

Oral Nicotine Pouches

- Quick Overview

By Elaine Tilling



Background

Oral Health Care Professionals have a duty of care to deliver smoking cessation advice to their patients, predominantly to reduce their risk of all cancers, but specifically in dentistry, oropharyngeal and mouth cancers. Tobacco's impact on periodontal disease, wound healing and implant failure all contribute to the rationale for dental teams to undertake this intervention.

The relatively recent trends for individuals to use other nicotine sources such as e-cigarettes/vapes and now oral nicotine pouches (ONP's) to avoid the harmful carcinogens released during smoking tobacco means that all health care professionals need to keep up to date with the trends and our emerging understanding about the general and oral health implications of their use.

This article will provide an overview of the literature on oral nicotine pouches and will inform the readers of the contents and variety of ONP's on sale in the UK. ONP's are non-regulated and highly addictive. Whilst ONP's may well be the least harmful way of ingesting nicotine by carrying fewer health risks than cigarettes or vapes, there are cardiovascular risks for people using pouches with high levels of nicotine and there is growing concern in the literature about the damage nicotine pouches do to the oral mucosa.

What's a Nicotine Pouch Anyway?

Oral nicotine pouches (ONP's) were sold initially as smokeless tobacco products by tobacco companies[i]. Marketed in the UK and Europe since 2019[ii], they are sold as individual little 'teabag-like' pouches in attractive containers made from tin or plastic that often have a 'nifty' collection compartment for used pouches.

They are placed in the buccal mucosa, usually in the anterior or pre-molar regions.



- Also known as white snus/lip pillows/upper decker's or brand specific such as "zyns". they contain nicotine which is either extracted from tobacco leaves or synthetically produced, sodium carbonate, flavourings, and sweeteners.
- They often have a high pH value, an effect of the ingredient sodium carbonate, which allows the nicotine inside the pouch to penetrate the soft lining of the oral tissues more quickly and enter the bloodstream, resulting in stronger nicotine hits.
- Useful for people wishing to quit the smoking habit in environments where smoking/vaping is prohibited.
- They are not for children or young people or all-time nonsmokers.

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What's in them exactly?

The current formulas are tobacco-free but may have nicotine mined from tobacco leaves or contain synthetically produced nicotine. They are made from a permeable outer pouch material, often viscose fibres, and the content is largely composed of a water and microcrystalline cellulose matrix which holds a filling agent, salt, taste additives, flavourings and pharmaceutical grade nicotine. [i]

The maximum recommended nicotine per pouch in UK is 20mg, however in a scoping review by Latha Davda in BSDHT's Dental Health in May 2025[ii], these levels were found to exceed 120mg per pouch in some cases. A worrying issue, given that a lethal dose of nicotine for adults is 30-60mgs, and around 10mgs in children and can result in death due to paralysis of the respiratory muscles and central respiratory failure[iii]. Dr Davda's review revealed over 228 brands of ONP's currently on the UK market with a multitude of flavour offerings which make them attractive for young users.

What they are not:

- They are NOT REGULATED in the UK
- They are NOT 'Snus' which is an ONP that does contain tobacco and is prohibited for sale in several countries including the UK.
- They are NOT part of nicotine replacement therapy but are used by some to reduce combustible tobacco consumption (smoking)
- They are NOT without HARM



Nicotine's impact on the body

Nicotine is a highly addictive, alkaloid, stimulant drug primarily found in the tobacco plant. Systemically it acts as a central nervous system stimulant that increases heart rate and blood pressure. When consumed via smoking, vaping and smokeless sources, it causes the brain to release dopamine creating feelings of pleasure and release that also leads to addiction. Like that of cocaine and heroin. Locally it can cause irritation and a burning sensation in the mouth and throat, increased salivation and nausea.

On a cellular level, nicotine can cause DNA mutations that promote early cancer cell proliferation. It also increases the risk of metastasis in tumours via angiogenesis. It has been shown to induce pancreatic adenocarcinoma, lung cancer and make tumour cells resistant to chemotherapy in mice (Mishra et al 2015). It decreases the migration of fibroblasts and inflammatory cells in wound healing by decreasing epithelialisation cell adhesion, resulting in immunosuppression and delayed wound healing.

ONP's impact on the oral mucosa

Oral abnormalities at the site of use vary but include:

- Slight wrinkling of the mucosa
- White patches, including gingival margins
- Erythematous patches
- Gingival blisters

Other reported side effects include:

- Dry Mouth
- Soreness and strange sensation in the jaw
- Nausea
- Dizziness
- Initial increased salivation

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Regulation

Unlike the UK's highly regulated tobacco products (Tobacco/Cigarette/Vapes) that require the labelling to carry health risks, age limit for purchase and the nicotine content of each component, ONP's are unregulated with only a few UK brands currently labelling the nicotine content. This means that even if the ONP is used as part of a user's strategy to reduce or eliminate smoking tobacco, they are consuming unknown and often higher levels of nicotine than through their smoking habit thereby, likely increasing their addiction.

Marketing Tactics

The big tobacco companies that own these products are marketing them in a similar way as they do Vapes. They are marketed as a 'harm reduction' product for smokers with the colours, flavours and clever packaging, all designed to attract younger audiences. The social media language used in advertising also appears to target the younger age groups. Free samples can be obtained online where it is impossible to confirm the age of the applicant.

The way forwards?

Oral health care professionals should include questions on ONP use in their routine medical history taking and record their use and whether they contain tobacco – simply record the brand and pattern of use. Provide an explanation as to why you are asking and, if they are using them as an aid to quit smoking, or wish to give up the ONP's themselves, signpost them to your nearest approved smoking cessation service. Any soft tissue changes that you observe or that the patient reports, should be photographed, recorded and monitored using the same protocol for all new or suspicious lesions.

Conclusion

The expansion of electronic nicotine delivery systems (ENDS) or Vapes in the consumer market, coupled with the use of ONPs has dramatically increased the consumption of nicotine independently of tobacco products. The tobacco industry is continuing to market addiction, in the guise of vapes for 'medication' to stop smoking and ONPs as 'medication' to stop vaping. The long-term consequences of these practices, commonly referred to as vaping, and pouching are currently unknown. Users should be informed of the side effects of nicotine on their health. The dental profession has a duty of care to record and monitor their use and effects on the oral mucosa and signpost these patients to approved smoking cessation services for alternative therapy.

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[1] Mishra A, Chaturvedi P, Datta S, Joshi P, Garg A. Harmful effects of nicotine. *Indian J Med Paediatr Oncol*. 2015; 36(1):24-31. <http://doi.org/10.4103/0971-5851.151771>.