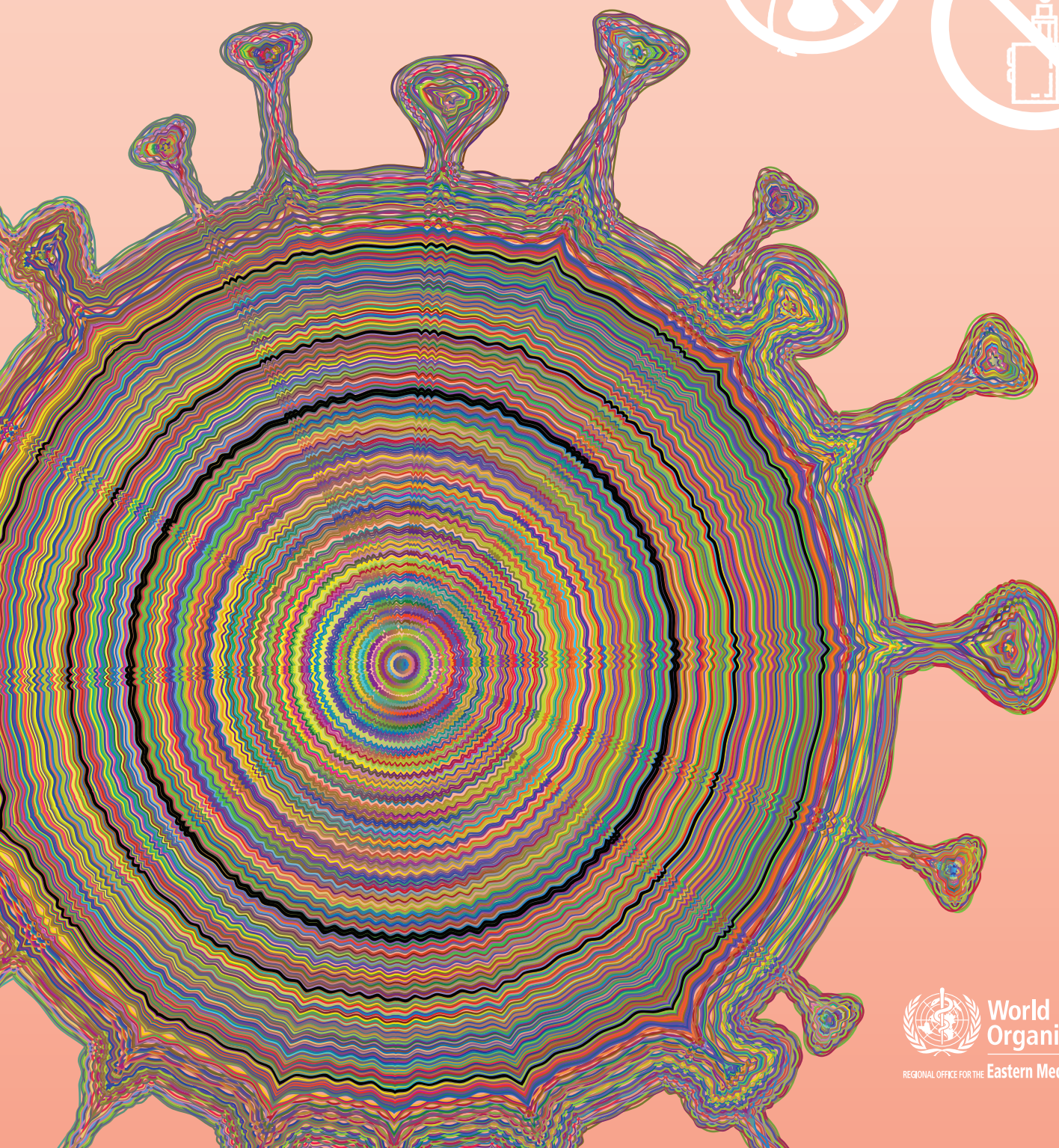


Q&A on tobacco, waterpipe and e-cigarette use in the context of COVID-19



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Q&A on tobacco, waterpipe and e-cigarette use in the context of COVID-19¹

This document is based on, and benefits from, the most recent evidence on COVID-19 and tobacco use. Although evidence is still accumulating on the links between COVID-19 and tobacco, waterpipe and e-products use, current research suggests a possible association between smoking and increased severity of COVID-19 symptoms. Therefore, it is important to raise awareness in this area. There are still research gaps that need to be addressed and, as more research data become available, the document will be updated accordingly.

