

Mayo Clinic NDC Tobacco Dependence Treatment Medication Summary*

Nicotine Replacement Therapy

Description & Examples	Pros & Cons	Comments	Dosing Recommendations
<p style="text-align: center;">Nicotine Patch (OTC)</p> <p>24 hour delivery systems 21, 14, 7 mg/24 hr</p> <p>16 hour delivery systems 15, 10, 5 mg/16 hr</p> <p style="text-align: center;">(Generic available)</p>	<p>Pros</p> <ul style="list-style-type: none"> Achieve desired levels of replacement Easy to use Only needs to be applied once a day Few side effects <p>Cons</p> <ul style="list-style-type: none"> Less flexible dosing Slower onset of delivery Mild skin rashes and irritation 	<p>Comments/limitations</p> <p>Patches vary in strengths and the length of time over which nicotine is delivered. Depending on the brand of patch used, may be left on for anywhere from 16 to 24 hours. Patches may be placed anywhere on the upper body-including arms and back. Rotate the patch site each time a new patch is applied.</p> <p style="text-align: center;">May purchase without a prescription</p>	<p>Dosing (24 hour patch)</p> <p>≥40 cpd = 42 mg/day 21-39 cpd = 28-35 mg/day 10-20 cpd = 14-21 mg/day <10 cpd = 14 mg/day</p> <p>If a dose > 42mg/day may be indicated, contact the patient’s prescriber. Adjust based on withdrawal symptoms, urges, and comfort. After 4-6 weeks of smoking abstinence, taper every 2-4 weeks in 7-14 mg steps as tolerated.</p>
<p style="text-align: center;">Nicotine Lozenge Regular or “Mini” Size (OTC)</p> <p>Delivers nicotine through the lining of the mouth as the lozenge dissolves.</p> <p style="text-align: center;">2 mg, 4 mg standard lozenge 2 mg, 4 mg mini-lozenge</p> <p style="text-align: center;">(Generic available for regular size)</p>	<p>Pros</p> <ul style="list-style-type: none"> Easy to use Delivers doses of nicotine approximately 25% higher than nicotine gum <p>Cons</p> <ul style="list-style-type: none"> Should not eat or drink 15 minutes before use or during use (especially avoid acidic fluids such as colas and coffee) Should not be chewed or swallowed Nausea most common side effect (12-15%) 	<p>Comments/limitations</p> <p>Use at least 8-9 lozenges/day initially. Efficacy and frequency of side-effects related to amount used. The mini-lozenge dissolves more rapidly and is smaller in size than the standard lozenge.</p> <p style="text-align: center;">May purchase without a prescription</p>	<p>Dosing as Monotherapy</p> <p>Based on time to first cigarette of the day: <30 minutes = 4 mg ≥30 minutes = 2 mg</p> <p>Based on cigarettes/day (cpd) >20 cpd: 4 mg ≤20 cpd: 2 mg</p> <p>Initial dosing is 1-2 lozenges every 1-2 hours (minimum of 9/day). Taper as tolerated</p>
<p style="text-align: center;">Nicotine Gum (OTC)</p> <p style="text-align: center;">2mg, 4mg</p> <p>Flavors: Orange, Mint, Regular Various Flavors: Cinnamon, Fruit, Extreme Chill, Mint, Original</p> <p>Delivers nicotine through the lining of the mouth while the gum is “parked.”</p> <p>The term “gum” is misleading. It is not chewed like regular gum but rather is chewed briefly and then “parked” between cheek and gum. (Generic Available)</p>	<p>Pros</p> <ul style="list-style-type: none"> Convenient/Flexible dosing Faster delivery of nicotine than the patches <p>Cons</p> <ul style="list-style-type: none"> May be inappropriate for people with dental problems and those with temporomandibular joint (TMJ) syndrome Should not eat or drink 15 minutes before use or during use (especially avoid acidic fluids such as colas and coffee) Frequent use during the day required to obtain adequate nicotine levels 	<p>Comments/limitations</p> <p>Many people use this medication incorrectly. Review package directions carefully to maximize benefit of product</p> <p style="text-align: center;">May purchase without a prescription</p>	<p>Dosing as Monotherapy</p> <p>Based on time to first cigarette of the day: <30 minutes = 4 mg >30 minutes = 2 mg</p> <p>Based on cigarettes/day (cpd) >20 cpd: 4 mg gum ≤20 cpd: 2 mg gum</p> <p>Initial dosing is 1-2 pieces every 1-2 hrs (10-12 pieces/day). Taper as tolerated.</p>

