

# Non-Communicable Diseases Watch

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衛生防護中心  
Centre for Health Protection



衛生署  
Department of Health

## *Smoking, NCDs and COVID-19*

### *Key Messages*

- ※ Smoking causes a wide spectrum of non-communicable diseases (NCDs) and increases risk of systemic infections, particularly respiratory infections.
- ※ Smoking can double the risk of severe coronavirus disease 2019 (COVID-19) progression. Waterpipe smoking may increase the risk of transmission of infectious diseases in social gatherings, including COVID-19.
- ※ The dual epidemics of NCDs and COVID-19 accentuate the importance of quitting smoking. For smokers, quitting smoking is the single best thing they can do for themselves and everyone around them. It is never too late to stop smoking. Smokers can visit [www.livetobaccofree.hk](http://www.livetobaccofree.hk) or call the Quitline 1833 183 for more information on quitting and for free quit support and services.
- ※ The Hong Kong SAR Government is committed to control tobacco use and reduce smoking-related harms, targeting to achieve a 30% relative reduction in the prevalence of current tobacco use among persons aged 15 and above in Hong Kong by 2025.
- ※ To create a tobacco-free Hong Kong, let us say NO to smoking.

## Smoking, NCDs and COVID-19

Tobacco use is the world's leading killer, driving an epidemic of cancers, cardiovascular diseases, chronic lung diseases and other non-communicable diseases (NCDs). At least half of all tobacco users die from tobacco related diseases. The annual death toll from tobacco use is more than 8 million, in which more than 7 million of those deaths are the result of direct tobacco use, and around 1.2 million deaths are among non-smokers being exposed to secondhand smoke.<sup>1</sup>

### Smoking Harms Health and Weakens Immunity

All forms of tobacco use, including cigarettes, waterpipes, cigars, e-cigarettes, heated tobacco products, are harmful. Cigarette smoke contains a lethal mixture of more than 7 000 chemicals, including at least 69 known carcinogens that damage nearly every organ in the body.<sup>2</sup> Smoking causes a wide spectrum

of NCDs, such as chronic obstructive pulmonary disease, cancers, heart diseases, stroke and diabetes mellitus (Table 1).<sup>2,3</sup> Cigarette smoking also increases risk of systemic infections, particularly respiratory infections. Compared to non-smokers, smokers are two to four times more likely to have invasive pneumococcal lung disease, and two times more likely to contract tuberculosis and four times more likely to die of it.<sup>2,3</sup> While the biological mechanisms of increased susceptibility to infections are multifactorial, smoking weakens the functions of the defense immune cells and the production of antibodies. In addition, it causes structural changes to the airways, including increased mucosal permeability, impaired mucociliary clearance and changes in pathogen adherence.<sup>3</sup>

**Table 1: Diseases that are caused by smoking<sup>2,3</sup>**

<b>Cancers</b>	lung cancer, oral cavity and pharyngeal cancer, laryngeal cancer, oesophageal cancer, stomach cancer, liver cancer, pancreatic cancer, colorectal cancer, bladder and kidney cancer, cervical cancer, leukaemia
<b>Respiratory diseases</b>	chronic obstructive pulmonary disease (including emphysema and chronic bronchitis), asthma, respiratory infection (including influenza, tuberculosis, pneumonia), respiratory symptoms (such as cough and excessive sputum production)
<b>Cardiovascular diseases</b>	hypertension, heart disease, stroke, atherosclerosis, abdominal aortic aneurysm, peripheral arterial disease
<b>Eye diseases</b>	blindness, cataracts, age-related macular degeneration
<b>Diseases of the ear, nose and throat</b>	hearing loss, ear infection, chronic rhinosinusitis
<b>Periodontal disease</b>	gum disease, gingivitis, periodontitis
<b>Skeletal diseases</b>	osteoporosis, hip fractures, rheumatoid arthritis
<b>Pregnancy-related diseases</b>	ectopic pregnancy, fetal growth retardation, congenital/birth defects (cleft lip or palate), premature delivery, miscarriage and other complications during pregnancy
<b>Diseases of the female reproductive system</b>	premature ovarian failure, early menopause, reduced fertility, painful menstruation
<b>Diseases of the male reproductive system</b>	infertility (sperm deformity, loss of motility, reduced number), impotence
<b>Other diseases</b>	diabetes mellitus, peptic ulcer

