

# Nicotine Replacement Therapy (NRT)

Nicotine replacement therapy (NRT) increases your chance of quitting smoking.

## What is nicotine addiction?

Nicotine is a drug that is inhaled from the tobacco in cigarettes. It gets into the bloodstream and stimulates the brain. Most regular smokers are addicted to nicotine.

If you are a regular smoker, when the blood level of nicotine falls, you usually develop withdrawal symptoms such as restlessness, increased appetite, inability to concentrate, irritability, dizziness, constipation, nicotine craving, or just feeling awful. These symptoms begin within a few hours after having the last cigarette. If they are not relieved by the next cigarette, withdrawal symptoms get worse. If you do not smoke any more, the withdrawal symptoms peak after about 24 hours, and then gradually ease over about 2-4 weeks.

So, most smokers smoke regularly to feel 'normal', and to prevent withdrawal symptoms.

About 2 in 3 smokers want to stop smoking but, without help, many fail to succeed. The main reason why so few smokers succeed, even though they want to stop smoking, is because nicotine addiction is strong and difficult to break. This is where NRT can help.

## What is nicotine replacement therapy (NRT)?

NRT is a way of getting nicotine into the bloodstream without smoking. There are nicotine gums, patches, inhalers, tablets, lozenges, and sprays. You can buy most of these from pharmacies and other retail outlets. They are also available on prescription.

## How does NRT work?

NRT stops, or reduces, the symptoms of nicotine withdrawal. This helps you to stop smoking, but without having unpleasant withdrawal symptoms. NRT does not 'make' you stop smoking. You still need determination to succeed in breaking the smoking habit.

## How do I use NRT?

- Take advice from a GP, practice nurse, pharmacist or Stop Smoking Clinic.
- Decide on which type of NRT will suit you best (see below).
- Set a date to start. Stop smoking, and start NRT straight away. Some people prefer to stop smoking at the end of one day, and start NRT when they wake the following day.
- Do not smoke at the same time as taking NRT.
- You should use NRT regularly at first, and not 'now and then'.
- Use an adequate dose of NRT. The higher doses are used if you smoked more than 18-20 per day.
- Use NRT for at least 8-12 weeks for the best chance of stopping smoking long-term.
- The dose of NRT is typically reduced in the later part of the course, and then stopped.

You are more likely to stop smoking if you receive counselling or support whilst taking NRT. A doctor, nurse, pharmacist, or Stop Smoking Clinic may give this support. Also, the manufacturers of NRT often offer support such as telephone counselling, tapes, internet sites, personalised written programmes, etc. The details come on the packets of the various NRT products. It is strongly advised that you take up any offer of support whilst going through the difficult time of giving up smoking.

## How effective is NRT?

NRT does increase the chance of quitting smoking. Various studies have looked at this issue. The studies compared NRT to a similar dummy (placebo) product in people who were keen to stop smoking. The results from the studies showed that, on average, about 17 in 100 people who took NRT stopped smoking successfully. This compared to about 10 in 100 who took the dummy (placebo) product rather than NRT. In other words, it increased the rate of success by about 70%. A combination of NRT with support or counselling may give the best chance of success.

## Which form of NRT is best?

There is not much difference in how well the different types of NRT work. Personal preference usually determines which one to use. Below are listed some points about each form of NRT. Please note, this is just a brief overview. Read the manufacturer's instructions on the packet for detailed advice on each type of NRT, or seek advice from a pharmacist, doctor or nurse.

### Nicotine gum

Two strengths are available - 2mg and 4mg. You should use the 4mg strength if you smoke 18 or more cigarettes a day. You need about 12-15 pieces of gum per day to start with (about one per hour). To release the nicotine, chew the gum slowly until the taste is strong. Then rest it between the cheek and the gum to allow absorption of nicotine into the bloodstream. Chew the gum again when the taste fades, and rest it again when the taste is strong, etc. Use a fresh piece of gum after about an hour.

After 2-3 months you should use the gum less and less. For example, reduce the chewing time, cut the gum into smaller pieces, or alternate the nicotine gum with sugar-free gum. Gradually stop the gum completely.

The disadvantage of gum is that some people do not like the taste, or always having something in their mouth. Gum is not suitable if you wear dentures.

### Nicotine patches

A patch that is stuck onto the skin releases nicotine into the bloodstream. Some patches last 16 hours, which you wear only when you are awake. Other types last 24 hours, and you wear these the whole time. The 24 hour patch may disturb sleep, but is thought to help with early morning craving for nicotine. Patches are discreet, and easy to apply.

The patches come in different strengths. The manufacturers normally recommend that you gradually reduce the strength of the patch over time before stopping completely. However, some research studies suggest that stopping abruptly is probably just as good without the need to gradually reduce the dose.

