

# HOOKAH SMOKING

## A Growing Threat to Public Health

Hookah (or waterpipe) smoking is gaining popularity nationwide, especially among urban youth, college students, and young professionals.<sup>1, 2</sup> Despite the growing popularity and increased adoption of state and local smokefree workplace laws, hookah bars remain largely unregulated. In addition, many hookah smokers consider the practice less harmful than smoking cigarettes.<sup>3</sup> This is troubling from a public health perspective since evidence shows that hookah smoking carries many of the same health risks and has been linked to many of the same diseases caused by cigarette smoking.<sup>2</sup> As the American Lung Association and its public health partners continue to move forward to protect workers and patrons from the harmful effects of secondhand smoke, it is vital that we address the health risks hookah use poses to youth and young adults, and close the loopholes in smokefree workplace laws that often exempt hookah bars.

Originating in ancient Persia and India, hookah smoking is a highly social activity during which users smoke tobacco filtered through a waterpipe

that is often shared by the group.<sup>4</sup> Hookah tobacco often contains flavors, including candy and fruit flavors such as orange, white grape or chocolate mint, which help mask the harshness of smoking.<sup>5</sup> Hookah smoking is most common in the United States among young adults ages 18 to 24; however, some studies suggest significant use among middle and high school students.<sup>6</sup> Hookah smoking may serve as a bridge to other forms of tobacco use and is falsely perceived as less harmful than cigarette smoking.<sup>7</sup>

Hookah smoking has increased with the growth of retail establishments that rent waterpipes and sell the flavored tobacco mixtures. Laws and regulations governing the use of hookahs in public places vary from state to state and sometimes from community to community. In many communities, hookah bars and cafes are exempt from smokefree air laws. Given the well-documented dangers of tobacco smoke, stringent policies to limit hookah smoking—especially among youth—are needed to halt this emerging public health threat.



## WHAT IS A HOOKAH AND HOW IS IT USED?

A hookah is a waterpipe used to pass charcoal heated air through a tobacco mixture and ultimately through a water-filled chamber. The charcoal or burning embers are placed on top of a perforated aluminum foil and the tobacco mixture is placed below. The user inhales the water filtered smoke through a tube and mouthpiece. The water lowers the temperature of the smoke. Hookahs are often shared by several users in a smoking session. The tobacco mixtures used in the hookahs are called shisha, boory, narghile, goza, arghileh, or hubble bubble. They vary in composition, with some having flavorings and additives that can reduce the nicotine content.

# PREVALENCE AND RISK FACTORS

## What We Know

Most national and state surveys of tobacco use do not track hookah smoking. As a result, the public health community must rely primarily on research conducted with college students and a limited number of state-based surveys to ascertain the extent of hookah use in the U.S. Despite these limitations, a troubling picture of this trend is emerging. Estimates of hookah use among college students over the past month and lifetime range from 9.5 percent to 20.4 percent and 41 percent to 48 percent, respectively.<sup>5, 8</sup> In a sample of users from Memphis, Tennessee and Richmond, Virginia, researchers reported most users were younger than 26 years of age, male, and college graduates or students. Greater frequency of use was found among people who owned a waterpipe, shared hookahs with more than one other person, and were younger when they first used a hookah.<sup>2</sup>

In a recent national survey of 12<sup>th</sup> graders, 17 percent reported smoking a hookah within the past year.<sup>9</sup> A survey of Arizona high school and middle school students found 10.3 percent and 2.1 percent reported having smoked a hookah, respectively.<sup>10</sup> Data from the Florida Youth Tobacco survey indicate that 11 percent of high school students and four percent of middle school students reported using hookahs.<sup>6</sup> Cigarette use and hookah use were found to be associated with each other, but it is unclear whether cigarette smoking leads to hookah smoking, vice versa, or an unknown third factor affects both.<sup>6</sup> Middle school and high school students who viewed cigarettes as helpful in relieving stress and in social situations were more likely to report hookah use.<sup>6</sup> Evidence also suggests 18 to 24 year olds who smoke cigarettes and marijuana, consume alcohol, or use other illicit drugs have higher rates of hookah use.<sup>8</sup>

## **FAR FROM SAFE**

### **Why Hookah Use Needs Greater Attention**

#### **Hookah use carries many of the same health risks as cigarette smoking.**

Hookah smoking appears to be associated with lung cancer, respiratory disease, and low birth weight in babies.<sup>11</sup> Changes measured in the amount of air moved in and out of the lungs when smokers breathe suggest that cigarette smoking and hookah smoking have similar effects on a person's breathing.<sup>12, 13</sup> The combination of charcoal and tobacco is unique to hookah smoking and the charcoal has its own set of health effects in addition to the health effects associated with tobacco use.<sup>14, 12</sup> Additionally, the use of shared mouthpieces during smoking sessions can spread infectious diseases such as tuberculosis, herpes, influenza, and hepatitis.<sup>14</sup>

