-the-counter (regular, mint, orange)	Prescription only	Prescription only	Over-the-counter (regular, cherry)
Cost per day: OSHU Outpatient Pharm.	7 mg. = \$4.89 21 mg = \$5.13	12 pieces per day \$4.92 – 2 mg; \$6.84 – 4 mg	Not available	Not available	4 mg. (9 pcs.) = \$7.17
Cost per day Average at Portland Pharmacies	\$3.25 = all strengths	Brand = \$5.25 2 or 4 mg. 4 mg. generic = \$4.32 2 mg. generic = \$3.90	Average 11 cartridges per day \$11.33	8 doses/day = 40 ml bottle 40 ml. bottle = \$36.25	Brand = \$4.77 (9 pcs.) Generic = \$4.32 (9 pcs.)

* Odds ratio (OR) = odds of remaining abstinent after 6 months compared to placebo

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Smoking Cessation Pharmacology 2006: Non-Nicotine Medications

	BUPROPION SR 150 mg. (OR = 2.1)* ZYBAN / WELLBUTRIN	VARNEICLINE (OR = 3.68)* (CHANTIX)
Length of Treatment	<ul style="list-style-type: none"> 7-12 weeks May be used for maintenance for up to 6 months. 	<ul style="list-style-type: none"> 12 weeks If quit at 12 weeks may take for additional 12 weeks to improve maintenance.
Dosing	<ul style="list-style-type: none"> 7-day up titration prior to quitting. Days 1-3; 150 mg tablet each am Days 4-end; 150 mg tablet am and pm. Doses should be > 8 hours apart. Dose not adjusted by cigs per day. May be combined with NRT. 	<ul style="list-style-type: none"> 7-day up titration prior to quitting. Days 1-3; .5 mg. white tablet per day. Days 4-7; .5 mg. white tablet twice per day, am and pm. Days 8 to end of treatment; 1.0 mg twice per day. Take after eating with full glass of water. Doses should be > 8 hrs apart. Dose not adjusted by cigs per day.
Pros	<ul style="list-style-type: none"> Easy to use Reduces urge to smoke 	<ul style="list-style-type: none"> Easy to use Reduces urge to smoke + satisfaction from smoking.
Cons	<ul style="list-style-type: none"> May disturb sleep May cause dry mouth 	<ul style="list-style-type: none"> Can cause nausea – up to 30% of patients. Dose can be reduced to .5 mg twice per day if nausea cannot be tolerated.
Comments	<ul style="list-style-type: none"> Immediate release form of Wellbutrin increases seizure risk compared to Sustained Release (SR) or Extended Release (XL) forms. Do not use with seizure disorder, heavy drinking, eating disorders, or while on monoamine oxidase inhibitor. Can increase suicidal thoughts in children. 	<ul style="list-style-type: none"> Doseage adjustment is recommended for patients with severe renal impairment. Not recommended for combination therapy with NRT. Not tested in children or pregnant women.
Availability	Prescription only Available as generic: bupropion SR 150mg.	Prescription only
Cost per day: OSHU Outpatient Pharm.	Zyban 150 mg. - \$5.66/day Wellbutrin SR 150 = \$5.66/day Bupropion SR 150 = \$2.94/day	N/A
Cost per day Average at Portland Pharmacies	Zyban = \$5.18/day Generic Zyban = \$3.26 Wellbutrin SR 150 = \$5.29/day Generic Wellbutrin - \$2.97/day	\$4.50 per day for 2 week "starter package" \$3.79/day for 30 day continuing package

For all medications:

Refer to package insert for complete prescribing instructions for each medication.

Smoking cessation, with or without using a medication, may alter responses to other medications.

* Odds ratio = odds of remaining abstinent after 6 months compared to placebo