What are the potential links between tobacco use and COVID-19?

Tobacco use may increase the risk of suffering from serious symptoms of COVID-19. Early research indicates that, compared to non-smokers, having a history of smoking may increase the chance of adverse health outcomes in patients with COVID-19 (1–4).

Smoking is known to be a risk factor for many other respiratory infections including colds, influenza, pneumonia, chronic obstructive pulmonary disease (COPD) and tuberculosis (5). The effects of smoking on the respiratory system make it more likely that smokers contract these diseases and suffer from their more severe symptoms (6,7). Smoking is also associated with increased development of acute respiratory distress syndrome, a key complication in severe cases of COVID-19 (8), among people with severe respiratory infections (9,10).

Any kind of tobacco smoking is harmful to bodily systems, especially the cardiovascular (11,12) and respiratory systems. COVID-19 can also harm these systems. Evidence from China shows that people who have cardiovascular and respiratory conditions caused by tobacco use, or otherwise, may be at higher risk of developing severe COVID-19 symptoms (13,14). Research on 55 924 laboratory-confirmed cases of COVID-19 in China shows the crude fatality rate is much higher among patients with cardiovascular disease, diabetes, hypertension, chronic respiratory disease or cancer than those with no pre-existing chronic medical conditions (15). This demonstrates that these pre-existing conditions

may increase the vulnerability of such individuals to COVID-19.

Tobacco use has a huge impact on respiratory health and is the most common cause of lung cancer (16). It is also the most important risk factor for COPD, which causes swelling and rupturing of air sacs in the lungs reducing their capacity to take in oxygen and expel carbon dioxide, as well as build-up of mucus resulting in painful coughing and breathing difficulties (17–19). This may have implications for smokers, given that the virus that causes COVID-19 primarily affects the respiratory system, often causing mild to severe respiratory damage (15).

There is a possible increased risk of more serious symptoms among COVID-19 patients who have underlying cardiovascular conditions (20,21). SARS-CoV-2, the virus that causes COVID-19, is from the same family as MERS-CoV and SARS-CoV, both of which are associated with cardiovascular damage (either acute or chronic) (22,23). There is evidence that COVID-19 patients with more severe symptoms often have heart-related complications (24). The effects of COVID-19 on the cardiovascular system could thus make pre-existing cardiovascular conditions worse. This relationship between COVID-19 and cardiovascular health is

¹ All countries in the Eastern Mediterranean Region have reported cases of COVID-19. Regularly updated information about COVID-19 and WHO's work to support Member States can be found at: <http://www.emro.who.int/health-topics/coronavirus/index.html>. For information on countries that have taken action to strengthen tobacco control in light of COVID-19 contact the Tobacco Free Initiative, WHO Regional Office for the Eastern Mediterranean, by email: emrgotfi@who.int.

important, because tobacco use and exposure to second-hand smoke are major causes of cardiovascular disease (25). Additionally, a weaker cardiovascular system among COVID-19 patients with a history of tobacco use could make such patients more vulnerable to severe symptoms of the disease (26). However, as COVID-19 is a newly identified disease, the link between tobacco use and COVID-19 needs further documentation and research.

How can the use of waterpipe contribute to the spread of COVID-19?

The main ingredient used in waterpipes is tobacco. The use of waterpipe has both acute and long-term harmful effects on the respiratory and cardiovascular systems (27,28), likely increasing the risk of disease including coronary artery disease and COPD (29).

