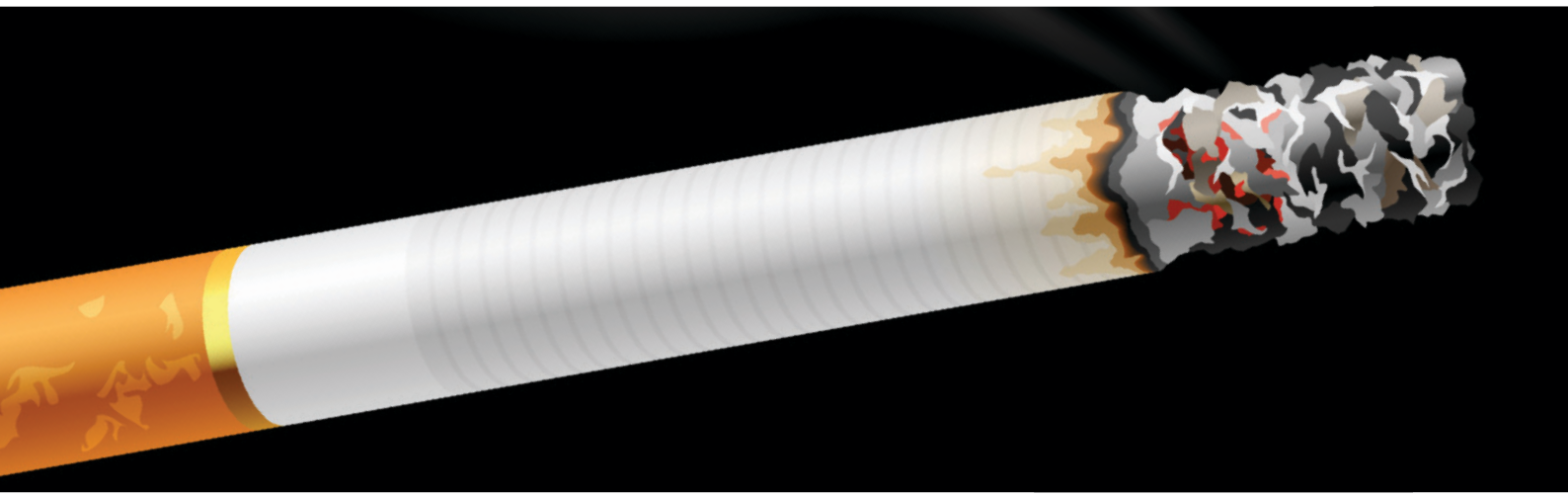
August 2015

Stopping smoking by using other sources of nicotine

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE



Key points:

- **Smoking kills an estimated 100,000 people each year**
- **Tobacco contains many harmful carcinogens and toxicants, as well as the highly addictive chemical, nicotine**
- **There is considerable confusion surrounding nicotine, with 90% of non-smokers and 78% of smokers believing it is harmful to health**
- **We have seen a proliferation of non-tobacco nicotine containing products (NCPs) offering much safer sources of nicotine**

Calls to action

- **Introduction of a smoking exclusion zone around schools, bars and restaurants**
- **Mandatory sale of non-tobacco NCPs in all outlets selling combustible tobacco products**
- **Greater utilisation of e-cigarettes by smoking cessation services**
- **Licensing of all purveyors of combustible tobacco products**
- **Stop calling the product an e-cigarette**

Introduction

As the leading cause of preventable illness and death in the UK, smoking kills an estimated 100,000 people each year,[1] more than the next five largest causes of preventable death combined.[2]

Smoking tobacco, the process by which tobacco is burned and then smoke inhaled into the lungs, exposes the user to a number of carcinogens and toxicants with hugely damaging consequences for health. Cigarette smoke contains roughly 4000 chemicals including tar, carbon monoxide and formaldehyde. Of these chemicals, at least 250 are known to be harmful,[3] causing a number of serious conditions including lung cancer, chronic obstructive pulmonary disease, heart disease, mouth cancer and throat cancer, among others. In addition, smoking can exacerbate the symptoms of, for example, asthma, hyperthyroidism and multiple sclerosis, as well as increase the risk of developing conditions such as dementia, osteoporosis and gum disease.[4]

