



Government of **Western Australia**
Department of **Health**

Health and Wellbeing of Adults in Western Australia 2015, Overview and Trends

Copyright

Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the Copyright Act 1968, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.

Acknowledgements

Thanks are extended to the people of Western Australia who participate in the Health and Wellbeing Survey. Appreciation is extended to our colleagues and specialists in the field who contribute to the content and integrity of the system.

Suggested citation

Tomlin S, Joyce S and Radomiljac A 2016. Health and Wellbeing of Adults in Western Australia 2015, Overview and Trends. Department of Health, Western Australia

Table of contents

EXECUTIVE SUMMARY	xi
1. INTRODUCTION	1
2. METHODOLOGY	3
2.1 Mode of administration and sampling	3
2.2 Weighting data.....	3
2.3 Response rates.....	3
3. HOW ESTIMATES ARE REPORTED	5
3.1 Percentage and prevalence.....	5
3.2 Confidence intervals	5
3.3 Using this report.....	6
4. COMPARISONS.....	7
4.1 Prevalence over time	7
4.2 Socio-Economic Indexes for Areas.....	7
4.3 Accessibility/ Remoteness Index of Australia	8
5. DEMOGRAPHICS	10
6. GENERAL HEALTH	14
6.1 Mental and physical functioning.....	17
6.2 Disability	17
7. CHRONIC HEALTH CONDITIONS	21
7.1 Arthritis and osteoporosis	21
7.2 Heart disease and stroke.....	24
7.3 Cancer and skin cancer	26
7.4 Diabetes	29
7.5 Injury.....	32
7.6 Asthma	35

7.7 Respiratory condition other than asthma	40
7.8 Mental health	42
8. LIFESTYLE BEHAVIOURS	46
8.1 Smoking.....	46
8.2 Alcohol.....	51
8.3 Nutrition	56
8.4 Physical activity and sedentary behaviour	67
8.5 Sleep	73
9. PHYSIOLOGICAL RISK FACTORS	75
9.1 Cholesterol level	75
9.2 Blood pressure.....	79
9.3 Body Weight	82
10. HEALTH SERVICE UTILISATION.....	89
11. PSYCHOSOCIAL	94
11.1 Psychological distress	94
11.2 Major life events.....	97
11.3 Feeling lack of control.....	99
11.4 Suicide ideation	102
11.5 Social support.....	104
REFERENCES.....	105

List of tables

Table 1: Response rates for 2015, by month	4
Table 2: Demographic characteristics, 16 years & over, HWSS 2015	10
Table 3: Socio-demographic characteristics, 16 years & over, HWSS 2015	11
Table 4: Socio-demographic characteristics, 16 years & over, continued, HWSS 2015	12
Table 5: Prevalence of working away and shift work, 16 to 64 years, HWSS 2015 .	13
Table 6: Self-reported health status, by age and sex, 16 years & over, HWSS 2015	14
Table 7: Self-reported health status compared with one year ago, 16 years & over, HWSS 2015.....	16
Table 8: Rating of burden due to disability, long-term illness or pain, 16 years & over, HWSS 2015.....	18
Table 9: Need aids or special equipment, 16 years & over, HWSS 2015.....	20
Table 10: Prevalence of arthritis and/or osteoporosis, 16 years & over, HWSS 2015	21
Table 11: Prevalence of arthritis and osteoporosis over time, 25 years & over, HWSS 2002–15.....	23
Table 12: Prevalence of heart disease and/or stroke, 16 years & over, HWSS 2015	24
Table 13: Prevalence of heart disease and stroke over time, 25 years & over, HWSS 2002–15.....	26
Table 14: Prevalence of cancer and skin cancer, 16 years & over, HWSS 2015	27
Table 15: Prevalence of cancer, excluding skin cancer, over time, 16 years & over, HWSS 2007–15.....	28
Table 16: Prevalence of all diabetes and proportion of diabetics with type 2 diabetes, 16 years & over, HWSS 2015.....	29
Table 17: Prevalence of diabetes over time, 16 years & over, HWSS 2002–15.....	30
Table 18: Prevalence of injuries and falls in past 12 months, 16 years & over, HWSS 2015	32
Table 19: Prevalence of injuries (a), in the past 12 months, over time, 16 years & over, HWSS 2002–15.....	34

Table 20: Mean number of injuries (a) in the past 12 months over time, 16 years & over, HWSS 2002–15.....	34
Table 21: Prevalence of asthma and asthma action plan, 16 years & over, HWSS 2015	36
Table 22: Prevalence of asthma over time, 16 years & over, HWSS 2002–15	38
Table 23: Prevalence of asthma interfering with daily activities in the last 4 weeks, 16 years & over, HWSS 2015.....	39
Table 24: Prevalence of respiratory conditions other than asthma, 16 years & over, HWSS 2015.....	40
Table 25: Prevalence of respiratory conditions other than asthma over time, 16 years & over, HWSS 2007–15	41
Table 26: Prevalence of mental health conditions, 16 years & over, HWSS 2015 ...	42
Table 27: Current mental health status, 16 years & over, HWSS 2015.....	43
Table 28: Prevalence of current mental health condition over time, 16 years & over, HWSS 2002–15.....	45
Table 29: Current smoking status, 16 years & over, HWSS 2015.....	47
Table 30: Lifetime smoking status, 16 years & over, HWSS 2015	48
Table 31: Smoking within the home, 16 years & over, HWSS 2015.....	49
Table 32: Prevalence of current smokers over time, 16 years & over, HWSS 2002–15	50
Table 33: Risk of long-term alcohol related harm, 16 years & over, HWSS 2015	51
Table 34: Risk of short-term alcohol related harm, 16 years & over, HWSS 2015... ..	52
Table 35: Prevalence of high risk alcohol consumption for long-term & short-term harm over time, 16 years & over, HWSS 2002–15.....	54
Table 36: NHMRC Australian Dietary Guidelines for fruit and vegetable daily consumption guidelines and HWSS reporting definitions, adults 16 years & over	56
Table 37: Serves of fruit consumed daily, 16 years & over, HWSS 2015.....	57
Table 38: Serves of vegetables consumed daily, 16 years & over, HWSS 2015	58
Table 39: Prevalence of sufficient daily fruit consumption and vegetable consumption^, 16 years and over, HWSS 2015	59
Table 40: Mean serves of fruit and vegetables over time, 16 years & over, HWSS 2002–15	61

Table 41: Type of milk consumed, 16 years & over, HWSS 2015.....	62
Table 42: Ran out of food and could not afford to buy more, 16 years & over, HWSS 2015	64
Table 43: Meals from fast food outlets per week, 16 years & over, HWSS 2015	65
Table 44: Number of meals eaten each day, 65 years & over, HWSS 2015.....	66
Table 45: Teeth or dentures affect food eaten, 65 years & over, HWSS 2015.....	66
Table 46: Self-reported level of physical activity, 16 years & over, HWSS 2015.....	67
Table 47: How usually spend day, 16 years & over, HWSS 2015.....	68
Table 48: Physical activity level, measured by the 2014 Australian Physical Activity and Sedentary Behaviour guidelines, 18 years & over, HWSS 2015	70
Table 49: Proportion adults completing recommended levels of physical activity over time by sex, 18 years & over, HWSS 2007–15.....	71
Table 50: Trend for mean time (a) spent in physical activity per week, 18 years & over, HWSS 2007–15.....	72
Table 51: Time spent watching TV/DVDs or using a computer/Smartphone/tablet device per week, 16 years & over, HWSS 2015.....	73
Table 52: Proportion of adults sleeping the recommended number of hours on a usual night, 16 years & over, HWSS 2015.....	74
Table 53: Prevalence of diagnosed high cholesterol levels, 16 years & over, HWSS 2015	76
Table 54: Cholesterol level last tested, 16 years & over, HWSS 2015.....	77
Table 55: Prevalence of high cholesterol over time, 25 years & over, HWSS 2003–15	78
Table 56: Prevalence of high blood pressure, 16 years & over, HWSS 2015	79
Table 57: Blood pressure last tested, 16 years & over, HWSS 2015	80
Table 58: Prevalence of high blood pressure over time, 25 years & over, HWSS 2003–15.....	81
Table 59: Prevalence by BMI categories, 16 years & over, HWSS 2015	83
Table 60: Prevalence by BMI categories over time, 16 years & over, HWSS 2002–15	84
Table 61: Mean BMI over time, 16 years & over, HWSS 2002–15.....	85
Table 62: Classification of waist circumference, 16 years & over, HWSS 2015	86