Description & Examples	Pros & Cons	Comments	Dosing Recommendations
<p>Nicotine Nasal Spray</p> <p>Delivers nicotine through the lining of the nose when sprayed directly into each nostril.</p>	<p>Pros :</p> <ul style="list-style-type: none"> • Flexible dosing • Can be used in response to stress or urges to smoke • Fastest delivery of nicotine of currently available NRT products <p>Cons:</p> <ul style="list-style-type: none"> • Nose and throat irritation is common, but usually disappears within one week. • Frequent use during the day required to obtain adequate nicotine levels • Infrequent nose bleed 	<p>Comments/limitations</p> <p>Unlike decongestant nasal sprays, the nicotine spray is not meant to be sniffed. Rather, it is sprayed against the lining of each nostril once or twice an hour (maximum of five times in one hour).</p> <p>Prescription required for purchase</p>	<p>Dosing as Monotherapy</p> <p>1 spray in each nostril 1-2 times/hr (up to 5 times/hr or 40 times/day)</p> <p>Most average 14-15 doses/day initially</p> <p>Taper as tolerated</p>
<p>Nicotine Inhaler</p> <p>A plastic cylinder containing a cartridge that delivers nicotine vapor when puffed. The inhaler delivers nicotine through the lining of the mouth, not to the lung, and enters the body in much the same way as the NRT lozenge or gum.</p>	<p>Pros</p> <ul style="list-style-type: none"> • Flexible dosing • Mimics the hand-to-mouth behavior of smoking • Few side effects <p>Cons</p> <ul style="list-style-type: none"> • Frequent use during the day required to obtain adequate nicotine levels • May cause mouth or throat irritation 	<p>Comments/limitations</p> <p>Puffing must be done frequently, far more often than with a cigarette. Each cartridge designed for 80 puffs over 20 minutes of use. Patient does not need to inhale deeply to achieve an effect.</p> <p>Prescription required for purchase</p>	<p>Dosing as Monotherapy</p> <p>Minimum of 6 cartridges/day, up to 16/day</p> <p>Taper as tolerated</p>

Non-Nicotine Medication

Description & Examples	Pros & Cons	Comments	Dosing Recommendations
<p>Bupropion SR</p> <p>(Generic Available)</p>	<p>Pros</p> <ul style="list-style-type: none"> • Easy to use • Pill form • Few side effects (most common are dry mouth and insomnia) • May be used in combination with NRT (nicotine patches, spray, gum and inhaler) <p>Cons</p> <ul style="list-style-type: none"> • Contraindicated with certain medical conditions and may interact adversely with MAO inhibitors 	<p>Comments/limitations</p> <p>A slight risk of seizure (1:1000) is associated with use of this medication. Seizure risk should be assessed. Risk of seizure is increased if:</p> <ul style="list-style-type: none"> • Personal history of seizures • Significant head trauma/brain injury • Anorexia nervosa or bulimia • Concurrent use of medications that lower the seizure threshold • Label contains boxed warning about mood changes, suicidal ideation and attempts, and aggressive behavior. • Avoid in patients with hepatic failure <p>Prescription required for purchase</p>	<p>Dosing: Take doses at least 8 hours apart</p> <p>Start medication one week prior to the Target Quit Date (TQD)</p> <p>150 mg once daily for 3 days, then 150 mg twice daily for 4 days, then</p> <p>On TQD STOP SMOKING</p> <p>Continue at 150 mg BID 12 weeks. Treatment for as long as 12 months may be effective for reducing relapse. May stop abruptly; no need to taper.</p>

