

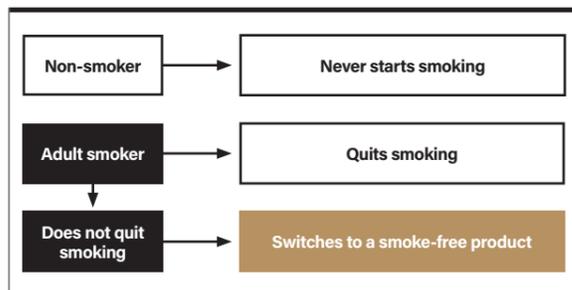
# Tobacco Harm Reduction: the role of pharmacists

The best choice for non-smokers is to never start smoking in the first place.

Smoking is the single greatest preventable cause of death in the UK. It kills approximately 78,000 people per year in England alone<sup>1</sup> and over 7 million per year, globally<sup>2</sup>. With a UK smoking prevalence rate of 14.1%<sup>3</sup>, or approximately 7 million adult smokers, cigarettes are responsible for causing an array of serious disabilities and diseases, such as cardiovascular diseases, chronic obstructive pulmonary disease and lung cancer, to give just a few examples.

The primary strategies for reducing the harm associated with cigarette smoking have focused on preventing smoking initiation and promoting smoking cessation.

Unfortunately, some of these strategies have been met with limited success: Despite pharmacies offering a wide range of NRTs, drugs (bupropion and varenicline) and other cessation services, government research over the last decade has shown that there has been a steady fall in the number of smokers attempting to quit cigarettes in primary care<sup>4</sup>. A major reason in explaining why these approaches fail, is that besides their nicotine addiction, many smokers report missing the ritual of hand-to-mouth gestures and the taste and smell



of tobacco, making it difficult for them to abandon cigarettes.

More recent approaches from UK public health authorities and experts recognise that nicotine, although addictive and not risk-free, is not the primary cause of smoking-related diseases, but rather it is the toxic chemicals emitted in smoke from the burning of tobacco in a cigarette that are to blame.

In recent years, this has guided successive governments to adopt a harm reduction approach to policy making, in order to accelerate smoking decline and complement existing tobacco control measures.

Though the UK Government has made significant progress in reducing smoking prevalence, it is still projected to miss its target of achieving a smoke-free England (defined as a smoking prevalence of less than 5 per cent) by the year 2030, with similar smoke-free targets also forecasted to be missed by the governments of Scotland, Wales and Northern Ireland<sup>5</sup>.

So, smoking continues to present a serious public health concern that must be addressed.

But pharmacists, as frontline healthcare leaders, can be the driving force in eliminating smoking in the UK.

## What role can pharmacists play?

Tobacco harm reduction is aimed at switching adult smokers, who would otherwise continue smoking, to markedly less harmful tobacco and nicotine-containing products. These less harmful alternatives deliver significantly lower levels of toxic and harmful compounds than cigarettes and have the potential to reduce the occurrence of adverse health effects of smoking.

Leading tobacco policy experts also acknowledge that successful harm reduction depends on the acceptability of alternative products to smokers: In 2007, the UK Royal College of Physicians stated that: "The alternative sources of nicotine need to be acceptable to smokers as substitutes for cigarettes..."<sup>6</sup> and, in keeping with these policies, over the last decade, the UK medical community has urged regulators to consider harm reduction strategies to reduce smoking prevalence rates<sup>7,8</sup>.

Recently, a survey of UK pharmacists revealed that nearly two thirds believed that smoke-free alternatives are beneficial to public health<sup>9</sup>.

The modern tide of public health thinking shows that now is the time for pharmacists, as frontline healthcare experts, to realise the opportunity to spearhead change and help deliver a smoke-free future for the UK.

Tobacco companies and other commercial organisations have also tried to meet the challenge of creating a smoke-free future by turning to science and innovation in order to create acceptable smoke-free products for adult smokers.

The introduction of e-cigarettes, followed by their endorsement by public health authorities, as a better choice than continued smoking, has had a positive impact in helping to reduce smoking prevalence<sup>10</sup>.

However, prevalence of e-cigarette use amongst adult smokers has plateaued in recent years<sup>10</sup>, with this trend projected to continue.

