

# Tobacco Treatment Medication Dosing Guidelines

## Nicotine Replacement Therapy (NRT)

Dosing with Nicotine Replacement Therapy often requires an individualized approach, adapted for a patient's unique characteristics. Monitor and adjust dose based on withdrawal symptoms, cravings and confidence. Combination therapy has been found to generally be more efficacious than monotherapy.

<p><b>Patch</b></p> <p>Strengths: 21mg, 14mg, 7mg</p> <p>Long acting (once/day)</p>	<p><b>Standard Dosing</b></p> <p>&lt; 5 cig/d: 7mg/day 6 -10 cig/d: 7- 14mg/day 11-20 cig/d: 14-21mg/day 21-39 cig/d: 21mg + 7mg or 21mg + 14mg 40+ cig/d: 21 mg + 7mg, 14mg, or 21mg</p> <p>Use for 4-6 weeks. May combine with short acting NRT (i.e., gum, lozenge, or inhaler) for acute cravings and withdrawal management. Taper by 7 mg every 2-4 weeks as withdrawal symptoms, cravings and patient confidence improve.</p>	<p><b>General Use Instructions and Information</b></p> <ul style="list-style-type: none"> <li>• Over the counter</li> <li>• Easiest to use, excellent safety record</li> <li>• Delivers steady state of nicotine over 20-24 hours</li> <li>• Slow onset - up to 2 hours</li> <li>• Apply new patch each day at the same time, on clean, dry, hairless site; usually upper trunk and arms. Rotate sites daily. Avoid using moisturizers on skin.</li> <li>• Side Effects: Localized skin irritation. May use 1% hydrocortisone as needed. Stop patch if rash lasts longer than 24 hours, or if excessive redness or indication of allergy.</li> <li>• May be removed at bedtime if it disrupts sleep. Place a new patch upon awaking</li> <li>• Dispose of carefully to avoid contact with children and pets</li> </ul>
<p><b>Gum</b></p> <p>Strengths: 2mg, 4mg</p> <p>Short acting</p>	<p><b>Standard Dosing</b></p> <p>Based on time to first cigarette of the day: &lt;30 minutes to first cig: 4mg &gt;30 minutes to first cig: 2mg</p> <p>Based on cigarettes/day: &lt;20 cig/d: 2mg &gt;20 cig/d: 4mg</p> <p>Use one piece every 1-2 hours initially, based on patient withdrawal symptoms and cravings as needed. Maximum of 20 pieces /day. Scheduled dosing is recommended. Taper as withdrawal symptoms, cravings and patient confidence improve.</p>	<p><b>General Use Instructions and Information</b></p> <ul style="list-style-type: none"> <li>• Over the counter</li> <li>• Efficacy and frequency of side effects are related to dose</li> <li>• Do not chew nicotine gum continually as with regular gum. Rather, chew one piece several times until a peppery taste is released. Then, park between gum and cheek. Repeat when the peppery taste fades, parking it in different areas. One piece lasts for 30 min.</li> <li>• Avoid eating &amp; drinking 15 min before, during, or 15 min after use (esp. with coffee and colas)</li> <li>• Do not use with dentures, bridges, gum disease, or if toothless</li> <li>• Use caution with digestive conditions such as gastroesophageal reflux</li> <li>• Side effects: indigestion, mouth or jaw soreness, hiccups</li> <li>• Over-chewing can cause excessive swallowing of nicotine, leading to nausea or indigestion.</li> </ul>
<p><b>Lozenge</b></p> <p>Strengths: 2mg, 4mg</p> <p>Short acting</p>	<p><b>Standard Dosing</b></p> <p>Based on time to first cigarette of the day: &lt;30 minutes to first cig = 4 mg &gt;30 minutes to first cig = 2 mg</p> <p>Based on cigarettes/day: &lt;20 cig/day = 2 mg &gt;20 cig/day = 4 mg</p> <p>Use one lozenge every 1-2 hours initially, based on patient withdrawal symptoms and cravings as needed. Scheduled dosing is recommended. Maximum of 24 pieces /day. Taper as withdrawal symptoms, cravings and patient confidence improve.</p>	<p><b>General Use Instructions and Information</b></p> <ul style="list-style-type: none"> <li>• Over the counter</li> <li>• Dose delivered is ~25% higher than with nicotine gum</li> <li>• Place lozenge between gum and cheek, allow to dissolve slowly, moving lozenge from one side of mouth to the other. Do not chew, swallow or suck the lozenge continually.</li> <li>• Avoid eating &amp; drinking 15 min before, during, or 15 min after use (esp. with coffee and colas)</li> <li>• Use caution in those with oral lesions and digestive conditions such as gastroesophageal reflux</li> <li>• Side effects: Indigestion, nausea, and hiccups</li> <li>• Constant sucking can cause excessive swallowing of nicotine and lead to nausea or indigestion.</li> </ul>
<p><b>Inhaler</b></p> <p>Strength: 10mg/cartridge</p> <p>6 cartridges/package</p> <p>Short acting</p>	<p><b>Standard Dosing</b></p> <p>1 cartridge delivers about 4mg of nicotine, but varies by individual and technique used. One nicotine cartridge delivers about 80 "sips".</p> <p>Use one cartridge every 1-2 hours initially, based on patient withdrawal symptoms and cravings as needed. Use 6 -16 cartridges /day. Taper as withdrawal symptoms, cravings and patient confidence improve.</p>	<p><b>General Use Instructions and Information</b></p> <ul style="list-style-type: none"> <li>• Prescription required</li> <li>• Nicotine vapor is "sipped" (like drawing from a straw) through a plastic cylinder containing a cartridge of nicotine. Bring vapor into the mouth where it is absorbed. "Sip" frequently over 20-60 minutes. <b>Do not inhale.</b></li> <li>• Avoid eating &amp; drinking 15 min before, during, or 15 min after use (esp. with coffee and colas)</li> <li>• Will not function properly in temperatures below 60° F</li> <li>• Caution in patients with asthma, severe reactive airway disease, or COPD</li> <li>• Side effects: mouth or throat irritation, cough, and changes in taste</li> </ul>
<p><b>Nasal Spray</b></p> <p>Strength: 10mg/ml</p> <p>10ml bottle = 200 applications.</p> <p>Short acting</p>	<p><b>Standard Dosing</b></p> <p>1 spray in each nostril (1 dose) per hour initially, or as needed. Not to exceed 5 doses in an hour or 40 doses in a day. Taper as withdrawal symptoms, cravings and patient confidence improve.</p>	<p><b>General Use Instructions and Information</b></p> <ul style="list-style-type: none"> <li>• Prescription required.</li> <li>• Fastest nicotine delivery of all NRTs</li> <li>• Tilt head back. Spray against the outer wall of the nostril. Do not sniff. Wait 2-3 minutes before blowing nose (if desired).</li> <li>• Avoid in rhinitis, nasal polyps, sinusitis, asthma or other reactive airway disease</li> <li>• Side effects: Significant nose and throat irritation, (may improve with time), headaches and rhinitis.</li> </ul>

