

## Mayo Clinic NDC Tobacco Dependence Treatment Medication Summary

Description & Examples	Pros & Cons	Comments	Dosing Recommendations
<b>Combination Nicotine Replacement Therapy (NRT)</b>	<b>Pros</b> <ul style="list-style-type: none"> <li>Permits sustained levels of nicotine with rapid adjustment for acute needs</li> <li>More efficacious than monotherapy</li> </ul> <b>Cons</b> <ul style="list-style-type: none"> <li>May increase risk of nicotine toxicity</li> <li>Cost</li> </ul>	<b>Comments/limitations</b> Providing two types of delivery system, one passive and one active, appears to be more efficacious. Should be considered for those who have failed single therapy in the past and those considered highly tobacco dependent. Not a FDA approved strategy.	<b>Dosing**</b> Dose the patch as described. Prescribe 2mg gum, 2 mg lozenge, nicotine inhaler or nicotine nasal spray on an as needed basis when acute withdrawal symptoms and urges to use tobacco occur. Adjust dose of patch if frequent use of other NRT: goal is to minimize need for short-acting NRT dosing.
<b>Nicotine Patch (OTC)</b>  <b>24 hour delivery systems</b> 21, 14, 7 mg/24 hr  <b>16 hour delivery systems</b> 15 mg/16 hr  (Generic available)	<b>Pros</b> <ul style="list-style-type: none"> <li>Achieve high levels of replacement</li> <li>Easy to use</li> <li>Only needs to be applied once a day</li> <li>Few side effects</li> </ul> <b>Cons</b> <ul style="list-style-type: none"> <li>Less flexible dosing</li> <li>Slow onset of delivery</li> <li>Mild skin rashes and irritation</li> </ul>	<b>Comments/limitations</b> 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.  May purchase without a prescription	<b>Dosing** (24 hour patch)</b> $\geq 40$ cpd = 42 mg/day 21-39 cpd = 28-35 mg/day 10-20 cpd = 14-21 mg/day <10 cpd = 14 mg/day <ul style="list-style-type: none"> <li>If a dose &gt; 42mg/day may be indicated, contact the patient's prescriber.</li> <li>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.</li> </ul>
<b>Nicotine Lozenge (OTC)</b>  Delivers nicotine through the lining of the mouth while the lozenge dissolves.  2 mg, 4 mg	<b>Pros</b> <ul style="list-style-type: none"> <li>Easy to use</li> <li>Delivers doses of nicotine approximately 25% higher than nicotine gum</li> </ul> <b>Cons</b> <ul style="list-style-type: none"> <li>Should not eat or drink 15 minutes before use or during use</li> <li>Should not be chewed or swallowed</li> <li>Nausea frequent (12-15%)</li> </ul>	<b>Comments/limitations</b> Use at least 8-9 lozenges/day initially. Efficacy and frequency of side-effects related to amount used.  May purchase without a prescription	<b>Dosing as Monotherapy</b> Based on time to first cigarette of the day: <30 minutes = 4 mg $\geq 30$ minutes = 2 mg  Based on cigarettes/day (cpd) >20 cpd: 4 mg $\leq 20$ cpd: 2 mg Initial dosing is 1-2 lozenges every 1-2 hours (minimum of 9/day). Taper as tolerated
<b>Nicotine Gum (OTC)</b> 2mg, 4mg Flavors: Orange, Mint, Regular  The term "gum" is misleading. It is not chewed like regular gum but rather is chewed briefly and then "parked" between cheek and gum. The nicotine is absorbed through the lining of the mouth. (Generic Available)	<b>Pros</b> <ul style="list-style-type: none"> <li>Convenient/Flexible dosing</li> <li>Faster delivery of nicotine than the patches</li> </ul> <b>Cons</b> <ul style="list-style-type: none"> <li>May be inappropriate for people with dental problems and those with temporomandibular joint (TMJ) syndrome</li> <li>Should not eat or drink 15 minutes before use or during use</li> <li>Frequent use during the day required to obtain adequate nicotine levels</li> </ul>	<b>Comments/limitations</b> Many people use this medication incorrectly. Review package directions carefully to maximize benefit of product  May purchase without a prescription	<b>Dosing as Monotherapy**</b> Based on cigarettes/day (cpd) >20 cpd: 4 mg gum $\leq 20$ cpd: 2 mg gum Based on time to first cigarette of the day: <30 minutes = 4 mg >30 minutes = 2 mg  Initial dosing is 1-2 pieces every 1-2 hrs (10-12 pieces/day).  Taper as tolerated.

