Nicotine Replacement Therapy for Quitting Tobacco

The nicotine in tobacco leads to actual physical dependence. This can cause unpleasant withdrawal symptoms when a person tries to quit. Nicotine replacement therapy (NRT) gives you nicotine – in the form of gum, patches, sprays, inhalers, or lozenges – but not the other harmful chemicals in tobacco. NRT can help relieve some of the physical withdrawal symptoms so that you can focus on the psychological aspects of quitting. Many studies have shown using NRT can nearly double the chances of quitting smoking. It hasn't been studied as much for quitting smokeless tobacco, but the NRT lozenges may help.

Smokers who are significantly dependent on nicotine should consider nicotine replacement or drug therapy to help them quit. Signs of severe dependence are:

- Smoking more than 1 pack a day
- Smoking within 5 minutes of waking up
- Smoking even while sick
- Waking up at night to smoke
- Smoking to ease symptoms of withdrawal

The more of these that apply, the more serious the dependence.

How does nicotine replacement therapy work?

Nicotine replacement therapy (NRT) can help with the difficult withdrawal symptoms and cravings that most people say is their only reason for not giving up tobacco. Using NRT
reduces those symptoms.

Many people can quit tobacco without using NRT, but most of those who attempt quitting do not succeed on the first try. In fact, smokers usually need many tries – sometimes as many as 10 or more – before they’re able to quit for good. Most people who try to quit on their own go back to smoking within the first month of quitting – often because of the withdrawal symptoms.

Together with counseling or other support, NRT has been shown to help increase the number of smokeless tobacco users who quit, too.

You can start using nicotine replacement therapy (NRT) as soon as you throw away your tobacco. You don’t need to wait a certain length of time to put on the patch or start using the gum, lozenge, nasal spray, or inhaler. Double-check this information with the instructions on your chosen method of nicotine replacement, but in general there’s no need to wait to start using NRT.

**Getting the most from nicotine replacement therapy**

Nicotine replacement therapy (NRT) only deals with the physical dependence. It’s not meant to be the only thing you use to help you quit smoking. You’ll need other methods that help with the psychological (emotional and mental) part of tobacco\(^3\), such as a quit program. Use these support systems during treatment with NRT and for at least a few months after you quit. Studies have shown that this approach – pairing NRT with a program that helps to change behavior – can improve your chances of quitting and staying quit compared to approaches that use only one method.

The best time to start NRT is when you first quit. Often people first try to quit tobacco on their own then decide to try NRT a day or more into quitting. This does not give you the greatest chance of success, but don’t let this discourage you. There are many options for quitting and staying quit. Just remember that it often takes many tries.

The Food and Drug Administration (FDA) has approved the NRT products discussed here as effective aids for helping people quit smoking. None of these products has been FDA-approved specifically to help people quit smokeless tobacco. Still, studies are being done, and some have shown the lozenge form may help.

**Who should not use NRT?**

The US Agency for Healthcare Research and Quality states that nicotine replacement
therapy (NRT) is safe for all adult who want to quit smoking except pregnant women and teens. Still, it’s best to discuss NRT use with your health care provider before starting it. You may have medical problems that should be considered. When looking at NRT use, the benefits of quitting tobacco must outweigh the potential health risks of NRT for each person.

People who are still smoking or using any other form of tobacco should not use NRT. The companies that make NRT products warn that you should not use them if you’re still using tobacco, and the FDA has not approved them to be used in this way. Get the advice of a health care provider if you want to use NRT and smoke or chew.

NRT has not yet been proven to help people who smoke fewer than 10 cigarettes a day. You might want to talk with your health care provider about a lower dose of NRT if you smoke less than that but feel you need nicotine replacement.

Can you get too much nicotine from NRT?