The communal nature of waterpipe smoking means that a single mouthpiece and hose are often shared between users, especially in social settings (30). In addition, the waterpipe apparatus itself (including the hose and chamber) may provide an environment that promotes the survival of microorganisms outside the body. Most cafés tend not to clean the waterpipe equipment, including the water jar, after each smoking session because washing and cleaning waterpipe parts is labour intensive and time consuming (31,32). These factors increase the potential for transmission of infectious diseases between users (28). Evidence has shown that waterpipe use is associated with an increased risk of transmission of infectious agents, including respiratory viruses, hepatitis C virus, Epstein Barr virus, herpes simplex virus, tuberculosis, *Helicobacter pylori* and *Aspergillus* (33–38).

Social gatherings provide ample opportunity for the virus that causes COVID-19 to spread (39). Since waterpipe smoking is typically an activity that takes place within groups in public settings (30), and waterpipe use increases the risk of transmission of disease, it may also encourage the transmission of COVID-19 in social

gatherings. When waterpipe use takes place in indoor areas, as it does in many places, the risk of disease transmission could be even higher.

Will strengthened tobacco control measures help in this context?

In 2008, WHO introduced the MPOWER technical package, which is based on the demand-reduction provisions in Articles 6–14 of the WHO Framework Convention on Tobacco Control (WHO FCTC). The MPOWER measures are:

- **M**onitor tobacco use and prevention policies
- **P**rotect people from tobacco use
- **O**ffer help to quit tobacco use
- **W**arn about the dangers of tobacco
- **E**nforce bans on tobacco advertising, promotion and sponsorship
- **R**aise taxes on tobacco.

Strengthened tobacco control measures, including tobacco-free public places and protection from second-hand smoke (as per Article 8 of the WHO FCTC and its Guidelines), could reduce the number of people at risk of suffering from severe COVID-19 symptoms. Lower rates of tobacco use will reduce the rates of many respiratory and cardiovascular conditions associated with severe COVID-19 symptoms and mortality. Good respiratory and cardiovascular health is also important for COVID-19 patients to successfully recover from the disease.

In addition, improved tobacco control could substantially reduce the background demand placed on health systems at this time, allowing more resources to be focused on treating COVID-19 patients. Research from around the world shows that enforcement of comprehensive smoke-free laws is followed by significant reductions in hospital admissions for a wide range of cardiac, cerebrovascular and respiratory diseases (40).

Reducing the demand for tobacco products, particularly waterpipes, will discourage social

gatherings associated with these products that can contribute to the spread of the virus. The current context presents a significant opportunity to strengthen measures to control waterpipe use, which is often overlooked in tobacco control efforts. There is an opportunity for positive health outcomes, both with respect to COVID-19 and in general, if immediate comprehensive tobacco control measures are taken that include the control of waterpipe use in public places.

Countries can use WHO's highly effective, evidence-based MPOWER package to support the formulation and implementation of tobacco control measures to protect public health.

How can regional tobacco control legislation help to limit spread of COVID-19?

The WHO FCTC and the MPOWER policy package apply at both the global and regional level. Countries in the Eastern Mediterranean Region should seek to limit the use of waterpipes and other tobacco products in order to reduce their negative health impact and improve people's respiratory and cardiovascular health.

Controlling tobacco and waterpipe use may be significant in reducing the risk of transmission of the virus that causes COVID-19. It is important that the control of waterpipe use is taken especially seriously at this time, within a comprehensive approach to control all tobacco use, in the light of WHO FCTC obligations and MPOWER recommendations.

WHO recommends that countries fully implement the WHO FCTC and the MPOWER policy package. This includes a comprehensive ban on all forms of tobacco use, including waterpipes, in all indoor and, as appropriate, outdoor public places including cafés and restaurants. Such a ban may help to prevent waterpipe-related transmission of the virus that causes COVID-19. Countries in the Region are encouraged to ensure that a comprehensive ban is in place and is fully enforced.

Why is this a good time to quit tobacco and waterpipe use?

Tobacco use dramatically increases the risk of many serious health problems, including respiratory diseases (such as lung cancer, tuberculosis and COPD) and cardiovascular diseases. While it is always a good idea to stop using tobacco, quitting tobacco and waterpipe use may be especially important at this time to reduce the harm caused by COVID-19.

