

Burden of Non-communicable Diseases: An Update

Key Messages

- ※ Non-communicable diseases (NCDs) are major causes of death, disability and ill-health. The major types of NCDs are cancer, cardiovascular diseases (such as heart diseases and stroke), diabetes mellitus (or simply called diabetes) and chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma).
- ※ Of 61 557 registered deaths in 2022 in Hong Kong, cancer, cardiovascular diseases, diabetes and chronic respiratory diseases accounted for about 45% of all registered deaths in the year.
- ※ The Population Health Survey 2020-22 revealed that risk factors of NCDs (including physical inactivity, unhealthy eating, smoking and alcohol drinking, overweight and obesity, raised blood pressure, raised blood glucose, and raised blood cholesterol) were prevalent among the general population.
- ※ The Hong Kong Special Administrative Region Government attaches great importance to the prevention and control of NCDs. The Department of Health will continue to promote healthy living and use a variety of strategies to enhance people's health literacy and capacity to make healthy choices.
- ※ Individuals can contribute in the fight against NCDs by looking after their own health and choosing to live in healthy ways. Furthermore, members of the public should seek medical advice when necessary for health assessment, prompt disease detection and timely management. Working in partnership, we can make ourselves healthier and Hong Kong a healthier city !

Burden of Non-communicable Diseases: An Update

Non-communicable diseases (NCDs), also known as chronic diseases, are major causes of ill-health, disability and deaths. At a global level, NCDs kill 41 million people, equivalent to 74% of all deaths each year. The major types of NCDs are cancer, cardiovascular diseases (such as heart diseases and stroke), diabetes mellitus (or simply called diabetes) and chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma). Together, these four types of NCDs account for over 80% of 17 million premature NCD deaths before the age of 70 annually¹.

The Hong Kong Special Administrative Region (SAR) Government attaches great importance to the prevention and control of NCDs. Since 2008, the SAR Government has published a strategic framework to prevent and control NCDs and set up a Steering Committee on Prevention and Control of Control Non-communicable Diseases to oversee the overall roadmap for implementation. In line with the WHO Global Action Plan for the Prevention and Control of Non-communicable Diseases 2013–2020 (now extended to 2030^{2, 3}) focusing on the “4 by 4 NCD agenda” (i.e. 4 major types of NCDs including cancer, cardiovascular diseases, diabetes and chronic respiratory diseases as well as their 4 shared behavioural risk factors including physical inactivity, unhealthy diet, tobacco use and harmful use of alcohol), the SAR Government has promulgated “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” in 2018 with local NCD targets and a list of proposed actions⁴. This articles aims to provide an update on the local burden of NCDs, calling members of the public to remain vigilance against NCDs.

Major NCDs

In Hong Kong, the Population Health Survey (PHS) 2020-22 conducted by the Department of Health (DH) estimated that 43.2% of non-institutionalised persons aged 15 or above had one or more doctor-diagnosed chronic health conditions⁵. Of 61 557 registered deaths in 2022, cancer, cardiovascular diseases, diabetes and chronic respiratory diseases accounted for about 45% of all registered deaths in the year⁶.

Cancer

Largely driven by the population ageing along with changes in cancer risks as well as the improvements in diagnostic practices, the number of new cancer cases have jumped up by over 42% or at an annual rate of 3.6% over the past decade⁷. In 2021, the Hong Kong Cancer Registry recorded 38 462 new cancer cases. The five most common newly diagnosed cancers were cancers of the lung (15.5%), colorectum (15.3%), breast (14.5%), prostate (7.9%), and liver (4.6%). Together, these five major cancers accounted for 57.9% of all new cancer cases in 2021⁷.