A 2019 *New England Journal of Medicine* study has also shown that only 18 per cent of smokers who switched to e-cigarettes were still smoke-free after 12 months, while less than 10 per cent of smokers who had switched to NRTs were smoke-free after the same length of time<sup>11</sup>.

These figures highlight just how significant relapse can be amongst smokers and underscores the need for a greater range and education of acceptable alternatives that keep smokers away from cigarettes.

## A smoke-free product

For any smoke-free alternative to be successful in reducing harm compared

## IQOS – A New Smoke-Free Alternative

One innovative smoke-free product developed by Philip Morris International (PMI) is called IQOS. Unlike e-cigarette vaping IQOS uses real tobacco – which it heats but does not burn. No combustion is involved and no smoke is generated. Because of this and using a novel heating system technology, IQOS emits on average 95 per cent lower levels of harmful chemicals compared to cigarettes\*.

PMI's goal in developing IQOS was to deliver an acceptable harm-reducing, smoke-free alternative for adult smokers. To this end, PMI has invested over USD 7.2 billion in fundamental research, product development and scientific substantiation of its smoke-free products, hiring over 430 world-class scientists, engineers and experts from fields ranging from engineering through to medicine and epidemiology. Initial design and engineering of the IQOS product platform was then met with the highest standards to ensure quality and consistency. A thorough and systematic approach for the research and development of IQOS was then taken, involving molecular, cellular and physiological research studies<sup>12</sup>, followed by human clinical trials.

IQOS has the potential to significantly reduce individual risk when compared with smoking, and yet is satisfying enough for adult smokers to completely switch by better replicating the taste, satisfaction and ritual characteristics associated with cigarettes. IQOS aerosol contains nicotine at similar levels to a cigarette.

The totality of PMI's research, encompassing aerosol chemistry, molecular, physiological, clinical and non-clinical data, demonstrates that completely switching to IQOS, while not risk-free, reduces exposure to harmful compounds when compared to smoking cigarettes<sup>12</sup>.

Independently peer-reviewed studies by PMI, confirm that the lower

levels of toxicants present in the aerosol generated by IQOS are significantly less toxic than cigarette smoke<sup>12</sup>.

Clinical studies conducted to date also support the risk reduction potential of IQOS: PMI's six-month clinical Exposure Response Study<sup>13</sup> successfully met its objective in showing improvements in the biological response of adult smokers who switched to IQOS compared to continued smoking.

Additionally, PMI is undertaking post-market surveillance and research to monitor the long-term effects of IQOS.

All IQOS studies have been published in peer-reviewed scientific journals available for scrutiny by the world's scientific community and general public. All PMI's data is available to view on its Science INTERVALS platform: [www.intervals.science](http://www.intervals.science).

On July 7, 2020, the U.S. Food and Drug Administration (FDA), the government agency responsible for protecting public health in the U.S., made a historic decision in authorising IQOS to be marketed in the U.S. as a modified risk tobacco product (MRTP), with a reduced exposure claim. In taking their decision, IQOS is the first and only tobacco heating system that has completed the US FDA Modified Risk Tobacco Product application process, concluding that switching completely to IQOS reduces your body's exposure to harmful or potentially harmful chemicals<sup>14</sup>.



with continued smoking, it has to fulfil two criteria:

- 1) It must be scientifically substantiated as significantly less harmful than cigarettes; and,
- 2) It should be satisfying enough for current adult smokers so that they completely switch.

For current adult smokers, pharmacists should continue to encourage them to quit cigarettes and, if they don't, smokers should be encouraged to switch to less harmful smoke-free alternatives. The greater the number of people who make less-risky choices, the more impact a harm reduction strategy can have on public health.

## Moving forward together

UK public health strategy recognises that many smokers may not want, or be able to quit smoking, but would like access

to better less-harmful alternatives to cigarettes<sup>15</sup>.

The low adherence rates to NRTs, and a modest one for e-cigarettes, as well as the plateauing uptake of e-cigarettes by smokers, means that there is a public health requirement for a better range of smoke-free alternatives that meets smokers' needs.

Pharmacists, as trusted healthcare professionals, can help adult smokers, who are unable to quit cigarettes, by equipping them with the most accurate information on newer and less harmful smoke-free options, like heated tobacco, which can help them abandon cigarettes completely.

