National Population Health Survey 2024

(Household Interview and Health Examination)

MINISTRY OF HEALTH
SINGAPORE

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NATIONAL POPULATION HEALTH SURVEY 2024

(Household Interview and Health Examination)

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Foreword

Since emerging from the COVID-19 pandemic, the Ministry of Health and the public healthcare family have taken important steps to strengthen preventive care. Healthier SG was launched in mid-2023 to encourage residents to take charge of their health, supported by a family doctor.

In this year's National Population Health Survey, several key health indicators reflected positive trends. Preventive health measures, including engagement in sufficient total physical activity and participation in chronic disease and cancer screenings, have gradually returned to pre-pandemic levels. There has also been a notable increase in vaccination uptake compared to 2023, with more residents receiving influenza and pneumococcal vaccines. While the proportion of residents with poor mental health has remained stable, there has been an encouraging rise in the proportion of individuals willing to seek informal and professional help. Additionally, the daily smoking prevalence continues to follow a downward trajectory. Obesity rates, however, have increased significantly compared to 2019-2020. For chronic diseases, diabetes and hypertension prevalence has remained stable, while the prevalence of hyperlipidaemia has decreased since the last survey.

I would like to acknowledge and express my appreciation to all who have, in one way or another, contributed to the successful completion of the survey. In particular, I would like to thank all respondents who have given their time to take part in the survey, and whose support makes this report possible. These findings will help the Ministry of Health and Health Promotion Board to develop and evaluate health policies and programmes, as we continue to work at improving the health of Singapore residents.

PROFESSOR KENNETH MAK
Director-General of Health
October 2025

Executive Summary

The National Population Health Survey (NPHS) is a cross-sectional population health survey, conducted annually by the Ministry of Health and Health Promotion Board, to track the health and risk factors, as well as lifestyle practices of Singapore residents.

The NPHS monitors lifestyle risk factors such as smoking and alcohol consumption; chronic diseases such as diabetes mellitus, hypertension and hyperlipidaemia as well as preventive health behaviour such as the practice of health screening and vaccination. The survey findings will be used by the Ministry of Health and Health Promotion Board to track progress towards national heath targets and for planning and evaluation of health policies, programmes, and health care services.

The NPHS consists of two components[1]: (i) Household Interview and (ii) Health Examination. This report presents the survey findings from the Household Interview of Singapore residents aged 18 to 74 years, as well as from the Health Examination, which comprises mainly measured indicators such as obesity and chronic disease prevalence. The findings from the Household Interview are based on annual data while the findings from the Health Examination are aggregated over two years (i.e., NPHS 2023 and NPHS 2024) to ensure sufficient data for a detailed analysis[2].

Trend analysis starting from 2007 is presented when there is sufficient data (inclusive of NHS, NHSS and NPHS) to gauge the directional change of an indicator. For the indicators presented in this report, the survey questions and tests used in NPHS are comparable to those used in earlier versions of the survey (NHS and NHSS), to better enable valid conclusions about trends over time can be drawn. A comparison of survey results between 2019 and 2024 is also carried out to highlight changes in the health behaviours and health practices among Singapore residents, which may have been affected by the COVID-19 pandemic[3].

[1] More details on the survey design, method and fieldwork are covered in “Chapter 15: Survey Methodology”.

[2] Data collection for the “Health Examination” component requires a longer time duration for completion. This is because it requires respondents to attend a health examination/screening at designated locations and hence there are relatively fewer respondents as compared to the “Household Interview” component.

[3] NPHS 2020 to NPHS 2024 results are compared with NPHS 2019 results to highlight changes in the health behaviours and health practices among Singapore residents possibly due to COVID-19. Fieldwork for NPHS 2019 was conducted from August 2018 to July 2019 where COVID-19 pandemic had not started

Alcohol consumption

- In 2024, 2.2% of Singapore residents aged 18 to 74 years consumed alcohol regularly, with 3.6% of males and 0.8% of females being regular drinkers.
- Regular alcohol consumption was most common among males in the 60 to 74 years age group (6.8%).
- However, the prevalence of regular drinking remained stable between 2019 and 2024 (crude: 2.1% in 2019, 2.2% in 2024; age-standardised: 2.1% in 2019, 2.2% in 2024).
- The crude prevalence of binge drinking was 9.9% in 2024, and it was more common among males (14.1%) than females (5.8%).
- Males and females aged 18 to 29 years had the highest proportion of binge drinkers at 18.4% and 13.1% respectively.
- The overall prevalence of binge drinking remained stable between 2019 and 2024 (crude: 10.2% in 2019, 9.9% in 2024; age-standardised: 10.2% in 2019, 10.1% in 2024).

Cigarette Smoking

- The crude prevalence of daily smoking has remained stable at 8.4% in 2024, on the background of a long-term declining trend.
- The prevalence of daily smoking was higher among males (14.9%) than females (2.1%) in 2024.
- Daily smoking was most prevalent in adults aged 50 to 59 years (10.5%) and least prevalent among younger adults aged 18 to 29 years (4.7%) in 2024.
- Male daily smokers smoked an average of 12 cigarettes a day while female daily smokers smoked an average of 10 cigarettes a day.
- About half (44.3%) of the daily smokers in 2024 had intention to quit smoking. However, only 15.4% of daily smokers planned to quit smoking within the next 12 months.

yet (pre-COVID-19). Fieldwork for NPHS 2020 was affected by COVID-19 as data were collected for only three-quarter of the survey year (July 2019 to March 2020) and fieldwork from April to June 2020 was cancelled due to the Circuit Breaker from 7 April to 1 June 2020 (inclusive). Fieldwork for NPHS 2021 to NPHS 2024 was typically carried out from July of the preceding year to June of the reporting year, unless stated otherwise (e.g. for NPHS 2021, the fieldwork was carried from July 2020 to June 2021).

- The crude and age-standardised prevalence of daily smoking decreased significantly between 2019 and 2024 (crude: 10.6% in 2019, 8.4% in 2024; age-standardised: 10.6% in 2019, 8.4% in 2024).

Physical Activity

- The proportion of residents with sufficient participation in total physical activity increased significantly from 78.5% in 2023 to 84.7% in 2024 after several years of declining participation, likely primarily due to COVID-19.
- In 2024, more males (85.4%) compared with females (84.0%) were able to meet the recommended sufficient total physical activity level.
- The prevalence of sufficient total physical activity was the highest among young adults aged 18 to 29 years at 89.7%, and was the lowest among older adults aged 60 to 74 years at 80.3%.
- The largest contributor to total physical activity per week was commuting (51.6%), followed by leisure-time physical activity (24.7%) and work-related physical activity (23.6%).
- More than one in three (35.7%) Singapore residents aged 18 to 74 years reported having sufficient muscle-strengthening activities in 2024, with the highest proportion being young adults aged 18 to 29 years (45.2%).
- There was a higher proportion of males (41.0%) with sufficient muscle-strengthening activities compared with females (30.6%).
- While the proportion of residents with sufficient total physical activity was similar in 2019 and 2024 (crude: 84.6% in 2019, 84.7% in 2024; age-standardised 84.6% in 2019, 84.9% in 2024), there was a significant decrease in sufficient total physical activity between 2019 and 2022, during the COVID-19 pandemic (crude: 84.6% in 2019, 74.9% in 2022; age-standardised: 84.9% in 2019, 75.5% in 2022).
- Post-pandemic, the proportion of residents with sufficient total physical activity has since increased significantly year-on-year from 74.9% in 2022, 78.5% in 2023 and 84.7% in 2024, which is on par with pre-COVID-19 levels

Chronic Disease Screening

- The crude proportion of Singapore residents aged 40 to 74 years with no previous diagnosed chronic diseases (i.e., diabetes mellitus, high blood pressure, and high blood cholesterol ("DHL")) and were screened for all of these three conditions within the recommended screening frequencies (i.e. the chronic disease screening participation) increased from 62.6% in 2023 to 66.4% in 2024.
- Going back further, the chronic disease screening participation rates for residents with no previous DHL diagnosis experienced a decline between 2019 and 2021, but has since improved to pre-COVID levels in 2024 (crude: 66.3% in 2019, 59.2% in 2021, 66.4% in 2024; age-standardised: 68.2% in 2019, 59.4% in 2021, 66.5% in 2024).
- Between 2019 and 2024, the individual crude screening participation for all three chronic diseases similarly experienced an initial decline during the COVID-19 period but has since returned to levels comparable to the pre-pandemic period. (diabetes: 81.0% in 2019, 76.6% in 2021, 79.3% in 2024; hypertension: 86.0% in 2019, 80.7% in 2022, 85.7% in 2024; hyperlipidaemia: 77.9% in 2019, 72.5% in 2021, 76.8% in 2024).

Cancer Screening

- The crude screening participation rate for breast (34.7% in 2023; 35.2% in 2024), cervical (45.4% in 2023; 44.9% in 2024), and colorectal cancers (41.7% in 2023; 44.9% in 2024) were broadly stable between 2023 and 2024.
- Colorectal cancer screening participation has returned to pre-COVID levels, while breast and cervical cancer screening participation are gradually returning to pre-COVID levels.
- Between 2019 and 2024, cancer screening participation rates saw an initial decline during the COVID-19 pandemic in 2021 before recovering close to pre-pandemic levels again in 2024 (breast cancer: 37.9% in 2019, 31.1% in 2021, 35.2% in 2024; cervical cancer: 48.2% in 2019, 41.0% in 2021, 44.9% in 2024; colorectal cancer: 42.0% in 2019, 36.6% in 2021, 44.9% in 2024).

Breast Cancer Screening

- In 2024, slightly more than one-third (35.2%) of Singapore female residents in the 50 to 69 years age group reported that they had gone for mammography in the last two years.

Cervical Cancer Screening

- In 2024, more than two in five (44.9%) Singapore female residents aged 25 to 74 years reported that they had gone for cervical cancer screening (had done Pap test in the past three years or HPV test in the past five years).
- Women aged 30 to 59 years (about 50% and higher) were most likely to have undergone cervical cancer screening.

Colorectal Cancer Screening

- In 2024, 44.9% of Singapore residents aged 50 to 74 years had undergone colorectal screening within the recommended screening frequency.
- Approximately one in four of these residents reported having undergone a Faecal Immunochemical Test (FIT) at least once in the past one year (27.0%) or had undergone colonoscopy in the past 10 years (29.5%).
- The practice of taking a FIT or a colonoscopy was more prevalent among males (47.0%) than females (42.9%).

Self-reported Vaccination Uptake

- In 2024, more than one in four (28.2%) Singapore residents aged 18 to 74 years reported that they had received influenza vaccination in the past 12 months.
- The self-reported influenza vaccination uptake among males (27.8%) was similar to that for females (28.6%) in 2024.
- Among Singapore residents aged 18 to 74 years, the crude and age-standardised self-reported influenza vaccination uptake showed a significant increasing trend between 2019 (crude: 17.4%, age-standardised: 17.4%) and 2024 (crude: 28.2%, age-standardised: 27.6%).

- The proportion of elderly aged 65 to 74 years who reported ever having received pneumococcal vaccination was 49.7% in 2024. This was a significant increase in uptake compared to 2019 (crude: 10.3%).

Mental Health

- The crude prevalence of poor mental health, as measured by the 12-item General Health Questionnaire (GHQ-12), among Singapore residents aged 18 to 74 years was 15.4% in 2024.
- More females (17.3%) reported poor mental health compared to males (13.5%) in 2024.
- In 2024, prevalence of poor mental health was the highest among younger adults aged 18 to 29 years had the highest prevalence (25.5%), while the prevalence decreased with increasing age, ranging from 17.8% for the 30 to 39 years age group to 9.1% for the 60 to 74 years age group.
- Between 2017 to 2024, the prevalence of poor mental health has increased though trend analysis did not show a statistically significant increase (crude: 12.5% in 2017, 15.4% in 2024; age-standardised: 12.4% in 2017, 15.6% in 2024).
- In 2024, Singapore residents aged 18 to 74 years indicated that they were more willing to seek help informally from their support network (81.8%) than from healthcare professionals (64.0%) if they were constantly unable to cope with stress.
- In 2024, females were more willing to seek help from healthcare professionals and informal support networks compared to males (females: 65.1% and 84.9% respectively; males: 62.8% and 78.6% respectively).
- Among the age groups, Singapore residents in the oldest age band (60 to 74 years) (54.7%) were least willing to seek help from healthcare professionals while those aged 30 to 39 years (70.9%) were the most willing to do so in 2024.
- The proportion of Singapore residents who were willing to seek help from informal support networks decreased with age. It was highest among younger adults aged 18 to 29 years (88.7%) and lowest among older adults aged 60 to 74 years (73.4%) in 2024.
- Between 2019 and 2024, overall help seeking attitudes have improved, with the proportion of Singapore residents willing to seek help from healthcare professionals

increasing from 47.8% to 64.0%, and those willing to seek help from informal support networks increasing from 74.5% to 81.8%. However, the upward trends observed were not statistically significant.

Obesity

- In 2023-2024, about one in eight (12.7%) Singapore residents aged 18 to 74 years were obese. Obesity was slightly more common among males (13.1%) than females (12.3%). Among the age groups, it was most prevalent amongst adults aged 30 to 39 years at 14.9%.
- Between 2019-2020 to 2023-2024, the crude and age-standardised prevalence of obesity increased significantly (crude: 10.5% in 2019-2020, 12.7% in 2023-2024; age-standardised: 10.5% in 2019-2020, 12.7% in 2023-2024).

High Risk BMI[4]

- Among Singapore residents aged 18 to 74 years, 22.8% were in the high risk BMI category according to the Asian classification of BMI categories. This was more common in males (25.4%) than females (20.3%), and most prevalent among adults aged 40 to 59 years (40 to 49 years: 26.4%, 50 to 59 years: 26.7%).
- The crude and age-standardised prevalence of high risk BMI remained largely stable from 2019-2020 to 2023-2024 (crude: 2019-2020: 20.7%, 2023-2024: 22.8%; age-standardised: 2010: 20.6%, 2023-2024: 22.8%).

Abdominal Obesity

- More than two-fifths of residents (43.6%) aged 18 to 74 years were found to have abdominal obesity. The prevalence of abdominal obesity was higher among females (44.6%) than males (42.6%). Prevalence of abdominal obesity increased with age, with the highest among adults aged 60 to 74 years (54.2%).

[4] Recognising that the risk for cardiovascular diseases and diabetes mellitus starts from a lower BMI for Asian populations, the WHO expert consultation recommended an additional classification of BMI for public health action among Asians where having a BMI equal to or greater than 27.5 kg/m^2 was considered as having high risk BMI (i.e., BMI ≥ .27.5 kg/m^2).

- The crude and age-standardised prevalence of abdominal obesity remained stable from 2019-2020 to 2023-2024 (crude: 2019-2020: 40.6%, 2023-2024: 43.6%; age-standardised: 2010: 40.7%, 2023-2024: 43.3%).

Diabetes Mellitus

- Both the crude and age-standardised prevalence of diabetes remained stable between 2019-2020 and 2023-2024 (crude: 9.5% in 2019-2020, 9.1% in 2023-2024; age-standardised: 9.5% in 2019-2020, 8.8% in 2023-2024).
- A higher proportion of males (10.5%) were diabetic compared to females (7.8%) during the period 2023-2024.
- Diabetes prevalence increased with age, with the proportion of diabetics almost doubling with each successive age group -- 1.8% among those aged 30 to 39 years to about one in five among those aged 60 to 74 years.
- Among all residents with diabetes mellitus, close to one in six (16.5%) of them had not been previously diagnosed with this condition.
- Among the known diabetics who attended health examination, close to two in three (66.5%) did not meet the recommended target for glycaemic control (HbA1c ≤ 7%).

Hypertension (or High Blood Pressure)

- The crude and age-standardised prevalence of hypertension remained stable between 2019-2020 to 2023-2024 (crude: 35.5% in 2019-2020, 33.8% in 2023-2024; age-standardised: 35.4% in 2019-2020, 33.0% in 2023-2024).
- More males (39.4%) were hypertensive compared with females (28.5%) during the period 2023-2024.
- Prevalence of hypertension increased with age -- starting at around 7.1% for those aged 18 to 29 years to 69.4% among those aged 70 to 74 years.
- Among all residents with hypertension, more than half (51.2%) of them had not been previously diagnosed with this condition.
- Among the known hypertensives who attended health examination, about three-fifths (60.4%) had poor control of their blood pressure.

Hyperlipidaemia (or High Blood Cholesterol)

- The crude and age-standardised prevalence of high blood cholesterol decreased from 2019-2020 to 2023-2024 (crude: 39.1% in 2019-2020, 30.5% in 2023-2024; age-standardised: 39.5% in 2019-2020, 30.1% in 2023-2024), but the decrease was not statistically significant based on linear trend analysis.
- Males (34.1%) had higher prevalence of high blood cholesterol than females (27.1%) during the period 2023-2024.
- The prevalence of high blood cholesterol increased with age -- around one in nine (10.9%) adults in the 18 to 29 years age group had the condition, compared to more than one in two in the 60 to 74 years age group (60 to 69 years: 54.2%, 70 to 74 years: 58.8%).
- Among all residents with high blood cholesterol, 41.3% of them had not been previously diagnosed with this chronic condition.

Chronic Kidney Disease (Renal Impairment)

- The prevalence of CKD increased from 2019-2020 to 2023-2024 (crude: 8.7% in 2019-2020, 14.9% in 2023-2024. Age-standardised: 8.7% in 2019-2020, 13.9% in 2023-2024). However, both increases for the crude and age-standardised prevalences were not statistically significant.
- The crude prevalence of CKD among males (14.9%) and females (14.9%) was similar.
- The prevalence of CKD increased with age, from 5.8% among those aged 18 to 39 years, to 35.0% for those aged 70 to 74 years.
- The prevalence of CKD among residents with both diabetes and hypertension is 47.4%, with females having slightly higher prevalence (49.0%) than males (46.3%).
- The CKD prevalence of residents with diabetes only is 34.4%, while the CKD prevalence of residents with hypertension only is lower at 21.4%. For residents without both diabetes and hypertension, the CKD prevalence is lower at 6.3%.

Chapter 1
Alcohol Consumption

Key Points

- 2.2% of Singapore residents aged 18 to 74 years consumed alcohol regularly in 2024, with 3.6% of the males and 0.8% of the females being regular drinkers.
- Regular alcohol consumption was most common among males in the 60 to 74 years age group (6.8%).
- The crude prevalence of binge drinking was 9.9% in 2024, and it was more common among males (14.1%) than females (5.8%).
- Males and females aged 18 to 29 years had the highest proportion of binge drinkers at 18.4% and 13.1% respectively.

Introduction

Alcohol consumption is a major contributor to the global burden of disease. Several diseases such as liver and pancreas disease, neuropsychiatric disease, cardiovascular diseases and certain cancers, can be caused by alcohol consumption. Although some studies have shown that light alcohol intake may provide health benefits, a recent meta-analysis found potential bias in studies combining abstainers with former / occasional drinkers, which may cause misleading positive health associations (Stockwell, et al., 2024). A recent meta-analysis reported that low levels of alcohol consumption was not associated with protection against all-cause mortality (Zhao et al., 2023). Meta-analysis shows a near linear association between alcohol intake and risk of hypertension (Cecchini et al., 2024). In addition to chronic disease risks, alcohol consumption can also affect social behaviours and cause immediate harm (e.g., road traffic accidents, physical assault) to both drinkers and the people around them. Due to the short- and long-term effects of alcohol consumption, there is risk associated with alcohol consumption at every level, so avoidance or reduction in alcohol intake should be encouraged (Anderson et al., 2023).

Definition

Alcohol consumption was classified according to the frequency of alcohol intake in Table 1.1.

Table 1.1: Classification of alcohol consumption

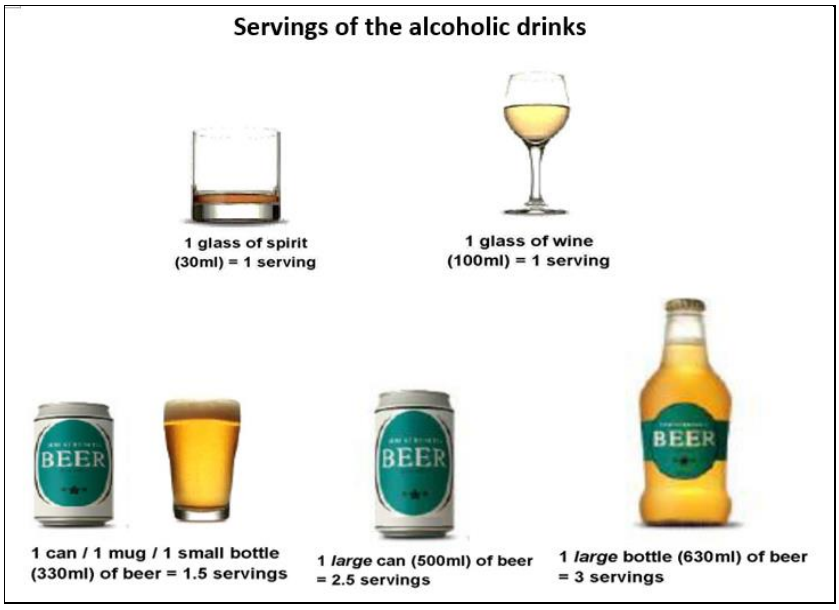
Classification	Frequency of alcohol consumption
Regular drinker	> 4 days a week
Frequent drinker	1 – 4 days a week
Occasional drinker	≤ 3 days a month

Binge drinking was defined as consumption of at least five alcoholic drinks[5] for males or at least four alcoholic drinks for females in any single drinking session during the past month preceding the survey.

Methodology

An interviewer-administered questionnaire was used. Respondents were shown a card with pictures of servings of alcoholic drinks (Diagram 1) and asked questions on alcohol consumption within the past 12 months at the time of the survey.

Diagram 1: Alcohol Card



[5] 1 alcoholic drink refers to 1 glass (~100 mls) of wine or 1 measure (~30 mls) of spirits.1 can/ mug/ small bottle (330ml) of beer represents 1.5 servings of alcoholic drink.

Alcohol Consumption

The survey found that among Singapore residents aged 18 to 74 years, 2.2% consumed alcohol regularly, 8.6% frequently, 37.3% occasionally, while 51.8% were non-drinkers (Table 1.2).

Table 1.2: Alcohol consumption (%) among Singapore residents aged 18 to 74 years by sex, 2024

Alcohol Consumption	Total	Males	Females
Non-drinker	51.8	44.9	58.6
Occasional drinker	37.3	39.7	35.0
Frequent drinker	8.6	11.9	5.5
Regular drinker	2.2	3.6	0.8

Note: Data might not sum to 100% due to rounding.

Prevalence of Regular Alcohol Consumption

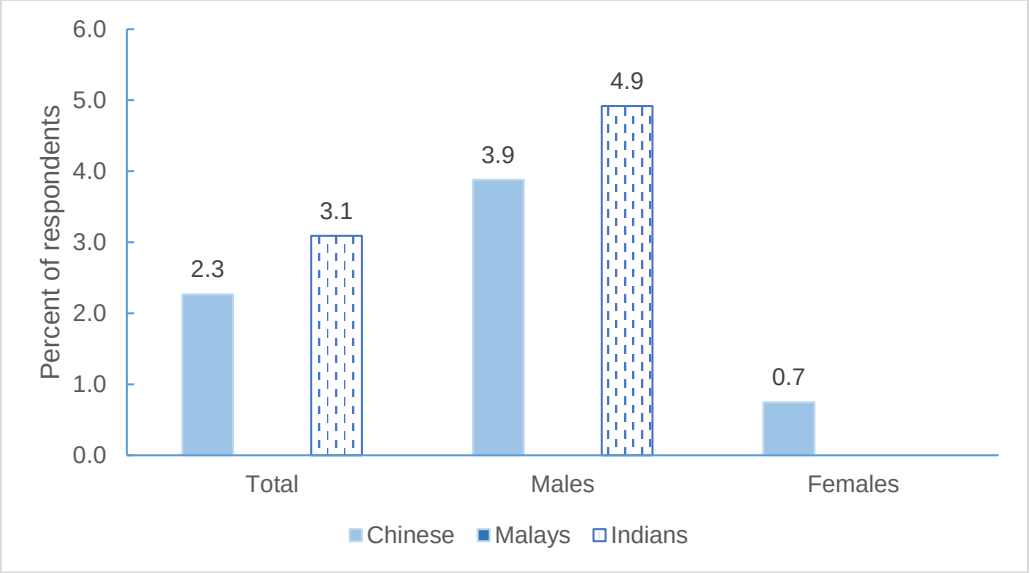
Among Singapore residents aged 18 to 74 years, 3.6% of the males and 0.8% of the females consumed alcohol regularly (Table 1.3). Regular alcohol consumption was most common among males in the 60 to 74 years age group (6.8%). Among the ethnic groups, Indians (3.1%) had the highest proportion of regular drinkers (Graph 1.1). A slightly higher proportion of residents with primary education (2.5%) and secondary education (3.1%) were regular drinkers, compared to those with post-secondary education (1.8%) (Table 1.4).

Table 1.3: Age-specific prevalence (%) of regular alcohol consumption among Singapore residents aged 18 to 74 years by sex, 2024

Age (years)	Total	Males	Females
18-29	1.1	s	s
30-39	1.2	2.0	s
40-49	2.0	3.4	s
50-59	2.6	4.5	s
60-74	3.7	6.8	s
18-74	2.2	3.6	0.8

s: Data have been suppressed due to small counts or high sampling variability.

Graph 1.1: Crude prevalence (%) of regular alcohol consumption among Singapore residents aged 18 to 74 years by sex and ethnicity, 2024



Note: Data for Malays, and Indian females have been suppressed due to small counts or high sampling variability.

Trends in Regular Alcohol Consumption

The crude and age-standardised prevalence of regular alcohol consumption increased significantly from 2007 to 2024 (Table 1.4). Likewise, a significant rise in prevalence of regular drinking was also observed among adults aged 40 to 49 years, among males and females, among Chinese and across all education levels in the same period. Comparing between 2019 and 2024, the prevalence of regular drinking remained stable.

Table 1.4: Prevalence (%) of regular alcohol consumption among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021	2022	2023	2024
Total	1.2	1.2	2.2 (1.6, 2.7)	2.1 (1.6, 2.6)	2.2 (1.7, 2.6)	2.8 (2.1, 3.4)	2.5 (2.1, 2.9)	2.1 (1.7, 2.4)	2.2[b] (1.8, 2.6)
ASR	1.2	1.2	2.2	2.1	2.2	2.8	2.5	2.1	2.2[b]
18-29	s	s	s	s	s	s	s	s	s
30-39	0.9	s	s	1.1 (0.5, 1.8)	1.8 (0.9, 2.8)	1.7 (1.0, 2.5)	1.9 (1.2, 2.7)	1.5 (0.8, 2.2)	1.2 (0.7, 1.8)
40-49	1.2	2.0	2.3 (1.1, 3.4)	2.1 (1.0, 3.1)	2.0 (1.2, 2.8)	2.7 (1.6, 3.9)	3.5 (2.5, 4.5)	2.8 (1.8, 3.8)	2.0[b] (1.3, 2.7)
50-59	1.9	1.5	3.8 (2.1, 5.4)	2.4 (1.3, 3.4)	3.4 (2.2, 4.6)	3.9 (2.7, 5.1)	3.2 (2.0, 4.4)	3.3 (2.1, 4.4)	2.6 (1.7, 3.4)
60-74	s	1.4	3.7 (2.0, 5.4)	4.3 (2.7, 5.9)	3.0 (2.1, 3.8)	3.2 (2.3, 4.1)	3.3 (2.3, 4.3)	2.4 (1.6, 3.3)	3.7 (2.7, 4.7)
Males	2.1	2.0	3.7 (2.7, 4.8)	3.6 (2.6, 4.5)	3.4 (2.7, 4.1)	4.6 (3.3, 5.8)	4.0 (3.3, 4.7)	3.2 (2.5, 3.8)	3.6[b] (3.0, 4.3)
Females	s	0.4	s	0.7 (0.3, 1.0)	1.0 (0.6, 1.4)	1.1 (0.7, 1.4)	1.1 (0.7, 1.5)	1.0 (0.6, 1.4)	0.8[b] (0.5, 1.2)
Primary	1.5	1.8	s	3.3 (1.9, 4.6)	3.2 (1.9, 4.4)	2.9 (1.8, 4.0)	3.8 (2.4, 5.3)	3.4 (2.1, 4.7)	2.5[b] (1.3, 3.7)
Secondary	1.3	1.6	2.6 (1.4, 3.7)	2.3 (1.4, 3.1)	1.9 (1.3, 2.5)	2.5 (1.8, 3.3)	2.7 (1.9, 3.4)	2.2 (1.5, 2,9)	3.1[b] (2.2, 3.9)
Post-secondary	1.0	0.8	1.9 (1.1, 2.7)	1.7 (1.1, 2.3)	2.1 (1.5, 2.6)	2.9 (1.9, 3.8)	2.2 (1.7, 2.7)	1.8 (1.3, 2.3)	1.8[b] (1.4, 2.3)
Chinese	1.3	1.3	2.3 (1.6, 2.9)	2.2 (1.6, 2.8)	2.4 (1.9, 2.9)	3.2 (2.3, 4.0)	2.9 (2.4, 3.4)	2.2 (1.8, 2.7)	2.3[b] (1.8, 2.3)
Malays	s	s	s	s	s	s	s	s	s
Indians	s	1.0	s	s	s	2.3 (1.2, 3.3)	s	2.1 (0.9, 3.2)	3.1 (1.6, 4.6)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals.

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upward trend between 2007 and 2024 with p-value <0.05.

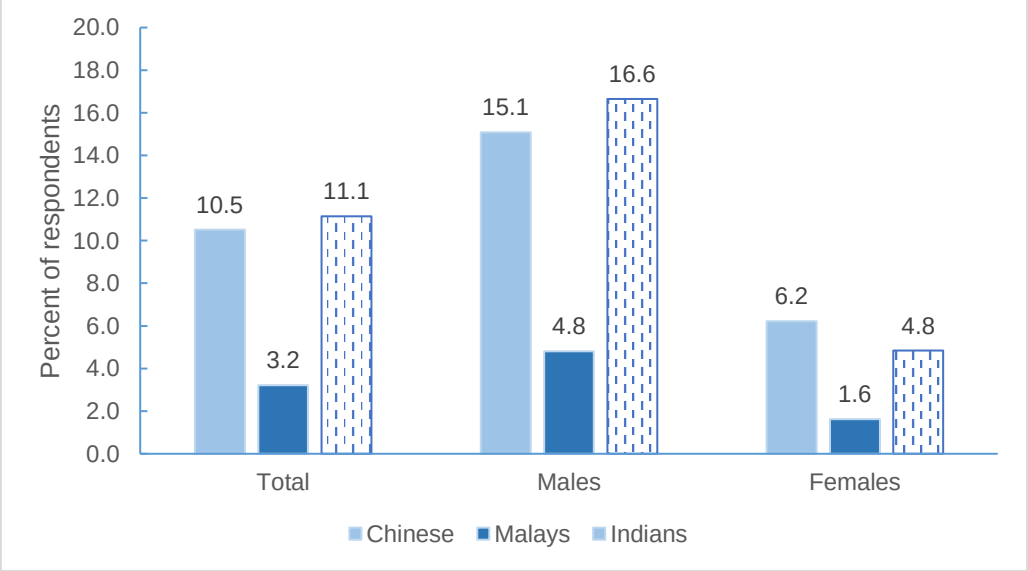
Prevalence of Binge Drinking

Among Singapore residents aged 18 to 74 years, the crude prevalence of binge drinking was 9.9% (Table 1.5). Binge drinking was more prevalent among males (14.1%) than females (5.8%). The highest proportion of binge drinkers for males and females was in the 18 to 29 years age group (18.4% and 13.1% respectively). Among the ethnic groups, the prevalence of binge drinking was higher in Indians (11.1%) and Chinese (10.5%) than Malays (3.2%) (Graph 1.2). The proportion of binge drinkers was higher among those with post-secondary education (11.6%), compared to those with lower education levels (primary and secondary education at 4.0% and 7.5%, respectively) (Table 1.6).

Table 1.5: Age-specific prevalence (%) of binge drinking among Singapore residents aged 18 to 74 years by sex, 2024

Age (years)	Total	Males	Females
18-29	15.9	18.4	13.1
30-39	12.1	16.5	8.0
40-49	10.3	15.5	5.6
50-59	7.3	12.3	2.4
60-74	5.1	9.1	1.5
18-74	9.9	14.1	5.8

Graph 1.2: Crude prevalence (%) of binge drinking among Singapore residents aged 18 to 74 years by sex and ethnicity, 2024



Trends in Binge Drinking

The rise in both the crude and age-standardised prevalence of binge drinking was significant between 2007 and 2024 (Table 1.6). This upward trend was also observed in all age groups (except those aged 18 to 29 years), among males and females, among all ethnic groups; and across all education levels between 2007 and 2024.

Between 2019 and 2024, the prevalence of binge drinking remained stable at the overall and subgroup levels.

Table 1.6: Prevalence (%) of binge drinking among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021	2022	2023	2024
Total	4.3	7.4	8.8 (7.6, 10.0)	10.2 (9.1, 11.3)	10.5 (9.5, 11.5)	9.6 (8.6, 10.6)	9.4 (8.6, 10.2)	10.3 (9.5, 11.2)	9.9[b] (9.1, 10.7)
ASR	3.9	6.9	8.6	10.2	10.5	9.7	9.4	10.4	10.1[b]
18-29	8.1	14.6	12.4 (9.2, 15.6)	16.6 (13.5, 19.7)	17.1 (13.8, 20.3)	15.6 (12.0, 19.3)	10.5 (8.5, 12.5)	14.4 (11.8, 16.9)	15.9 (13.2, 18.6)
30-39	4.6	7.7	10.6 (7.5, 13.7)	13.8 (10.9, 16.6)	14.5 (12.0, 17.0)	12.8 (10.7, 14.9)	12.6 (10.7, 14.5)	14.3 (12.2, 16.4)	12.1[b] (10.3, 14.0)
40-49	3.7	5.3	9.3 (6.8, 11.7)	8.8 (6.8, 10.7)	9.6 (7.7, 11.6)	9.7 (7.9, 11.5)	11.2 (9.4, 13.0)	11.6 (9.8, 13.5)	10.3[b] (8.7, 11.9)
50-59	2.3	4.9	7.3 (5.0, 9.7)	6.9 (5.0, 8.8)	6.8 (5.1, 8.5)	6.4 (4.9, 7.8)	9.0 (7.1, 10.9)	8.2 (6.5, 10.0)	7.3[b] (5.7, 8.9)
60-74	s	3.2	4.0 (2.4, 5.7)	5.0 (3.4, 6.6)	4.9 (3.5, 6.2)	4.3 (3.2, 5.3)	4.5 (3.4, 5.6)	4.3 (3.2, 5.4)	5.1[b] (3.9, 6.4)
Males	6.4	10.7	13.1 (11.1, 15.1)	14.9 (13.1, 16.6)	14.6 (13.0, 16.3)	13.8 (12.1, 15.5)	13.1 (11.9, 14.4)	13.7 (12.3, 15.0)	14.1[b] (12.8, 15.5)
Females	2.2	4.2	4.7 (3.4, 6.0)	5.7 (4.6, 6.8)	6.5 (5.3, 7.7)	5.6 (4.5, 6.7)	5.7 (4.9, 6.6)	7.1 (6.1, 8.2)	5.8[b] (4.9, 6.7)
Primary	3.1	2.7	4.2 (2.3, 6.2)	5.4 (3.6, 7.2)	4.4 (2.9, 5.9)	4.8 (3.2, 6.3)	6.6 (4.7, 8.5)	5.2 (3.6, 6.8)	4.0[b] (2.5, 5.5)
Secondary	4.5	5.7	8.4 (6.5, 10.4)	7.3 (5.9, 8.7)	7.5 (6.0, 8.9)	6.6 (5.4, 7.8)	6.6 (5.3, 8.0)	6.7 (5.4, 8.1)	7.5[b] (6.2, 8.7)
Post-secondary	4.5	9.8	10.3 (8.6, 12.0)	12.5 (10.9, 14.2)	13.0 (11.5, 14.5)	11.7 (10.2, 13.1)	11.0 (9.9, 12.0)	12.6 (11.4, 13.7)	11.6[b] (10.5, 12.7)
Chinese	4.7	8.6	9.4 (8.0, 10.9)	11.5 (10.1, 12.8)	11.6 (10.3, 12.8)	10.2 (9.0, 11.4)	10.1 (9.2, 11.1)	11.0 (10.0, 12.0)	10.5[b] (9.6, 11.5)
Malays	1.1	1.5	s	2.3 (1.0, 3.6)	1.7 (0.7, 2.7)	2.1 (1.0, 3.2)	1.9 (0.8, 3.0)	3.0 (1.5, 4.6)	3.2[b] (2.0, 4.4)
Indians	4.5	6.6	13.4 (9.2, 17. 6)	10.5 (7.8, 13.1)	11.4 (7.9, 14.8)	10.6 (6.3, 14.8)	9.2 (6.8, 11.7)	13.0 (9.8, 16.2)	11.1[b] (8.5, 13.8)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals.
(2) s: Data have been suppressed due to small counts or high sampling variability.
(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.
(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.
(5) [b] Indicate statistically significant linear upward trend between 2007 and 2024 with p-value <0.05.

Chapter 2
Cigarette Smoking

Key Points

- 8.4% of Singapore residents aged 18 to 74 years smoked cigarettes daily in 2024.
- More males (14.9%) smoked daily than females (2.1%).
- Daily smoking was most prevalent in adults aged 50 to 59 years (10.5%) and least prevalent among younger adults aged 18 to 29 years (4.7%) in 2024.
- Male daily smokers smoked an average of 12 cigarettes a day while female daily smokers smoked an average of 10 cigarettes a day.
- About half (44.3%) of the daily smokers had intention to quit smoking. However, only 15.4% of them planned to quit smoking within the next 12 months.

Introduction

Tobacco use is a source of preventable morbidity and mortality. Cigarette smoking is the most common form of tobacco use. Smoking increases the risk of all-cause mortality, respiratory diseases, cardiovascular diseases and certain cancers (Hwang et al., 2024). In addition to these disease risks that affect smokers, smoking also affects others who are exposed to second-hand smoke. Meta-analyses and reviews have established that quitting smoking can ameliorate some of the increased health risks, such as for lung cancer (Lai et al., 2024), with earlier cessation associated with longer gains in life years (Le et al., 2024).

Definition

Smoking status was classified according to the frequency of cigarette smoked as shown in Table 2.1, which followed the American College of Cardiology 2018 classification criteria (Barua et al., 2018).

Table 2.1: Classification of smoking status

Classification	Frequency of cigarette smoking
Daily smoker	Smokes cigarettes at least once a day (including people who smoke every day but have to stop temporarily because of religious fasting or medical reasons)
Non-daily smoker	Smokes cigarettes but not every day
Ex-smoker	Formerly a daily smoker, but currently does not smoke at all
Non-smoker	Never smoked before or smoked too little in the past to be regarded as an ex-smoker

Methodology

An interviewer-administered questionnaire was used. The questionnaire was based on WHO's recommended core questions for assessing smoking status (*WHO,1998)*.

Smoking Status

The survey showed that among Singapore residents aged 18 to 74 years, 8.4% were daily smokers, 3.1% were non-daily smokers, 8.1% were ex-smokers and 80.4% were non-smokers (Table 2.2).

Table 2.2: Smoking status (%) of Singapore residents aged 18 to 74 years by sex, 2024

Smoking Status	Total	Males	Females
Daily smoker	8.4	14.9	2.1
Non-daily smoker	3.1	4.8	1.4
Ex-smoker	8.1	13.3	3.1
Non-Smoker	80.4	66.9	93.3

Note: Data might not sum to 100% due to rounding.

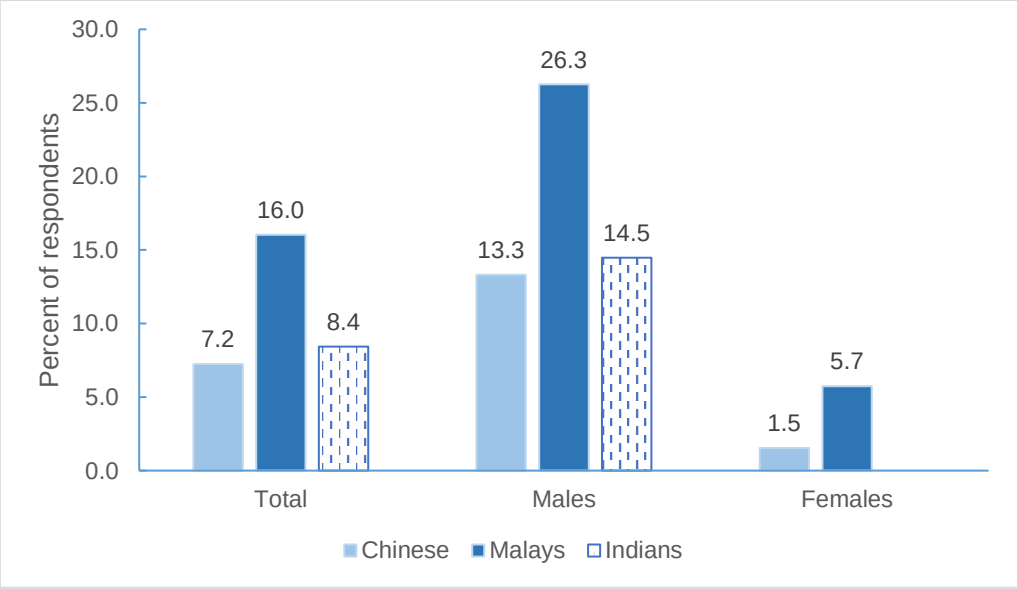
Prevalence of Daily Smoking

The prevalence of daily smoking among Singapore residents aged 18 to 74 years was 14.9% among males and 2.1% among females (Table 2.3). Daily smoking was most prevalent for males in the 50 to 59 years age group (19.1%) and for females in the 30 to 39 years age group (3.1%). Daily smoking prevalence was higher among Malays (16.0%) than Chinese (7.2%) and Indians (8.4%) (Graph 2.1). The prevalence of daily smoking among residents with primary education (17.9%) was more than three times higher than residents with post-secondary education (5.2%) (Table 2.4).

Table 2.3: Age-specific prevalence (%) of daily smoking among Singapore residents aged 18 to 74 years by sex, 2024

Age (years)	Total	Males	Females
18-29	4.7	7.4	1.7
30-39	8.5	14.3	3.1
40-49	9.7	17.3	2.7
50-59	10.5	19.1	2.2
60-74	8.5	16.4	1.2
18-74	8.4	14.9	2.1

Graph 2.1: Crude prevalence (%) of daily smoking among Singapore residents aged 18 to 74 years by sex and ethnicity, 2024



Note: Data for Indian females have been suppressed due to small counts or high sampling variability.