For many years, cancer has been the number one killer in Hong Kong. Between 2013 and 2022, the number of registered cancer deaths increased from 13 589 with a crude death rate of 189.3 per 100 000 population to 14 717 with a crude death rate of 200.3 per 100 000 population. In 2022, lung cancer (25.7%) was the most common cause of cancer death in both genders, followed by colorectal cancer (15.4%), liver cancer (9.6%), pancreatic cancer (6.3%) and breast cancer (5.5%). Together, these five major cancers accounted for 62.4% of all registered cancer deaths in that year⁶.

Cardiovascular Diseases

Based on the Framingham Risk Model adapted for local use, the PHS 2020–22 estimated that 18.4% of non-institutional persons aged 40–74 were classified as high-risk with cardiovascular risk 20% or more over the next 10 years. While only 37.6% of persons aged 40–74 with high cardiovascular risk received both drug therapy and counselling to prevent heart attack and strokes, 28.1% of persons with high cardiovascular risk did not receive any drug therapy or counselling⁵.

In 2022, there were 10 665 registered deaths attributed to cardiovascular diseases, including 6 791 deaths due to heart diseases with a crude death rate of 92.4 per 100 000 population and 3 057 deaths due to stroke with a crude death rate of 41.6 per 100 000 population⁶.

Diabetes

There are three main types of diabetes: type 1 diabetes, type 2 diabetes and gestational diabetes, among which type 2 diabetes is the most common but largely preventable⁸. The PHS 2020–22 revealed that 8.5% of non-institutionalised persons aged 15–84 had diabetes or raised blood glucose, including 5.4% with self-reported doctor-diagnosed diabetes and 3.1% with no self-reported history but found to have raised blood glucose or glycated haemoglobin (fasting plasma glucose greater than or equal to 7.0 millimoles per liter (mmol/L) or glycated haemoglobin greater than 6.5%) by biochemical testing provided under the survey⁵.

In 2022, there were 661 registered deaths attributed to diabetes with a crude death rate of 9.0 per 100 000 population⁶.

Chronic Respiratory Diseases

While smoking is the leading cause of chronic obstructive pulmonary disease, asthma is often associated with environmental factors and a variety of triggers (including tobacco smoke). The PHS 2020–22 revealed that 0.5% and 1.6% of non-institutionalised persons aged 15 or above self-reported having doctor-diagnosed chronic obstructive pulmonary disease and asthma respectively⁵.

In 2022, there were 1 919 registered deaths attributed to chronic respiratory diseases with a crude death rate of 26.1 per 100 000 population⁶.

Major Modifiable Risk Factors of NCDs

Many chronic diseases share behavioural and biomedical risk factors (Table 1)^{9, 10}. Behavioural risk factors, including physical inactivity, unhealthy eating, smoking and alcohol drinking, are risk factors that individuals have the most ability to modify. Biomedical risk factors, such as overweight and obesity, raised blood pressure, raised blood glucose and raised blood cholesterol, are bodily states that are often influenced by health-related behaviours and have an impact on a person’s risk of disease. In addition to being prevalent in the local population, these modifiable NCD risk factors often co-exist within individuals¹¹.

Physical Inactivity

For optimal health and prevention of NCDs, the WHO recommends adults aged 18 or above to do at least 150–300 minutes of moderate-intensity aerobic physical activity; or at least 75–150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate-and vigorous-intensity activity throughout the week¹². Among persons aged 18 and above, the PHS 2020–22 revealed that 24.8% of them did not meet the WHO’s recommended levels of aerobic physical activity⁵.

Table 1: Direct associations between major NCDs and behavioural and biomedical risk factors^{9, 10}

	Cancer	Cardiovascular Diseases	Diabetes	Chronic Respiratory Diseases
Physical Inactivity	•	•	•	
Unhealthy Eating	•	•	•	
Smoking	•	•	•	•
Alcohol Drinking	•	•	•	
Overweight and Obesity	•	•	•	
Raised Blood Pressure		•		
Raised Blood Glucose		•	•	
Raised Blood Cholesterol		•		

Unhealthy Eating

Eating well with sufficient amounts of fruit and vegetables and less salt/sodium helps to protect against NCDs. For adults, the WHO recommends daily fruit and vegetable consumption of at least 5 servings of about 80 grams (g) each and salt consumption of less than 5 g (equivalent of sodium consumption of less than 2 g) per day¹³. The PHS 2020–22 showed that 97.9% of persons aged 15 or above had inadequate daily intake of fruit and vegetables. Among persons aged 15–84, 83.9% of them had dietary salt consumption above the WHO's recommended daily limit with an average of 8.4 g per day⁵.

