

TOBACCO, VAPING & CANNABIS

INFORMATION SERIES



Waterpipes

Background

Waterpipes, also called hookah or narghile, involves smoking products known as “shisha”. It dates back several centuries with its origin traced to India and also to South Africa, Persia and Ethiopia.¹ Traditional tobacco shisha is a mixture of tobacco and water, and sometimes mixed with glycerin and/or honey. Tobacco-containing shisha is sometimes marketed as “washed” or “unwashed.” Washing tobacco does not affect nicotine levels and tobacco still contains dangerous chemicals after being washed.

Shisha is also available without tobacco and such products are often described as “herbal.” Flavouring has been added to most products to make them more appealing including many non-traditional flavours (such as those inspired by cocktails and energy drinks). Overtly flavoured shisha is not traditional, nor are venues that have recently opened in Alberta.²

Venues offering public waterpipe use promote a range of casual to luxury atmospheres,

citing “relaxation after a stressful day at school” (Cloud 9 Hookah Lounge & Bar, Calgary) or hosting themed nights with onsite DJs and karaoke. Such promotion of waterpipe establishments demonstrate the increasing commercialization of shisha in Alberta over the past two decades, with both tobacco and purported non-tobacco-containing products readily available.

In fact, an increase in prevalence and spread of use of waterpipes has been observed globally. The World Health Organization (WHO) reports that contributing factors to this increase include: the introduction of flavoured tobacco, social acceptability, developments in mass communications and social media, and a lack of waterpipe-specific policy and regulations.³

Prevalence

In 2017, past-30-day use of a waterpipe to smoke tobacco was reported by 1% (208,000) of Canadians aged 15 years and older.⁴ A closer look at age groups demonstrated the past 30-day prevalence among youth aged 15 to 19 was one percent (1% or 30,000) and among young adults aged 20 to 24, the rate increased to 3% (75,000).⁵

The 2018-19 Canadian Student Tobacco, Alcohol and Drug Survey (CSTADS) reported 6.9% of Grade 7-12 students had ever tried waterpipe, down from 8.6% in 2016-2017.⁶

An aspect of concern surrounding the spread of waterpipe use is the potential for it to impede quit attempts by those who smoke cigarettes or serve as a bridge to cigarette smoking among young people.⁷ This worry has been echoed in a recent systematic review which concluded that waterpipe tobacco smoking is associated with more than doubling of the odds of later initiation of cigarette smoking.⁸

In order to maintain a downward trend in prevalence rates, prevention and policy measures for waterpipe must remain a priority.

The trend of banning public waterpipe use

Over the last decade, public waterpipe use was banned in Syria, Lebanon, Turkey, and Jordan.^{9,10,11,12} As of March 31, 2018 New Brunswick, Newfoundland/Labrador, Nova Scotia, Prince Edward Island and Quebec have all banned waterpipe in public spaces.¹³ A growing number of cities and communities in British Columbia and Ontario have also implemented waterpipe bans.¹⁴ Alberta's *Tobacco and Smoking Reduction Act* continues to provide an exemption that permits the use of waterpipes in public establishments.

Alberta Health's Office of the Chief Medical Officer of Health recommended in 2012 that waterpipe use should be prohibited in enclosed public places and work-places, and within five metres of entrances, windows and air intakes in public venues and workplaces.¹⁵

Alberta Health Services (AHS) supports these recommendations and continues to advocate for clean air legislation to protect against exposure to waterpipe smoke.

Indoor public use of waterpipes in Alberta exposes Albertans to carcinogens and other contaminants in public venues. This undermines the fundamental objective of provincial legislation which is to protect Albertans from exposure to carcinogens and other contaminants in public venues.

Cities/municipalities in Alberta including Red Deer, Cold Lake and Spruce Grove have made strides by enacting bylaws to prevent indoor waterpipe use. On July 1st, 2020 a ban on all waterpipe smoking in public places comes into effect in the city of Edmonton.

As public waterpipe venues do not require a unique business license, accurate information on the number of venues in Alberta is not readily available. A scan of waterpipe lounges in Alberta indicates at least 30 in operation in cities/towns where bylaws do not exist.

Despite a ban on other flavored tobacco products since 2015, a subsequent review of the *Tobacco and Smoking Reduction Act* in 2019 and the introduction of *Bill 19 - The Tobacco, Smoking and Vaping Amendment Act* in June 2020, flavoured waterpipe and vaping products continue to be available in Alberta.

Tobacco product labelling

In the past, testing conducted by public health officials in Ottawa, Toronto and New York City has determined that tobacco was present within products sold at lounges, although customers were told that the items were tobacco free.¹⁶ Testing is logistically difficult

and capacity to comprehensively test shisha products for tobacco content is insufficient. Some waterpipe venues in Alberta prepare their own “mixes” of shisha, using Red Bull or Monster Juice, which adds to the complexity of monitoring these products. However, it does not change the health risks associated with the products.