In empowering adult smokers with advice on the significant harm reduction benefit that is conferred by switching to a smoke-free alternative, such as IQOS, that is better able to replicate the taste

and ritual of tobacco consumption, whilst reducing harm, pharmacists can make a major contribution to public health.

With over 16 million users, worldwide, 11 million of which have abandoned cigarettes completely<sup>16</sup>, IQOS may provide pharmacists with great potential in contributing to, and delivering on, the UK harm reduction strategy.

In this dynamic area of public health, the development of heated tobacco addresses some of the key characteristics of cigarettes that adult smokers find difficult to give up, providing them with an option that better emulates the taste and ritual of tobacco consumption, whilst reducing their exposure to harm.

By encouraging a harm reduction approach, pharmacists, as healthcare leaders, can help the UK eliminate smoking altogether.

REFERENCES 1. PHE Smoking and tobacco: applying All Our Health Updated 16 June 2020 <https://www.gov.uk/government/publications/smoking-and-tobacco-applying-all-our-health> 2. World Health Organization Publications, The Tobacco Atlas, Judith Mackay and Michael Eriksen, 2002. 3. Adult smoking habits in the UK: 2019, Office of National Statistics, 7th July 2020. 4. Public Health England, Health Matters: Stopping smoking - what works? Published Sept. 2018; updated Dec 2019. 5. Cancer Intelligence Team, Cancer Research UK. Smoking prevalence projections for England, Scotland, Wales, and Northern Ireland, based on data to 2018/19. Published February 2020. 6. Royal College of Physicians Harm reduction in nicotine addiction: Helping people who can't quit. A report by the Tobacco Advisory Group of the Royal College of Physicians (2007). 7. NICE (National Institute for Health and Care Excellence) Public health guidance: Tobacco: Harm-reduction approaches to smoking (2011) (London). 8. Royal College of Physicians Fifty years since smoking and health. Progress, lessons and priorities for a smoke-free UK. Britton (Ed.), Report of conference proceedings, RCP, London (2012) (64 pp.). 9. Tobacco Harm Reduction Survey, 2020, Communications International Group Research, 2020. Survey of 204 UK pharmacists on awareness of tobacco harm reduction. 10. Public Health England, Evidence review of e-cigarettes and heated tobacco products 2018 <https://www.gov.uk/government/publications/e-cigarettes-and-heated-tobacco-products-evidence-review/evidence-review-of-e-cigarettes-and-heated-tobacco-products-2018-executive-summary> 11. Hajek P, Phillips-Waller A, Pizlji D, Pesola F, Myers Smith K, Bisal N, Li J, Parrott S, Soseni P, Dawkins L, Ross L, Goniewicz M, Wu Q, McRobbie HJ. A Randomized Trial of E-Cigarettes versus Nicotine-Replacement Therapy. N Engl J Med. 2019 Feb 14;380(7):629-637. 12. [pmi.com/science](https://www.pmi.com/science) 13. Lüddecke E, Ansari SM, Lamo N, Blanc N, Bosilkovska M, Donelli A, Picavet P, Baker G, Hazzo C, Pritsch M, Weikunat R. Effects of Switching to a Heat-Not-Burn Tobacco Product on Biologically Relevant Biomarkers to Assess a Candidate Modified Risk Tobacco Product: A Randomized Trial. Cancer Epidemiol Biomarkers Prev. 2019 Nov;28(11):1934-1943. doi: 10.1158/1055-9965.EPI-18-0915. Epub 2019 Jul 3. PMID: 31270101. 14. PMI 3-month reduced exposure studies conducted in Japan and the US in near real world conditions. 15. Healthy lives, healthy people: A tobacco control plan for England, HM Government, 2011, (pp. 57). 16. Philip Morris International, 2020 Third-Quarter Results, October 20, 2020



Important information: IQOS is not risk-free. It delivers nicotine, which is addictive.

IQOS emits 95% lower levels of harmful chemicals compared to cigarettes.\*

Important information: It does not necessarily equal a 95% reduction in risk. IQOS is not risk-free. \*Average reductions in levels of a range of harmful chemicals (excluding nicotine) compared to the smoke of a reference cigarette (3R4F).



Philip Morris's R&D Headquarters – Switzerland