Summary Charts for Tobacco Cessation Pharmacology

Four pharmacology charts are included in this resource: Prescribing Nicotine Replacement Therapy (NRT) for Smokeless Tobacco Cessation, Prescribing NRT for Smoking Cessation, Prescribing Combined Nicotine Replacement Therapy for Smoking Cessation and Prescribing Non-Nicotine Pharmacotherapy for Smoking Cessation.

Prescribing Nicotine Replacement Therapy for Smokeless Tobacco Cessation

<table>
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<tr>
<th>Smokeless tobacco tins used per week</th>
<th>Type and dose</th>
<th>Comments</th>
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</table>
| Two or fewer                         | - Patch: 14 mg for four weeks; 7 mg for four weeks  
- Gum or lozenge: * 8–12 4 mg pieces per day for eight weeks (maximum 24 pieces per day) | Patch: Adjust starting dose to 14 mg (14 mg for four weeks; 7 mg for four weeks). Gum/lozenge: Increase starting dosage to 21 mg patch. |
| Two to five                          | - Patch: 21 mg plus gum or lozenge*   
- 21 mg for four weeks  
- 14 mg for two weeks  
- 7 mg for two weeks  
- As needed, gum/lozenge*: 4 to 8 4 mg pieces per day   
- Gum or lozenge: * 12–16 4 mg pieces per day for eight weeks (maximum 24 pieces per day) | |
| Five or more                         | - Patch: 21 mg plus 4 mg gum or lozenge (one per waking hour)   
- Gum/lozenge: * 16–20 4 mg pieces per day for eight weeks (maximum 24 pieces per day) | |

* For lozenges, enter first tobacco use to indicate within 30 minutes of waking.
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# Prescribing Nicotine Replacement Therapy for Smoking Cessation

<table>
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<tr>
<th>Drug and Cost</th>
<th>Approved Indications</th>
<th>Available Dosages</th>
<th>Dosing</th>
<th>Labelled precautions and contraindications</th>
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<td><strong>Nicotine patch</strong>&lt;br&gt;• Sustained release&lt;br&gt;• Average $3 to $5 per day</td>
<td>• As an aid to smoking cessation for partial relief of nicotine withdrawal symptoms. This treatment should be used as part of a comprehensive behavioural smoking-cessation program.&lt;br&gt;• Approved for use as part of a reduce-to-quit strategy.&lt;br&gt;• Can be used in combination with bupropion and with short-acting nicotine replacement therapy products.</td>
<td>• 7 mg, 14 mg and 21 mg per 24-hours, sustained-release transdermal patches</td>
<td>• 21 mg per day for six weeks.&lt;br&gt;• Patients who have successfully abstained can have their dose decreased to 14 mg per day for two weeks, followed by two weeks on 7 mg per day.&lt;br&gt;• May initiate treatment at 14 mg per day in patients with cardiovascular disease, who weigh less than 45 kg or who smoke less than a half-pack of cigarettes per day.&lt;br&gt;• Pre-Quit Dosing: Gradual reduction in the number of cigarettes smoked over two weeks leading up to your quit date while wearing the patch, followed by 10 weeks of standard dosing.</td>
<td><strong>Contraindications</strong>&lt;br&gt;• Previous acute hypersensitivity reaction&lt;br&gt;• Immediate post-myocardial infarction period&lt;br&gt;• Life-threatening arrhythmias&lt;br&gt;• Severe or worsening angina pectoris&lt;br&gt;• Recent cerebral vascular accident&lt;br&gt;<strong>Precautions</strong>&lt;br&gt;• Pregnancy&lt;br&gt;• Nursing mothers&lt;br&gt;• Generalized skin disorders</td>
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<tr>
<td><strong>Nicotine gum</strong>&lt;br&gt;• Immediate release&lt;br&gt;• Effect within 15 minutes of use&lt;br&gt;• Average $2 to $8 per day (6–25 pieces)</td>
<td>• As an adjunct to a smoking cessation program, can be used in the following ways:&lt;br&gt;  – Abrupt cessation&lt;br&gt;  – Gradual cessation (reduce to quit)&lt;br&gt;  – Temporary abstinence from smoking&lt;br&gt;• Can be used in combination with bupropion and with other forms of NRT.</td>
<td>• 2 mg and 4 mg</td>
<td>• Use 4 mg gum for clients who are highly nicotine dependent (21 or more cigarettes per day).&lt;br&gt;• Recommended use is one piece every hour, as needed, or whenever there is the urge to smoke; maximum 20 pieces per day or titrated to individual effect.&lt;br&gt;• Number and frequency should be decreased over time.&lt;br&gt;• Reduce to quit: Used when craving to smoke to prolong smoke-free intervals for as long as possible, with the goal of achieving 50% reduction in daily cigarette consumption after 6 weeks to 4 months of treatment.</td>
<td><strong>Contraindications</strong>&lt;br&gt;• Previous acute hypersensitivity reaction&lt;br&gt;• Immediate post-myocardial infarction period&lt;br&gt;• Life-threatening arrhythmias&lt;br&gt;• Severe or worsening angina pectoris&lt;br&gt;• Recent cerebral vascular accident&lt;br&gt;• Active temporomandibular joint disease&lt;br&gt;<strong>Precautions</strong>&lt;br&gt;• Pregnancy&lt;br&gt;• Nursing mothers&lt;br&gt;• Active peptic ulcer disease</td>
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(continued)
**Prescribing Nicotine Replacement Therapy for Smoking Cessation**