The absence of smoking will help to reduce instances of touching the mouth with the fingers. Also, it is possible that current smokers who quit would better manage any pre-existing conditions if they do become infected with the virus, because quitting tobacco has an almost immediate positive impact on lung and cardiovascular function and these improvements increase as time goes on (3). Within just 20 minutes of quitting, the heart rate drops, and within 12 hours the carbon monoxide level in the blood drops to normal. Within 2 weeks to 3 months, the risk of heart attack begins to drop and lung function begins to improve. Such improvements may increase the ability of COVID-19 patients to respond to the infection and potentially reduce the risk of developing severe symptoms.

What are the key lessons from previous experience?

Waterpipe use can encourage social gatherings, creating environments that increase contact between members of different households. Waterpipe use at social gatherings may be a catalyst for an increase in transmission of the virus.

Previous evidence shows that smoking has adverse effects on the survival of individuals with infectious diseases (41). Evidence from other outbreaks caused by viruses from the same family as COVID-19 suggests that tobacco smoking could, directly or indirectly, contribute to an increased risk of infection, poor prognosis

and/or mortality for infectious respiratory diseases (42,43).

Is it safe to use tobacco, including waterpipes, at home during the COVID-19 pandemic?

It is not safe to use tobacco at home. Using tobacco at home is associated with the same risks as tobacco use in public places (3). Tobacco use, including waterpipes, in any setting is harmful to the health of the user and to anyone who breathes in the tobacco smoke.

The home is often the setting where both children and adults are most exposed to second-hand smoke (44,45). Children are especially susceptible to second-hand smoke exposure, which has been shown to increase their risk of lower respiratory tract infections, asthma, middle ear diseases and other debilitating health conditions (3). Children exposed to second-hand smoke are also prone to suffering more severe symptoms of respiratory syncytial virus disease (like COVID-19, respiratory syncytial infection is a form of viral pneumonia) (46). There may be an increased danger of second-hand smoke exposure during the COVID-19 pandemic because more people, including smokers and the people they live with, are spending longer periods of time in their homes as part of lockdown measures imposed by countries to reduce disease transmission.

In addition, exposure to third-hand smoke at home might be increased at this time. Third-hand smoke is the persistent residue from tobacco smoke (e.g. from cigarette or waterpipe smoke) that accumulates in dust and on objects and surfaces, and is re-emitted into the air (47,48). Children are exposed to third-hand smoke toxicants via inhalation, ingestion and dermal transfer (48,49).

In response to the COVID-19 pandemic,

15 countries¹ in the Eastern Mediterranean Region have introduced new measures to ban waterpipe use in all public places. Despite the bans on use in public places, waterpipe use in the home has persisted (50). In some instances, people are able to have waterpipes delivered to their homes, facilitating access to smoking during the COVID-19 outbreak. It is important to note that waterpipe use at home is not only harmful to the user, but also to non-users who breathe in second-hand smoke. The impact of tobacco smoke on respiratory and cardiovascular health, as well as the risk of transmission of infectious agents through shared waterpipe use, are of serious concern during the COVID-19 pandemic.

Why are e-cigarettes not a “safer” option in relation to the COVID-19 pandemic?²

Evidence reveals that electronic nicotine delivery systems (ENDS) and electronic non-nicotine delivery systems, more commonly referred to as e-cigarettes, are harmful to health and undoubtedly unsafe. E-cigarette emissions typically contain nicotine and other toxic substances that are harmful to both users and non-users who have been exposed to the aerosols second-hand (51,52). Use of e-cigarettes also increases the risk of heart disease and lung disorders (53,54).

Given the growing evidence that e-cigarette use could be associated with lung injuries, including a recent link to an outbreak in the United States of America (51,55,56) described as “e-cigarette, or vaping, product use-associated lung injury” (EVALI) (57), COVID-19 may have implications for e-cigarette users. This is because the COVID-19 virus affects the respiratory tract. Further,

¹ Fifteen countries in the Eastern Mediterranean Region have banned waterpipe use in all public places in the context of COVID-19, while two had already banned it previously.