Age of Initiation and Onset of Daily Smoking Among Daily Smokers

Among Singapore residents who are daily smokers, the mean age of initiation, or the age at which they first tried smoking, was 17 years old. The mean age at which they established their habit of daily smoking was 19 years old. Among the younger daily smokers aged 18 to 24 years, the mean age of initiation and age at which they established their daily smoking habit was 16 and 18 years old respectively. Such information helps to establish more targeted interventions aimed at younger adults to prevent their smoking initiation.

Smoking Intensity of Daily Smokers

The mean number of cigarettes smoked per day among the daily smokers was 12 cigarettes. Male daily smokers on average smoked more cigarettes per day (12 cigarettes) than female daily smokers (10 cigarettes). Daily smokers in the 50 to 59 years age group on average smoked the highest number of cigarettes per day (14 cigarettes), compared to the other age groups.

Quit Intention of Daily Smokers

About half (44.3%) of the daily smokers had intention to quit smoking. However, only over one in seven (15.4%) daily smokers planned to quit smoking within the next 12 months. Around one in three (33.7%) daily smokers did not plan to quit smoking at all but planned to cut down on the number of cigarettes smoked. Over one in five (22.0%) daily smokers did not plan to quit smoking or reduce the number of cigarettes smoked. Almost two in five (39.7%) daily smokers reported that they had abstained from smoking for a period of at least 24 hours in the past 12 months. On average, they had tried quitting smoking five times during the past 12 months preceding the survey.

Trends in Daily Smoking

The crude and age-standardised prevalence of daily smoking decreased significantly between 2007 and 2024 (Table 2.4). This downward trend was significant in adults aged 18 to 49 years, among males and females, among the Chinese and Malays, and those with secondary and post-secondary education over the same period.

Between 2019 and 2024, the overall crude and age-standardised prevalence of daily smoking decreased significantly. There was a significant decrease in daily smoking prevalence in adults aged 18 to 29 years and those aged 50 to 59 years, among males and females, among Chinese and Malays, and those with secondary education.

Table 2.4: Prevalence (%) of daily smoking among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	13.3	13.9	13.1	11.8 (10.6, 13.0)	10.6 (9.5, 11.7)	10.1 (9.2, 11.0)	10.4 (9.6, 11.2)	9.2 (8.5, 10.0)	8.8 (8.0, 9.6)	8.4[c,e] (7.8, 9.1)
ASR	13.0	13.5	12.7	11.7	10.6	10.2	10.4	9.3	8.9	8.4[c,e]
18-29	17.4	16.0	12.6	9.8 (7.1, 12.5)	8.4 (6.5, 10.2)	8.8 (6.8, 10.8)	8.3 (6.2, 10.4)	5.1 (3.8, 6.5)	5.0 (2.7, 7.2)	4.7[c,e] (3.4, 6.1)
30-39	12.5	16.0	14.7	12.6 (9.5, 15.7)	11.4 (9.3, 13.5)	9.9 (7.9, 11.8)	12.8 (10.9, 14.7)	8.7 (7.1, 10.4)[a]	8.5 (6.7, 10.3)	8.5[c] (7.0, 10.0)
40-49	12.8	14.3	15.4	14.5 (11.6, 17.4)	10.6 (8.7, 12.5)	10.6 (8.5, 12.7)	11.6 (9.5, 13.7)	11.6 (9.9, 13.3)	10.5 (8.7, 12.2)	9.7[c] (8.2, 11.1)
50-59	12.7	11.4	13.3	11.9 (9.2, 14.6)	12.6 (10.0, 15.2)	13.4 (10.8, 16.0)	11.3 (9.4, 13.3)	11.4 (9.5, 13.3)	11.5 (9.6, 13.4)	10.5[e] (8.9, 12.2)
60-74	9.8	10.1	8.5	10.2 (7.5, 12.8)	10.2 (8.0, 12.4)	8.0 (6.5, 9.5)	8.3 (6.9, 9.6)	9.4 (7.9, 10.8)	8.7 (7.2, 10.2)	8.5 (7.2, 9.7)
Males	23.1	24.0	23.0	20.6 (18.5, 22.8)	18.4 (16.3, 20.5)	17.0 (15.4, 18.6)	17.8 (16.3, 19.3)	16.0 (14.7, 17.3)	15.7 (14.2, 17.2)	14.9[c,e] (13.7, 16.1)
Females	3.8	4.1	3.6	3.3 (2.3, 4.3)	3.2 (2.4, 3.9)	3.4 (2.5, 4.3)	3.3 (2.6, 4.0)	2.7 (2.2, 3.3)	2.3 (1.8, 2.8)	2.1[c,e] (1.7, 2.6)
Primary	16.3	19.4	15.8	17.2 (13.6, 20.9)	18.3 (15.2, 21.4)	16.5 (13.7, 19.3)	16.5 (13.5, 19.5)	17.5 (14.7, 20.3)	17.6 (14.8, 20.5)	17.9 (15.2, 20.7)
Secondary	18.0	18.1	19.6	17.5 (14.8, 20.2)	16.7 (14.3, 19.0)	16.4 (14.2, 18.6)	15.5 (13.6, 17.3)	14.6 (12.9, 16.4)	14.6 (12.5, 16.8)	13.3[c,e] (11.7, 14.8)
Post-secondary	8.4	9.3	8.3	6.9 (5.6, 8.2)	6.1 (5.1, 7.1)	6.0 (5.0, 6.9)	7.2 (6.3, 8.1)	5.7 (5.0, 6.4)	5.2 (4.4, 5.9)	5.2[c] (4.5, 5.9)
Chinese	12.0	12.6	11.5	9.9 (8.6, 11.2)	8.6 (7.5, 9.7)	8.6 (7.7, 9.5)	8.6 (7.8, 9.5)	7.9 (7.2, 8.7)	7.6 (6.8, 8.4)	7.2[c,e] (6.6, 7.9)
Malays	23.0	26.1	24.9	23.1 (19.0, 27.3)	23.0 (19.4, 26.6)	21.1 (17.3, 24.9)	22.4 (19.1, 25.8)	19.5 (16.6, 22.3)	16.0 (13.3, 18.7)	16.0[c,e] (13.5, 18.5)
Indians	11.1	10.0	10.5	12.6 (8.4, 16.9)	10.9 (8.0, 13.8)	8.9 (6.0, 11.9)	9.2 (6.8, 11.7)	5.9 (4.2, 7.6)	9.8 (5.3, 14.3)	8.4 (6.2, 10.7)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [c] Indicate statistically significant linear downward trend between 2007 and 2024 with p-value <0.05.

(5) [e] Indicate statistically significant linear downward trend between 2019 and 2024 with p-value <0.05

Chapter 3
Physical Activity

Key Points

- Based on all domains of physical activity (including work-related, transportation-related and leisure-time), 84.7% of Singapore residents had sufficient total physical activity in 2024.
- More males (85.4%) compared with females (84.0%) were able to meet the recommended sufficient total physical activity level.
- The prevalence of sufficient total physical activity was the highest among young adults aged 18 to 29 years at 89.7%, while it was the lowest among older adults aged 60 to 74 years at 80.3%.
- The largest contributor to total physical activity per week was commuting (51.6%), followed by leisure-time physical activity (24.7%) and work-related physical activity (23.6%).
- More than one in three (35.7%) Singapore residents aged 18 to 74 years reported having sufficient muscle-strengthening activities in 2024.
- This was more common among younger adults aged 18 to 29 years (45.2%) while the proportion of residents with sufficient muscle-strengthening activities dropped to around one-third or less for those aged 30 to 74 years.
- There was a higher proportion of males (41.0%) with sufficient muscle-strengthening activities compared with females (30.6%).

Introduction

Physical activity is essential for maintaining good health across all age groups. For adults, it has been shown to reduce the risk of premature death as well as lowering the risk of developing cardiovascular diseases, hypertension and diabetes mellitus. In addition, physical activity can improve mental and cognitive health, sleep and prevent unhealthy weight gain. They also have better functional capacity and mobility to live longer independently *(US Department of Health and Human Services 2018; WHO 2020; WHO 2010)*. For older adults aged 65 years and above, those who remain physically active are less likely to experience falls and falls-related injuries (Colón-Emeri et al., 2024).

Methodology

An interviewer-administered questionnaire was used. Respondents were asked about the frequency, duration, and intensity of physical activity in the domain of work, transportation and leisure[6] using the Global Physical Activity Questionnaire (GPAQ) Analysis Guide developed by WHO in 2014. From NHSS 2007 to NPHS 2023, physical activity participation was assessed and could be achieved in one single session or accumulated in bouts of at least 10 minutes throughout the day.

In 2020, WHO published new guidelines on physical activity, removing the criterion that physical activity must be accumulated in bouts of least 10 minutes based on emerging evidence that any duration of physical activity is associated with better health outcomes (*WHO 2020*). Reflecting this change from NPHS 2024 onwards, respondents can report their accumulated physical activity regardless of duration. However, to maintain comparability of data with earlier years, only physical activity participation lasting at least 10 minutes are included in the NPHS 2024 figures included in this chapter.

Total Physical Activity

WHO guidelines recognise that participation in physical activity can be achieved across three domains: work-related activity (paid or unpaid work including household chores), transportation-related activity (e.g. walking or cycling while travelling to and from places) and leisure-time physical activity; and recommend that adults should do at least 150 minutes of moderate-intensity physical activity or at least 75 minutes of vigorous-intensity physical activity or an equivalent combination of moderate- and vigorous-intensity physical activity per week *(WHO 2020; WHO 2010)*. This recommendation is equivalent to achieving a minimum of at least 600 MET[7] minutes per week (i.e., having sufficient total physical activity).

Prevalence of Sufficient Total Physical Activity

In 2024, 84.7% of Singapore residents aged 18 to 74 years had sufficient total physical activity (Table 3.1). More males (85.4%) compared with females (84.0%) were able to

[6] Starting from NPHS 2022, the National Population Health Survey no longer reports the participation on leisure-time physical activity separately as an indicator. For information regarding sports and exercise participation among Singapore residents, please refer to the National Sport Participation Survey (NSPS).

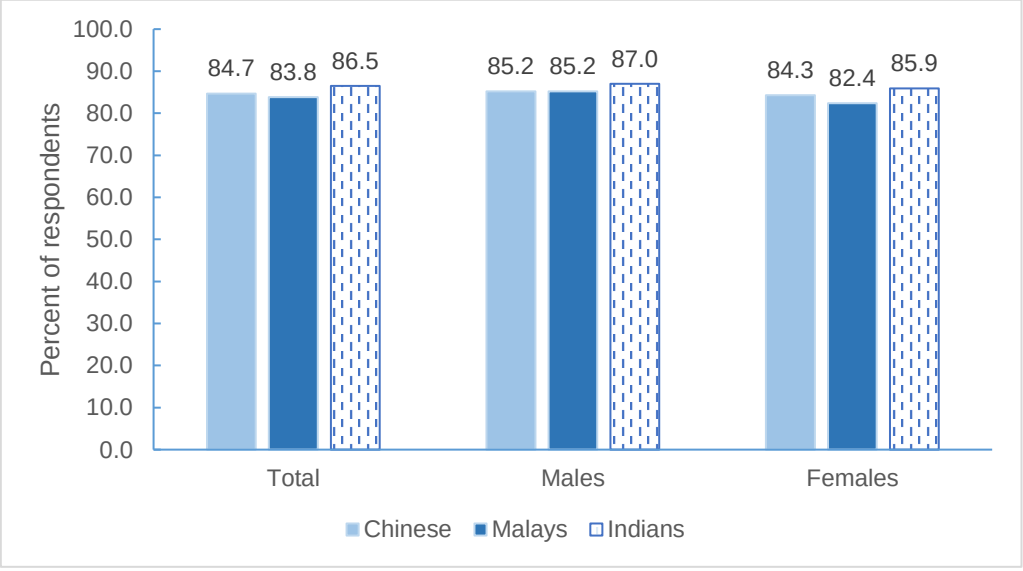
[7] MET (Metabolic Equivalents) is the ratio of a person's working metabolic rate relative to the resting metabolic rate. 1MET is defined as the energy cost of sitting quietly and is equivalent to a caloric consumption of 1kcal/kg/hour.

meet the recommended sufficient total physical activity level. Physical activity participation was observed to decrease with age - young adults in the 18 to 29 years age group (89.7%) had the highest proportion who had sufficient total physical activity while the older adults aged 60 to 74 years had the lowest proportion at 80.3%. A higher proportion of Indians (86.5%) had sufficient total physical activity than the Chinese (84.7%) and Malays (83.8%) (Graph 3.1). Residents with post-secondary education (86.6%) had higher sufficient total physical activity compared with residents with secondary (81.6%) or primary (79.3%) education (Table 3.2). The largest contributor to total physical activity per week was commuting (51.6%), followed by leisure-time physical activity (24.7%) and work-related physical activity (23.6%).

Table 3.1: Age-specific prevalence (%) of sufficient total physical activity among Singapore residents aged 18 to 74 years by sex, 2024

Age (years)	Total	Males	Females
18-29	89.7	91.4	87.8
30-39	88.2	91.4	85.1
40-49	84.8	85.7	83.9
50-59	81.7	80.0	83.4
60-74	80.3	79.7	80.9
18-74	84.7	85.4	84.0

Graph 3.1: Crude prevalence (%) of sufficient total physical activity among Singapore residents aged 18 to 74 years by sex and ethnicity, 2024



Trends in Sufficient Total Physical Activity

There was no significant change in the sufficient total physical activity levels between 2007 and 2024. Between 2019 and 2024, there was an initial decline in the sufficient total physical activity levels up until 2022, before it rebounded back to pre-pandemic levels in 2024. Comparing between 2023 and 2024, the proportion of residents with sufficient total physical activity increased significantly from 78.5% to 84.7%. The significant increase was also observed among residents aged 30-49 and 60-74 years, across both sexes, Chinese, and residents across all education levels.

Table 3.2: Prevalence (%) of sufficient total physical activity among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2013	2017	2019	2020	2021	2022	2023	2024
Total	85.4	79.5	84.0 (82.1, 86.0)	84.6 (83.2, 85.9)	80.6 (79.4, 81.8)[a]	76.0 (74.8, 77.2)[a]	74.9 (73.8, 76.1)	78.5 (77.3, 79.6)[a]	84.7 (83.8, 85.6)[a]
ASR	85.3	78.9	83.9	84.6	80.5	76.1	75.0	78.5	84.9
18-29	87.9	86.9	90.4 (87.5, 93.4)	88.2 (85.4, 91.0)	86.4 (84.0, 88.8)	81.9 (79.1, 84.7)	80.2 (77.5, 82.8)	85.5 (82.7, 88.3)	89.7 (87.5, 91.9)
30-39	83.2	78.9	84.6 (81.0, 88.1)	82.7 (79.8, 85.5)	81.4 (78.6, 84.1)	76.6 (73.8, 79.3)	75.5 (73.0, 77.9)	79.0 (76.5, 81.4)	88.2 (86.3, 90.0)[a]
40-49	85.6	78.5	81.6 (78.1, 85.1)	86.1 (83.7, 88.5)	79.5 (76.9, 82.2)[a]	74.9 (72.1, 77.7)	75.7 (73.4, 78.1)	77.4 (75.0, 79.8)	84.8 (82.8, 86.7)[a]
50-59	85.7	78.1	82.5 (79.3, 85.7)	83.2 (80.1, 86.3)	81.3 (78.7, 83.9)	78.0 (75.3, 80.6)	74.3 (71.6, 77.0)	77.0 (74.4, 79.7)	81.7 (79.4, 84.1)
60-74	84.6	73.4	80.5 (76.7, 84.4)	82.7 (80.0, 85.3)	74.7 (71.9, 77.5)[a]	69.6 (67.0, 72.2)	69.9 (67.5, 72.2)	74.2 (71.9, 76.5)	80.3 (78.4, 82.2)[a]
Males	85.2	82.5	84.6 (82.1, 87.0)	85.6 (83.9, 87.3)	80.4 (78.6, 82.2)[a]	78.1 (76.4, 79.7)	76.7 (75.2, 78.3)	80.0 (78.5, 81.6)[a]	85.4 (84.1, 86.7)[a]
Females	85.7	76.6	83.5 (81.1, 85.9)	83.6 (81.8, 85.5)	80.7 (79.1, 82.3)	74.1 (72.3, 75.9)[a]	73.2 (71.6, 74.8)	76.9 (75.3, 78.6)[a]	84.0 (82.7, 85.3)[a]
Primary	87.7	72.9	83.7 (79.9, 87.5)	79.0 (74.9, 83.1)	75.1 (71.8, 78.3)	67.6 (63.8, 71.3)[a]	63.1 (59.6, 66.6)	68.9 (65.4, 72.5)	79.3 (76.3, 82.3)[a]
Secondary	87.4	79.8	82.6 (79.6, 85.6)	84.2 (81.9, 86.5)	78.5 (76.2, 80.9)[a]	74.5 (72.1, 76.8)	74.1 (72.0, 76.3)	76.3c (74.0, 78.5)	81.6 (79.7, 83.5)[a]
Post-secondary	83.0	81.3	84.9 (82.7, 87.1)	86.0 (84.3, 87.6)	82.5 (81.0, 84.1)[a]	78.1 (76.5, 79.7)[a]	77.3 (75.9, 78.6)	80.8 (79.4, 82.2)[a]	86.6 (85.5, 87.8)[a]
Chinese	84.3	78.7	83.4 (81.2, 85.6)	83.6 (81.9, 85.2)	79.7 (78.2, 81.1)[a]	74.9 (73.4, 76.4)[a]	73.1 (71.8, 74.4)	77.2 (75.8, 78.5)[a]	84.7 (83.7, 85.8)[a]
Malays	87.9	81.7	87.1 (83.6, 90.7)	84.8 (81.5, 88.1)	80.5 (77.1, 83.9)	76.2 (73.0, 79.4)	79.4 (76.6, 82.2)	80.1 (77.2, 83.0)	83.8 (81.2, 86.4)
Indians	89.9	81.6	83.6 (79.3, 88.0)	91.1 (88.7, 93.4)[a]	86.5 (83.4, 89.6)	82.4 (78.9, 85.9)	80.9 (77.6, 84.1)	84.1 (80.6, 87.6)	86.5 (83.8, 89.2)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Muscle-Strengthening Activity

WHO also recommends that adults should do muscle-strengthening activities involving the major muscle groups at least two days or more in a week. Muscle-strengthening activity refers to an activity or exercise that increases skeletal muscle strength, power, endurance and mass (e.g., strength training, resistance training or muscular strength and endurance exercises) and may involve the use of weight machines, exercise bands, hand-held weights or own body weight (e.g., push-ups or sit-ups) (*WHO 2010*; *Bennie et al. 2019)*. The major muscle groups to work on include the legs, back, abdomen, chest, shoulders and arms (*WHO 2010*). It has been shown that muscle-strengthening exercises increase skeletal muscle strength and mass, bone density, ability to perform activities of daily living, improve cardiometabolic heath and reduce symptoms of anxiety and depression (*Bennie et al. 2019*).

Methodology

Information on muscles-strengthening activities were collected since 2020 using an interviewer-administered questionnaire. Respondents were asked about the number of days in a typical week that they do physical activities or exercises to strengthen their muscles. Respondents must complete at least one set of exercises involving eight to 12 repetitions to be counted as having done one day of muscle-strengthening activities. Respondents were classified as having sufficient muscle-strengthening activities if the frequency of muscle-strengthening activities are at least two days per week.

Prevalence of Sufficient Muscle-Strengthening Activities

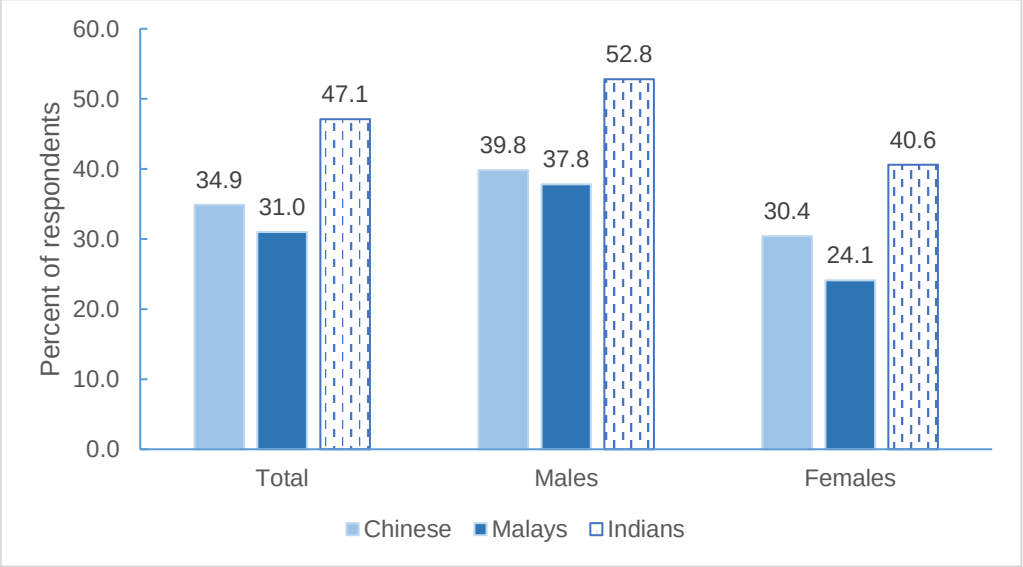
More than one in three (35.7%) Singapore residents aged 18 to 74 years reported having sufficient muscle-strengthening activities in 2024 (Table 3.3). This was more common among younger adults aged 18 to 29 years (45.2%) while the proportion of residents with sufficient muscle-strengthening activities dropped to around one-third or less for the rest of the older age groups. Males (41.0%) had higher proportion with sufficient muscle-strengthening activities compared with females (30.6%). The proportion of males with sufficient muscle-strengthening activities in the ages 18 to 29 years was about twice that of females in the same age group and this difference narrowed for older age groups.

Table 3.3: Age-specific prevalence (%) of sufficient muscle-strengthening activities among Singapore residents aged 18 to 74 years by sex, 2024

Age (years)	Total	Males	Females
18-29	45.2	59.7	29.3
30-39	32.5	39.1	26.4
40-49	33.6	33.3	33.9
50-59	31.2	32.8	29.6
60-74	36.1	39.6	32.9
18-74	35.7	41.0	30.6

Among the ethnic groups, Indians had the highest proportion with sufficient muscle-strengthening activities (47.1%) and for both sexes (males 52.8%, females 40.6%) (Graph 3.2). Similar proportion of Chinese (34.9%) and Malay (31.0%) residents reported having sufficient muscle-strengthening activities in 2024. Among the subgroups, Chinese (30.4%) and Malay (24.1%) females had the lowest participation in sufficient muscle-strengthening activities. Residents with post-secondary education (39.2%) had higher proportion with sufficient muscle-strengthening activities compared with residents with secondary (31.8%) or primary (20.8%) education (Table 3.4).

Graph 3.2: Crude prevalence (%) of sufficient muscle-strengthening activities among Singapore residents aged 18 to 74 years by sex and ethnicity, 2024



Trends in Sufficient Muscle-Strengthening Activities

The proportion of Singapore residents aged 18 to 74 years with sufficient muscle-strengthening activities remained stable from 33.8% to 35.7% between 2020 to 2024 (Table 3.4).

Table 3.4: Prevalence (%) of sufficient muscles-strengthening activities among Singapore residents aged 18 to 74 years by age, sex, education and ethnicity, 2020 to 2024

	NPHS	NPHS	NPHS	NPHS	NPHS
	2020	2021	2022	2023	2024
Total	33.8 (32.3, 35.3)	35.5 (34.0, 37.0)	34.5 (33.3, 35.8)	33.7 (32.4, 35.1)	35.7 (34.4, 36.9)
ASR	33.8	35.6	34.6	33.8	35.7
18-29	44.1 (40.2, 48.0)	46.4 (42.4, 50.5)	45.8 (42.4, 49.3)	42.4 (38.4, 46.3)	45.2 (41.7, 48.8)
30-39	30.9 (27.4, 34.4)	37.0 (33.8, 40.2)	33.9 (31.0, 36.7)	34.1 (31.1, 37.2)	32.5 (29.8, 35.3)
40-49	33.5 (30.1, 36.8)	30.8 (27.8, 33.9)	33.5 (30.9, 36.1)	31.7 (29.0, 34.4)	33.6 (31.0, 36.3)
50-59	35.5 (32.0, 39.0)	32.3 (29.0, 35.6)	31.6 (28.7, 34.5)	31.3 (28.4, 34.2)	31.2 (28.3, 34.0)
60-74	25.5 (22.7, 28.3)	31.3 (28.8, 33.9)[a]	28.8 (26.4, 31.3)	30.0 (27.4, 32.5)	36.1 (33.8, 38.5)[a]
Males	40.1 (37.8, 42.4)	40.0 (37.9, 42.1)	40.2 (38.3, 42.0)	40.4 (38.4, 42.5)	41.0 (39.1, 42.8)
Females	27.8 (25.8, 29.8)	31.2 (29.1, 33.2)	29.1 (27.4, 30.9)	27.3 (25.6, 29.1)	30.6 (28.9, 32.2)
Primary	19.6 (16.4, 22.8)	21.0 (17.6, 24.3)	21.7 (18.6, 24.7)	19.3 (16.3, 22.3)	20.8 (17.9, 23.8)
Secondary	27.4 (24.8, 30.0)	30.5 (28.0, 33.1)	29.2 (26.8, 31.6)	28.4 (25.9, 30.9)	31.8 (29.6, 34.1)
Post-secondary	39.4 (37.3, 41.5)	40.1 (38.1, 42.0)	38.9 (37.2, 40.6)	38.0 (36.3, 39.8)	39.2 (37.5, 40.8)
Chinese	32.7 (31.0, 34.5)	34.5 (32.8, 36.2)	33.3 (31.8, 34.8)	32.1 (30.6, 33.6)	34.9 (33.5, 36.4)
Malays	32.7 (28.5, 36.9)	33.7 (29.8, 37.7)	33.9 (30.5, 37.4)	34.1 (30.3, 37.8)	31.0 (27.6, 34.3)
Indians	41.6 (36.1, 47.1)	41.7 (36.8, 46.5)	44.8 (40.7, 49.0)	41.8 (36.7, 46.9)	47.1 (42.9, 51.3)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically from the previous survey year at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) Data for NPHS 2023 have been revised due to a coding error.

Chapter 4
Chronic Disease Screening

Key Points

- Among Singapore residents aged 40 to 74 years with no previous diagnosis of diabetes, high blood pressure, and high blood cholesterol ("DHL"), (i.e. not told by a doctor that they have these diseases), about two-thirds (66.4%) were screened for all three health conditions according to the recommended screening frequency
- Among Singapore residents aged 40 to 74 years without known diabetes, 79.3% were screened for diabetes within the past three years.
- Among Singapore residents aged 40 to 74 years without known high blood pressure, 85.7% were screened for high blood pressure in the past two years.
- Among Singapore residents aged 40 to 74 years without known high blood cholesterol, 76.8% were screened within the past three years.

Introduction

Chronic disease screening is an effective strategy for disease prevention in the population. It is important to go for appropriate and regular health screening as it helps to detect risk factors or diseases early even when there are no symptoms. Early detection of diabetes mellitus, high blood pressure and high blood cholesterol could result in better treatment, fewer complications and increased chances of better outcomes.

Methodology

An interviewer-administered questionnaire was used. Respondents were asked whether they were ever told by a doctor that they had diabetes, high blood pressure or high blood cholesterol. Respondents who reported that they were not told by a doctor that they have diabetes or high blood cholesterol were asked about their most recent blood tests. Those who were not told by a doctor that they had high blood pressure were asked about the last time they had checked their blood pressure. Respondents were also asked about the place where they last had their screening for these chronic diseases. The "Healthier SG Screening" programme (formerly known as "Screen for Life") which takes reference from the Screening Test Review Committee's recommendations, recommended that Singapore residents aged 40 years and above to go for diabetes and hyperlipidaemia screening once every three years and hypertension screening once every two years.

Practice of Health Screening

Health screening for chronic diseases was a relatively common practice among Singapore residents aged 40 to 74 years who were not told by a doctor to have any chronic diseases (diabetes, high blood pressure and high blood cholesterol (DHL)). In 2024, 66.4% of these residents reported being screened for all three health conditions (DHL) according to the recommended screening frequencies (Table 4.1). The majority of them with no known DHL were screened at private GP clinics at 44.3%, followed by polyclinics (17.0%), specialist outpatient clinics in public hospitals (10.7%) and specialist outpatient clinics in private hospitals (8.6%)

The practice of chronic disease screening was found to be more prevalent among older adults aged 70 to 74 years, with three-fourths of them (76.9%) having screened for all three health conditions (DHL) according to the recommended screening frequency. Among the ethnic groups, Indians (79.6%) had a higher screening participation rate for all three chronic diseases, followed by Chinese (66.1%) and Malays (54.6%). Singapore residents with post-secondary education were more likely to have gone for chronic disease screening compared to those with lower education levels (primary education: 55.6%, secondary education: 55.8%, post-secondary education: 72.7%).

Looking at individual chronic diseases alone (regardless of co-morbidity with the other two chronic diseases), 79.3% of adults aged 40 to 74 years without known diabetes were screened for diabetes within the past three years, 85.7% of those without known high blood pressure were screened for high blood pressure within the past two years, and 76.8% of those with no previous diagnosis of high blood cholesterol were screened for high blood cholesterol within the past three years (Tables 4.3 to 4.5).

Trends in Health Screening

Over 2007 to 2024, significant increases in the screening participation for residents with no previous diagnosis of DHL were observed among those aged 40 to 49 years, females, Chinese, and those with post-secondary education (Table 4.2). The overall chronic disease screening participation showed a significant upward trend during this period, but not the age-standardised screening participation rates.

For the individual chronic diseases, the crude screening participation rate for diabetes and hypertension screening increased significantly from 2007 to 2024 while the screening participation rate for hyperlipidaemia did not show a significant upward trend over the

same period (Tables 4.3 to 4.5). For diabetes, the screening participation improved in the age groups of 40 to 49 years and 70 to 74 years; in both sexes, among Chinese and Indians, and those with primary and post-secondary education. For hypertension, the significant improvements were observed for those aged 40 to 49 years, in both sexes, among Chinese and those with primary education.

Between 2019 and 2024, there was an initial decline in the individual crude screening participation for all three chronic diseases during the COVID-19 period, but it has since returned to levels comparable to the pre-pandemic period.

Table 4.1: Health screening practice (%) among Singapore residents who did not have any of the corresponding self-reported chronic diseases aged 40 to 74 years by socio-demographic characteristics, 2024

Characteristic	Screened for all 3 diseases within the recommended intervals	Diabetes screening at least once in the past 3 years	Hypertension screening at least once in the past 2 years	High blood cholesterol screening at least once in the past 3 years
Total	66.4	79.3	85.7	76.8
Age (years)				
40-49	67.5	77.7	84.6	76.4
50-59	63.9	76.2	85.2	73.3
60-69	65.1	81.7	86.6	79.4
70-74	76.9	89.9	90.6	86.7
Sex				
Males	66.2	80.2	85.2	76.5
Females	66.5	78.4	86.1	77.1
Highest Education Attained				
Primary	55.6	75.5	80.3	71.6
Secondary	55.8	75.2	82.1	70.5
Post-secondary	72.7	82.2	88.4	80.8
Ethnic group				
Chinese	66.1	78.7	85.3	76.3
Malays	54.6	74.5	83.1	70.3
Indians	79.6	89.4	90.3	87.6

Note: Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Table 4.2: Chronic disease screening participation (%) among Singapore residents who did not have any of the self-reported chronic diseases aged 40 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	58.1	45.2	56.0	66.4 (63.1, 69.6)	66.3 (63.7, 68.9)	63.0 (60.4, 65.6)	59.2 (56.7, 61.8)	60.3 (58.1, 62.4)	62.6 (60.5, 64.8)	66.4[b] (64.5, 68.3)
ASR	62.0	45.2	56.9	68.3	68.2	63.3	59.4	60.8	62.6	66.5
40-49	54.5	44.7	55.0	60.7 (56.2, 65.1)	62.6 (58.6, 66.6)	62.5 (58.5, 66.6)	60.8 (56.8, 64.7)	59.5 (56.4, 62.6)	62.8 (59.5, 66.1)	67.5[b] (64.6, 70.3)
50-59	60.4	47.9	54.8	69.1 (63.6, 74.5)	66.2 (61.5, 70.9)	63.1 (58.6, 67.6)	55.3 (50.5, 60.1)	58.3 (54.3, 62.4)	63.3 (59.4, 67.2)	63.9 (60.1, 67.8)
60-69	68.6	37.4	61.8	71.1 (64.6, 77.5)	72.1 (67.3, 77.0)	62.9 (57.2, 68.5)	58.6 (53.5, 63.6)	64.6 (59.5, 69.7)	60.2 (55.0, 65.5)	65.1 (60.9, 69.3)
70-74	68.9	53.3	56.9	85.2 (77.2, 93.2)	79.0 (71.6, 86.3)	66.7 (54.3, 79.0)	72.6 (64.8, 80.4)	63.2 (53.8, 72.6)	66.0 (57.7, 74.3)	76.9 (70.8, 83.0)
Males	59.9	47.8	55.0	65.9 (61.3, 70.5)	67.5 (63.5, 71.5)	63.9 (60.2, 67.7)	61.3 (57.9, 64.6)	59.2 (56.0, 62.5)	61.9 (58.6, 65.1)	66.2 (63.3, 69.1)
Females	56.4	42.8	56.9	66.8 (62.6, 71.0)	65.2 (61.7, 68.8)	62.2 (58.7, 65.8)	57.5 (53.7, 61.3)	61.1 (58.2, 64.0)	63.3 (60.3, 66.2)	66.5[b] (63.9, 69.2)
Primary	57.8	32.7	43.7	60.9 (53.3, 68.6)	57.2 (50.7, 63.8)	50.4 (44.3, 56.6)	56.4 (49.9, 62.9)	54.6 (48.7, 60.6)	51.6 (45.1, 58.1)	55.6 (49.6, 61.6)
Secondary	57.6	45.4	53.7	64.4 (59.0, 69.7)	61.1 (56.7, 65.6)	55.9 (51.2, 60.7)	50.1 (45.2, 54.9)	54.1 (49.9, 58.3)	55.6 (51.4, 59.8)	55.8 (52.0, 59.5)
Post-secondary	59.0	54.1	64.5	71.0 (66.7, 75.4)	71.4 (67.8, 75.1)	69.8 (66.3, 73.3)	64.1 (60.8, 67.4)	64.1 (61.3, 66.9)	67.6 (64.9, 70.4)	72.7[b] (70.3, 75.1)
Chinese	57.2	44.6	55.7	65.8 (62.1, 69.5)	64.9 (61.8, 67.9)	63.5 (60.6, 66.5)	59.7 (56.7, 62.7)	58.7 (56.2, 61.2)	61.4 (58.9, 63.9)	66.1[b] (63.9, 68.3)
Malays	57.2	40.0	48.2	62.2 (53.4, 71.1)	64.4 (56.4, 72.3)	48.4 (39.7, 57.0)	48.3 (40.5, 56.0)	59.0 (52.5, 65.5)	52.6 (45.5, 59.7)	54.6 (48.3, 60.9)
Indians	70.1	59.3	68.9	80.0 (71.9, 88.1)	78.7 (71.7, 85.7)	75.4 (68.3, 82.5)	65.7 (58.7, 72.7)	71.9 (66.0, 77.8)	78.4 (72.9, 83.9)	79.6 (74.4, 84.9)

Table 4.3: Diabetes screening participation (%) among Singapore residents who did not have self-reported diabetes aged 40 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	72.4	63.9	70.3	77.8 (75.6, 80.0)	81.0 (79.3, 82.8)	78.5 (76.8, 80.3)	76.6 (74.9, 78.2)	77.4 (75.9, 78.8)	76.7 (75.2, 78.2)	79.3[b] (77.9, 80.6)
ASR	74.5	66.4	71.8	78.7	81.5	78.8	76.7	77.6	77.0	79.4[b]
40-49	67.3	58.3	65.9	71.4 (67.7, 75.1)	75.4 (72.0, 78.8)	75.2 (72.0, 78.5)	74.2 (71.4, 77.0)	74.1 (71.7, 76.5)	72.8 (70.2, 75.4)	77.7[b] (75.4, 79.9)
50-59	74.8	64.4	68.9	80.0 (76.2, 83.7)	81.4 (78.3, 84.5)	79.0 (75.9, 82.1)	73.8 (70.5, 77.1)	75.3 (72.4, 78.1)	75.9 (73.1, 78.6)	76.2 (73.4, 79.0)
60-69	80.0	73.9	78.1	81.7 (77.3, 86.2)	85.7 (83.1, 88.3)	79.8 (76.4, 83.2)	79.2 (76.3, 82.1)	81.8 (79.0, 84.6)	79.8 (77.0, 82.7)	81.7 (79.3, 84.1)
70-74	79.9	71.8	84.2	92.1 (87.7, 96.6)	91.2 (87.9, 94.5)	87.8 (83.1, 92.6)	90.0 (87.1, 93.0)	85.8 (82.1, 89.5)	86.4 (83.1, 89.7)	89.9[b] (87.1, 92.6)
Males	73.1	64.7	70.2	78.9 (75.8, 82.0)	82.6 (80.2, 84.9)	80.8 (78.4, 83.1)	78.6 (76.5, 80.7)	78.0 (75.9, 80.1)	77.2 (75.0, 79.3)	80.2[b] (78.3, 82.2)
Females	71.8	63.0	70.5	76.9 (73.8, 80.0)	79.7 (77.1, 82.3)	76.4 (73.8, 79.1)	74.7 (72.2, 77.1)	76.8 (74.8, 78.9)	76.3 (74.2, 78.3)	78.4[b] (76.5, 80.3)
Primary	70.7	58.4	63.9	75.4 (70.6,80.3)	77.8 (74.4, 81.2)	73.8 (69.8, 77.8)	75.2 (71.3, 79.0)	76.3 (72.7, 79.9)	71.4 (67.3, 75.6)	75.5[b] (71.9, 79.1)
Secondary	72.2	61.7	69.0	75.8 (72.0, 79.6)	79.7 (77.1, 82.3)	74.6 (71.2, 78.0)	72.7 (69.5, 75.9)	74.3 (71.6, 77.0)	73.7 (71.0, 76.5)	75.2 (72.8, 77.7)
Post-secondary	74.4	71.0	76.0	81.3 (78.1, 84.5)	83.0 (80.4, 85.7)	82.2 (79.8, 84.7)	79.2 (77.1, 81.3)	79.3 (77.3, 81.3)	79.5 (77.6, 81.4)	82.2[b] (80.4, 84.0)
Chinese	72.7	64.4	70.0	76.9 (74.4, 79.5)	80.5 (78.5, 82.5)	78.9 (76.9, 80.8)	76.6 (74.7, 78.5)	76.8 (75.1, 78.5)	76.5 (74.8, 78.2)	78.7[b] (77.2, 80.3)
Malays	68.4	54.5	65.7	76.5 (69.6, 83.3)	77.7 (71.9, 83.4)	69.8 (63.2, 76.4)	69.1 (63.8, 74.3)	72.8 (67.8, 77.7)	71.1 (66.4, 75.9)	74.5 (70.1, 79.0)
Indians	79.2	74.2	79.9	88.1 (82.3, 94.0)	89.3 (84.8, 93.8)	88.0 (83.0, 93.0)	85.1 (81.0, 89.2)	86.0 (82.3, 89.7)	83.0 (78.8, 87.2)	89.4[b] (86.0, 92.8)

Table 4.4: Hypertension screening participation (%) among Singapore residents who did not have self-reported hypertension aged 40 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	77.7	79.9	77.8	82.9 (80.8, 85.0)	86.0 (84.4, 87.6)	83.3 (81.4, 85.1)	82.4 (80.7, 84.1)	80.7 (79.2, 82.2)	82.7 (81.2, 84.2)	85.7[b] (84.4, 86.9)[a]
ASR	79.6	80.1	78.8	84.0	86.6	83.6	82.6	81.1	82.9	85.8[b]
40-49	75.8	78.3	76.4	79.9 (76.1, 83.6)	84.6 (81.6, 87.6)	82.7 (79.6, 85.8)	81.9 (79.2, 84.6)	78.5 (76.0, 80.9)	82.3 (79.9, 84.7)	84.6[b] (82.6, 86.6)
50-59	77.5	82.9	76.2	81.6 (78.1, 85.2)	85.7 (82.9, 88.5)	83.0 (79.8, 86.1)	79.7 (76.3, 83.1)	79.9 (77.0, 82.8)	82.4 (79.7, 85.0)	85.2 (82.7, 87.6)
60-69	85.0	78.5	84.4	88.3 (84.6, 92.1)	88.1 (85.2, 91.1)	84.8 (81.4, 88.3)	85.3 (82.5, 88.2)	85.0 (82.2, 87.8)	82.8 (79.4, 86.2)	86.6 (84.3, 88.9)
70-74	82.2	79.5	79.3	94.1 (89.9, 98.3)	90.8 (86.3, 95.2)	83.6 (75.0, 92.1)	89.7 (85.6, 93.8)	83.2 (77.4, 89.0)	86.8 (81.8, 91.8)	90.6 (87.4, 93.7)
Males	77.1	80.5	77.0	81.3 (77.8, 84.8)	85.5 (83.1, 88.0)	83.2 (80.6, 85.8)	81.8 (79.4, 84.2)	81.0 (78.8, 83.2)	81.7 (79.4, 83.9)	85.2[b] (83.4, 87.0)
Females	78.2	79.4	78.5	84.4 (81.7, 87.0)	86.5 (84.3, 88.6)	83.4 (80.8, 86.0)	82.9 (80.5, 85.3)	80.4 (78.3, 82.5)	83.6 (81.6, 85.7)	86.1[b] (84.4, 87.8)
Primary	76.5	72.9	68.7	80.1 (75.0, 85.2)	78.4 (74.2, 82.6)	78.4 (74.2, 82.6)	80.4 (76.3, 84.6)	78.7 (74.8, 82.6)	77.9 (73.3, 82.6)	80.3[b] (76.4, 84.2)
Secondary	79.9	80.5	76.7	82.3 (78.7, 86.0)	85.4 (82.9, 87.8)	79.2 (75.6, 82.8)[a]	81.7 (78.4, 85.1)	79.9 (76.9, 82.8)	80.8 (77.9, 83.6)	82.1 (79.7, 84.6)
Post-secondary	75.6	84.6	84.2	85.2 (82.1, 88.4)	88.7 (86.5, 91.0)	86.8 (84.3, 89.2)	83.2 (81.0, 85.3)	81.6 (79.6, 83.6)	84.6 (82.7, 86.5)	88.4 (86.9, 89.9)[a]
Chinese	76.7	79.9	76.9	82.2 (79.8, 84.6)	85.8 (84.0, 87.7)	83.1 (81.0, 85.2)	81.6 (79.6, 83.6)	79.1 (77.3, 80.9)	81.2 (79.4, 83.0)	85.3[b] (83.9, 86.8)[a]
Malays	79.3	76.6	76.4	82.6 (76.3, 88.8)	81.4 (76.0, 86.8)	74.7 (67.3, 82.0)	83.8 (79.5, 88.0)	83.1 (78.6, 87.6)	80.8 (76.2, 85.4)	83.1 (78.9, 87.3)
Indians	87.6	86.7	86.7	92.8 (88.4, 97.3)	92.5 (88.5, 96.5)	92.4 (89.0, 95.9)	87.2 (82.9, 91.5)	88.9 (85.4, 92.3)	94.0 (91.5, 96.5)	90.3 (87.0, 93.5)

Table 4.5: Hyperlipidaemia screening participation (%) among Singapore residents who did not have self-reported hyperlipidaemia aged 40 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	78.1	61.1	73.0	78.2 (75.9, 80.5)	77.9 (76.0, 79.9)	76.5 (74.5, 78.6)	72.5 (70.5, 74.5)	75.0 (73.3, 76.7)	74.7 (73.0, 76.4)	76.8 (75.3, 78.4)
ASR	80.8	62.7	74.5	79.4	78.9	77.0	72.8	75.6	75.2	77.2
40-49	74.8	59.3	70.8	73.0 (69.2, 76.7)	73.3 (69.7, 76.8)	74.5 (71.1, 78.0)	71.6 (68.3, 74.8)	71.8 (69.2, 74.5)	72.4 (69.6, 75.2)	76.4 (74.0, 78.8)
50-59	79.9	62.9	70.7	78.7 (74.6, 82.9)	76.9 (73.3, 80.5)	75.3 (71.7, 79.0)	68.7 (64.7, 72.7)	74.4 (71.2, 77.5)	74.4 (71.3, 77.4)	73.3 (70.2, 76.5)
60-69	86.2	63.1	79.4	84.1 (80.0, 88.2)	84.0 (80.9, 87.1)	79.0 (75.2, 82.8)	74.4 (70.6, 78.1)	78.6 (75.1, 82.2)	76.8 (73.1, 80.5)	79.4 (76.4, 82.4)
70-74	77.9	61.5	84.8	90.3 (85.0, 95.7)	89.8 (85.2, 94.4)	85.7 (79.3, 92.1)	88.2 (84.2, 92.2)	84.3 (79.2, 89.4)	83.1 (77.8, 88.4)	86.7 (82.8, 90.6)
Males	77.9	62.8	71.8	78.6 (75.2, 82.0)	79.0 (76.0, 82.0)	77.5 (74.7, 80.3)	74.2 (71.7, 76.7)	75.3 (72.8, 77.7)	74.9 (72.3, 77.4)	76.5 (74.2, 78.8)
Females	78.3	59.5	74.1	77.8 (74.8, 80.9)	77.0 (74.5, 79.6)	75.7 (72.8, 78.6)	71.0 (67.9, 74.0)	74.7 (72.4, 77.0)	74.6 (72.2, 76.9)	77.1 (74.9, 79.2)
Primary	73.8	53.7	66.2	74.9 (69.4, 80.4)	74.2 (69.4, 79.0)	68.1 (63.1, 73.1)	75.7 (71.4, 80.0)	70.6 (66.1, 75.1)	68.8 (63.7, 74.0)	71.6 (67.1, 76.2)
Secondary	77.7	61.1	72.1	76.4 (72.2, 80.6)	75.1 (71.9, 78.4)	72.3 (68.5, 76.1)	64.0 (60.0, 68.1)[a]	70.7 (67.6, 73.9)	70.5 (67.3, 73.7)	70.5 (67.5, 73.5)
Post-secondary	82.4	67.1	78.3	81.7 (78.5, 84.9)	80.9 (77.9, 83.9)	81.3 (78.7, 84.0)	76.0 (73.5, 78.5)[a]	78.2 (76.0, 80.4)	78.0 (75.8, 80.2)	80.8 (78.8, 82.8)
Chinese	78.1	61.8	72.5	77.7 (75.1, 80.3)	77.9 (75.6, 80.2)	77.3 (75.1, 79.5)	72.9 (70.6, 75.2)	74.1 (72.1, 76.0)	74.3 (72.3, 76.4)	76.3 (74.5, 78.1)
Malays	74.0	53.8	69.6	77.7 (70.8, 84.6)	75.1 (68.9, 81.4)	63.0 (55.5, 70.6)	62.2 (55.3, 69.0)	71.1 (65.9, 76.3)	68.3 (62.8, 73.7)	70.3 (65.2, 75.4)
Indians	83.1	67.6	82.2	86.3 (80.7, 91.9)	83.6 (77.7, 89.4)	84.8 (79.4, 90.2)	79.8 (74.9, 84.7)	85.9 (82.1, 89.7)	83.9 (79.7, 88.2)	87.6 (83.7, 91.4)

Notes applicable to Table 4.2 to 4.5:

(1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age- standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [b] Indicate statistically significant linear upward trend between 2007 and 2024 with p-value <0.05.

