

## Awareness of Lung Cancer

### Key Messages

- ※ Lung cancer is one of the most frequently occurring malignancies, both globally and locally. Smoking any kind of tobacco products is the most important cause of lung cancer. There is no safe level of tobacco exposure; even smoking occasionally increases the risk of cancer.
- ※ In 2021, the Hong Kong Cancer Registry recorded 5 978 new cases of lung cancer, of which two-thirds (66.0%) of them were diagnosed at age 65 or above and over half (56.9%) of the cases belonged to the most advanced stage at time of diagnosis. Being the leading cause of cancer death in Hong Kong, a total of 3 782 people died of lung cancer in 2022.
- ※ Not smoking tobacco is the most effective strategy to prevent lung cancer. While non-smokers should never start smoking, current smokers are urged to quit smoking immediately. In addition to no smoking, healthy living by eating sufficient amounts of fruits and vegetables and being physically active can reduce lung cancer risk.
- ※ To fight against lung and other lifestyle-related cancers, the Department of Health will continue to work in collaboration with various sectors to promote a smoke-free culture in Hong Kong so as to safeguard the health of the community, organise health campaigns and engage the general public to adopt a healthy lifestyle.

## Awareness of Lung Cancer

Lung cancer (including cancer of the trachea, bronchus and lung) is one of the most frequently occurring malignancies and associated with a poor outcome<sup>1</sup>. In 2022, there were over 2.4 million new lung cancer cases with more than 1.8 million lung cancer-related deaths globally<sup>2</sup>. While survival for lung cancer patients varies with several factors (such as clinical stage and type of lung cancer, patients' age and smoking status at diagnosis), 5-year survival estimates of lung cancer are about 10–20% in most countries<sup>3</sup>. Among the local population, lung cancer is a major cause of morbidity and mortality as well. This article firstly gives a brief account of lung cancer risk factors and then provides an update on the local situation and the recommendations on lung cancer prevention.

## Risk Factors for Lung Cancer

Smoking any kind of tobacco products (including cigarettes, cigars or pipes) is the most important cause of lung cancer<sup>4</sup>. Across the globe, 80–85% of lung cancer cases are thought to result from smoking<sup>1</sup>. Classified as a Group 1 carcinogen (a cancer-causing substance to humans) by the International Agency for Research on Cancer, tobacco smoke is a mix of more than 7 000 chemicals including at least 69 known to cause cancer<sup>1</sup>. Thus, there is no safe level of tobacco exposure<sup>5</sup>; even smoking occasionally increases the risk of cancer. Compared to nonsmokers, tobacco smokers are up to 22 times more likely to develop lung cancer in their lifetime<sup>6</sup>. The earlier the smokers start smoking and the more they smoke, the greater the risk of lung cancer<sup>7</sup>.

As with active smoking, passive smoking (such as exposure to second-hand smoke from spouse or family members, smokers at the workplace or public places) causes lung cancer<sup>7</sup>. For never-smokers, exposure to secondhand smoke would confer an estimated 25% increase in risk of developing lung cancer<sup>8</sup>. The greater the frequency and duration of exposure to secondhand smoke, the greater the risk of developing lung cancer<sup>5, 7</sup>.

Other risk factors for developing lung cancer include occupational exposure to carcinogens (such as asbestos, nickel, radon gas and crystalline silica, etc.), outdoor and indoor air pollution (such as cooking fumes in poorly ventilated homes), previous lung diseases (such as chronic obstructive pulmonary disease), increasing age, and family history of lung cancer (particularly with a first-degree relative)<sup>1, 4</sup>.

## Local Epidemiology of Lung Cancer

In Hong Kong, lung cancer is the most common cancer. In 2021, the Hong Kong Cancer Registry recorded 5 978 new cases of lung cancer (Table 1), representing a 35.8% increase from 4 401 new cases in 2011<sup>9</sup>. Such increases might be partly attributed to the growing and ageing population<sup>10</sup>. After adjusting for changes in population composition, the age-standardised incidence rate of males had a downward trend over the past 10 years. However, the age-standardised incidence rate of females showed an upward trend during the same period<sup>9</sup>.

**Table 1: Local incidence (in 2021) and mortality (in 2022) of lung cancer**

	Incidence (2021)			Mortality (2022)		
	Male	Female	Overall	Male	Female	Overall
<b>Number of registered cases</b>	3 493	2 485	5 978	2 405	1 377	3 782
<b>Rank among all cancers</b>	1	2	1	1	1	1
<b>Proportion of all cancers</b>	18.4%	12.7%	15.5%	28.6%	21.8%	25.7%
<b>Median age (years)</b>	70	68	69	72	75	73
<b>Crude rate (per 100 000 population)</b>	103.3	61.7	80.6	71.7	34.5	51.5
<b>Aged-standardised rate (per 100 000 standard population)</b>	40.9	26.0	33.1	25.3	11.9	18.2

Sources: Census and Statistics Department, Department of Health, Hong Kong Cancer Registry of the Hospital Authority.