Table 63: Prevalence of self-perception of body weight, 16 years & over, by Body Mass Index classification, HWSS 2015	88
Table 64: Prevalence of intentions to change weight, 16 years & over, by Body Mass Index classification, HWSS 2015.....	88
Table 65: Health service utilisation in the past 12 months, 16 years & over, HWSS 2015	90
Table 66: Mean visits to health services in the past 12 months, 16 years & over, HWSS 2015.....	91
Table 67: Vaccinations received, 65 years & over, HWSS 2015.....	93
Table 68: Psychological distress, as measured by Kessler 10, 16 years & over, HWSS 2015.....	95
Table 69: Prevalence of high and very high psychological distress, as measured by the Kessler 10, 16 years & over, HWSS 2002–15	96
Table 70: Prevalence by major life events experienced, 16 years & over, HWSS 2015	98
Table 71: Lack of control over life in general during past four weeks, 16 years & over, HWSS 2015.....	99
Table 72: Lack of control over personal life during past four weeks, 16 years & over, HWSS 2015.....	100
Table 73: Lack of control over health during past four weeks, 16 years & over, HWSS 2015.....	100
Table 74: Often or always perceive a lack of control, 16 years & over, HWSS 2015	101
Table 75: Suicide thoughts over past 12 months, 16 years & over, HWSS 2015...	102
Table 76: Friends/ family suicide attempts over past 12 months, 16 years & over, HWSS 2015.....	103
Table 77: Number of groups/ associations belonging to, 16 years & over, HWSS 2015	104

List of figures

Figure 1: Self-reported health status, by SEIFA quintiles in WA, 16 years & over, HWSS 2015.....	15
Figure 2: Mean mental component scores (MCS), 16 years & over, HWSS 2015 ...	17
Figure 3: Mean physical component scores (PCS), 16 years & over, HWSS 2015..	17
Figure 4: Prevalence of disability, long-term illness or pain within the family that puts a burden on them personally or on their family, 16 years & over, HWSS 2015	17
Figure 5: Prevalence of disability, long-term illness or pain within the family that puts a burden on them personally or on their family, 16 years & over, by SEIFA quintiles in WA, HWSS 2015	18
Figure 6: Principal carers, 16 years & over, HWSS 2015.....	19
Figure 7: Prevalence of arthritis and osteoporosis, 16 years & over, by SEIFA quintiles in WA, HWSS 2015	22
Figure 8: Prevalence of heart disease and stroke, 16 years & over, by SEIFA quintiles in WA, HWSS 2015	25
Figure 9: Prevalence of skin cancer and cancer, 16 years & over, by geographic area of residence in WA, HWSS 2015.....	28
Figure 10: Prevalence of diabetes, 16 years & over, by SEIFA quintiles in WA, HWSS 2015.....	30
Figure 11: Prevalence of diabetes over time, 16 years & over, HWSS 2002–15	31
Figure 12: Prevalence of any injury and fall in the past 12 months, 16 years & over, by geographic area of residence in WA, HWSS 2015	33
Figure 13: Prevalence of falls (a) in the last 12 months over time, 16 years & over, HWSS 2005–15.....	35
Figure 14: Prevalence of asthma, 16 years & over, by SEIFA quintiles in WA, HWSS 2015	37
Figure 15: Prevalence of asthma action plans, 16 years & over, by geographic area of residence in WA, HWSS 2015.....	37
Figure 16: Prevalence of current asthma (a) over time, 16 years & over, HWSS 2002–15.....	38
Figure 17: Prevalence of respiratory conditions other than asthma, 16 years & over, by geographic area of residence in WA, HWSS 2015	41

Figure 18: Prevalence of current mental health conditions, by SEIFA quintiles in WA, HWSS 2015.....	44
Figure 19: Proportion of current smokers, 16 years & over, by SEIFA quintiles in WA, HWSS 2015.....	49
Figure 20: Prevalence of current smokers over time, 16 years & over, HWSS 2002–15	50
Figure 21: Prevalence of high risk alcohol consumption for long-term (a) and short-term (b) harm, 16 years & over, by ARIA in WA, HWSS 2015	53
Figure 22: Prevalence of high risk alcohol consumption for long-term & short-term harm over time, 16 years & over, HWSS 2002–15.....	54
Figure 23: Prevalence of sufficient fruit & vegetables consumption^ over time, 2013 Australian Dietary Guidelines for fruit and vegetable consumption, 16 years & over, HWSS 2002–15	60
Figure 24: Low/ reduced fat or skim milk consumption, 16 years & over, by ARIA in WA, HWSS 2015.....	63
Figure 25: Spend day mostly sitting, 16 years & over, by SEIFA quintiles in WA, HWSS 2015.....	69
Figure 26: Proportion of people meeting the physical activity recommendation, 18 years & over, by SEIFA quintiles in WA, HWSS 2015.....	71
Figure 27: Prevalence of current high cholesterol, 16 years & over, by geographic area of residence in WA, HWSS 2015.....	78
Figure 28: Prevalence of current high blood pressure, 16 years & over, by SEIFA quintiles in WA, HWSS 2015	81
Figure 29: Prevalence of overweight and obesity by BMI, 16 years & over, by ARIA in WA, HWSS 2015	84
Figure 30: Mean BMI over time, 16 years & over, HWSS 2002–15	85
Figure 31: Classification of waist circumference, 16 years & over, by geographic area of residence in WA, HWSS 2015.....	87
Figure 32: Health service utilisation in the past 12 months, allied and dental health services, 16 years & over, by SEIFA quintiles in WA, HWSS 2015.....	92
Figure 33: Prevalence of high/very high psychological distress, measured by the Kessler 10, 16 years & over, by geographic area of residence in WA, HWSS 2015.....	96

EXECUTIVE SUMMARY

This report describes the findings from the 2015 Health and Wellbeing Surveillance System and provides the health sector and the general public with important information about a number of aspects of health and wellbeing of the Western Australian adult population.

The Health and Wellbeing Surveillance System is a continuous data collection which was initiated in 2002 to monitor the health status of the general population. In 2015, 6,980 adults aged 16 years and over were interviewed via computer assisted telephone interviews between January and December, reflecting an average participation rate of just over 90%. The sample is randomly selected and then weighted to reflect the Western Australian adult population.

Some key findings from the report include:

General health:

- Almost nine out of ten adults aged 16 years and over reported that their health was the same or better than it had been the previous year (87.0%).
- Persons aged 65 years and over were significantly more likely to report being the primary carer of a family member with a disability or long-term illness compared with persons aged 16-44 years (72.3% compared with 38.9%).