Smoking

All forms of tobacco use are harmful; up to half of all tobacco users will die of tobacco related causes¹⁴. In 2021, the Thematic Household Survey conducted by the Census and Statistics Department reported that about 581500 persons were daily conventional cigarette smokers, accounting for 9.5% of the local population aged 15 or above¹⁵.

Alcohol Drinking

There is no safe level of alcohol consumption; alcohol use increases health risks even drinking low to moderate amount¹⁶. Among persons aged 15 or above, the PHS 2020–22 showed that 8.7% of them drank alcohol regularly (i.e. drank at least once a week), including 2.1% reported daily drinking; 2.0% reported binge drinking (i.e. drinking at least five cans of beer, five glasses of table wines or five pegs of spirits on one occasion) at least once per month in the 12 months preceding the survey. Overall, 0.3% of persons aged 15 or above had an Alcohol Use Disorder Identification Test (AUDIT) score of 16 or above which indicate harmful drinking or probable alcohol dependence⁵.

Overweight and Obesity

Body mass index (BMI) is a common surrogate marker of adiposity calculated as body weight (in kg) divided by the square of height (in m): kg/m^2 . For local Chinese adults, a body mass index (BMI) of 23.0 kg/m^2 to less than 25.0 kg/m^2 is considered overweight while a BMI greater than or equal to 25.0 kg/m^2 is regarded obesity. Among persons aged 15–84, the PHS 2020–22 reported that 54.6% of them were overweight (22.0%) and obese (32.6%)⁵.

Raised Blood Pressure/Hypertension

An adult is said to have hypertension if systolic blood pressure persistently higher than or equal to 140 millimeters of mercury (mmHg) and/or diastolic blood pressure persistently higher than or equal to 90 mmHg. The PHS 2020–22 reported that 29.5% of non-institutionalised persons aged 15–84 had raised blood pressure/hypertension, including 17.4% with self-reported doctor-diagnosed hypertension and 12.1% with no self-reported history but found to have raised blood pressure by physical measurement provided under the survey⁵.

Raised Blood Glucose/Diabetes

In addition to 8.5% of non-institutionalised persons aged 15–84 had raised blood glucose or diabetes, the PHS 2020–22 also revealed that 1.6% of persons aged 15–84 had impaired fasting glucose (or prediabetes) with fasting plasma glucose between 6.1 and 6.9 mmol/L by chemical testing⁵.

Raised Blood Cholesterol/Hypercholesterolaemia

There are the two main types of cholesterol: low-density lipoprotein (commonly known as ‘bad’ cholesterol) and high-density lipoprotein (commonly known as ‘good’ cholesterol). Among non-institutionalised persons aged 15–84, the PHS 2020–22 found that 51.9% of them had raised blood cholesterol/hypercholesterolaemia with total blood cholesterol greater than or equal to 5.2 mmol/L by chemical testing⁵.

Acting on NCD

The risk factors of today are the diseases of tomorrow¹⁷. From public health perspective, better control of the modifiable risk factors are of particular importance in NCD prevention and control. Intervening upstream on a cluster of behavioural risk factors can induce parallel reductions in the prevalence of biological risk factors, thereby reducing the incidence of NCD and possibly preventing or delaying a substantial number of NCD premature deaths¹⁸.