Among all newly diagnosed lung cancer cases in 2021, two-thirds (66.0%) of them were diagnosed at age 65 or above and over half (56.9%) of the cases belonged to the most advanced stage at time of diagnosis<sup>9</sup>. Despite improvements in lung cancer treatment<sup>10</sup>, local data show that lung cancer survival remains low, with an estimated overall 5-year survival of 21.8%<sup>11</sup>. By stage of diagnosis, the 5-year relative survival rates would decrease drastically from 72.4% for Stage I, to 45.4% for Stage II, 24.6% for Stage III, and 7.8% for Stage IV<sup>11</sup>.

Lung cancer is the leading cause of cancer death in Hong Kong as well. In 2022, a total of 3 782 persons died from lung cancer, accounting for 25.7% of all cancer deaths. After adjusting for changes in population composition, the age-standardised death rate of both sexes had a downward trend over the past 10 years<sup>12</sup>.

## Prevention of Lung Cancer

Not smoking tobacco is the most effective strategy to prevent lung cancer. Epidemiological studies showed that cessation of tobacco smoking could reduce the risk of developing lung cancer in both men and women, as well as among light and moderate to heavy smokers (i.e. smoking 20 or more cigarettes per day)<sup>7</sup>. Compared to current smokers, heavy former smokers were shown to have a 39.1% lower lung cancer risk within five years since quitting; yet their risk would remain 3-fold higher than never smokers even after quitting for 25 years<sup>13</sup>. Thus, non-smokers should never start smoking and current smokers are urged to quit smoking immediately. For free quitting services, smokers can visit [www.livetobaccofree.hk/en/free-quit-tools/free-cessation-services.html](http://www.livetobaccofree.hk/en/free-quit-tools/free-cessation-services.html) or call the Integrated Smoking Cessation Hotline 1833 183.

In addition to no smoking, healthy living by eating sufficient amounts of fruits and vegetables and being physically active can reduce lung cancer risk. A meta-analysis of 27 cohort studies showed an 8–18% decreased risk of lung cancer with higher intakes of fruits and vegetables<sup>14</sup>.

Another pooled analysis of 12 prospective cohort studies revealed that high versus low levels of leisure-time physical activity was associated with 26% reduction in lung cancer risk<sup>15</sup>. Moreover, avoiding or reducing occupational exposure to known carcinogenic substances by observing occupation safety and health rules (such as use of protection gears) can reduce the risk of getting lung cancer<sup>16</sup>.

## **Early Detection of Lung Cancer**

Recognition of symptoms of lung cancer is important for early detection and treatment. However, the symptoms of lung cancer may not be easily noticed at an early stage. Common symptoms include persistent cough, coughing up blood, shortness of breath, chest pain, hoarseness, unexplained tiredness and weight loss. Should there be any suspicious symptoms, individuals are advised to seek medical advice as soon as possible. For asymptomatic persons at average risk of developing lung cancer, the Cancer Expert Working Group on Cancer Prevention and Screening does not recommend routine screening for lung cancer. Asymptomatic persons at increased risk, such as those with heavy smoking history, are advised to consult doctor before making an informed and individualised decision about screening for lung cancer<sup>16</sup>.

## **Major Initiatives in Lung Cancer Prevention and Control**

The Government of the Hong Kong Special Administrative Region (the Government) recognises the significant impact of cancer including lung cancer on the health of local population. In 2019, the Government launched the Hong Kong Cancer Strategy with a holistic plan for cancer prevention and control for Hong Kong<sup>17</sup>. As smoking is the main culprit of lung cancer, the Government has been taking a multi-pronged approach to strengthen tobacco control through legislation, enforcement, publicity, education, smoking cessation services and taxation. While the prevalence of daily cigarette smokers among local persons aged 15 or above has significantly reduced from 14.4% in 2002 to 9.5% in 2021<sup>18</sup>, which is one of the lowest in the world, the Government will continue to push ahead with its tobacco control work and strive to further reduce the smoking prevalence among the local population.

To fight against lung and other lifestyle-related cancers, the Department of Health will continue to work in collaboration with various sectors to promote a smoke-free culture in Hong Kong so as to safeguard the health of the community, organise health campaigns and engage the general public to adopt a healthy lifestyle.