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<tr>
<th>Drug and Cost</th>
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| **Nicotine lozenge**  | • For the reduction of nicotine withdrawal symptoms, including cravings associated with smoking cessation.  
• If possible, should be used in conjunction with a behavioural support program.  
• Can be used in combination with bupropion and with other forms of NRT. | • 1 mg and 2 mg nicotine bitartrate dehydrate  
• 2 mg and 4 mg nicotine polacrilex  
Note: The above products are not considered equivalent dosages. | • For clients smoking 20 or fewer cigarettes per day, use 1 mg nicotine bitartrate dehydrate or 2 mg nicotine polacrilex  
• For clients smoking more than 20 cigarettes per day, use 2 mg nicotine bitartrate dehydrate or 4 mg nicotine polacrilex  
• The timing of the first cigarette may also be considered. Those having their first within 30 minutes of waking up may require higher strengths.  
• Take one lozenge every hour, as needed; maximum 20 lozenges per day or titrated to individual effect.  
• Should dissolve within 20–30 minutes.  
• Typically down titration is achieved by increasing the interval between dosages. | **Contraindications**  
• Previous acute hypersensitivity reaction  
• Immediate post-myocardial infarction period  
• Life-threatening arrhythmias  
• Severe or worsening angina pectoris  
• Recent cerebral vascular accident  
**Precautions**  
• Pregnancy  
• Nursing mothers  
• Active peptic ulcer disease |
| **Nicotine inhaler**  | • Indicated as an aid to smoking cessation for the relief of nicotine withdrawal symptoms.  
• Should be used as part of a comprehensive behavioural smoking-cessation program.  
• Can be used in combination with bupropion and with other forms of NRT. | • 10 mg cartridge that delivers 4 mg of nicotine through about 80 inhalations (over 20 minutes of active puffing) | • Recommended use is one cartridge every 20 minutes, as needed, or titrated to individual effect; maximum 16 cartridges per day.  
• Should use at least six cartridges per day for the first three to six weeks of treatment.  
• It is recommended that the number and frequency be decreased over time after 12 weeks, stopping when reduced to one or two cartridges per day. | **Contraindications**  
• Previous acute hypersensitivity reaction  
• Immediate post-myocardial infarction period  
• Life-threatening arrhythmias  
• Severe or worsening angina pectoris  
• Recent cerebral vascular accident  
**Precautions**  
• Pregnancy  
• Nursing mothers  
• Active peptic ulcer disease  
• Brochospastic diseases (such as asthma) |
### Prescribing Nicotine Replacement Therapy for Smoking Cessation

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| Nicotine mouth spray| • An instant-release mouth spray that works within 60 seconds for fast relief of cravings.  
• Can be used in combination with bupropion and with other forms of NRT. | • Available in a dispenser that contains 150 sprays; each spray delivers 1 mg of nicotine | • Recommended use is one or two sprays every 30 minutes, as needed, for 12 weeks and then reassess; maximum two sprays at a time, four sprays per hour and 64 sprays per day.  
• It is recommended that the number and frequency be decreased over time, stopping when reduced to two to four sprays per day. | Contraindications  
• Previous acute hypersensitivity reaction  
• Immediate post-myocardial infarction period  
• Life-threatening arrhythmias  
• Severe or worsening angina pectoris  
• Recent cerebral vascular accident  

Precautions  
• Pregnancy  
• Nursing mothers  
• Active peptic ulcer disease |

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### Prescribing Combined Nicotine Replacement Therapy For Smoking Cessation

When titrating the dose of nicotine, start with the number of cigarettes smoked daily. The amount of nicotine obtained from smoking can vary due to individual technique from 1.0 mg to 1.5 mg per cigarette. Replacement for comfort varies with product chosen. Follow up in the first week to assess response to medication and adjust NRT as necessary.