The DH will continue to promote healthy living and use a variety of strategies to enhance people's health literacy and capacity to make healthy choices. However, the responsibility of reducing NCD burden extends beyond the health sector and its workforce. The pursuit of good population health invariably requires the government, private and public sectors, community as well as members of the public to work collaboratively. Individuals can contribute in the fight against NCDs by looking after their own health and choosing to live in healthy ways (Box 1). Apart from healthy living (primary prevention), another key to lowering the risk of developing cardiovascular disease, type 2 diabetes and certain cancers is to have regular screenings as recommended (Table 2). As a tool for secondary prevention, screening aims to detect the disease early before symptoms appear, so that early intervention can be initiated if indicated to prevent or delay the disease. Members of the public can consult doctors about screenings for high blood pressure, type 2 diabetes and hyperlipidaemia, as well as obtaining full information in relation to cancer screening needs. To learn more about the SAR Government's initiatives and news regarding the prevention and control of NCDs, please visit the Change for Health website at www.change4health.gov.hk.

Box 1: Healthy choices and living

- ◇ Maintain an optimal body weight with a BMI between 18.5 kg/m² and 22.9 kg/m² and waist circumference below 90 cm for men and below 80 cm for women
- ◇ Be physically active with at least 150–300 minutes of moderate-intensity aerobic activities (such as brisk walking), or at least 75–150 minutes of vigorous-intensity aerobic physical activity (such as jogging), or an equivalent amount of physical activity throughout the week; and sit less
- ◇ Eat a balance diet and limit foods high in fat, salt and sugar
- ◇ Do not smoke
- ◇ Refrain from alcohol drinking

Table 2: Recommended screenings for general adult population to prevent cardiovascular diseases, type 2 diabetes and certain cancers

High blood pressure

- ◆ Adults aged 18 or above are recommended to have blood pressure checked at least once every 2 years¹⁹, and annual screening of hyper-tension is recommended for older adults²⁰.

Type 2 Diabetes

- ◆ Adults aged 45 or above are recommended to screen for type 2 diabetes at a minimum of 3-year intervals, and more frequent testing (e.g. every 12 months) is recommended when risk factors (such as overweight, obesity, family history of diabetes, etc.) are present²¹.

Hyperlipidaemia

- ◆ Adults aged 50–75 are recommended to screen for hyperlipidaemia every 3 years; more frequent testing (e.g. every 12 months) is recommended when risk factors of cardiovascular diseases (such as smoking, obesity, hypertension, diabetes, etc.) are present²⁰.

Cervical Cancer

- ◆ Women aged 25–64 who ever had sexual experience (including those vaccinated against human papillomavirus) should have regular cervical screening²². For more information about cervical cancer, please visit www.cervicalscreening.gov.hk.

Colorectal Cancer

- ◆ Individuals aged 50–75 are recommended to have regular colorectal cancer screening²³. For more information about the colorectal cancer, please visit www.colonscreen.gov.hk.

Breast Cancer

- Women aged 44–69 with certain combinations of personalised risk factors putting them at increased risk of breast cancer are recommended to consider mammography screening every two years and consult doctor²⁴. For estimating individual risks of developing breast cancer, women can use the Breast Cancer Risk Assessment Tool that is accessible at the Cancer Online Resource Hub: www.cancer.gov.hk/en/bctool/index.html.