Description & Examples	Pros & Cons	Comments	Dosing Recommendations
Varenicline	<p>Pros</p> <ul style="list-style-type: none"> • Easy to use • Pill form • Generally well tolerated • No known drug interactions <p>Cons</p> <ul style="list-style-type: none"> • Nausea, abnormal dreams and sleep disturbances are common adverse effects 	<p>Comments/limitations</p> <ul style="list-style-type: none"> • Nausea is common. Taking the medication with food and titrating the dose as directed will help • Preliminary studies suggest that varenicline can be safely used in combination with bupropion and/or NRT. However, efficacy of these combinations has not been shown • Dose must be lowered if kidney function is impaired • Label contains boxed warning about mood changes, suicidal ideation and attempts, and aggressive behavior. <p>Prescription required for purchase</p>	<p>Dosing: TAKE WITH FOOD</p> <p>Start medication one week prior to the Target Quit Date (TQD)</p> <p>0.5 mg once daily X 3 days, then 0.5 mg twice daily X 4 days, then ON TQD STOP SMOKING AND Take 1.0 mg twice daily X 11 weeks</p> <p>If not smoking at the end of twelve weeks, may continue at 1.0 mg twice daily for an additional 12 weeks</p> <p>May stop abruptly. No need to taper.</p>

Combination Therapy

Description & Examples	Pros & Cons	Comments	Dosing Recommendations
<p>Long Acting + Short Acting NRT</p> <p>Bupropion + NRT</p>	<p>Pros</p> <ul style="list-style-type: none"> • Permits sustained levels of nicotine with rapid adjustment for acute needs • More efficacious than monotherapy <p>Cons</p> <ul style="list-style-type: none"> • Cost 	<p>Comments/limitations</p> <p>Providing two types of delivery system, one or two Long Acting medications and one or more Short Acting NRT, appears to be more efficacious. Should be considered for those who have failed monotherapy in the past and those considered highly tobacco dependent.</p> <p>This strategy is endorsed by the 2008 Public Health Service clinical practice guideline, but is considered “off-label” prescribing according to the FDA approved product labels.</p>	<p>Dosing</p> <ul style="list-style-type: none"> • Dose the patch as described according to cigarettes used per day. Prescribe 2mg gum, 2 mg lozenge, nicotine inhaler or nicotine nasal spray for Ad Lib use every 1-2 hours and as needed when withdrawal symptoms and urges to use tobacco occur. Adjust dose of patch upward if unusually frequent use of immediate-release NRT is needed. The goal is to minimize need for short-acting NRT dosing. • Some patients will benefit from using nicotine patch therapy and bupropion and one or more Short Acting NRT

Smokeless Tobacco (ST)

Description & Examples	Pros & Cons	Comments	Dosing Recommendations
Treatment Recommendations	<p>24 hour nicotine patch:</p> <p>>3 cans or pouches/week = 42 mg/day</p> <p>2-3 cans or pouches/week = 21 mg/day</p> <p><2 cans or pouches/week = 14 mg/day</p> <p>Adjust based on withdrawal symptoms, urges, and comfort. After 4-6 weeks of abstinence, taper every 2-4 weeks in 7-14 mg steps as tolerated</p>	<p>Other NRT:</p> <p>Nicotine lozenge: 4mg if > 3 tins/week 2mg if ≤ 3 tins/week</p> <p>Nicotine gum or nicotine lozenge may be combined with nicotine patch as described for cigarette smokers. Nicotine inhaler and nicotine nasal spray are <u>not</u> recommended for ST users.</p>	<p>Non-nicotine pharmacotherapy</p> <p>Empiric evidence suggests that bupropion and varenicline may be of benefit in this population of tobacco users, using the dosing guidelines recommended for cigarette smokers.</p>

*The table is a summary of recommendations for use of medication in the treatment of tobacco dependence. The most effective regimen and dose varies by individual. Costs will vary depending on retailer. Some of the dosing recommendations are “off-label”, i.e., not contained in the current FDA-approved product labeling information. Adapted from Hurt, R.D., et al. CA Cancer J Clin.2009;59:314-326; Fiore, et.al. U.S. Public Health Service Guideline, 2008
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