

Today's Lifestyles, Tomorrow's Cancers

Key Messages

- ※ Cancer is a major health problem. Many risk factors for cancer are closely related to lifestyles, such as smoking, unhealthy eating, lack of physical activity and alcohol consumption. By avoiding risk factors and implementing existing evidence-based prevention strategies, between 30–50% of cancers can currently be prevented.
- ※ In Hong Kong, progress in cancer control has been made for reducing incidence and death rates in the last three decades. However, the number of new cancer cases hit a historical high of 31 468 in 2016. The most frequent cancers diagnosed for both genders combined were cancers of the colorectum, lung, breast, prostate and liver. Together, these five leading cancers comprised over half (57.9%) of all new cancers in 2016.
- ※ In May 2018, the Hong Kong SAR Government launched “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” announcing a list of committed actions in order to achieve the overall Target, and that is, to reduce premature mortality from non-communicable diseases including cancer by 2025.
- ※ The Government will organise systematic health communication campaigns to increase health literacy of the local population, raise public awareness of the importance of primary prevention of cancer, and instil the concept of healthy lifestyle; update the cancer-related vaccination strategy; promote awareness and uptake of cancer screening by populations as recommended; strengthen the health system at all levels, in particular a comprehensive primary care for prevention, early detection and management of cancer; and review and update drug lists and clinical protocols regularly to ensure equitable access by cancer patients to cost-effective drugs and therapies of proven safety and efficacy.



香港非傳染病防控策略及行動計劃
Strategy and Action Plan to
Prevent and Control NCD in Hong Kong



Target 1: Reduce premature mortality from non-communicable diseases, including cancer

Today's Lifestyles, Tomorrow's Cancers

Cancer is a diverse group of diseases. It begins with gene damage in a cell, causing the normal cells to become abnormal and multiply out of control. Eventually, the abnormal cells invade surrounding tissue and spread to other parts of the body (Figure 1). With different patterns of causation, progression and spread, there are over 100 different types of cancers.¹ As a major global health problem, the estimated incidence of cancer increased to 18.1 million in 2018. Meanwhile, cancer accounted for an estimated 9.6 million deaths, or 1 in every 6 deaths in 2018 globally.^{2,3}

Major Causes and Risk Factors of Cancer across the Globe

Many factors contribute to cell damage and result in cancer. While some risk factors (such as ageing, gender, ethnicity and a family history of cancer) are not avoidable, many cancer-associated lifestyle choices and environmental causes are potentially preventable or modifiable. As the World Health Organization (WHO) estimates, around one third of cancer deaths are due to the 5 leading behavioural and dietary risks: tobacco use, alcohol use, lack of physical activity, low fruit and vegetable intake, and high body mass index. By avoiding risk factors along with implementing existing evidence-based prevention strategies (such as vaccination), between 30–50% of cancers can be prevented.²