References

1. Noncommunicable Diseases (16 September 2023). Geneva: World Health Organization. Accessed 10 January 2024: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>. Geneva: World Health Organization.
2. Advancing the Global Agenda on Prevention and Control of Noncommunicable Diseases 2000 to 2020: Looking Forwards to 2030. Geneva: World Health Organization, 2023.
3. Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020. Geneva: World Health Organization, 2013.
4. Towards 2025: Strategy and Action Plan to Prevent Non-communicable Diseases in Hong Kong. Hong Kong SAR: Food and Health Bureau and Department of Health, May 2018.
5. Population Health Survey 2020-22. Hong Kong SAR: Department of Health.
6. Mortality Statistics Hong Kong SAR: Department of Health and Census and Statistics Department.
7. Overview of Hong Kong Cancer Statistics of 2021. Hong Kong SAR: Hong Kong Cancer Registry, Hospital Authority. Accessed 11 January 2024: <https://www3.ha.org.hk/cancereg/>.
8. Diabetes (5 April 2023). Geneva: World Health Organization. Accessed 17 January 2024: <https://www.who.int/news-room/fact-sheets/detail/diabetes>.
9. Evidence for Chronic Disease Risk Factors (19 April 2016). Canberra: Australian Institute of Health and Welfare. Accessed 23 January 2024: <https://www.aihw.gov.au/reports/chronic-disease/evidence-for-chronic-disease-risk-factors/contents/behavioural-biomedical-risk-factors>.
10. Schwartz LN, Shaffer JD, Bukhman G. The origins of the 4 × 4 framework for noncommunicable disease at the World Health Organization. *SSM - Population Health* 2021;13:100731.
11. Co-occurrence of health risk behaviours: An overview. *Non-Communicable Disease Watch* 2020 (October):1-5.
12. WHO Guidelines on Physical Activity and Sedentary Behaviour. Geneva: World Health Organization, 2020.
13. Healthy Diet (29 April 2020). Geneva: World Health Organization. Accessed 12 January 2024: <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>.
14. Tobacco (31 July 2023). Geneva: World Health Organization. Accessed 11 January 2024: <https://www.who.int/news-room/fact-sheets/detail/tobacco>.
15. Thematic Household Survey Report No. 75: Pattern of Smoking. Hong Kong SAR: Census and Statistics Department.
16. WHO/Europe News Release: No level of alcohol consumption is safe for our health (4 January 2023). Accessed 17 January 2024: <https://www.who.int/europe/news/item/04-01-2023-no-level-of-alcohol-consumption-is-safe-for-our-health>.
17. WHO STEPS Surveillance Manual (26 January 2017). Geneva: World Health Organization. Accessed 22 January 2024: https://www.who.int/docs/default-source/ncds/ncd-surveillance/steps/steps-manual.pdf?sfvrsn=c281673d_5.
18. Invisible Numbers. The True Extent of Noncommunicable Diseases and What To Do About Them. Geneva: World Health Organization, 2022.
19. Hong Kong Reference Framework for Hypertension Care for Adults in Primary Care Settings (Revised Edition 2021). Hong Kong SAR: Primary Healthcare Office, Health Bureau. Accessed 15 January 2024: <https://www.healthbureau.gov.hk>.
20. Hong Kong Reference Framework for Preventive Care for Older Adults in Primary Care Settings (Revised Edition 2021). Hong Kong SAR: Primary Healthcare Office, Health Bureau. Accessed 15 January 2024: <https://www.healthbureau.gov.hk>.
21. Hong Kong Reference Framework for Diabetics Care for Adults in Primary Care Settings (Revised Edition 2023). Hong Kong SAR: Primary Healthcare Office, Health Bureau. Accessed 15 January 2024: <https://www.healthbureau.gov.hk>.
22. Cervical Cancer Prevention and Screening (June 2021). Hong Kong SAR: Department of Health. Accessed 8 February 2024: https://www.chp.gov.hk/files/pdf/2_cervical_cancer_prevention_and_screening_eng.pdf.
23. Colorectal Cancer Prevention and Screening (July 2022). Hong Kong SAR: Department of Health. Accessed 8 February 2024: https://www.chp.gov.hk/files/pdf/3_colorectal_cancer_prevention_and_screening_eng.pdf.
24. Breast Cancer Prevention and Screening (January 2021). Hong Kong SAR: Department of Health. Accessed 8 February 2024: https://www.chp.gov.hk/files/pdf/4_breast_cancer_prevention_and_screening_eng.pdf.



The Department of Health produced the poster “**Walk Together for Health and Happiness**”, encouraging members of the public to walk with family members and integrate walking 10 000 steps a day into daily life. The poster is accessible at the Change for Health website at www.change4health.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.

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