## Non- Nicotine Oral Medications by Prescription

<b>Bupropion SR</b> (Zyban®, Wellbutrin SR®)	<b>Standard Dosing</b> Begin 1 week before target quit date Start with 150 mg daily for 7 days, then twice daily May try 150 mg once/day for those who do not tolerate the full dose Continue for 12 weeks or longer as needed	<b>General Use Instructions and Information</b> <ul style="list-style-type: none"> <li>• Take with food</li> <li>• Contraindicated in patients with history of / risk for seizures (e.g. bulimia, head injury, alcohol detox), some mental health conditions, uncontrolled hypertension</li> <li>• May help to delay weight gain in some users</li> <li>• Side effects: Agitation, insomnia, dry mouth, headache</li> <li>• <b>See Possible Mental Health Side Effects Below</b></li> </ul>
<b>Varenicline</b> (Chantix®)	<b>Standard Dosing</b> Begin 1 week before target quit date. Starter Pack includes dose titration pills from 0.5 mg once a day up to 1 mg twice daily. Continue for 12 weeks or longer if necessary.	<b>General Use Instructions and Information</b> <ul style="list-style-type: none"> <li>• Take with food to minimize nausea</li> <li>• Avoid taking at bedtime</li> <li>• Do not make up a missed dose by doubling up the next dose</li> <li>• May need dose reduction in renal disease, elderly, or in those who weigh less than 100 pounds</li> <li>• Side effects: Nausea, vomiting, gas, constipation, headache, sleep disturbance, unusual dreams, drowsiness</li> <li>• Use caution if recent cardiac event</li> <li>• <b>See Possible Mental Health Side Effects Below</b></li> </ul>
<b>Possible Mental Health Side Effects</b> when taking Bupropion and Varenicline The FDA has removed the Black Box Warning on varenicline and bupropion as of 12.16.16. The risk for serious side effects on mood, behavior, or thinking when taking varenicline and/or bupropion is lower than previously suspected. The risk is still present however, especially in those with current or past histories of mental illnesses such as depression, anxiety disorders, or schizophrenia. Monitor for neuropsychiatric symptoms and counsel patients to stop taking varenicline or bupropion and to contact their health professional right away if they notice any side effects on mood, behavior or thinking.		