Chapter 5
Breast Cancer Screening

Key Points

- In 2024, slightly more than one-third (35.2%) of Singapore women in the 50 to 69 years age group reported that they had gone for mammography in the last two years.

Introduction

Breast cancer remained the most common cancer among Singapore women in the past 50 years (NRDO 2024). For the latest five-year period from 2018-2022, it accounted for 29.6% cancer diagnoses in females, and the age-standardised incidence rate of breast cancer was 76.2 per 100,000 women. It was the leading cause of cancer death among females in 2018-2022, accounting for 17.1% of cancer deaths among females.

A number of risk factors, including age, family history of breast cancer, smoking, high-fat diet and obesity, have been linked with the development of breast cancer. The earlier breast cancer is diagnosed, the better the chances for successful treatment. As early breast cancer typically develops without any symptoms, screening is important. Mammography for women over 50 years old is widely accepted as appropriate and beneficial. The Healthier SG Screening programme, which takes reference from the Screening Test Review Committee's recommendations, recommends mammography screening once every two years for women aged 50 to 69 years.

Methodology

An interviewer-administered questionnaire was used. Female respondents were asked about their practice of mammography and where they went for their mammograms.

Practice of Mammography

In 2024, slightly more than one-third (35.2%) of Singapore women in the 50 to 69 years age group reported that they had gone for a mammography within the last two years, in accordance with the recommended frequency of mammography in this age group (Table 5.1). Ever-married women (35.2%) were just as likely to have a mammography within the last two years than never married women (35.0%). A higher proportion of Chinese (37.9%) and Indian (30.2%) women had undergone mammography compared to their Malay counterparts (18.4%) (Table 5.2). Women with post-secondary education (45.4%) were more likely to go for screening than women with secondary education (31.3%) or primary education (19.3%). More than two-fifths (41.0%) of the women had their mammogram taken in the polyclinics, followed by public hospitals (20.9%), private hospitals (16.8%) and private X-ray centres (12.5%).

Table 5.1: Practice of mammography (%) among Singapore female residents aged 50 to 69 years by marital status, 2024

Characteristic	Had a mammography within the last 2 years
Total	35.2
Marital status	
Never married	35.0
Ever-married	35.2

Trends in Breast Cancer Screening

Between 2007 and 2024, the downward trends for overall and other groups were not significant while there was significant decrease in screening participation for breast cancer for Malay females and in all educational levels (Table 5.2).

Between 2019 and 2024, there was an initial decline in the crude and age-standardised participation rate of breast screening during the COVID-19 period, but it has since returned to levels comparable to the pre-pandemic period.

Table 5.2: Breast cancer screening participation (%) among Singapore female residents aged 50 to 69 years by age, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	41.0	39.6	42.7	30.9 (26.9, 34.9)	38.7 (34.8, 42.6)	37.9 (34.7, 41.2)	31.1 (28.0, 34.1)[a]	37.6 (34.5, 40.6)[a]	34.7 (31.7, 37.8)	35.2 (32.4, 38.0)
ASR	40.2	39.3	41.3	30.7	39.0	37.9	31.5	37.7	34.7	35.2
50-59	43.6	40.5	44.3	32.7 (27.3, 38.2)	40.2 (34.7, 45.7)	40.9 (36.1, 45.8)	31.6 (27.3, 36.0)[a]	41.1 (36.6, 45.5)[a]	38.4 (34.1, 42.8)	38.9 (34.6, 43.1)
60-69	35.8	37.9	39.9	28.4 (23.0, 33.9)	36.9 (31.4, 42.4)	34.3 (29.7, 38.8)	30.4 (26.1, 34.8)	33.6 (29.3, 37.8)	30.6 (26.5, 34.7)	31.0 (27.5, 34.6)
Primary	29.9	29.3	25.5	24.3 (17.4, 31.2)	28.4 (22.2, 34.6)	22.6 (17.3, 27.8)	24.6 (18.3, 31.0)	27.7 (22.0, 33.4)	20.8 (15.4, 26.2)	19.3[c] (14.8, 23.8)
Secondary	48.4	40.8	46.2	28.6 (22.8, 34.4)	37.0 (32.3, 41.7)	32.9 (28.0, 37.9)	26.0 (21.6, 30.4)	34.5 (29.5, 39.4)	31.5 (27.0, 36.0)	31.3[c] (27.2, 35.3)
Post-secondary	54.8	60.7	66.0	45.6 (35.7, 55.5)	49.6 (41.2, 58.0)	54.3 (48.0, 60.6)	42.4 (37.0, 47.9)[a]	46.5 (41.3, 51.7)	44.6 (39.3, 49.9)	45.4[c] (40.5, 50.3)
Chinese	41.9	41.7	44.4	32.2 (27.6, 36.8)	40.1 (35.7, 44.6)	41.3 (37.6, 45.0)	31.7 (28.2, 35.2)[a]	39.5 (35.9, 43.0)[a]	36.6 (33.0, 40.1)	37.9 (34.7, 41.2)
Malays	35.0	23.5	28.1	10.4 (4.3, 16.5)	28.9 (20.5, 37.3)[a]	17.6 (10.7, 24.4)	18.7 (11.7, 25.8)	21.5 (14.7, 28.3)	16.9 (11.0, 22.8)	18.4[c] (12.4, 24.5)
Indians	38.2	41.9	44.8	46.3 (30.2, 62.3)	41.0 (28.5, 53.5)	43.2 (31.3, 55.1)	37.7 (27.0, 48.4)	43.9 (32.9, 54.9)	40.4 (28.2, 52.5)	30.2 (21.5, 39.0)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 female resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [c] Indicate statistically significant linear downward trend between 2007 and 2024 with p-value <0.05.

Chapter 6
Cervical Cancer Screening

Key Points

- In 2024, more than two in five (44.9%) Singapore female residents aged 25 to 74 years reported that they had gone for cervical cancer screening (had done Pap test in the past three years or HPV test in the past five years).
- Women aged 30 to 59 years were most likely to have undergone cervical cancer screening.

Introduction

Cervical cancer was the 10th most common cancer among women in Singapore for the latest five-year period from 2018-2022, accounting for 2.5% of cancer diagnoses in females (NRDO 2024). During this period, the age-standardised incidence rate of cervical cancer was 6.8 per 100,000 women and it accounted for 2.4% of all cancer deaths among females.

Major risk factors for cervical cancer include having sexual intercourse at an early age, having multiple sexual partners, and infection with Human Papillomavirus (HPV) (the cause of genital warts). Long term consumption of combined oral contraceptive pills and cigarette smoking are also risk factors (American Cancer Society, 2025)

Based on the latest recommendations on cervical cancer screening in 2019 (Ministry of Health, 2019), women aged 25 to 29 years are recommended to undergo a Pap test every three years while women aged 30 years and above are recommended to undergo HPV testing every five years.

Methodology

An interviewer-administered questionnaire was used. Female respondents were asked about their cervical cancer screening history as well as where they took the test; and which test (Pap test/ HPV test) was taken.

Practice of Cervical Cancer Screening

In 2024, among women aged 25 to 74 years, more than two in five (44.9%) had undergone cervical cancer screening (had done a Pap test in the past three years or HPV test in the past five years) (Table 6.1). The proportion of women who had undergone cervical cancer screening was higher among ever-married women (51.2%) than women who were never married (21.9%). Chinese (47.2%) and Indian (41.6%) women were more likely to have undergone cervical cancer screening compared to Malays (32.9%) women (Table 6.2). Women aged 30 to 59 years were the most likely to have undergone cervical cancer screening. Women with post-secondary education (51.3%) were more likely to have undergone cervical cancer screening compared to those with secondary (38.0%) or primary education (22.5%). The most common setting for women's latest cervical cancer screening was private GP clinics (26.5%), followed by specialist outpatient clinics in the public hospitals (22.5%), specialist outpatient clinics in the private hospitals (18.8%) or polyclinics (17.5%).

Table 6.1: Practice of cervical cancer screening (%) among Singapore women aged 25 to 74 years by marital status, 2024

Characteristic	Had a cervical cancer screening
Total	44.9
Marital status	
Never married	21.9
Ever-married	51.2

Trends in Cervical Cancer Screening

The crude and age-standardised screening participation for cervical cancer decreased significantly from 2007 to 2024 (Table 6.2). Significant decreases were seen in some age groups (25 to 29 years, 30 to 39 years and 70 to 74 years), across all education levels and all ethnic groups.

Between 2019 and 2024, there was an initial decline in the crude and age-standardised participation rate of cervical screening during the COVID-19 period, but it has since returned to levels comparable to the pre-pandemic period.

Table 6.2: Cervical cancer screening participation (%) among Singapore female residents aged 25 to 74 years by age, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	57.9	46.8	48.9	46.3 (43.5, 49.1)	48.2 (45.8, 50.7)	45.4 (43.1, 47.6)	41.0 (38.7, 43.3)	43.1 (41.2, 45.1)	45.4 (43.3, 47.4)	44.9[c] (43.0, 46.8)
ASR	54.1	44.3	47.6	45.0	47.8	44.7	41.1	42.9	44.9[c]	44.7[c]
25-29	49.5	32.3	29.4	21.5 (14.2, 28.9)	21.0 (15.1, 26.9)	18.8 (12.8, 24.7)	21.4 (15.2, 27.5)	17.6 (12.5, 22.6)	20.3 (13.4, 27.3)	22.7[c] (16.7, 28.6)
30-39	69.5	59.5	53.9	57.5 (51.5, 63.4)	55.9 (51.0, 60.7)	52.2 (47.6, 56.9)	43.6 (39.1, 48.2)	47.1 (43.1, 51.1)	54.6 (50.3, 59.0)	49.2[c] (45.1, 53.2)
40-49	64.6	57.1	54.6	56.8 (51.1, 62.6)	58.8 (54.1, 63.5)	57.6 (52.8, 62.4)	56.1 (50.8, 61.5)	58.2 (54.3, 62.0)	57.8 (53.8, 61.9)	60.2 (56.4, 63.9)
50-59	59.8	43.8	48.4	48.8 (42.6, 54.9)	56.5 (51.5, 61.5)	52.8 (47.7, 57.9)	44.9 (40.0, 49.8)	49.3 (44.7, 53.9)	50.5 (45.9, 55.0)	48.8 (44.4, 53.2)
60-69	33.3	29.0	44.2	33.9 (28.2, 39.5)	37.0 (31.2, 42.8)	33.9 (29.2, 38.6)	32.5 (27.9, 37.0)	34.6 (30.3, 38.9)	34.3 (29.7, 38.9)	34.5 (30.7, 38.2)
70-74	s	s	47.5	18.0 (10.0, 26.1)	25.1 (17.8, 32.4)	20.6 (14.0, 27.3)	20.9 (12.8, 29.1)	15.4 (10.1, 20.6)	17.0 (11.2, 22.8)	25.3[c] (19.7, 30.9)
Primary	38.2	31.2	36.3	27.9 (22.5, 33.2)	28.9 (23.7, 34.1)	28.3 (23.4, 33.2)	29.4 (23.5, 35.4)	23.9 (19.4, 28.5)	26.7 (21.5, 31.8)	22.5[c] (18.3, 26.7)
Secondary	62.5	51.0	50.7	42.4 (37.3, 47.5)	49.8 (45.8, 53.9)	40.5 (36.3, 44.6)[a]	35.2 (31.2, 39.2)	37.4 (33.6, 41.2)	34.5 (30.7, 38.3)	38.0[c] (34.7, 41.3)
Post-secondary	66.4	52.5	53.4	55.5 (51.3, 59.8)	52.8 (49.3, 56.4)	51.7 (48.6, 54.8)	45.9 (42.8, 49.0)	49.0 (46.4, 51.6)	52.7 (50.0, 55.3)	51.3[c] (48.8, 53.7)
Chinese	59.4	47.6	50.8	48.5 (45.3, 51.7)	49.9 (46.8, 52.9)	47.2 (44.6, 49.8)	42.2 (39.5, 44.9)	45.3 (43.0, 47.6)	46.9 (44.5, 49.3)	47.2[c] (45.0, 49.3)
Malays	48.9	38.5	38.6	29.1 (22.2, 36.0)	34.8 (28.8, 40.8)	29.8 (23.5, 36.0)	29.2 (23.0, 35.5)	30.3 (25.5, 35.1)	31.4 (26.5, 36.4)	32.9[c] (28.0, 37.7)
Indians	51.8	47.0	42.8	47.4 (39.6, 55.2)	46.1 (39.4, 52.8)	46.3 (38.8, 53.7)	44.4 (38.1, 50.8)	38.6 (32.4, 44.8)	46.2 (38.2, 54.3)	41.6[c] (35.7, 47.4)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. a Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 female resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [c] Indicate statistically significant linear downward trend between 2007 and 2024 with p-value <0.05.

Chapter 7
Colorectal Cancer Screening

Key Points

- In 2024, 44.9% of Singapore residents aged 50 to 74 years had undergone colorectal screening within the recommended screening frequency.
- Approximately one in four of these residents aged 50 to 74 years reported having undergone a Faecal Immunochemical Test (FIT) at least once in the past one year (27.0%) or had undergone colonoscopy in the past 10 years (29.5%).
- The practice of taking a FIT or a colonoscopy was more prevalent among males (47.0%) than females (42.9%).

Introduction

Colorectal cancer was the most common and second most common cancer among Singapore men and women respectively for the latest five-year period from 2018-2022, accounting for 16.2% of cancer diagnoses in males and 12.9% of cancer diagnoses in females (NRDO 2024). During this period, the age-standardised incidence rate of colorectal cancer was 37.9 per 100,000 men and 27.0 per 100,000 women respectively and it accounted for 14.3% of cancer deaths in males and 15.6% of cancer deaths in females.

Factors that have been associated with higher risk of colorectal cancer include specific hereditary conditions, older age, inflammatory bowel diseases, regular high saturated fat/low fibre diet, excessive alcohol intake and sedentary lifestyle (Centers for Disease Control and Prevention, 2024).

Faecal Immunochemical Test (FIT) and colonoscopy can detect colorectal cancer at an early stage. The Screening Test Review Committee recommends annual screening for colorectal cancer using FIT, **or** screening with colonoscopy every 5-10 years, for people aged 50 years and older who are at average risk for colorectal cancer.

Methodology

An interviewer administered questionnaire was used. Respondents were asked whether they had ever done a FIT or colonoscopy, and where they took the FIT.

Practice of FIT

Based on the survey, 27.0% of Singapore residents aged 50 to 74 years reported to undergone FIT screening in the last one year (Table 7.1). A higher proportion of males (28.6%) than females (25.6%) had undergone a FIT in the last one year. Chinese (29.2%) were more likely to undergo FIT compared to Indians (27.3%) and Malays (15.4%). A higher proportion of residents with post-secondary education (34.3%) had undergone a FIT in the last one year compared to residents with secondary (22.4%) or primary (19.4%) education. The most common setting for FIT screening was private GP clinics (32.4%), followed by polyclinics (16.8%) and specialist outpatient clinics in the public hospitals (13.9%). One in five (19.9%) residents tested using FIT kits that they had collected from pharmacies, clinics, or Singapore Cancer Society.

Practice of Colonoscopy

29.5% of Singapore residents aged 50 to 74 years reported to have undergone a colonoscopy in the last 10 years (Table 7.1). Similar to the practice of FIT, the practice of colonoscopy was more prevalent among males (32.6%) than females (26.7%). Chinese (31.8%) were more likely to have undergone a colonoscopy compared to Indians (25.7%) and Malays (16.4%). More than one-third (35.1%) of residents with post-secondary education had a colonoscopy in the last 10 years compared to residents with secondary (27.0%) or primary (21.5%) education.

Table 7.1: Practice of FIT or colonoscopy (%) among Singapore residents aged 50 to 74 years by socio-demographic characteristics, 2024

Characteristic	Had a FIT in last 1 year	Had a colonoscopy in last 10 years
Total	27.0	29.5
Age (years)		
50-59	27.1	23.9
60-69	27.5	34.1
70-74	25.4	34.7
Sex		
Males	28.6	32.6
Females	25.6	26.7
Highest education attained		
Primary	19.4	21.5
Secondary	22.4	27.0
Post-secondary	34.3	35.1
Ethnic group		
Chinese	29.2	31.8
Malays	15.4	16.4
Indians	27.3	25.7

Note: Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Trends in Colorectal Cancer Screening

Any resident who took a FIT in the last one year or had undergone a colonoscopy in the last 10 years was considered as having been screened for colorectal cancer. In 2024, 44.9% of Singapore residents aged 50 to 74 years had undergone colorectal screening within the recommended screening frequency (Table 7.2). Females (42.9%) had lower screening participation compared to males (47.0%). Malay residents (26.5%) had lower screening participation compared to Chinese (48.5%) and Indian (40.9%) residents. In general, residents with higher education levels were more likely to have screened for colorectal cancer, where more than one in two (53.3%) residents with post-secondary education had done the screening compared to about two in five (40.7%) residents with secondary education and about one in three (33.7%) residents with primary education.

The crude and age-standardised screening participation rate for colorectal cancer rose significantly from 2007 to 2024 (Table 7.2). The increase was seen across all ages, sexes, education levels and ethnic groups over this period.

Between 2019 and 2024, there was an initial decline in the crude and age-standardised participation rate of colorectal screening during the COVID-19 period, but it has since returned to levels comparable to the pre-pandemic period.

Table 7.2: Colorectal cancer screening participation (%) among Singapore residents aged 50 to 74 years by age, sex, education, and ethnicity, 2007 to 2024

	NHSS	NHS	NHSS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2007	2010	2013	2017	2019	2020	2021	2022	2023	2024
Total	14.6	19.4	21.2	33.5 (30.5, 36.6)	42.0 (39.1, 44.8)[a]	41.1 (38.9, 43.3)	36.6 (34.4, 38.8)[a]	38.1 (36.2, 40.1)	41.7 (39.7, 43.7)	44.9[b] (43.0, 46.8)
ASR	15.0	19.4	22.1	33.5	42.0	41.2	36.5	38.0	41.7	44.9[b]
50-59	13.7	18.6	19.1	32.5 (28.6, 36.4)	39.7 (35.9, 43.5)	39.8 (36.4, 43.2)	33.9 (30.3, 37.4)	36.2 (33.1, 39.2)	41.5 (38.4, 44.6)	39.8[b] (36.8, 42.8)
60-69	16.6	21.3	21.9	35.4 (30.7, 40.2)	44.3 (39.8, 48.7)	43.6 (40.0, 47.2)	38.8 (35.7, 41.9)	39.7 (36.6, 42.8)	42.2 (39.1, 45.4)	49.7[b] (46.9, 52.5)[a]
70-74	13.8	18.5	30.4	31.5 (24.7, 38.4)	43.7 (37.0, 50.3)	38.3 (32.7, 43.9)	39.5 (34.2, 44.7)	39.9 (35.3, 44.5)	40.5 (35.6, 45.5)	47.7[b] (43.3, 52.0)
Males	17.2	21.7	22.2	36.2 (31.7, 40.7)	45.4 (41.5, 49.2)[a]	44.6 (41.2, 47.9)	39.1 (36.0, 42.2)	40.0 (37.2, 42.8)	43.8 (40.9, 46.7)	47.0[b] (44.2, 49.8)
Females	12.1	17.2	20.3	30.9 (27.1, 34.8)	38.7 (35.5, 41.9)[a]	37.7 (34.6, 40.8)	34.2 (31.1, 37.3)	36.3 (33.6, 39.0)	39.6 (36.8, 42.4)	42.9[b] (40.4, 45.5)
Primary	11.4	12.3	14.7	25.9 (21.4, 30.3)	31.9 (28.1, 35.7)	27.9 (24.2, 31.6)	24.0 (20.5, 27.4)	27.4 (24.0, 30.8)	26.0 (22.5, 29.6)	33.7[b] (30.1, 37.3)[a]
Secondary	16.5	19.0	21.6	33.2 (28.5, 37.8)	38.9 (34.9, 42.9)	35.8 (32.3, 39.2)	34.9 (31.3, 38.5)	34.3 (31.2, 37.4)	37.9 (34.8, 41.1)	40.7[b] (37.8, 43.5)
Post-secondary	16.8	32.5	29.5	44.0 (37.8, 50.3)	53.5 (48.4, 58.6)	54.9 (50.8, 59.0)	46.7 (42.9, 50.4)[a]	48.0 (44.5, 51.4)	52.9 (49.5, 56.2)	53.3[b] (50.1, 56.5)
Chinese	15.2	21.3	22.3	34.6 (31.1, 38.0)	43.6 (40.4, 46.8)[a]	44.7 (42.2, 47.3)	38.6 (36.1, 41.1)[a]	41.7 (39.4, 43.9)	44.6 (42.3, 46.9)	48.5[b] (46.4, 50.7)
Malays	10.0	6.9	12.4	20.4 (13.3, 27.5)	31.9 (24.7, 39.2)	17.5 (12.8, 22.1)[a]	25.5 (19.3, 31.8)	19.0 (14.6, 23.5)	23.7 (18.8, 28.6)	26.5[b] (21.7, 31.2)
Indians	14.8	18.7	22.1	36.9 (26.8, 47.0)	37.5 (29.3, 45.7)	40.3 (32.4, 48.1)	29.6 (23.2, 36.0)	28.5 (22.4, 34.7)	35.0 (27.8, 42.3)	40.9[b] (34.4, 47.4)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [b] Indicate statistically significant linear upward trend between 2007 and 2024 with p-value <0.05.

Chapter 8
Self-reported Vaccination Uptake

Key Points

- In 2024, more than one in four (28.2%) Singapore residents aged 18 to 74 years reported that they had received influenza vaccination in the past 12 months.
- Among the age group recommended for influenza vaccination (elderly aged 65-74), 52.6% had received influenza vaccination in the past 12 months.
- The proportion of elderly aged 65 to 74 years who reported ever having received pneumococcal vaccination was 49.7% in 2024, which is a significant increase from 2023.

Introduction

Seasonal influenza, which is commonly called flu, is a respiratory illness caused by influenza viruses which is highly contagious. For healthy individuals, influenza is usually self-limiting. However, it can sometimes lead to complications and even death. Those who are at risk of serious flu complications such as older persons, young children, adults and children with certain medical conditions and pregnant women should get vaccinated (Healthhub, 2022). Annual influenza vaccination is recommended under the National Childhood Immunisation Schedule (NCIS) and National Adult Immunisation Schedule (NAIS) for these groups of persons (Communicable Diseases Agency, 2025).

The pneumococcal vaccine helps to prevent pneumococcal disease caused by the bacteria *Streptococcus pneumonia*. This bacteremia can cause a wide spectrum of illnesses and disease burden is greater at the extremes of ages, that is, those less than five years old and those older than 65 years old, as well as those with certain medical conditions. These include infection of the lungs (pneumonia), ear (otitis media), brain (meningitis) and blood (bacteremia) (Healthhub, 2022). The NAIS and NCIS recommends all persons aged 65 years or older and other groups of persons at higher risk of complications from pneumococcal infection to be vaccinated against pneumococcal disease.

Methodology

An interviewer-administered questionnaire was used to measure the uptake of both vaccinations. Respondents were asked “In the past 12 months, have you had an injection to protect you from getting flu?” and “Have you ever had pneumococcal vaccination?”

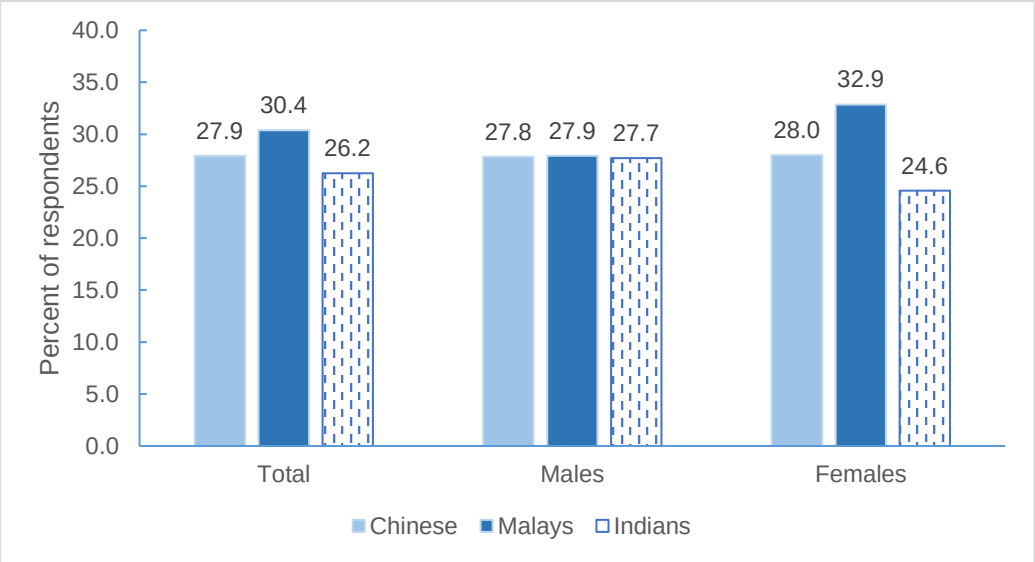
Self-reported Influenza Vaccination

The self-reported influenza vaccination among Singapore residents aged 18 to 74 years was 28.2% in 2024, with the proportion being similar among males (27.8%) and females (28.6%) (Table 8.1). Singapore residents aged 65 to 74 years had the highest self-reported influenza vaccination at 52.6% and more than double that of other age groups. The lowest uptake was among those aged 40 to 49 at 19.8%. All the ethnic groups had similar self-reported influenza vaccination uptake, with Malays at 30.4%, Chinese at 27.9% and Indians at 26.2% (Graph 8.1).

Table 8.1: Age-specific (%) self-reported influenza vaccination uptake among Singapore residents aged 18 to 74 years by sex, 2024

Age (years)	Total	Males	Females
18-29	27.4	34.1	20.0
30-39	24.1	20.1	27.9
40-49	19.8	20.1	19.6
50-64	24.6	21.9	27.1
65-74	52.6	50.7	54.3
18-74	28.2	27.8	28.6

Graph 8.1: Self-reported influenza vaccination uptake (%) among Singapore residents aged 18 to 74 years by sex and ethnicity, 2024



Trends in Self-reported Influenza Vaccination Uptake

Among Singapore residents aged 18 to 74 years, the crude and age-standardised self-reported influenza vaccination uptake showed a significant increasing trend between 2017 and 2024. This increasing trend is seen amongst most demographic groups, in all ages (except those aged 18 to 29 years), in both males and females, all education levels and Chinese during this period (Table 8.2). Between 2019 and 2024, there was a significant improvement in influenza vaccination uptake reported among residents aged 30 to 39 years and 65 to 74 years, among males, those with primary and secondary education, Chinese and Malays.

Table 8.2: Self-reported influenza vaccination uptake (%) among Singapore residents aged 18 to 74 years by age, sex, and ethnicity, 2017 to 2024

	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS	NPHS
	2017	2019	2020	2021	2022	2023	2024
Total	13.1 (11.7, 14.5)	17.4 (16.0,18.7)[a]	17.0 (15.8,18.2)	18.7 (17.6, 19.9)	18.0 (16.9, 19.0)	21.7 (20.6, 22.9)[a]	28.2[b,d] (27.0, 29.4)[a]
ASR	13.0	17.4	17.0	18.6	17.8	21.5	27.6 [b,d]
18-29	17.8 (13.8, 21.8)	21.2 (17.7, 24.7)	19.8 (16.5, 23.0)	21.3 (17.8, 24.8)	17.9 (15.2, 20.6)	19.6 (16.5, 22.6)	27.4 (24.2, 30.6)[a]
30-39	14.2 (11.0, 17.3)	16.0 (13.2, 18.8)	17.4 (14.4, 20.4)	16.9 (14.6, 19.1)	19.5 (17.1, 21.9)	20.9 (18.3, 23.5)	24.1[b,d] (21.7, 26.5)
40-49	9.6 (7.0, 12.2)	12.1 (9.9, 14.3)	12.6 (10.3, 14.9)	14.0 (12.0, 16.0)	11.6 (9.9, 13.3)	15.5 (13.4, 17.6)[a]	19.8[b] (17.6, 22.0)
50-64	11.3 (9.0, 13.6)	16.2 (13.7, 18.6)[a]	15.4 (13.3, 17.6)	14.7 (12.8, 16.6)	15.4 (13.6, 17.2)	18.7 (16.7, 20.7)	24.6[b] (22.4, 26.7)[a]

65-74	13.5 (9.8, 17.3)	24.2 (20.2, 28.2)[a]	22.5 (19.4, 25.5)	32.4 (29.0, 35.8)[a]	29.7 (26.7, 32.7)	40.6 (37.2, 43.9)[a]	52.6[b,d] (49.6, 55.5)[a]
Males	14.2 (12.1, 16.4)	16.0 (14.3, 17.7)	18.0 (16.0, 19.9)	18.4 (16.7, 20.0)	18.5 (17.0, 20.0)	22.1 (20.4, 23.8)[a]	27.8[b,d] (26.1, 29.5)[a]
Females	12.0 (10.2, 13.8)	18.7 (16.6, 20.7)[a]	16.1 (14.6, 17.6)	19.1 (17.5, 20.7)	17.5 (16.1, 18.8)	21.4 (19.8, 23.0)[a]	28.6[b] (27.0, 30.1)[a]
Primary	8.4 (6.1, 10.8)	16.4 (12.9, 19.9)[a]	15.3 (12.6, 18.1)	18.3 (15.1, 21.5)	22.6 (19.6, 25.7)	24.6 (21.3, 27.9)	31.9[b,d] (28.6, 35.2)[a]
Secondary	11.6 (9.2, 14.0)	15.3 (13.3, 17.3)	14.1 (12.3, 16.0)	18.9 (16.8, 21.0)[a]	16.9 (15.1, 18.8)	22.6 (20.4, 24.8)[a]	28.8[b,d] (26.7, 30.9)[a]
Post-secondary	15.1 (13.2, 17.1)	18.5 (16.7, 20.3)	18.7 (16.9, 20.4)	18.8 (17.2, 20.3)	17.6 (16.3, 18.9)	20.9 (19.5, 22.4)[a]	27.5[b] (25.9, 29.0)[a]
Chinese	12.0 (10.4, 13.6)	16.7 (15.0, 18.3)[a]	17.2 (15.8, 18.6)	18.5 (17.1, 19.8)	17.8 (16.6, 19.0)	21.4 (20.1, 22.7)[a]	27.9[b,d] (26.6, 29.3)[a]
Malays	18.2 (13.8, 22.6)	19.9 (16.4, 23.4)	15.8 (12.9, 18.7)	20.1 (17.0, 23.3)	20.4 (17.5, 23.3)	23.1 (20.0, 26.3)	30.4[d] (27.1, 33.6)[a]
Indians	14.5 (10.6, 18.4)	19.8 (15.4, 24.3)	17.4 (12.3, 22.6)	19.4 (14.8, 24.0)	15.8 (12.8, 18.8)	22.3 (18.1, 26.5)	26.2 (22.5, 30.0)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [b] Indicate statistically significant linear upward trend between 2017 and 2024 with p-value <0.05.

(5) [d] Indicate statistically significant linear upward trend between 2019 and 2024 with p-value <0.05

Self-reported Pneumococcal Vaccination Uptake Among Elderly

The proportion of elderly aged 65 to 74 years who reported ever having received pneumococcal vaccination was 49.7% in 2024, a significant increase from 35.0% in 2023 (Table 8.3). There were similar proportions of uptake reported among males (50.0%) and females (49.5%). In 2024, among the ethnic groups, Chinese (51.3%) had the highest self-reported pneumococcal vaccination uptake, followed by Indians (47.2%) then Malays (41.3%). Pneumococcal vaccination uptake increased with education attainment at 38.2%, 49.9%, and 63.1% for residents with primary education, secondary education, and post-secondary education, respectively.

Trends in Pneumococcal Vaccination Uptake Among Elderly

There was a significant upward trend in the pneumococcal vaccination uptake among Singapore residents aged 65 to 74 years from 2017 to 2024. Significant improvement in the pneumococcal vaccination uptake was reported among males and females, across all education levels, and among Chinese over the same period (Table 8.3). The trend was the same for the period between 2019 to 2024.

Table 8.3: Self-reported pneumococcal vaccination uptake (%) among Singapore residents aged 65 to 74 years by sex, education, and ethnicity, 2017 to 2024

	NPHS 2017	NPHS 2019	NPHS 2020	NPHS 2021	NPHS 2022	NPHS 2023	NPHS 2024
Total	11.9 (7.4, 16.4)	10.3 (7.9, 12.7)	14.4 (11.8, 17.0)	22.4 (19.3, 25.5)[a]	26.5 (23.5, 29.4)	35.0 (31.8, 38.2)[a]	49.7[b,d] (46.8, 52.7)[a]
Males	s	10.4 (7.2, 13.7)	13.8 (10.0, 17.7)	21.9 (17.9, 25.9)[a]	26.9 (22.4, 31.3)	35.0 (30.3, 39.7)	50.0[b,d] (45.6, 54.5)[a]
Females	12.7 (8.0, 17.3)	10.2 (6.8, 13.6)	15.0 (11.5, 18.4)	22.8 (18.1, 27.5)	26.1 (22.3, 30.0)	34.9 (30.6, 39.2)[a]	49.5[b,d] (45.5, 53.4)[a]
Primary	9.6 (4.2, 15.0)	6.5 (4.2, 8.9)	14.4 (10.5,18.2)[a]	20.5 (14.4, 26.7)	24.2 (19.9, 28.6)	28.4 (23.7, 33.1)	38.2[b,d] (33.4, 43.0)[a]
Secondary	13.3 (6.8, 19.9)	11.4 (7.2, 15.6)	13.8 (9.9,17.6)	22.2 (18.0, 26.5)[a]	28.7 (24.0, 33.4)	33.4 (28.7, 38.2)	49.9[b,d] (45.6, 54.1)[a]
Post-secondary	s	16.2 (8.9, 23.5)	15.7 (9.1, 22.2)	25.5 (19.1, 32.0)	26.3 (19.6, 33.0)	46.4 (39.0, 53.9)[a]	63.1[b,d] (56.5, 69.8)[a]
Chinese	9.8 (6.0, 13.6)	9.9 (7.4, 12.3)	15.1 (12.2, 18.0)	21.6 (18.2, 25.0)[a]	27.2 (23.9, 30.4)	36.7 (33.1, 40.2)[a]	51.3[b,d] (48.0, 54.6)[a]
Malays	s	s	s	23.3 (13.8, 32.8)	24.5 (14.8, 34.3)	29.2 (20.6, 37.7)	41.3 (33.0, 49.7)
Indians	s	s	s	32.2 (17.5, 47.0)	22.3 (12.4, 32.2)	27.8 (14.7, 40.8)	47.2 (35.8, 58.6)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [b] Indicate statistically significant linear upward trend between 2017 and 2024 with p-value <0.05.

(5) [d] Indicate statistically significant linear upward trend between 2019 and 2024 with p-value <0.05

Chapter 9
Mental Health

Key Points

- The crude prevalence of poor mental health, as measured by the 12-item General Health Questionnaire (GHQ-12), among Singapore residents aged 18 to 74 years was 15.4% in 2024.
- More females (17.3%) reported poor mental health compared to males (13.5%) in 2024.
- In 2024, prevalence of poor mental health was the highest among younger adults aged 18 to 29 years had the highest prevalence (25.5%), while the prevalence decreased with increasing age, ranging from 17.8% for the 30 to 39 years age group to 9.1% for the 60 to 74 years age group.
- In 2024, Singapore residents aged 18 to 74 years indicated that they were more willing to seek help informally from their support network (81.8%) than from healthcare professionals (64.0%) if they were constantly unable to cope with stress.
- In 2024, females were more willing to seek help from healthcare professionals and informal support networks compared to males (females: 65.1% and 84.9% respectively; males: 62.8% and 78.6% respectively).
- Among the age groups, Singapore residents in the oldest age band (60 to 74 years) (54.7%) were least willing to seek help from healthcare professionals while those aged 30 to 39 years (70.9%) were the most willing to do so in 2024.
- The proportion of Singapore residents who were willing to seek help from informal support networks decreased with age, it was the highest among younger adults aged 18 to 29 years (88.7%) and lowest among older adults aged 60 to 74 years (73.4%) in 2024.

Introduction

The WHO defines mental health as more than the absence of mental disorders. It is also a state of well-being in which the individual realises his or her own abilities, is able to cope with the normal stresses of life, work productively and fruitfully, and contribute to his or her community (WHO 2020). A person's mental health may be affected by multiple interrelated social, psychological, physical and biological factors (Kirkbride et al., 2024).

Methodology

The 12-item General Health Questionnaire (GHQ-12) was administered by interviewers and used to measure mental health. Cut-off for poor mental health (having a score of 3 or more) was based on an earlier internal validation study conducted in 2003.