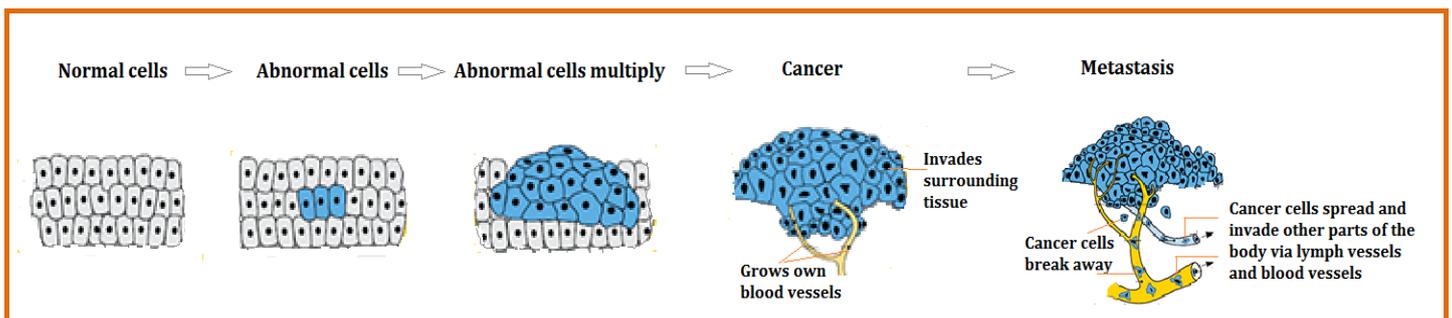
Tobacco Use

Tobacco smoking, which accounts for about 22% of cancer deaths globally, is the single largest preventable cause of cancer.² Being classified by the International Agency for Research on Cancer (IARC) of the WHO as a Group 1 carcinogen (i.e. sufficient evidence of cancer-causing in humans), there is no safe level of tobacco smoking.⁴ To date, epidemiological studies have shown that tobacco smoking causes at least 14 types of cancer (Table 1).⁵ While parental smoking causes hepatoblastoma in children, a positive association between parental smoking and childhood leukaemia has also been observed.⁴ In non-smoking individuals, inhaling secondhand smoke causes lung cancer. In China, Europe and North America, a study estimated that secondhand smoke exposure occurring at home and at the workplace attributed to 24.1%, 14.3% and 5.6% of lung cancer in never-smoking women respectively. The corresponding attributable fractions in never-smoking men were 12.4%, 10.3% and 8.2%.⁶

Diet, Obesity, and Physical Inactivity

What people eat can have a big impact on their health and unhealthy diet raises the risk of certain cancers. For example, the IARC classified Cantonese-style salted fish⁴ and processed meat (such as bacon, ham and sausage)⁷ as Group 1 carcinogens

Figure 1: Initiation and Spread of Cancer



with sufficient evidence for causing nasopharyngeal cancer and colorectal cancer respectively. There is convincing evidence that consuming red meat increases the risk of colorectal cancer; consuming too much food preserved by salting (such as pickled vegetables) increases the risk of stomach cancer; and consuming aflatoxin-contaminated food increases the risk of liver cancer.⁸ Obesity (due to an energy imbalance between dietary intake and physical activity) is also a major cause of various cancers (Table 1).⁸ Worldwide, the burden of cancer attributable to obesity is 11.9% in men and 13.1% in women.⁹

Alcohol Use

Alcohol is a Group 1 carcinogen, and there is no safe drinking level as far as cancer risk is concerned. Besides, the cancer-causing effect is the same for beer, wine or spirits (Table 1).⁴ The detrimental impact of alcohol use is evident in some European countries with high per capital alcohol consumption. A study of people aged 15 and over in eight European countries (France, Italy, Spain, Greece, United Kingdom, the Netherlands, Germany and Denmark) estimated that 10% of all new cancer cases in males and 3% in females could be attributable to current and former alcohol use.¹⁰

Table 1: Cancer site for which there is sufficient (convincing or probable) evidence of increased risk because of tobacco use, body fatness, alcohol use and unhealthy diet

Cancer site	Tobacco use ^{4,5}	Body fatness ^{8,11}	Alcohol use ⁸	Unhealthy Diet ^{5,8}			
				Processed meat	Red meat	Foods preserved by salting	Aflatoxin-contaminated food
Mouth, pharynx, larynx	✓	✓	✓				
Nasopharynx						✓(e)	
Oesophagus	✓	✓	✓				
Lung	✓						
Stomach	✓	✓	✓	✓		✓	
Pancreas	✓	✓					
Gallbladder		✓					
Liver	✓	✓	✓				✓
Colorectum	✓	✓	✓	✓	✓		
Kidney	✓	✓					
Urinary bladder	✓						
Breast (female)		✓(b)	✓				
Ovary	✓	✓					
Corpus uteri		✓					
Cervix	✓						
Prostate		✓(c)					
Bone marrow	✓(a)	✓(d)					

Notes: (a) Refers to myeloid leukaemia; (b) Refers to post-menopausal breast cancer; (c) Refers to advanced prostate cancer only; (d) Refers to multiple myeloma; (e) Refers to Cantonese-style salted fish

Infectious Agents

Infections with bacteria and viruses remain an important cause of cancer worldwide, especially in less developed countries. Of 14 million new cancer cases worldwide in 2012, 15.4% (ranged from 4.0% in North America to 31.3% in sub-Saharan Africa) were attributable to cancer-causing infections. Important infectious agents include helicobacter pylori, human papillomavirus (HPV), hepatitis B virus (HBV) and hepatitis C virus and Epstein-Barr virus which account for a major proportion of stomach, cervical, liver and nasopharyngeal cancers respectively. Notably, around 30% of infection-attributable cancer cases occur in people younger than 50 years.¹²