## Smoking and COVID-19

The coronavirus disease 2019 (COVID-19) is an infectious disease that primarily attacks the lungs. Emerging data from around the world suggests that smokers, compared to non-smokers, who have contracted COVID-19 are more likely to develop severe complications and die.<sup>4</sup> In addition, having other smoking related health conditions, such as chronic obstructive pulmonary disease, heart disease or diabetes mellitus, further increases their risk of developing severe COVID-19 complications and decreases their chances of survival.<sup>5-7</sup>

### *Smoking can double the risk of severe disease progression*

A meta-analysis published in May 2020, consisting of 19 independent studies with 11 590 COVID-19 patients in China, Korea, and the United States, found that among patients with COVID-19, current smokers had nearly double the risk of severe disease progression of non-smokers.<sup>8</sup> Another review study published in March 2020 about COVID-19 cases in China also concluded that smokers were 1.4 times more likely than non-smokers to have severe symptoms of COVID-19 and approximately 2.4 times more likely to be admitted to an intensive care unit, require mechanical ventilation, or die.<sup>9</sup>

### *Waterpipe smoking acts as an additional risk*

In addition to the risk of smoking tobacco, evidence has also shown that waterpipe smoking is associated with an increased risk of transmission of infectious diseases, including Herpes Simplex virus, tuberculosis and hepatitis C virus. The World Health Organization (WHO) points out that the design of the waterpipe apparatus and the manner of use promote the growth and transmission of microorganisms. Waterpipes are commonly shared between smokers, and the parts of the apparatus are difficult to be completely disinfected after each smoking session. With such connection, waterpipe smoking may encourage the transmission of COVID-19 in social gatherings.<sup>10</sup>

## Quit Smoking for Good

The importance of quitting smoking has been accentuated by the dual epidemics of NCDs and COVID-19. Quitting smoking yields significant and immediate health benefits, including rapid improvements in blood pressure and carbon monoxide levels. The smoker's heart and lung functions will improve within a short period of time after quitting (Box 1).<sup>11</sup> In fact, quitting smoking is the single best thing smokers can do for themselves and everyone around them. It is never too late to stop smoking.

### Box 1: Health benefits from quitting smoking<sup>11</sup>

- ✓ In 20 minutes, blood pressure and heart rate drop to normal levels.
- ✓ In 12 hours, carbon monoxide level in blood drops to normal.
- ✓ In 2 to 12 weeks, lung function and circulation improves.
- ✓ In 1 to 9 months, coughing and shortness of breath decrease.
- ✓ In 1 year, risk of coronary heart disease is halved compared to a smoker.
- ✓ In 5 to 15 years, risk of stroke is reduced to that of a non-smoker.
- ✓ In 10 years, risk of lung cancer is halved; risk of cancers of the mouth, throat, oesophagus, bladder, cervix, and pancreas decreases.
- ✓ In 15 years, risk of coronary heart disease is that of a non-smoker.

It is noteworthy that quitting is not an “on-off” switch. Quitting is a journey that is different for each smoker and it is normal to crave a cigarette every now and then. However, even if smokers slip up and have one, it is not the end of their quit journey. With determination, strategies to overcome the urge for smoking, and support, smokers can always get back on track and kick the habit. A local survey in 2019 showed that more than 280 000 people who previously had a daily cigarette smoking habit had quit.<sup>12</sup> Smokers and members of the public can visit [www.livetobaccofree.hk](http://www.livetobaccofree.hk) or call the Quitline 1833 183 for more information on quitting and for free quit support and services. Smokers can also download the Quit Smoking Mobile App to keep track of progress on quitting and get tips to deal with cravings and stay tobacco-free.



## Pursuing a Tobacco-free Hong Kong

To reduce the significant harms associated with smoking, the Hong Kong SAR Government has been progressively stepping up tobacco control efforts with full regard to the provisions of the WHO Framework Convention on Tobacco Control, and adopted the WHO recommended ‘best buys’ and other recommended interventions for reducing tobacco use. With committed actions to strengthen tobacco control and new initiatives to enhance smoking cessation services and help smokers quit smoking, the Government targets to achieve a 30% relative reduction in the prevalence of current tobacco use among persons aged 15 and above in Hong Kong by 2025 (compared to the baseline prevalence in 2010).<sup>13</sup>

For details concerning the Government key initiatives and specific actions to reduce tobacco use in Hong Kong, please refer to the “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” which can be found at the Change for Health website of the Department of Health [www.change4health.gov.hk/en/saptowards2025](http://www.change4health.gov.hk/en/saptowards2025). To create a tobacco-free Hong Kong, let us say NO to smoking. Together, we fight the virus and stay healthy!

