

# Choices

## Smoking and MS



Multiple sclerosis information

# Welcome to this Choices booklet about smoking

MS-UK believes we must listen to the voices of people affected by multiple sclerosis (MS) to shape the information and support we provide. It is these people that bring us perspectives that no one else can give.

For every Choices booklet we produce, MS-UK consults the wider MS community to gather feedback and uses this to inform our content. All of our Choices booklets are then reviewed by the MS-UK Virtual Insight Panel before they are published.

This Choices booklet has been designed with you in mind and we hope it will answer some of your questions about smoking.

# Contents

Smoking and MS	4
Stopping smoking	7
About MS-UK	10
Sources	14

# Smoking and MS

Everyone is aware smoking is bad for your health. In the UK alone approximately 78,000 people will die each year due to a smoking-related illness. The list of diseases caused by smoking is vast, many of which are fatal or at the very least cause permanent long-term health damage. Smokers are at an increased risk of contracting coronary heart disease, strokes and a variety of cancers. It is estimated that around 70 per cent of lung cancer cases in the UK are caused by the effects of smoking. (1).

For people with multiple sclerosis (MS), there are even more compelling reasons to quit. There is evidence that demonstrates smoking is an environmental risk factor that contributes both to MS onset and disability progression (2).

Smoking is associated with a reduction in brain volume, it can lead to a higher relapse rate and also more cognitive problems (3).

## Risk of developing MS for smokers

Research published in October 2003 in the journal *Neurology* looked at the increased risk of developing MS in people who smoked within the general population. The study followed 22,312 people in Norway, who completed a detailed questionnaire about past and current smoking habits and were given a physical examination. In this group, 87 people were reported to have MS at the beginning of the study, some of whom smoked, or had smoked in the past (4).

The study concluded that there was an increased risk of developing

MS associated with smoking – for men the risk was three times greater than for a male non-smoker, and for women, the risk was one and a half times greater. The theory behind these results was smoking may damage the cells which line blood vessels and these damaged cells cause the vessels to leak, allowing the toxic chemicals in cigarette smoke to damage the brain (4).

More recently in 2016 a meta-analysis of previous studies, incorporating over 20,000 cases, concluded that people who are exposed to tobacco smoke, both via direct and passive means, are at more of a risk of developing MS in comparison to the unexposed (5).

### **Risk of disability progression for smokers**

In 2005 the Harvard School of Public Health published research in *Brain - A Journal of Neurology*, suggesting smoking contributes to the progression of MS (6). The researchers examined the medical records of more than 2,000 people, including 179 people with relapsing remitting MS (RRMS).

Researchers found current or former smokers with RRMS were over three times more likely to develop secondary progressive MS, another phase of MS marked by a steady increase in MS symptoms and disability, compared to non or past smokers (6).

The study was interesting because, amongst other viral and genetic factors potentially involved in either the development of MS or disability progression in MS, quitting smoking is something that can slow disability progression. This was the first time a modifiable risk factor for MS was identified. The theory behind these results was that nitrous oxide - a chemical in cigarette

smoke - may be responsible for damage to the cells that create myelin, the protective coating around a nerve cell.

## **Risk of passive smoking in developing MS in children**

In 2007, research from France was published in *Brain – A Journal of Neurology*, linking children's exposure to passive smoking and an increase in the development of MS in later life (7). In the study, 62 per cent of the people diagnosed with MS had been exposed to parental smoking as children, compared to 45 per cent of people diagnosed with MS, whose parents did not smoke.

The research also pointed to a time-related correlation between the increase in the risk of developing MS as an adult and the length of time a child had been exposed to passive smoking (7).

## **Smoking and Tysabri**

For people taking the disease-modifying drug Tysabri (natalizumab), there is evidence that smoking increases the risk of the body developing neutralising antibodies to the therapy, causing the drug to have little or no therapeutic effect.

A study published in July 2014 looked at 1,338 people on a treatment programme of Tysabri in Sweden (8). The risk for developing neutralising antibodies was over twice as high in smokers, compared to non-smokers.