<table>
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<tr>
<th>Cigarette consumption per day</th>
<th>Strength of patch to start and one short acting NRT for break through cravings</th>
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<tbody>
<tr>
<td>Less than 10 cpd</td>
<td>7 mg patch and short acting NRT *</td>
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<tr>
<td>10 to 19 cpd</td>
<td>14 mg patch and short acting NRT *</td>
</tr>
<tr>
<td>More than 19 cpd</td>
<td>21 mg patch and short acting NRT *</td>
</tr>
<tr>
<td>More than 30 cpd</td>
<td>28 mg patch (i.e.: 21 mg + 7 mg) and short acting NRT *</td>
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* Short acting NRT options:  
1 mg per dose – oral spray, lozenges  
2 mg and 4 mg per dose – gum, lozenges  
4 mg – inhaler depending on number of inhalations

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Note: When using NRT to quit tobacco, changes in drug metabolism are similar to those seen when quitting without NRT. Drug interactions with NRTs can occur. Nicotine may reduce the sedative effects of benzodiazepines, decrease the subcutaneous absorption of insulin, reduce the effectiveness of beta-blockers, and lessen the effectiveness of opioid analgesia. Higher dosages may be required for patients who smoke more than 25 cigarettes per day (e.g., 21 mg per day plus 7 mg per day).
### Prescribing Non-Nicotine Pharmacotherapy for Smoking Cessation

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| **Bupropion SR**  
• $2 to $3 per day  
• Indicated as smoking cessation treatment in conjunction with behavioural modification.  
• Also approved for use in combination with nicotine replacement therapy.  
• Prior to deciding to prescribe a non-nicotine treatment, thorough consideration should be given to the treatment option of nicotine replacement therapy alone. | 150 mg SR tablets |  
• Starting one to two weeks prior to the target quit date:  
  - 150 mg in the morning for three days, followed by 150 mg twice daily, with dosages at least eight hours apart.  
  - Taken for 7 to 12 weeks; up to six months can be considered post-quit. |  
**Pregnancy**  
• Pregnant women should be encouraged to quit without medication.  
• Bupropion has not been shown to be effective for tobacco cessation in pregnant women.  
• Bupropion has not been evaluated in breastfeeding patients.  
• Bupropion is an FDA pregnancy Class C agent.  
**Cardiovascular disease**  
• Generally well-tolerated; occasional reports of hypertension.  
**Seizure risk**  
• Contraindicated in history of seizures or eating disorders, with concurrent use of another form of bupropion, or use of a MAO inhibitor in the past 14 days.  
• Extreme caution in those with risk factors for seizures, including:  
  - excessive alcohol use  
  - concurrent drug abuse  
  - history of head trauma, CNS tumour  
  - presence of severe hepatic impairment  
  - use of concomitant medications that lower seizure threshold (e.g., antipsychotics, antidepressants, lithium, amantadine, theophylline, systemic steroids, quinolone antibiotics, antimalarials)  
  - use of over-the-counter stimulants or anorectics  
  - diabetes treated with oral hypoglycemics or insulin  
**Psychiatric warnings**  
• Agitation-type events have been reported in both pediatrics and adults, of severe agitation-type adverse events coupled with self-harm or harm to others.  
• The agitation-type events include akathisia, agitation, disinhibition, emotional lability, hostility, aggression and depersonalization.  
• In some cases, the events occurred within several weeks of starting treatment.  
• Clinical monitoring for psychiatric symptoms is recommended. | (continued)
## Prescribing Non-Nicotine Pharmacotherapy for Smoking Cessation

