



## Did you know?

- ▶ New Health Canada Safety Information Regarding Smoking Cessation Aid: Champix (Varenicline) <sup>6</sup>
- ▶ An update to the product's labeling will reflect current safety information about the risks of serious psychiatric side effects and increase awareness of these potential risks. As a result of these updates, prescribing information for Health Care providers will also change.
- ▶ Health Care Professionals prescribing varenicline to any of their patients seeking assistance in smoking cessation should be well informed of the risks, especially if they are prescribing varenicline to patients with pre existing depression or mental health problems, as these symptoms may worsen if administered the drug.
- ▶ Health Canada also advises that individuals taking varenicline report to their health care professional any "unusual thoughts, feelings or behaviors, especially those related to depression, aggression or self harm" <sup>6</sup>. Patients are also encouraged to stop taking the drug immediately should these behaviors occur. Health Canada will circulate these labeling changes to Health Care Professionals upon their completion <sup>6</sup>.

## In this Issue: Tobacco Cessation Pharmacology & Waterpipes

### Myths about Stop Smoking Medications

In January 2008, the OMA released a policy paper entitled *Rethinking Stop-Smoking Medications: Treatment Myths and Medical Realities*. What follows are some of these myths and the OMA's perspective on the medical realities <sup>5</sup>.

#### ***Nicotine is the harmful substance in cigarettes.***

**Medical Reality:** It is not nicotine, but the thousands of toxins present in tobacco and its combustion products, that are responsible for the vast majority of tobacco-caused disease.

#### ***Nicotine's addictive potential is the same regardless of whether nicotine is obtained through Nicotine Replacement Therapies (NRT) or cigarettes.***

**Medical Reality:** Cigarettes are far more addictive than nicotine replacement products primarily because of the way in which they deliver nicotine.

#### ***Patients with heart disease should not use nicotine replacement products.***

**Medical Reality:** It is more dangerous for patients with heart disease to continue to smoke than to use NRT. Given the seriousness of their medical condition, cardiac patients who cannot quit using non-pharmacologic methods should be among those first considered for NRT and other cessation medications.

#### ***Pregnant women should never use NRT.***

**Medical Reality:** NRT is safer than smoking for the pregnant woman and her fetus if she is unable to quit smoking with a behavioral intervention. Pregnant women who cannot quit using non-pharmacologic means should be considered for NRT.

#### ***Smokers under 18 should not use cessation medications.***

**Medical Reality:** Most daily smokers begin smoking before age 18, and are therefore already getting nicotine. The nicotine patch and gum are far safer than smoking. Cessation medications should be considered for all smokers, including those under 18.

#### ***Stop-smoking medications are not effective in helping people quit.***

**Medical Reality:** Cessation medications are effective with or without counseling. NRT and bupropion have each been found to approximately double quit rates compared to placebo.

#### ***The various nicotine replacements should not be used at the same time and/or in combination with bupropion.***

**Medical Reality:** The nicotine patch and gum/lozenge/inhaler may be used at the same time and/or in combination with bupropion.

#### ***Nicotine gum, inhaler, lozenge or the patch should only be used by those who are ready to quit smoking and should not be used by those who just want to reduce their tobacco use.***

**Medical Reality:** NRT can be used by people who are not yet ready or able to quit as, for some individuals, being tobacco-free is not a foreseeable goal. NRT may help these smokers take a "cigarette holiday" or, in some cases, substantially reduce their smoking as an interim, achievable step toward tobacco abstinence.

# THE Real Story of Hookah

As hookah use and shisha smoking become more popular in North America, the misconceptions around this practice continue to grow. Those who work in health care need to be well informed about the effects of hookah use so that they can in turn educate their patients about this potentially harmful lifestyle choice. Also, tobacco smoking with a water pipe is becoming more available and is attracting large numbers of youth and young adults.<sup>1</sup>

## What is Hookah?

Hookahs or water pipes come in a variety of sizes and designs but normally have the following four components<sup>2</sup>:

- ▶ A bowl where tobacco is placed and heated with embers or charcoal,
  - ▶ A vase or smoke chamber that is filled with water,
  - ▶ A pipe or stem which connects the bowl to the vase through a tube that transports the smoke down to the water and;
  - ▶ A hose (or several hoses) with a mouth piece through which the smoke is drawn from the vase into the smokers lungs.
- ▶ Regular tobacco can be smoked with a hookah, but more traditionally, flavored tobacco or 'shisha' is used instead. Normally, shisha consists of approximately 30% tobacco fermented with 70% honey, molasses, fruit and other additives. The mix of tobacco and sweeteners result in a flavored taste for the user and an aromatic smoke from the burning of the shisha<sup>2</sup>.



