

Here are the

**FACTS:**

# NICOTINE

## WHAT IT IS, AND WHY IT IS IN SMOKE-FREE ALTERNATIVES?



### **NICOTINE, WHILE ADDICTIVE AND NOT RISK-FREE, IS NOT THE PRIMARY CAUSE OF SMOKING RELATED DISEASES.**

Science based, smoke-free products are not risk free and contain nicotine which is addictive, but have the potential to be less harmful than continuing to smoke. But the best option remains that if you don't smoke, you should not start; and if you smoke, you should quit entirely.

#### **WHAT IS NICOTINE?**

Nicotine occurs naturally in the tobacco plant.

Once inhaled, nicotine is absorbed through the lungs straight into the bloodstream where it travels through the body into tissues and organs, including the brain. In the brain, nicotine binds to specific receptors and triggers the release of dopamine and other neurotransmitters. As a result, nicotine may stimulate and ultimately affect short-term brain functions such as emotion, learning, and memory.<sup>1</sup>

After repeated nicotine stimulation, the brain adapts to the presence of nicotine, a process that is reversible when a person stops using nicotine-containing products.

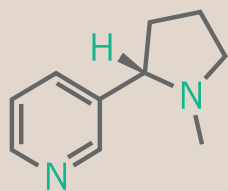
The action of nicotine in the brain can also trigger physiological effects outside the brain. For example, the messenger epinephrine is released into the bloodstream, leading to temporary (and reversible) narrowing of blood vessels, higher blood pressure, and increased heart rate.<sup>2</sup>

Nicotine-containing products should not be used by people who have or are at risk of heart disease, are diabetic, are epileptic, or are experiencing seizures.

**NICOTINE IS NOT THE PRIMARY CAUSE OF SMOKING RELATED DISEASES.**

They should not be used during pregnancy or while breast-feeding, Finally, minors should not use or have access to tobacco or nicotine-containing products.

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Nicotine occurs naturally in tobacco. It has pharmacological effects, including increasing heart rate and blood pressure.



Nicotine is addictive and not risk-free. Nicotine is not the primary cause of smoking-related disease. Other chemicals in the smoke are.



Certain people should not use products that contain nicotine. This includes pregnant or breastfeeding women and people with heart disease, severe high blood pressure, or diabetes. Minors should not use or have access to tobacco or nicotine-containing products.

## NICOTINE IN SMOKE-FREE ALTERNATIVES

We are often asked why nicotine is present in the smoke-free alternatives we produce at Phillip Morris International (PMI).

Nicotine is one of the reasons that some adults smoke but is not the only reason. For many adult smokers, the taste, ritual, and sensorial experience are reasons that they smoke. In order for adult smokers, who would otherwise continue to smoke, to switch from cigarettes to smoke-free alternatives, these products need to contain nicotine and also provide the taste and experience that is acceptable.

## NICOTINE IS NOT THE PRIMARY CAUSE OF SMOKING-RELATED DISEASES

Nicotine, while addictive and not risk-free, is not the primary cause of smoking-related diseases. It's the other harmful and potentially harmful chemicals in smoke that are the primary cause of smoking-related diseases. A statement from NICE (National Institute for Health and Care Excellence) finds that "it is primarily the toxins and carcinogens in tobacco smoke—not the nicotine—that cause illness and death."<sup>3</sup>

## A BALANCED PERSPECTIVE

Institutes like Public Health England (PHE)<sup>4</sup> and the U.S. Food and Drug Administration<sup>5</sup> see the potential of nicotine-containing products as smoking alternatives.

Public Health England also weighs in on the public awareness of nicotine, saying "there is much public misunderstanding about nicotine (less than 10% of adults understand that most of the harms to health from smoking are not caused by nicotine)."<sup>6</sup> However, regions like Australia carry heavier restrictions on nicotine. Under Australian Commonwealth law, nicotine-containing products are categorized as prescription-only (with nicotine patches, gums, or sprays as exceptions) or dangerous poisons (with the exception of its use in therapeutics or cigarettes).

Adult smokers deserve accurate and nonmisleading information in order to be able to make an informed decision. And choices like these add up to affect public health outcomes. This is one of the reasons why it is so important to combat public misperceptions about nicotine. Many people still mistakenly believe that nicotine is a major cause of tobacco-related diseases. A literature review of 54 studies has shown that peoples' assumptions about nicotine vary, and are often wrong.<sup>7</sup>

It is important to educate regulators, public health experts, adult smokers and adult nicotine users about nicotine and nicotine-containing products.

## A balanced perspective on nicotine is necessary.

On one hand, products containing nicotine should not be used by certain groups of people. On the other hand, products containing nicotine can help to support public health goals by encouraging smokers who would otherwise continue to smoke to abandon cigarettes and switch completely to smoke-free products.



Quitting tobacco and nicotine altogether is the best choice for health. Existing tobacco control measures designed to discourage initiation and encourage cessation should continue.

However, despite these efforts, millions of people continue to smoke. **Science-backed, smoke-free products** can play a role in moving adults who would otherwise continue to smoke away from cigarettes. With the right regulatory encouragement and support from civil society, **together we can deliver a smoke-free future** more quickly than relying on traditional measures alone.

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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2946180/>
- 2 "Pharmacology of Nicotine: Addiction, Smoking-Induced Disease, and Therapeutics" 2009  
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<https://www.nice.org.uk/guidance/ph45/chapter/Introduction-scopeand-purpose-of-this-guidance>
- 4 Public Health England, "PHE publishes independent expert e-cigarettes evidence review", 2018,  
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- 5 U.S. FDA, "Statement from FDA Commissioner Scott Gottlieb, M.D., on actions to advance our comprehensive plan to reduce tobacco-related disease and death, through new efforts to improve the tobacco product application review process, including a newly proposed rule.", 2019  
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<https://www.gov.uk/government/news/phe-publishes-independent-expert-e-cigarettes-evidence-review>
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<https://pubmed.ncbi.nlm.nih.gov/27625408/>