

# An Alarming Unrecognized Pollutant of Indoor Private and Public Space: Waterpipe Tobacco Smoke



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Worldwide, over 1.1 billion people smoke tobacco with men having higher prevalence than women. In Lebanon, current prevalence of tobacco smoking (including waterpipe tobacco smoking) among adults is 43% males, 34% females, of whom, 32% males and 21 % females are cigarette smokers. In the Arab world, the prevalence of cigarette smoking among men is higher than in women; with 51.3% in Syria, 39.7% in Palestine, and 42.1% in Lebanon among men, and 8.4% in Syria, 10.9% in Jordan, and 24.3% Lebanon among women. (Abdulrahim et al., 2018). Waterpipe tobacco smoking is also a major problem both in the Arab world and in other parts of the world. Amongst youth, current waterpipe tobacco smoking among school students is higher in the following countries; in the United States, especially among Arab Americans (12%-15%), the Arabic Gulf region (9%-16%), Estonia (21%), and Lebanon (25%). As for university students: Arabic Gulf region (6%), the United Kingdom (8%), the United States (10%), Syria (15%), Lebanon (28%), and Pakistan (33%).

## How toxic is waterpipe tobacco smoke?

Waterpipe tobacco smoke contains many gases and particles which result from the burning of the charcoal on the tobacco. All kinds of waterpipe tobacco including Ajami and Moasal are harmful to health. Some of the emissions with the most serious health consequences are lead, chromium, nickel, and arsenic. In addition to those heavy metals, also high levels of CO are emitted from waterpipe tobacco smoking. Studies have shown that when CO levels are measured in the blood of waterpipe tobacco smokers, very high levels are detected. Studies have also reported on waterpipe tobacco smoking producing four times the acetaldehyde, 27 times the formaldehyde and 38 times the yield of benzo[a]pyrene when compared with cigarette emissions. Unfortunately the sweet odor which waterpipe tobacco smokers experience while smoking is very misleading. Although generally people are offended from the smell of cigarette smoking this is often not the case from waterpipe tobacco smoking.

These chemicals are delivered into the human body in tiny particles that are able to reach very deep into the airway, significantly affecting the human health.

## Is waterpipe tobacco smoking addictive?

Just like cigarettes, waterpipe tobacco contains nicotine. Since waterpipe tobacco smoking requires many puffs, and a longer duration than smoking cigarettes, then nicotine will get transferred to the smoker. Studies showed nicotine dependence from waterpipe tobacco smoking, leading to smoking waterpipe on a daily basis, regardless if smoking is alone at home, or in a social gathering.

## What are the health effects from waterpipe

## tobacco smoking?

Waterpipe tobacco smoking targets many organs in the body mainly the respiratory, and cardiovascular systems, leading to several diseases and cancers; in addition to periodontal and oral diseases. Acute cardiovascular health effects include increased heart rates and blood pressure, resulting in Coronary Artery Disease (CAD); a long term cardiovascular effect.

Respiratory health effects include: short term effects, decrease in oxygen saturation, and increase in respiratory rate, and carbon monoxide (CO) toxicity. Some of the long term health effects include: increase in exhaled CO, by increase in COHb (compromising transfer of oxygen to the brain and other organs), and decrease respiratory function.

In addition sharing the waterpipe hose can lead to the spread of serious infectious diseases.

Harm from waterpipe tobacco smoking is not only limited to harming one's self, but a pregnant mother can harm her unborn child. Waterpipe tobacco smoking is linked to low birthweight, pulmonary complications, and untimely infant mortality.

## What should be done to avoid this catastrophic unrecognized source of indoor air pollution?

At home: If you are smoking waterpipe indoors you need to move to an outdoor area or better stop all together. Children and other individuals who live with waterpipe smokers that smoke indoors are exposed to multiple toxic cancer causing compounds which compromise their health. At the workplace: Employers should not allow smoking of any kind in their workplace. Employees should ask for their right to breath clean air.

At café's and restaurants: Banning indoor smoking of waterpipe is the only way to protect customers and employees from the second hand smoke emissions of the waterpipe. Many studies have documented that air quality levels in indoor waterpipe cafes are hazardous to human health. This is the responsibility of the restaurants and café, owners as well as the government who should be very serious in enforcing bans.

At a national level: The WHO recommends that waterpipes be prohibited in public places with bans on cigarette and other forms of tobacco use to protect the health and safety of the public. In Lebanon, the restaurants and cafés serving the waterpipe should comply with Law 174 which bans indoor smoking of all tobacco products. The Lebanese government should enforce Law 174.

Toxicants emitted from waterpipe tobacco smoking