Occupational and Environmental Carcinogens

Annually, roughly 19% of global cancers are estimated to be attributable to the environment, including in work settings.¹³ To date, more than 40 agents, mixtures and exposure circumstances (such as asbestos, benzene, arsenic and silica) in the working environment have been identified as carcinogenic to humans. In developed countries, it is estimated that 4–8% of all cancers are due to occupational exposure, with higher fractions for lung cancer than for other cancers.⁵ Exposure to cancer-causing chemicals in the environment can also occur through pollution of air (such as from vehicle emissions, power generation or household combustion of solid fuels), water (such as because of disinfection by-products and organic solvents) and soil (such as by some pesticides, herbicides or fertilizers).⁵ Furthermore, cancer risk increases with exposure to all types of ionizing radiation from both natural sources (such as radon gas) and man-made sources (such as X-ray). Moreover, over-exposure to ultraviolet (UV) radiation from the sun or artificial sources (such as sunbeds or other indoor tanning devices) causes skin and ocular cancers.^{5, 13}

Globally, estimated 75.7% of all new cases of cutaneous melanoma (the most lethal type of skin cancer) and 1.2% of all new cancer cases were attributable to excessive UV radiation exposure.¹⁴

Local Situation

In Hong Kong, progress in cancer control has been made for reducing incidence and death rates in the past 3 decades. After adjusting for ageing effect, the age-standardised incidence and death rates for all cancers (per 100 000 standard population) decreased from 293.9 and 154.8 in 1987 to 252.4 and 100.4 in 2016 respectively.¹⁵ However, the number of new cancer cases hit a historical high of 31 468 in 2016. As shown in Table 2, the most frequent cancers diagnosed for both genders combined were cancers of the colorectum (17.3% of all new cancer cases), lung (15.7%), breast (13.1%), prostate (6.1%) and liver (5.8%). Together, these five leading cancers comprised over half (57.9%) of all new cancers in 2016.¹⁶

Of most concern, cancer-associated unhealthy lifestyle practices prevail among Hong Kong people. According to the findings of the Population Health Survey 2014/15 by the Department of Health (DH), 50% of local people aged 15–84 were overweight or obese. Among people aged 15 or above, over 90% consumed less than the recommended five servings of fruit and vegetables a day; 13% did not have adequate levels of physical activity to be of benefit to health; about 60% had consumed alcohol in the last 12 months.¹⁷ Furthermore, the Thematic Household Survey conducted by the Census and Statistics Department in 2017 observed that daily cigarette smokers accounted for 10% of all persons aged 15 and over.¹⁸

Table 2: Five most common cancers by gender in 2016

Rank	Male		Female		Both Sexes	
	Site	Number (Relative frequency)	Site	Number (Relative frequency)	Site	Number (Relative frequency)
1	Colorectum	3 169 (19.8%)	Breast	4 108 (26.6%)	Colorectum	5 437 (17.3%)
2	Lung	3 086 (19.2%)	Colorectum	2 268 (14.7%)	Lung	4 936 (15.7%)
3	Prostate	1 912 (11.9%)	Lung	1 850 (12.0%)	Breast	4 123 (13.1%)
4	Liver	1 391 (8.7%)	Corpus uteri	1 050 (6.8%)	Prostate	1 912 (6.1%)
5	Stomach	750 (4.7%)	Thyroid	692 (4.5%)	Liver	1 810 (5.8%)
	Other sites	5 727 (35.7%)	Other sites	5 465 (35.4%)	Other sites	13 250 (42.1%)
	All sites	16 035 (100.0%)	All sites	15 433 (100.0%)	All sites	31 468 (100.0%)

Note: Add-up may not equal to total due to rounding.

Source: Hong Kong Cancer Registry, Hospital Authority.