In order to increase awareness of health risks and effects associated with tobacco use, Health Canada has proposed to make changes to health-related labelling of tobacco products.¹⁷ The *Forward Regulatory Plan 2019-2021: Tobacco Products Labelling Regulations* also proposes new requirements for labelling on products such as waterpipe tobacco, which are not currently subject to any labelling requirements.

Waterpipe smoking and disease

Tobacco smoke from waterpipes has been linked to diseases also known to be associated with cigarette use. Such diseases include malignancies, cardiovascular disease, lung diseases, pregnancy complications, oral or dental complications, hematologic disturbances and genetic abnormalities.¹⁸

The charcoal used to heat waterpipes adds additional health risks as it produces high levels of CO, metals and cancer-causing chemicals.¹⁹

Alberta's own research has found that even the non-tobacco, or “herbal” shisha products used in waterpipes produce toxic air pollutants – including carbon monoxide, volatile aldehydes and polyaromatic hydrocarbons. In fact, both the main-stream and second-hand smoke produced by herbal shisha contained these known cancer-causing agents at levels equal to or greater

than that of tobacco products.²⁰ The same research study also found toxic trace metals and carcinogens – at levels equal to or greater than those in cigarettes – in three raw herbal shisha products tested.²¹

Air quality in shisha venues affects not only owners/operators of waterpipe venues, but also employees. If the waterpipe venue is part of a multi-unit building, people in adjacent units may also be adversely affected. Ventilation is not an option because a ventilation system with the technology to eliminate the carcinogens in tobacco smoke does not exist.²²

The recent outbreak of the 2019 novel coronavirus (a.k.a. COVID-19), has prompted considerations of public health policies and the risks of smoking and vaping in the transmission, trajectory and outcomes of infectious diseases. Studies of infectious viruses, including the novel coronavirus, indicate they can remain viable and infectious in aerosols and on surfaces, for long periods of time.^{23,24} The risk of disease transmission through frequent hand to mouth contact is well-established. Waterpipes are also said to increase a person’s exposure to harmful microorganisms due to moisture conditions that encourage their development and device structures that make proper cleaning and sanitization difficult.²⁵

The communal nature of waterpipe smoking within social settings includes using a single mouthpiece and hose, shared between users, often in restaurant and/or lounge settings.^{26,27} Waterpipe users are therefore also at an increased risk of communicable diseases like herpes and meningococcal disease that are transmitted through sharing waterpipe mouthpieces.²⁸

With regard to tobacco and nicotine dependence, a review examining whether waterpipe smoking supports dependence in its users is aptly summarized by the following:²⁹

- waterpipe smoking delivers active doses of dependence-producing nicotine
- waterpipe tobacco smokers may engage in waterpipe use on a daily basis
- waterpipe tobacco smokers do experience withdrawal, alter their behaviours to access waterpipes, and have difficulty quitting.

The findings of the review amidst public health concerns regarding the growing popularity of waterpipe smoking demonstrates the importance of public health action on waterpipe use. Informing the public of the risks of waterpipe use (including nicotine dependence) and ensuring waterpipe smoking is included in the same public health policies as cigarette smoking is a vital component of current tobacco control interventions.³⁰

For more information, please contact Alberta Health Services Tobacco, Vaping and Cannabis Program at tru@albertahealthservices.ca.