The disadvantage of patches is that a steady amount of nicotine is delivered. This does not mimic the alternate high and low levels of nicotine when you smoke, or with chewing nicotine gum. Skin irritation beneath the patch occurs in some users.

### Nicotine inhaler

This resembles a cigarette. Nicotine cartridges are inserted into it, and inhaled in an action similar to smoking. Each cartridge provides up to three 20 minute sessions. You should use about 6-12 cartridges a day for eight weeks, and then gradually reduce over four further weeks. It is particularly suitable if you miss the hand-to-mouth movements of smoking.

### Nicotine tablets / lozenges

You dissolve these under the tongue (they are not swallowed). Nicotine is absorbed through the mouth into the bloodstream. They are easy to use.

### Nicotine nasal spray

The nicotine in the spray is rapidly absorbed into the bloodstream from the nose. This form of NRT most closely mimics the rapid increase in nicotine level that you get from smoking cigarettes. This may help to relieve sudden surges of craving. Side-effects such as nose and throat irritation, coughing, and watering eyes occur in about 1 in 3 users. As the nasal spray may cause sneezing and watering eyes for a short time after use, do not use it whilst driving.

### Can different methods of NRT be combined?

This is an option, especially if you have particularly bad withdrawal symptoms. The common combination is to use an NRT patch (which gives a regular background level of nicotine) with gum or a nasal spray (taken now and then to top up the level of nicotine to ease sudden cravings). Evidence from research studies suggests that this kind of combination provides a small but significant increase in success rates compared with a single product. It is also thought that it is safe to combine NRT in this way.

### NRT and other diseases and situations

As a rule, getting nicotine from NRT is much safer than from cigarettes. (NRT does not contain the harmful chemicals that cigarettes have.) But the following points may be relevant to some people.

- **Pregnancy.** NRT is likely to be safer than continued smoking and so its use can be justified in pregnant women who are finding it difficult to stop smoking. NRT products that are taken intermittently (such as gum, lozenge, spray, inhalator) are preferred to patches. This is to minimise the exposure of nicotine to the unborn baby. Avoid liquorice-flavoured NRT products.
- **Breastfeeding.** The amount of nicotine that gets into breastmilk is probably similar whether the mother smokes or uses NRT. Breastfeeding within one hour of smoking or taking an NRT product can significantly increase the levels of nicotine in breast milk. Therefore, NRT products that are taken intermittently are probably best if NRT is used during breastfeeding. Avoid using the NRT for at least one hour before breastfeeding.
- **If you are taking a theophylline medicine** (used for some lung conditions) and stop smoking, the blood level of theophylline will increase. (The chemicals in cigarette smoke interfere with this medicine.) It is likely that the dose you need to take will need to be reduced, typically by about a third.

### Some other points about NRT

- Apart from causing addiction, nicotine is not thought to cause disease. The health problems from cigarettes, such as lung and heart diseases, are due to the tar and other chemicals in cigarettes. So, taking NRT instead of smoking is one step towards a healthier life.
- The dose of nicotine in NRT is not as high as in cigarettes. Also, the nicotine from smoking is absorbed quickly, and has a quicker effect than NRT. So, NRT is not a perfect replacement. Withdrawal symptoms are reduced with NRT, but may not go completely.
- Always read the product label before starting NRT for full instructions and cautions.
- Cost - a week's supply of NRT can vary, depending on the one you chose. NRT is also available on prescription. However, your doctor will follow guidelines when prescribing NRT. For example, a first prescription should only be issued if you are committed to giving up smoking, and further prescriptions should only be issued if you have stayed off cigarettes.
- The risk of becoming addicted (dependent) on NRT is small. About 1 in 20 people who stop smoking with the help of NRT continue to use NRT in the longer term.

## Further help and information

**Quit** - a charity that helps people to stop smoking.

Quitline: 0800 00 22 00 Web: [www.quit.org.uk](http://www.quit.org.uk)

**Smokefree** - information from the NHS

Free smoking helpline 0800 022 4 332 Web: [www.smokefree.nhs.uk](http://www.smokefree.nhs.uk)

For help and advice on stopping smoking, and for details of your local NHS Stop Smoking Service.

## References

- [Stead LF, Perera R, Bullen C, et al](#); Nicotine replacement therapy for smoking cessation. Cochrane Database Syst Rev. 2008 Jan 23;(1):CD000146. [abstract]
- [Smoking cessation - bupropion and nicotine replacement therapy](#), NICE (2002)
- [Smoking cessation](#), Clinical Knowledge Summaries (April 2008)

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Comprehensive patient resources are available at [www.patient.co.uk](http://www.patient.co.uk)

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