#### **Hookah smokers may be exposed to more nicotine than cigarette smokers.**

Many users think hookah smoking is less addictive and exposes them to less nicotine than cigarette smoking.<sup>2, 15</sup> As research on the health effects of waterpipe smoking increases, studies suggest hookah smokers may inhale larger amounts of smoke than cigarette smokers during a single smoking session.<sup>7, 11</sup> Hookah smoking sessions are generally longer (1/2 hour or more) which results in considerably greater nicotine exposure.<sup>16, 5</sup> In one study that pooled results from other similar studies looking at cotinine (a by-product of nicotine in urine and blood), researchers estimated daily waterpipe use to be equivalent to smoking 10 cigarettes a day.<sup>16</sup> When smoking a hookah, very little nicotine is filtered out when the smoke passes through the water in the pipe, with less than a five percent decrease observed.<sup>16</sup>

#### **Increased availability and flavored tobacco make hookah use attractive, especially to youth and young adults.**

A recent review of the global waterpipe smoking trend suggests hookah use may "represent the second global tobacco epidemic since the cigarette."<sup>7</sup> Hookahs are often smoked in private homes. Becoming increasingly common is patrons renting hookahs and purchasing flavored tobacco in public places such as bars, cafes, and lounges.<sup>5, 2, 6</sup> Two-thirds of states have hookah bars and cafes.<sup>12</sup> Many of these establishments are located near college campuses and students can purchase pipes and accessories online.<sup>5, 2, 6</sup> Additionally, some hookah establishments can cater to youth under the age of 21 as long as alcohol is not served.

*continued on next page* ➡

## FAR FROM SAFE

### Why Hookah Use Needs Greater Attention *(continued)*

#### Youth and young adults perceive hookah use as less dangerous than smoking cigarettes.

The increasing popularity of hookah smoking is in part driven by the social context in which use occurs (e.g., among friends in popular social settings), the attractive flavors used in the tobacco mixtures and the perception that it is safer and less irritating than cigarette smoking.<sup>2, 12, 14</sup> *The American Journal of Public Health* recently published findings from the California Tobacco Study that showed a 40 percent increase in hookah smoking among California adults between 2005 and 2008, much of this use in young, college educated adults.<sup>17</sup> Surveys of youth and young adults reveal that this population believes they will experience fewer health effects from hookah smoking than from cigarette smoking.<sup>2, 12</sup> In a survey of attitudes among hookah smokers in Richmond and Memphis the majority of smokers believed that their risk of addiction is less, and reported that they could quit at any time.<sup>2</sup> Most reported that if they switched from cigarettes to hookahs it would reduce their health risks from tobacco.<sup>2</sup> Researchers also report that hookah smoke may be less irritating to smokers, presumably because the smoke is filtered through water before inhalation occurs.<sup>7</sup>

#### Regulatory environment is murky and varies from state to state.

Despite widespread adoption of smokefree workplace legislation in many states and localities, tobacco stores and hookah bars continue to operate. They are often exempted from the requirements that prohibit smoking in public places because they sell tobacco and are classified primarily as tobacco retail establishments. The retail exemption has sometimes been interpreted to mean that patrons can sample the tobacco products they purchase on site.<sup>18</sup> Some establishments qualify for exemptions because they do not serve alcohol on the premises.<sup>18</sup> The definition of smoking can also be an impediment to effective regulation and enforcement, because water pipe smoking is not consistently defined as smoking across jurisdictions.<sup>18, 20</sup>

With the exception of menthol cigarettes, the U.S. Food and Drug Administration (FDA) prohibits the sale of cigarettes with “characterizing flavors” but does not regulate other flavored tobacco products such as those used in waterpipes. The FDA is currently examining options for regulating these products, which, according to a fact sheet posted on FDA’s website, the agency considers unsafe and harmful.<sup>19</sup>

## REGULATING HOOKAH USE

### What Some States and Local Governments Are Doing

In some states, bars and lounges that derive a portion of their income from the sale of non-cigarette tobacco products are exempt from smokefree workplace legislation that prohibits smoking in indoor public places.<sup>20</sup> New Jersey exempts bars and restaurants from their smokefree air ordinance if more than 15 percent of income is from sale of these products and in New York, a similar exemption applies if more than 10 percent of the income is derived from such sales.<sup>18</sup> Michigan's 2010 'Smoke Free Air Law' prohibits hookah smoking unless an exemption as a tobacco specialty store is obtained, and as a tobacco specialty store they can't have any type of liquor, food or restaurant license. North Carolina limits hookah smoking to establishments that do not serve food or alcohol.<sup>21</sup> Boston and Maine have ended their indoor-smoking exemptions that previously allowed customers at hookah bars to smoke indoors.<sup>1</sup>

