

WHO Technical Brief on Nicotine pouches

DESCRIPTION

Nicotine pouches are pre-portioned pouches that contain nicotine and are similar to traditional smokeless tobacco products such as snus in some respects including appearance and manner of use (placing them between the gum and lip). However, unlike snus which contains tobacco, nicotine pouches have been promoted as “tobacco free” and in some jurisdictions, such as Sweden, they are referred to as “white snus”. Nicotine pouches differ in weight, nicotine level, flavour, and pouch size, within and between brands. Examples of the brands available on the markets include Lyft, White Fox, Zyn, Velo, Nordic Spirit, Shiro etc.

These products have several variants and nicotine strengths. The nicotine content of some of these products can be as high as that of other tobacco products, such as conventional cigarettes, traditional smokeless tobacco products, and heated tobacco products. Therefore, they may have the same or similar addictive potential.

Recent publications have reported that a single nicotine pouch weight varies between 149 and 800 milligrams and has nicotine levels of 3 to 50 mg/g, which equals a nicotine dose of 3 to 32.5 mg per pouch [1]. Some nicotine pouches have been reported with exceptionally high nicotine levels of up to 120 mg/g nicotine.

PREVALENCE

Limited data exist on the prevalence of use among different user groups. Data from national Global Youth Tobacco Surveys show that the current use of nicotine pouches among 13- 15-year-old youths is *8.1% in the Czech Republic (2022)* and *4.6% in Lithuania (2022)*.

In Nordic countries that have data from at least two rounds of surveys, there have been an increase in prevalence of current use of nicotine pouches over time. For example, in Denmark among 15-17-year-olds, the use of nicotine pouches increased from 8.7% in 2020 to 12% in 2022 [3].

Countries from other regions have similar trends. In a national US survey of young people (aged 15–24) from 2021–2022, 16% had ever used nicotine pouches and 12% currently used the products. About three-quarters (73%) of those currently using nicotine pouches were also current smokers. Data from the International Tobacco Control project showed an increase in nicotine pouch use over time among young people aged 16–19 in the US, from 3.5% in August 2019 to 4.1% in August 2021. Use was more common among those who also used other tobacco/nicotine products [4].

Ukraine. According to the results of the sociological survey ‘Tobacco and nicotine use in Ukraine among adults: behaviour and attitudes’ (2000+ respondents), conducted at the request of WHO in November 2024, 0.3% of adults use nicotine pouches, with a maximum value of 1.4% among the 18–29-year-old cohort. The level of consumption has not changed since the 2023 survey, but awareness of this new product among adults has increased significantly.

According to a survey on tobacco use and attitudes among students aged 14-15 as part of the Nicotine and Tobacco-Free Schools project in Kyiv (700 respondents, November-December 2024), 3% of adolescents reported having used nicotine pouches. Thus, children (adolescents) use

nicotine pads much more often than adults, which is a significant problem of nicotine consumption among children.

MARKETING

In February 2021, journalists from the Bureau of Investigative Journalism published an article summarizing the marketing tactics as follows:

- 1) presenting nicotine products as “cool” and “aspirational” in a glossy youth-focused advertising campaign,
- 2) paying social media influencers to promote nicotine pouches on social media,
- 3) sponsoring music and sporting events, and
- 4) an international free sample offer for nicotine pouches that appears to have attracted underage people and non-smokers.

The authors argued that this was part of a campaign targeted at young people rather than older adults trying to quit smoking [5].

The pouches are available in similar flavours as, for example, ENDS and ENNDS and conventional smokeless tobacco products, which have the potential to increase product appeal, especially to young people. A 2023 publication reported a survey of 228 flavours among 28 nicotine pouch brands. Menthol (including all variants of mint) and fruit flavours predominate, with few instances of tobacco flavour [6].

A variety of candy flavoured nicotine pouches were identified on the United Kingdom and European markets but can be purchased and shipped elsewhere. Some nicotine pouch vendors directly copy the brand names and imagery from popular candy products. These makes the products attractive to children and young people, who may eat them thinking they are a sweet treat or candy.



What is especially concerning is that these are very high nicotine content products, with labels indicating 120 mg or 150 mg of nicotine. Should a young child consume these products, a potentially lethal nicotine overdose may occur, as has been observed following flavoured e-liquid ingestion [7].



Nicotine pouches are promoted as discreet and stealthy allowing freedom to use anywhere, ‘healthier’ (use to quit smoking), no smoke/no smell/no yellow teeth, as lifestyle products and ‘modern’ nicotine. Advertising characterizes as pervasive, sophisticated, and broadly targeted, relies on heavy use of social media and influencers.

HEALTH CONCERNS

The main concern is the presence of nicotine, a known toxicant, registered under the European Union REACH regulations. It is classified as acutely toxic (category 2) after oral, dermal, or inhalation exposure. It is subject to hazard statements H300: fatal if swallowed, H310: fatal in contact with skin, and H330: fatal if inhaled [8].