## Who is using Hookah?

Hookah use, both from its cultural roots to today's availability has most often been a social activity. Many hookahs come with several hoses attached so that many people can use it at once. The rise of hookah bars and cafés in many Canadian cities has also increased its popularity with university students and those in similar age groups. The advertising of hookah and shisha use has also been marketed to these age groups to parallel their social interests<sup>4</sup>. Using online blogs, chats and websites, shisha and hookah manufacturers and purveyors reach their target audience to spread the message that hookah use is safe, fun, relaxing, trendy and a great social activity for young people<sup>2</sup>.

## Popular Misconceptions and the Science of Hookah

Much of the current literature on hookah use tells us that the majority of those using these products believe that smoking tobacco this way is less harmful than cigarette smoking<sup>3</sup>. Water pipe smokers in one study believed that this activity was a safer and cheaper alternative to a night out in a bar. Many young people have not considered the health effects of hookah, mostly due to the lack of public education and safety warnings. Also, the flavoring of the tobacco and the idea that use of water in the hookah acts as a filter for the smoke has reinforced the idea that tobacco use in this form is safer than cigarettes<sup>3</sup>.

While the water does filter out some of the nicotine, smokers are still exposed to enough of this drug to become addicted. Also, since cigarette smokers alter their smoking habits to get enough nicotine to satisfy their addiction, it is likely that those who smoke their tobacco in a hookah would have to smoke longer and inhale higher amounts of smoke to get to the same nicotine levels as a cigarette<sup>2</sup>.

The length of hookah sessions and the increased amount of inhalations vs. smoking tobacco in a cigarette exposes smokers to an increased amount of harmful toxins and health effects. An individual who uses a hookah for 40-45 minutes may inhale as much smoke as if they were consuming 100 cigarettes<sup>4,1</sup>. In addition to smoking tobacco in a hookah for longer periods for increased nicotine exposure, smokers may increase the length of their hookah session due to perceived pleasantness and social gratification<sup>4</sup>.

The idea that using the hookah and or water as a filter to make the shisha less harmful is as old as the practice itself. The smoke that emerges from a water pipe contains all the toxins and carcinogens that cause cancer and other tobacco related diseases<sup>1</sup>. Many accessories for the water pipe have been sold with adverts that claim these products will reduce the harmful effects of smoking, but this is not the case. Any individual who uses a hookah, no matter in what form, will be exposed to the toxins and risk factors that can lead to tobacco caused disease and death<sup>1</sup>.

## Health Effects

The health effects and risks of smoking tobacco or shisha from a water pipe are similar to smoking tobacco from cigarettes<sup>4</sup>. However, because this tobacco use trend is relatively new in Canada, there is less research about the risks from hookah use specifically and what the hazards are over the long term. The current literature agrees on the following detrimental health effects from hookah use<sup>4,3,1</sup>:

- ▶ Throat problems, harsh sensation from poor quality of smoke in a longer session<sup>3</sup>.
- ▶ Increased risk of cardiovascular disease and lung, oral, esophagus and stomach cancer<sup>3,2</sup>.
- ▶ Due to the social nature of hookah use, individuals are higher risk for communicable diseases such as tuberculosis, hepatitis and herpes through shared mouthpieces and heated moist smoke (which is a perfect place for these microorganisms to grow)<sup>4</sup>. Also, most hookah bars or cafes are not required to sterilize the mouth pieces of the hose between users<sup>2</sup>.
- ▶ Exposure to hundreds of toxic chemicals and compounds in the hookah smoke, many of them proven to be cancer causing<sup>1,2</sup>.
- ▶ The social aspect of hookah use and the flavoring of shisha may entice young people to start smoking hookah and potentially get addicted to nicotine and perhaps move on to cigarette smoking<sup>1</sup>.
- ▶ The commonly used sources to heat the shisha are also likely to increase health risks as when these fuels are burned, they produce their own toxins such as carbon monoxide and carcinogens<sup>1</sup>.
- ▶ Increased risk of respiratory irritation, infection or disease<sup>2</sup>.