Nicotine overdose is rare, but possible. Nicotine replacement therapy (NRT) products are labeled to match the amount of nicotine you get from NRT to the amount you got from tobacco. If used this way, you should get a nicotine dose fairly close to what you’ve been getting. You don’t want to get more than that, because higher doses of nicotine can cause harm. To avoid this, follow dosing instructions carefully. Also, don’t use heat (like a heating pad or heat lamp) on the skin near your nicotine patch – you could absorb more nicotine due to the increased blood supply.

Nicotine absorbs through the skin and mucous membranes, so you must store and dispose of your NRT safely. Nicotine overdose can cause death. Overdose is more of a problem in children and pets because of their smaller size. Keep NRT and used gum, patches, empty cartridges, bottles, etc., safely away from children and pets. Never drop them on the street or in open trash cans where kids and animals can reach them.

Symptoms of nicotine overdose

Here are some symptoms of too much nicotine:

• Headache
• Nausea and vomiting
• Belly pain
• Diarrhea
• Agitation, restlessness
• Fast or irregular heartbeat
• Cold sweat
• Pale skin and mouth
• Weakness
• Tremors (shaking)
• Confusion
• Disturbed vision and hearing
• Weakness
• High blood pressure, which then drops
• Dizziness or faintness due to low blood pressure
• Seizures
• Fast breathing in early poisoning, breathing may stop later

Call Poison Control and get emergency help if you suspect an overdose. If you’re taking NRT as prescribed and are still having mild symptoms such as headache, vomiting, diarrhea, or sweating, lower your dose and talk to your health care provider.

How do I know if I’m a light, average, or heavy smoker?

Most nicotine replacement therapy (NRT) products are recommended on the basis of how much you smoke. But there’s no formal category in any textbook or group that defines a light, average, or heavy smoker.

These are general guidelines:

• Light smoker: Smokes fewer than 10 cigarettes per day
• Heavy smoker: Smokes a pack a day or more
• An average smoker falls in between.

How do I know what NRT dose to use based on my smokeless tobacco use?

For smokeless tobacco users, certain types of NRT may help more than others. If you look at the way the tobacco is used, nicotine gum and lozenges are most like using smokeless tobacco. They also let you control your dose to help keep nicotine cravings down.
NRT products are supposed to roughly match the amount of nicotine you typically took in through tobacco. It can be more of a challenge to get the dose right for smokeless tobacco users, since NRT products are labeled for smokers.

To avoid withdrawal symptoms, you want to aim for a nicotine dose fairly close to what you got from snuff or tobacco use.

These are general guidelines:

- A heavy user is a person who uses more than 3 cans of snuff or 3 pouches of tobacco a week, and would typically use the higher doses of NRT (the dose for heavy smokers).
- Those who use 2 to 3 cans or pouches per week would usually try the moderate doses.
- Those who use less than 2 would start with the lowest doses of NRT.

If you’ve decided to try NRT, discuss your dose with a health care provider before you quit tobacco.

**Types of nicotine replacement therapy**

The US Food and Drug Administration (FDA) has approved 5 forms of nicotine replacement therapy (NRT):

- Patch
- Gum
- Nasal spray
- Inhalers
- Lozenges

The most important thing to do with any form of NRT is read and follow the package instructions very carefully.

**Nicotine patches (transdermal nicotine systems)**

Patches can be bought with or without a prescription.

Patches give a measured dose of nicotine through the skin. You’re weaned off nicotine
by switching to lower-dose patches over a course of weeks. Many different types and strengths are available. Package instructions tell you how to use them, and list special considerations and possible side effects.

The **16-hour patch** works well if you are a light-to-average smoker. It’s less likely to cause side effects. But it doesn’t deliver nicotine during the night, so it may not be right if you have early morning withdrawal symptoms.

The **24-hour patch** provides a steady dose of nicotine, avoiding highs and lows. It helps with early morning withdrawal. But there may be more side effects.