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<p><b>Nicotine Nasal Spray</b></p> <p>Delivers nicotine through the lining of the nose when sprayed directly into each nostril.</p>	<p><b>Pros :</b></p> <ul style="list-style-type: none"> <li>Flexible dosing</li> <li>Can be used in response to stress or urges to smoke</li> <li>Fastest delivery of nicotine of currently available products but not as fast as cigarettes</li> </ul> <p><b>Cons</b></p> <ul style="list-style-type: none"> <li>Nose and eye irritation is common, but usually disappears within one week.</li> <li>Frequent use during the day required to obtain adequate nicotine levels</li> </ul>	<p><b>Comments/limitations</b></p> <p>Unlike nasal sprays used to relieve allergy symptoms, 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><b>Dosing as Monotherapy</b></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><b>Nicotine Inhaler</b></p> <p>A plastic cylinder containing a cartridge that delivers nicotine when puffed. The inhaler delivers nicotine to the oral mucosa, not the lung, and enters the body much more slowly than the nicotine in cigarettes.</p>	<p><b>Pros</b></p> <ul style="list-style-type: none"> <li>Flexible dosing</li> <li>Mimics the hand-to-mouth behavior of smoking</li> <li>Few side effects</li> </ul> <p><b>Cons</b></p> <ul style="list-style-type: none"> <li>Frequent use during the day required to obtain adequate nicotine levels</li> <li>May cause mouth or throat irritation</li> </ul>	<p><b>Comments/limitations</b></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><b>Dosing as Monotherapy</b></p> <p>Minimum of 6 cartridges/day, up to 16/day</p> <p>Taper as tolerated</p>
<p><b>Non-nicotine medication</b></p> <p><b>Bupropion SR</b></p> <p>(Generic Available)</p>	<p><b>Pros</b></p> <ul style="list-style-type: none"> <li>Easy to use</li> <li>Pill form</li> <li>Few side effects</li> <li>May be used in combination with NRT (nicotine patches, spray, gum and inhaler)**</li> </ul> <p><b>Cons</b></p> <ul style="list-style-type: none"> <li>Contraindicated with certain medical conditions and medications</li> </ul>	<p><b>Comments/limitations</b></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"> <li>Personal history of seizures</li> <li>Significant head trauma/brain injury</li> <li>Anorexia nervosa or bulimia</li> <li>Concurrent use of medications that lower the seizure threshold</li> </ul> <p>Prescription required for purchase</p>	<p><b>Dosing: Take doses at least 8 hours apart</b></p> <p>Start medication one week prior to the Target Quit Date (TQD)</p> <p><b>150 mg once daily for 3 days, then 150 mg twice daily for 4 days, then</b></p> <p><b>On TQD STOP SMOKING</b></p> <p>Continue at 150 mg BID 12 weeks, or longer if necessary. May stop abruptly; no need to taper.</p>
<p><b>Non-nicotine medication</b></p> <p><b>Varenicline</b></p>	<p><b>Pros</b></p> <ul style="list-style-type: none"> <li>Easy to use</li> <li>Pill form</li> <li>Generally well tolerated</li> <li>No known drug interactions</li> </ul> <p><b>Cons</b></p> <ul style="list-style-type: none"> <li>Nausea is common</li> </ul>	<p><b>Comments/limitations</b></p> <ul style="list-style-type: none"> <li>Nausea is common. Taking the medication with food and titrating the dose as directed will help</li> <li>It appears that varenicline can be safely used in combination with bupropion and/or NRT. However, efficacy of these combinations has not been shown</li> <li>Dose must be adjusted if kidney function is impaired</li> </ul> <p>Prescription required for purchase</p>	<p><b>Dosing: TAKE WITH FOOD</b></p> <p>Start medication one week prior to the Target Quit Date (TQD)</p> <p><b>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</b></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>
<p><b>SMOKELESS TOBACCO (ST) Treatment Recommendations</b></p>	<p><b>24 hour nicotine patch:</b></p> <p>&gt;3 cans or pouches/week = 42 mg/day 2-3 cans or pouches/week = 21 mg/day &lt;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><b>Other NRT:</b></p> <p><b>Nicotine lozenge: 4mg if &gt; 3 tins/week 2mg if ≤ 3 tins/week</b></p> <p><b>Nicotine gum or nicotine lozenge</b> may be combined with nicotine patch as described for cigarette smokers. <b>Nicotine inhaler and nicotine nasal spray</b> are <u>not</u> recommended for use in ST users.</p>	<p><b>Non-nicotine pharmacotherapy</b></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 dose varies by individual. Costs will vary depending on retailer. (\*\*Some of the dosing recommendations are not contained in current product labeling information). Adapted from Ebbert JO, et al. J Thorac Oncol.2007;2:249-256; Fiore, et.al. U.S. Public Health Service Guideline, June 2000; Schiffman et. Al. Archives of Internal Medicine 2002;162:1267-1276. Varenicline Product Information profile (May,2006)

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