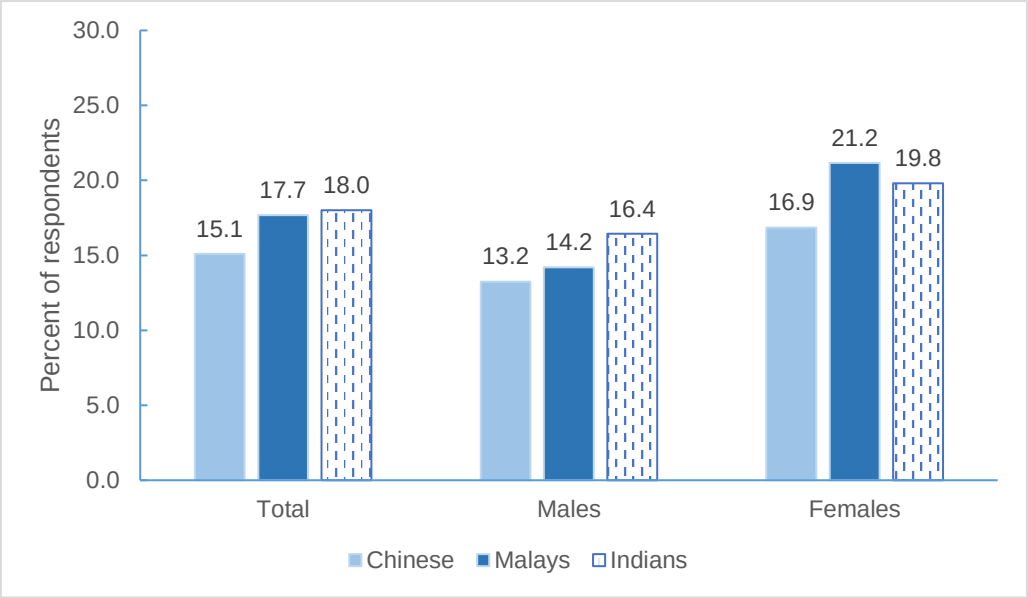
Prevalence of Poor Mental Health

The crude prevalence of poor mental health, as measured by GHQ-12, among Singapore residents aged 18 to 74 years was 15.4% in 2024 (Table 9.1). More females (17.3%) reported poor mental health compared to males (13.5%). The prevalence of poor mental health was highest in younger adults aged 18 to 29 years (25.5%), while the prevalence for other age groups was lower and decreased with age, ranging from 17.8% in the 30 to 39 years age group to 9.1% in the 60 to 74 years age group. Young females aged 18 to 29 years (31.7%) had the highest prevalence of poor mental health, double that of the national average. Among the ethnic groups, Indians (18.0%) and Malays (17.7%) had higher prevalences of poor mental health compared to Chinese (15.1%) (Graph 9.1). Residents with post-secondary education (16.7%) had the highest prevalence of poor mental health compared to residents with primary (11.4%) or secondary education (13.6%) (Table 9.2)

Table 9.1: Age-specific prevalence (%) of poor mental health among Singapore residents aged 18 to 74 years by sex, 2024

Age (years)	Total	Males	Females
18-29	25.5	19.7	31.7
30-39	17.8	16.8	18.8
40-49	14.2	15.2	13.4
50-59	12.5	9.4	15.5
60-74	9.1	7.7	10.4
18-74	15.4	13.5	17.3

Graph 9.1: Crude prevalence (%) of poor mental health among Singapore residents aged 18 to 74 years by sex and ethnicity, 2024



Trends in Prevalence of Poor Mental Health

The crude and age-standardised prevalence of poor mental health among Singapore residents aged 18 to 74 years increased between 2017 and 2024, though trend analysis did not show a statistically significant increase (Table 9.2). The only significant increase in the prevalence of poor mental health between 2017 to 2024 was observed among younger residents aged 18 to 29 years (16.5% to 25.5%) and among Indians (12.4% to 18.0%).

Table 9.2: Prevalence (%) of poor mental health among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2017 to 2024

	NPHS 2017	NPHS 2020	NPHS 2022	NPHS 2023	NPHS 2024
Total	12.5 (10.9, 14.0)	13.4 (12.4, 14.5)	17.0 (15.9, 18.0)[a]	15.0 (13.9, 16.0)	15.4 (14.5, 16.4)
ASR	12.4	13.3	17.0	15.0	15.6
18-29	16.5 (12.7, 20.3)	21.5 (18.4, 24.6)	25.3 (22.4, 28.2)	26.0 (22.6, 29.4)	25.5[b] (22.4, 28.5)
30-39	12.8 (9.8, 15.7)	12.6 (10.5, 14.8)	19.4 (17.0, 21.8)[a]	17.2 (14.9, 19.6)	17.8 (15.7, 20.0)
40-49	10.9 (8.1, 13.6)	12.4 (10.2, 14.6)	15.7 (13.7, 17.7)	13.4 (11.4, 15.4)	14.2 (12.4, 16.1)

50-59	10.6 (7.8, 13.5)	11.4 (9.2, 13.7)	15.0 (12.8, 17.2)	11.2 (9.3, 13.1)	12.5 (10.5, 14.5)
60-74	11.4 (8.8, 13.9)	9.4 (7.8, 11.1)	10.5 (8.7, 12.2)	8.2 (6.9, 9.5)	9.1 (7.8, 10.3)
Males	11.4 (9.3, 13.4)	12.0 (10.5, 13.5)	15.2 (13.8, 16.6)[a]	12.2 (10.9, 13.5)[a]	13.5 (12.3, 14.8)
Females	13.5 (11.4, 15.7)	14.8 (13.3, 16.2)	18.6 (17.2, 20.1)[a]	17.6 (16.1, 19.1)	17.3 (15.9, 18.7)
Primary	12.6 (9.6, 15.6)	12.6 (10.0, 15.1)	12.2 (9.8, 14.6)	9.5 (7.4, 11.6)	11.4 (9.0, 13.8)
Secondary	13.5 (10.7, 16.2)	15.4 (13.4, 17.5)	15.7 (13.7, 17.6)	13.4 (11.5, 15.3)	13.6 (12.0, 15.2)
Post-secondary	11.8 (9.8, 13.8)	12.7 (11.3, 14.1)	18.2 (16.9, 19.6)[a]	16.4 (15.1, 17.8)	16.7 (15.5, 17.9)
Chinese	11.7 (10.1, 13.3)	12.6 (11.4, 13.8)	16.4 (15.3, 17.6)[a]	14.7 (13.5, 15.8)	15.1 (14.0, 16.2)
Malays	16.9 (13.2, 20.6)	16.3 (13.2, 19.5)	19.5 (16.6, 22.3)	16.1 (13.2, 19.0)	17.7 (14.8, 20.5)
Indians	12.4 (8.1, 16.7)	15.9 (12.2, 19.6)	15.7 (12.6, 18.8)	16.1 (12.7, 19.5)	18.0[b] (14.8, 21.2)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey periods (where data are available) are significantly different statistically at 5% significance level as the confidence intervals for these two survey periods did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained, which served as a proxy for socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [b] Indicate statistically significant linear upward trend between 2017 and 2024 with p-value <0.05.

Definition of Help-seeking Attitudes

Through the interviewer-administered questionnaire, respondents were asked on their willingness to seek help from healthcare professionals or informal support networks if they were constantly unable to cope with stress. Healthcare professionals include counsellors, doctors, psychologists or psychiatrists. Informal support networks refer to friends, family, relatives, colleagues, religious leaders and teachers in school.

Help-seeking Attitudes

In 2024, Singapore residents aged 18 to 74 years were more willing to seek help from informal support networks (81.8%) than from healthcare professionals (64.0%) if they were constantly unable to cope with stress (Tables 9.3 and 9.4). Females were more willing to seek help from healthcare professionals and informal support networks compared to males. Older adults aged 60 to 74 years (54.7%) were the least willing to seek help from healthcare professionals while those aged 30 to 39 years (70.9%) were the most willing to seek help from healthcare professionals. Similarly, the willingness to seek help from informal support decreased with age, it was highest among younger adults aged 18 to 29 years (88.7%) and the lowest among older adults aged 60 to 74 years (73.4%). Those with higher levels of educational attainment were more willing to seek help from healthcare professionals and informal support networks. Willingness to seek help from healthcare professionals and informal support networks was highest among those with post-secondary education (71.5% and 85.3% respectively) and the lowest among those with primary education (38.9% and 68.0% respectively).

Trends in Help-seeking Attitudes

Between 2019 and 2024, overall help-seeking attitudes have increased, with the proportion of Singapore residents willing to seek help from healthcare professionals increasing from 47.8% to 64.0% (Table 9.3), while those willing to seek help from informal support networks increased from 74.5% to 81.8% (Table 9.4). However, these increases were not significant.

Significant increases in the proportion of Singapore residents willing to seek help from healthcare professionals were observed from 2019 to 2024 for demographic groups which were less willing to seek help compared to other groups. These groups include older adults aged 60 to 74 years (41.2% to 54.7%), males (45.4% to 62.8%), those with primary education (29.6% to 38.9%), Malays (48.5% to 61.1%) and Indians (44.4% to 63.7%). As for those willing to seek help from informal support networks, there was a significant increase observed amongst Indians (68.8% to 80.7%) from 2019 to 2024.

Table 9.3: Proportion of Singapore residents aged 18 to 74 years who were willing to seek help from healthcare professionals by age, sex, education, and ethnicity, 2019 to 2024

	NPHS 2019	NPHS 2020	NPHS 2021	NPHS 2022	NPHS 2023	NPHS 2024
Total	47.8 (46.0, 49.6)	60.4 (58.9, 61.8)[a]	58.3 (56.8, 59.8)	56.6 (55.3, 57.9)	62.8 (61.5, 64.2)[a]	64.0 (62.8, 65.2)
ASR	47.8	60.4	58.3	56.8	63.0	64.2
18-29	54.6 (50.3, 58.8)	63.3 (59.6, 67.0)[a]	62.2 (58.4, 66.0)	60.1 (56.7, 63.4)	64.5 (60.8, 68.3)	66.5 (63.2, 69.8)
30-39	53.5 (49.6, 57.4)	69.4 (66.3, 72.5)[a]	67.7 (64.8, 70.6)	62.0 (59.2, 64.9)	71.9 (69.2, 74.6)[a]	70.9 (68.4, 73.4)
40-49	47.0 (43.2, 50.8)	63.8 (60.6, 67.0)[a]	65.4 (62.2, 68.5)	59.2 (56.5, 61.9)[a]	67.4 (64.8, 70.1)[a]	67.4 (64.9, 69.9)
50-59	42.9 (38.9, 46.8)	58.9 (55.5, 62.2)[a]	51.9 (48.5, 55.4)[a]	55.2 (52.1, 58.3)	61.0 (58.0, 64.0)	62.6 (59.7, 65.5)
60-74	41.2 (37.6, 44.8)	47.8 (44.7, 50.9)	45.8 (43.1, 48.5)	48.1 (45.5, 50.8)	51.2 (48.5, 53.9)	54.7[d] (52.3, 57.0)
Males	45.4 (43.1, 47.7)	59.0 (56.8, 61.2)[a]	56.8 (54.7, 58.8)	56.3 (54.4, 58.1)	62.3 (60.3, 64.3)[a]	62.8[d] (61.0, 64.6)
Females	50.1 (47.7, 52.4)	61.6 (59.6, 63.7)[a]	59.8 (57.7, 61.9)	57.0 (55.2, 58.8)	63.3 (61.5, 65.2)[a]	65.1 (63.4, 66.7)
Primary	29.6 (25.8, 33.5)	34.1 (30.5, 37.8)	34.9 (31.0, 38.7)	33.7 (30.3, 37.1)	37.4 (33.6, 41.1)	38.9[d] (35.3, 42.5)
Secondary	44.0 (41.3, 46.6)	52.5 (49.7, 55.3)[a]	45.8 (43.0, 48.6)[a]	48.0 (45.4, 50.6)	52.9 (50.2, 55.6)	53.5 (51.1, 55.8)
Post-secondary	53.5 (51.1, 55.8)	68.9 (67.0, 70.8)[a]	67.6 (65.8, 69.3)	64.0 (62.4, 65.6)[a]	70.7 (69.0, 72.3)[a]	71.5 (70.1, 73.0)
Chinese	48.2 (46.2, 50.2)	61.5 (59.8, 63.2)[a]	58.6 (56.9, 60.3)	56.4 (54.9, 57.9)	62.4 (60.9, 64.0)[a]	64.3 (62.9, 65.6)
Malays	48.5 (44.6, 52.4)	54.0 (49.6, 58.3)	55.2 (51.2, 59.3)	53.7 (50.1, 57.3)	61.0 (57.2, 64.8)	61.1[d] (57.7, 64.6)
Indians	44.4 (39.2, 49.7)	59.3 (54.2, 64.3)[a]	57.1 (52.3, 61.9)	60.1 (56.1, 64.2)	65.6 (60.9, 70.3)	63.7[d] (59.8, 67.7)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [d] Indicate statistically significant linear upward trend between 2019 and 2024 with p-value <0.05.

Table 9.4: Proportion of Singapore residents aged 18 to 74 years who were willing to seek help from informal support networks by age, sex, education, and ethnicity, 2019 to 2024

	NPHS 2019	NPHS 2020	NPHS 2021	NPHS 2022	NPHS 2023	NPHS 2024
Total	74.5 (73.0, 76.0)	79.2 (78.0, 80.4)[a]	69.1 (67.7, 70.6)[a]	79.7 (78.6, 80.7)[a]	78.4 (77.3, 79.5)	81.8 (80.8, 82.7)[a]
ASR	74.4	79.1	69.2	79.8	78.6	82.1
18-29	86.0 (83.1, 88.9)	88.1 (85.9, 90.4)	84.3 (81.2, 87.4)	88.1 (86.0, 90.3)	85.4 (82.9, 87.9)	88.7 (86.5, 90.8)
30-39	82.8 (80.3, 85.4)	86.3 (84.0, 88.6)	78.6 (75.8, 81.4)[a]	85.5 (83.4, 87.7)[a]	85.4 (83.4, 87.5)	85.4 (83.5, 87.3)
40-49	76.1 (72.9, 79.3)	81.7 (79.3, 84.1)	73.7 (70.0, 77.4)[a]	80.8 (78.6, 83.0)[a]	82.5 (80.4, 84.6)	82.3 (80.3, 84.3)
50-59	69.0 (65.2, 72.8)	78.4 (75.7, 81.0)[a]	61.0 (57.6, 64.4)[a]	77.3 (74.8, 79.9)[a]	75.5 (72.8, 78.2)	81.2 (79.0, 83.4)[a]
60-74	59.3 (55.9, 62.6)	63.1 (60.2, 66.1)	50.3 (47.6, 53.0)[a]	68.4 (66.1, 70.8)[a]	65.6 (63.0, 68.1)	73.4 (71.4, 75.5)[a]
Males	69.3 (67.1, 71.5)	75.1 (73.3, 77.0)[a]	64.3 (62.3, 66.3)[a]	75.7 (74.2, 77.3)[a]	75.1 (73.4, 76.7)	78.6 (77.1, 80.0)[a]
Females	79.5 (77.7, 81.4)	83.1 (81.6, 84.6)[a]	73.7 (71.6, 75.8)[a]	83.5 (82.1, 84.8)[a]	81.6 (80.1, 83.0)	84.9 (83.7, 86.1)[a]
Primary	56.4 (52.2, 60.7)	61.2 (57.6, 64.9)	49.8 (45.9, 53.7)[a]	64.8 (61.3, 68.2)[a]	64.0 (60.3, 67.7)	68.0 (64.7, 71.4)
Secondary	73.1 (70.6, 75.6)	74.3 (72.0, 76.7)	60.3 (57.5, 63.1)[a]	74.6 (72.4, 76.8)[a]	71.7 (69.3, 74.0)	77.6 (75.7, 79.4)[a]
Post-secondary	79.1 (77.1, 81.2)	84.8 (83.4, 86.2)[a]	76.2 (74.3, 78.0)[a]	84.3 (83.0, 85.5)[a]	83.3 (82.0, 84.6)	85.3 (84.2, 86.4)
Chinese	74.4 (72.7, 76.1)	79.9 (78.5, 81.2)[a]	67.9 (66.2, 69.6)[a]	79.2 (78.0, 80.4)[a]	77.9 (76.6, 79.2)	81.3 (80.2, 82.4)[a]
Malays	78.3 (74.8, 81.8)	79.2 (75.9, 82.5)	72.2 (68.4, 76.0)	81.8 (79.1, 84.4)[a]	80.2 (77.2, 83.2)	84.4 (81.9, 86.9)
Indians	68.8 (63.5, 74.0)	74.0 (69.7, 78.2)	72.9 (68.9, 77.0)	79.8 (76.5, 83.0)	78.5 (74.8, 82.2)	80.7[d] (77.5, 83.9)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2023 and NPHS 2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) [d] Indicate statistically significant linear upward trend between 2019 and 2024 with p-value <0.05.

Chapter 10

Obesity

Key Points

- About one in eight (12.7%) Singapore residents aged 18 to 74 years were obese in 2023-2024. Obesity was slightly more common among males (13.1%) than females (12.3%) and was most prevalent among adults aged 30 to 39 years at 14.9%.
- Among Singapore residents aged 18 to 74 years, 22.8% were in the high risk BMI category according to Asian classification of BMI category. This was more common in males (25.4%) than females (20.3%), and most prevalent among adults aged 40 to 59 years (40 to 49 years: 26.4%, 50 to 59 years: 26.7%).
- More than two-fifths of residents (43.6%) aged 18 to 74 years were found to have abdominal obesity. The prevalence of abdominal obesity was higher among females (44.6%) than males (42.6%). Prevalence of abdominal obesity increased with age, with the highest among adults aged 60 to 74 years (54.2%).

Introduction

Obesity increases the risk of chronic diseases such as diabetes mellitus, hypertension and hyperlipidaemia, cardiovascular diseases and certain cancers (Koskinas et al., 2024; Seravalle & Grassi, 2024). Aside from genetic factors, obesity is also linked to modifiable lifestyle factors such as excessive food intake that are high in fats and sugars, as well as lack of physical activity *(Hruby 2015)*.

Method Used

All respondents who completed the interviewer-administered questionnaire were invited to participate in a health examination to record their height, weight, waist and hip circumferences. Electronic weighing scale (SECA model 803) was used to measure the weight, while a stadiometer (SECA model 213) was used to measure the height. Both weight and height were measured without footwear. For height measurement, each respondent was positioned against the measuring rod and stood upright with their heels together. The respondent's eyes were directed forward so that the top of the ear was horizontal with the inferior orbital margin and the measuring slide was lowered onto the scalp and the height was recorded. Two height readings were taken for each respondent. If the difference between the first and second height reading was more than one centimetre apart, a third reading was taken. An average height reading was calculated based on two closest readings. Body mass index (BMI) was then calculated based on the weight and average height measurement.

Waist and hip measurements were taken using a tailor's measuring tape over respondent's thin clothing. Two readings each of the waist and hip circumferences were taken and the average calculated. If the difference between the two readings for waist or hip measurements was more than two centimetres apart, a third reading was taken and an average reading was calculated based on two closest readings.

Definition

The weight status based on the Body Mass Index (BMI), where BMI = weight (kg) / height x height (m^2), was classified into the following groups according to WHO (BMI) classification (Table 13.1).

Table 13.1: Classification of weight status

Classification	BMI (kg/m^2)
Underweight	< 18.5
Normal weight	18.5 – 24.9
Overweight	25.0 – 29.9
Obese	≥ 30

Recognising that the risk for cardiovascular diseases and diabetes mellitus starts from a lower BMI for Asian populations, the WHO expert consultation recommended an additional classification of BMI for public health action among Asians (*WHO 2004*). Based on this classification, Singapore residents having a BMI equal to or greater than 27.5 kg/m^2 are considered as having high risk BMI (Table 13.2).

Table 13.2: Asian classification of BMI risk category

Classification	BMI (kg/m^2)
Low risk	18.5 – 22.9
Moderate risk	23.0 – 27.4
High risk	≥ 27.5

The waist circumference measures the central obesity and visceral fat. People with more weight around their abdomen tend to have higher health risks (*WHO 2008)*. The cut-offs for high risk abdominal obesity for male and female are shown in Table 13.3.

Table 13.3: High risk abdominal obesity

Sex	Waist circumference (cm)
Male	> 90
Female	> 80

Weight Status

The survey found that among Singapore residents aged 18 to 74 years, 6.4% were underweight, 53.6% had normal weight, 27.4% were overweight, and 12.7% were obese (Table 13.4).

Table 13.4: Weight status (%) of Singapore residents aged 18 to 74 years by sex, 2023-2024

Classification	Total	Males	Females
Underweight	6.4	3.7	9.0
Normal weight	53.6	49.3	57.7
Overweight	27.4	33.9	21.1
Obese	12.7	13.1	12.3

Note: Data might not sum to 100% due to rounding.

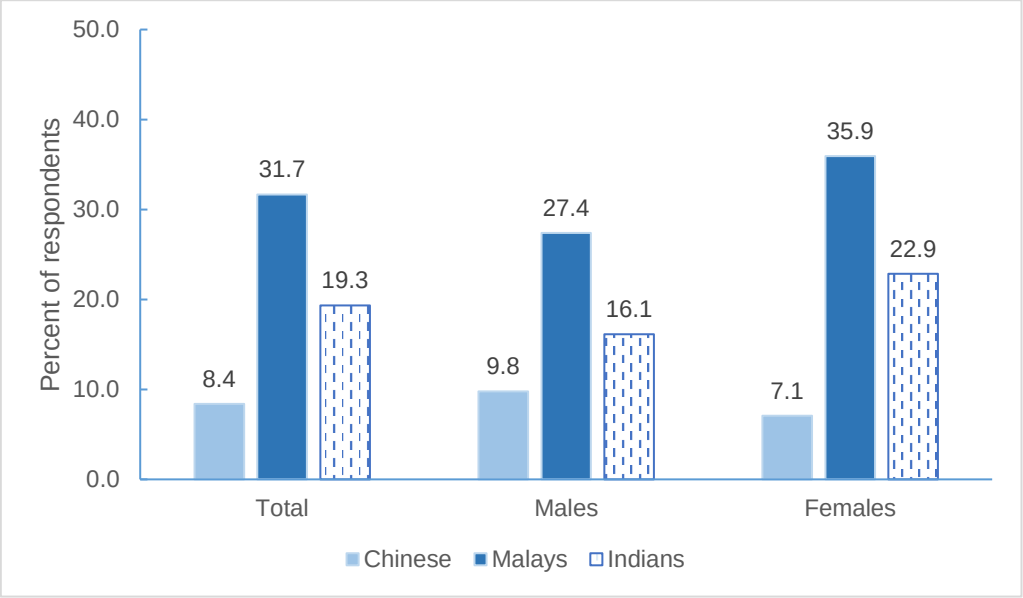
Prevalence of Obesity

Obesity was more common among males (13.1%) than females (12.3%) (Table 13.5). Obesity among adults aged 30 to 39 years was most prevalent at 14.9%. Obesity prevalence among Malays (31.7%) was nearly four times that of the Chinese (8.4%), while the prevalence among Indians (19.3%) was more than 2 times higher than the Chinese (Graph 13.1). The obesity prevalence was higher among Chinese males (9.8%) than Chinese females (7.1%), but it was the reverse for Malays and Indians. Residents with secondary education (16.2%) had highest obesity prevalence followed by residents with primary (13.3%) and post-secondary (11.2%) education (Table 13.6).

Table 13.5: Age-specific prevalence (%) of obesity among Singapore residents aged 18 to 74 years by sex, 2023-2024

Age (years)	Total	Males	Females
18-29	11.6	12.5	10.5
30-39	14.9	16.5	13.5
40-49	14.0	15.5	12.5
50-59	14.1	14.3	13.8
60-74	9.6	7.8	11.2
18-74	12.7	13.1	12.3

Graph 13.1: Crude prevalence (%) of obesity among Singapore residents aged 18 to 74 years by sex and ethnicity, 2023-2024



Trends in Obesity

Although crude and age-standardised prevalence of obesity had been on the rise since 2013, the upward trend seen in obesity from 2010 to 2023-2024 was not significant. However, significant increases in prevalence of obesity were seen among adults aged 40 to 49 years and 60 to 74 years during this period.

In recent years between 2019-2020 and 2023-2024, a significant upward trend was observed for crude and age-standardised prevalence of obesity. This significant upward trend was observed for adults aged 18 to 29 years, 50 to 59 years and Chinese. A significant downward trend was observed for those with primary school education from 16.3% in 2019-2020 to 13.3% in 2023-2024.

Table 13.6: Prevalence (%) of obesity among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2010, 2013, 2017, 2019-2020, 2021-2022 and 2023-2024

	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2010	2013	2017	2019-2020	2021-2022	2023-2024
Total	10.5 (9.1, 11.9)	8.6 (7.9, 9.3)	8.6 (6.6, 10.5)	10.5 (9.6, 11.6)	11.6 (10.7, 12.4)	12.7[d] (11.9, 13.5)
ASR	10.1	8.4	8.5	10.5	11.6	12.7[d]
18-29	10.5 (6.8, 14.1)	5.6 (4.1, 7.0)	s	6.6 (4.6, 8.7)	9.0 (7.1, 11.4)	11.6[d] (9.4, 13.7)
30-39	11.9 (8.9, 14.9)	11.6 (9.9, 13.4)	11.4 (6.3, 16.5)	12.4 (10.0, 15.0)	12.2 (10.4, 14.0)	14.9 (13.0, 17.0)
40-49	10.5 (7.2, 13.7)	10.5 (9.0, 12.0)	11.3 (7.5, 15.2)	11.9 (9.7, 14.1)	15.0 (13.1, 16.9)	14.0[b] (12.4, 15.6)
50-59	11.8 (8.7, 14.8)	8.1 (6.8, 9.3)	8.4 (4.9, 12.0)	11.9 (9.4, 14.5)	13.0 (10.9, 15.3)	14.1[d] (12.2, 16.0)
60-74	6.8 (4.6, 8.9)	6.7 (5.3, 8.0)	6.9 (3.4, 10.5)	10.2 (8.1, 12.5)	9.1 (7.7, 10.7)	9.6[b] (8.3, 11.1)
Males	11.7 (9.5, 13.9)	9.4 (8.3, 10.4)	7.0 (4.6, 9.5)	11.9 (10.4, 13.4)[a]	13.1 (11.8, 14.4)	13.1 (11.9, 14.4)
Females	9.4 (7.6, 11.1)	7.8 (7.0, 8.7)	10.0 (7.1, 12.9)	9.3 (8.1, 10.6)	10.2 (9.1, 11.3)	12.3 (11.2, 13.4)
Primary	10.8 (8.1, 13.6)	9.1 (7.6, 10.5)	10.7 (5.7, 15.6)	16.3 (12.9, 20.5)	15.0 (12.1, 18.2)	13.3[e] (10.9, 15.8)
Secondary	12.0 (9.2, 14.7)	11.4 (10.0, 12.8)	10.0 (6.7, 13.4)	12.5 (10.6, 14.7)	13.4 (11.6, 15.3)	16.2 (14.5, 17.9)
Post-secondary	9.5 (7.5, 11.5)	6.7 (5.8, 7.6)	7.1 (4.8, 9.4)	8.9 (7.8, 10.1)	10.4 (9.4, 11.4)	11.2 (10.3, 12.2)
Chinese	7.7	5.8	5.7	7.4	7.9	8.4[d]

	(5.9, 9.5)	(5.0, 6.6)	(4.0, 7.5)	(6.5, 8.4)	(7.1, 8.7)	(7.7, 9.1)
Malays	23.8 (21.0, 26.5)	20.5 (18.5, 22.4)	16.6 (10.6, 22.7)	23.9 (19.7, 28.5)	26.2 (22.7, 29.5)	31.7 (28.6, 35.2)
Indians	17.2 (14.8, 19.5)	14.1 (12.2, 16.1)	20.4 (11.2, 29.6)	17.7 (13.7, 22.6)	21.3 (17.9, 24.8)	19.3 (16.3, 22.6)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2021-2022 and NPHS 2023-2024)
(2) s: Data have been suppressed due to small counts or high sampling variability.
(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.
(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.
(5) [b] Indicate statistically significant linear upward trend between 2010 and 2023-2024 with p-value <0.05.
(6) [d] Indicate statistically significant linear upward trend between 2019-2020 and 2023-2024 with p-value <0.05
(7) [e] Indicate statistically significant linear downward trend between 2019-2020 and 2023-2024 with p-value <0.05

BMI Risk Category

The survey found that among Singapore residents aged 18 to 74 years, 34.8% had low risk BMI, 36.1% had moderate risk BMI, and 22.8% had high risk BMI (Table 13.7).

Table 13.7: BMI Risk Category (%) of Singapore residents aged 18 to 74 years by sex, 2023-2024

Classification	Total	Males	Females
Low risk	34.8	28.0	41.2
Moderate risk	36.1	42.9	29.5
High risk	22.8	25.4	20.3

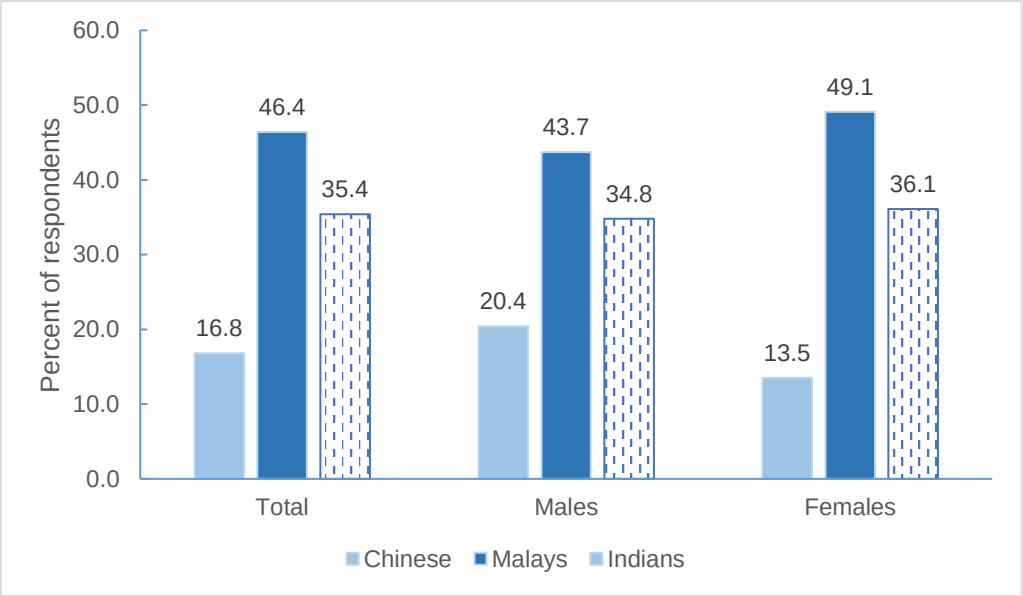
Prevalence of High Risk BMI

Similar to the obesity prevalence, there was a higher proportion of males (25.4%) with high risk BMI than females (20.3%) (Table 13.8). High risk BMI was more common among adults aged 40 to 59 years (40 to 49 years: 26.4%, 50 to 59 years: 26.7%). Malays (46.4%) and Indians (35.4%) had higher proportion with high risk BMI than Chinese (16.8%) (Graph 13.2). Malay females (49.1%) had the highest proportion with high risk BMI. Residents with post-secondary education had a lower prevalence of high risk BMI (20.7%) compared to those with primary (25.7%) or secondary (27.1%) education (Table 13.9).

Table 13.8: Age-specific prevalence (%) of high BMI risk among Singapore residents aged 18 to 74 years by sex, 2023-2024

Age (years)	Total	Males	Females
18-29	17.6	20.0	15.1
30-39	24.3	30.3	18.8
40-49	26.4	31.2	21.9
50-59	26.7	27.3	26.1
60-74	19.5	19.7	19.4
18-74	22.8	25.4	20.3

Graph 13.2: Crude prevalence (%) of high BMI risk among Singapore residents aged 18 to 74 years by sex and ethnicity, 2023-2024



Trends in High Risk BMI

The crude and age-standardised prevalence of high risk BMI remained largely stable from 2010 to 2023-2024 with no significant trends observed. Between 2019-2020 and 2023-2024, only females had a significant upward trend (Table 13.9).

Table 13.9: Prevalence (%) of high risk BMI among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2010, 2013, 2017, 2019-2020, 2021-2022 and 2023-2024

	NHS	NHSS	NPHS	NPHS	NPHS	NPHS
	2010	2013	2017	2019-2020	2021-2022	2023-2024
Total	22.7 (20.7, 24.6)	17.6 (16.7, 18.5)	18.7 (15.9, 21.5)	20.7 (19.2, 22.0)	22.3 (21.2, 23.4)	22.8 (21.7, 23.8)
ASR	22.5	17.5	18.8	20.6	22.3	22.8
18-29	16.9 (12.8, 21.0)	10.1 (8.3, 12.0)	11.2 (5.8, 16.5)	13.1 (10.2, 16.2)	16.1 (13.5, 18.9)	17.6 (15.1, 20.1)
30-39	23.2 (19.3, 27.2)	20.6 (18.3, 23.0)	24.7 (17.2, 32.2)	22.4 (19.3, 25.8)	21.1 (18.8, 23.4)	24.3 (21.9, 26.8)
40-49	25.0 (21.0, 29.1)	20.8 (18.8, 22.8)	20.5 (15.2, 25.7)	24.2 (21.2, 27.3)	27.2 (24.8, 29.6)	26.4 (24.2, 28.5)
50-59	27.3 (22.8, 31.7)	20.3 (18.4, 22.3)	20.8 (15.0, 26.6)	23.7 (20.2, 26.9)	26.6 (23.7, 29.7)	26.7 (24.4, 29.2)
60-74	20.7 (15.8, 25.5)	15.9 (13.8, 18.0)	16.8 (11.7, 22.0)	20.3 (17.3, 23.3)	20.7 (18.6, 22.9)	19.5 (17.8, 21.4)
Males	24.4 (21.6, 27.2)	19.9 (18.5, 21.4)	20.6 (16.3, 24.8)	22.6 (20.4, 24.7)	25.2 (23.5, 26.8)	25.4 (23.8, 27.0)
Females	21.0 (18.4, 23.6)	15.4 (14.2, 16.6)	16.9 (13.4, 20.5)	18.8 (17.0, 20.8)	19.5 (17.9, 21.1)	20.3[d] (18.9, 21.6)
Primary	27.9 (23.2, 32.6)	20.3 (18.0, 22.6)	23.7 (16.4, 31.0)	28.2 (23.9, 32.8)	28.0 (24.4, 31.9)	25.7 (22.4, 29.0)
Secondary	25.9 (22.5, 29.4)	21.9 (20.1, 23.7)	22.4 (17.5, 27.3)	24.9 (22.1, 27.8)	24.9 (22.6, 27.3)	27.1 (25.0, 29.1)
Post-secondary	18.8 (16.1, 21.4)	14.2 (13.0, 15.4)	15.3 (11.9, 18.6)	17.8 (16.2, 19.6)	20.5 (19.2, 21.8)	20.7 (19.5, 22.0)
Chinese	19.0 (16.5, 21.4)	13.6 (12.5, 14.7)	14.8 (11.9, 17.7)	16.1 (14.7, 17.5)	16.5 (15.4, 17.7)	16.8 (15.8, 17.8)
Malays	38.3 (35.2, 41.4)	32.8 (30.5, 35.0)	34.6 (26.6, 42.6)	38.7 (33.0, 44.0)	46.0 (42.1, 50.2)	46.4 (43.1, 50.1)
Indians	33.1 (30.1, 36.1)	28.2 (25.6, 30.7)	28.6 (18.7, 38.5)	31.8 (26.5, 37.2)	35.7 (31.3, 39.9)	35.4 (31.6, 39.4)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals.

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [d] Indicate statistically significant linear upward trend between 2019-2020 and 2023-2024 with p-value <0.05

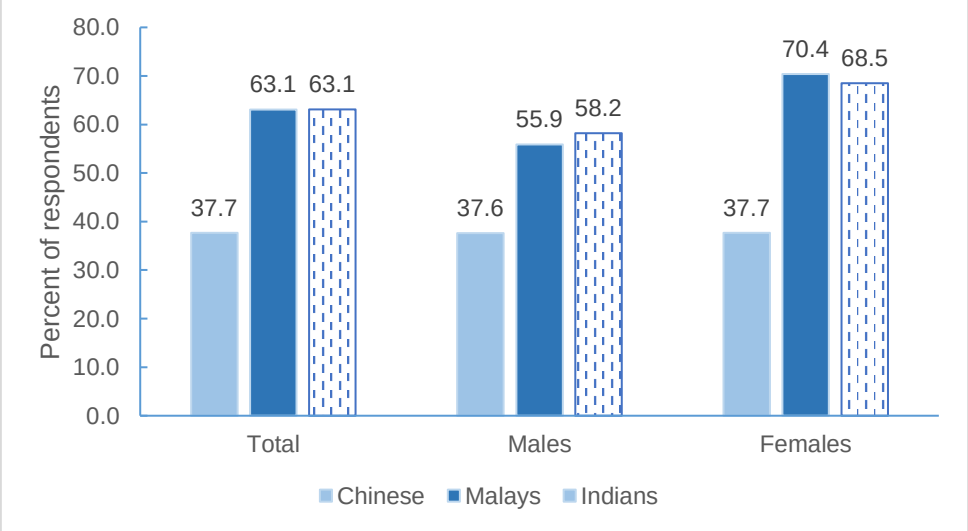
Prevalence of Abdominal Obesity

During 2023-2024, more than two-fifths (43.6%) of Singapore residents aged 18 to 74 years were found to have abdominal obesity (male's and female's waist circumference greater than 90 centimetres and 80 centimetres respectively) (Table 13.10). The prevalence of abdominal obesity was similar between females (44.6%) and males (42.6%). The prevalence of abdominal obesity increased with age, with the highest prevalence among adults aged 60 to 74 years (54.2%). The prevalence of abdominal obesity was higher among Malays (63.1%) and Indians (63.1%) compared to Chinese (37.7%) (Graph 13.3). Malay females had the highest prevalence of abdominal obesity at 70.4%. The proportion of residents with abdominal obesity that had primary (58.8%) and secondary (52.6%) education was higher than those with post-secondary (38.3%) education (Table 13.11).

Table 13.10: Age-specific prevalence (%) of abdominal obesity among Singapore residents aged 18 to 74 years by sex, 2023-2024

Age (years)	Total	Males	Females
18-29	25.2	26.1	24.3
30-39	38.2	40.8	35.8
40-49	46.8	48.9	45.0
50-59	50.8	49.1	52.4
60-74	54.2	47.7	60.3
18-74	43.6	42.6	44.6

Graph 13.3: Crude prevalence (%) of abdominal obesity among Singapore residents aged 18 to 74 years by sex and ethnicity, 2023-2024



Trends in Abdominal Obesity

From 2010 to 2023-2024, there was an overall significant increase in the crude prevalence of abdominal obesity in the population. Subgroups with a significant upward trend include males, Malays, and residents with secondary and post-secondary education. Comparing between 2019-2020 and 2023-2024, abdominal obesity prevalence increased significantly for those aged 30 to 39 years (Table 13.11).

Table 13.11: Prevalence (%) of abdominal obesity among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2010, 2017, 2019-2020, 2021-2022 and 2023-2024

	NHS	NPHS	NPHS	NPHS	NPHS
	2010	2017	2019-2020	2021-2022	2023-2024
Total	39.1 (36.8, 41.3)	40.3 (37.1, 43.5)	40.6 (39.0, 42.4)	43.3 (42.0, 44.7)	43.6[b] (42.4, 44.8)
ASR	40.5	40.4	40.7	43.2	43.3
18-29	22.3 (17.8, 26.7)	18.8 (12.0, 25.6)	17.1 (13.9, 20.5)	23.9 (20.8, 27.0)[a]	25.2 (22.5, 28.0)
30-39	35.5 (31.0, 40.0)	41.2 (33.7, 48.6)	33.6 (30.0, 37.4)	36.0 (33.1, 38.8)	38.2[d] (35.6, 41.0)
40-49	42.5 (37.8, 47.1)	47.9 (40.8, 55.0)	45.7 (41.8, 49.5)	46.9 (44.4, 49.6)	46.8 (44.4, 49.2)
50-59	49.1 (44.0, 54.2)	47.0 (40.6, 53.4)	48.8 (44.7, 52.8)	53.9 (50.6, 57.2)	50.8 (48.1, 53.5)
60-74	51.8 (45.1, 58.4)	48.0 (41.1, 54.8)	56.9 (53.5, 60.9)	54.5 (51.9, 57.3)	54.2 (51.8, 56.5)
Males	34.6 (31.5, 37.7)	37.0 (32.2, 41.7)	37.8 (35.3, 40.3)	42.9 (41.0, 44.8)[a]	42.6[b] (40.8, 44.3)
Females	43.4 (40.1, 46.7)	43.5 (39.3, 47.6)	43.2 (40.9, 45.6)	43.8 (41.9, 45.7)	44.6 (43.0, 46.2)
Primary	51.8 (46.6, 57.1)	45.5 (37.2, 53.7)	59.2 (54.3, 64.2)[a]	58.0 (54.3, 62.0)	58.8 (55.2, 62.5)
Secondary	44.0 (40.1, 47.9)	48.7 (43.1, 54.3)	48.2 (44.9, 51.4)	49.8 (46.9, 52.5)	52.6[b] (50.3, 54.9)
Post-secondary	31.4 (28.2, 34.5)	34.0 (29.7, 38.3)	34.8 (32.7, 37.1)	38.8 (37.1, 40.4)	38.3[b] (36.8, 39.8)
Chinese	35.6 (32.7, 38.5)	35.0 (31.4, 38.5)	36.4 (34.5, 38.4)	37.9 (36.4, 39.3)	37.7 (36.4, 38.9)
Malays	47.0 (43.9, 50.2)	58.4 (48.9, 67.9)	53.7 (48.1, 59.2)	59.6 (55.7, 63.7)	63.1[b] (59.7, 66.3)
Indians	56.3 (53.0, 59.6)	59.5 (49.2, 69.8)	54.8 (48.4, 61.5)	65.6 (61.6, 69.7)[a]	63.1 (58.6, 67.8)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2021-2022 and NPHS 2023-2024)

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upward trend between 2010 and 2023-2024 with p-value <0.05

(6) [d] Indicate statistically significant linear upward trend between 2019-2020 and 2023-2024 with p-value <0.05

Chapter 11
Diabetes Mellitus

Key Points

- About one in 11 (9.1%) Singapore residents aged 18 to 74 years had diabetes mellitus during the period 2023-2024. The age-standardised prevalence was 8.8% after accounting for population ageing.
- A higher proportion of males (10.5%) were diabetic compared to females (7.8%).
- Diabetes prevalence increased with age. The proportion of diabetics almost doubled with each successive age group, from 1.8% among those aged 30 to 39 years to about one in five among those aged 60 to 74 years.
- Among all residents who were detected to have diabetes mellitus based on the health examination, close to one in six (16.5%) of them had not been previously diagnosed with diabetes.
- Among the known diabetics who attended health examination, about two in three (66.5%) did not meet the target for glycaemic control defined in this report (HbA1c ≤ 7%).