Currently in the UK, 22% of men and 17% of women are smokers, equating to roughly ten million people.[1] With a clear social pattern to smoking, this is a major contributing factor in health inequalities, with individuals living in the most deprived areas being twice as likely to smoke as those living in the least deprived. According to data from the Office for National Statistics, 14.3% of men and 10.2% of women in the least deprived quintile are smokers, compared with 32.9% and 26.1% respectively in the most deprived quintile.[5]

With concerted efforts from the Government, health professionals and campaigners, smoking rates have declined considerably since the middle of the 20th century, when rates peaked at an incredible 82% for men in 1948 and 45% for women in the 1960s.[6] Over the past fifty years, we have seen a raft of government legislation to reduce smoking levels, beginning with the ban on tobacco advertising on television in 1965, followed by, for example, the introduction of health warnings on packaging in 1971, the ban on smoking in enclosed public spaces in 2007 and the ban on point of sale display of cigarettes from 2012 for larger shops and 2015 for smaller ones.[7,8] Earlier this year, Parliament also voted in favour of standardised cigarette packaging, meaning that from May 2016 all cigarette packets will look the same, apart from the make, brand name and health warnings.[9]

Some, however, have raised concerns that this decline is

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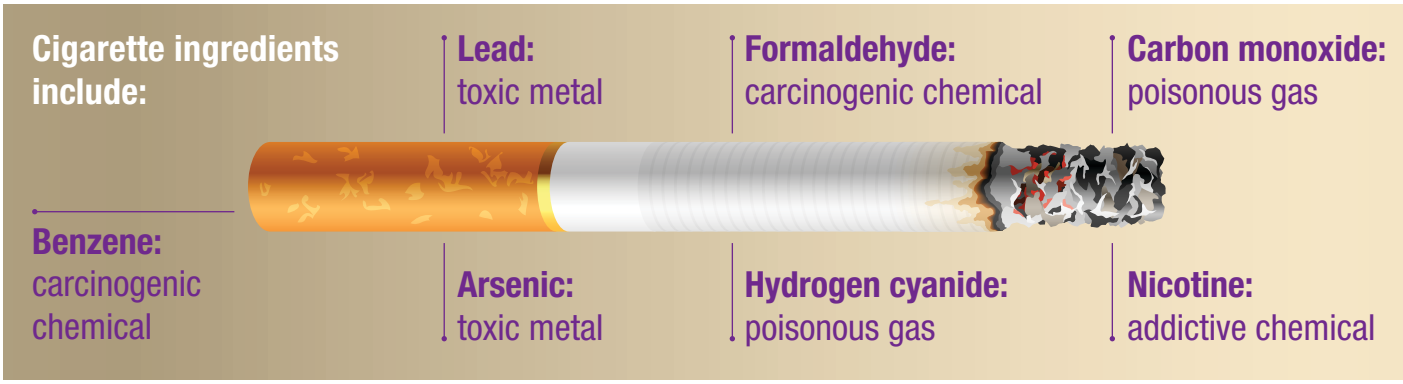
not moving quickly enough. Cigarettes are responsible for the death and disease of a vast number of people, placing a huge financial burden on healthcare services, the welfare system and employers, with costs of at least £13 billion per year, more than the estimated £12 billion in tobacco revenue received by the UK treasury each year.[10] It is crucial that we do not lose momentum on tobacco control and instead take firm, multifaceted action to finally eradicate smoking.

Over the past few decades, we have seen the proliferation of non-tobacco nicotine containing products, providing us with more tools than ever to support individuals to quit smoking and move to safer sources of nicotine.

Quitting smoking is very difficult, and while the goal is for people not to smoke, additional support is often required. Given that the evidence to date so far suggests that non-tobacco nicotine containing products are safer than cigarettes, we should ensure that we utilise these products to their full potential for smokers.



Why do people smoke?

