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**Contents & Health Effects** 

# What are Oral Nicotine Pouches?

Oral nicotine pouches are small fibre pouches containing nicotine, flavorings, and other chemicals. These pouches are placed between the lips and the gums and release nicotine into the bloodstream

# Contents

#### **Nicotine salts**

- Oral nicotine pouches contain nicotine salts. Nicotine salts are formed when nicotine is combined with an acid. This is done to lower the pH and allow for higher nicotine concentrations
- Nicotine salts are more potent and absorb faster than free-based nicotine, which is the pure form of nicotine

# **Tobacco Specific Nitrosamines**

 The majority of oral nicotine pouches contain highly carcinogenic (cancer causing) amines like nitrosamine ketone (NNK) and N-nitrosonornicotine (NNN)

# Flavours

- Oral nicotine pouches are produced in a variety of sweet, mint, and fruity flavours
- As of 2024, Health Canada only permits mint and menthol flavoured oral nicotine pouches
- Oral nicotine pouches that claim to be unflavoured often still contain sweeteners and cooling agents to improve palatability and addictiveness

# Other chemicals

• In a study of 50 oral nicotine pouches, nearly 200 different chemicals were found, many of which were not listed on the ingredients label. Some were not approved for human consumption

# **Health Effects of Nicotine**

#### **Cardiovascular Impacts**

- Nicotine usage causes increased vascular constriction, leading to an increased heart rate and blood pressure
- Regular oral nicotine pouch use can cause heart rate increases of over 20 beats per minute. This may increase oral nicotine pouch user's risk of heart disease and death by 40%

# Increased vascular constriction has systemic effects:

### Cognition

- Interferes with cognitive functions such as decision-making, impulse control and coordination
- Impedes short and long term memory formation
- Increases risk of severe concussion and impedes recovery

# **Reproductive Organs**

- · Causes poorer egg and sperm quality
- Contributes to development of erectile dysfunction

Case reports indicate that oral nicotine pouch overuse (consumption of 160 mg of nicotine in 12 hours) can lead to nicotine poisoning, which can be life-threatening

Increases in oral nicotine pouch use lend to further increases in oral irritation, heart rate, and arterial stiffness, ultimately increasing the overall risk for disease and death

Encouraging users to reduce or cease their oral nicotine pouch usage is a powerful way to help improve their overall health status

# Oral Health Impacts of Oral Nicotine Pouches

# **Dry Mouth**

 Associated with compromised oral protection, chronic inflammation, periodontitis, digestive and vocal disorders

#### **Mucosal Inflammation**

 Inflammation and irritation increase the risk of oral cancer

#### **Gum Recession**

 Leads to cavities, periodontitis, and increased systemic disease risk

#### **Oxidative Stress**

 Increases risk of cancers, diabetes, and heart disease

#### **Mucosal Lesions**

 Users develop ulcers and lesions at the pouch site, increasing risk for cancer and other oral health diseases

#### **Tannerella Forsythia**

• This pathogenic bacteria is very commonly found in the mouths of oral nicotine pouch users, and is a major risk factor for the development of esophageal cancer

# Implications of Tobacco-Free Oral Nicotine Pouches

Tobacco-free oral nicotine pouches contain synthetic forms of nicotine that are not derived directly from the tobacco plant.

Users may falsely equate being tobacco-free with being nicotine free, or inherently safer than tobacco containing products. It is important to counsel patients that the chemical structure of synthetic nicotine is the same as tobacco derived nicotine, carrying the same health risks and addictive properties

# How do Oral Nicotine Pouches Compare to Traditional Nicotine

	Nicotine Replacement Therapy	Oral Nicotine Pouches
Nicotine Source	Free-based nicotine (lower nicotine)	Nicotine salts (higher nicotine)
Flavours	Unflavored or mint	Sweet, mint, and fruity flavours
Risks	Contain health regulated content	Contain unregulated chemicals that increase health risks

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