Introduction

Diabetes mellitus represents a group of metabolic disorders characterised by high blood sugar (hyperglycaemia) resulting from defects in insulin secretion, insulin action, or both. Diabetes mellitus can lead to death and disability through long-term complications including blindness, kidney failure, coronary heart disease and stroke. Type 2 diabetes is the more common form of diabetes, occurring mainly in older adults and is associated with obesity (WHO, 2024*).*

Method Used

An interviewer-administered questionnaire was used to obtain an indication of the prevalence of known diabetes mellitus in the community. Respondents were asked whether they had ever been told by a western-trained doctor that they had diabetes and were currently prescribed medication for diabetes. Respondents who answered “yes” to both questions were classified as having “reported diabetes mellitus”. Among those with

self-reported diabetes, they were also asked on the frequency of doctor's visit and place of treatment to manage their diabetes.

All respondents who completed the interviewer-administered questionnaire were invited to participate in a health examination. Among those who attended the health examination, blood samples were taken by venepuncture to determine the fasting plasma glucose and glycated haemoglobin (HbA1c) levels after an overnight fasting of at least 10 hours. Blood samples for fasting glucose analysis were collected in fluoride/oxalate tubes while those for HbA1c analysis were collected in EDTA tubes. These samples were then dispatched to Innoquest Diagnostics for analysis on the same day of the health examination. Plasma glucose was measured using Roche c702 instrument using hexokinsase method, while the HbA1c levels were measured using Roche c513 instrument using turbidimetric inhibition immunoassay for haemolysed whole blood.

Data on diabetes mellitus were aggregated over a span of two survey cycles (i.e., NPHS 2023 and NPHS 2024) so that there will be a larger sample for detailed analysis.

Definition

Diabetes mellitus prevalence estimate was defined as a composite indicator of (i) those who reported that they were diagnosed with diabetes by a doctor and on medication, (ii) those who reported that they were diagnosed with diabetes by a doctor and not on medication but were found to have diabetes during health examination, and (iii) those who had been newly diagnosed with diabetes during the health examination and did not self-report doctor-diagnosed diabetes.

The WHO Diagnostic Classification criteria (*WHO 2006*) were used as reference for the classification of diabetes (Table 10.1). In this report, diabetes mellitus was defined as single reading of fasting plasma glucose level equal or above 7.0 mmol/l or equal or above 126mg/dl.

Table 10.1: Diagnostic values for fasting plasma glucose

Classification	mmol/l	mg/dl
Normal	< 6.1	< 110
Diabetes Mellitus	≥ 7.0	≥ 126

Prevalence of Diabetes Mellitus

The prevalence of diabetes among Singapore residents aged 18 to 74 years was 9.1% during 2023-2024 (Table 10.2). Overall, a higher proportion of males (10.5%) were diabetic compared to females (7.8%) and this pattern was also observed in all age groups. The prevalence of diabetes increased with age, where the proportion of diabetics almost doubled with each successive age group, from 1.8% among those aged 30 to 39 years to about one in five among those aged 60 to 74 years.

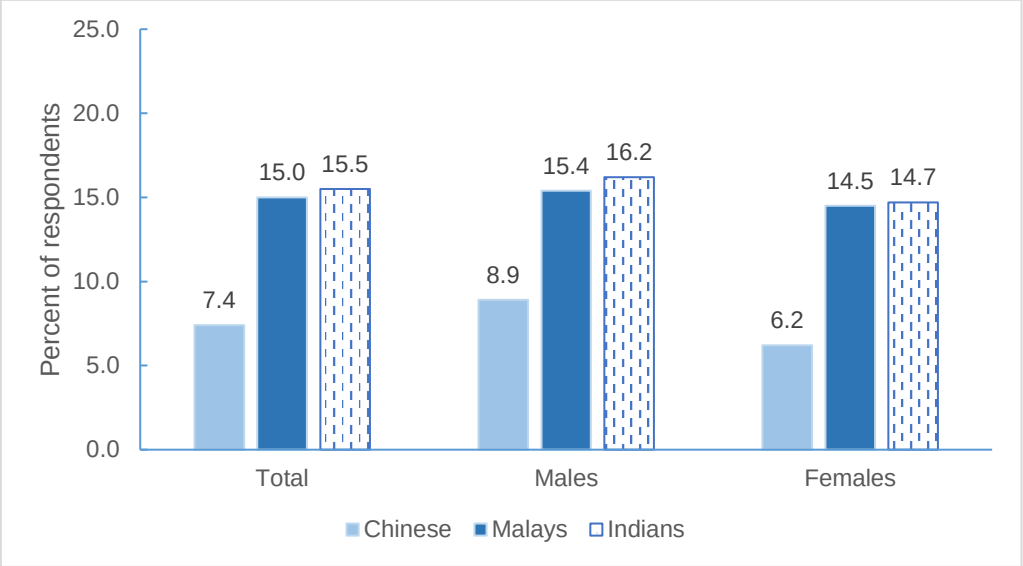
Table 10.2: Age-specific crude prevalence (%) of diabetes mellitus among Singapore residents aged 18 to 74 years by sex, 2023-2024

Age (years)	Total	Males	Females
18-29	s	s	s
30-39	1.8	1.9	1.7
40-49	5.4	7.1	3.9
50-59	12.9	15.2	10.6
60-69	21.9	25.5	18.5
70-74	22.0	22.2	21.7
18-74	9.1	10.5	7.8

s: Data have been suppressed due to small counts or high sampling variability.

Indians (15.5%) and Malays (15.0%) had higher prevalence of diabetes compared to Chinese (7.4%) (Graph 10.1). Comparing across sexes and ethnic groups, the proportion of diabetics was highest among Indian males (16.2%) while the prevalence of diabetes among Indian females (14.7%) and Malay females (14.5%) was more than double that of Chinese females (6.2%). More than one in five (22.8%) residents with primary education were diabetic and this proportion was much higher compared with residents with secondary (14.5%) or post-secondary (5.1%) education (Table 10.3). Residents who reported having diabetes visited a doctor for their diabetes about three times over the period of the past 12 months, mainly in polyclinics (62.9%), private GP clinics (20.2%) and specialist outpatient clinics in public hospitals (14.4%).

Graph 10.1: Crude prevalence (%) of diabetes mellitus among Singapore residents aged 18 to 74 years by sex and ethnicity, 2023-2024



Trends in Prevalence of Diabetes Mellitus

The crude prevalence of diabetes was largely stable from 2010 (8.6%) to 2023-2024 (9.1%), and the same goes for age-standardised prevalence (9.8% in 2010, 8.8% in 2023-2024) (Table 10.3). Both trends were not significant during this period. The increases in prevalence were significant for older residents aged 60 to 69 years, as well as residents with post-secondary education. On the other hand, the prevalence of diabetes among residents aged 50 to 59 years decreased significantly during this period.

Table 10.3: Prevalence (%) of diabetes mellitus among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2010, 2017, 2019-2020, 2021-2022, and 2023-2024

	NHS	NPHS	NPHS	NPHS	NPHS
	2010	2017	2019-2020	2021-2022	2023-2024
Total	8.6 (7.4, 9.7)	8.8 (7.5, 10.2)	9.5 (8.7, 10.2)	8.5 (8.0, 9.1)	9.1 (8.5, 9.6)
ASR	9.8	9.2	9.5	8.4	8.8
18-29	s	s	s	s	s
30-39	3.7 (2.1, 5.3)	s	3.0 (1.7, 4.3)	1.9 (1.2, 2.6)	1.8 (1.2, 2.3)
40-49	6.7 (4.7, 8.6)	7.6 (4.5, 10.7)	6.0 (4.6, 7.4)	5.0 (4.0, 5.9)	5.4 (4.4, 6.5)
50-59	17.0 (13.2, 20.6)	14.4 (10.6, 18.0)	13.4 (11.2, 15.6)	10.8 (9.4, 12.3)	12.9[c] (11.3, 14.4)
60-69	18.5 (13.4, 23.8)	21.0 (16.5, 25.5)	22.2 (19.6, 25.0)	21.8 (19.6, 23.9)	21.9[b] (20.0, 23.8)

70-74	22.0 (11.8, 32.1)	18.9 (11.4, 26.4)	27.1 (22.2, 31.8)	24.2 (20.6, 27.6)	22.0 (19.0, 24.9)
Males	9.2 (7.5, 10.8)	10.3 (8.3, 12.3)	10.6 (9.4, 11.8)	9.7 (8.9, 10.6)	10.5 (9.6, 11.3)
Females	8.0 (6.3, 9.6)	7.4 (5.7, 9.2)	8.4 (7.3, 9.3)	7.3 (6.6, 8.0)	7.8 (7.1, 8.5)
Primary	17.8 (13.9, 21.6)	15.2 (11.2, 19.0)	22,8 (19.9, 25.8)[a]	23.2 (20.7, 25.9)	22.8 (20.2, 25.4)
Secondary	10.5 (8.3, 12.8)	13.6 (10.7, 16.5)	14.5 (12.5, 16.3)	12.2 (10.9, 13.5)	14.5 (13.2, 16.0)
Post-secondary	4.1 (2.9, 5.3)	4.3 (2.9, 5.7)	4.5 (3.8, 5.3)	4.7 (4.1, 5.2)	5.1[b] (4.4, 5.5)
Chinese	7.0 (5.5, 8.5)	6.9 (5.5, 8.3)	8.2 (7.3, 9.0)	7.0 (6.4, 7.6)	7.4 (6.9, 8.1)
Malays	14.5 (12.3, 16.8)	11.6 (7.5, 15.7)	14.4 (11.5, 17.3)	12.9 (11.0, 14.9)	15.0 (13.1, 17.0)
Indians	14.9 (12.5, 17.3)	22.7 (15.6, 29.8)	14.2 (11.5, 16.8)	16.9 (14.3, 19.5)	15.5 (12.9, 17.9)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2021-2022 and NPHS 2023-2024)

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upward trend between 2010 and 2023-2024 with p-value <0.05

(6) [c] Indicate statistically significant linear downward trend between 2010 and 2023-2024 with p-value <0.05

Proportion of Undiagnosed Diabetes Mellitus

Among all residents who were detected to have diabetes mellitus based on the health examination, 16.5% of them had not been previously diagnosed with diabetes (Table 10.4). This proportion was lower than the rates observed in 2021-2022 (18.8%) and 2019-2020 (23.2%). More male diabetics (17.1%) compared with female diabetics (15.4%) were unaware of their diabetic condition. The proportion of undiagnosed diabetics was highest among adults aged 40 to 49 years with diabetes at 33%. Residents with post-secondary education (23.5%) had higher proportion of undiagnosed diabetics compared with those with primary education (13.2%) or secondary education (13.1%). More than one-fifth (22.0%) of Malay diabetics were undiagnosed, followed by Indians (15.5%) and Chinese (14.9%).

Table 10.4: Proportion (%) of undiagnosed diabetes mellitus among Singapore residents aged 18 to 74 years with diabetes mellitus by age, sex, education, and ethnicity, 2023-2024

	% of residents with undiagnosed diabetes mellitus
Total	16.5
18-29	s
30-39	27.8
40-49	33.3
50-59	18.6
60-69	13.2
70-74	2.3
Males	17.1
Females	15.4
Primary	13.2
Secondary	13.1
Post-secondary	23.5
Chinese	14.9
Malays	22.0
Indians	15.5

Notes:

(1) s: Data have been suppressed due to small counts or high sampling variability.

(2) Analysis based on highest education attained, which served as a proxy for socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Among the previously undiagnosed diabetics, the majority of them were between the ages of 50 to 69 years (64.3%), males (59.6%), Chinese (55.7%) and had post-secondary education (50.9%) (Table 10.5). The mean fasting blood glucose level in the newly diagnosed diabetics in 2023-2024 was 9.2 mmol/l, which is similar to the level reported in 2021-2022 (9.4 mmol/l) and higher than the level reported for 2019-2020 (8.8 mmol/l).

Table 10.5: Profile (%) of Singapore residents aged 18 to 74 years with undiagnosed diabetes mellitus by age, sex, education, and ethnicity, 2023-2024

	Profile (%) of residents with undiagnosed diabetes mellitus
Total	100.0
18-29	s
30-39	6.5
40-49	22.8
50-59	31.0
60-69	33.3
70-74	s
Males	59.6
Females	40.4
Primary	15.9
Secondary	33.1
Post-secondary	50.9
Chinese	55.7
Malays	28.8
Indians	13.2

Notes (1) s: Data have been suppressed due to small counts or high variability.
(2) Analysis based on highest education attained, which served as a proxy for socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Control of Diabetes in Known Diabetics

Good control of blood glucose levels in adults with diabetes is important in preventing the development and progression of diabetes-related complications (*WHO 2016*). Blood glucose levels are monitored routinely in adults with diabetes using the Glycated Haemoglobin or HbA1c test to track how well the glucose levels are maintained over a period of time. The HbA1c test measures the average amount of blood sugar attached to the haemoglobin in the red blood cells over the previous two to three months and is not affected by short-term changes in glucose levels. The recommended target of glycaemic control for most adults[8] with T2DM is HbA1c less than or equal to 7.0% (≤ 7.0%). (Agency for Care Effectiveness, 2023). In this report, a HbA1c target of ≤ 7.0% (recommended target of glycaemic control for most adults with T2DM) is used as the benchmark for good glycaemic control (Agency for Care Effectiveness, 2023).

Among the adults with known diabetes who attended the health examination, close to one in three (33.5%) met the target for glycaemic control with HbA1c levels lower than 7% (Table 10.6). Similarly, around one in three (34.6%) had HbA1c levels between 7 to 8%, while another one-third (31.9%) had HbA1c levels above 8%. More female diabetics (68.0%) had poorer glycaemic control compared with male diabetics (65.4%). A higher proportion of younger diabetics aged 30 to 39 years (81.5%) had poorer glycaemic control compared to those aged 40 years and above (ranging between 60% and 70%). By education attainment, the proportion of diabetics who failed to meet the glycaemic control target was highest among residents with post-secondary education (68.3%) and secondary education (68.3%), followed by those with primary education (60.5%). Malay (74.7%) and Indian (69.1%) diabetics had higher proportion with poor glucose control compared to Chinese diabetics (62.4%). The mean HbA1c among all known diabetics was 7.8%, about the same as the level in 2021-2022 (7.7%) and 2019-2020 (7.6%).

[8] Based on "ACE Clinical Guidance on Type 2 diabetes mellitus – Personalising management with non-insulin medications" (published 17 May 2023), it is mentioned that "Target HbA1c should be individualised based on the patient's overall health status, in consultation with the patient. For most patients, a target HbA1c of ≤ 7% provides a reasonable balance between a reduction in risk of microvascular complications and risk of hypoglycaemia." This means that a more/ less stringent target HbA1c might for appropriate for some population segments depending on their health status.

Table 10.6: Proportion (%) of Singapore residents aged 18 to 74 years with known diabetes mellitus who did not meet the glycaemic control target by age, sex, education, and ethnicity, 2023-2024

Among known diabetics who attended Health Examination	% of residents who did not meet glycaemic control target (HbA1c > 7.0%)
Total	66.5
18-29	s
30-39	81.5
40-49	59.2
50-59	72.4
60-69	61.1
70-74	71.8
Males	65.4
Females	68.0
Primary	60.5
Secondary	68.3
Post-secondary	68.3
Chinese	62.4
Malays	74.7
Indians	69.1

Notes: (1) s: Data have been suppressed due to small counts or high sampling variability.
(2) Analysis based on highest education attained, which served as a proxy for socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Chapter 12
Hypertension

Key Points

- Around one in three (33.8%) Singapore residents aged 18 to 74 years had hypertension (or high blood pressure) during the period 2023-2024, while the age-standardised prevalence was 33.0% after accounting for population ageing.
- More males (39.4%) had hypertension compared with females (28.5%).
- Prevalence of hypertension increased with age; starting at 7.1% for those aged 18 to 29 years old to 69.4% among those aged 70 to 74 years.
- Among all residents who were detected to have hypertension based on the health examination, more than half (51.2%) of them had not been previously diagnosed with hypertension.
- Among the known hypertensives who attended health examination, about three-fifths (60.4%) had poor control of their blood pressure.

Introduction

Hypertension or high blood pressure is a condition in which the blood vessels have persistently raised pressure. It rarely causes symptoms and many people go undiagnosed. Hypertension is one of the key risk factors for cardiovascular diseases such as heart attack, stroke and heart failure as well as other diseases like kidney failure. Dietary and lifestyle changes can improve blood pressure control and decrease the risk of associated health complications, although drug treatment may be necessary in patients for whom lifestyle changes prove ineffective or insufficient *(WHO 2023).*

Method Used

An interviewer-administered questionnaire was used to obtain an indication of the prevalence of known hypertension in the community. Respondents were asked whether they had ever been told by a western-trained doctor that they had high blood pressure and were currently prescribed medication for high blood pressure. Respondents who answered “yes” to both questions were classified as having “reported hypertension”. Among those with self-reported hypertension, they were also asked on the frequency of doctor’s visit and place of treatment to manage their hypertension.

All respondents who completed the interviewer-administered questionnaire were invited to participate in a health examination. Among those who attended the health examination, blood pressure was measured using an electronic blood pressure machine (Terumo ES-W100). Respondents had adequate rest before measurements were taken. Blood pressure was measured with the respondent seated and the right arm comfortably placed on a table. An appropriately sized blood pressure cuff was applied about two to three centimetres above the cubital fossa on the respondent's right arm, with the middle portion of the cuff's bladder positioned over the brachial artery. The cuff was then inflated, and the systolic and diastolic readings were recorded from the monitor. The left arm was used if there were specific reasons why the blood pressure cannot be obtained from the right arm.

Two measurements were taken for each respondent, with an interval of three to four minutes between them. However, if the systolic blood pressure between the two measurements differed by 25mmHg or the diastolic blood pressure by more than 15mmHg, a third measurement was taken. The average blood pressure was calculated based on the two closest readings.

Data on hypertension were aggregated over a span of two survey cycles (i.e., NPHS 2023 and NPHS 2024) so that there will be a larger sample for detailed analysis.

Definition

Hypertension prevalence estimate was defined as a composite indicator of (i) those who reported that they were diagnosed with high blood pressure by a doctor and on medication, (ii) those who reported that they were diagnosed with high blood pressure by a doctor and not on medication but were found to have high blood pressure during the health examination, and (iii) those who had been newly diagnosed with high blood pressure during the health examination and did not self-report doctor-diagnosed high blood pressure.

The European Society of Hypertension guidelines for the management of arterial hypertension (European Society of Hypertension, 2023) were used as reference for the classification of hypertension (Table 11.1). In this report, hypertension is defined as an

average reading of a systolic blood pressure equal to or above 140mmHg or a diastolic blood pressure equal to or above 90mmHg, measured in a single day/setting.

Table 11.1: Diagnostic values for hypertension

Classification	Blood pressure (mmHg)		
	Systolic		Diastolic
Normal (including high-normal)	<140	and	< 90
Hypertension	≥ 140	or	≥ 90

Prevalence of Hypertension

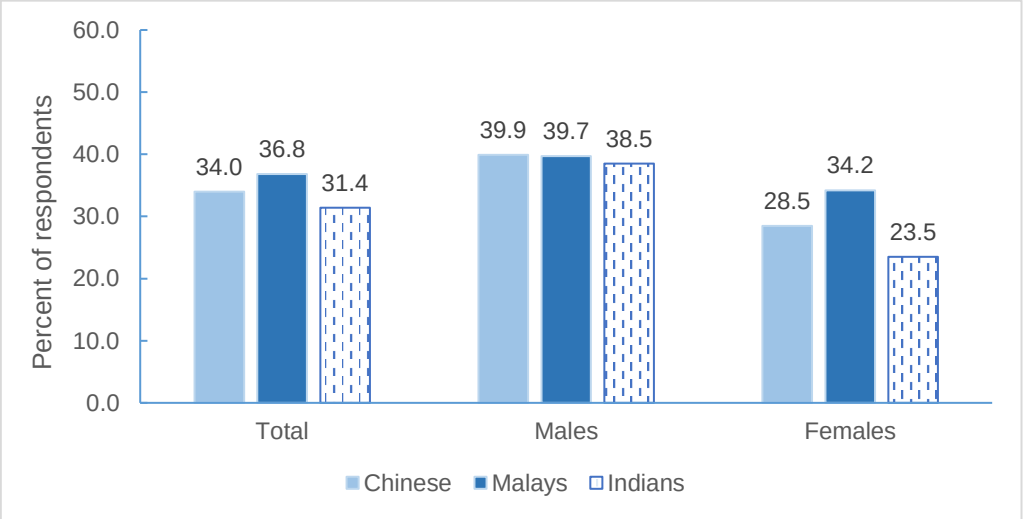
The prevalence of hypertension among Singapore residents aged 18 to 74 years was 33.8% during 2023-2024 (Table 11.2). More males (39.4%) had hypertension compared to females (28.5%), especially in the younger age groups of 18 to 49 years where the prevalence of hypertension in males was more than double that of the females. The prevalence of hypertension increased with age; starting at 7.1% for those aged 18 to 29 years to 69.4% among those aged 70 to 74 years. Malays (36.8%) and Chinese (34.0%) had higher prevalence of hypertension while it was lower for Indians at 31.4% (Graph 11.1). Among the ethnic groups, the prevalence of hypertension was similar among the men but Malay women (34.2%) was higher compared to Chinese (28.5%) and Indian (23.5%) women.

More than six in 10 (62.2%) residents with primary education had hypertension compared with residents with secondary (44.8%) and post-secondary education (25.6%) (Table 11.3). Residents with reported hypertension visited a doctor for their condition about three times over the period of the past 12 months, mainly in polyclinics (55.0%), private GP clinics (29.1%) and specialist outpatient clinics in public hospitals (11.6%).

Table 11.2: Age-specific crude prevalence (%) of hypertension among Singapore residents aged 18 to 74 years by sex, 2023-2024

Age (years)	Total	Males	Females
18-29	7.1	9.9	4.0
30-39	15.5	22.6	9.0
40-49	29.0	40.3	18.8
50-59	48.1	55.9	40.2
60-69	59.2	62.6	55.9
70-74	69.4	66.5	71.8
18-74	33.8	39.4	28.5

Graph 11.1: Crude prevalence (%) of hypertension among Singapore residents aged 18 to 74 years by sex and ethnicity, 2023-2024



Trends in Prevalence of Hypertension

The crude prevalence of hypertension showed a significant increase from 2010 to 2023-2024, though the increase was not significant for the age-standardised prevalence. (Table 11.3). The increase was significant among those aged 30 to 39 and 50 to 59 years, among both males and females, those with secondary and post-secondary education, Chinese and Indians.

Table 11.3: Prevalence (%) of hypertension among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2010, 2017, 2019-2020, 2021-2022, and 2023-2024

	NHS	NPHS	NPHS	NPHS	NPHS
	2010	2017	2019-2020	2021-2022	2023-2024
Total	19.8 (17.8, 21.7)	24.2 (21.9, 26.7)[a]	35.5 (33.9, 37.1)[a]	37.0 (35.7, 38.3)	33.8[b] (32.7, 35.0)
ASR	23.4	25.7	35.4	36.3	33.0
18-29	s	s	9.4 (6.7, 12.0)	8.1 (6.0, 10.2)	7.1[e] (5.3, 8.8)
30-39	7.6 (4.8, 10.4)	11.2 (6.4, 16.0)	17.0 (14.3, 19.7)	17.4 (15.3, 19.5)	15.5[b] (13.5, 17.5)
40-49	16.2 (12.9, 19.5)	17.7 (13.2, 22.1)	32.4 (29.0, 35.8)[a]	31.9 (29.5, 34.5)	29.0 (26.8, 31.2)
50-59	31.9 (26.9, 37.1)	36.2 (30.1, 42.2)	49.7 (45.6, 53.7)[a]	53.7 (49.9, 57.3)	48.1[b] (45.1, 51.1)
60-69	53.2 (43.7, 62.5)	52.8 (45.3, 60.5)	61.9 (57.6, 66.3)	64.3 (60.9, 67.5)	59.2 (56.2, 62.2)
70-74	53.3 (40.8, 65.9)	68.7 (51.2, 86.1)	74.9 (67.7, 81.9)	76.8 (71.2, 82.2)	69.4 (64.5, 74.6)
Males	22.0 (19.2, 24.8)	27.0 (23.5, 30.5)	41.0 (38.6, 43.5)[a]	44.0 (42.0, 46.0)	39.4[b] (37.7, 41.1)
Females	17.6 (14.9, 20.2)	21.7 (18.5, 24.9)	30.2 (28.3, 32.2)[a]	30.2 (28.6, 31.8)	28.5[b] (27.0, 30.0)
Primary	39.0 (33.2, 44.8)	41.6 (33.7, 49.4)	60.9 (56.0, 65.7)[a]	68.6 (64.3, 72.9)	62.2 (58.1, 66.3)
Secondary	20.7 (17.6, 23.9)	33.6 (28.8, 38.4)[a]	45.2 (42.0, 48.2)[a]	48.7 (46.0, 51.6)	44.8[b] (42.5, 47.2)
Post-secondary	12.3 (9.8, 14.7)	14.2 (11.6, 16.8)	26.4 (24.5, 28.5)[a]	27.1 (25.6, 28.6)	25.6[b] (24.2, 26.9)
Chinese	20.2 (17.7, 22.7)	24.7 (21.9, 27.5)	36.1 (34.2, 38.0)[a]	37.3 (35.8, 38.8)	34.0[b] (32.7, 35.3)
Malays	21.3 (18.8, 23.9)	23.1 (17.2, 29.0)	37.5 (32.7, 42.3)[a]	40.5 (36.5, 44.4)	36.8 (33.6, 40.2)
Indians	16.4 (14.0, 18.7)	25.1 (17.4, 32.7)	29.5 (25.0, 34.1)	30.9 (27.2, 34.8)	31.4[b] (27.3, 35.6)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2021-2022 and NPHS 2023-2024)

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [b] Indicate statistically significant linear upward trend between 2010 and 2023-2024 with p-value <0.05

(6) [e] Indicate statistically significant linear downward trend between 2019-2020 and 2023-2024 with p-value <0.05

Proportion of Undiagnosed Hypertensives

Among all residents detected to have hypertension based on the health examination, the survey found that more than half of them (51.2%) had not been previously diagnosed with hypertension (Table 11.4). There were more males (54.1%) who were undiagnosed with hypertension compared to females (47.4%). The proportion of undiagnosed hypertensives decreased with age from about seven in eight (87.3%) adults aged 18 to 29 years with undiagnosed hypertension to about three in ten (31.0%) adults aged 70 to 74 years with undiagnosed hypertension. On the other hand, the proportion of undiagnosed hypertensives was higher among the higher educated. About three in five (59.8%) hypertensives with post-secondary education was not previously diagnosed with hypertension compared to about one in two (46.7%) with secondary education and about one in three (35.7%) with primary education. Indians (58.0%) had a higher proportion of undiagnosed hypertensives compared with Chinese (51.2%) and Malays (47.0%).

Table 11.4: Proportion (%) of undiagnosed hypertension among Singapore residents aged 18 to 74 years with hypertension by age, sex, education, and ethnicity, 2023-2024

	% of residents with undiagnosed hypertension
Total	51.2
18-29	87.3
30-39	79.4
40-49	67.2
50-59	53.4
60-69	34.6
70-74	31.0
Males	54.1
Females	47.4
Primary	35.7
Secondary	46.7
Post-secondary	59.8
Chinese	51.2
Malays	47.0
Indians	58.0

Note: Analysis based on highest education attained.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Among the undiagnosed hypertensives, the majority of them were between the ages of 50 to 59 years (29.2%), males (60.3%), Chinese (74.7%) and had post-secondary education (58.1%) (Table 11.5). The majority of the residents (72.7%) with undiagnosed hypertension were found to have Grade 1 hypertension [9] (European Society of Hypertension, 2023). However, a higher proportion of Malay newly diagnosed hypertensives (24.2%) had Grade 2 hypertension compared with Chinese (19.8%) and Indian (17.6%) hypertensives. For Grade 3 hypertension, Indian newly diagnosed hypertensives had the highest proportion (17.2%), much higher than Chinese (6.3%) and Malays (6.0%).

Table 11.5: Profile (%) of Singapore residents aged 18 to 74 years with undiagnosed hypertension by age, sex, education, and ethnicity, 2023-2024

	Profile (%) of residents with undiagnosed hypertension
Total	100.0
18-29	6.6
30-39	13.7
40-49	21.0
50-59	29.2
60-69	21.2
70-74	8.5
Males	60.3
Females	39.7
Primary	10.7
Secondary	31.2
Post-secondary	58.1
Chinese	74.7
Malays	13.4
Indians	9.3

Note: Analysis based on highest education attained, which served as a proxy for socio-economic factors.

[9] The 2023 ESH guidelines for management of arterial hypertension defines Grade 1 hypertension as systolic blood pressure of 140-159mmHg and/or diastolic blood pressure of 90-99mmHg, Grade 2 hypertension as systolic blood pressure of 160-179mmHg and/or diastolic blood pressure of 100-109mmHg and Grade 3 hypertension as systolic blood pressure of 180mmHg and above and/or diastolic blood pressure of 110mmHg and above. The BP category is defined by the highest level of BP, whether systolic or diastolic.

Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Control of Hypertension in Known Hypertensives

According to the ACE Clinical Guidance on Hypertension, the target levels of blood pressure for adults with hypertension should be individualised according to cardiovascular risk and overall health status (Agency for Care Effectiveness, 2023). Good control of blood pressure will reduce the risks of developing serious hypertension-related complications. In this report, the blood pressure target for individuals with low to intermediate cardiovascular risk (i.e. systolic blood pressure of less than 140mmHg and a diastolic blood pressure of less than 90 mmHg) is used as the benchmark for good blood pressure control *(Agency for Care Effectiveness, 2023)*.

Among the adults with known hypertension who attended the health examination, around two-fifths (39.6%) had good control of their blood pressure levels while the remaining three-fifths (60.4%) were less effective in controlling their blood pressure (Table 11.6). More than four in five (84.0%) younger adults aged 30 to 39 years with known hypertension had poor blood pressure control compared with other age groups. More males (63.5%) compared to females (56.7%) had poorer blood pressure control. The proportion of hypertensive residents with poor blood pressure control was higher among those with post-secondary education (63.4%) compared with those with primary (58.8%) and secondary (57.8%) education levels. Among the ethnic groups, Malay known hypertensives (66.0%) had the highest proportion with poor blood pressure control followed by Indians (64.9%) and Chinese (58.7%).

Table 11.6: Proportion (%) of Singapore residents aged 18 to 74 years with known hypertension who had poor control of blood pressure levels by age, sex, education, and ethnicity, 2023-2024

Among known hypertensives who attended Health Examination	% of residents with poor control of blood pressure levels (Systolic BP ≥ 140mmHg or Diastolic BP ≥ 90mmHg)
Total	60.4
18-29	s
30-39	84.0
40-49	71.7
50-59	58.7
60-69	57.7
70-74	57.4
Males	63.5
Females	56.7
Primary	58.8
Secondary	57.8
Post-secondary	63.4
Chinese	58.7
Malays	66.0
Indians	64.9

Notes: (1) s: Data have been suppressed due to small counts or high sampling variability.

(2) Analysis based on highest education attained, which served as a proxy for socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Chapter 13
Hyperlipidaemia

Key Points

- About three in 10 (30.5%) Singapore residents aged 18 to 74 years had hyperlipidaemia (or high blood cholesterol) during 2023-2024, while the age-standardised prevalence was 30.1% after accounting for population ageing.
- Males (34.1%) had higher prevalence of high blood cholesterol than females (27.1%).
- The prevalence of high blood cholesterol increased with age; from around one in nine (10.9%) adults in the 18 to 29 years age group to more than one in two in the 60 to 74 years age group (60 to 69 years: 54.2%; 70 to 74 years: 58.8%).
- Among residents detected to have high blood cholesterol based on the health examination, 41.3% of them had not been previously diagnosed with high blood cholesterol.

Introduction

Hyperlipidaemia or high blood cholesterol is a major risk factor for coronary heart disease. Elevated blood cholesterol, in particular LDL-cholesterol, causes atherosclerosis and increases the risk for coronary heart disease. HDL-cholesterol has been shown to have a protective effect against coronary heart disease. Low HDL-cholesterol has been shown to be an important independent risk factor for the development of coronary heart disease. The adoption of healthier lifestyle behaviours such as reduced intake of saturated fats, being more physically active, and better weight control as well as clinical management of those persons at increased risk are important factors in improving the cholesterol levels in the population (*JAMA 2001; NIH 2002)*.

Method Used

An interviewer-administered questionnaire was used to obtain an indication of the prevalence of known high blood cholesterol in the community. Respondents were asked whether they had ever been told by a western-trained doctor that they had high blood cholesterol and were currently prescribed medication for high blood cholesterol. Respondents who answered “yes” to both questions were classified as having “reported high blood cholesterol”. Among those with self-reported high blood cholesterol, they were also asked on the frequency of their visits to the doctor and place of treatment to manage their high blood cholesterol.

All respondents who completed the interviewer-administered questionnaire were invited to participate in a health examination. Among those who attended the health examination, blood samples were taken by venepuncture to determine the fasting cholesterol, LDL-cholesterol and HDL-cholesterol after an overnight fasting of at least 10 hours. Blood samples for cholesterol analysis were collected in plain test tubes and were centrifuged on sites before they were dispatched to Innoquest Diagnostics for analysis on the same day of the health examination. LDL-cholesterol was measured using Roche c702 instrument using homogenous enzymatic colorimetric method.

This report focuses on the analysis for LDL-cholesterol and data on LDL-cholesterol were aggregated over a span of two survey cycles (i.e., NPHS 2023 and NPHS 2024) so that there will be a larger sample for detailed analysis.

Definition

High blood cholesterol prevalence estimate was defined as a composite indicator of (i) those who reported that they were diagnosed with high blood cholesterol by a doctor and on medication, (ii) those who reported that they were diagnosed with high blood cholesterol by a doctor and not on medication but were found to have high blood cholesterol based on LDL-cholesterol level during the health examination, and (iii) those who had been newly diagnosed with high blood cholesterol based on LDL-cholesterol level during the health examination and did not self-report doctor-diagnosed high blood cholesterol.

The classification of LDL-cholesterol used in the survey was adapted from the Ministry of Health's Clinical Practice Guidelines on Lipids 2016 (Table 12.1) (MOH, 2016). High blood cholesterol was defined as an LDL-cholesterol level equal or above 4.1mmol/l or equal or above 160mg/dl.

Table 12.1: Diagnostic values for LDL-cholesterol

Classification	Blood Cholesterol Concentration	
	mmol/l	mg/dl
Desirable	≤ 3.3	≤ 129
Borderline high	3.4 – < 4.1	130 – < 160
High	≥ 4.1	≥ 160

Prevalence of Hyperlipidaemia

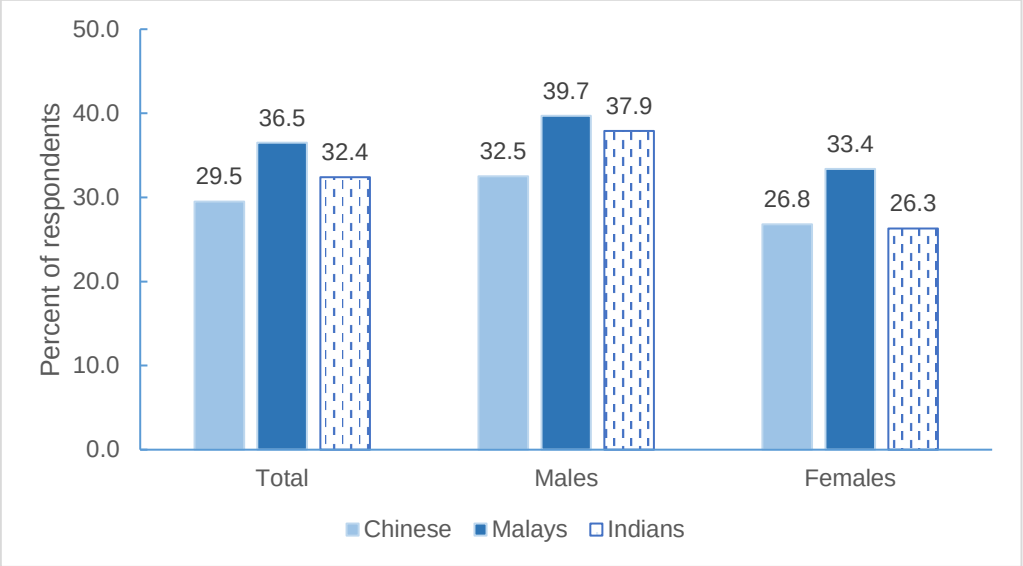
The prevalence of high blood cholesterol among Singapore residents aged 18 to 74 years was 30.5% (Table 12.2) in 2023-2024. Overall, males (34.1%) had higher prevalence of high blood cholesterol than females (27.1%), and in most age groups except 60 to 74 years. The prevalence of high blood cholesterol increased with age; from around one in nine (10.9%) adults in the 18 to 29 years age group to more than one in two in the 60 to 74 years age group (60 to 69 years: 54.2%; 70 to 74 years: 58.8%).

Among the ethnic groups, the proportion of residents with high blood cholesterol was higher among Malays (36.5%) compared to Indians (32.4%) and Chinese (29.5%) (Graph 12.1). Malay males (39.7%) tended to have higher prevalence of high blood cholesterol than their Indian (37.9%) and Chinese counterparts (32.5%). Malay females (33.4%) had the highest proportion with high blood cholesterol compared with the Chinese (26.8%) and Indian (26.3%) females. More than one in two (54.4%) residents with primary education had high blood cholesterol compared with residents with secondary (39.2%) or post-secondary education (23.9%) (Table 12.3). Residents with self-reported high blood cholesterol visited a doctor for their condition about three times during the period of the past 12 months, mainly in polyclinics (56.4%), private GP clinics (26.2%) and specialist outpatient clinics in public hospitals (12.3%).

Table 12.2: Age-specific crude prevalence (%) of hyperlipidaemia among Singapore residents aged 18 to 74 years by sex, 2023-2024

Age (years)	Total	Males	Females
18-29	10.9	14.6	6.9
30-39	16.3	21.1	11.9
40-49	24.1	33.3	15.5
50-59	40.5	44.9	36.2
60-69	54.2	52.8	55.4
70-74	58.8	52.8	64.1
18-74	30.5	34.1	27.1

Graph 12.1: Crude prevalence (%) of hyperlipidaemia among Singapore residents aged 18 to 74 years by sex and ethnicity, 2023-2024



Trends in Prevalence of Hyperlipidaemia

There were no significant differences in the overall crude and age-standardised prevalence for hyperlipidaemia between 2010 and 2023-2024 (Table 12.3). Between 2019-2020 and 2023-2024, a significant decrease in hyperlipidaemia prevalence was observed for those aged 30 to 39 years.

Table 12.3: Prevalence (%) of hyperlipidaemia among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2010, 2017, 2019-2020, 2021-2022, and 2023-2024

	NHS	NPHS	NPHS	NPHS	NPHS
	2010	2017	2019-2020	2021-2022	2023-2024
Total	26.2 (24.0, 28.3)	35.5 (32.3, 38.8)[a]	39.1 (37.4, 41.0)	31.9 (30.7, 33.2)[a]	30.5 (29.4, 31.7)
ASR	29.6	36.0	39.5	31.7	30.1
18-29	s	18.3 (11.2, 25.4)	15.7 (12.3, 19.0)	9.6 (7.3, 11.9)[a]	10.9 (8.5, 13.1)
30-39	14.9 (11.4, 18.2)	24.5 (18.3, 30.6)[a]	25.9 (22.6, 29.4)	20.5 (18.1, 22.9)	16.3[e] (14.1, 18.4)
40-49	22.7 (18.9, 26.6)	31.7 (25.7, 37.9)	36.8 (33.1, 40.8)	27.2 (24.7, 29.7)[a]	24.1 (21.9, 26.1)
50-59	41.4 (35.8, 47.0)	52.1 (43.7, 60.4)	56.3 (51.8, 60.7)	45.4 (41.7, 48.9)[a]	40.5 (37.8, 43.3)
60-69	56.9 (47.0, 66.8)	51.8 (43.8, 59.8)	58.4 (54.0, 62.9)	53.7 (50.4, 56.8)	54.2 (51.0, 57.2)
70-74	54.5 (41.3, 67.7)	53.1 (38.3, 68.0)	62.8 (55.6, 70.2)	55.1 (50.5, 59.8)	58.8 (54.5, 63.0)
Males	28.8 (25.7, 32.1)	42.8 (37.6, 47.8)[a]	42.8 (40.1, 45.5)	36.2 (34.1, 38.0)[a]	34.1 (32.3, 35.8)

Females	23.6 (20.8, 26.5)	28.5 (24.8, 32.3)	35.8 (33.4, 38.1)[a]	27.9 (26.3, 29.7)[a]	27.1 (25.8, 28.7)
Primary	44.6 (38.6, 50.7)	54.3 (45.0, 63.5)	58.9 (54.1, 63.8)	49.3 (45.5, 53.1)[a]	54.4 (50.3, 58.4)
Secondary	28.2 (24.5, 32.0)	38.2 (32.2, 44.3)[a]	45.7 (42.5, 49.2)	40.3 (37.5, 42.9)	39.2 (36.9, 41.5)
Post-secondary	18.5 (15.6, 21.2)	29.1 (25.2, 32.9)[a]	32.6 (30.4, 34.8)	25.7 (24.2, 27.2)[a]	23.9 (22.6, 25.2)
Chinese	25.2 (22.5, 28.0)	34.1 (30.6, 37.8)[a]	39.6 (37.6, 41.6)	32.0 (30.4, 33.3)[a]	29.5 (28.4, 30.8)
Malays	32.8 (29.5, 36.0)	40.7 (31.0, 50.5)	39.2 (33.9, 44.8)	33.5 (29.3, 37.7)	36.5 (33.1, 40.0)
Indians	28.0 (25.0, 31.2)	40.3 (29.7, 50.7)	37.5 (31.6, 43.3)	32.8 (28.8, 36.9)	32.4 (27.9, 36.6)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey years are significantly different statistically at 5% significance level as the confidence intervals for these two survey years did not overlap (e.g. NPHS 2021-2022 and NPHS 2023-2024)

(2) s: Data have been suppressed due to small counts or high sampling variability.