San Francisco recently applied California's state law prohibiting smoking inside enclosed workplaces to hookah establishments, prohibiting the serving of food or alcohol in those establishments and requiring that they be owner-occupied and located in commercial buildings.<sup>22</sup> This local interpretation was necessary because the California state law does not explicitly reference hookah bars and lounges.<sup>21</sup> Some communities in California seem to be interpreting state law differently, however, with Sacramento permitting indoor hookah smoking in family-owned establishments.<sup>21</sup>

# POLICY RECOMMENDATIONS

A broad range of strategies are needed to reverse the accelerating trend of hookah use in the United States. To accomplish this objective, the American Lung Association recommends the following:

- 1 Close loopholes in state and local laws that exempt hookah bars.** States with smokefree workplace laws often include specific exemptions that enable hookah establishments to continue to allow smoking. In some states and local jurisdictions, hookah bars can qualify as tobacco retail stores, tobacco/cigar bars, private clubs, or owner-operated businesses. Exemptions for hookah bars should be closed in existing laws when possible and not included in new smokefree workplace laws.
- 2 Close loopholes in laws/regulations by clearly defining smoking to include waterpipes.** State laws should clearly include waterpipes in their definitions of smoking. This loophole has been used to exempt hookah bars from laws prohibiting smoking in public places and workplaces in some states.
- 3 FDA should assert authority over tobacco used in hookahs.** The U.S. Food and Drug Administration should assert authority over the manufacturing and marketing of tobacco used in waterpipes, and apply regulations to these products as needed to protect public health.
- 4 Prohibit flavorings in hookah tobacco.** Federal, state or local laws/regulations should be used to eliminate flavorings in hookah tobacco. Flavorings are one of the factors associated with increasing use in youth and young adults. Prohibiting flavors is likely to lessen the appeal of hookah smoking.
- 5 Include questions in national surveys to provide data on hookah use to the public health community.** National surveys such as the Behavioral Risk Factor Surveillance Survey (BRFSS) and the Youth Risk Behavior Survey (YRBS) should include questions about hookah smoking so that better estimates of national incidence and prevalence will be available for policymakers and public health professionals.
- 6 Implement and enforce laws prohibiting the sale of hookah tobacco and its smoking paraphernalia to minors.** The varying definitions of smoking in some jurisdictions allow minors to be admitted to establishments where hookahs are used and/or where paraphernalia is sold. Closing these loopholes will help prevent minors from purchasing hookah tobacco or its paraphernalia.
- 7 Use licensure requirements or zoning rules to regulate hookah establishments.** License and zoning requirements for the sale of tobacco, alcohol or food, hours of operation, age of patrons, and live music or belly dancing can be tools to restrict hookahs bars and lounges. Some jurisdictions prohibit tobacco use and the sale of food and alcohol on the premises. Zoning regulations could prohibit hookah bars and lounges near college campuses.

In addition to the policy recommendations outlined above, alternate measures to discourage hookah use should also be considered. Prohibiting advertising in college newspapers or websites can help to discourage college students from frequenting hookah establishments. Additionally, public awareness campaigns that highlight the health effects of hookahs and counter the myths about reduced harm (compared to cigarette smoking) could help build public support for more effective regulations.

**Conclusions** A comprehensive approach to limiting access to hookah use is critical to averting a potentially deadly trend. Hookah smoking is a growing public health threat that may lead to a resurgence in tobacco use among vulnerable populations. Both the American Lung Association and the World Health Organization recommend that laws or regulations prohibiting cigarette or other tobacco use in public places apply to hookah smoking.<sup>18</sup> Efforts should be made to restrict hookah use, especially among teens and young adults.

## RESOURCES

**American Academy of Pediatrics  
Julius P. Richmond Center of Excellence**  
[www.aap.org/richmondcenter/  
RCEwebinars.html#webinar2](http://www.aap.org/richmondcenter/RCEwebinars.html#webinar2)

**American Cancer Society**  
[www.njgasp.org/ACS\\_Hookah\\_  
Factsheet.pdf](http://www.njgasp.org/ACS_Hookah_Factsheet.pdf)

**Americans for Nonsmokers' Rights**  
[www.no-smoke.org/goingsmokefree.  
php?id=581](http://www.no-smoke.org/goingsmokefree.php?id=581)

**American Lung Association State  
Legislated Actions on Tobacco Issues**  
[www.lungusa2.org/slati/search.php](http://www.lungusa2.org/slati/search.php)