Research shows that almost two-thirds of smokers would like to quit. Despite this, over half of them feel that it would be difficult to go even one day without a cigarette.[11] The reasons why people smoke, and therefore struggle to give up are many and varied, ranging from social pressures or the perceived role of smoking in stress relief to the habituation of holding a cigarette.[12]

A major factor, however, in this difficulty is the dependence of smokers on the nicotine present in cigarettes. Nicotine, a naturally occurring chemical found in the tobacco plant, is a highly addictive substance,[13] with some researchers describing it as the third strongest 'dependence-forming drug', behind heroin and crack cocaine.[14] The addictive nature of tobacco and the effects of nicotine are reinforced by chemicals, such as pyridine and acetaldehyde, which enhance nicotine dosing and delivery to the brain.[15,16] Research also suggests that other chemicals in cigarettes encourage tobacco dependency themselves by blocking the enzyme, monoamine oxidase, thus increasing dopamine levels in smokers.[14]

Once smoke is inhaled, nicotine reaches the brain in roughly 10 seconds and in small amounts acts as a stimulant, improving concentration and enhancing brain activity. With a relatively short half-life, the effects of nicotine are roughly halved after just two hours, thus promoting the regular use of tobacco. Withdrawal from nicotine is also associated with many unpleasant symptoms, thus compounding the difficulty of smoking cessation. These symptoms include impaired concentration, depressed mood, irritability, sleep disturbance and increased appetite, often leading to weight gain.[12]

For a large proportion of smokers, their smoking habit and consequent nicotine dependency began before the age of 16, two-thirds before the age of 18 and 80% before the age of 20.[17] Evidence suggests that, when consumed in low concentrations, nicotine is not deleterious to health; it does not appear to be a direct carcinogen and, whilst its use can increase heart rate, is not associated with an increase in acute cardiovascular events amongst users (although it must not be used in pregnancy).[18] The harm instead occurs when the presence of nicotine in cigarettes encourages dependency on a product containing 69 carcinogens,[19] as well as the many other dangerous chemicals found in cigarettes. What begins as teenage experimentation or rebellion ends as a long struggle with tobacco dependency, with one in two smokers dying from smoking-related diseases.[4]

Over the past few decades, however, the market of nicotine containing products (NCPs) has developed considerably, offering smokers a vast array of safer alternatives to cigarettes, including nicotine replacement therapies (NRTs) and most recently, electronic cigarettes. Evidence to date indicates that these products offer an effective delivery of nicotine, without exposing the user to the many harmful chemicals found in tobacco, for example, through NRT lozenges, patches or chewing gum and in the case of e-cigarettes, nicotine delivered orally through inhaled vapour, known as 'vaping'.

Since their introduction into the UK in 2005,[20] e-cigarettes have experienced a surge in popularity amongst smokers, with usage amongst this group increasing from 2.7% in 2010 to 17.6% in 2014, equating to roughly 2.6 million people.[21] Whilst greater research is required to understand the long-term health impacts of e-cigarette usage, there is a growing consensus amongst

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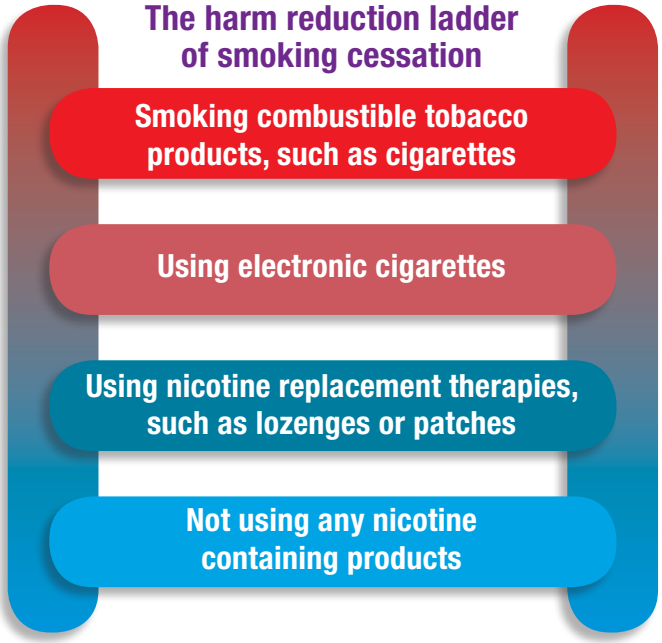

health professionals that these products offer a safer alternative to combustible tobacco products. Due to the absence of tobacco, many of the harmful chemicals found in cigarettes are absent from e-cigarettes and those that are present are at a significantly lower level.[22,23] Whilst there has not been exhaustive testing of all e-cigarette brands, one study, which examined the vapour content of 12 brands of e-cigarettes, estimated that the levels of potentially dangerous chemicals, such as formaldehyde and acetaldehyde were between 9 and 450 times lower in e-cigarette vapour than in tobacco smoke.[24] Although concern has been raised around the safety of the flavourings used in these products, and the type and level of ingredients does vary according to the brand, this clearly demonstrates the harm reduction potential of e-cigarettes for smokers.