**How to use nicotine patches:** Depending on body size and smoking habits, most smokers should start using a full-strength patch (15-22 mg of nicotine) daily for 4 weeks, and then use a weaker patch (5-14 mg of nicotine) for another 4 weeks. The patch is changed every day. It should be put on in the morning on a clean, dry area of the skin without much hair. It should be placed below the neck and above the waist – for instance, on the upper arm or chest. The FDA has approved using the patch for a total of 3 to 5 months.

**Possible side effects of the nicotine patch include:**

- Skin irritation (redness and itching)
- Dizziness
- Racing heartbeat
- Sleep problems or unusual dreams
- Headache
- Nausea
- Muscle aches and stiffness

No one has all of the side effects, and some people have none. Some side effects, such as racing heart, may occur because the dose of nicotine is too high for you. Stop using the patch and talk to your health care provider if this happens. You can also have nicotine withdrawal symptoms during this time if your NRT dose is too low.

**What to do about side effects**

- Try a different brand of patch if your skin becomes irritated.
- Reduce the amount of nicotine by using a lower-dose patch.
- Sleep problems may go away in 3 or 4 days. If not, and you’re using a 24-hour patch, try switching to a 16-hour patch.
Stop using the patch and try a different form of NRT.

**Nicotine gum (nicotine polacrilex)**

Nicotine gum can be bought without a prescription.

Nicotine gum is a fast-acting form of replacement. Nicotine is taken in through the mucous membrane of the mouth. You can buy it over the counter (without a prescription). It comes in 2 mg and 4 mg strengths.

**How to use nicotine gum**

For best results, follow the instructions in the package. Chew the gum slowly until you get a peppery taste or tingle. Then tuck it inside your cheek until the taste fades. Chew it to get the peppery taste back, and hold it again. Do this off and on for 20 to 30 minutes. Food and drink can affect how well the nicotine is absorbed, so don’t eat or drink for at least 15 minutes before and during gum use.

In choosing your dose, think about whether you

- Smoke 25 or more cigarettes per day
- Smoke within 30 minutes of waking up
- Have trouble not smoking in restricted areas

If any of these describe you, you may need to start with the higher 4mg gum dose.

Chew no more than 24 pieces of gum in one day. Nicotine gum is usually recommended for 6 to 12 weeks, with the maximum being 6 months. Tapering down the amount of gum you use as you approach 3 months may help you stop using it.

Another advantage of nicotine gum is that it allows you to control the nicotine doses. The gum can be used as needed or on a fixed schedule during the day. The most recent research has shown that scheduled dosing works better. A schedule of 1 to 2 pieces per hour is common. On the other hand, with an as-needed schedule, you can use it when you need it most – when you have cravings.

**Possible side effects of nicotine gum include:**

- Bad taste
• Throat irritation
• Mouth sores
• Hiccups
• Nausea
• Jaw discomfort
• Racing heartbeat
• Nausea

The gum can also stick to and damage dentures and dental work.

Stomach and jaw discomfort are usually caused by improper use of the gum, such as swallowing the nicotine or chewing too fast. No one has all of the side effects, and some people have none. If your heart is racing or beating irregularly, stop using the gum and talk to your health care provider. You can also have nicotine withdrawal symptoms during this time if your NRT dose is too low.

Nicotine nasal spray

Nicotine nasal spray is only available by prescription.

The nasal spray delivers nicotine to the bloodstream quickly because it’s absorbed through the nose. It relieves withdrawal symptoms very quickly and lets you control your nicotine cravings. Smokers usually like the nasal spray because it’s easy to use when you need it.

How to use nicotine nasal spray

Most people are told to use 1 to 2 doses per hour. (1 dose = 2 sprays, 1 in each nostril.) At least 8 doses (16 sprays) each day may be needed when you first start, but use as directed by your health care provider. You should not use more than 40 doses (80 sprays) per day. Instructions can vary. Talk to your provider about the plan that’s best for you.

The FDA recommends that the spray be prescribed for 3-month periods and that it not be used for longer than 6 months.