Reduce Premature Mortality from Cancer

The Government of the Hong Kong Special Administrative Region is committed to protect population health and reduce the disease burden of NCD, including cancer. In May 2018, the Government launched “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (SAP) announcing 9 local NCD targets to be achieved by 2025, all of which are related to cancer prevention and control (Box 1). The SAP has also put forward a systematic portfolio of policies, programmes and actions that Hong Kong will pursue to achieve the ultimate Target: A 25% relative reduction in risk of premature mortality (i.e. dying between ages 30 and 70) from the four NCD including cancers by 2025.¹⁹

The Government will organise systematic health communication campaigns to increase health literacy of the local population, raise public awareness of the importance of primary prevention of cancer, and instil the concept of healthy lifestyle; update the cancer-related vaccination strategy (such as the

recommendations on HBV vaccination against liver cancer and HPV vaccination against cervical cancer) in accordance to emerging evidence and the recommendations of the Scientific Committees on Vaccine Preventable Diseases and the Scientific Committee on AIDS and Sexually Transmitted Infections under the Centre of Health Protection of DH; promote awareness and uptake of cervical cancer screening by eligible women (especially women aged 25 to 64 who ever had sex) and colorectal cancer screening by average-risk population aged 50 to 75 as recommended by the Cancer Expert Working Group on Cancer Prevention and Screening; strengthen the health system at all levels, in particular a comprehensive primary care for prevention, early detection and management of cancer based on the family doctor model; and review and update drug lists and clinical protocols regularly to ensure equitable access by patients to cost-effective drugs and therapies of proven safety and efficacy for treatment of cancer.¹⁹

Box 1: 9 local NCD targets by 2025



Target 1

A 25% relative reduction in risk of premature mortality from cardiovascular diseases, cancers, diabetes, or chronic respiratory diseases



Target 2

At least 10% relative reduction in the prevalence of binge drinking and harmful use of alcohol (harmful drinking/ alcohol dependence) among adults and in the prevalence of drinking among youth



Target 3

A 10% relative reduction in the prevalence of insufficient physical activity among adolescents and adults



Target 4

A 30% relative reduction in mean population daily intake of salt/sodium



Target 5

A 30% relative reduction in the prevalence of current tobacco use in persons aged 15+ years



Target 6

Contain the prevalence of raised blood pressure



Target 7

Halt the rise in diabetes and obesity



Target 8

Prevent heart attacks and strokes through drug therapy and counselling



Target 9

Improve availability of affordable basic technologies and essential medicines to treat major NCD

As announced in 2018 Policy Address, the Food and Health Bureau will further map out a cancer strategy in 2019 to set out the strategic direction for prevention and care services drawing reference from WHO's recommendations, international practices and local situations. While the Government will continue to foster co-operation across sectors and work in close partnership with the community and members of the public to build a health-enhancing environment, individuals too can contribute to the fight against cancer by choosing to live in healthy ways (Box 2). Working in partnership, we can make ourselves healthier and Hong Kong a healthier city! For more information about cancer prevention and screening, please visit www.chp.gov.hk/en/content/9/25/31932.html. For access to the SAP document and related information, please visit <http://www.change4health.gov.hk/en/saptowards2025>.

Box 2: 9 Tips for Cancer Prevention^{8, 20}

- ✓ Do not smoke, and avoid secondhand smoke
- ✓ Avoid alcohol consumption, as alcohol is a cancer-causing substance in human
- ✓ Have a balanced diet with at least 5 daily servings of fruit and vegetables, limit the consumption of processed and red meat as well as reduce the consumption of foods high in salt, sugars and fat
- ✓ Be physically active in everyday life
- ✓ Maintain a healthy body weight and waist circumference
- ✓ Get vaccinated against HBV and HPV
- ✓ Reduce exposure to environmental carcinogens, such as overexposure to sunlight
- ✓ Observe occupational safety and health rules to minimise occupational exposure to cancer-causing substances
- ✓ Practise safer sex

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World Cancer Day is an initiative of the Union for International Cancer Control (UICC) which takes place every year on 4 February. It aims to unite the world in the fight against cancer. The theme for World Cancer Day 2019-2021 is: **'I Am and I Will'**, urging everybody to make a personal commitment to reduce the impact of cancer for themselves, the people they love and the world. To know more about World Cancer Day, please visit <https://www.worldcancerday.org/>. For live updates, follow #WorldCancerDay or #IAmAndIWill.



For a cancer free world, Lazy Lion has also committed to support, take immediate action and move more! Let's join him and please follow his Facebook (www.facebook.com/lazylionhk) and Instagram (www.instagram.com/lazylionhk) pages for his latest moves.

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.

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