Chronic health conditions:

- The prevalence of arthritis, osteoporosis, heart disease, cancer other than skin cancer and diabetes all increased significantly with age.
- Almost one-quarter (23.7%) of adults reported an injury in the past 12 months that required treatment by a health care professional.
- The lifetime prevalence of asthma decreased significantly for females aged 16 years and over from 2007 (21.4%) to 2015 (16.5%).

Lifestyle and physiological risk factors:

- The prevalence of current smokers decreased significantly from 2002 (21.6%) to 2015 (12.5%).
- The prevalence of current smokers was significantly higher in the most disadvantaged areas of WA (17.0%) compared with the least disadvantaged areas (7.8%)
- Over one quarter (27.8%) of the Western Australian population drink at levels likely to increase their risk of long-term alcohol related harm and 9.6% drink at levels that increase their likelihood of short-term alcohol related harm. These estimates are the lowest recorded since data collection began in 2002.
- The prevalence of risky drinking for long-term alcohol related harm was significantly higher in areas of Western Australia classified as very remote (47.3%) compared with areas classified as major cities (25.9%), inner regional (31.9%) or outer regional (30.5%).
- The prevalence of males, females and all persons meeting the recommended level of physical activity was significantly higher in 2015 compared with 2007.
- Adults living in the least disadvantaged areas of WA were significantly more likely to meet the recommended level of physical activity (70.0%) compared with the most disadvantaged areas of WA (55.2%).
- There has been a significant increase in the prevalence of obesity in Western Australian adults from 2002 to 2015, increasing from 21.3% to 27.0%.

Health service utilisation:

- Nine out of ten adults (89.9) visited a primary health care service in the last 12 months. Females were significantly more likely than males to visit primary, allied and dental health care services.
- Older adults (65 years and over) were significantly more likely to have used a primary or hospital based health service than younger adults (16-64 years), and were also significantly less likely to use mental or alternative health services compared with younger adults.
- Utilisation of allied health and dental health services was significantly higher in the least disadvantaged areas of WA.

1. INTRODUCTION

The WA Health & Wellbeing Surveillance System (HWSS) is a continuous data collection system which was developed to monitor the health and wellbeing of Western Australians. On average, 600 people throughout Western Australia are interviewed each month. The HWSS began in March 2002 and as at December 2015 over 85,000 adults have been interviewed.

People are asked questions on a range of indicators related to health and wellbeing. Topics include chronic health conditions, lifestyle risk factors, protective factors and socio-demographics. Information from the survey is used to monitor the health status of all Western Australians, to inform health education programs, to evaluate interventions and programs, to inform and support health policy development, to identify and monitor emerging trends and to inform and support health service planning and development.

The questions that are included on the HWSS are selected either to provide information about State or National indicators of health and wellbeing, or to provide information about areas of health, lifestyle and demography that are not available elsewhere and are necessary to understand the dynamics of healthy behaviours and outcomes.

This report presents what WA adults aged 16 years and over said about their health and wellbeing in 2015. All of the information provided in this report is based on self-reported data. Testing has shown that the responses to the questions on the survey are reliable but in a very few cases, may not be completely accurate. For example, people are likely to underestimate their weight and alcohol consumption^{1,2}, but they do so consistently. This means that although the estimates for these are likely to be less than the 'true' estimate in the population, the estimates reliably show patterns of change over time. The identification of patterns over time is the basis of a monitoring and surveillance system.

Another feature of a surveillance system is that it is population based. That is, it is designed to examine trends at the population level and although major socio-

demographic group estimates are possible, it is not the purpose of the system. Therefore the information provided in this report is representative of the Western Australian population as a whole but it is unlikely to be reliably representative of small minority groups within the population such as Aboriginal people, the homeless or those without telephones. People requiring information about Aboriginal health are recommended to consult the results of the 2007-08 National Aboriginal and Torres Strait Islander Social Survey³ or the 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey⁴, which are more representative of the Aboriginal and Torres Strait Islander population.

2. METHODOLOGY

2.1 Mode of administration and sampling

The HWSS is conducted as a Computer Assisted Telephone Interview (CATI). Households are selected from the 2013 White Pages[®] by a stratified random process with over sampling representative of the population in rural and remote areas. An approach letter is sent to selected households informing them about the survey and that their household has been selected to participate. The approach letter explains the purpose of the survey, gives the time within which they can expect to be contacted by the data collection agency and explains that one person from the household will be selected to participate. A specially prepared brochure is included with the letter, which explains about the HWSS and provides contact numbers for people to call for more information.

2.2 Weighting data

One of the most important features of a report describing the health and wellbeing of any population is the ability to make comparisons. In order to do this data must be weighted to the population that is being described, which in this case is the WA population.

The HWSS data are weighted to compensate for the over-sampling in the rural and remote areas of WA and then weighted by age and sex to the most recent Estimated Resident Population (ERP) for the year of the survey. For 2015, this was the 2014 ERP released by the Australian Bureau of Statistics (ABS) in August 2015.⁵

2.3 Response rates

A very important part of any survey is the response rate attained because low response rates may produce estimates that are not representative of the population or that are unreliable or biased. Each year since the HWSS began adjusted response rates of above 80% have been attained. The response rate for each month of 2015 is shown in Table 1.

The consistency of the response rates over the year provides an excellent basis for producing reliable estimates. These high response rates are also an indication of the willingness of the people of WA to respond to surveys that they judge to be important.

Table 1: Response rates for 2015, by month

Month	Sample Frame	Out of Scope (a)	Eligible Sample	No answer after 10 attempts	Eligible Contacts (b)	Refusals	Interviews	Raw Response Rate	Adjusted Response Rate (c)	Participation Rate (d)
Jan	1203	373	830	150	680	62	581	70.0	85.4	90.4
Feb	1503	460	1043	186	857	86	716	68.6	83.5	89.3
Mar	1576	472	1104	217	887	75	775	70.2	87.4	91.2
Apr	1579	488	1091	182	909	73	789	72.3	86.8	91.5
May	1370	448	922	148	774	66	658	71.4	85.0	90.9
Jun	1220	404	816	135	681	76	579	71.0	85.0	88.4
Jul	1156	363	793	155	638	56	543	68.5	85.1	93.3
Aug	1160	377	783	145	638	62	550	70.2	86.2	89.9
Sep	1403	457	946	200	746	65	631	66.7	84.6	90.7
Oct	1303	423	880	189	691	47	625	71.0	90.4	93.0
Nov	1706	662	1044	165	879	86	741	71.0	84.3	89.6
Dec	1370	505	865	170	695	67	583	67.4	83.9	89.7
Total	16549	5432	11117	2042	9075	821	7771	69.9	85.6	90.4

a) Non-operational, business or dedicated fax numbers. All other numbers were considered to be part of the eligible sample, which forms the denominator for the Raw Response Rate.

b) If the telephone is answered, the number is part of the eligible contacts. This forms the denominator of the Adjusted Response Rate.

c) The Adjusted Response rate is the number of people interviewed divided by the Eligible Contacts (b)

d) The Participation Rate is the number of people interviewed divided by the number of people interviewed plus the number of refusals.

A full explanation of the methodology can be found in the paper titled WA Health and Wellbeing Surveillance System (WAHWSS), Design and Methodology, Technical Paper No 1. September 2011 – Version 2. This document is available both on the Epidemiology website and on the WA Department of Health internet site at the following web address:

<http://ww2.health.wa.gov.au/~-/media/Files/Corporate/Reports%20and%20publications/Population%20surveys/2003-Technical-paper-no1-Design-and-Methodology.ashx>

3. HOW ESTIMATES ARE REPORTED

3.1 Percentage and prevalence

The information in this report is presented either as a percentage of the population who have a particular risk factor/demographic characteristic or as prevalence of the population who have a particular health condition. Prevalence is the description of the number or proportion of individuals in a community with a given condition and is usually expressed as a percentage. Prevalence is distinct from incidence, which is a measure of the number of new cases of a condition. Prevalence involves all affected individuals, regardless of the date of contraction, whereas incidence only involves individuals who have newly contracted the disease during a specified time interval. Surveys generally do not collect or report incidence of disease.