### References

1. Wild C, Weiderpass E, Stewart B, (Eds). World Cancer Report. Cancer Research for Cancer Prevention. Lyon: International Agency for Research on Cancer, World Health Organization 2020.
2. Bray F, Laversanne M, Sung H, et al. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: A Cancer Journal for Clinicians 2024; (April 4) doi: 10.3322/caac.21834.
3. Allemani C, Matsuda T, Di Carlo V, et al. Global surveillance of trends in cancer survival 2000-14 (CONCORD-3): Analysis of individual records for 37 513 025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries. Lancet 2018; 391(10125): 1023-1075.
4. Lung Cancer (26 June 2023). Geneva: World Health Organization. Accessed 25 April 2024: <https://www.who.int/news-room/fact-sheets/detail/lung-cancer>.
5. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 100E: Personal Habits and Indoor Combustions. Lyon: International Agency for Cancer Research on Cancer, 2012.
6. Don't Let Tobacco Take Your Breath Away. Geneva: World Health Organization, 2019. Accessed 25 April 2024: <https://iris.who.int/bitstream/handle/10665/312260/WHO-NMH-PND-2019.3-eng.pdf>.
7. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 83: Tobacco Smoke and Involuntary Smoking. Lyon: International Agency for Research on Cancer; 2004.
8. Kim AS, Ko HJ, Kwon JH, et al. Exposure to secondhand smoke and risk of cancer in never smokers: A meta-analysis of epidemiologic studies. International Journal of Environmental Research and Public Health 2018;15(9):1981.
9. Lung Cancer Statistics. Hong Kong SAR: Hong Kong Cancer Registry, Hospital Authority. Accessed 25 April 2024: <https://www3.ha.org.hk/cancereg>.
10. Au PC, Lee AW, Lee VH, et al. The trends in lung cancer prevalence, incidence, and survival in Hong Kong over the past two decades (2002-2021): A population-based study. Lancet Regional Health Western Pacific 2024;45:101030.
11. Report of Stage-specific Survival of Lung Cancer in Hong Kong (Version 1). Hong Kong SAR: Hong Kong Cancer Registry, Hospital Authority, 2023. Accessed 25 April 2024: <https://www3.ha.org.hk/cancereg>.
12. Mortality Statistics: Lung Cancer and Trends. Hong Kong SAR: Department of Health and Census and Statistics Department.
13. Tindle HA, Stevenson Duncan M, Greevy RA, et al. Lifetime smoking history and risk of lung cancer: Results from the Framingham Heart Study. Journal of the National Cancer Institute 2018; 110(11):1201-1207.
14. Vieira AR, Abar L, Vingeliene S, et al. Fruits, vegetables and lung cancer risk: A systematic review and meta-analysis. Annals of Oncology 2016;27(1):81-96.
15. Moore SC, Lee IM, Weiderpass E, et al. Association of leisure-time physical activity with risk of 26 types of cancer in 1.44 million adults. JAMA internal Medicine 2016;176(6):816-825.
16. Cancer Expert Working Group on Cancer Prevention and Screening: Recommendations on Prevention and Screening for Lung Cancer for Health Professionals (June 2023). Hong Kong SAR: Department of Health.
17. Hong Kong Cancer Strategy 2019. Hong Kong SAR: Food and Health Bureau, Department of Health and Hospital Authority.
18. Thematic Household Survey Report No. 75: Pattern of Smoking. Hong Kong SAR: Census and Statistics Department.

The Tobacco and Alcohol Control Office (TACO) of the Department of Health has launched the “**Quit in June**” campaign to call on smokers to make a quit attempt in order to reduce their risk of tobacco-related diseases and deaths. Quitting is beneficial to smokers and brings immediate and long-term health benefits. Smokers who stay tobacco-free for four weeks would be five times more likely to quit for good.

There are more than 100 reasons to quit tobacco once and for all. TACO collaborates with community pharmacies, smoking cessation clinics, and District Centres/ District Health Centre Expresses to provide free one-week smoking cessation drugs (nicotine replacement therapy “NRT”) trial packs, and Chinese medicine ear points patches to encourage quitting. For more details about the Campaign, please visit website: [www.livetobaccofree.hk/en/quit-month/about.html](http://www.livetobaccofree.hk/en/quit-month/about.html).



*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).*

#### Editor-in-Chief

Dr Rita HO

#### Members

Dr Patrick CHONG	Dr Joanna LEUNG
Dr Thomas CHUNG	Dr YH LEUNG
Dr Cecilia FAN	Dr April LI
Mr Kenneth LAM	Dr Kellie SO
Dr Ruby LEE	Dr Lilian WAN