(3) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(4) Analysis based on highest education attained served as a proxy to socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(5) [e] Indicate statistically significant linear downward trend between 2019-2020 and 2023-2024 with p-value <0.05

Proportion of Undiagnosed Hyperlipidaemia

Among all residents with high blood cholesterol, the survey found that 41.3% of them had not been previously diagnosed with high blood cholesterol (Table 12.4). Similar proportions of males (40.5%) and females (42.4%) had undiagnosed high blood cholesterol. In terms of age groups, the proportion of individuals with undiagnosed high blood cholesterol decreased with increasing age, from about seven in eight (85.3%) among those aged 18 to 29 years to about one in eight (12.6%) among those aged 70 to 74 years. Higher educated residents with hyperlipidaemia had higher proportions of individuals with undiagnosed high blood cholesterol (49.4% among those with post-secondary education, 36.5% among those with secondary education and 27.4% among those with primary education). More Malays (48.2%) and Indians (46.6%) had undiagnosed high blood cholesterol compared with Chinese (39.3%).

Table 12.4: Proportion (%) of undiagnosed hyperlipidaemia among Singapore residents aged 18 to 74 years with hyperlipidaemia by age, sex, education, and ethnicity, 2023-2024

	% of residents with undiagnosed hyperlipidaemia
Total	41.3
18-29	85.3
30-39	71.8
40-49	56.4
50-59	40.2
60-69	25.5
70-74	12.6
Males	40.5
Females	42.4
Primary	27.4
Secondary	36.5
Post-secondary	49.4
Chinese	39.3
Malays	48.2
Indians	46.6

Note: Analysis based on highest education attained, which served as a proxy for socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Among residents with undiagnosed high blood cholesterol, the majority of them were between the ages of 40 to 59 years (45.9%), males (53.3%), Chinese (68.3%) and had post-secondary education (61.6%) (Table 12.5). The mean LDL-cholesterol level among the newly diagnosed was 4.6 mmol/l for 2023-2024, similar to the levels in 2021-2022 (4.6 mmol/l) and 2019-2020 (4.8 mmol/l).

According to the ACE Clinical Guidance on Lipid Management, the LDL-cholesterol target level for individuals with high blood cholesterol is based on their cardiovascular risk and needs to be contextualised when guiding lipid management (Agency for Care Effectiveness, 2023). Hence, the topic on control of hyperlipidaemia among individuals with known hyperlipidaemia is beyond the scope of this report.

Table 12.5: Profile (%) of Singapore residents aged 18 to 74 years with undiagnosed hyperlipidaemia by age, sex, education, and ethnicity, 2023-2024

	Profile (%) of residents with undiagnosed hyperlipidaemia
Total	100.0
18-29	13.5
30-39	17.9
40-49	20.3
50-59	25.6
60-69	18.9
70-74	3.8
Males	53.3
Females	46.7
Primary	9.0
Secondary	29.3
Post-secondary	61.6
Chinese	68.3
Malays	18.5
Indians	10.4

Note: Analysis based on highest education attained, which served as a proxy for socio-economic factors.
Primary education: No formal qualification/ Primary/ PSLE.
Secondary education: Secondary/ GCE 'O'/ 'N' level.
Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

Chapter 14
Chronic Kidney Disease (Renal Impairment)

Key Points

- The prevalence of chronic kidney disease (CKD) among Singapore residents aged 18 to 74 years was 14.9% during 2023-2024, with males (14.9%) and females (14.9%) having the same prevalence.
- The prevalence of CKD increased with age, from 5.8% among those aged 18 to 39 years to 35.0% for those aged 70 to 74 years.
- The prevalence of CKD among residents with both diabetes and hypertension is 47.4%, with females having slightly higher prevalence (49.0%) than males (46.3%).
- The CKD prevalence of residents with diabetes only is 34.4%, while the CKD prevalence of residents with hypertension only is lower at 21.4%. For residents without both diabetes and hypertension, the CKD prevalence is lower at 6.3%.

Introduction

Chronic kidney disease (CKD) is defined as abnormalities of kidney structure or function, present for a minimum of three months, with implications for health *(KDIGO 2024)*. CKD is classified based on cause, glomerular filtration rate (GFR) category, and albuminuria (ratio of urine albumin and urine creatinine) category. It is important to detect and manage CKD early to treat reversible conditions and retard its progression. Severe CKD (kidney failure) is a debilitating condition and is associated with numerous comorbidities and reduced life expectancy. The socio-economic impact on the society is also considerable.

Method Used

All respondents who completed the interviewer-administered questionnaire were invited to participate in a health examination to have their blood samples collected using standard phlebotomy procedure and centrifuges after allowing 30 minutes of clotting time. The serum creatinine was measured using the Roche c702 instrument using the Jaffe Gen.2 reagent at Innoquest Diagnostics. This method is standardised against the isotope dilution-mass spectrometry method and fulfils the prerequisite for using the CKD-EPI equations.

Random spot urine samples were collected in sterile containers for measurement of albumin and creatinine using the Roche c702 instrument at Innoquest Diagnostics. The urine albumin was measured using the immunoturbidimetric method (Tina-quant Albumin Gen.2) whereas the urine creatinine was measured using the Jaffe reaction in urine mode.

Data on serum creatinine, urinary albumin and urinary creatinine were aggregated over a span of two survey cycles (i.e., NPHS 2023 and NPHS 2024) so that there will be a larger sample for detailed analysis.

Definition

The estimated glomerular filtration rate (eGFR) of the respondents was derived using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equations as provided below (Table 14.1) *(Levey 2009)*.

Table 14.1: Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equations for estimating GFR in non-Black subjects. SCr = serum creatinine

Subject characteristics	Equation
Female with SCr ≤ 62 µmol/L	$eGFR = 144\ (SCr \times 0.0113 / 0.7)^{-0.329} \times (0.993)^{\text{age in years}}$
Female with SCr> 62 µmol/L	$eGFR = 144\ (SCr \times 0.0113 / 0.7)^{-1.209} \times (0.993)^{\text{age in years}}$
Male with SCr ≤ 80 µmol/L	$eGFR = 141\ (SCr \times 0.0113 / 0.9)^{-0.411} \times (0.993)^{\text{age in years}}$
Male with SCr> 80 µmol/L	$eGFR = 141\ (SCr \times 0.0113 / 0.9)^{-1.209} \times (0.993)^{\text{age in years}}$

The ACE Clinical Guidance on early detection of CKD was used as reference for the diagnosis and staging of CKD (Agency for Care Effectiveness, 2022). In this report, a respondent is considered to have CKD if they have one reading of eGFR < 60mL/min per 1.73m2 (i.e., GFR categories G3a to G5) or one reading of albuminuria (ratio of urine albumin and urine creatinine) ≥ 3mg/mmol (i.e., UACR categories A2 and A3 (Table 14.2).

As the classification of CKD in this report is based on a single urine sample rather than multiple measurements over a longer period of time as required for clinical diagnosis, the estimated CKD prevalence in this report is likely an over-estimate, as it includes respondents with transient microalbuminuria.

Table 14.2: Classification of CKD based on glomerular filtration rate (GFR) and albuminuria

GFR Category	GFR stages (mL/min per 1.73 m^2)	UACR Category	Albuminuria stages (UACR, mg/mmol)
G1	≥90	A1	<3
G2	60-89	A2	3-30
G3a	45-59	A3	>30
G3b	30-44		
G4	15-29		
G5	<15		

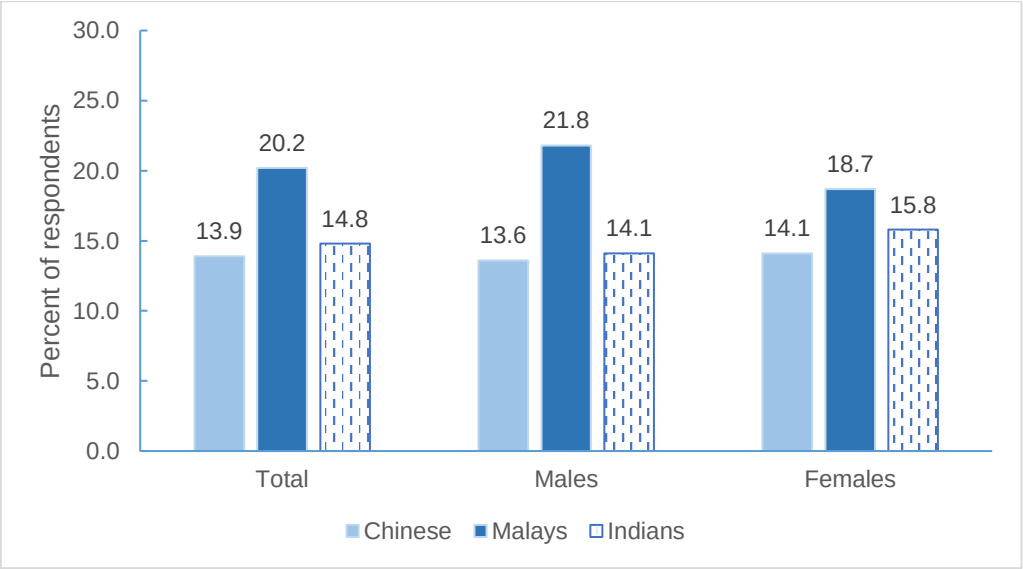
Prevalence of CKD

The overall prevalence of CKD among Singapore residents aged 18 to 74 years was 14.9%, with males and females having similar prevalence at 14.9% (Table 14.3). The prevalence of CKD increased with age, from 5.8% among those aged 18 to 39 years, to 35.0% for those aged 70 to 74 years. Malays (20.2%) had the highest CKD prevalence, followed by Indians (14.8%) and Chinese (13.9%) (Graph 14.1). The same patterns regarding age and ethnic group were observed among both males and females.

Table 14.3: Age-specific crude prevalence (%) of CKD among Singapore residents aged 18 to 74 years by sex, 2023-2024

Age (years)	Total	Males	Females
18-39	5.8	6.0	5.6
40-54	12.8	13.0	12.6
55-69	23.2	23.2	23.2
70-74	35.0	32.5	37.2
18-74	14.9	14.9	14.9

Graph 14.1: Crude prevalence (%) of CKD among Singapore residents aged 18 to 74 years by sex and ethnicity, 2023-2024



Two important clinical risk factors for CKD are diabetes and hypertension. Among Singapore residents aged 18 to 74 years with both diabetes and hypertension, the prevalence of CKD is 47.4%, with females having slightly higher prevalence (49.0%) than males (46.3%) (Table 14.4). The CKD prevalence of residents with diabetes (with or without hypertension) is 43.3%, which is higher compared to residents with hypertension (with or without diabetes) at 26.6%. Similarly, comparing the CKD prevalence of residents with diabetes only, the prevalence is 34.4%, while the CKD prevalence of residents with hypertension only is lower at 21.4%. For residents without both diabetes and hypertension, the CKD prevalence drops to 6.3%. In all of the cases above, females generally have slightly higher CKD prevalence than males.

Table 14.4: Crude prevalence (%) of CKD among Singapore residents aged 18 to 74 years by sex, diabetes, and hypertension status, 2023-2024

Diabetes / Hypertension status	Total	Males	Females
Diabetes and hypertension	47.4	46.3	49.0
Diabetes (with or without hypertension)	43.3	42.2	44.9
Hypertension (with or without diabetes)	26.6	23.8	30.7
Diabetes only (without hypertension)	34.4	32.8	36.7
Hypertension only (without diabetes)	21.4	18.1	26.1
No diabetes and no hypertension	6.3	5.9	6.5

Note: Respondents are classified solely based on whether they have diabetes and hypertension. Other comorbidities (that the respondents may have) are not taken into consideration in this classification. co

The distribution of respondents by the different GFR category and UACR category is presented in Table 14.5. Cells shaded in grey represent CKD. The prevalence of CKD with GFR category G3a and above (i.e. abnormal GFR) is 2.6%.

Table 14.5: Proportion (%) of Singapore Residents aged 18 to 74 years by GFR category and UACR category, 2023-2024

GFR Category	**UACR Category**			
	A1	A2	A3	Total
G1	59.5	6.4	0.6	66.5
G2	25.6	4.5	0.7	30.9
G3a	0.9	0.8	0.2	1.8
G3b	0.1	0.1	0.3	0.5
G4	<0.1	0	0.1	0.1
G5	0	0	0.1	0.1
Total	86.1	11.9	2.0	100

Trends in Prevalence of CKD

There were no significant changes in the CKD prevalence rates overall or at any of the subgroup levels between 2019-2020 and 2023-2024 (Table 14.6)

Table 14.6: Prevalence (%) of CKD among Singapore residents aged 18 to 74 years by age, sex, education, and ethnicity, 2019-2020, 2021-2022, 2023-2024

	NPHS	NPHS	NPHS
	2019-2020	2021-2022	2023-2024
Total	8.7 (7.7, 9.7)	13.8 (12.7, 14.9)[a]	14.9 (13.9, 16.0)
ASR	8.7	13.0	13.9
18-39	3.3 (2.1, 4.6)	5.9 (4.7, 7.2)[a]	5.8 (4.7, 7.1)
40-54	6.7 (5.3, 8.4)	10.8 (9.2, 12.7)[a]	12.8 (10.9, 14.7)
55-69	14.7 (12.5, 17.0)	21.6 (19.3, 24.0)[a]	23.2 (21.0, 25.6)
70-74	28.0 (21.0, 35.4)	36.0 (30.7, 41.7)	35.0 (30.0, 40.6)
Males	8.6 (7.3, 10.1)	13.6 (12.2, 15.0)[a]	14.9 (13.4, 16.4)
Females	8.7 (7.3, 10.2)	14.0 (12.5, 15.6)[a]	14.9 (13.5, 16.4)
Primary	20.2 (16.3, 24.6)	30.5 (26.1, 34.6)[a]	33.4 (29.1, 37.8)
Secondary	12.4 (10.3, 14.6)	18.2 (16.2, 20.4)[a]	21.3 (19.1, 23.7)
Post-secondary	5.5 (4.4, 6.6)	9.2 (8.1, 10.4)[a]	9.2 (8.2, 10.4)
Chinese	8.2 (7.1, 9.3)	12.8 (11.8, 14.0)[a]	13.9 (12.7, 15.0)
Malays	11.3 (7.9, 14.9)	19.0 (15.7, 22.6)[a]	20.2 (17.3, 23.5)
Indians	9.2 (6.1, 12.8)	14.6 (11.3, 18.3)	14.8 (11.1, 19.4)

Notes: (1) Figures in ( ) refer to the 95% confidence intervals. [a] Indicates that the results for any two consecutive survey periods are significantly different statistically at 5% significance level as the confidence intervals for these two survey periods did not overlap (i.e., between NPHS 2021-2022 and NPHS 2023-2024).

(2) ASR: Age-standardised rate. The reference population used is Singapore Census 2020 resident population.

(3) Analysis based on highest education attained, which served as a proxy for socio-economic factors.

Primary education: No formal qualification/ Primary/ PSLE.

Secondary education: Secondary/ GCE 'O'/ 'N' level.

Post-secondary education: GCE 'A' Level/ Polytechnic & other diploma/ Degree & professional qualification.

(4) Data for the previous survey cycle (i.e., NPHS 2019-2020) has been revised due to revisions made to the data.

Chapter 15 Survey Methodology

Study Design and Objectives

The NPHS is a cross-sectional population health survey series jointly managed by the Ministry of Health and Health Promotion Board to track the health and risk factors of the Singapore residents. The main objectives of the survey are to monitor the health of Singapore residents and track progress towards national targets in the areas of:

(i) risk factors such as alcohol consumption, cigarette smoking and physical inactivity;

(ii) diseases such as diabetes mellitus, hypertension and hyperlipidaemia; and

(iii) preventive health behaviours such as chronic disease screening; cervical, breast and colorectal cancer screening; and vaccinations.

The survey results were presented for the 18 to 74 years age group for most chapters except chronic disease screening, cancer screening and vaccinations. For these few chapters, the analyses were confined to relevant age groups recommended for screening and immunisation. Data for the “Others” ethnic group were included in the compilation of the survey results shown under “Total” but suppressed in ethnic-specific data of all statistical tables due to small counts or high sampling variability.

Ethics Approval

The NPHS methodology, protocol and procedures were approved by National Healthcare Group (NHG) Domain Specific Review Board (Domain F).

Sample Design

A representative sample of residential addresses was obtained from the Singapore Department of Statistics (DOS) who maintains a sampling frame of residential addresses for the selection of samples for household surveys. The sample selection was based on a two-stage design where the primary sampling units comprised of geographical areas and the secondary sampling units were the residential dwelling units.

The NPHS design comprised two components – (1) Household Interview (HI) and (2) Health Examination (HE). In the first component, a household member aged 18 to 79 years old (also known as “reference person”) was identified using KISH tables within each selected address to participate in the household for a face-to-face questionnaire interview (i.e. NPHS HI). Only Singapore citizens and permanent residents were recruited for the survey. All reference persons who completed NPHS HI would be invited to undergo a health examination (i.e. NPHS HE) at a designated clinic. Physical measurements e.g. height, weight, hip and waist circumference, blood pressure levels and bio-specimens such as blood and urine samples of survey respondents were collected. The blood and urine samples were sent to a medical laboratory to test for blood sugar, cholesterol, proteins in urine and other conditions. A full report on the respondent’s health status was mailed to him/ her six to eight weeks after the completion of the health examination. As the health examination is conducted for the purposes of population health surveillance and does not include medical follow up (i.e., is not health screening), respondents were informed that that they should consult their own family doctor if they wished to find out more about the report.

Questionnaire

An electronic structured questionnaire administrated on a tablet was used in the survey to collect information on the demographic, socio-economic, lifestyle practices relating to the major non-communicable diseases and risk factors, health conditions, knowledge, attitude and practices on health screening as well as the help-seeking attitudes of the respondents. The questionnaire was adopted from that of the National Population Health Survey 2017 and National Health Surveillance Survey 2013; and included elements of the instruments used in the WHO STEP-wise approach to Surveillance of Non-Communicable Diseases (STEPS) Instrument for Non-Communicable Disease Risk Factors and WHO’s Global Physical Activity Questionnaire (GPAQ).

Invitation Letter and Publicity

An invitation letter, in four official languages, was mailed to the selected household addresses one week prior to visitation by the assigned interviewers. The invitation letter provided information on the survey purpose, what the survey comprised and expected survey duration. It also informed that an interviewer from a research company commissioned by the Ministry of Health and Health Promotion Board would be visiting the household to enumerate, select and interview an eligible household member to take part in the survey, and assured the household on the confidentiality of all collected

information. A dedicated NPHS webpage was set-up to provide detailed information on the conduct of the NPHS.

Training

All survey interviewers were given an overview of the survey background and briefed extensively on the fieldwork procedures such as procurement of appointments, enumeration of household members, selection of eligible household members using KISH tables and consent taking for survey participation. They were given training slides on survey protocols and questionnaire administration as well as training in administrating the electronic questionnaire on a tablet. Fieldworkers carrying out the health examination were given training on consent taking and the standard operation procedures for the conduct of health examination. These trainings helped to ensure compliance to standards and protocols of the survey, and consistency in data collection for the household interview and health examination.

Household Interview Fieldwork

The survey fieldwork was conducted between 29 July 2023 and 30 June 2024. Survey interviewers from the appointed research company *(National University of Singapore (IPS-Social Lab)),* commissioned by the Ministry of Health and Health Promotion Board visited all the selected household addresses. The interviewers made a minimum of five visit attempts, at different times of the day and on different days of a week to establish contact with the reference person or household member to conduct the survey or obtain a survey appointment if the reference person was unavailable at the point of visit. Informed written consent was obtained from the reference person before the interviewer administered the questionnaire face-to-face. A token of appreciation was given to the reference person who completed the survey interview. All reference persons who completed the household interview were invited to go for a health examination and given a letter of invitation by the interviewer.

Health Examination Fieldwork

The health examination fieldwork for NPHS 2024 was carried out between 11 August 2023 and 28 August 2024 by a healthcare service provider *(Healthway Medical Group)* appointed by the Ministry of Health and Health Promotion Board. Appointment setting officers from the service provider provided a reminder call to reference persons two to three days prior to their appointments and managed any requests for changes to the appointments. At the appointed clinic, informed written consent was obtained by a fieldworker before the conduct of the health examination and a token of appreciation was given to the reference person after the completion of the health examination.

Data Quality Control

Informed consent forms validation

All the informed consent forms from the household interview and health examination were checked for completeness and accuracy of information captured. This included checks for missing information, consistency of information and any data-entry errors in the datasets.

Interview validation

Data quality control was conducted by a separate team of staff who were not involved in the survey interview fieldwork. For each interviewer, 40% of their survey interviews were randomly selected and subjected to quality control checks via telephone validation or audio audit. At least 30% of all quality control checks were conducted through telephone validation where respondents were asked to verify their residential address and responses to nine specific fields with the respondents concerned. The remaining 10% of the checks were audio audits where a quality control staff listened to segments of the interview and checked if the interviewer complied with the stipulated survey protocols in administering the questions.

Data verification and consistency check

The electronic survey questionnaire had built-in features that prompt data entry for fields that required a response or prompt data re-entry if data entered was outside the logical or valid field range. Built-in checks for relational fields were also incorporated to ensure that responses for those fields across different sections of the questionnaire were consistent. The built-in features and checks ensured that missing values, data-entry errors and inconsistent responses were eradicated or kept to the minimum where possible. The database on the questionnaire records with the complete survey responses was subjected to a series of computer-programmed checks for missing values, valid field range and cross-field relational consistency. Missing values were obtained from respondents and data anomalies were clarified through direct verification with the respondents whenever necessary.

The database on the physical measurements and laboratory results were also checked for missing values, valid field range and cross-field relational consistency. Missing values and data anomalies were clarified with fieldworkers and corrected where possible.

Data Confidentiality

Throughout all stages of the survey, strict confidentiality on individual respondent information was maintained. All information, including audio recordings, questionnaire answers, health examination records collected for this survey, would be kept strictly confidential, and stored in a secure, password-protected environment. Any reporting of findings would be done on a grouped basis such that no individual survey respondents can be identified. The identity of the respondents would remain confidential in publications (e.g. in national reports).

Age-Standardisation

Age-standardisation of prevalence rates takes into account the changing age distribution of the population over the years and allows for more meaningful trend comparison, especially with an ageing population. Age-standardisation of prevalence was calculated by the direct method, using the 2020 Census Singapore resident population as the standard (reference) population.

Response Rate

From a sample of 11,691 eligible households, 8,802 reference persons aged 18 to 79 years participated in the household interview, forming a response rate of 75.3% in NPHS 2024. 7,102 reference persons (80.7% of all reference persons) initially agreed to participate in the follow-on health examination. However, only 5,429 (76.4%) of those who agreed eventually attended the health examination.

Comparison of Demographic Profile between Survey Respondents and Resident Population

The demographic profiles of survey respondents from household interview were shown in Table 15.1. The survey sample was weighted to the age, ethnic group and sex distribution of the 2023 Singapore resident population to yield a similar population structure as the resident population. This was to ensure that the survey results apply to the general population.

Sample Weights

The sample weights for household interview were the composite of sample weights for the households and the selected household members. For each household, the sample weight (W_{HH}) comprised weight for non-response and unequal probability of selection stratified by planning regions and housing type and benchmarked to the total number of resident households. For each household member, the sample weight (W_{HH_Mem}) comprised weight for unequal probability of selection and weight for post-stratification stratified by age, sex and ethnic groups. The overall sample weight for household interview was the product of W_{HH} and W_{HH_Mem}.

Table 15.1: Percentage distribution (%) of the survey sample (unweighted) for household interview and 2023 Singapore resident population by demographic characteristics

	Household Interview Survey Sample (Unweighted)	Singapore Resident 2023
Total	100.0	100.0
18-29	11.7	17.9
30-39	18.4	18.9
40-49	19.5	18.6
50-59	17.0	18.3
60-69	19.5	16.7
70-79	13.9	9.7
Males	47.3	48.7
Females	52.7	51.3
Chinese	75.7	75.0
Malays	12.1	12.8
Indians	9.4	8.8
Others	2.7	3.3

Table 15.2: Percentage distribution (%) of the combined survey sample (unweighted) for household interview and health examination by demographic characteristics

	Household Interview Combined Survey Sample (Unweighted)	Health Examination Combined Survey Sample (Unweighted)
Total	100.0	100.0
18-29	11.8	11.5
30-39	18.2	18.6
40-49	19.8	20.9
50-59	17.8	19.1
60-69	19.2	19.0
70-79	13.3	10.9
Males	47.2	47.6
Females	52.8	52.4
Chinese	75.5	78.2
Malays	12.2	10.3
Indians	9.3	8.3
Others	3.1	3.2

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Annex A

Survey Questionnaire

NATIONAL POPULATION HEALTH SURVEY 2023/24

QUESTIONNAIRE A [FOR PERSONS AGED 18 YEARS & ABOVE]

全国人口健康调查 2023/24 问卷 A [供 18 岁或以上的人]

Serialhi								
Date of Interview	D	D	M	M	Y	Y	Y	Y

Interviewer's Full Name		KISH Table Used	

Household Information

Number of eligible PERSONS (Singapore citizens/PRs aged 18 to 79 years) in household: _____

住户中合格的人士（18 至 79 岁以下的新加坡公民/永久居民）人数

Number of eligible SENIORS (Singapore citizens/PRs aged 65 years & above) in household: _____

住户中合格的乐龄人士（65 岁或以上的新加坡公民/永久居民）人数

1. REGISTRATION

Interviewer: I would like to inform that your individual information collected for the survey will be kept strictly confidential. Any reporting would be done on a collective basis such that no participants in the survey will be identifiable.
我想告诉您，本调查所收集的个人信息会严格保密。所有调查都会基于整体数据，因此不会泄漏您的任何个人信息。

1000. Year of birth: 出生年份 | Y | Y | Y | Y |

Age: 年龄 | | | |

1001. Record gender of participant **[SA]**
请注明受访者的性别

1	Male	男性
2	Female	女性

1002. Ethnic group (as listed in NRIC) **[SA]**
种族（以身份证（NRIC）为准）

READ ONLY IF NECESSARY		
1	Chinese	华族
2	Malay	马来族
3	Indian	印度族
DO NOT READ		
4	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
[Go to Q1003]		

1003. Are you a Singapore Citizen? **[SA]**
您是新加坡公民吗？

READ			
1	Yes, I am a Singapore Citizen	是，我是新加坡公民	**[Go to Q1006a]**
2	No, I am a Permanent Resident	否，我是永久居民	**[Go to Q1007]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q1004]**

1006a. Did you previously hold citizenship of another country? **[SA]**
您以前是否持有另一个国家的公民身份？

READ			
1	Yes	是	**[Go to Q1006b]**
2	No	否	**[Go to Q1004]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

1006b. **[Version A]** What is the country of your <u>previous</u> citizenship? **[SA]**
您<u>以前</u>是哪个国家/地区的公民？

READ ONLY IF NECESSARY		
1	Malaysia	马来西亚
2	Other Southeast Asian countries (e.g. Indonesia, Thailand, Philippines)	其他东南亚国家/地区（如印尼、泰国、菲律宾）
3	China	中国
4	Hong Kong, Taiwan, Japan or South Korea	香港、台湾、日本或韩国
5	India	印度
6	Other Asian countries (e.g. Pakistan, Russia, Saudi Arabia) not listed in (1) to (5) above	第 1 至 5 选项以外的亚洲国家（如巴基斯坦、俄罗斯，沙地阿拉伯）
7	Australia or New Zealand	澳洲或纽西兰

8	European countries (e.g. United Kingdom, France, Germany)	欧洲国家/地区（如英国、法国、德国）
9	USA or Canada	美国或加拿大
10	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q1006c]		

1006c. In which year did you become a citizen of Singapore? **[SA]**
您是哪一年成为新加坡公民？

	Year	年
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q1004]		

1007. **[Permanent Resident]** What is the country of your current citizenship? **[SA]**
您目前是哪个国家/地区的公民？

READ ONLY IF NECESSARY		
1	Malaysia	马来西亚
2	Other Southeast Asian countries (e.g. Indonesia, Thailand, Philippines)	其他东南亚国家/地区（如印尼、泰国、菲律宾）
3	China	中国
4	Hong Kong, Taiwan, Japan or South Korea	香港、台湾、日本或韩国
5	India	印度
6	Other Asian countries (e.g. Pakistan, Russia, Saudi Arabia) not listed in (1) to (5) above	第 1 至 5 选项以外的亚洲国家（如巴基斯坦、俄罗斯，沙地阿拉伯）
7	Australia or New Zealand	澳洲或纽西兰
8	European countries (e.g. United Kingdom, France, Germany)	欧洲国家/地区（如英国、法国、德国）
9	USA or Canada	美国或加拿大
10	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q1004]		

1004. May I know your height in metres, centimetres, or feet and inches? **[SA]**
请问您的身高是多少公尺、公分或英尺英寸？

	Height in cm, **OR** (nearest whole number)	公分，**或** （最近的整数）
	Height in metres, **OR** (nearest two decimal places)	公尺，**或** （最接近的两位小数）
	Feet (nearest whole number) **AND**	英尺（最近的整数）**与**
	Inches (nearest whole number)	英寸（最近的整数）
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q1005]		

1005. May I know your weight in kilograms or pounds? **[SA]**
请问您的体重是多少公斤或磅？

	Weight in kg, **OR** (nearest one decimal place)	公斤，**或** （最接近的一位小数）
	Weight in lbs (nearest whole number)	磅 （最近的整数）
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 1. GO TO SECTION 2.		

2. DEMOGRAPHICS

2000. What is your current marital status? **[SA]**
请问您目前的婚姻状况是？

USE SHOWCARD		
1	Never married	从未结婚
2	Married	已婚
3	Divorced	离婚
4	Separated	分居
5	Widowed	丧偶
DO NOT READ		
777	Refused	拒绝回答
[Go to Q2001]		

2001. Do you have any children, including adopted and step-children? Please do not include foster children. **[SA]**
请问您是否有孩子, 这包括领养的孩子、继子和继女？ 请不要包括寄养的儿童。

USE SHOWCARD			
1	Yes	有	**[Go to Q2002]**
2	No	没有	**[Go to Q2003]**
DO NOT READ			
777	Refused	拒绝回答	

2002. Are any of your children within the following age range, including adopted and step-children? Please do not include foster children. **[SA]**
您是否有属于以下年龄段的孩子，这包括领养的孩子、继子和继女？请不要包括寄养的儿童。

READ			
a) Aged 0 to 3 years old 0 岁至 3 岁	1) Yes 是	2) No 否	777) Refused 拒绝回答
b) Aged 4 to 6 years old 4 岁至 6 岁	1) Yes 是	2) No 否	777) Refused 拒绝回答
c) Aged 7 to 12 years old 7 岁至 12 岁	1) Yes 是	2) No 否	777) Refused 拒绝回答
d) Aged 13 years to 17 years old 13 岁至 17 岁	1) Yes 是	2) No 否	777) Refused 拒绝回答
e) Aged 18 years old and above 18 岁以上	1) Yes 是	2) No 否	777) Refused 拒绝回答
[Go to Q2003]			

2003. What is the highest level of education* that you have attained? **[SA]**
请问您的最高教育程度*是什么？

USE SHOWCARD AND DO NOT READ		
1	No formal education / Primary	未接受正规教育/小学
2	PSLE or equivalent	小六离校毕业证书或同等学历
3	Secondary	中学
4	'O' / 'N' level or NTC3 cert or its equivalent	'O' / 'N' 水准或全国技工证书第 3 级 (NTC 3)或同等学历
5	'A' level / International Baccalaureate (IB)/ NTC 1-2 or Cert in office/ business skills or its equivalent, WSQ certificates	'A' 水准或/国际高中文凭(IB)/全国技工证书第 1-2 级(NTC 1-2)或办公室/商业技能证书或同等学历,WSQ 证书
6	Polytechnic Diploma	理工学院文凭
7	Other diploma & professional qualification	其它文凭或专职业资格证书
8	University and above	大学及以上学历
9	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q2004]		

** Refers to the highest level or standard which a person had passed or attained and was awarded a certificate, either through attendance at an institution of learning, through correspondence or self-study.*
最高教育程度指的是一个人通过在教育机构学习、函授或自修并获得证书的最高教育水平或学位。

2004. Which of the following best describes your main work status* over the last 12 months? **[SA]**
下列哪项最符合您在过去 12 个月内的主要工作情况*?

USE SHOWCARD & READ ONLY IF NECESSARY			
1	Working	工作	**[Go to Q2005a]**
2	Full-time Student	全职学生	**[Go to Q2006]**
3	Serving National Service	在服兵役/国民服役	
4	Homemaker or housewife	家庭主妇/夫	
5	Retired	退休	**[Go to Q2005a]**
6	Unemployed	无工作	
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q2006]**
888	Don't know / Not sure	不知道 / 不肯定	

** Refers to what you spent most of the usual working hours on during the last 12 months.*
主要工作情况指的是在过去 12 个月内的平常工作时间，您大部分的时间所做的事。

2005a. Which industry do you work in, or used to work in? **[SA]**
您目前或以前从事哪一个行业的工作？

<write response 写回应>

2005b. What is or was your occupation? **[SA]**
您目前或以前的职业是什么？

<write response 写回应>

DO NOT READ (for internal coding only)		
1	Community, Social and Personal Services (e.g. education, nursing, arts, entertainment, public administration, defence, …)	社区，社会及个人服务业（如教育，护理，艺术，娱乐，公共行政，国防， 等等）
2	Manufacturing	制造业
3	Business Services (e.g. real estate, legal, accounting, architectural, R&D, travel, employment, …)	商业服务业（如房地产，法律，会计，建筑设计，科研开发，旅游，雇员介绍，等等）
4	Wholesale and Retail Trade	批发及零售业
5	Financial and Insurance Activities	金融险业
6	Information and Communications (e.g. publishing, media, telecommunications, information technology, …)	资讯通信业(如出版， 媒体， 电信， 资讯科技 等等)
7	Others (e.g. transport, hotels, restaurants, construction)	其它(如交通， 酒店， 餐馆， 建筑业， 等等)
8	Have **never** worked	**从来没有**工作过
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q2006]		

2006. Over the last 12 months, what is the average earnings (S$) of your household in one month, before any deductions? Please include all sources of income such as bonuses, rental and investment income, and other sources such as pension and contributions from relatives and friends who are not staying in the same household. **[SA]**

在过去 12 个月内，您全家每月的平均总收入，在任何扣除前，大概是多少新币？请包括红利、租金和投资所得到的收入，也包括退休金和非同住在一起的家人或朋友所给的现金零用钱/资助。

USE SHOWCARD		
1	Below 2,000 per month	每月收入低于 2,000
2	2,000 – 3,999 per month	每月收入在 2,000 – 3,999 之间
3	4,000 – 5,999 per month	每月收入在 4,000 – 5,999 之间
4	6,000 – 9,999 per month	每月收入在 6,000 – 9,999 之间
5	10,000 – 14,999 per month	每月收入在 10,000 – 14,999 之间
6	15,000 & above per month	每月收入 15,000 及以上
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 2. GO TO SECTION 3.		

3. PHYSICAL ACTIVITY

Interviewer: The next questions are about the time you spend doing work. Think of work as the things that you **have to do** such as paid or unpaid work, household chores or looking for a job. Activities at work, focus on occupational physical activity. For homemakers, this refers to household chores. For unemployed, this refers to looking for a job. For students, this refers to classes (including Physical Education if relevant).
接着我要询问您关于工作中的体力活动。工作是指您不得不做的事情，如有偿或无偿工作、家务活以及找工作。工作中的活动，主要是指与职业相关的体力活动。对于家庭主妇来说，这指的是家务劳动。对于无业人士来说，这指的是找工作。对于学生来说，这指的是上课（包括相关的体育课）。

In answering the next few questions, 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.
在以下的问题，“剧烈活动” 是指需要大量体力并引起呼吸心跳显著增加的活动，“中等强度活动” 是指需引起呼吸心跳轻度增加的活动。

Activity at work （在工作中的活动）

3000. In a typical week, on how many days do you do *vigorous-intensity* activities as part of your work? **[SA]**
您在工作中通常每周有多少天会做*剧烈*活动？

USE SHOWCARD FOR EXAMPLES			
	Days a week	每周几天	**[If 0 day, go to Q3001. Else go to Q3000a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3001]**
888	Don't know / Not sure	不知道 / 不肯定	

3000a. On a typical day on which you do *vigorous-intensity* activities, how much time do you spend doing such activities at work? **[SA]**
在您有做*剧烈*活动的平常一天里，您通常会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3001]		

3001. In a typical week, on how many days do you do *moderate-intensity* activities as part of your work? **[SA]**
您在工作中通常每周有多少天会做*中等强度*活动？

USE SHOWCARD FOR EXAMPLES			
	Days a week	每周几天	**[If 0 day, go to Q3002. Else go to Q3001a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3002]**
888	Don't know / Not sure	不知道 / 不肯定	

3001a. On a typical day on which you do *moderate-intensity* activities, how much time do you spend doing such activities at work? **[SA]**
在您有做*中等强度*活动的平常一天里，您通常会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3002]		

Interviewer: The next questions **exclude** the physical activities at work that you have previously mentioned. Now, I would like to ask you about the usual way you travel to and from places. For example, going to work, shopping, market, or church, temple or mosque or going out for lunch.
以下的问题**不包括**上述工作时的体力活动。现在我要询问您通常的交通方式。例如，上班、购物、去市场、教堂、寺庙或清真寺，或出门用午餐。

Travel to and from places （出行时）

3002. In a typical week, on how many days do you walk or cycle (pedal cycle) to get to and from places? **[SA]**
您出行时，通常每周有多少天步行或骑脚踏车？

	Days a week	每周几天	**[If 0 day, go to Q3100. Else go to Q3002a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3100]**
888	Don't know / Not sure	不知道 / 不肯定	

3002a. On a typical day when you walk or cycle (pedal cycle), how much time do you spend walking or cycling? **[SA]**
在您有步行或骑脚踏车的一天里，您通常会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3100]		

Recreational activities （娱乐性体力活动）

3100. The next questions exclude the work and transport activities that you have already mentioned. In the past 3 months, did you participate in any sports, exercise or walking during your leisure time? This includes sports, fitness and leisure recreational activities like swimming and badminton. **[SA]**
以下问题不包括上述的工作和出行时的体力活动。现在，我要询问一些有关运动、健身和娱乐活动的问题，如游泳和打羽毛球。在过去 3 个月内，您曾在闲暇时间参加过任何运动、健身或步行吗？

READ			
1	Yes	有	**[Go to Q3003]**
2	No	没有	**[Go to Q3100a]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

[If Q3100 = "2 No", "777 Refused" or "888 Don't know / Not sure"]

3100a. What is your main reason for not doing any leisure physical activity? **[SA]**
您没有参加任何娱乐性体力活动的主要原因是什么？

DO NOT READ		
1	No time due to work / family commitment	由于工作/家庭责任而没有时间
2	Too lazy	过于懒惰
3	Too tired because of work commitment etc	因为工作责任等导致太累
4	No companion to exercise with	没有同伴一同锻炼/ 运动
5	Too old	年龄太大
6	Health problems (e.g. difficulty in walking, knee pain, long-term injury)	健康不佳 （如行走困难、膝盖疼痛、长期受伤）
7	Doctor advised not to exercise	医生建议不要锻炼/ 运动
8	Have enough exercise at work	工作中进行了足够的锻炼/ 运动
9	No interest	没有兴趣
10	Accident/ short-term injuries	事故/暂时受伤
11	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3006]		

3003. In a typical week, on how many days do you do *vigorous-intensity* sports, fitness, recreational or leisure activities? **[SA]**
您通常每周有多少天会做*剧烈*运动、健身或娱乐性体力活动？

USE SHOWCARD FOR EXAMPLES			
	Days a week	每周几天	**[If 0 day, go to Q3004. Else go to Q3003a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3004]**
888	Don't know / Not sure	不知道 / 不肯定	

3003a. On a typical day, how much time do you spend doing *vigorous-intensity* sports, fitness, recreational or leisure activities? **[SA]**
在您有做*剧烈*运动、健身或娱乐性体力活动的平常一天里，您通常会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3004]		

3004. In a typical week, on how many days do you do *moderate-intensity* sports, fitness, recreational or leisure activities? **[SA]**
您通常每周有多少天会做*中等强度*运动、健身或娱乐性体力活动？

USE SHOWCARD FOR EXAMPLES			
	Days a week	每周几天	**[If 0 day, go to Q3006. Else go to Q3004a]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q3006]**
888	Don't know / Not sure	不知道 / 不肯定	

3004a. On a typical day, how much time do you spend doing *moderate-intensity* sports, fitness, recreational or leisure activities? **[SA]**
在您有做*中等强度*运动、健身或娱乐性体力活动的平常一天里，您通常会花多长时间做此类活动？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3006]		

3006. In a typical week, on how many days do you do physical activities or exercises to **strengthen your muscles**? Examples of these activities include tai-chi, qi-gong, yoga, sit-ups, push-ups, the use of weight machines, free weights, or elastic bands. Do **not** include aerobic activities like walking, running, or cycling. **[SA]**
您通常每周有多少天会为了**增强肌肉**而做运动或体育锻炼？这些运动包括太极、气功、瑜伽、仰卧起坐或伏地挺身，以及那些使用举重器械、自由力量训练设备或弹力带的运动。请勿包括有氧运动，如健步行走、跑步或骑脚踏车。
***Interviewer note**: Record number of days per month if frequency is less than once a week. Respondents should complete at least 1 set of strength exercises to register as 1 day.*

USE SHOWCARD FOR EXAMPLES & DEFINITION OF 1 SET OF EXERCISE		
	Days per week **OR**	每周几天 **或**
	Days per month	每月几天
DO NOT READ		
666	Never do such activity or exercise	没有做这些运动或体育锻炼
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q3005]		

Interviewer: The next question is about sitting or reclining at work, at home, getting to and from places, or with friends, including time spent sitting at a desk, sitting with friends, travelling in car, bus, train, reading, playing cards or watching television but **DO NOT** include time spent sleeping.
以下的问题是关于工作中、在家里、出行或与朋友相处时的坐卧情况，包括坐在桌前、与朋友坐在一起，乘坐汽车、巴士、地铁，阅读、打牌或看电视的时间，但**不包括**睡眠时间。

3005. On a typical day, how much time do you usually spend sitting or reclining? **[SA]**
您通常每天花多长时间坐着或靠着？

	Hours	小时
	Minutes	分钟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 3. GO TO SECTION 4		

4. TOBACCO USE

Interviewer: The next questions are on cigarette smoking.
现在，我要问一些有关吸烟的问题。

4000. Have you ever smoked cigarettes? **[SA]**
您曾吸过烟吗？

READ			
1	Yes	有	**[Go to Q4001]**
2	No	没有	**[Go to Q4016 Other Tobacco Products]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

4001. How old were you when you first tried or experimented with smoking cigarettes? **[SA]**
您第一次尝试吸烟时是几岁？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4002]		

4002. Have you ever smoked at least 100 cigarettes, or about 5 packs in your **whole life**? **[SA]**
您一生中曾经吸过的烟总数是否有至少 100 支（约 5 包）？

READ			
1	Yes	有	**[Go to Q4003]**
2	No	没有	**[Go to Q4016 Other Tobacco Products]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

4003. Have you ever smoked cigarettes daily? **[SA]**
您曾经每天吸烟吗？

READ			
1	Yes	有	**[Go to Q4004]**
2	No	没有	**[Go to Q4005]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

4004. At what age did you start smoking cigarettes daily? **[SA]**
您从几岁开始每天吸烟的？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4005]		

4005. How often do you smoke cigarettes now, is it….? **[SA]**
您目前吸烟的频率，是…？

~~READ~~			
1	Daily*	每天*	**[Go to Q4006a]**
2	Occasionally	偶尔	
3	Have stopped smoking completely	已经彻底戒烟	**[Go to Q4030]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q4016 Other Tobacco Products]**
888	Don't know / Not sure	不知道 / 不肯定	

* ***Interviewer Note:*** *Please include respondents who have stop smoking daily temporarily because of religious fasting or medical reasons.*
请包括受访者因宗教禁食或医疗因素而暂时停止每天吸烟。

[If Q4005 = "Daily" or "Occasionally", ask the following question]

4006a. Can you show me the pack of cigarettes that you are currently smoking so that we can write down the flavour of cigarette? **[SA]**
您是否能让我看您所吸的烟的包装以便我记下其烟的口味？
Interviewer Note*: If respondent does not have a pack or refused to show pack of cigarettes, please ask for the flavour. If there are more than 1 flavour smoked, record the flavour that was most often smoked.*

DO NOT READ [Record flavour as shown for 4006a]		
1	Regular	
2	Menthol	
3	Mint	
4	Clove/ Kretek	
5	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4006]		

4006. Based on the pack of cigarettes, please code the theme of the graphic health warning. **[SA]**

DO NOT READ [For internal coding by Interviewers]	
1	Smoking causes blindness
2	Smoking causes cancer
3	Smoking causes heart disease
4	Smoking causes lung disease
5	Smoking increases the risk of miscarriage
6	When you're hooked, your child suffers too
7	Smoking can cause stillbirth
8	Smoking causes oral cancer
9	Smoking causes throat cancer
10	Smoking leads to death from lung cancer
11	Tobacco smoke harms your baby
12	Smoking causes premature ageing
13	Others please specify: _____
666	No graphic warnings
777	Refused to show the pack of cigarette

Note: No translation of graphic warning theme is required.