There are three main types of prevalence that are typically reported. Lifetime prevalence represents the proportion of the population that have ever had a condition, period prevalence represents the proportion of the population who have a condition within a specified period of time, e.g. twelve months, and point prevalence represents the proportion of the population who have a condition at the time of the survey. In this report, most of the prevalence estimates presented are period prevalence. With some conditions, such as asthma, both lifetime and point prevalence are reported. This is because a person may have had asthma at some point in their life but not have it currently. A copy of the questionnaire is available on the intranet at: intranet.health.wa.gov.au/epidemiology/resources/index.cfm

Non WA Department of Health employees are asked to contact the Health Survey Unit, Epidemiology Branch, (WA Department of Health) for a copy of the questionnaire.

3.2 Confidence intervals

Each table presents the estimate of the prevalence of a condition or the estimate of the proportion of the population with a particular characteristic along with the 95% confidence interval around that estimate.

The 95 per cent confidence interval is the range between which the true estimate would lie 95 out of 100 times. Overlapping confidence intervals indicate that there is probably no difference in the estimates being compared. If the confidence intervals do not overlap, then the estimates are considered to be significantly different. Along with determining statistically significant differences confidence intervals can also be used to determine the level of stability around an estimate. The wider the confidence interval is around an estimate the less precise that estimate is and the more caution that should be applied with using it.

The level of stability around an estimate can also be guided by the relative standard error (RSE). The RSE is a measure of the extent to which the survey estimate is likely to be different from the actual population result. Estimates with RSEs above 25% are considered unreliable for general use.

In this report wide confidence intervals and high RSEs can be present for young age groups (16-44 years) for certain chronic health conditions, due to the fact that they are less likely to be present and detectable at younger ages. It is also possible to see wide confidence intervals and high RSEs for some variables that have multiple response options (4 or more), for example self-reported level of physical activity and fast food intake.

Therefore, throughout this report, estimates between 25% and 50% have been annotated by an asterisk and should be used with caution. Estimates with RSEs above 50% have been withheld.

Further information on how to determine whether or not a difference is statistically significant can be found at:

http://ww2.health.wa.gov.au/~/_/media/Files/Corporate/Reports%20and%20publications/Population%20surveys/2003-Confidence_intervals_How_they_work.ashx

3.3 Using this report

This report has been generated to be a reference document and therefore contains little interpretative text. The confidence intervals should be used to determine statistical significance if no text has been provided. If more detailed information is

required or interpretation needed, please contact the Health Survey Unit, Epidemiology Branch, WA Department of Health.

4. COMPARISONS

4.1 Prevalence over time

One of the strengths of the HWSS is its ability to show changes over time. Therefore, trends for selected major health conditions and risk factors have been provided.

The prevalence or proportion of males and females who reported a selected condition/risk factor of interest was derived for each year from 2002 to 2015.

As chronic conditions were not always asked of 16 to 24 year olds until 2006, chronic condition estimates are presented for 25 year olds and over to ensure comparability across years. To guarantee any changes in prevalence estimates are not the result of changes in the age and sex distribution of the population, all years presented in trend tables have been standardised by weighting them to the 2011 Estimated Resident Population. As a result, 2015 estimates presented in trend tables may differ slightly from 2015 estimates presented in prevalence tables due to the standardising of estimates to different populations.

Small changes in estimates from those presented in previous reports may occur due to the standardisation of the estimates using updated population estimates.

4.2 Socio-Economic Indexes for Areas

The HWSS collects information on where the survey respondent lives. This allows comparisons to be made between the health characteristics of people living in less advantaged areas with those in more advantaged areas, using indexes developed by the Australian Bureau of Statistics.

Socio-Economic Indexes for Areas (SEIFA) are a group of measures that ranks areas across Australia based on their level of socio-economic advantage or

disadvantage. This is broadly defined in terms of people's access to material and social resources, and their ability to participate in society. These measures are developed every five years based on information collected during the Census. The latest available SEIFA are from the 2011 Census.⁶

In this report when the acronym SEIFA is used it is referring to the Index of Relative Socio-economic Disadvantage (IRSD).⁷ This is the index most frequently used for analysis of health characteristics. The IRSD ranks areas in terms of relative socio-economic disadvantage. A score is derived for individual suburbs/ localities in Western Australia by summarising characteristics of the population including low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations.⁷ A complex statistical calculation is used to determine the score for each suburb/ locality. A technical explanation of the calculation process can be found on the ABS website:

[http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/22CEDA8038AF7A0DCA257B3B00116E34/\\$File/2033.0.55.001%20seifa%202011%20technical%20paper.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/22CEDA8038AF7A0DCA257B3B00116E34/$File/2033.0.55.001%20seifa%202011%20technical%20paper.pdf)

Areas are then grouped into quintiles from most disadvantaged (quintile 1), low scores, through to least disadvantaged (quintile 5), high scores. SEIFA quintiles are based on IRSD at statistical area 2 (SA2) level.

Tables presenting selected health characteristics by SEIFA quintiles have been provided.

4.3 Accessibility/ Remoteness Index of Australia

Having location information for survey respondents allows health behaviours and conditions to be analysed by remoteness.

The Accessibility/ Remoteness Index of Australia (ARIA) was created to define remoteness using road distances to selected Service Centres. There are five different Service Centre sizes that a locality's road distances are measured to. The five measurements are then each standardised to a ratio. These five ratios are then added together and a score between 0 and 15 is derived. A score of 0 indicates high accessibility and 15 indicates high remoteness.⁸

In this report ARIA+ is used and the categories presented are Major Cities, Inner Regional, Outer Regional, Remote and Very Remote. More information on how ARIA is calculated can be found on the Australian Population and Migration Research Centre at the University of Adelaide:

http://www.adelaide.edu.au/apmrc/research/projects/category/about_aria.html

Tables presenting selected health characteristics by ARIA+ categories have been provided.

5. DEMOGRAPHICS

The demographic characteristics of the adult sample that participated in the 2015 HWSS collection period are shown in Table 2. The table shows the unweighted number in the sample for each group and the weighted population prevalence expressed as a per cent.

Table 2: Demographic characteristics, 16 years & over, HWSS 2015

	Unweighted Sample (n)	Estimated Per Cent (%)
Age		
16 to 24 yrs	292	15.4
25 to 44 yrs	916	38.2
45 to 64 yrs	2,827	30.4
65 yrs & over	2,945	16.0
Gender		
Females	4,366	49.5
Males	2,614	50.5
Australian Born		
Yes	4,787	65.2
No	2,188	34.8
Aboriginal or Torres Strait Islander		
Yes	130	2.3
No	6,840	97.7
Marital Status		
Married	4,163	56.3
De facto	466	9.6
Widowed	884	3.7
Divorced	522	3.2
Separated	178	1.6
Never married	740	25.5
Region of Residence		
Metro	3,343	79.0
Rural	2,829	14.5
Remote	808	6.5
Health Region		
Goldfields	379	2.3
Great Southern	567	2.6
Kimberley	225	1.9
Midwest	472	2.7
North Metro	1,697	39.9
Pilbara	204	2.2
South Metro	1,646	39.2
South West	1,204	6.2
Wheatbelt	586	2.9
ARIA+		
Inner Regional	1,396	9.6
Major Cities	3,182	75.1
Outer Regional	1,444	8.3
Remote	680	4.9
Very Remote	278	2.1

The socio-demographic characteristics of the sample and the weighted population estimates are shown in Table 3 and Table 4.