Possible side effects of nicotine spray:

The most common side effects of the spray get better in about 1 to 2 weeks and can
include:

- Nasal irritation
- Runny nose
- Watery eyes
- Sneezing
- Throat irritation
- Coughing

Other side effects are related to nicotine:

- Racing heart
- Nervousness
- Headache

No one has all of the side effects, and some people have none. Some side effects, such as racing heart, may occur because you’ve gotten too much nicotine. Stop using the spray to see if the feelings get better and talk to your health care provider if this happens. You may need to use it less often. You can also have nicotine withdrawal symptoms during this time if your NRT dose is too low.

If you have asthma, allergies, nasal polyps, or sinus problems, your provider may suggest another form of NRT.

Special note: This form of NRT poses a more serious risk to small children and pets because the empty bottles of nasal spray contain enough nicotine to harm them. Do not get the liquid on your skin. If there’s any skin contact, rinse thoroughly with plain water right away. If a bottle breaks or liquid leaks out, put on plastic or rubber gloves to clean it up. Call Poison Control and get emergency help if there’s any question of overdose.

Nicotine inhalers

Inhalers are available only by prescription.

The nicotine inhaler is a thin plastic tube with a nicotine cartridge inside. Unlike other inhalers, which deliver most of the medicine to the lungs, the nicotine inhaler delivers most of the nicotine vapor to the mouth where it’s absorbed into the bloodstream. Nicotine inhalers are the FDA-approved nicotine replacement method that’s most like smoking a cigarette, which some smokers find helpful.
At this time, inhalers are the most expensive form of NRT available. They are not the same as electronic cigarettes, which are not approved by the FDA to help people quit smoking.

**How to use the nicotine oral inhaler**

You puff on the inhaler and the cartridge sends a pure nicotine vapor into your mouth. You may use up the cartridge all at once over about 20 minutes, or puff on it only a few minutes at a time. The recommended dose is between 4 and 20 cartridges a day, slowly tapering off over 6 months.

**Possible side effects of the nicotine inhaler:**

The most common side effects, especially when first using the inhaler, include:

- Coughing
- Mouth and/or throat irritation
- Runny nose
- Upset stomach

Other side effects are related to nicotine:

- Racing heart
- Nervousness
- Headache

No one has all of the side effects, and some people have none. Some side effects, such as racing heart, may occur because you’ve gotten too much nicotine. Stop using the inhaler to see if the feelings get better and talk to your health care provider if this happens. You may need to use it less often. You can also have nicotine withdrawal symptoms during this time if your NRT dose is too low.

**Special note:** This form of NRT poses an extra risk to small children and pets because the used cartridges still have enough nicotine in them to cause harm if it gets on skin or mucous membranes (for instance, if licked or touched to the eyes, mouth, or other mucous membrane). Be sure to store and dispose of the cartridges away from children and pets. Call Poison Control and get emergency help if there’s any question of overdose.
Nicotine lozenges

Nicotine lozenges can be bought without a prescription.

The lozenge is available in 2 strengths: 2 mg and 4 mg. Smokers choose their dose based on how long after waking up they normally have their first cigarette. If you smoke your first cigarette within 30 minutes of waking up, use 4 mg nicotine lozenges. If you smoke your first cigarette more than 30 minutes after waking up, use 2 mg-nicotine lozenges.

How to use nicotine lozenges

The recommended dose is 1 lozenge every 1 to 2 hours for 6 weeks, then 1 lozenge every 2 to 4 hours for weeks 7 to 9, and finally, 1 lozenge every 4 to 8 hours for weeks 10 to 12. The lozenge makers also recommend:

- Do not eat or drink for at least 15 minutes before using a lozenge or while using a lozenge. (Some drinks can reduce how well the lozenge works.)
- Do not use more than 1 lozenge at a time and do not use one right after another.
- Suck on the lozenge until it is fully dissolved, about 20 to 30 minutes. Move it from side to side in your mouth. Do not bite or chew it like a hard candy, and don’t swallow it. The nicotine absorbs through the mucous membranes of the mouth.
- Do not use more than 5 lozenges in 6 hours, or more than 20 lozenges per day.
- Stop using the lozenge after 12 weeks. If you still feel you need to use the lozenge, talk to your doctor.