## References

1. Tobacco, 27 May 2020. World Health Organization. Available at [www.who.int/news-room/fact-sheets/detail/tobacco](http://www.who.int/news-room/fact-sheets/detail/tobacco).
2. The Tobacco Atlas, Sixth Edition. Atlanta: American Cancer Society and Vital Strategies, 2018.
3. The Health Consequences of Smoking -- 50 years of Progress. A Report of the Surgeon General. Rockville, MD: Office of the Surgeon General, US Department of Health and Human Services, 2014.
4. Smoking and COVID-19. Scientific Brief, 26 May 2020. World Health Organization. Available at [www.who.int/publications-detail/smoking-and-covid-19](http://www.who.int/publications-detail/smoking-and-covid-19).
5. Alqahtani JS, Oyelade T, Aldhahir AM, et al. Prevalence, severity and mortality associated with COPD and smoking in patients with COVID-19: a rapid systematic review and meta-analysis. PloS One 2020;15(5):e0233147.
6. Huang I, Lim MA, Pranata R. Diabetes mellitus is associated with increased mortality and severity of disease in COVID-19 pneumonia - a systematic review, meta-analysis, and meta-regression. Diabetes & Metabolic Syndrome 2020;14(4):395-403.
7. Mehra MR, Desai SS, Kuy S, et al. Cardiovascular disease, drug therapy, and mortality in Covid-19. New England Journal of Medicine 2020(May 2020):10.1056/NEJMoa2007621.
8. Patanavanich R, Glantz SA. Smoking is Associated with COVID-19 Progression: A Meta-Analysis. Nicotine & Tobacco Research 2020;May 13:ntaa082.
9. Vardavas CI, Nikitara K. COVID-19 and smoking: A systematic review of the evidence. Tobacco Induced Diseases 2020;18:20.
10. Tobacco and Waterpipe Use Increases the Risk of COVID-19. Regional Office for the Eastern Mediterranean, World Health Organization. Available at [www.emro.who.int/tfi/know-the-truth/tobacco-and-waterpipe-users-are-at-increased-risk-of-covid-19-infection.html](http://www.emro.who.int/tfi/know-the-truth/tobacco-and-waterpipe-users-are-at-increased-risk-of-covid-19-infection.html).
11. Health Benefits of Smoking Cessation, 25 February 2020. World Health Organization. Available at [www.who.int/news-room/q-a-detail/health-benefits-of-smoking-cessation](http://www.who.int/news-room/q-a-detail/health-benefits-of-smoking-cessation).
12. Thematic Household Survey Report No. 70. Pattern of Smoking. Hong Kong SAR: Census and Statistics Department.
13. Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong. Hong Kong SAR: Food and Health Bureau and Department of Health, May 2018.





## Data Brief

### Number and rate of daily cigarette smokers by age and sex

Age Group	Male		Female		Overall	
	No. of persons ('000)	Rate*	No. of persons ('000)	Rate*	No. of persons ('000)	Rate*
20 – 29	38.4	9.0	10.0	2.4	48.4	5.7
30 – 39	90.1	19.3	27.2	5.0	117.3	11.6
40 – 49	108.6	23.2	32.7	5.6	141.2	13.4
50 – 59	141.0	25.1	21.2	3.3	162.2	13.5
≥ 60	153.5	17.5	14.1	1.5	167.6	9.1
Overall <sup>#</sup>	532.2	18.1	105.7	3.2	637.9	10.2

Notes: \*As a percentage of all persons in the respective age and sex sub-groups. For example, among all males aged 20 – 29, 9.0% were daily cigarette smokers.

<sup>#</sup> Figures refer to the numbers and rates of daily cigarette smokers aged 15 and over. Statistics for persons aged 15 – 19 are not separately shown in the table due to large sampling error.

Source: Thematic Household Survey Report No. 70 — Pattern of Smoking. Census and Statistics Department, Hong Kong SAR Government. Available at [www.censtatd.gov.hk](http://www.censtatd.gov.hk).

**Non-Communicable Diseases (NCD) WATCH** is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to [so\\_dp3@dh.gov.hk](mailto:so_dp3@dh.gov.hk).

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