Advice given at the 2014 conference ACTRIMS/ECTRIMS following the results of the study was that a person should not be prevented from starting Tysabri if they smoked. If the treatment proved ineffective due to the presence of antibodies, other therapies should

then be considered (9).

A more recent study undertaken in Denmark, published in August 2018, also examined the link between smoking and the onset of relapses for Tysabri-treated RRMS patients. Over a two-year period, they studied the relapse activity of 355 participants comprising smokers and non-smokers, all of whom were affected by RRMS and undergoing Tysabri treatment. This study found that relapses were much more common in the participants that smoked as opposed to the non-smokers, with a relapse rate increase of 38 per cent in those that smoked 20 cigarettes per day (10).

For more detailed information about Tysabri, see MS-UK's Choices leaflet Disease modifying therapies.

## Stopping smoking

Although it may be difficult to stop smoking, this lifestyle change could prevent you from increasing your, and your children's risk of developing MS. If already diagnosed, stopping smoking could help to decrease your risk of disability progression.

Researchers at University College London published a report in 2017 which states that success rates for giving up smoking were at their highest for over a decade. In the first half of 2017, nearly 1 in 5 attempts at quitting smoking were successful (11).

It is suggested that some of this success has come from the use of e-cigarettes. Recent figures published by the Office for National Statistics show that in 2019 around 3 million people in the UK

regularly used e-cigarettes, with approximately half using them as a smoking cessation aid (12).

Whilst e-cigarettes are a relatively safe alternative to smoking tobacco and are highly regulated within the UK to ensure their quality and safety, there are still risks associated with their use. The liquid and vapour that they produce can contain chemicals that are potentially harmful, but on a significantly lower level than what is found within the smoke produced by conventional cigarettes (13).

If you smoke and want to quit the NHS Smokefree website at [www.nhs.uk/smokefree](http://www.nhs.uk/smokefree) provides a range of information and advice to help you stop. This includes details about the different methods you can use to quit smoking, where to find localised help within the UK and their very handy NHS Quit Smoking app.

Your GP, hospital and local pharmacy will also be happy to advise you on what may be the best course of action to help you stop smoking.





# About MS-UK

MS-UK is a national charity formed in 1993 supporting anyone affected by multiple sclerosis. Our hope for the future is a world where people affected by MS live healthier and happier lives.

MS-UK has always been at the forefront of promoting choice, of providing people with all the information and support they need to live life as they wish to with multiple sclerosis, whether that be through drugs, complementary therapies, lifestyle changes, a mixture of these or none at all.

We will always respect people's rights to make informed decisions for themselves.

## The MS-UK Helpline

We believe that nobody should face multiple sclerosis alone and our helpline staff are here to support you every step of the way.

Our service is informed by the lived experience of real people living with MS, so we can discuss any treatments and lifestyle choices that are of benefit, whether they are clinically evidenced or not.



## New Pathways

Our bi-monthly magazine, New Pathways, is full of the latest MS news regarding trials, drug development and research as well as competitions, special offers and product reviews. The magazine connects you to thousands of other people living with MS across the country.

Available in print, audio version, large print and digitally.

# About MS-UK

## Peer Support Service

Our Peer Support Service enables people to connect with others in a safe space and share experiences on topics of interest. Our Peer Pods take place regularly and are all volunteer led. Please visit the website to find out more [www.ms-uk.org/peer-support-service](http://www.ms-uk.org/peer-support-service) or email [peersupport@ms-uk.org](mailto:peersupport@ms-uk.org).





## Online activities

MS-UK offers a variety of online activities to stay active and connected for those affected by MS and manage their symptoms to live happier and healthier lives. Activities include exercise sessions, mindfulness courses, chair yoga classes, information sessions and workshops. Visit our website to explore and find out more.

## E-learning

Do you work with or support someone living with MS and want to increase your understanding and knowledge of this long-term health condition? Professionals at MS-UK have created accredited Learning courses that can help you do this. Visit <https://ms-uk.org/excellence-ms/> to find out more.

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in [www.linkedin.com/company/ms-uk](https://www.linkedin.com/company/ms-uk)

📷 [www.instagram.com/multiplesclerosis\\_uk](https://www.instagram.com/multiplesclerosis_uk)

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