² This section is based on WHO’s Q&A on e-cigarettes: <https://www.who.int/news-room/q-a-detail/e-cigarettes-how-risky-are-they>.

e-cigarette use may suppress immune and inflammatory-response genes in nasal epithelial cells in a similar way to cigarette smoke (58), which could make e-cigarette users more susceptible to COVID-19. The hand-to-mouth action by e-cigarette users may also put them at increased risk of contracting the disease, and if e-cigarette devices are shared the risk of transmission is likely to be increased. Given that many countries are in lockdown and access to e-cigarettes might be limited, especially for youth, the sharing of devices may be more common under these circumstances.

In addition, the scientific evidence regarding the effectiveness of ENDS as a smoking cessation aid is still being debated. To date, in part due to the diversity of ENDS products and the low certainty surrounding many studies, the potential for ENDS to play a role as a population-level tobacco cessation intervention is unclear. Tobacco users should quit completely and not switch to e-cigarettes which pose health risks of their own and are unsafe (59). The safest approach is to not use either tobacco products or e-cigarettes (55). Using any of these products may predispose COVID-19 patients to suffering more severe symptoms of the illness.

Tobacco users who want to quit should use tried-and-tested interventions such as advice from health professionals, national quit lines and/or cessation interventions delivered via mobile text message (i.e. mTobacco Cessation), where available.

What is next?

In the context of COVID-19, countries are encouraged to take the needed action to protect the public from the devastating health consequences of tobacco use in light of their international commitments under the WHO FCTC and WHO recommendations.

This document is based on the most up-to-date available evidence. It will be updated as new evidence emerges.

Additional resources

There are several additional resources related to tobacco, waterpipe and e-cigarette use and COVID-19 that have been published by WHO and other organizations. Key online resources are listed below (accessed 31 May 2020).

Coronavirus (COVID-19): effective options for quitting smoking during the pandemic. London: Cochrane Special Collection; 2020.

COVID-19 and smoking: resources, research and news. London: Tobacco Control (BMJ); 2020.

COVID-19 and tobacco industry interference. Thailand: Global Center for Good Governance in Tobacco Control; 2020.

COVID-19 and tobacco policy and communication toolkit. Washington DC: Action on Smoking & Health; 2020.

COVID is no joke, it gets worse with smoke. Washington DC: Pan American Health Organization; 2020.

COVID-19: quit smoking and vaping to protect your lungs. Washington DC: Campaign for Tobacco-Free Kids; 2020.

COVID-19: the connection to smoking and vaping, and resources for quitting. Washington DC: Truth Initiative; 2020.

COVID-19: tobacco use and vaping. New Delhi: WHO Regional Office for South-East Asia; 2020.

Increased risk of COVID-19 infection amongst smokers and amongst waterpipe users. Beirut: WHO FCTC Knowledge Hub for Waterpipe Tobacco Smoking; 2020.

Links between smoking and COVID-19. Bath: Stopping Tobacco Organizations & Products (STOP); 2020.

People who are at higher risk of severe illness. Atlanta: US Centers for Disease Control and Prevention; 2020.

Q&A: tobacco and COVID-19. Geneva: World Health Organization; 2020.

Resources for tobacco use control as part of COVID-19 response, Copenhagen: WHO Regional Office for Europe; 2020.

Smoking and COVID-19 – factsheet. New York: Vital Strategies; 2020.

Statement on COVID-19 and smoking. Paris: The Union; 2020.

Smoking and COVID-19: scientific brief. Geneva: World Health Organization; 2020.

Tobacco control during the COVID-19 pandemic: how we can help. Geneva: WHO FCTC Secretariat; 2020.

Tobacco Tactics: COVID-19. Bath: University of Bath Tobacco Control Research Group; 2020.

What do we know about tobacco use and COVID-19? Atlanta: Tobacco Atlas; 2020.

WHO statement: tobacco use and COVID-19. Geneva: World Health Organization; 2020.

World No Tobacco Day 2020 and COVID-19 – social media tiles. Manila: WHO Regional Office for the Western Pacific; 2020.

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