## The Future of Hookahs & Tobacco Control

It is clear that we have only scratched the surface in learning more about hookah use. Today's researchers and academics, as well as many public health and health care organizations are working to create policy and discover the long term effects of hookah use. Suggestions gathered from the literature about future tobacco control which includes hookah use focuses on three main issues:

1. More epidemiological research needs to be completed so that we have solid long term evidence about the health risks and effects of this practice, including the effects of SHS from water pipes<sup>1,2,4</sup>.
2. Legislation and policies need to be created and changed as necessary to control not only hookah bars and cafes, but the manufacturing, selling and marketing of hookahs, shisha, all related products as well as who can purchase them<sup>2,4</sup>.
3. More public education needs to be done to increase the level of knowledge that young people have about hookah and to dispel the myth that it is a safer alternative than cigarette smoking. Also, additional research to understand why these attitudes occur is needed<sup>4</sup>.

## Alternate Tobacco Products

**AN UPDATE:** Industry Pursues Capacity

A recent spate of moves by major North American cigarette makers to acquire manufacturers of smokeless tobacco products suggests that the industry is increasingly looking to alternative tobacco products to make up for the passing of many laws regarding the ban of smoking in a variety of public spaces, both indoor and outdoor.

Smokeless products still remain a niche.<sup>12</sup> In Ontario, for example, use is relatively low (about 1.5-2.5% among youth). In parallel with recent industry growth moves in the category, published studies have nevertheless made clear that use of smokeless tobacco is by no means risk-free and that health risks increase with intensity of use.<sup>13,14</sup>

Companies are increasingly moving to a greater emphasis on non-combustible products for several reasons:

- ▶ Smokeless tobacco such as snus - a teabag-size pouch containing ground tobacco - can be positioned as less-harmful than cigarettes, although there is considerable debate about the degree of benefit: while the Tobacco Advisory Group of the UK's Royal College has noted that snus can be effective as a harm reduction strategy<sup>12</sup> the European Union has banned the product;
- ▶ All forms of smokeless tobacco, especially snus and dissolvable tobacco lozenges (now being test-marketed in the US), do not require users to spit out residual juice when using the product. This allows users to maintain nicotine titration in places where smoking is banned as protection, thus reducing the potential impact of such bans on cessation rates. This use of smokeless tobacco could also undermine the use of non-tobacco nicotine replacement therapies in similar settings and further retard intentions to quit among some smokers<sup>12</sup>;
- ▶ The extent to which smokeless products can serve as 'gateways' to nicotine addiction among the young is a question without a clear answer at present. In one example, use of chewing tobacco among high school sports teams in Northern Ontario has been widely reported by area health units, and youth groups organized under the province's tobacco control strategy frequently target smokeless use by their peers as a serious problem<sup>12</sup>. Whether or not use among young people leads to smoking uptake health educators need to educate youth about the serious health effects of the use of these products as well.

Beyond smokeless products, inspectors in some Ontario health units have noted increasing use of waterpipes. Users appear to believe that because tobacco smoke is drawn through water, it is less harmful than other forms of smoking. The most recent research does not support this conclusion, and notes that far too little is known about the health impacts of waterpipe use: a lead Cochrane Researcher recently called for comprehensive research efforts to combat "this looming epidemic".<sup>4</sup>

Non-combustible products and combustible alternatives to cigarettes all carry significant health risks: the fact that some may not cause the same degree of morbidity and mortality as cigarette smoking should not deter health authorities from working aggressively to reduce their prevalence and cut off another point of access for the industry to our youth.

# Smoking-related drug interactions

We all know that smoking affects health. It is less widely known that smoking may decrease the effectiveness of a wide variety of commonly prescribed medications, thereby seriously complicating our ability to manage certain diseases.

Tobacco and cigarette smoke contain more than 3000 identified chemicals including nicotine, insecticides, carbon monoxide, formaldehyde, and nitric oxide. These chemicals have a direct impact on health, increasing one's risk for a variety of diseases ranging from cancer to heart disease to periodontal disease.

But the effects of smoking go beyond its widely recognized effects on health. Evidence shows that the chemicals in tobacco and cigarette smoke can actually decrease the effectiveness of many medications and may increase the likelihood of adverse reactions to other drugs.<sup>7</sup> The result can be a worsening of disease symptoms, and is a serious complicating factor in the management of a patient population that is already at high risk for many serious conditions.