Moreover, there is growing evidence demonstrating the efficacy of both NRT and e-cigarettes as smoking cessation tools. A longitudinal study, for example, found that individuals using e-cigarettes on a daily basis were six times as likely to report quitting tobacco smoking as non-users or 'triers' of e-cigarettes.[25] Studies have also shown that the use of NRTs such as nicotine patches and lozenges can increase quitting success rates by as much as 70%.[26]

There is, however, considerable misunderstanding, amongst both the public and some medical professionals, about nicotine and the relative harm of non-tobacco NCPs, acting as a significant barrier to their usage. Many mistakenly view nicotine as the dangerous element in cigarettes; a survey conducted by the RSPH, for example, found that 90% of non-smokers and 78% of smokers believe that nicotine is harmful to health.[27] A study examining attitudes to NRT products found similarly concerning misperceptions amongst smokers, with 69% not knowing that they are less dangerous than cigarettes and 76% not knowing that they are less addictive.[28]

With the development of a vast array of non-tobacco NCPs, we are well equipped to support individuals to quit smoking and move to safer sources of nicotine. The lack of understanding surrounding these products, and nicotine more generally, is however, severely limiting this potential, with many individuals unable to make informed choices. The public health community is united in our desire to see smoking eradicated. If the evidence is that non-tobacco NCPs are an effective means of quitting and less harmful to health than cigarettes, we should take steps to address public confusion and encourage greater numbers to move from using cigarettes to non-tobacco NCPs.

What is the RSPH calling for?

- **Introduction of a smoking exclusion zone around schools, bars and restaurants**

The introduction of a smoking ban for all enclosed public places in 2007 was a landmark in government interventions to reduce smoking levels, reducing the public's exposure to harmful second-hand smoke, and acting as a catalyst for many smokers to 'kick the habit'.[29] A survey found that in the year following the smoking ban a staggering 400,000 people were motivated to give up smoking.[30] This led to appreciable improvements in the public's health including a 12.3% reduction in the number of children admitted to hospital with asthma symptoms and a 2.4% reduction in emergency heart attack admissions in the 12 months immediately after the ban.[31,32]

Alongside the health benefits, this legislation was crucial for de-normalising smoking. The appearance of individuals smoking combustible tobacco products in public places arguably gives the deeply misleading impression that smoking is a largely safe activity to be universally enjoyed. By reducing the prominence of smoking in public locations, particularly those visited by children, we can ensure that smoking is no longer seen as a normal or safe activity.

The RSPH therefore calls for the smoking ban to be extended further to include school gates, the outside areas of bars and restaurants and also, all public parks and squares, mirroring the calls made by Lord Darzi in the 2014 report by the London Health Commission.[33] This could be achieved through legislation to introduce smoking exclusion zones, in which smoking combustible tobacco products is prohibited, but the use of an e-cigarette in this zone is permitted.

This would significantly reduce the convenience of smoking, with the potential to encourage a greater number of smokers to move to safer sources of nicotine. It would also reduce the visibility of cigarette usage and serve to further denormalise smoking,[34] thus potentially discouraging people, particularly children, from beginning to smoke in the future.

A similar approach has been taken by several cities around the world with considerable success. New York, for example,

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banned smoking in doorways to bars, cafes and restaurants and in Central Park, which, alongside other initiatives, contributed to the impressive decline in smoking rates from 22% to 15% in just 10 years. Similarly, Hong Kong introduced a smoking ban in outside areas including public parks and beaches contributing to a 7% reduction in smoking rates between 2002 and 2012.[33] The smoking ban has already been extended in Bristol. In 2015, with a public approval rating of 61%, Bristol became the first UK city to prohibit smoking in prominent outdoor spaces.[35]

- **Mandatory sale of non-tobacco NCPs in all outlets selling combustible tobacco products**

Despite the proliferation of alternative nicotine containing products, for many smokers cigarettes remain the easiest source of nicotine. This is partly due to them being far more readily available than NRTs or e-cigarettes; a survey of 134 tobacco retailers in London and Newcastle, for example, found that just 3 of these also stocked NRT products.[36]

For those with a nicotine dependency, this can mean that cigarettes are their only option and for those trying to give up, can pose a real challenge to overcoming their tobacco cravings. To encourage more smokers to stop smoking and use safer sources of nicotine, we must ensure that these products are widely available and clearly advertised in stores. We therefore call for the mandatory sale of non-tobacco NCPs in all outlets selling combustible tobacco products.