[If Q4005 = "1 Daily", go to Q4007. If Q4005 = "2 Occasionally", go to Q4023. Else, go to Q4016 Other Tobacco Products]

4007. **[Daily Smoker]** On average, how many cigarettes do you smoke per day? **[SA]**
您平均每天吸多少支烟?

	Cigarettes daily	一天几支烟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4019]		

4019. **[Daily Smoker]** How soon do you smoke your first cigarette after you wake up? You can state in terms of minutes or hours after waking up. **[SA]**
您醒来之后, 大概花了多久的时间才开始吸第一支烟？您的回答可以是以几分钟或几小时以内。

DO NOT READ		
1	5 minutes or below	5 分钟或以下
2	6 to 30 minutes	6 至 30 分钟
3	31 to 60 minutes	31 至 60 分钟
4	More than 60 minutes	60 分钟以上
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4022]		

4022. **[Daily Smoker]** What is your main reason for smoking now? **[SA]**
您现在吸烟的主要原因是什么？

DO NOT READ		
1	To feel **relaxed**/ to **relieve stress**/ to help me cope with problems	感觉**放松**/**释放压力**/有助于解决问题
2	Addiction/ would feel **unbearable** if I do not smoke	烟瘾/如果不吸烟，就觉得**很难受**
3	Out of habit	出于习惯
4	Smoking is **enjoyable**	吸烟**令人愉快**
5	**Boredom**	**无聊**
6	To be like my **family members**/ relatives/ boyfriend/ girlfriend/ friends / colleagues	模仿**家庭成员**/亲戚/男友/女友/朋友/同事
7	To **entertain** clients/ friends	**招待**客户/朋友
8	To help me **concentrate**	有助于**集中精神**
9	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4008]		

4008. **[Daily Smoker]** Do you have any intention to quit smoking? **[SA]**
您是否有戒烟的打算?

READ AND USE SHOWCARD		
1	Yes, I plan to quit smoking within the next month	有,我打算在下个月内戒烟
2	Yes, I plan to quit smoking within the next 6 months	有,我打算在未来 6 个月内戒烟
3	Yes, I plan to quit smoking within the next 12 months	有,我打算在未来 12 个月内戒烟
4	Yes, I plan to quit smoking within the next 5 years	有,我打算在未来 5 年内戒烟
5	Yes, I plan to quit smoking sometime in the future	有,我打算在未来的某个时候戒烟
6	No, I do not plan to quit smoking completely, but plan to cut down on the number of cigarettes smoked	我没有打算完全戒烟,但有打算减少吸烟
7	No, I do not plan to quit smoking or cut down on the number of cigarettes smoked	我没有打算戒烟或减少吸烟
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4009]		

4009. **[Daily Smoker]** In the last 12 months, have you tried to stop smoking for at least 24 hours? **[SA]**
在过去 12 个月内，您是否有尝试连续至少 24 小时不吸烟?

READ			
1	Yes	有	**[Go to Q4010]**
2	No	没有	**[Go to Q4028]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

4010. **[Daily Smoker]** How many times did you try to quit smoking during the last 12 months? **[SA]**
在过去 12 个月内，您曾经几次尝试戒烟?

	Number of times in last 12 months	在过去12个月内有几次
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4028]		

4028. **[Daily Smoker]** In the last 12 months, have you been advised by a western-trained doctor to quit smoking? **[SA]**
在过去 12 个月内，西医是否有建议您戒烟？

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4016 Other Tobacco Products]		

[If Q4005 = "2 Occasionally", go to Q4023. Else, go to Q4016 Other Tobacco Products]

4023. **[Occasional Smoker]** On average, how many cigarettes do you smoke? You can tell me the number of cigarettes per week or per month. **[SA]**
您平均吸多少支烟？您的回答可以是以每周或每月几支烟。

	Cigarettes per week, **OR**	每周几支香烟，**或**
	Cigarettes per month	每月几支香烟
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4024]		

4024. **[Occasional Smoker]** What is your <u>main reason</u> for smoking now? **[SA]**
您现在吸烟的<u>主要原因</u>是什么？

DO NOT READ		
1	To feel **relaxed**/ to **relieve stress**/ to help me cope with problems	感觉**放松**/**释放压力**/有助于解决问题
2	Addiction/ would feel **unbearable** if I do not smoke	烟瘾/如果不吸烟，就觉得**很难受**
3	Out of habit	出于习惯
4	Smoking is **enjoyable**	吸烟**令人愉快**
5	**Boredom**	**无聊**
6	To be like my **family members**/ relatives/ boyfriend/ girlfriend/ friends / colleagues	模仿**家庭成员**/亲戚/男友/女友/朋友/同事
7	To **entertain** clients/ friends	**招待**客户/朋友
8	To help me **concentrate**	有助于**集中精神**
9	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4025]		

4025. **[Occasional Smoker]** Do you have any intention to quit smoking? **[SA]**
您是否有戒烟的打算？

READ AND USE SHOWCARD		
1	Yes, I plan to quit smoking within the next month	有，我打算在下个月内戒烟
2	Yes, I plan to quit smoking within the next 6 months	有，我打算在未来 6 个月内戒烟
3	Yes, I plan to quit smoking within the next 12 months	有，我打算在未来 12 个月内戒烟
4	Yes, I plan to quit smoking within the next 5 years	有，我打算在未来 5 年内戒烟
5	Yes, I plan to quit smoking sometime in the future	有，我打算在未来的某个时候戒烟
6	No, I do not plan to quit smoking completely, but plan to cut down on the number of cigarettes smoked	我没有打算完全戒烟，但有打算减少吸烟
7	No, I do not plan to quit smoking or cut down on the number of cigarettes smoked	我没有打算戒烟或减少吸烟
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4026]		

4026. **[Occasional Smoker]** How many times did you try to quit smoking during the last 12 months? **[SA]**
在过去 12 个月内，您曾经尝试戒烟过几次？

	Number of times in last 12 months	在过去12个月内有几次	**[If 0 time, go to Q4029. Else go to Q4027]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q4029]**
888	Don't know / Not sure	不知道 / 不肯定	

4027. **[Occasional Smoker]** What was the <u>main reason</u> for which you attempted to stop smoking? **[SA]**
您试图戒烟的<u>主要原因</u>是什么？

DO NOT READ		
1	**Experienced** the ill effects of smoking	**身受**吸烟之害
2	Pressure to stop from the environment (e.g. **smoking bans**)	迫于环境（例如**禁烟令**）的压力而戒烟
3	Concerned about the health of those around me (through **passive smoking**)	担心周围人群的健康（通过**二手烟**）
4	**Concerned** about the **harmful effects** of smoking	**关注**吸烟的**害处**
5	Pressure/ advice to stop from **family/ friends/ colleagues**	出于**家庭/朋友/同事**的压力/建议而戒烟
6	Cigarettes have become too **expensive**	香烟价格**太贵**
7	**Social stigma** associated with smoking	吸烟**不光彩**

8	Advised to stop smoking by my **doctor**	**医生**建议我戒烟
9	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4029]		

4029. **[Occasional Smoker]** In the last 12 months, have you been advised by a western-trained doctor to quit smoking? **[SA]**
在过去 12 个月内，西医是否有建议您戒烟?

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4016 Other Tobacco Products]		

[If Q4005 = "3 Have stopped smoking completely", go to Q4030. Else, go to Q4016 Other Tobacco Products]

4030. **[Ex-Smoker]** Did you stopped smoking completely in the last 30 days or more? **[SA]**
在过去 30 天或更长时间内，您是否已彻底戒烟?

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[If Q4005 =3 and Q4003=1, go to Q4011. If Q4005 = 3 and Q4003=2, 777 or 888, go to Q4015.]		

4011. **[Ex-daily Smoker]** How long has it been since you last smoked daily? **[SA]**
您已经有多久停止每日吸烟的习惯?

	Number of years, **OR**	几年，**或**
	Number of months, **OR**	几月，**或**
	Number of days	几天
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4012]		

4012. **[Ex-daily Smoker]** How long did you smoke daily before you gave up smoking? **[SA]**
在戒烟之前，您曾经有多久每天吸烟？

	Number of years, **OR**	几年，**或**
	Number of months, **OR**	几月，**或**
	Number of days	几天
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4015]		

4015. **[Ex-smoker]** How many times did you try to quit smoking before you succeeded? **[SA]**
在戒烟成功前，您曾经尝试戒烟过几次？

	Number of times	几次
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4013]		

4013. **[Ex-smoker]** What was the main reason which made you stop smoking completely? **[SA]**
您彻底戒烟的主要原因是什么？

DO NOT READ		
1	**Experienced** the ill effects of smoking	**身受**吸烟之害
2	Pressure to stop from the environment (e.g. **smoking bans**)	迫于环境（例如**禁烟令**）的压力而戒烟
3	Concerned about the health of those around me (through **passive smoking**)	担心周围人群的健康（通过**二手烟**）
4	**Concerned** about the **harmful effects** of smoking	**关注**吸烟的**害处**
5	Pressure/ advice to stop from **family/ friends/ colleagues**	出于**家庭/朋友/同事**的压力/建议而戒烟
6	Cigarettes have become too **expensive**	香烟价格**太贵**
7	**Social stigma** associated with smoking	吸烟**不光彩**
8	Advised to stop smoking by my **doctor**	**医生**建议我戒烟
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4014]		

4014. **[Ex-smoker]** How did you quit smoking? **[MA]**
请问您是怎样戒烟的？

DO NOT READ		
1	Abstained from smoking on own accord	自我克制主动戒烟
2	Attended smoking cessation programme/counselling in public/private hospitals	参加公立/私人医院的戒烟计划/辅导
3	Attended smoking cessation programme/counselling in public (including polyclinics) /private GP clinics	参加公立(包括综合诊疗所)/私人诊所的戒烟计划/辅导
4	Attended smoking cessation programme/counselling in the workplace	参加工作场所的戒烟计划/辅导
5	Attended smoking cessation programme/counselling through a retail pharmacy	通过零售药店参加戒烟计划/辅导
6	Through talking to a quit advisor at Quitline	通过与戒烟热线的戒烟顾问沟通
11	Through participating in I Quit programme (constitutes SMS and Quitline as an option for smokers)	通过参加全国戒烟运动“I Quit”
7	By nicotine replacement therapy (e.g. nicotine patch, inhaler)	通过尼古丁替代治疗（例如尼古丁贴片、尼古丁吸入剂）
8	By herbal remedy	通过草药疗法
9	Used medication (e.g. Bupropion/ Zyban, Varenicline/Champix)	药物治疗（例如耐烟盼牌的安非他酮、戒必适牌的伐尼克兰）
10	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don’t know / Not sure	不知道 / 不肯定
[Go to Q4016]		

4016. **[Ask All]** Other than cigarettes, which of the following tobacco products do you smoke in the last 30 days? **[SA]**
除了香烟，您在过去 30 天内吸的是以下哪种烟草产品？

USE SHOWCARD					
List of other tobacco products **其它烟草产品的列表**	1) Yes, Daily 是, 每天	2) Yes, Occasionally 是, 偶尔	3) No 否	777) Refused 拒绝回答	888) Don’t know / Not sure 不知道 / 不肯定
4016a. Cigar 雪茄	☐	☐	☐	☐	☐
4016b. Cigarillos 迷你雪茄	☐	☐	☐	☐	☐
4016c. E-cigarette / E-vapouriser 电子香烟	☐	☐	☐	☐	☐
4016d. Heated Tobacco 加热烟草	☐	☐	☐	☐	☐
4016e. Beedis 比迪烟	☐	☐	☐	☐	☐
4016f. Roll your own tobacco /	☐	☐	☐	☐	☐

Ang Hoon (loose tobacco) 卷烟					
4016g. Pipe Tobacco 烟丝	☐	☐	☐	☐	☐
4016h. Others 其它 **[Go to Q4016h(i) for "1" or "2"]**	☐	☐	☐	☐	☐
[If Q4016a to Q4016h=1 or 2, go to Q4020. If Q4016a to Q4016h=3, 777 or 888, go to Q4017]					

4016h(i) **[**If respondent selected "1" or "2" for Q4016h, please specify below**]**:
其它（请注明）：

[If Q4000 = "1 Yes" or Q4016a to Q4016h = "1 Yes, Daily" or "2 Yes, Occasionally"]

4020. **[Ask All Smokers]** When you first started smoking, which of the following tobacco product did you smoke? **[SA]**
在您刚开始吸烟时，您吸的是以下哪种烟草产品？

USE SHOWCARD		
1	Cigarettes	香烟
2	Cigar	雪茄
3	Cigarillo	迷你雪茄
4	E-cigarette / E-vapouriser	电子香烟
5	Heated Tobacco	加热烟草
6	Beedis	比迪烟
7	Roll your own tobacco / Ang Hoon (loose tobacco)	卷烟
8	Pipe Tobacco	烟丝
9	Others, please specify: 其它，请注明：_____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4021]		

4021. **[Ask All Smokers]** What was the flavour of *(tobacco product mentioned in 4020)* that you smoked when you first started smoking? **[SA]**
在您刚开始吸烟时，您吸的_____是什么口味？

USE SHOWCARD		
1	Regular	普通味
2	Menthol	薄荷醇味
3	Mint	薄荷味
4	Clove/ Kretek	丁香味
5	Others, please specify: 其它，请注明：_____	

DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4017]		

4017. **[FOR ALL]** How often does anyone smoke inside your home? Would you say daily, weekly, monthly, less than monthy, or never? **[SA]**
您的家中多常会有人吸烟？您估计是每天，每周，每月，少过每月或完全没有？

READ		
1	Daily	每天
2	Weekly	每周
3	Monthly	每月
4	Less than Monthly	少过每月
5	Never	完全没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4100]		

[FOR ALL]
Interviewer: Next, I would like to ask you some questions on e-cigarettes or vapes.

E-cigarettes, or vapes, are electronic devices that usually contain a nicotine-based liquid that is vaporised and inhaled.

They are also known as vape-pens, e-vaporisers, hookah-pens, electronic hookahs (e-hookahs), electronic cigars (e-cigars) or electronic pipes (e-pipes). Some look like cigarettes and others look like pens or small pipes. These are battery-powered devices that produce vapor instead of smoke.

接下来，我要问您一些关于电子烟的问题。
电子烟 是一种电子设备，通常含有可蒸发和吸入的尼古丁液体。
它们也被称为 vape-pen、hookah-pen、电子水烟 (e-hookahs)、电子雪茄 (e-cigars) 或电子烟斗 (e-pipes)。有些看起来像香烟，有些看起来像钢笔或小烟斗。这些是电池供电的设备，产生蒸汽而不是烟雾。

4100. **[FOR ALL]** I am now going to read out some statements regarding the use of e-cigarettes /vapes. Do you agree that…? **[SA]**
我现在将读出几个有关服用电子香烟的句子，请告诉我您觉得每一项的答案是对或错。

USE SHOWCARD				
Statement	1) Yes 对	2) No 错	**DO NOT READ**	
			777) Refused 拒绝回答	888) Don't know / Not sure 不知道 / 不肯定
(a) The purchase, use and possession of e-cigarettes / vapes is legal in Singapore. 在新加坡购买、使用和拥有电子香烟是合法的。				
(b) Vaping is harmful to health as it increases risk of respiratory, heart issues and contains cancer-causing substances 电子香烟有害健康，因为它会增加呼吸、心脏问题的风险，并含有致癌物质				
(c) If one try e-cigarettes / vapes once, he/she may become addicted 如果一个人尝试电子香烟一次，他/她可能会上瘾				
(d) Use of e-cigarettes / vapes can lead individuals who has never smoked cigarettes before, to pick up smoking later in life 使用电子香烟可能会导致从未吸过烟的人在往后的生活中开始吸烟				
(e) E-cigarettes / vapes can help cigarette smokers quit smoking 电子香烟可以帮助吸烟者戒烟				
(f) E-cigarettes / vapes are less harmful than smoking cigarette 电子香烟比吸烟危害更小				
(g) E-cigarettes / vapes have less nicotine content in vaporisers than cigarettes 电子香烟的尼古丁含量低于香烟				
[Go to Q4101]				

4101. Have you ever tried or experimented with e-cigarettes/ vapes? **[SA]**
您曾经使用或尝试过电子香烟吗？

READ			
1	Yes	有	**[Go to Q4102]**
2	No	没有	**[Go Q4106]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

4102. How old were you when you first tried or experimented with e-cigarettes/ vapes?**[SA]**
您第一次使用或尝试电子香烟是几岁？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4103]		

4103. During the last 30 days, on how many days did you use e-cigarettes/ vapes?**[SA] 在这 30 天以内，您有多少天使用电子香烟？**

	Number of days in the last 30 days **[Indicate "0" if did not vape in the last 30 days]**	这 30 天以内的天数 如果这 30 天以内没有吸过电子烟，请注明"0"
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4104]		

4104. What are your reasons for using e-cigarettes/ vapes? **[MA]**

	您为什么会使用电子香烟? **DO NOT READ (May choose more than one answer)**
1	Out of **curiosity**
2	E-cigarettes/ vapes help me **project a cool /mature /attractive image**
3	Peer influence / to be **socially accepted**
4	Helps me **relax/ relieve stress/ cope** with problem(s)
5	E-cigarettes/ vapes are **better** for the **environment** compared to regular cigarettes
6	E-cigarettes/ vapes help me **save money** compared to regular cigarettes
7	E-cigarettes/ vapes help me to **quit cigarette smoking**
8	Feel/ think that it is **alright** to vape as **family members** are also **doing it**
9	Feel/ think that it is **alright** to vape as **friends** are also **doing it**
10	**Easy** for me to **purchase/ obtain** it
11	**Easy** for me to **hide**/ much **less detectable**
12	E-cigarettes/ vapes **smell/ taste good**
13	E-cigarettes/ vapes come in **many flavours**
14	Get a **high or buzz from nicotine**
15	**Seen people** on **TV, online** and in **movies** using e-cigarettes/ vapes
16	Use e-cigarettes/ vapes to **do tricks**
17	Others, please specify: _____
777	Refused
888	Don't know / Not sure
	[Go to Q4105]

4105. Where do you obtain e-cigarettes/ vapes? **[MA]**
您从哪里取得电子香烟?

DO NOT READ (May choose more than one answer)	
1	Family members (e.g. parents, spouse/ partner, siblings)
2	Relatives
3	Friends
4	colleagues
5	Schoolmates
6	On-line store
7	Retail store in Singapore
8	Street peddler in Singapore
9	Bought it overseas
10	Others, please specify: _____
777	Refused
888	Don't know / Not sure
[Go to Q4107]	

[If Q4101="2 No", "777 Refused", "888 Don't know/ Not sure", then answer Q4016]

4106 What are your reasons for not using e-cigarettes/ vapes? **[MA]**
您为什么不使用电子香烟?

DO NOT READ (May choose more than one answer)	
1	Enjoy smoking and do not want to give up smoking
2	No tobacco content, its a poor substitute
3	Complicated and messy to refill nicotine cartridges
4	Vaping feels more harmful/ addictive than smoking cigarettes
5	E-cigarettes/ vapes are illegal in Singapore
6	Vaping is harmful to health
7	If I try e-cigarettes / vapes I may become addicted to nicotine
8	Using e-cigarettes / vapes can lead to picking up smoking later in life
9	Others, please specify: _____
777	Refused
888	Don't know / Not sure
[Go to Q4107]	

4107. Does anyone (e.g family members, friends, colleagues) in your life whom that you spend the most time with on a regular basis uses e-cigarettes/ vapes? **[MA]**
您生活中与您相处最多和经常来往的人（例如家人、朋友、同事）有谁在使用电子香烟?

DO NOT READ (May choose more than one answer)	
1	Parent
2	Spouse/ Partner
3	Sibling
4	Friend
5	Colleague
6	Schoolmate
7	Child
8	Others, please specify: _____
666	No one in my life uses e-cigarettes/ vapes
777	Refused
888	Don't know / Not sure
[Go to Q4108]	

4108. Of the five closest friends that you spend the most time with on a regular basis, how many of them use vapes? **[SA]**
在您经常相处最多的五个最亲密的朋友中，有多少人使用电子香烟?

READ		
1	One	一
2	Two	二
3	Three	三
4	Four	四
5	Five	五
6	None	无
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4109]		

4109. In the last 30 days, how often have you seen anyone using an vaping device in public? **[SA]**
过去的 *30* 天以内，您有多长看到人在公共场合使用电子香烟设备？

READ		
1	Most days	多数日子见过
2	Some days	有些日子见过
3	Every day	每日/天见过
4	Rarely	很少见过
5	Not at all	完全没见过
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q4110]		

4110. What do you think the general public's attitudes is towards vaping? **[SA]**
您认为公众对电子香烟的态度如何？

READ		
1	Strongly approves	非常赞同
2	Approves	赞同
3	Neither approves nor disapproves	不赞同也不反对
4	Disapproves	反对
5	Strongly disapproves	非常反对
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[END OF SECTION 4. GO TO SECTION 6.]		

6. ALCOHOL CONSUMPTION

Interviewer: Now I am going to ask you some questions about alcohol consumption.
现在，我要问您一些关于饮酒的问题。

6000. In the past 12 months, how frequent did you have at least one drink? **[SA]**
在过去 12 个月内，您喝至少一杯酒的频率是多少？

READ AND USE SHOWCARD			
1	5 or more days a week	每周 5 天或更多	**[Go to Q6001]**
2	1-4 days per week	每周 1 至 4 天	
3	1-3 days a month	每月 1 至 3 天	
4	Less than once a month	每月少于一天	
5	Did not drink alcohol in the past 12 months	在过去 12 个月内没有喝酒	**[Go to Section 7]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

6001. What alcoholic drink do you consume most often? **[SA]**
您最常喝的是哪种酒？

READ AND USE SHOWCARD		
1	Beer	啤酒
2	Stout	烈性黑啤酒
3	Wines (champagne, port)	葡萄酒（香槟酒、波特酒）
4	Spirits (gin, whisky, rum, brandy, vodka)	烈酒（杜松子酒、威士忌酒、朗姆酒、白兰地酒、伏特加酒）
5	Alcoholic fruit drinks, premixed drinks or alcopops	酒精水果饮品或其他预混合酒
6	Others, please specify: 其它，请注明: _____	
7	No specific preference	没有特别的偏好
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q6003]		

6003. On the days that you drank alcohol, about how many drinks did you usually have? **[SA]**
每当喝酒时，您通常会在一天内喝几杯含有酒精的饮料？

USE SHOWCARD & EXPLAIN WHAT CONSTITUTES 1 DRINK		
	Number of drinks per day	一天内几杯饮料
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q6002]		

6002. How many times during the past month did you have X **[X = 5 for men, X = 4 for women]** or more drinks in any one drinking session? Please include all types of alcoholic drinks. **[SA]**
在过去一个月内，您曾经有多少次在一次饮酒过程中喝了 X［男性 X = 5，女性 X = 4］杯或更多？请包括所有类型的酒精饮品。

USE SHOWCARD & EXPLAIN WHAT CONSTITUTES 1 DRINK			
	Times in the past month	过去一个月内有几次	**[If 0 time, go to Q6005, else go to Q6004]**
DO NOT READ			
666	Did not drink X **[X = 5 for men, X = 4 for women]** or more drinks in any one drinking session	没有在一次饮酒过程中喝超过 X［男性 X = 5，女性 X = 4］杯	**[Go to Q6005]**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

6004. On those days where you drink X [X = 5 for men, X = 4 for women] or more drinks, where do you usually drink? **[MA]**
在您喝 X [男性 X = 5，女性 X = 4] 杯酒或更多的那些天里, 您通常会在哪里喝？

READ (May choose more than one answer)		
1	At home / relative's/ friend's home (e.g. during parties, celebratory occasions)	在家里/亲戚/朋友家里（聚会、庆祝场合）
2	Pubs/ Bars/ Hotels lounges	酒吧/酒店酒廊
3	Discos/ Nightclubs/ KTVs	歌舞厅/夜店/KTV 练歌房
4	Restaurants/ Coffeeshops/ Hawker Centres	餐馆/咖啡店/小贩中心
5	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q6005]		

6005. In the past 12 months, did you ever experience any of the following events due to drinking? **[SA]**
在过去 12 个月内，您曾经因为喝酒而经历以下情形吗？

USE SHOWCARD				
List of events **情形**	**700** 是	2) No 否	777) Refused 拒绝回答	888) Don't know / Not sure 不知道 / 不肯定
a. Passed out from drinking too much or was unable to remember what happened the night before 因过度饮酒而昏迷，或无法想起昨晚所发生的事情	☐	☐	☐	☐
b. Got injured or injured someone else 受伤或打伤其他人	☐	☐	☐	☐
c. Missed work / school the next day 隔天无法上班/上学	☐	☐	☐	☐
d. Experienced a hangover 经历宿醉	☐	☐	☐	☐
e. Engaged in sexual activities 经历性行为	☐	☐	☐	☐
f. Smoked a cigarette only when drinking 因喝酒而吸烟	☐	☐	☐	☐
[Go to Q6007]				

6007. What are your reasons for drinking alcohol? **[MA]**
您喝酒的原因是什么?

DO NOT READ (May choose more than one answer)		
1	To feel **relaxed**/ to **relieve stress**/ to help me cope with problems	感觉**放松**/**释放压力**/有助于解决问题
2	To **socialise** with my friends/ colleagues	与朋友/同事**社交**
3	To **be like** my boyfriend/ girlfriend/ family members	**模仿**男友/女友/家庭成员
4	To **entertain** clients	**招待**客户
5	To **celebrate** events (e.g. celebratory occasions, company events, etc)	**庆祝**节日/ **欢庆**公司活动
6	Drinking is **enjoyable**	喝酒**令人愉快**
7	Alcohol have possible **health** benefits	酒精可能**有益健康**
8	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q6008]		

6008. Do you have the intention to reduce the amount you drink? **[SA]**
您有减少饮酒的打算吗?

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 6. GO TO SECTION 7.		

7. DIABETES

Interviewer: Now, I would like to ask you some questions about diabetes. Diabetes occurs when there is excess sugar in the blood. Oral medications and insulin injections may be required if a person with diabetes is unable to adequately control his blood sugar levels despite lifestyle changes.
现在，我要问您一些关于糖尿病的问题。血糖过高会导致糖尿病。若糖尿病患者在改变生活方式之后仍然无法控制血糖，那他/她就或许需要以服用口服降糖药或胰岛素注射来控制病情。

7000. Can you tell me who in your immediate family* has diabetes, excluding diabetes that happens only during pregnancy? **[MA]**
您的直系家庭*中谁患有糖尿病？这不包括只在怀孕期间患上的糖尿病。
***Interviewer note**: Diabetes that happens only during pregnancy refer to diabetes that develop during pregnancy and usually stop at the end of pregnancy (also known as gestational diabetes).*

READ (May choose more than one answer)		
1	Parents	父母
2	Siblings	兄弟姐妹
3	Children	儿女
4	No one in my family has diabetes	没有家人患有糖尿病
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q7001]		

** Exclude spouse and non-blood relatives*
不包括配偶及无血缘关系的亲戚

7001. Have you ever been told by a western-trained doctor that you have diabetes? **[SA]**
西医是否曾经告诉过您，您患有糖尿病？
[If 'Yes' and respondent is female, ask "*Was this only when you were pregnant?"***]**

READ			
1	Yes	是	**[Go to Q7001a]**
2	Yes, but only during pregnancy	是，不过仅在怀孕时	**[Go to Q7004]**
3	No	否	
4	No, pre-diabetes or borderline diabetes	否，糖尿病前期或临界性糖尿病	**[Go to Q7002]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q7004]**
888	Don't know / Not sure	不知道 / 不肯定	

7001a. Does your doctor currently give you treatment for your diabetes such as tablets or injections? **[SA]**
医生目前是否有给您治疗糖尿病的药物或注射？

READ			
1	Yes	有	**[Go to Q7001b]**
2	No	没有	**[Go to 7002]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

7001b. What type of medication are you on? **[SA]**
您正在使用哪种治疗方式？

READ		
1	Insulin injections	胰岛素注射
2	Oral medications for diabetes	口服降糖药
3	Both insulin injections & oral medications for diabetes	同时使用胰岛素注射和口服降糖药
4	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to 7002]		

7002. How many times in the past 12 months have you seen a doctor for your **X** [X=pre-diabetes when Q7001=4, X=diabetes when Q7001=1]? **[SA]**
在过去 12 个月内，您曾经有几次因为 X [X=糖尿病前期 when Q7001=4,X=糖尿病 when Q7001=1]而看医生？

	Number of times in the past 12 months	在过去 12 个月内有几次
DO NOT READ		
666	Did not see a doctor for **X** [X=pre-diabetes when Q7001=4, X=diabetes when Q7001=1]	没有因为 X [X=糖尿病前期 when Q7001=4, X=糖尿病 when Q7001=1]而看医生
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to 7003]		

7003. Where do you seek treatment for your **X** [X=pre-diabetes when Q7001=4, X=diabetes when Q7001=1) most of the time? **[SA]**
您大多数是去哪里治疗您的 X[X=糖尿病前期 when Q7001=4, X=糖尿病 when Q7001=1]?

DO NOT READ		
1	Private GP	家庭医生
2	Polyclinic	综合诊疗所
3	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
4	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
5	Others, please specify: 其它，请注明: _____	
666	None, do not seek treatment for **X** [X=pre-diabetes when Q7001=4, X=diabetes when Q7001=1]	否， 没有为 X [X=糖尿病前期 when Q7001=4, 糖尿病 when Q7001=1]寻求治疗
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[If Q7001=1, go to Q7006 If Q7001=4, go to Q7014]		

7006. On average, how often do you check your blood sugar? You can tell me in number of times per day, per week, per month or per year. Please include checks done by yourself, family member or friend, but do not include checks by a health professional. **[SA]**
您平均有多常检查您的血糖？您的回答可以是以每天，每周，每个月或每年几次。请包括自行检查以及家人或朋友帮您检查的次数，但不包括医疗专业人员检查的次数。

	Times per day, **OR**	每天几次，**或**
	Times per week, **OR**	每周几次，**或**
	Times per month, **OR**	每月几次，**或**
	Times per year	每年几次
DO NOT READ		
666	Do not check my blood sugar	从来没检查过
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q7007]		

7007. At what age were you first diagnosed with diabetes? **[SA]**
您是在几岁时被西医诊断患有糖尿病？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q7008]		

7008. What lifestyle or dietary modifications did you make to control your diabetes? **[MA]**
您是通过哪些生活或饮食习惯改变来控制糖尿病的？

DO NOT READ (May choose more than one answer)		
1	Manage / Lose weight	控制体重/减肥
2	Reduce intake of sugar, white rice, white bread	减少糖、白米饭、白面包的摄取量
3	Increase intake of wholemeal bread, brown rice, vegetables and high fibre food	增加全麦面包、糙米、蔬菜和高纤维食物的摄取量
4	Reduce fat intake	减少脂肪摄取量
5	Cutting down/ stop smoking	减少/停止吸烟
6	Do more exercise	多做运动
7	Reduce alcohol intake	减少酒精摄取量
8	Avoid sugar-sweetened beverages	避免饮用含糖饮料
9	Others, please specify: 其它，请注明: _____	
666	No lifestyle or dietary modifications	没有改变生活或饮食习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q7009]		

7009. A test for haemoglobin "A one C" (HbA1c) measures the average level of blood sugar over the past 3 months. How many times in the past 12 months did a doctor, nurse or health professional checked you for HbA1c? **[SA]**
糖化血红蛋白"A one C"(HbA1c) 测试能够测量过去 3 个月内的平均血糖值。在过去 12 个月内，医生、护士或医疗专业人员为您检验过几次糖化血红蛋白 "A one C" (HbA1c) 测试呢？

	Number of times in the past 12 months	在过去 12 个月内有几次
DO NOT READ		
666	Never heard of this test	没听说过此项测试
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Section 8]		

If Q7001="4 No, pre-diabetes or borderline diabetes", go to Q7014]

7014. What lifestyle or dietary modications have you made to prevent or delay the progression to diabetes? **[MA]**
您是通过哪些生活或饮食的改变来预防或延缓糖尿病的进展？

DO NOT READ (May record more than one answer)		
1	Manage / Lose weight	控制体重/减肥
2	Reduce intake of sugar, rice, bread	减少糖、米饭、面包的摄取量
3	Increase intake of wholemeal bread, brown rice, vegetables and high fibre food	增加全麦面包、糙米、蔬菜和高纤维食物的摄取量
4	Reduce fat intake	减少脂肪摄取量

5	Cutting down/ stop smoking	减少/停止吸烟
6	Do more exercise	多做运动
7	Reduce alcohol intake	减少酒精摄取量
8	Avoid sugar-sweetened beverages	避免饮用含糖饮料
10	Receive health coaching to improve blood sugar control	接受健康辅导以改善血糖控制
11	Others, please specify: 其它，请注明：_____	
555	Unaware that pre-diabetes can progress to diabetes	不知道糖尿病前期会导致糖尿病
666	No lifestyle changes or dietary modifications	没有改变生活或饮食习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q7004]		

[If Q7001 = "2 Yes, but only during pregnancy", "3 No", "4 No, pre-diabetes or borderline diabetes", "777 Refused" or "888 Don't know / Not sure"]

7004. Blood tests can be used to check for diabetes. When was the last time you had a blood test to check for diabetes? Please exclude checks done by yourself. **[SA]**
血糖检验是一种测试糖尿病的方法。您最后一次进行血糖测试是什么时候？请不要包括自己做的检查。

***Interviewer note**: Blood tests can be a fasting plasma glucose test (FPG), random plasma glucose test, oral glucose tolerance test (OGTT) or HbA1c test.*

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q7005]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	
5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	**[Go to Q7012]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

7005. Where did you go for your last blood test for diabetes? **[SA]**
您的最后一次血糖测试是在哪里进行的？

***Interviewer note**: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test. Use the showcard for SFL letter and e-notification to aid respondent's recall.*

DO NOT READ		
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊疗所

4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Army camp	军队兵营
10	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q7010]		

7010. Why did you go for your last blood test to check for diabetes? **[MA]**
您最后一次进行血糖测试的原因是什么？

DO NOT READ (May choose more than one answer)		
1	Know the importance of screening	了解检查的重要性
2	Advised by doctors / nurses	医生/护士建议
3	My family members / friends / colleagues encouraged me	家庭成员/朋友/同事的鼓励
4	Read/ heard about it / saw an advertisement about checking for diabetes	读到/听到这项检查/看到糖尿病检查的广告
9	Received a letter e.g. Screen for Life letter to encourage me to go for screening	收到鼓励我去检查的信件例如 ″定期体检， 益您一生″的信件
5	Ad-hoc health screening	临时健康检查
6	Routine check-up	定期体检
7	Company / application health screening (e.g. pre-employment or permanent residency application)	公司/申请健康检查（例如入职前或永久居留申请）
8	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q7011]		

7011. Which of the following blood test did you take during your last blood test to check for diabetes? **[SA]**
您最后一次检查糖尿病时接受了以下哪一种血糖测试？

READ		
1	Fasting blood test (e.g. fasting plasma glucose (FPG) test or oral glucose tolerance (OGTT) test)	空腹验血测试（例如空腹血糖测试(FPG)或口服葡萄糖耐量测试(OGTT)）
2	Non-fasting blood test (e.g. casual plasma glucose test, HbA1c test)	非空腹血液测试（例如随机血浆葡萄糖测试或糖化血红蛋白“A one C”测试）

DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Section 8]		

[If Q7004 = "6 Never been checked", "777 Refused" or "888 Don't know / Not sure"]

7012. What are your reasons for not having a blood test to check for diabetes? **[MA]**
您从未验血检查糖尿病的原因有哪些？

DO NOT READ (May choose more than one answer)		
1	Not necessary as I am healthy	因为我很健康，所以不需要
2	Never heard about it	从未听说过
3	Too old	年纪太大
4	Not at risk	没有危险
5	Cost of the test is too expensive	检查费用太高
6	Afraid of knowing the results	害怕知道检查结果
7	Inconvenient (e.g. clinic/hospital too far away, wait at clinic/hospital too long, English signs at clinic/hospital too confusing)	不方便（例如诊所/医院太远，在诊所/医院等待的时间太长，诊所/医院的英文标示难以理解）
8	Not important	不重要
9	No time due to work/ family commitment (e.g. need to take leave, make alternative arrangement with family members)	由于工作/家庭责任，没时间（例如需要请假、和家庭成员另有安排）
10	Cannot afford cost of treatment for diabetes	承担不起治疗糖尿病的费用
11	Cannot do anything if diabetes is detected	即使检查出糖尿病，也无能为力
12	Too young	年纪太小
13	Fated if I get diabetes	如果得了糖尿病，那是命运的安排
14	Not suggested by doctors	医生没有建议
15	Don't know where to go	不知道去哪里检查
16	Painful test	检查太痛苦
17	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 7. GO TO SECTION 8.		

8. HYPERTENSION

Interviewer: Next, I would like to ask you some questions about hypertension, also commonly known as high blood pressure.
接下来，我要问您一些关于高血压的问题。

8000. Can you tell me who in your immediate family* has high blood pressure, excluding high blood pressure that only happens during pregnancy? **[MA]**
您的直系家庭*中谁患有高血压？这不包括只在怀孕期间患上的高血压。
***Interviewer note**: High blood pressure that happens only during pregnancy refer to high blood pressure that develop during pregnancy and usually stop at the end of pregnancy.*

READ (May choose more than one answer)		
1	Parents	父母
2	Siblings	兄弟姐妹
3	Children	儿女
4	No one in my family has high blood pressure	没有家人患有高血压
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q8001]		

** Exclude spouse and non-blood relatives*
不包括配偶及无血缘关系的亲戚

8001. Have you ever been told by a western-trained doctor that you have high blood pressure? **[SA]**
西医是否曾经告诉过您，您患有高血压？
[If 'Yes' and respondent is female, ask "*Was this only when you were pregnant?"***]**

READ			
1	Yes	是	**[Go to Q8002]**
2	Yes, but only during pregnancy	是，不过仅在怀孕时	**[Go to Q8005]**
3	No	否	
4	No, borderline hypertension	否，临界性高血压	
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

***Interviewer Note:** A person with blood pressure ≥140/90mmHg is defined to have high blood pressure or hypertension.*
高血压指血压高于 140/90mmHg.