## Additional Guidelines

<b>Combination Therapy</b>	Combination therapy has been found to be more efficacious than monotherapy (PHS Clinical Guideline, 2008). FDA approved in 2013. Combined NRT permits sustained levels of nicotine with added benefit of rapid adjustment for acute needs and cravings. Adjust short acting method based on symptoms. Examples: Combine long acting NRT (patch) with short acting NRT (lozenge, gum or inhaler). Combine bupropion plus NRT (patch, gum or lozenge). May increase risk of nicotine excess symptoms.
<b>Smokeless Tobacco</b>	PHS Clinical Practice Guideline 2008 Update does not recommend tobacco treatment medications in smokeless tobacco users due to insufficient evidence of efficacy. Yet, these medications may be beneficial for some patients and options should be discussed with each patient. Monitor and adjust dose based patient response. Dosing: 1 or more cans/week: 21 mg patch or 4 mg gum or 4 mg lozenge Less than 1 can/week: 14 mg patch or 2 mg gum or 2 mg lozenge
<b>Cigars &amp; Pipes</b>	Small Cigars: Dose similar to cigarettes Medium cigars: 2 or more cigars /day: 21 mg patch or 4 mg gum or 4 mg lozenge Large Cigars: <2 /day: 14 mg patch or 2 mg gum or 2 mg lozenge Large Cigars: 2 or more /day: 21 mg patch or 4 mg gum or 4mg lozenge Pipe (averages >0.4mg/bowl): dose similar to smoking 2 -10 cigarettes/day
<b>Special populations</b>	Always consider risk/benefit ratio to medication use. <b>Pregnant/lactating women:</b> Behavioral counseling alone is first approach. Limited safety testing and no FDA approval for tobacco treatment medications. Use under the guidance of patient's provider. <b>Youth:</b> no evidence for efficacy; probably safe, not FDA approved. <b>Cardiovascular disease:</b> NRT considered safe for most, use caution if very recent MI or stroke; or in arrhythmias. <b>Psychiatric disorders:</b> These medications are generally safe, but potential exists for psych destabilization in nicotine withdrawal, changes in psych med metabolism, and/or with use of some of these medications. Consider psychiatric consultation.
<b>Contraindications for NRT (partial list)</b>	<b>Relative contraindications for NRT:</b> Unstable cardiovascular disease, some acute post-op conditions. Consult provider. Monitor/consider alternatives if: peptic ulcer disease, endocrine disorders, severe kidney or liver disease, or malignant hypertension. Allergic reactions are possible with any medication. Past allergic reaction to one of these medications is a contraindication. <b>Absolute Contraindication for NRT:</b> Buerger's Disease
<b>Smoking Cessation Effect on some Medications</b>	Smoking interferes with the metabolism of several medications via its effect on P-450 enzymes. Stopping smoking can directly impact medication metabolism with the result of increased medication circulating in the blood stream. Closer monitoring of these medications is warranted when patients stop smoking. This is a smoking effect, not a nicotine effect. For a list of the most common medications effected and information, go to: <a href="https://smokingcessationleadership.ucsf.edu/sites/smokingcessationleadership.ucsf.edu/files/Drug-Interactions-with-Tobacco-Smoke.pdf">https://smokingcessationleadership.ucsf.edu/sites/smokingcessationleadership.ucsf.edu/files/Drug-Interactions-with-Tobacco-Smoke.pdf</a>

This Dosing Guideline is a summary of recommendations for the use of all 7 FDA approved medication in the treatment of tobacco dependence and is strictly for the convenience of healthcare professionals. Information is simplified and may not reflect the most recent updates. Please see package inserts for prescribing details. Consult a healthcare provider for special circumstances.