Nicotine pouches are available in different nicotine strengths. The higher the nicotine dose, the larger the increase in heart rate and systolic blood pressure when used by never-tobacco users [9]. A concern associated with synthetic nicotine is that the pharmacological and metabolic effects of R-nicotine are largely unknown [10]. Further, nicotine extracted from tobacco may be contaminated with tobacco-specific nitrosamines, which are carcinogenic.

Nicotine is a dangerous drug that is addictive and encourages the continued use of tobacco and nicotine products. Nicotine is particularly dangerous for the health of children and adolescents. Nicotine use has significant risks for the cardiovascular and nervous systems of the human body.

- Nicotine use has significant risks for the cardiovascular system. For example, nicotine activates the sympathetic nervous system and promotes the release of catecholamines, which leads to an increase in heart rate, vascular tone, blood pressure, myocardial contractility, and additional myocardial oxygen demand [12].
- Nicotine use has a negative effect on vascular tone and may contribute, for example, to a decrease in myocardial oxygen supply and coronary artery spasm [13].
- Nicotine causes endothelial dysfunction (dysfunction of the arterial lining, which leads to narrowing of the arteries) and causes various pathological conditions such as

atherosclerosis, hypertension, hypercholesterolemia, bacteremia, chronic heart failure, and diabetes mellitus [14].

- Nicotine increases the levels of low-density lipoprotein cholesterol and blood pressure [15].
- Nicotine use has been confirmed to be associated with coronary heart disease, cardiac arrhythmia (ventricular tachycardia) and thrombosis [16]
- Regular use of e-cigarettes increases the risk of myocardial infarction [17].
- Nicotine is particularly dangerous for the health of young people [18].
- In adolescence, nicotine use increases the risk of other drug use and mental health problems.
- Iniguez SD and others (2009) argue that nicotine exposure can lead to changes in the brain and behaviour, including increased pleasure effects of other drugs, decreased attention span, and mood disorders [19].
- Leslie FM (2020) provides evidence of a direct link between e-cigarette use and substance use, mental health problems, and impulsivity in adolescents [20].
- Doroteo U. et al. (2023) link adolescent nicotine exposure to cognitive impairment such as decreased concentration, increased impulsivity, and depression [21].
- The use of e-cigarettes is also associated with a decline in academic performance [1].
- Mishra A. and others (2015) add that nicotine exposure is associated with altered cellular immunity, increased risk of respiratory and gastrointestinal disorders, carcinogenesis and tumour development, as well as negative effects on reproductive and fetal health [22].

ENVIRONMENTAL CONCERNS

As the nicotine pouch market grows, the disposal of these single use products is an emerging concern. Plastic cans used to store nicotine pouches contribute to overall plastic pollution.

REGULATION

The industry is also seeking regulatory carve-outs to have more lenient regulations applied to these products, relative to conventional tobacco products. One of the challenges faced by regulators is that the manufacturers of these products claim that the nicotine contained in the products is not derived from tobacco, in which case it should not be regulated under tobacco laws. Whether synthetic nicotine products fall within current tobacco control regulations depends on how the laws of each country define products covered under the regulations.

According to Ukrainian legislation, ‘nicotine is a nicotine alkaloid or other chemical substance, including any salt or complex of nicotine, extracted from plant material (tobacco) or synthetically’. In other words, from a regulatory perspective, the ‘origin’ of nicotine does not matter.

Some countries have made their regulations and laws futuristic and resilient such that nicotine pouches are captured and regulated under existing laws, some have recently had their laws updated, whereas some still have definitions that refer to traditional products, which the industry uses to its advantage.

Given the aggressive marketing of these products, which contain attractive and child friendly flavours, countries are encouraged to protect its existing policies and formulate new policies, as appropriate, to broaden its regulatory requirements to cover the large range of nicotine and tobacco products appearing on several markets around the world.

Countries should ban or regulate nicotine pouches to ensure a high degree of protection for human health. WHO recommends a strong precautionary approach to ensure that these products do not create new markets.

Banning

- The general obligations of Parties as articulated in **Article 5 (2b)** of the WHO FCTC provides that Parties shall in accordance with its capabilities “adopt and implement effective legislative, executive, administrative and/or other measures and cooperate, as appropriate, with other Parties in developing appropriate policies for preventing and reducing tobacco consumption, *nicotine addiction* and exposure to tobacco smoke.” This specifically addresses **nicotine addiction** and countries may wish to introduce new measures or take appropriate action to prevent and reduce nicotine addiction.
- Countries may wish to go beyond the WHO FCTC and ban these products. This is because the WHO FCTC supports the implementation of measures beyond those set out in the Convention, in line with **Article 2.1**, which states:

“In order to better protect human health, Parties are encouraged to implement measures beyond those required by this Convention and its protocols, and nothing in these instruments shall prevent a Party from imposing stricter requirements that are consistent with their provisions and are in accordance with international law.”

Therefore, in summary, countries may exercise their authority to go beyond the provisions of the WHO FCTC in line with Article 2.1 and rely on Article 5(2b) to take measures to prevent nicotine addiction by banning these products under applicable domestic laws (food, consumer, tobacco, etc.).