8002. Does your doctor currently give you medicine (e.g. tablets) for your high blood pressure? **[SA]**
医生目前是否有给您治疗高血压的药物？

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q8003]		

8003. How many times in the past 12 months have you seen a doctor for your high blood pressure? **[SA]**
在过去 12 个月内，您为了治疗高血压看过几次医生？

	Number of times in the past 12 months	在过去12个月内有几次
DO NOT READ		
666	Did not see a doctor for high blood pressure	没有因为高血压看医生
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q8004]		

8004. Where do you seek treatment for your high blood pressure most of the time? **[SA]**
您大多数是去哪里治疗您的高血压？

DO NOT READ		
1	Private GP	家庭医生
2	Polyclinic	综合诊疗所
3	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
4	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
5	Others, please specify: 其它，请注明: _____	
666	None, do not seek treatment for high blood pressure	否， 没有为高血压寻求治疗
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q8007]		

8007. At what age were you first diagnosed with high blood pressure? **[SA]**
您是在几岁时被西医诊断为患有高血压的？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q8008]		

8008. What lifestyle or dietary modifications did you make to control your high blood pressure? **[MA]**
您是通过哪些生活或饮食习惯改变来控制您的高血压？

DO NOT READ (May choose more than one answer)		
1	Manage / Lose weight	控制体重/减肥
2	Reduce salt intake	减少盐的摄取量
3	Reduce/ cope with stress	减轻/舒解压力
4	Reduce fat intake	减少脂肪的摄取量
5	Cutting down/ stop smoking	减少/停止吸烟
6	Do more exercise	多做运动
7	Reduce alcohol intake	减少酒精摄取量
9	Reduce intake of sugar, rice, bread	减少糖、米饭、面包的摄取量
10	Increase intake of wholemeal bread, brown rice, vegetables and high fibre food	增加全麦面包、糙米、蔬菜和高纤维食物的摄取量
8	Others, please specify: 其它，请注明: _____	
666	No lifestyle or dietary modifications	没有改变生活或饮食习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Section 9]		

[If Q8001 = "2 Yes, but only during pregnancy", "3 No", "4 No, borderline hypertension", "777 Refused" or "888 Don't know / Not sure"]

8005. When was the last time you had your blood pressure checked? Please exclude checks by yourself. **[SA]**
您最后一次检查血压是什么时候？请不要包括自己做的检查。

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q8006]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	

5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	**[Go to Q8010]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

8006. Where did you go for your last blood pressure check-up? **[SA]**
您最后一次检查血压是在哪里进行的？

***Interviewer note**: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test. Use the showcard for SFL letter and e-notification to aid respondent's recall.*

DO NOT READ		
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊疗所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Army camp	军队兵营
10	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q8009]		

8009. Why did you go for your last blood pressure check? **[MA]**
您最后一次检查血压的原因是什么？

DO NOT READ (May choose more than one answer)		
1	Know the importance of screening	了解检查的重要性
2	Advised by doctors / nurses	医生/护士建议
3	My family members / friends / colleagues encouraged me	家庭成员/朋友/同事的鼓励
4	Read/ heard about it / saw an advertisement about checking for hypertension	读到/听到这项检查/看到检查高血压的广告
9	Received a letter e.g. Screen for Life letter to encourage me to go for screening	收到鼓励我去检查的信件例如 "定期体检， 益您一生"的信件
5	Ad-hoc health screening	临时健康检查
6	Routine check-up	定期体检

7	Company / application health screening (e.g. pre-employment or permanent residency application)	公司/申请健康检查（例如入职前或永久居留申请）
8	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Section 9]		

[If Q8005 = "6 Never been checked", "777 Refused" or "888 Don't know / Not sure"]

8010. What are the reasons for not checking your blood pressure? **[MA]**
您从未检查血压的原因有哪些？

DO NOT READ (May choose more than one answer)		
1	Not necessary as I am healthy	因为我很健康，所以不需要
2	Never heard about it	从未听说过
3	Too old	年纪太大
4	Not at risk	没有危险
5	Cost of the test is too expensive	检查费用太高
6	Afraid of knowing the results	害怕知道检查结果
7	Inconvenient (e.g. clinic/hospital too far away, wait at clinic/hospital too long, English signs at clinic/hospital too confusing)	不方便（例如诊所/医院太远，在诊所/医院等待的时间太长，诊所/医院的英文标示难以理解）
8	Not important	不重要
9	No time due to work/ family commitment (e.g. need to take leave, make alternative arrangement with family members)	由于工作/家庭责任，没时间（例如需要请假、和家庭成员另有安排）
10	Cannot afford cost of treatment for high blood pressure	承担不起治疗高血压的费用
11	Cannot do anything if high blood pressure is detected	即使检查出高血压，也无能为力
12	Too young	年纪太小
13	Fated if I get high blood pressure	如果得了高血压，那是命运的安排
14	Not suggested by doctors	医生没有建议
15	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 8. GO TO SECTION 9.		

9. HIGH BLOOD CHOLESTROL

9008. Can you tell me who in your immediate family* has high blood cholesterol? **[MA]**
您的直系家庭*中谁患有高胆固醇?

READ (May choose more than one answer)		
1	Parents	父母
2	Siblings	兄弟姐妹
3	Children	儿女
4	No one in my family has high blood cholesterol	没有家人患有高胆固醇
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q9000]		

** Exclude spouse and non-blood relatives*
不包括配偶及无血缘关系的亲戚

9000. Have you ever been told by a western-trained doctor that you have high blood cholesterol? **[SA]**
西医是否曾经告诉过您，您患有高胆固醇?

READ			
1	Yes	是	**[Go to Q9001]**
2	No	否	**[Go to Q9004]**
3	No, borderline high blood cholesterol	否，临界性高胆固醇	
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

9001. How many times in the past 12 months have you seen a doctor for your high blood cholesterol? **[SA]**
在过去 12 个月内，您为了治疗高胆固醇看过几次医生?

	Number of times in the past 12 months	在过去12个月内有几次
DO NOT READ		
666	Did not see a doctor for high blood cholesterol	没有因为高胆固醇看医生
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q9002]		

9002. Does your doctor currently give you medicine (e.g. tablets) for your high blood cholesterol? **[SA]**
医生目前是否有给您治疗高胆固醇的药物？

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q9003]		

9003. Where do you seek treatment for your high blood cholesterol most of the time? **[SA]**
您大多数是去哪里治疗您的高胆固醇？

DO NOT READ		
1	Private GP	家庭医生
2	Polyclinic	综合诊疗所
3	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
4	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
5	Others, please specify: 其它，请注明: _____	
666	None, do not seek treatment for high blood cholesterol	否，没有为高胆固醇寻求治疗
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q9010]		

9010. At what age were you first diagnosed with high blood cholesterol? **[SA]**
您是在几岁时被西医诊断为患有高胆固醇的？

	Age	几岁
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q9011]		

9011. What lifestyle or dietary modifications did you make to control your high blood cholesterol? **[MA]**

您是通过哪些生活或饮食习惯改变来控制您的高胆固醇？

DO NOT READ (May choose more than one answer)		
1	Manage / Lose weight	控制体重/减肥
2	Choose healthier cooking methods like boiling, steaming, roasting	选择更健康的烹饪方法，如水煮、蒸、烤
3	Increase intake of wholemeal bread, brown rice, vegetables and high fibre food	增加全麦面包、糙米、蔬菜和高纤维食物的摄取量
4	Reduce fat intake	减少脂肪摄取量
5	Cutting down/ stop smoking	减少/停止吸烟
6	Do more exercise	多做运动
7	Reduce alcohol intake	减少酒精摄取量
8	Others, please specify: 其它，请注明：_____	
666	No lifestyle or dietary modifications	没有改变生活或饮食习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Section 11]		

[If Q9000 = "2 No", "3 No, borderline high blood cholesterol", "777 Refused" or "888 Don't know / Not sure"]

9004. When was the last time you had your blood cholesterol checked? **[SA]**

您最后一次检查胆固醇是什么时候？

***Interviewer note**: Blood tests can be a fasting or non-fasting*

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q9005]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	
5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	**[Go to Q9007]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

9005. Where did you go for your last blood test to check for cholesterol? **[SA]**
您最后一次检查胆固醇是在哪里进行的？

	***Interviewer note**: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test. Use the showcard for SFL letter and e-notification to aid respondent's recall.* **DO NOT READ**	
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊疗所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Army camp	军队兵营
10	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q9006]		

9006. Why did you go for your last blood test to check for cholesterol? **[MA]**
您最后一次检查胆固醇的原因是什么？

DO NOT READ (May choose more than one answer)		
1	Know the importance of screening	了解检查的重要性
2	Advised by doctors / nurses	医生/护士建议
3	My family members / friends / colleagues encouraged me	家庭成员/朋友/同事的鼓励
4	Read/ heard about it / saw an advertisement about checking for cholesterol	读到/听到这项检查/看到检查胆固醇的广告
9	Received a letter e.g. Screen for Life letter to encourage me to go for screening	收到鼓励我去检查的信件例如 "定期体检， 益您一生"的信件
5	Ad-hoc health screening	临时健康检查
6	Routine check-up	定期体检
7	Company / application health screening (e.g. pre-employment or permanent residency application)	公司/申请健康检查（例如入职前或永久居留申请）
8	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Section 11]		

[If Q9004 = "6 Never been checked", "777 Refused" or "888 Don't know / Not sure"]

9007. What are your reasons for not having your blood cholesterol checked? **[MA]**
您从未检查胆固醇的原因有哪些？

DO NOT READ (May choose more than one answer)		
1	Not necessary as I am healthy	因为我很健康，所以不需要
2	Never heard about it	从未听说过
3	Too old	年纪太大
4	Not at risk	没有危险
5	Cost of the test is too expensive	检查费用太高
6	Afraid of knowing the results	害怕知道检查结果
7	Inconvenient (e.g. clinic/hospital too far away, wait at clinic/hospital too long, English signs at clinic/hospital too confusing)	不方便（例如诊所/医院太远，在诊所/医院等待的时间太长，诊所/医院的英文标示难以理解）
8	Not important	不重要
9	No time due to work/ family commitment (e.g. need to take leave, make alternative arrangement with family members)	由于工作/家庭责任，没时间（例如需要请假、和家庭成员另有安排）
10	Cannot afford cost of treatment for high blood cholesterol	承担不起治疗高血胆固醇的费用
11	Cannot do anything if high blood cholesterol is detected	即使检查出有高胆固醇，也无能为力
12	Too young	年纪太小
13	Fated if I get high blood cholesterol	如果得了高血胆固醇，那是命运的安排
14	Not suggested by doctors	医生没有建议
15	Don't know where to go	不知道去哪里检查
16	Painful test	检查太痛苦
17	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 9. GO TO SECTION 11.		

11. HEALTH SCREENING PROGRAMMES

IF respondent is <u>male & below 50 years of age</u>, go to Q11023.

IF respondent is <u>male & aged 50 and above</u>, go to Q11016.

IF respondent is <u>female & below 50 years of age</u>, go to Q11000.

IF respondent is <u>female & aged 50 and above</u>, go to Q11002.

11000. **[For women below 50 years of age]** To your knowledge, are you pregnant now? **[SA]**
据您所知，您目前是否怀孕？

READ		
1	Yes	是
2	No	否
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11002]		

11002. **[For all women only]** When was the last time you had a test to scrape cells from the mouth of the womb to check for cervical cancer? These tests are also known as Pap test or HPV test. **[SA]**
您最后一次接受子宫口细胞检查子宫颈癌时，是多久以前的事？ 这些检查也称为子宫颈抹片检查人或乳头瘤病毒检查(HPV)。

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q11003]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 4 years	超过 3 年但在 4 年以内	
5	More than 4 years to 5 years	超过 4 年但在 5 年以内	
6	More than 5 years ago	超过 5 年前	
7	Never been checked	从未检查过	**[Go to Q11010 if <u>aged 40 and above</u>.** **Go to Q11023 if <u>aged below 40</u>]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

11003. **[For all women only]** Where did you go for your last test to check for cervical cancer? **[SA]**
您最后一次在哪里进行子宫颈癌检查？

***Interviewer note**: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test. Use the showcard for SFL letter and e-notification to aid respondent's recall.*

DO NOT READ		
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊疗所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
10	Specialist outpatient clinic (not in hospital)	专科门诊诊所（不在医院经营）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Others, please specify: 其它，请注明：_____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11025]		

11025. **[For all women only]** Which of the following test have you taken for your last check for cervical cancer**? [SA]**
您在最后一次检查子宫颈癌时接受了以下哪一种子宫口细胞检查？

USE SHOWCARD		
1	Pap test	子宫颈抹片检查
2	Human Papillomavirus (HPV) test	人乳头瘤病毒检查(HPV)
3	Pap test and Human Papillomavirus (HPV) test on the same visit	在同一次进行子宫颈抹片检查和人乳头瘤病毒检查（HPV）
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11010 if aged 40 and above.] **[Go to Q11023 if aged below 40.]**		

11010. **[Only for Women aged 40 years and older]** A mammogram is an x-ray of each breast to look out for breast cancer. When was the last time you had a mammogram? **[SA]**
乳房 X 光检查是一种利用 X 光检查乳癌的方法。您最后一次接受乳房 X 光检查是多久以前的事？

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q11013]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 4 years	超过 3 年但在 4 年以内	
5	More than 4 years to 5 years	超过 4 年但在 5 年以内	
6	More than 5 years ago	超过 5 年前	
7	Never been checked	从未检查过	**[Go to Q11016 if <u>aged 50 and above</u>]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q11023 if <u>aged below 50</u>]**
888	Don't know / Not sure	不知道 / 不肯定	

11013. **[Only for Women aged 40 years and older]** Where did you go for your last mammogram? **[SA]**
您最后一次的乳房 X 光检查是在哪里进行的？

DO NOT READ		
1	Polyclinic	综合诊疗所
2	Public hospital	公共医院
3	Private hospital	私人医院
4	Private X-ray centre	私人 X 光检查中心
5	Mammobus	乳房 X 光检查流动巴士
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
9	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11016 if <u>aged 50 and above</u>] **[Go to Q11023 if <u>aged below 50</u>]**		

[For Male & Female respondents aged 50 years and above only]

11016. A blood stool test is a test to determine whether the stool contains blood, which can be caused by conditions such as piles or colorectal cancer. When was the last time you had a blood stool test? **[SA]**

便血检查能检测粪便中是否含有血液，这可能是由于痔疮或者结直肠癌等病症引起的。您最后一次进行便血检查是多久以前的事？

***Interviewer note**: A blood stool test can be also known as a faecal occult blood test (FOBT) or faecal immunochemical blood test (FIT).*

READ ONLY IF NECESSARY			
1	1 year ago or less	过去 1 年或少于 1 年	**[Go to Q11018]**
2	More than 1 year to 2 years	超过 1 年但在 2 年以内	
3	More than 2 years to 3 years	超过 2 年但在 3 年以内	
4	More than 3 years to 5 years	超过 3 年但在 5 年以内	
5	More than 5 years ago	超过 5 年前	
6	Never been checked	从未检查过	**[Go to Q11020]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

[For Male & Female respondents aged 50 years and above only]

11018. Where did you go for your last blood stool test? **[SA]**

您最后一次的便血检查是在哪里进行的？

***Interviewer note**: If respondent answers "Private GP", probe to check if they are participating in the Screen for Life programme where they pay $0, $2 or $5 for the test. Use the showcard for SFL letter and e-notification to aid respondent's recall.*

DO NOT READ		
1	Private GP (Screen for Life)	家庭医生（"定期体检， 益您一生"）
2	Private GP (Non-Screen for Life)	家庭医生（非"定期体检， 益您一生"）
3	Polyclinic	综合诊疗所
4	Specialist outpatient clinic (public hospital)	专科门诊诊所（公共医院）
5	Specialist outpatient clinic (private hospital)	专科门诊诊所（私人医院）
6	Workplace	工作场所
7	Community venue	社区场所
8	Overseas clinic/ hospital	国外的诊所或医院
10	Collection of Faecal Immunochemical Test (FIT) kit (e.g. from pharmacies such as Watson, Guardian, Eu Yan Seng, Unity Family Medicine Clinic, Singapore Cancer Society)	粪便免疫化学测验器 （例如屈臣氏（Watson's），佳宁药房（Guardian），余仁生，仁益家庭医药诊所，新加坡癌症协会）
9	Others, please specify: 其它，请注明: _____	
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q11020]		

[For Male & Female respondents aged 50 years and above only]

11020. Colonoscopy is a procedure where a flexible tube is inserted through the rectum and into the large intestines. A small camera allows the doctor to examine the intestinal wall for abnormalities such as cancer. When was the last time you had a colonoscopy? **[SA]**
结肠内窥镜检查是一种将软管插入直肠然后进入大肠的检查方法。软管前端会有一个小型摄像头，让医生可以检查肠壁是否有异常，例如癌症。您最后一次接受结肠内窥镜检查是多久以前的事？

***Interviewer note**: Before taking a colonoscopy, patients are required to drink a cleansing liquid and be on a clear liquid diet at least one day before the test so that a clear view of their bowel can be taken.*

READ ONLY IF NECESSARY		
1	1 year ago or less	过去 1 年或少于 1 年
2	More than 1 year to 2 years	超过 1 年但在 2 年以内
3	More than 2 years to 3 years	超过 2 年但在 3 年以内
4	More than 3 years to 5 years	超过 3 年但在 5 年以内
5	More than 5 years to 10 years	超过 5 年但在 10 年以内
6	More than 10 years ago	超过 10 年前
7	Never been checked	从未检查过
DO NOT READ		
777	Refused	拒绝回答
888	Don’t know / Not sure	不知道 / 不肯定
[Go to Q11023]		

[For all Male & Female respondents]

11023. In the past 12 months, have you had an injection to protect you from getting flu? This injection is also known as influenza vaccination. **[SA]**
在过去 12 个月内，您有没有接受流行性感冒的免疫注射？这也被称为接种流感疫苗注射。

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don’t know / Not sure	不知道 / 不肯定
[Go to Q11024]		

11024. Have you ever had pneumococcal vaccination before? This vaccine protects against a bacterial infection that causes pneumonia, blood infection and inflammation of the brain (meningitis). **[SA]**
您是否曾有接种肺炎球菌疫苗？这种疫苗可预防能引起肺炎、血液感染和脑炎(脑膜炎)的细菌感染。

READ		
1	Yes	有
2	No	没有
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 11. **[Go to Section 24 if aged 40 and above]** **[Go to Section 12 if aged below 40 years old]**		

24. Healthier SG (FOR RESPONDENT AGED 40 YEARS AND ABOVE)

Interviewer: Next, I would like to ask you some questions related to Healthier SG. Healthier SG is a new programme to support residents in taking concrete steps to lead a healthier life, detect health issues early, and manage existing conditions with a family doctor who knows you well. Under this programme, you will choose a Healthier SG-registered family doctor and develop a health plan with him to take care of your health needs, which may include community activities and programmes to help you stay active and healthy.
接下来我想问你一些关于健康 SG 的问题。健康 SG 是一项新计划，旨在支持居民采取具体措施过上更健康的生活，及早发现健康问题，并与熟悉您的家庭医生一起管理现有状况。根据此计划，您将选择一位在健康 SG 注册的家庭医生，并与他一起制定健康计划来满足您的健康需求，其中可能包括帮助您保持活跃和健康的社区活动和计划。

***Interviewer note**: From May 2023 onwards, Singapore residents aged 40 years and above with chronic conditions **and** who are already seeing a Healthier SG-registered family doctor can pre-enrol in Healthier SG. From July 2023 onwards, Singapore residents aged 60 years and above can enroll in Healthier SG while residents aged 40 to 59 years will be progressively invited to enrol in Healthier SG after the initial rollout phases.*

24001. Have you signed up with a regular Healthier SG-registered GP or polyclinic? You can sign up for Healthier SG via your HealthHub mobile application or physically. **[SA]**
您是否注册了健康 SG 常规全科医生或综合诊所？您可以通过 保健资讯网 (Health Hub) 移动应用程序或登门注册。

USE SHOWCARD			
1	Yes, with a Healthier-SG registered GP clinic	是，在健康 SG 注册的全科医生诊所	**[Go to Q24003]**
2	Yes, with a Polyclinic	是，在综合诊所	
3	No	否	**[Go to Q24002]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Section 12]**
888	Don't know / Not sure	不知道 / 不肯定	

24002. What are the reasons for not signing up for Healthier SG? **[MA]**
您是什么原因没有注册 健康SG?

DO NOT READ (May choose more than one answer)	
1	Never **heard** of Healthier SG
2	**Have not received** SMS invitation to sign up with a Healthier SG clinic
3	Do not **know enough** about the Healthier SG
4	Don't know **how to sign up** for Healthier SG
5	Don't know **which** are the Healthier SG-registered clinics
6	Never **thought about it**
7	**Not interested** in the Healthier SG benefits

8	Not necessary as I am **healthy**/ I **don't have any chronic conditions**
9	Not necessary as I can **manage my own health**
10	**Not recommended** by my GP/ polyclinic doctor
11	My existing/ preferred GP **did not participate** in Healthier SG
12	Consult my **employer's/company's panel of doctors** for my health problems/needs
13	Consult the **panel of doctors** under my **healthcare plans/insurance** for my health problems/needs
14	Consult doctors/specialists in **public hospitals** (including Specialist Outpatient Clinics (SOCs)) for my health problems/needs
15	Consult doctors/specialists in **private hospitals** for my health problems/needs
16	Others, please specify: 其它，请注明：_____
777	Refused
888	Don't know / Not sure
END OF SECTION 24. GO TO SECTION 12.	

24003. Have you attended the face-to-face onboarding health consultation with your family doctor? During this consultation, your doctor will discuss your health and develop a health plan to take care of your health needs. **[SA]**
您是否参加过您家庭医生的面对面健康咨询指南？在这次咨询期间，您的医生将讨论您的健康状况并制定健康计划来满足您的健康需求。

READ			
1	Yes	是	**[Go to Q24004]**
2	No	否	**[Go to Q24005]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Section 12]**
888	Don't know / Not sure	不知道 / 不肯定	

24004. What lifestyle changes or health advices did you doctor recommend you to make? **[MA]**
您的医生建议您改变哪些生活方式或提出哪些健康建议？

DO NOT READ (May choose more than one answer)	
1	Manage / Lose weight
2	Do more exercise
3	Cutting down/ stop smoking
4	Reduce alcohol intake
5	Reduce intake of sugar, white rice, white bread
6	Reduce fat intake
7	Reduce salt intake
8	Increase intake of wholemeal bread, brown rice, vegetables and high fibre food
9	Go for regular health screenings for chronic diseases
10	Go for regular health screenings for cancers
11	Take appropriate vaccinations e.g. influenza
12	Others, please specify: 其它，请注明：_____

666	Did not recommend any lifestyle changes or health advices
777	Refused
888	Don’t know / Not sure
END OF SECTION 24. GO TO SECTION 12.	

24005. What are the reasons for not attending the face-to-face onboarding health consultation with your family doctor? **[MA]**
您没有参加您家庭医生的面对面健康咨询指南的原因是什么？

DO NOT READ (May choose more than one answer)	
1	**Don’t know that I need** to attend an onboarding health consultation
2	**Don’t know why I need** to attend an onboarding health consultation
3	Don’t know **how to schedule** the onboarding health consultation
4	Not necessary as I am **healthy** / I don’t have any chronic conditions
5	Not necessary as I can **manage my own health**
6	**Already scheduled** my onboarding health consultation appointment and waiting to attend
7	The incentive for attending the onboarding health consultation (3,000 Healthpoints worth $20) is **not attractive**
8	**Inconvenient** to attend the onboarding health consultation
9	Others, please specify: 其它，请注明：_____
777	Refused
888	Don’t know / Not sure
END OF SECTION 24. GO TO SECTION 12.	

12. PRIMARY CARE

[If Q24001 = "1 Yes, with a Healthier-SG registered GP clinic" or "2 Yes, with a Polyclinic"]

12006. **Before you sign up for Healthier SG**, do you have a regular* family doctor (i.e. a General Practitioner (GP) or Polyclinic) whom you consult when you have common illnesses such as diarrhoea or headache? **[SA]**
在您参加健康 SG 之前， 当您患上腹泻或头痛等普通疾病的时候，您是否会去看固定*的家庭医生，或者前往同一间综合诊疗所看病？

[If Q24001 = "3 No", "777 Refused" or "888 Don't know/ Not sure"] or [If aged below 40 years old]

12006. Do you have a regular* family doctor (i.e. a General Practitioner (GP) or Polyclinic) whom you consult when you have common illnesses such as diarrhoea or headache? **[SA]**
您在患上腹泻或头痛等普通疾病的时候，您是否会去看固定*的家庭医生，或者前往同一间综合诊疗所看病？

READ ONLY IF NECESSARY			
1	Yes, I have a regular family doctor in a private General Practitioner (GP) clinic whom I consult on common illnesses	有，我有固定的家庭医生看病	**[Go to Q12007]**
2	Yes, I visit the same Polyclinic to consult a doctor on common illnesses	有，我会探访同一所综合诊疗所看病	
3	No, I do not have a regular family doctor whom I consult on common illnesses	没有，我在患上普通疾病的时候我没有固定家庭医生	**[Go to Q12008]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

** A regular family doctor is defined as a primary care physician who you turn to frequently or habitually for healthcare advice/consultation.*

12007. What are the reasons you choose him/ her as your regular family doctor or visit the same polyclinic for your common illnesses? **[MA]**
您选择他/她作为您固定的家庭医生或者前往同一间综合诊疗所看病的原因是什么？
***Interviewer note**: If respondent answers "convenient location", probe if it is convenient to home or workplace.*

READ ONLY IF NECESSARY		
1	Professionally competent doctor / good doctor	医生的专业水平/医术高
2	Cheaper charges	医疗费用比较便宜
3	Convenient location, nearer to my home	地点方便，靠近住家
4	Convenient location, nearer to my workplace	地点方便，靠近工作地点
5	Have been seeing this doctor since young / for many years	从小就看这位医生/看这位医生很多年了
7	Part of company's panel of doctors	是公司指定的医生团队

6	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q12008]		

12008. Do you have a regular* family doctor (i.e. a General Practitioner (GP) or Polyclinic) whom you will consult on your chronic conditions^ (e.g diabetes, hypertension, high blood cholesterol, asthma)? **[SA]**
您在患上慢性疾病^（例如:糖尿病、高血压、高胆固醇、哮喘）的时候，您是否会去看固定*的家庭医生，或者前往同一间综合诊疗所看病？

READ ONLY IF NECESSARY			
1	Yes, I have a regular family doctor in a private General Practitioner (GP) clinic whom I consult on my chronic conditions	有，我有固定的家庭医生看病	**[Go to Q12009]**
2	Yes, I visit the same Polyclinic to consult a doctor on my chronic conditions	有，我会探访同一所综合诊疗所看病	
3	No, I do not have a regular family doctor whom I consult on my chronic conditions	没有，我在患上慢性疾病的时候没有固定家庭医生去看病	**[Go to Q12002]**
4	I do not have any chronic conditions	我没有任何慢性疾病	**[Go to Section 13]**
DO NOT READ			
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

* *A regular family doctor is defined as a primary care physician who you turn to frequently or habitually for healthcare advice/consultation.*
^ *Chronic conditions refer to long-term medical conditions that require regular management (e.g. diabetes, hypertension, high blood cholesterol, asthma)*

12009. What are the reasons you choose him/ her as your regular family doctor or visit the same polyclinic for your chronic conditions? **[MA]**
您选择他/她作为您固定的家庭医生或者前往同一间综合诊疗所看病的原因是什么？
Interviewer note*: If respondent answers "convenient", probe if it is convenient to home or workplace.*

READ ONLY IF NECESSARY		
1	Professionally competent doctor / good doctor	医生的专业水平/医术高
2	Cheaper charges	医疗费用比较便宜
3	Convenient location, nearer to my home	地点方便，靠近住家
4	Convenient location, nearer to my workplace	地点方便，靠近工作地点
5	Have been seeing this doctor since young / for many years	从小就看这位医生/看这位医生很多年了
6	Part of company's panel of doctors	是公司指定的医生团队
7	Others, please specify: 其它，请注明: _____	
DO NOT READ		

777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Section 13]		

[If Q12006="3 No, I do not have a regular family doctor whom I consult on common illnesses" or Q12008="3 No, I do not have a regular family doctor whom I consult on my chronic conditions"]

12002. What are the reasons that you do not have a regular family doctor? **[MA]**
您没有固定的家庭医生或综合诊疗所的原因有哪些?

READ ONLY IF NECESSARY		
1	I visit different clinics depending on convenience – whichever clinic near wherever I am	我会为了方便而选择探访不同的诊所 – 哪家诊所靠近就去哪家
3	I visit different clinics because I compare the cost of visiting the different clinics	我探访不同的诊所是为了比较医疗费用
4	I don't see the value / need to have a regular family doctor	我不认为有需要看固定的家庭医生
5	Others, please specify: 其它，请注明: _____	
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 12. GO TO SECTION 13.		

13. HEALTH STATE DESCRIPTIONS

13005. In general, how would you rate your health today? **[SA]**
总的来说，您觉得您现在的健康状况如何？

READ AND USE SHOWCARD		
1	Very Good	很好
2	Good	好
3	Moderate	一般
4	Bad	不好
5	Very Bad	很差
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q13006]		

Interviewer: Next, I would like to ask you some questions about your sleeping habits.
接下来我想问关于您的睡眠习惯。

13006. How many hours do you usually sleep per day on weekdays? **[SA]**
您通常在周日有几个小时的睡眠？
***Interviewer note**: Please exclude nap time and record number of hours of sleep to the nearest 0.5 hours e.g. 8 hours 30 minutes per weekday is 8.5 hours per weekday.*

	Hours per day on weekdays	每个周日几小时
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q13007]		

13007. How many hours do you usually sleep per day on weekends? **[SA]**
您通常在周末有几个小时的睡眠？
***Interviewer note**: Please exclude nap time and record number of hours of sleep to the nearest 0.5 hours e.g. 8 hours 30 minutes per weekend is 8.5 hours per weekend.*

	Hours per day on weekends	每个周末日几小时
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q13004]		

Interviewer: Now, I would ask about your health in general over the last 6 weeks. For each question, tell me which answer you think best applies to you in the last 6 weeks. Remember that I want to know about present and recent complaints, not those you had in the past. All answers will be treated as confidential.
我要问您在过去 6 周内的整体健康状况。请您在每一题选择最能够代表您在过去 6 周内的状况。请切记，我想知道您目前以及最近的心理诉状，不包括您以前的诉状。所有答案将完全保密。

13004. Have you recently (in the past 6 weeks) ...? **[SA]**
您最近（过去 6 周内）是否…?

READ AND USE SHOWCARD				
	1)	2)	3)	4)
13004a. Been able to concentrate on whatever you are doing? 能够集中精神做事?	☐ Better than usual 优于往常	☐ Same as usual 与往常一样	☐ Less than usual 比往常稍差	☐ Much less than usual 比往常差很多
13004b. Lost much sleep over worry? 因担忧而严重失眠?	☐ Not at all 根本不	☐ No more than usual 与往常一样	☐ Rather more than usual 比往常稍差	☐ Much more than usual 比往常差很多
13004c. Felt that you are playing a useful part in things? 感觉自己在某些事情中发挥作用?	☐ More than usual 优于往常	☐ Same as usual 与往常一样	☐ Less useful than usual 比往常稍差	☐ Much less useful 比往常差很多
13004d. Felt capable of making decisions about things? 感觉有能力做决定?	☐ More so than usual 优于往常	☐ Same as usual 与往常一样	☐ Less so than usual 比往常稍差	☐ Much less capable 比往常差很多
13004e. Felt constantly under strain? 经常感觉紧张?	☐ Not at all 根本不	☐ No more than usual 与往常一样	☐ Rather more than usual 比往常稍差	☐ Much more than usual 比往常差很多
13004f. Felt you couldn't overcome your difficulties? 感觉自己不能克服困难?	☐ Not at all 根本不	☐ No more than usual 与往常一样	☐ Rather more than usual 比往常稍差	☐ Much more than usual 比往常差很多
13004g. Been able to enjoy your normal day-to-day activities? 能够享受正常的日常活动?	☐ More so than usual 优于往常	☐ Same as usual 与往常一样	☐ Less so than usual 比往常稍差	☐ Much less than usual 比往常差很多
13004h. Been able to face up to your problems? 能够面对自己的问题?	☐ More so than usual 优于往常	☐ Same as usual 与往常一样	☐ Less able than usual 比往常稍差	☐ Much less able 比往常差很多
13004i. Been feeling unhappy and depressed? 一直感觉不开心和抑郁?	☐ Not at all 根本不	☐ No more than usual 与往常一样	☐ Rather more than usual 比往常稍差	☐ Much more than usual 比往常差很多

READ AND USE SHOWCARD				
	1)	2)	3)	4)
13004j. Been losing confidence in yourself? 一直没有自信？	☐ Not at all 根本不	☐ No more than usual 与往常一样	☐ Rather more than usual 比往常稍差	☐ Much more than usual 比往常差很多
13004k. Been thinking of yourself as a worthless person? 一直认为自己没有价值？	☐ Not at all 根本不	☐ No more than usual 与往常一样	☐ Rather more than usual 比往常稍差	☐ Much more than usual 比往常差很多
13004l. Been feeling reasonably happy, all things considered? 整体上一直感觉比较开心？	☐ More so than usual 优于往常	☐ Same as usual 与往常一样	☐ Less so than usual 比往常稍差	☐ Much less than usual 比往常差很多
[Go to Q13002]				

13002. If you feel like you are constantly unable to cope with stress, would you be willing to seek help from a…? **[SA]**
若您觉得经常无法应付/面对压力时，您是否愿意向以下人士求助？

READ			
	1) Yes 是	2) No 否	777) Refused 拒绝回答
a. Healthcare professional, for example a counsellor, doctor, psychologist or psychiatrist? 医疗专业人士例如辅导员、医生、心理学家、精神科医生？	☐	☐	☐
b. Friend, family, relative, colleague, religious leader or teacher in school? 朋友、家人、亲戚、同事、宗教领袖、学校的老师？	☐	☐	☐
[Go to Q13017]			

13017. **Mental wellbeing relates to our thoughts, feelings and our ability to cope with day-to-day life so that we can achieve our goals and contribute to the community**. In the last 2 weeks, did you do anything to improve your mental wellbeing? **[SA]**
心理健康与我们的思想、感情和处理日常生活的能力息息相关，由此我们才可以实现我们的目标，为社区做出贡献。在过去两周内，您有做什么来改善您的心理健康吗?

READ		
1	Yes	是
2	No	否
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q13101]		

Interviewer: Next, I would like to ask how you have been feeling, thinking and behaving over the last 2 weeks.
For each sentence, tell me which number on the scale ranging from 1: Strongly Disagree to 9: Strongly Agree best corresponds to how well each sentence describes you over the last 2 weeks.
接下来，我想问关于您在前两周内的心情、思想及行为。请仔细阅读以下句子。
请您在每个句子旁的比例表（从 1：强烈不同意至 9：强烈同意）选择最代表您在前两周内的心情、思想及行为。

READ AND USE SHOWCARD								
1 Strongly Disagree 强烈不同意	**2**	**3**	**4 Mildly Disagree** 稍微不同意	**5 Neither Agree Nor Disagree** 不同意也不反对	**6 Mildly Agree** 稍微同意	**7**	**8**	**9 Strongly Agree** 强烈同意
								Score [1 to 9]
13101a.	I am optimistic about the future. 我对未来感到乐观。							
13101b.	I am spiritual. 我的心灵感到满足。							
13101c.	I am able to accept myself. 我能够接受自己。							
13101d.	I am able to accept reality. 我能够接受现实。							
13101e.	I am able to cope with life's challenges. 我能够应付生活的挑战。							
13101f.	I am calm. 我感到镇定。							
13101g.	I am not depressed. 我不会感到忧郁。							
13101h.	I am able to make friends. 我能够交朋友。							
13101i.	I have the strong support of my family and friends. 我有朋友与家人的支持及鼓励。							
13101j.	I seek for self-development/growth/cultivation. 我寻求自我提升/成长/修炼。							
13101k.	I am able to offer help to others. 我能够帮助其他人。							
13101l.	I am appreciative of life. 我对生活具有欣赏力。							
13101m.	I appreciate my own self-worth. 我赏识我的自我价值。							
13101n.	I am happy. 我感到开心。							
13101o.	I am able to think clearly. 我能够清楚地思考。							
13101p.	I am able to make good decisions. 我能够做好的决定。							
END OF SECTION 13. GO TO SECTION 14.								

14. DENTAL HEALTH

Interviewer: Now, I would like to ask you some questions about your dental health.
现在，我想问您关于口腔健康的问题。

14000. How often do you visit a dentist? **[SA]**
您多久看一次牙医？

READ ONLY IF NECESSARY			
1	Once every 6 months	每 6 个月一次	**[Go to Q14001]**
2	Once a year	一年一次	
3	Once every 2 years	每两年一次	
4	Only if there is pain or when I have a dental problem	只有在有牙疼或有口腔问题的时侯	
5	Others, please specify: 其它，请注明: _____		
DO NOT READ			
666	Have never been to a dentist	从未看过牙医	**[Go to Section 16]**
777	Refused	拒绝回答	
888	Don't know / Not sure	不知道 / 不肯定	

14001. When was the last time you visited a dentist? **[SA]**
您最后一次看牙医是什么时候？

READ ONLY IF NECESSARY		
1	Less than 6 months ago	过去 6 个月内
2	6-12 months ago	6 到 12 个月内
3	More than a year, but less than 2 years ago	超过 1 年，但少过 2 年内
4	2 years or more, but less than 5 years ago	2 年以上，但少过 5 年内
5	At least 5 years ago	至少 5 年以前
DO NOT READ		
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
END OF SECTION 14. GO TO SECTION 16.		

16. BREASTFEEDING (FOR WOMEN WITH CHILDREN AGED 3 YEARS AND BELOW)

16005. How old is your youngest child? **[SA]**
您最年幼的孩子有多大了？

***Interviewer note**: If respondent mentions in years AND months, for example 2 year and 4 months, record as 28 months.*

DO NOT READ		
	Days, **OR**	天，或
	Months, **OR**	月，或
	Years	年
777	Refused	拒绝回答
[Go to Q16006]		

16006. Which hospital was your youngest child born in? **[SA]**
您最年幼的孩子在哪家医院出生？

DO NOT READ	
1	Singapore General Hospital (SGH)
2	Kandang Kerbau Hospital (KKH)
3	National University Hospital (NUH)
4	Raffles Hospital
5	Gleneagles Hospital
6	Mt Elizabeth (Orchard)
7	Mt Elizabeth (Novena)
8	Parkway East Hospital
9	Mt Alvernia
10	Thomson Medical Centre
11	Others, please specify: _____
777	Refused
[Go to Q16000]	

16000. Have you ever breastfed your youngest child? **[SA]**
您是否有母乳喂养您最年幼的孩子？

READ			
1	Yes	有	**[Go to Q16007]**
2	No	没有	**[Go to Q16002]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q16002]**
888	Don't know / Not sure	不知道 / 不肯定	

16007. Did you start breastfeeding your youngest child since the day he/she was born? **[SA]**
您在您最年幼的孩子出生时是否进行母乳喂养？

READ			
1	Yes	有	**[Go to Q16008]**
2	No	没有	**[Go to Q16002]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q16008]**
888	Don't know / Not sure	不知道 / 不肯定	

16008. How long did you breastfeed your youngest child? **[SA]**
您给您最年幼的孩子母乳喂养了多长时间？

	Days, **OR**	天，或
	Months, **OR**	月，或
	Years	年
DO NOT READ		
777	Refused	
888	Don't know / Not sure	
[Go to Q16009]		

16009. Did you exclusively breastfeed your youngest child when he/she was born (i.e. only breastmilk without introducing water or any infant formula milk)? **[SA]**
您在您最年幼的孩子出生时是否进行纯母乳喂养(只提供母乳， 没有添加任何配方奶粉)？
***Interviewer note**: Exclusive breasfeeding includes expressed breastmilk, which is breastmilk that has been pumped and stored, instead of feeding the baby directly from breast.*

READ			
1	Yes	有	**[Go to Q16004]**
2	No	没有	**[Go to Q16002]**
DO NOT READ			
777	Refused	拒绝回答	**[Go to Q16004]**
888	Don't know / Not sure	不知道 / 不肯定	

16004. How long did you feed your youngest child **only** breast milk (without water or infant formula milk)? [SA]
您给最年幼的孩子**只**喂养食母乳的时期有多久（不喂水或配方牛奶）？

	Days, **OR**	天，或
	Months, **OR**	月，或
	Years	年
DO NOT READ		
777	Refused	
888	Don’t know / Not sure	
[Go to Q16002]		

16002. How old was your youngest child when he/she was first fed infant formula milk or dairy/non-dairy milk products? **[SA]**
请问您最年幼的孩子第一次喝配方奶粉时是几岁？
***Interviewer note**: Dairy products refer to powdered milk, UHT milk, fresh milk. Non-dairy milk products refer to soy milk, almond milk, oat milk.*

	Days, **OR**	天，或
	Months, **OR**	月，或
	Years	年
DO NOT READ		
666	Have not started on infant formula milk or dairy/non-dairy milk products	
777	Refused	拒绝回答
888	Don’t know / Not sure	不知道 / 不肯定
[Go to Q16003]		

16003. How old was your youngest child when he/she was first fed baby foods such as purees, rice cereals and solid food? **[SA]**
请问您最年幼的孩子第一次吃婴儿食品时（例如泥状食物、米谷物及固体食物）是几岁？

READ ONLY IF NECESSARY		
1	0 to below 4 months old	4 个月以下
2	4 to below 6 months old	4 到 6 个月以下
3	6 to below 9 months old	6 到 9 个月以下
4	9 months old and above	9 个月及以上
DO NOT READ		
666	Have not started on baby foods	未开始吃婴儿食品
777	Refused	拒绝回答
888	Don’t know / Not sure	不知道 / 不肯定
END OF SECTION 16. GO TO SECTION 22.		

22. HYGIENE PRACTICES AND USE OF ANTIBIOTICS

22000. I am now going to read out some practices that will prevent the spread of infectious diseases like common cold or influenza that are caused by viruses. For the prevention of infectious diseases, do you usually …? **[MA]**
我现在将读出一些防止由病毒所引起的传染病，例如预防普通感冒或流感传播的措施。为了预防传染病，您通常是否会 …?

USE SHOWCARD (You may choose more than one answer)		
1	wash your hands regularly with soap and water or use a hand sanitiser	定期用肥皂和水洗手或使用消毒洗手液
2	cover your nose and mouth when coughing or sneezing	在咳嗽或打喷嚏时掩住鼻子和嘴巴
3	stay at home if you feel unwell	在感到不适的时候待在家里
4	use a surgical mask when you are unwell ***Interviewer note*: *Exclude reusable mask***	在身体不适的时候使用手术型口罩
5	go see a doctor if you feel unwell	在感到不适的时候去看医生
6	go for yearly flu vaccination ***Interviewer note*: *Flu vaccination refers to an injection to protect you from getting the flu***	接受年度流感疫苗接种
7	Others, please specify: 其它，请注明: _____	
DO NOT READ		
666	No, I do not have these habits	不，我没有这些习惯
777	Refused	拒绝回答
888	Don't know / Not sure	不知道 / 不肯定
[Go to Q22001]		

22001. I am now going to read out some statements on the use of antibiotics. Do you agree that…? **[SA]**
我现在将读出几个有关服用抗生素的句子，请告诉我您觉得每一项的答案是对或错。

USE SHOWCARD				
Statement	1) Yes 对	2) No 错	**DO NOT READ**	
			777) Refused 拒绝回答	888) Don't know / Not sure 不知道 / 不肯定
(a) Antibiotics do not work on flu virus 抗生素对流感病毒无效				
(b) Antibiotics will lose its effectiveness in the long term if one takes antibiotics for common cold and flu, does not complete the full course of antibiotics or take leftover antibiotics 如果因为普通感冒和流感而服用抗生素，或者未完成整个抗生素疗程，或者服用剩余的抗生素，长期以来, 抗生素将失去效力				
(c) You should ask the doctor for antibiotics if not prescribed 如果医生未开抗生素处方，您应该向医生要求抗生素				
(d) You will recover faster when you take antibiotics for your respiratory infections like the flu 如果服用抗生素治疗呼吸道感染如流感等，您将会更快复原				
END OF SECTION 22.				

Annex B

Project Team

Survey Planning, Preparation, Fieldwork & Survey Report	Survey Report (Writers)
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