Table 3: Socio-demographic characteristics, 16 years & over, HWSS 2015

	Unweighted Sample (n)	Estimated Per Cent (%)
Current Place of Living		
Rented from govt or public authority	261	2.8
Rented privately	616	13.2
Being paid off by you/your partner	1,668	37.3
Fully owned/outright owner	4,116	41.2
Other	240	5.6
Current Living Arrangement		
Living with parent(s)	279	15.5
Living with other family members	428	7.2
Living with friends	56	3.4
Living with a partner and children	1,554	34.9
Living with a partner but no children	2,933	28.7
Living alone	1,524	8.6
Living in a nursing home	0	0.0 *
Living in a retirement village	104	0.5
Other living arrangement	91	1.2
Household Income		
Under \$20,000	680	6.2
\$20,000 to \$40,000	1,283	13.1
\$40,000 to \$60,000	684	11.2
\$60,000 to \$80,000	558	11.7
\$80,000 to \$100,000	491	11.0
\$100,000 to \$120,000	411	10.6
\$120,000 to \$140,000	317	9.4
More than \$140,000	876	26.9
Household Spending		
Spend more money than earn/get	216	3.8
Have just enough money to get by	1,056	14.6
Spend left over money	379	6.5
Save a bit every now and then	2,064	30.0
Save some regularly	2,176	34.7
Save a lot	571	10.5

Table 4: Socio-demographic characteristics, 16 years & over, continued, HWSS 2015

	Unweighted Sample (n)	Estimated Per Cent (%)
Highest Level of Education (a)		
Less than Year 10	612	3.7
Year 10 or Year 11	1,303	13.0
Year 12	687	13.6
TAFE/Trade qualification	2,880	39.7
Tertiary degree or equivalent	1,426	30.0
Employment Status		
Self employed	845	11.7
Employed for wages, salary or payment in kind	2,323	48.2
Unemployed for less than one year	93	2.2
Unemployed for more than one year	67	2.0
Engaged in home duties	381	6.3
Retired	2,883	17.0
Unable to work	177	2.3
A student	166	9.7
Other	37	0.5 *
Receiving a Government Pension		
Yes	2,559	20.4
No	4,370	79.6
Possess a Government Health Care Card		
Yes	2,912	25.3
No	4,008	74.7
Possess Private Health Insurance		
Yes - Hospital only	143	2.1
- Ancillary only	405	6.5
- Both hospital and ancillary	4,384	68.7
No	1,898	22.7

(a) Excludes respondents who are currently still at school.

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

People aged 16 to 64 years who were employed were asked whether they did fly-in fly-out work which took them away from home for a set period each week or month, and whether they were a shift worker. The prevalence of working away and shift work are shown in Table 5.

Table 5: Prevalence of working away and shift work, 16 to 64 years, HWSS 2015

	Working Away		Shift Work	
	Unweighted Sample (n)	Estimated Per Cent (%)	Unweighted Sample (n)	Estimated Per Cent (%)
Age				
16 to 44 years	46	8.7	66	9.5
45 to 64 years	70	5.9	140	7.2
16 to 64 years	116	7.6	206	8.6
Sex				
Males	105	12.5	118	11.4
Females	11	1.1 *	88	5.3
Persons	116	7.6	206	8.6

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

6. GENERAL HEALTH

Self-ratings of health are used internationally, with poor health ratings associated with increased mortality and psychological distress, and lower physical functioning compared with excellent or very good ratings.^{9, 10} Respondents were asked several questions regarding their general health, including their overall health status now and compared with one year ago, the SF-8™ (a quality of life measure) and questions regarding family members with disabilities. Table 6 shows Western Australian's self-reported general health status.

Table 6: Self-reported health status, by age and sex, 16 years & over, HWSS 2015

	Excellent		Very good		Good		Fair		Poor	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	22.9	(17.7 - 28.1)	41.5	(35.7 - 47.3)	25.8	(20.6 - 31.0)	8.8	(4.7 - 12.9)	N/A	(N/A - N/A)
Females	21.1	(17.0 - 25.2)	44.8	(39.5 - 50.2)	24.6	(20.1 - 29.2)	6.9 *	(4.1 - 9.6)	2.6 *	(0.5 - 4.7)
Persons	22.0	(18.7 - 25.3)	43.1	(39.1 - 47.1)	25.2	(21.8 - 28.7)	7.9	(5.4 - 10.4)	1.8 *	(0.6 - 3.0)
45 to 64 yrs										
Males	14.5	(11.5 - 17.4)	37.4	(33.5 - 41.2)	36.4	(32.7 - 40.2)	7.7	(5.8 - 9.6)	4.0	(2.4 - 5.6)
Females	22.0	(19.5 - 24.5)	36.2	(33.3 - 39.1)	30.5	(27.7 - 33.3)	8.4	(6.7 - 10.0)	3.0	(2.0 - 4.0)
Persons	18.2	(16.3 - 20.2)	36.8	(34.4 - 39.2)	33.5	(31.1 - 35.8)	8.0	(6.8 - 9.3)	3.5	(2.6 - 4.4)
65 yrs & over										
Males	10.8	(8.6 - 12.9)	33.9	(30.5 - 37.2)	37.4	(34.0 - 40.8)	13.1	(10.8 - 15.4)	4.8	(3.4 - 6.3)
Females	12.5	(10.7 - 14.4)	33.2	(30.5 - 35.8)	34.8	(32.2 - 37.5)	14.7	(12.8 - 16.6)	4.8	(3.6 - 5.9)
Persons	11.7	(10.3 - 13.1)	33.5	(31.4 - 35.6)	36.1	(33.9 - 38.2)	13.9	(12.5 - 15.4)	4.8	(3.9 - 5.7)
Total										
Males	18.5	(15.5 - 22.2)	39.1	(35.7 - 42.5)	30.7	(27.6 - 33.9)	9.1	(6.8 - 11.4)	2.5	(1.7 - 3.4)
Females	19.9	(17.6 - 22.2)	40.2	(37.2 - 43.2)	28.2	(25.6 - 30.8)	8.7	(7.1 - 10.2)	3.1	(1.9 - 4.2)
Persons	19.2	(17.3 - 21.1)	39.6	(37.4 - 41.9)	29.5	(27.4 - 31.5)	8.9	(7.5 - 10.3)	2.8	(2.1 - 3.5)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