- **Greater utilisation of e-cigarettes by smoking cessation services**

It is estimated that roughly one third of smokers try to quit each year, but just 5% of these are successful in doing so over the longer term.[37] The health and financial benefits of giving up smoking are well established, but for those with a nicotine dependency, this can pose a real challenge.
The local stop smoking services, established in 1999, seek to support individuals to quit smoking by providing advice, as well as a range of smoking cessation aids, including NRT and medication.[38] Research has shown that the service supports roughly 50% to quit after four weeks and 15% after 12 months. This is considerably higher than the 12-month quit rate for those who try to stop smoking without such support, which stands at just 4%.[39]

There is, however, significant variation between services in terms of their approach to e-cigarettes. The stop smoking service in Leicester became the first 'e-cigarette friendly' service in 2014, meaning that they will provide support and guidance to those seeking to quit using an e-cigarette.[40] Whilst other services have followed suit, this approach is not universal.

E-cigarettes have achieved considerable popularity in the UK, with a growing evidence base demonstrating their potential as a smoking cessation tool. E-cigarettes have the potential to not only address the nicotine aspect of tobacco dependency, but may alleviate some of the other factors as well, such as the habituation of holding a cigarette.

From a harm reduction perspective, e-cigarettes may also be a valuable tool, reducing the exposure of smokers to the many harmful carcinogens and toxicants found in cigarettes. Research conducted at University College London indicates that for every one million UK smokers that move to e-cigarettes, 6,000 premature deaths could be avoided each year.[41]

The RSPH therefore calls on commissioners and smoking cessation services to consider trialling an 'e-cigarette friendly' approach and evaluate the potential effectiveness of these products for supporting smoking cessation. Looking forward, following licensing by the Medicines and Healthcare products Regulatory Agency, there may also be potential for these products to be offered by the services themselves as smoking cessation aids.

- **Licensing of all purveyors of combustible tobacco products**

We call on the Government to introduce the mandatory licensing of all retailers selling combustible tobacco products. In the UK, the sale of tobacco products is banned to anyone under the age of 18 years old; however, in spite of this, up to 207,000 children aged 11 – 15 year old begin smoking each year.[42] Introducing a positive licensing scheme would enable local authorities to remove the license of any retailers found not to be acting in accordance with tobacco legislation, such as not enforcing age restrictions or the display ban.

In England and Wales, a negative licensing scheme is currently in operation, in which magistrates can ban retailers from selling tobacco for up to a year if they are found to be acting illegally.[43] This is a time consuming and costly process, which has thus far led to relatively few prosecutions. Introducing a positive licensing system would instead enable local authorities to ensure that retailers are familiar with tobacco regulations and that they are able demonstrate how they intend to comply with these laws before they begin to sell such products.

Research conducted in Australia found that a positive licensing scheme led to a significant increase in awareness of tobacco regulations and in Tasmania led to a 95% compliance rate.[44] In Scotland and Northern Ireland, retailers are currently required to register to sell tobacco.[45,46] The revenue from a nominal license fee (the Republic of Ireland currently charges €50 for registration[47]) could also be directed into smoking cessation programmes, educational schemes aimed at young people or enforcement initiatives.

- **Stop calling the product an e-cigarette**

Despite the use of the term electronic or e-cigarette, these products are very different to cigarettes. Whilst some may be visually similar to combustible tobacco products, they do not contain tobacco, nor are they smoked; instead nicotine, which has been removed from the tobacco leaves, is suspended in a solution of glycerine or propylene glycol, water, and sometimes flavourings.[24] This solution is then heated to form a vapour, which is inhaled by the user.[24] Research to date indicates that inhaling e-cigarette vapour is significantly less harmful to the user than smoking tobacco.

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There is, however, significant misunderstanding surrounding nicotine and the relative safety of non-tobacco NCPs, and we have concerns that the use of misleading terms such as 'e-cigarette' may compound this problem. We therefore call for these products to be referred to as vapourisers or nicotine control products. This terminology would ensure that a clear distinction is made between combustible tobacco products and the very different product known as 'e-cigarettes'.

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