Possible side effects of the nicotine lozenge include:

- Nausea
- Hiccups
- Sore throat
- Coughing
- Heartburn
- Headache
- Gas
- Trouble sleeping
- Racing heart
Choosing and using the right nicotine replacement therapy for you

No one type of nicotine replacement therapy (NRT) is any better than another. When choosing the type of NRT you will use, think about which method will best fit your lifestyle and pattern of smoking or using smokeless tobacco. For example, do you want/need something in your mouth or something to keep your hands busy? Are you looking for once-a-day convenience?

Here are some important points to think about as you decide:

- Nicotine gums, lozenges, and inhalers are substitutes you can put into your mouth that let you control your dosage to help keep cravings under better control.
- Nicotine gums and lozenges are generally sugar-free, but if you are diabetic and have any doubts, check with the manufacturer.
- Nicotine nasal spray works very quickly when you need it.
- Nicotine inhalers allow you to mimic the use of cigarettes by puffing and holding the inhaler. It also works very quickly.
- Nicotine patches are convenient and only have to be put on once a day.
- Both inhalers and nasal sprays require a doctor’s prescription.
- Some people may not be able to use patches, inhalers, or nasal sprays because of allergies or other conditions.
- Nicotine gum may stick to dentures or dental work making it hard to chew before “parking.”

Whatever type you use, take your NRT at the recommended dose, and use it only for as long as it’s recommended.

If you use a different dose or stop taking it too soon, it can’t be expected to work like it should. If you are a very heavy smoker or a very light smoker, or a smokeless tobacco user, you may want to talk with your health care provider about how to get the NRT dose that best fits your needs.

Combining the patch and other nicotine replacement products

Using the nicotine patch along with shorter-acting products, like the gum, lozenge, nasal spray, or inhaler, is another method of NRT. The idea is to get a steady dose of nicotine with the patch and then use one of the shorter-acting products when you have strong cravings. If you’re thinking about using more than one NRT product, be sure to talk to your health care provider first.
High-dose nicotine replacement therapy for heavy smokers

Another NRT option is to give smokers a higher dose based on the amount of nicotine that they’ve been getting from cigarettes. Sometimes this method requires larger than usual doses of NRT. At this time, not much is known about this option. High-dose NRT should be considered only with a health care provider’s guidance and close supervision. It may worsen things if you already have heart disease or other health problems.

Stopping nicotine replacement therapy

Nicotine replacement therapy (NRT) is meant to be used for a limited period of time. Use should be tapered down before NRT is stopped. Studies to date have not shown that extending NRT use longer than the recommended time greatly impacts quit success.

Research is still being done to refine the use of NRT. If you feel that you need NRT for a different length of time than is recommended, it’s best to discuss this with your health care provider.

Long-term nicotine replacement therapy dependence

Nicotine replacement therapy (NRT) has the potential for long-term dependence. Nicotine is addictive, and people can transfer their dependence from tobacco to the NRT.

Use NRT only as long as you need it, as prescribed by your health care provider. Talk to your provider if you’re having trouble stopping NRT.

Hyperlinks


References


Last Medical Review: January 12, 2017 Last Revised: January 12, 2017

Written by
The American Cancer Society medical and editorial content team (www.cancer.org/cancer/acs-medical-content-and-news-staff.html)

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as journalists, editors, and translators with extensive experience in medical writing.

American Cancer Society medical information is copyrighted material. For reprint requests, please see our Content Usage Policy (www.cancer.org/about-us/policies/content-usage.html).