**Tobacco Free U.org  
(The Bacchus Network)**  
[www.tobaccofreeu.org/pdf/  
HookahWhitePaper.pdf](http://www.tobaccofreeu.org/pdf/HookahWhitePaper.pdf)

**Tobacco Control Network**  
[www.ttac.org/tcn/peers/other/  
08.12.10.html](http://www.ttac.org/tcn/peers/other/08.12.10.html)

## REFERENCES

- <sup>1</sup> Quenqua, D. Putting a crimp in the hookah. *New York Times*. May 2011. [http://www.nytimes.com/2011/05/31/health/31hookah.html?\\_r=2](http://www.nytimes.com/2011/05/31/health/31hookah.html?_r=2)
- <sup>2</sup> Ward et al. Characteristics of US water pipe users: A preliminary report. *Nicotine and Tobacco Research*. 2007 December; 9(12):1339-1346.
- <sup>3</sup> American Lung Association. An emerging deadly trend: Waterpipe tobacco use. (PDF-222 KB) Washington: American Lung Association, 2007 [accessed 2011 Feb 15].
- <sup>4</sup> Chaaya M et al. Argileh smoking among university students: A new tobacco epidemic. *Nicotine & Tobacco Research* [serial online]. June 2004;6(3):457-463.
- <sup>5</sup> Harvard Mental Health Letter. The hazards of hookah: Why water pipe smoking raises concerns about addiction and other health problems. *Harvard Health Publications*. 2008 March; 24(9).
- <sup>6</sup> Barnett et al. Waterpipe tobacco smoking among middle and high school students. *Am J Pub Hlth*. 2009; 15:1225.
- <sup>7</sup> Maziak, W. The global epidemic of waterpipe smoking. *Addictive Behavior*. 2011; 36:1-5.
- <sup>8</sup> Dugas et al. Waterpipe smoking among North American youths. *Pediatrics*. 2010. 125(6):1184-1189.
- <sup>9</sup> Johnston, LD et al. Monitoring the future national results on adolescent drug use: Overview of key findings, 2010. Ann Arbor, MI: Institute for Social Research, The University of Michigan, 2011.
- <sup>10</sup> Primack et al. Waterpipe and cigarette smoking among middle and high school students in Arizona. *Pediatrics*. 2009; 123(2):e282-e288.
- <sup>11</sup> Akl et al. The effects of waterpipe tobacco smoking on health outcomes: a systematic review. *Int J Epidemiol*. 2010; 39(3):834-857.
- <sup>12</sup> Chan et al. Up in Smoke: The fallacy of the harmless hookah. *Chest*. 2011; 139:737-738.
- <sup>13</sup> Hakim et al. The acute effects of water-pipe smoking on the cardiorespiratory system. *Chest*. 2011; 139(4):775-781.
- <sup>14</sup> Centers for Disease Control and Prevention. Fact sheet on hookah smoking. [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets/tobacco\\_industry/hookahs/](http://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/hookahs/) Accessed August 20, 2011.
- <sup>15</sup> Primack et al. Prevalence of and associations with waterpipe tobacco smoking among US university students. *Ann Behav Med*. 2008; 36:81-86.
- <sup>16</sup> Neergard et al. Waterpipe exposure and nicotine exposure: A review of the current evidence. *Nicotine and Tobacco Research*. 2007; 9(10):987-994.
- <sup>17</sup> Smith, J et al. Increasing hookah use in California. *American Journal of Public Health*. 10.2105/AJPH.2011.300196. Accessed September 2, 2011.
- <sup>18</sup> Noonan, D. Exemptions for hookah bars in clean indoor air legislation: A public health concern. *Public Health Nursing*. 2010; Vol 27 (1):9-53.
- <sup>19</sup> Food and Drug Administration. Flavored tobacco product fact sheet. <http://www.fda.gov/downloads/TobaccoProducts/ProtectingKidsfromTobacco/FlavoredTobacco/UCM183214.pdf>. Accessed August 26, 2011.
- <sup>20</sup> Tobacco Control Network. State hookah regulations. October 12, 2010. <http://www.ttac.org/tcn/peers/other/08.12.10.html>.
- <sup>21</sup> News 10. Sacramento hookah lounge owners react to San Francisco ban on indoor smoking. <http://www.news10.net/news/local/story.aspx?storyid=149395>. Accessed August 20, 2011.
- <sup>22</sup> CBS San Francisco. Closer look: San Francisco hookah lounges snuffed out. <http://sanfrancisco.cbslocal.com/2011/08/03/closer-look-san-francisco-hookah-lounges-snuffed-out/> August 3, 2011.

[www.lungusa.org](http://www.lungusa.org)

Paid for with funds provided from the U.S. Department of Health and Human Services