Regulating

Based on what is known about these products, so far, WHO provide the following guidance to countries:

- Regulate nicotine pouches in the same manner as products of similar appearance, content, and use.
- Ensure that nicotine pouches are not classified as pharmaceutical products unless they are proven to act as nicotine replacement therapy and undergo stringent pharmaceutical registration for licensing as such by the appropriate national regulatory authority.
- Regulate nicotine pouches to prevent all forms of marketing and promotional activities and take all other actions necessary to minimize access and appeal to and initiation by young people.
- Protect tobacco control activities from all commercial and other vested interests related to nicotine pouches, including the direct and indirect interests of the tobacco industry.
- Prohibit health-related claims by manufacturers, including their potential effectiveness as cessation products, unless the products are licensed and approved as such by regulators.

EXAMPLE of countries that ban nicotine pouches in the WHO/Europe

- Belgium: banned nicotine pouches from 1 October 2023 with the aim to protect the health of children and adolescents.
- Germany: does not regulate nicotine pouches, however by the court decision these are not allowed on the national market.
- Kazakhstan: banned nicotine pouches with any form of nicotine, including synthetic nicotine.
- Kyrgyzstan: banned ‘tobacco-free’ nicotine products.
- Netherlands: banned nicotine pouches with more than 0,035 mg nicotine per pouch. The bill that completely ban nicotine pouches was voted in plenary on 21st May 2024 and will enter into force from first of February 2025.
- Uzbekistan: banned non-smoking tobacco products, including nicotine-containing, nonsmoking products.

EXAMPLE of country that regulate these products

The Republic of Moldova

In the Republic of Moldova Law, nicotine-containing products are defined as “*any product consumed by inhalation, ingestion or otherwise, to which nicotine is added during the production process or is added by the consumer himself before or during consumption*”. Therefore, nicotine pouches fall under the category “tobacco-related products”, defined as “products made of plants for smoking and *products which contain nicotine*, including electronic cigarettes”.

In accordance with European Union laws and regulations, the Republic of Moldova regulates the nicotine content of nicotine-containing products, such as nicotine pouches. According to Article 23 of Moldovan law,“(1) Nicotine-containing products, including e-cigarettes and replacement vials, which are not subject to pharmaceutical and drug regulation, may be placed on the market under the following conditions:

- a) the nicotine content does not exceed 2 mg per unit of product;**
- b) the content of nicotine in the liquid of electronic cigarettes and reserve vials does not exceed 20 mg per 1 ml;
- c) the maximum volume of cartridges and reservoirs of disposable electronic cigarettes and disposable cartridges does not exceed 2 ml;
- d) the maximum volume of reserve vials does not exceed 10 ml;
- e) the product does not contain additives specified in paragraph (3) of Article 11.”**

Article 23 (a) and (e) specifically apply to these products.

As of June 2024, a new tobacco control Bill that envisions a total ban on nicotine pouches is under public discussion in the Republic of Moldova [11].

KEY MESSAGES

- A country can ensure maximum protection of public health by applying the most restrictive domestic law to protect public health. Any decision taken should suit a country's domestic regulatory context and ensure effective protection of the health of its citizens, especially children and young people. If existing laws do not cover nicotine pouches, regulators should consider applying a regulatory regime to those products so that their classification and regulation are clearly addressed.
- Countries should encourage relevant authorities to track the availability of these products in their markets.
- Nicotine pouches should not be classified as pharmaceutical products as they are not proven Nicotine Replacement Therapies (NRTs). Sovereign States should not be subjected to interference and undue influence by the tobacco industry and its affiliates to follow a particular approach or adopt an approach by another country.
- Countries should not allow tobacco or other manufacturers to lobby it to treat the products differently or more favourably than other products with which they bear close resemblance, should they wish to regulate them.

Note: It should be noted that the comments provided herein do not constitute legal advice or a legal opinion. Nor is it intended that the Technical Brief be submitted to a court or tendered into evidence.

Conclusions

Nicotine pouches pose significant health risks due to their high and variable nicotine content, which can lead to addiction and severe cardiovascular and neurological harm, especially among children and adolescents. Despite being marketed as "tobacco-free," these products contain nicotine—a toxic and addictive substance—that can cause long-term health damage, including increased blood pressure, heart rate, cognitive impairment, and heightened risk of health issues in youth. Their discreet use, appealing flavors, and aggressive marketing tactics, particularly targeting young people, raise serious concerns about nicotine initiation and addiction. Given these risks, WHO recommends a strong precautionary approach: countries should either ban nicotine pouches entirely or regulate them comprehensively under existing tobacco control frameworks. Regulation should include strict controls on marketing, flavorings, youth access, and health claims while ensuring that nicotine pouches are not misclassified as pharmaceutical cessation aids unless approved as such. The goal must be to prevent a new generation from becoming addicted to nicotine through seemingly modern and attractive products.

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