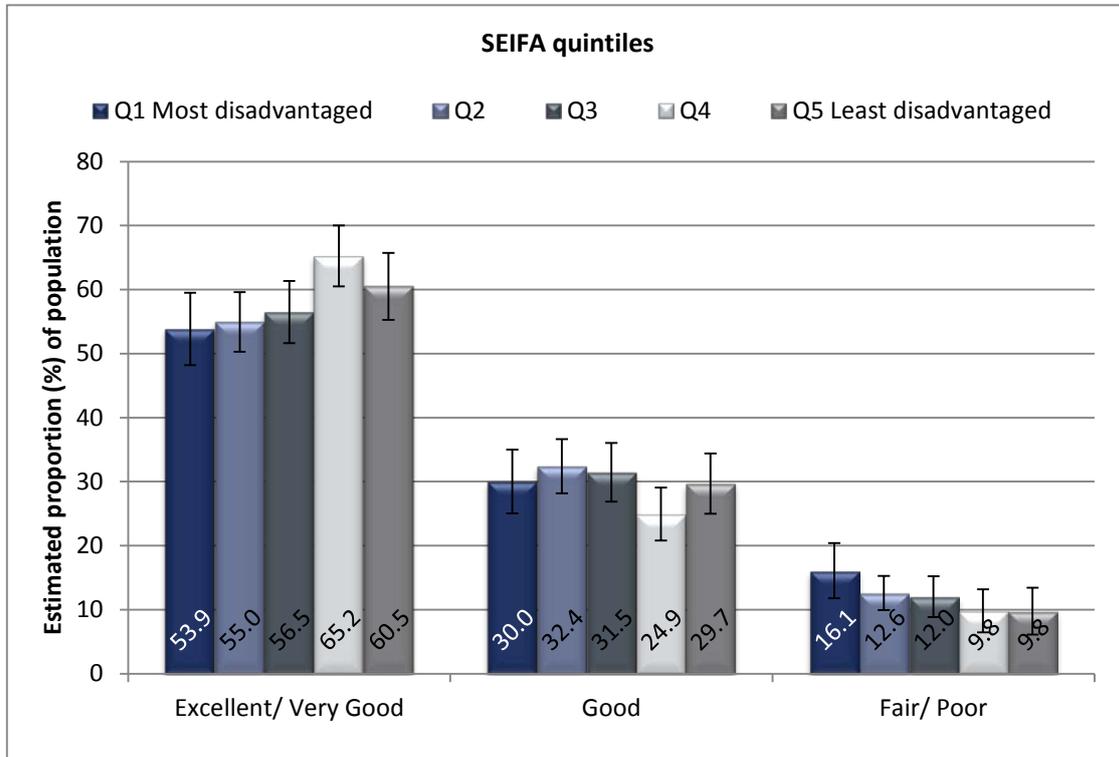
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

The proportion of people reporting excellent or very good health decreased significantly with age (16 to 44 years: 65.1%, 45 to 64 years: 55.0% and 65 years and over: 45.2%).

About one in nine people (11.7%) reported that their health was fair or poor. The proportion reporting fair or poor health status increased significantly with age.

Figure 1 shows self-reported general health by SEIFA quintiles.

Figure 1: Self-reported health status, by SEIFA quintiles in WA, 16 years & over, HWSS 2015



The prevalence of excellent/ very good health was significantly lower in the two most disadvantaged quintiles (Q1 and Q2) compared with the second least disadvantaged quintile (Q4).

Respondents were asked how they would rate their health in general now compared with one year ago, as shown in Table 7.

Table 7: Self-reported health status compared with one year ago, 16 years & over, HWSS 2015

	Much better		Somewhat better		About the same		Somewhat worse		Much worse	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	14.9	(10.6 - 19.1)	23.1	(17.9 - 28.3)	53.0	(47.0 - 59.0)	8.3	(5.0 - 11.5)	N/A	(N/A - N/A)
Females	13.3	(9.8 - 16.8)	16.9	(13.0 - 20.8)	59.0	(53.8 - 64.3)	7.5	(4.9 - 10.1)	3.2 *	(0.7 - 5.7)
Persons	14.1	(11.4 - 16.9)	20.1	(16.8 - 23.4)	55.9	(51.9 - 59.9)	7.9	(5.8 - 10.0)	2.0 *	(0.6 - 3.3)
45 to 64 yrs										
Males	7.8	(5.7 - 10.0)	11.8	(9.2 - 14.3)	68.8	(65.2 - 72.4)	9.9	(7.7 - 12.1)	1.7 *	(0.8 - 2.6)
Females	11.0	(9.1 - 13.0)	10.8	(9.0 - 12.6)	64.0	(61.0 - 66.9)	11.7	(9.8 - 13.6)	2.5	(1.5 - 3.5)
Persons	9.4	(8.0 - 10.9)	11.3	(9.7 - 12.9)	66.4	(64.1 - 68.7)	10.8	(9.3 - 12.3)	2.1	(1.4 - 2.8)
65 yrs & over										
Males	4.4	(3.0 - 5.8)	7.6	(5.8 - 9.4)	70.2	(67.1 - 73.4)	15.3	(12.8 - 17.9)	2.4	(1.5 - 3.4)
Females	5.8	(4.5 - 7.1)	7.9	(6.4 - 9.4)	65.5	(62.8 - 68.1)	17.7	(15.6 - 19.8)	3.2	(2.2 - 4.1)
Persons	5.1	(4.2 - 6.1)	7.8	(6.6 - 8.9)	67.7	(65.6 - 69.7)	16.6	(15.0 - 18.2)	2.8	(2.2 - 3.5)
Total										
Males	11.2	(8.8 - 13.6)	17.4	(14.3 - 20.4)	60.3	(56.8 - 63.9)	9.8	(7.9 - 11.8)	1.3 *	(0.6 - 2.0)
Females	11.3	(9.4 - 13.3)	13.5	(11.4 - 15.6)	61.6	(58.7 - 64.6)	10.5	(9.0 - 12.1)	3.0	(1.6 - 4.3)
Persons	11.3	(9.7 - 12.8)	15.5	(13.6 - 17.3)	61.0	(58.7 - 63.3)	10.2	(8.9 - 11.4)	2.1	(1.4 - 2.9)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

While three in five people (61.0%) reported their health status as about the same as one year ago, one in nine (11.3%) regarded their health as much better. Self-reported improvement in health status decreased significantly with age, with respondents aged 65 years and over being less than half as likely than those aged 16 to 44 years to report their health status as much better or somewhat better than one year ago (12.9% compared with 34.2%).

6.1 Mental and physical functioning

Health status was also measured using the SF-8™ instrument, a quality-of-life measure that determines the effects of physical and mental health on day-to-day functioning. Two overall scores were derived from the SF-8™: a Mental Component Score (MCS), which measures the level of emotional wellbeing (shown in Figure 2) and a Physical Component Score (PCS), which measures the level of physical functioning (shown in Figure 3). Scores are standardised. Scores greater than 50 indicate a better than average health functioning while scores less than 50 indicate a lower than average functioning.¹¹

Figure 2: Mean mental component scores (MCS), 16 years & over, HWSS 2015

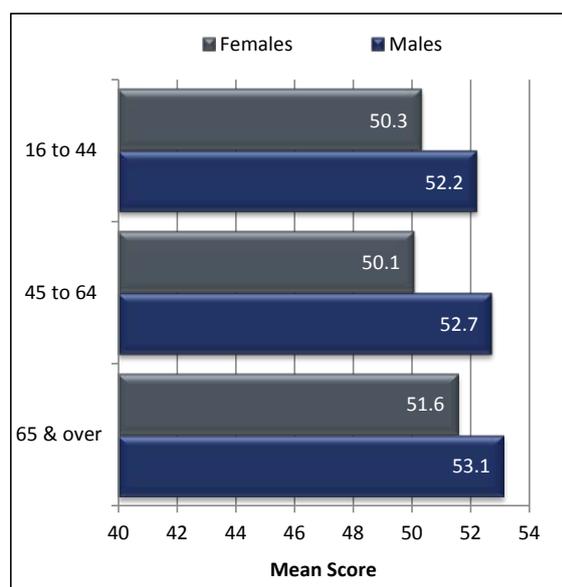
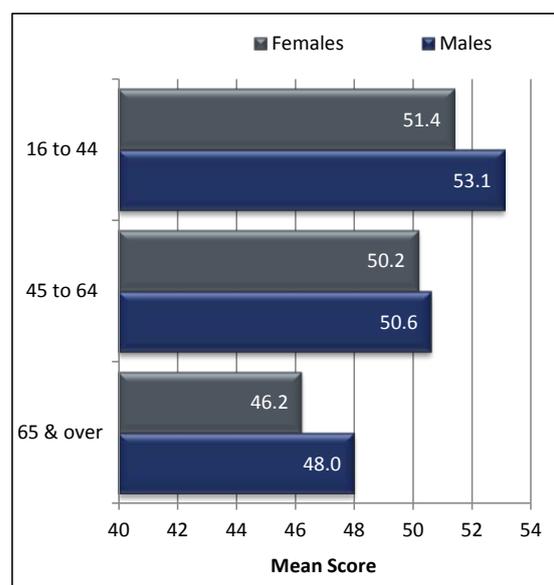