References

- Kniskow, B., & Amitai, Y. (2005). Water-pipe (narghina) smoking: an emerging health risk behavior. *Pediatrics*, 116, e113–e119. Retrieved June 5, 2013, from <http://www.ncbi.nlm.nih.gov/pubmed/15995011>
- Hammal, F., Wild, T. C., Nykiforuk, C., Abdullahi, K., Mussie, D., & Finegan, B. a. (2015). Waterpipe (Hookah) Smoking Among Youth and Women in Canada is New, not Traditional. *Nicotine & Tobacco Research*, July (17), 152. doi:10.1093/ntr/ntv152
- WHO Study Group on Tobacco Product Regulation (TobReg). (2015). Waterpipe Tobacco Smoking: health effects, research needs and recommended actions by regulators, 2nd. Ed. Retrieved from: https://www.who.int/tobacco/publications/prod_regulation/waterpipe_secondedition/en/
- Statistics Canada. (2017). Canadian Tobacco, Alcohol & Dugs Survey. Retrieved from: <https://www.canada.ca/en/health-canada/services/canadian-tobacco-alcohol-drugs-survey/2017-summary.html>
- Ibid*
- Statistics Canada. (2019). Canadian Student Tobacco, Alcohol & Drugs Survey. Retrieved from: <https://www.canada.ca/en/health-canada/services/canadian-student-tobacco-alcohol-drugs-survey.html>
- Supra*, note 3.
- Al Oweini, D., Jawad, M., & Akl, E.A. (2019). The association of waterpipe tobacco smoking with later initiation of cigarette smoking: a systematic review and meta-analysis exploring the gateway theory. *Tobacco Control*. doi: 10.1136/tobaccocontrol-2018-054870
- BBC NEWS. (2010). Syria smoking ban enters into force. http://news.bbc.co.uk/2/hi/middle_east/8634411.stm.
- BBC NEWS. (2012). Lebanon smoking ban provokes protests. <http://www.bbc.com/news/world-middle-east-19470425>
- Erdöl, C. et al. (2015). Waterpipe Tobacco Smoking in Turkey: Policy Implications and Trends from the Global Adult Tobacco Survey (GATS). *International Journal of Environmental Research and Public Health*, 12(12), 15559–66. doi:10.3390/ijerph121215004
- The National World. (2014) Tougher enforcement of Jordan shisha ban sparks public outcry. <http://www.thenational.ae/world/jordan/tougher-enforcement-of-jordan-shisha-ban-sparks-public-outcry>
- Canadian Partnership Against Cancer. (2019, May). *Commercial Tobacco Policy Pack*. Retrieved from: <https://www.partnershipagainstcancer.ca/topics/commercial-tobacco-policy-pack/>
- Smoking & Health Action Foundation. (2016, March). *Waterpipe Update: Legislation & Bylaws*. Retrieved from: https://nsra-adnf.ca/wp-content/uploads/2016/08/2016_Waterpipe_Bylaws_Update-FINAL.pdf
- Government of Alberta. (2012, February). *Waterpipe Smoking in Alberta, A Report by the Office of the Chief Medical Officer of Health*. Retrieved from: <https://open.alberta.ca/publications/waterpipe-smoking-in-alberta>
- Peterborough City-County Staff Report Tobacco, second-hand smoke and water-pipes (hookah, shisha) Retrieved from: <http://www.pcchu.ca/boh/agendas/november2011/downloads/9.2%20-%20SR%20-%20Water%20Pipes.pdf>
- Government of Canada. (2020, March). *Forward Regulatory Plan 2019-2021: Tobacco Products Labelling Regulations*. Retrieved from: <https://www.canada.ca/en/health-canada/corporate/about-health-canada/legislation-guidelines/acts-regulations/forward-regulatory-plan/plan/regulatory-initiative-package-labelling-pursuant-tobacco-act.html>
- El-Zaatari, Z.M., Chami, H.A., & Zaatari, G.S. (2015). Health effects associated with waterpipe smoking. *Tob Control*. 24 (1): i31-i43.
- World Health Organization. (2005). *Tobacco Regulation Advisory Note. Waterpipe Tobacco Smoking: Health effects, research*

needs and recommended actions by regulators. Retrieved from: www.who.int/tobacco/global_interaction/tobreg/Waterpipe%20recommendation_Final.pdf

²⁰ Hammal, F., Chappell, A., Wild, C., Kindzierski, W., Shihadeh, A., Vanderhoek, A., Huynh, C., Plateel, G., Finegan, B. (2013). 'Herbal' but potentially hazardous: An analysis of the constituents and smoke emissions of tobacco-free waterpipe products and the air quality in the cafés where they are served. *Tobacco Control*. doi: 10.1136/tobaccocontrol-2013-051169

²¹ *Ibid*

²² U.S. Department of Health and Human Services. (2006). *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

²³ van Doremalen, N., Bushmaker, T., Morris, D.H., Holbrook, M.G., Gamble, A., Williamson, B.N., Tamin, A., Harcourt, J.L., Thornburg, N.J., Gerber, S.I., Lloyd-Smith, J.O., de Wit, E., & Munster, W.J. (2020). Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. *N Engl J Med*. 382:1564-1567.

²⁴ Qu, G., Li, X., Hu, L., & Jiang, G. (2020). An Imperative Need for Research on the Role of Environmental Factors in Transmission of Novel Coronavirus (COVID-19). *Environmental science & technology*, 54(7), 3730–3732. <https://doi.org/10.1021/acs.est.0c01102>

²⁵ Blachman-Braun, R., Del Mazo-Rodríguez, R.L., López-Sámamo, G., & Buendía-Roldán, I. (2014). Hookah, is it really harmless? *Respiratory Medicine*. 108(5), 661-667.

²⁶ P. Koul, M. Hajni, M. Sheikh, U. Khan, A. Shah, Y. Khan, A. Ahanger and R. Tasleem, "Hookah smoking and lung cancer in the Kashmir valley of the Indian subcontinent," *Asian Pacific Journal of Cancer Prevention*, vol. 12, no. 2, pp. 519-24, 2011.

²⁷ C. Tan and S. Glantz, "Association between smoke-free legislation and hospitalizations for cardiac, cerebrovascular, and respiratory diseases: a meta-analysis," *Circulation*, vol. 126, no. 18, pp. 2177-2183, 2012.

²⁸ *Supra*, note 12.

²⁹ Aboaziza, E., & Eissenberg, T. (2015). Waterpipe tobacco smoking: what is the evidence that it supports nicotine/tobacco dependence? *Tobacco Control* 24:i44-i53.

³⁰ *Ibid*