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<tr>
<td><strong>Varenicline</strong></td>
<td>• Smoking-cessation treatment in adults in conjunction with smoking-cessation counselling. • Can be used in combination with bupropion.</td>
<td>• 0.5 mg, 1 mg</td>
<td><strong>Setting a Quit Date</strong>&lt;br&gt;There are three different ways to set the quit date with varenicline&lt;br&gt;• <strong>Fixed Quit Approach:</strong> The patient sets a date to stop smoking and varenicline dosing is started 1-2 weeks before this date.&lt;br&gt;• <strong>Flexible Quit approach:</strong> The patient begins varenicline and then quits smoking between days 8 and 35 of treatment (ie between Weeks 2 and 5)&lt;br&gt;• <strong>Gradual Quit approach:</strong> The patient starts taking varenicline with a goal to quit smoking by end of 12 weeks of treatment. The patient should gradually reduce smoking during the first 12 weeks of treatment such as 50% reduction or more by 4 weeks of treatment, 75% or more by 8 weeks to reach 100% by 12 weeks</td>
<td><strong>Psychiatric safety</strong>&lt;br&gt;• &quot;Black box&quot; type warnings about neuropsychiatric adverse effects in varniciline product monographs were removed by the EMA, FDA and most recently by Health Canada in February 2017.&lt;br&gt;• The need for ongoing assessment of monitoring for any changes in behavior or thinking that are not typical for the patient remains during any quit attempt for patients with or without a history of psychiatric disorders given that these changes can occur with or without medication use.&lt;br&gt;• <strong>Psychiatric warnings remain in the product monograph:</strong> “There have been post-marketing reports of serious neuropsychiatric symptoms in patients being treated with varenicline, including anxiety, psychosis, mood swings, depressed mood, agitation, aggression, hostility, changes in behavior or thinking, suicidal ideation, suicidal behavior and suicide, as well as worsening of pre-existing psychiatric disorder (previously diagnosed or not). Not all patients had stopped smoking at the time of onset of symptoms, and not all patients had known pre-existing psychiatric illness, or were using concomitant CNS drugs.”&lt;br&gt;• <strong>Pre-existing Psychiatric Disorder or Symptoms:</strong> “Smoking cessation, with or without pharmacotherapy, has been associated with exacerbation of underlying psychiatric illness (e.g. depression, anxiety). Patients with a history of psychiatric symptoms should be monitored for worsening or new symptoms when attempting to quit smoking, regardless of how well controlled symptoms may be when starting smoking cessation treatment. Patients should be instructed to report strongly a typical and concerning symptoms to their healthcare provider, so that dose adjustments of psychiatric medications or varenicline may be considered.”</td>
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### Dosing
- 0.5 mg daily for three days, then 0.5 mg twice daily for four days.<br>- The dosage may be increased to 1 mg twice daily on day eight, but 0.5 mg twice daily may also be effective.<br>- The choice of dosing regimen from day 8 onward should be based on physician judgment and patient preference.
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<tr>
<td>Varenicline</td>
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<td><strong>Duration of Treatment</strong></td>
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<td>• <strong>Fixed Quit and Flexible Quit Approaches:</strong> For patients who have successfully stopped smoking at the end of 12 weeks, an additional course of 12 weeks treatment with varenicline may be considered.</td>
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<td>• <strong>Gradual Quit:</strong> Patients who follow the gradual quit approach (12 week) should be treated with varenicline for 24 weeks.</td>
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<td><strong>General:</strong> Patients should be informed that if they experience thoughts, moods or behaviours that are strongly atypical and concerning while on smoking-cessation medication, including varenicline, the medication should be discontinued immediately, with urgent medical help sought as needed, and the symptoms reported to their healthcare provider.</td>
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<td><strong>Cardiovascular disease</strong></td>
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<td>• Patients should be advised to notify a health-care provider of any new or worsening symptoms of cardiovascular disease.</td>
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<td><strong>Pregnancy</strong></td>
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<td>• Varenicline is an FDA pregnancy Class C agent.</td>
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<td>• Varenicline has not been evaluated in breastfeeding patients.</td>
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<td><strong>Renal impairment</strong></td>
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<td>• Caution for patients with significant renal impairment (creatinine clearance &lt; 30 ml per min) or who are on dialysis.</td>
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<td>• Doses should be reduced for these patients.</td>
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<td><strong>Activities</strong></td>
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<td>• May experience impairment of the ability to drive or operate heavy machinery.</td>
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