Figure 3: Mean physical component scores (PCS), 16 years & over, HWSS 2015



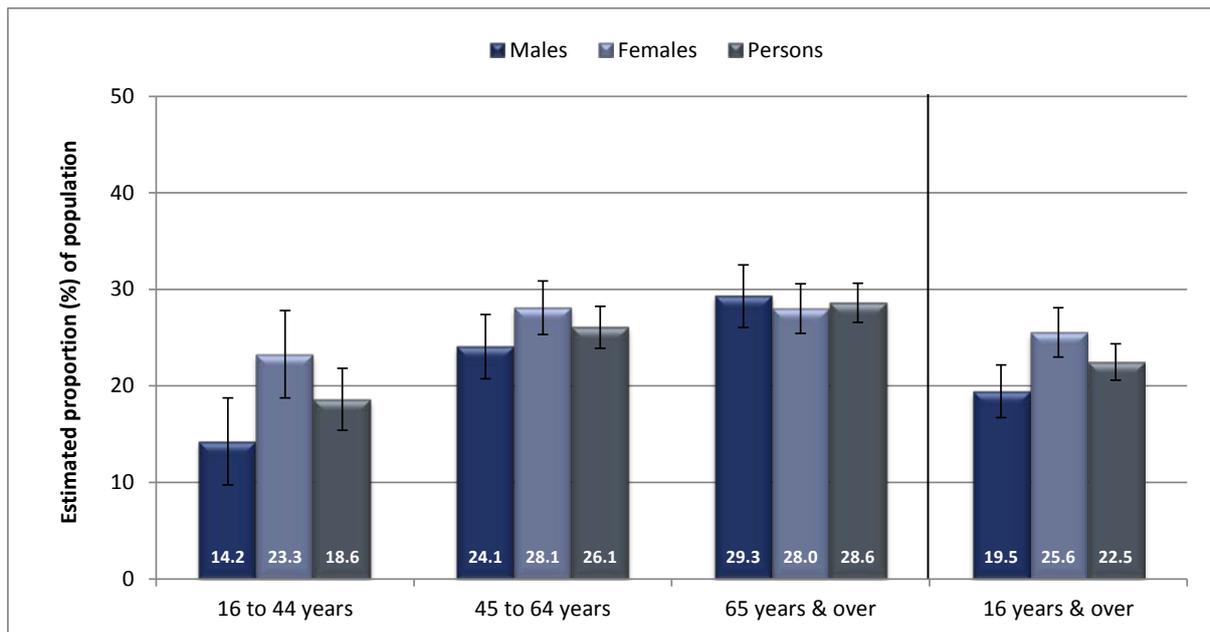
The PCS shows a significant decrease in age-related functioning for both males and females.

6.2 Disability

Disability may be experienced in terms of impairments of body functions and structures, activity limitations or participation restrictions.¹² Respondents were asked whether they or a family member had a disability, long-term illness or pain that put a burden on either them personally or on their family. Figure 4 shows the proportion of people with a family member who have a disability, long-term illness or pain that put

a burden on either them personally or on their family. A significantly lower prevalence of adults aged 16 to 44 years reported a family member with a disability compared with those aged 45 to 64 years and 65 years and over (18.6% compared with 26.1% and 28.6%). In 2015, an estimated 460,964 Western Australians (22.5%) were in a family where at least one person had a disability. This is not significantly different to the 2014 estimate of 19.7%.¹³

Figure 4: Prevalence of disability, long-term illness or pain within the family that puts a burden on them personally or on their family, 16 years & over, HWSS 2015



As illustrated in Figure 5, the prevalence of having a family member with a disability, long-term illness or pain that put a burden on either them personally or on their family was significantly higher in the most disadvantaged SEIFA quintiles (Q1, Q2 and Q3) compared with the least disadvantaged SEIFA quintile (Q5).

Figure 5: Prevalence of disability, long-term illness or pain within the family that puts a burden on them personally or on their family, 16 years & over, by SEIFA quintiles in WA, HWSS 2015

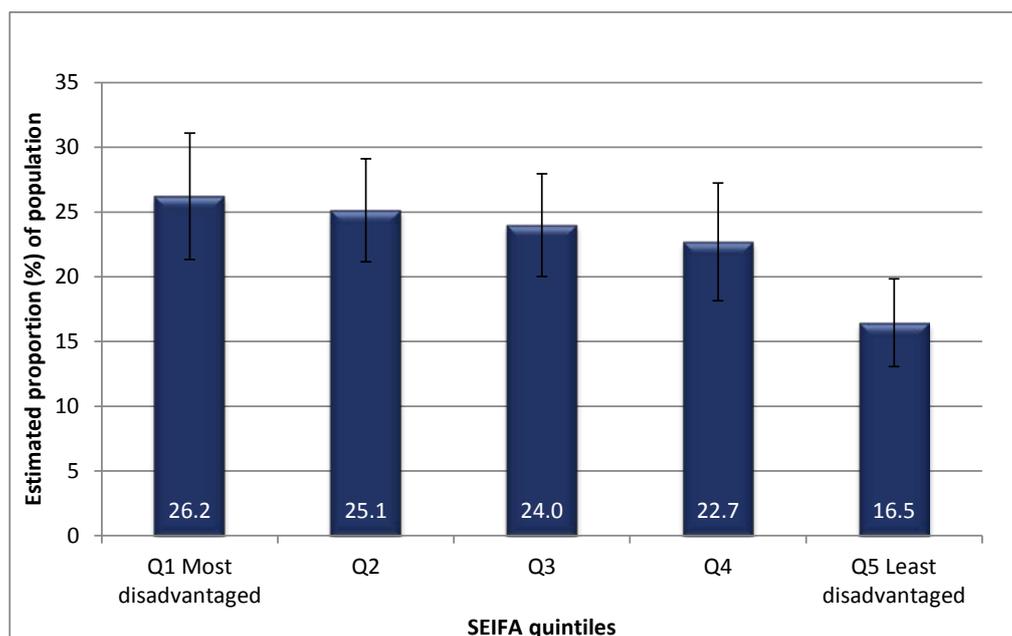


Table 8 shows how people rated the burden of the disability, long-term illness or pain on either them personally, or on their family.

