



## NICOTINE CESSATION

### NICOTINE WITHDRAWAL

Nicotine is a highly addictive substance that results in physical dependence. As such, individuals with a physical dependence to nicotine will likely experience withdrawal symptoms when they quit using nicotine-containing product(s). Quitting 'cold turkey' will result in nicotine withdrawal syndrome. Withdrawal symptoms will peak somewhere between 1-3 days after quitting then slowly resolve over 3-4 weeks. Symptoms may include:

- Feeling restless or anxious
- Feeling irritable, easily frustrated or easily angered
- Feeling down, depressed mood or decreased enjoyment in activities
- Difficulty concentrating
- Trouble sleeping
- Increased appetite or weight gain

Nicotine Replacement Therapy (NRT) can help minimize the withdrawal symptoms. Nonprescription options (patch, gum, lozenge) have proven to be as effective as prescription options (inhaler and nasal spray).

Experts recommend combining the long-acting patch with a short-acting form such as gum or lozenge. One study of over 1,000 smokers compared 12 weeks of nicotine patch, nicotine patch plus nicotine lozenge, and varenicline (Chantix®) and found no differences in confirmed rates of smoking abstinence among the three groups.

### NICOTINE REPLACEMENT

Quitting nicotine "cold turkey" is very challenging and is unlikely to be a successful endeavor for many individuals. Instead, a gradual reduction in nicotine exposure will significantly limit withdrawal symptoms and is more likely to result in successful elimination of nicotine use.

In order to implement this approach, each individual needs to be able to approximate what their daily range of nicotine intake is. This will vary based on the specific product and amount of product being used. For example, individuals who smoke cigarettes will inhale anywhere from 1.1-1.8 mg of nicotine with each cigarette. This translates to a daily physical exposure 22-36 mg of nicotine for each pack of cigarettes. Similarly, there is variation in nicotine content in different vaping pods. JUUL® offers both 3% and 5% pods which contain about 23-40 mg of nicotine per pod (about 0.7 ml) while Breeze Plus® has 50 mg of nicotine in a tank of fluid.

In order to use the following chart, a close estimate of daily nicotine intake is needed to provide the most accurate NRT guidelines. For daily nicotine users, the best approach to eliminate nicotine use with minimal physical cravings and withdrawal symptoms is through the use of a daily patch plus gum or lozenge.



Estimated Daily Nicotine Intake	Nicotine Patch	Nicotine Gum	OR	Nicotine Lozenge
< 22 mg	14 mg patch x 6 weeks then consider taper to 7 mg patch x 6 weeks	Supplement as needed to treat cravings or breakthrough withdrawal symptoms. Use dosing noted below.		Supplement as needed to treat cravings or breakthrough withdrawal symptoms. Use dosing noted below.
> 22 mg	21 mg patch x 6 weeks then consider taper to 14 mg patch x 6 weeks then 7 mg patch x 6 weeks if needed	Supplement as needed to treat cravings or breakthrough withdrawal symptoms. Use dosing noted below.		Supplement as needed to treat cravings or breakthrough withdrawal symptoms. Use dosing noted below.
< 27 mg (or individual waits at least 30 minutes after waking to vape or smoke tobacco)	If using a patch, follow the above recommendations	<b>2 mg:</b> 1 piece every 1-2 hours while awake and when a craving occurs. Maximum of 24 pieces per day during the first 6 weeks of treatment. Gradually reduce use of the ensuing 6 or more weeks by increasing the time between using the gum.		<b>2 mg:</b> 1 lozenge every 1-2 hours while awake and when a craving occurs. Maximum of 20 lozenges per day during the first 6 weeks of treatment. Gradually reduce use of the ensuing 6 or more weeks by increasing the time between taking the lozenge.
≥ 27 mg (or individual vapes or smokes tobacco within 30 minutes of waking)	If using a patch, follow the above recommendations	<b>4 mg:</b> 1 piece every 1-2 hours while awake and when a craving occurs. Maximum of 24 pieces per day during the first 6 weeks of treatment. Gradually reduce use of the ensuing 6 or more weeks by increasing the time between using the gum.		<b>4 mg:</b> 1 lozenge every 1-2 hours while awake and when a craving occurs. Maximum of 20 lozenges per day during the first 6 weeks of treatment. Gradually reduce use of the ensuing 6 or more weeks by increasing the time between taking the lozenge.

**ADDITIONAL NICOTINE REPLACEMENT THERAPY PRODUCT INFORMATION:**

Regardless of the product being used, nicotine replacement therapy is recommended for at least three months.

#### **NICOTINE PATCH:**

Remove and replace the patch with a new one each morning to any non-hairy skin site; rotate the site daily to avoid skin irritation, the most common side effect. Over-the-counter topical hydrocortisone (1% cream or ointment) may be used to relieve skin irritation if it occurs.