Tobacco use affects the action of drugs either by interfering with their absorption, metabolism, or clearance, or by changing their expected response. For example, a group of aromatic hydrocarbons in cigarette smoke are thought to contribute to the induction of liver enzymes, leading to increased drug metabolism in smokers.<sup>8,9</sup>

Both regular smoking and abrupt changes in smoking patterns can cause alterations in drug metabolism. Even if a person quits smoking, these effects can last for several months.<sup>9</sup> This means that people who smoke or who have recently quit smoking are at risk of experiencing unpredictable results from some courses of drug therapy.<sup>7</sup> The effects are particularly evident in younger patients (people under 40 years old) and heavy smokers (people who smoke more than 20 cigarettes per day).<sup>9</sup>

Some of the ways in which smoking can effect drug therapy and disease management include:

- Women who smoke and who take oral contraceptives have an increased risk of heart attacks, stroke and blood clots. Smoking may also reduce the effectiveness of oral contraceptives.<sup>8,9</sup>
- Diabetics whose smoking patterns have changed may need to have their insulin levels adjusted. Smoking increases peripheral vasoconstriction, thereby decreasing the uptake of insulin.<sup>8,9</sup>
- Smokers are at an increased risk of cardiovascular events and a decreased response to certain cardiovascular medications, including certain anticoagulants and beta blockers.<sup>8,9,10</sup>
- In some cases, smoking decreases the effectiveness of antidepressants and antipsychotics.<sup>8,9,11</sup>

For people who smoke or who have recently changed their smoking practices, the effects of tobacco use on their drug therapy must be considered. Only then can patients can then be properly monitored, and therapy adjusted accordingly.

Health-care practitioners are encouraged to speak to their patient about their smoking status every time that they prescribe or dispense a medication. This includes asking if they smoke, how much they smoke, and whether their smoking patterns have changed since their last visit. All information should be recorded in the patient profile.



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## References:

1. World Health Organization. (2005). Water pipe tobacco smoking: Health effects, research needs and recommended actions by regulators. WHO Study Group on Tobacco Product Regulation.
2. The Bacchus Network. (2008). Reducing hookah use: A public health challenge for the 21st century. Retrieved from [www.tobaccofree.org](http://www.tobaccofree.org) on Feb 2, 2009.
3. Roskin, J. & Aveyard, P. (2009). Canadian and English students' beliefs about waterpipe smoking: a qualitative study. BMC Public Health, 9.
4. America Lung Association Tobacco Policy Trend Alert. (2007). An emerging deadly trend: Waterpipe tobacco use. Tobacco Policy Project.
5. The Ontario Medical Association, 2008. Rethinking Stop-Smoking Medications: Treatment Myths and Medical Realities Retrieved from <http://www.oma.org/Health/tobacco/index.asp>, January 6th, 2009.
6. Health Canada, retrieved from [http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/\\_2009/2009\\_01-eng.php](http://www.hc-sc.gc.ca/ahc-asc/media/advisories-avis/_2009/2009_01-eng.php), January 5th, 2009.
7. Wichman, K. (2001). Smoking and drug/disease interactions. Canadian Pharmaceutical Journal, 134 (10), pp. 37-39.
8. Schein, J.R. (1995). Cigarette smoking and clinically significant drug interactions. Ann Pharmacother, 29 (11), pp. 1139-1147.
9. Tatro DS. Effects of smoking on drug therapy. Drug Newsletter 1994;13(7):49-51.
10. Colucci, V.J., & Knapp, J.F. (2001). Increase in international normalized ratio associated with smoking cessation. Ann Pharmacother, 35 (3), pp. 385-386.
11. Bezchlibnyk-Butler K.Z. & Jeffries J.J. (eds). (2001). Clinical Handbook of Psychotropic Drugs. 11th edition. Seattle: Hogrefe and Huber.
12. Rossel, S. (2009). Smokeless tobacco: the industry's miracle cure? Tobacco Journal International.
13. Boffetta, P., Hecht, S., Gray, N., Gupta, P. & Straif, K. (2008). Smokeless tobacco and cancer. The Lancet, 9, pp. 667-75.
14. Henley, S.J., Connell, C.J., Richter, P., Husten, C., Pechacek, T., Calle, E.E. & Thun, M. J. (2007). Tobacco -related disease mortality among men who switched from cigarettes to spit tobacco. Tobacco Control, 16, pp. 22-28.