

## Nicotine Replacement Therapy (NRT) & Medication Summary

*Discuss any and all use of NRT or medication with your health care provider before use*

Description	Pros & Cons	Usage/Comments
<p><b>Nicotine Patch (OTC)</b>  <b>24 hour delivery system</b>            21, 14, &amp; 7 mg/24 hr</p> <p>Generic available</p>	<p><b>Pros</b></p> <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/day</li> <li>▪ Few side effects</li> </ul> <p><b>Cons</b></p> <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>	<p>Patches vary in strengths and the length of time over which nicotine is delivered.</p> <p>Depending on the brand of patch used, may be left on for anywhere from 16 to 24 hours.</p> <p>Patch may be placed anywhere on the upper body-including arms and back.</p> <p>Rotate the patch site each time a new patch is applied.</p> <p>May purchase without a prescription</p>
<p><b>Nicotine Lozenge (OTC)</b>            2 mg &amp; 4 mg</p> <p>Delivers nicotine through the lining of the mouth while the lozenge dissolves.</p>	<p><b>Pros</b></p> <ul style="list-style-type: none"> <li>▪ Easy to use</li> <li>▪ Delivers doses of nicotine approximately 25% higher than nicotine gum</li> </ul> <p><b>Cons</b></p> <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 may occur (12 – 15%)</li> </ul>	<p>Use at least 8-9 lozenges/day initially.</p> <p>Efficacy and frequency of side-effects related to amount used.</p> <p>May purchase without a prescription.</p>
<p><b>Nicotine Gum (OTC)</b>            2 mg &amp; 4 mg            (Flavors: Orange, Mint, Regular &amp; Cinnamon)</p> <p>**The term “gum” is misleading. It is not chewed like regular gum, but rather is chewed briefly and then “parked” between the cheek and gums. The nicotine is absorbed through the lining of the mouth.</p> <p>Generic available</p>	<p><b>Pros</b></p> <ul style="list-style-type: none"> <li>▪ Convenient/flexible dosing</li> <li>▪ Faster delivery of nicotine than the patches</li> </ul> <p><b>Cons</b></p> <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>	<p>Many people use this medication incorrectly. Review package directions carefully to maximize benefit of product.</p> <p>May purchase without a prescription.</p>
<p><b>Nicotine Nasal Spray</b>            Prescription required</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>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>Nicotine Inhaler</b>            Prescription required</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>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>

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<p><b>Bupropion SR (Zyban/Wellbutrin)</b>  <b>Prescription required</b>  <i>Non-nicotine pill</i></p> <p><b>Generic available</b></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 (patches, spray, gum &amp; 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>A risk of seizure (1:1000) is associated with use of this medication. Seizure risk should be assessed. Risk of seizure is increased if:</b></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 seizure threshold</li> </ul> <p><b>Prescription required for purchase</b></p>
<p><b>Varenicline (Chantix)</b>  <b>Prescription required</b>  <i>Non-nicotine pill</i></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>	<ul style="list-style-type: none"> <li>▪ Mental health &amp;/or depression risk should be assessed before use.</li> <li>▪ Nausea is common. Taking the medication with food will help.</li> <li>▪ Dose must be adjusted if kidney function is impaired</li> </ul> <p><b>Prescription required for purchase</b></p>

### Nicotine and brain chemistry

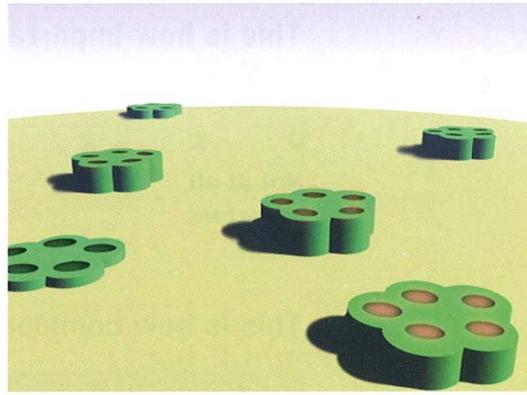
Using nicotine increases the number of nicotine receptors in the brain. Those receptors are triggered by cues that make you want to smoke. When those receptors are empty, you experience withdrawal symptoms and your urge to smoke increases. See diagram below:

Shown below: Nicotinic receptors (green) on brain cells in smokers (left) and nonsmokers or ex-smokers (right).



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Smokers have many more nicotinic receptors than nonsmokers do. When filled with nicotine (red cones), these receptors will “fire,” causing the feelings you have when you smoke.



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When you stop smoking, many nicotinic receptors will disappear, but those that remain have “memory” and can be triggered by cues.

Nicotine from NRT medications will fill the nicotinic receptors, but instead of feeling the exact way you felt when you were smoking, the lower, more constant levels of nicotine help to stabilize the brain, increasing comfort and reducing the intensity of nicotine withdrawal symptoms. This will help you focus more on your behavior change ~ a major piece to quitting smoking. More over, NRT does not contain the other harmful chemicals found in cigarette smoke, so it is safer to use than any tobacco product.



Adapted from Dale, et.al. Mayo Clinic Proceedings 2000; 75:1311-1316; Fiore, et.al., U.S. Public Health Service Guideline, June 2000; Schiffman et. Al. Archives of Internal Medicine 2002; 162:1267-1276. Varenicline Product profile (May 2006) Revised August 2006

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