If leaving the patch on overnight causes the frequently reported side effects of insomnia and vivid dreams, remove the patch at bedtime and replace with a new one the next morning. Nicotine use cessation rates are similar whether the patch is left on for 24 hours or taken off at night.

If the patch is removed at night and replaced with a new one in the morning, adequate plasma levels of nicotine are reached 30 minutes to three hours after the new patch is applied. If morning nicotine cravings occur before plasma nicotine levels rise, use of a short-acting NRT (eg, gum, lozenge) while waiting for the new nicotine patch to take effect.

Although patches are typically marketed with instructions to taper the dose over 12 weeks, in clinical trials and experience, tapering has not improved nicotine cessation rates. Tapering the dose is not required but this approach can be used if patients feel that cravings and withdrawal symptoms are well controlled and they wish to reduce the dose.

Longer duration (more than 8 to 10 weeks) of treatment with the nicotine patch may lead to improved smoking cessation rates. Generally, NRT is used until a patient feels that they have stabilized as a non-nicotine user. The patch may be continued longer since NRT is safer than continued vaping or smoking.

#### **NICOTINE GUM:**

Nicotine gum is a commonly used short-acting NRT. Chewing the gum releases nicotine, which is absorbed through the tissue in the mouth. This Blood nicotine levels peak about 20 minutes after starting to chew. Nicotine gum is available in several flavors that most users find preferable to the original flavor.

Proper chewing of gum is important for optimal results. "Chew and park" is recommended: chew the gum until the nicotine taste appears, then "park" the gum against the cheek until the taste disappears, then chew a few more times to release more nicotine. Repeat this for 30 minutes, then discard the gum (because all nicotine in the gum has been released).

Acidic beverages (such as coffee or carbonated drinks) should be avoided immediately before and during gum use since these will decrease nicotine absorption in the mouth and result in lower blood nicotine levels.

Stomach and esophageal irritation can occur if the gum is chewed too rapidly because nicotine is released faster than it can be absorbed. The excess nicotine is swallowed and when it is absorbed in the stomach, the nicotine is broken down in the liver and becomes ineffective. Side effects are mostly a consequence of excess nicotine release with overly vigorous chewing and consist of nausea, vomiting, abdominal pain, constipation, hiccups, headache, excess salivation, a sore jaw, and mouth irritation or ulcers.

Chewing gum may exacerbate temporomandibular joint disease and the gum can damage or adhere to dental appliances. Individuals with temporomandibular joint disease, with poor dentition, or who use dental appliances (removable orthodontic appliances, dentures) may do better with the lozenges.

#### **NICOTINE LOZENGES:**

Place lozenge in the mouth and allow it to dissolve over 30 minutes. Do not chew the lozenge since that will result in more rapid release of the nicotine which decreases the effectiveness and increases the likelihood of side-effects. Side effects include mouth irritation or ulcers, in addition to nicotine-related side effects of abdominal pain, nausea, vomiting, diarrhea, headache, and palpitations.

An advantage of the lozenge over the gum is that it can be used in those with temporomandibular disorders, poor dentition, or dentures.

#### **CAMPUS ONE-ON-ONE CONSULTATION AND SUPPORT:**

Consultation appointments are available to discuss your desire to quit using nicotine containing products and to support you with your efforts. You can schedule an appointment with Wellness and Health Promotions which is located in UREC. [Visit this link](#) to explore what substance misuse coaching is all about. If you would like to schedule an appointment, you can do so by clicking on one of the two options listed at the bottom of the web page.

#### **ONLINE / MOBILE SUPPORTS:**

- **Quit Now Virginia** (<https://www.vdh.virginia.gov/tobacco-free-living/quit-now-virginia/>): Provides free information and coaching by telephone or online to residents who want to quit using nicotine products. The counseling is offered by trained Quit Coaches.
- **Quit Guide APP** (<https://smokefree.gov/tools-tips/apps/quitguide>): Free APP that helps you understand your nicotine use pattern and build skills needed to become and stay nicotine free.
- **quitStart** (<https://smokefree.gov/tools-tips/apps/quitguidequitstart>): Free APP that takes information you provide about your nicotine use to give tailored tips, inspiration, and challenges to help you become nicotine free.
- **This is Quitting** (<https://truthinitiative.org/thisisquitting>): Free and anonymous text messaging program from Truth Initiative designed to help young people quit vaping with inspiration from others like them.
- **BecomeAnEx** (<https://www.becomeanex.org/>): Free digital plan to quit vaping or smoking. Created by Truth Initiative in collaboration with The Mayo Clinic.