Table 8: Rating of burden due to disability, long-term illness or pain, 16 years & over, HWSS 2015

	Not much of a burden at all		A little burden		A fairly big burden		A big burden		A very big burden	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	16.0 *	(4.7 - 27.3)	43.9	(26.4 - 61.3)	31.6 *	(15.0 - 48.3)	7.3 *	(0.8 - 13.9)	N/A	(N/A - N/A)
Females	9.2 *	(4.0 - 14.5)	33.5	(23.4 - 43.5)	33.6	(22.6 - 44.6)	9.9 *	(1.9 - 17.9)	13.8 *	(6.4 - 21.1)
Persons	11.9	(6.4 - 17.4)	37.6	(28.2 - 46.9)	32.8	(23.5 - 42.2)	8.9 *	(3.4 - 14.4)	8.8 *	(4.1 - 13.4)
45 to 64 yrs										
Males	11.4	(6.4 - 16.5)	46.7	(38.7 - 54.6)	18.5	(12.8 - 24.1)	14.9	(9.8 - 20.0)	8.5 *	(3.6 - 13.4)
Females	10.6	(7.2 - 14.1)	34.5	(28.9 - 40.0)	28.2	(23.0 - 33.4)	15.0	(10.7 - 19.3)	11.7	(7.7 - 15.7)
Persons	11.0	(8.0 - 14.0)	40.1	(35.3 - 44.9)	23.7	(19.8 - 27.6)	15.0	(11.6 - 18.3)	10.2	(7.1 - 13.4)
65 yrs & over										
Males	16.9	(12.0 - 21.9)	42.4	(35.8 - 48.9)	22.1	(16.6 - 27.7)	12.3	(8.0 - 16.7)	6.2 *	(2.8 - 9.7)
Females	15.4	(11.6 - 19.2)	31.2	(26.0 - 36.3)	33.2	(28.0 - 38.4)	12.8	(9.2 - 16.4)	7.5	(4.4 - 10.6)
Persons	16.1	(13.0 - 19.2)	36.5	(32.4 - 40.7)	27.9	(24.1 - 31.7)	12.5	(9.7 - 15.4)	6.9	(4.6 - 9.2)
Total										
Males	14.5	(9.4 - 19.5)	44.6	(36.8 - 52.4)	24.6	(17.3 - 31.9)	11.3	(7.7 - 14.8)	5.0 *	(2.8 - 7.3)
Females	10.9	(8.0 - 13.7)	33.4	(28.1 - 38.6)	31.7	(26.1 - 37.4)	12.2	(8.0 - 16.3)	11.9	(8.1 - 15.7)
Persons	12.4	(9.7 - 15.2)	38.3	(33.7 - 42.8)	28.6	(24.1 - 33.1)	11.8	(9.0 - 14.6)	8.9	(6.5 - 11.3)

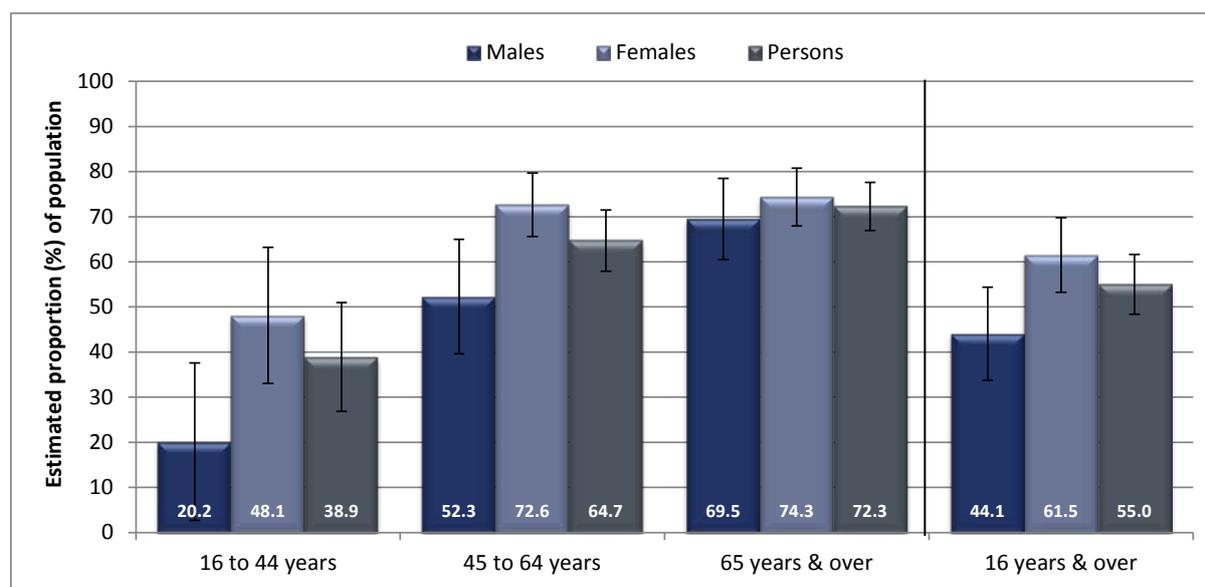
* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Of those with a family member with some form of disability, long-term illness or pain, one in five (20.7%) reported that this puts a big or very big burden on the family.

Respondents who reported themselves or a family member with a disability, long-term illness or pain that put a burden on themselves or their family were also asked if they are the principal carer of this family member. The estimated prevalence of principal carers in Western Australia is shown in Figure 6.

Figure 6: Principal carers, 16 years & over, HWSS 2015



Those aged 65 years and over were significantly more likely to report being the principal carer of a family member with a disability or long-term illness compared with those aged 16 to 44 years (72.3% compared with 38.9%).

Respondents were asked whether they currently have any health problem that requires the use of special equipment, such as a cane, a wheelchair, a special bed or a special telephone. The prevalence of adults who require the use of special equipment is shown in Table 9.

Table 9: Need aids or special equipment, 16 years & over, HWSS 2015

	Yes		No	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	N/A	(N/A - N/A)	99.4	(98.7 - 100.0)
Females	1.2 *	(0.4 - 2.0)	98.8	(98.0 - 99.6)
Persons	0.9 *	(0.4 - 1.4)	99.1	(98.6 - 99.6)
45 to 64 yrs				
Males	4.4	(2.9 - 5.9)	95.6	(94.1 - 97.1)
Females	3.1	(2.1 - 4.2)	96.9	(95.8 - 97.9)
Persons	3.8	(2.8 - 4.7)	96.2	(95.3 - 97.2)
65 yrs & over				
Males	10.7	(8.6 - 12.8)	89.3	(87.2 - 91.4)
Females	14.7	(12.8 - 16.5)	85.3	(83.5 - 87.2)
Persons	12.8	(11.4 - 14.2)	87.2	(85.8 - 88.6)
Total				
Males	3.3	(2.6 - 4.0)	96.7	(96.0 - 97.4)
Females	4.1	(3.4 - 4.7)	95.9	(95.3 - 96.6)
Persons	3.7	(3.2 - 4.1)	96.3	(95.9 - 96.8)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.
 N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

In 2015, 3.7% of the population had a health problem requiring the use of special equipment, such as a cane, a wheelchair, a special bed or a special telephone. This is equivalent to an estimated 75,236 people in WA.

7. CHRONIC HEALTH CONDITIONS

Chronic health conditions refer to long-term conditions (lasting more than six months) that can have a significant impact on a person's life. The chronic conditions collected by the HWSS were chosen due to their health impact and the potential to reduce their burden.¹⁴ In the HWSS, prevalence of a chronic condition was determined by asking respondents whether or not a doctor had ever diagnosed them with a number of common health conditions.

7.1 Arthritis and osteoporosis

Arthritis and osteoporosis are musculoskeletal conditions that can greatly reduce quality of life. Arthritis causes inflammation of the joints, while osteoporosis is a disease where bone density and structural quality deteriorate, leading to an increased risk of fracture.¹⁵ The lifetime prevalence of arthritis and/or osteoporosis is shown in Table 10.

Table 10: Prevalence of arthritis and/or osteoporosis, 16 years & over, HWSS 2015

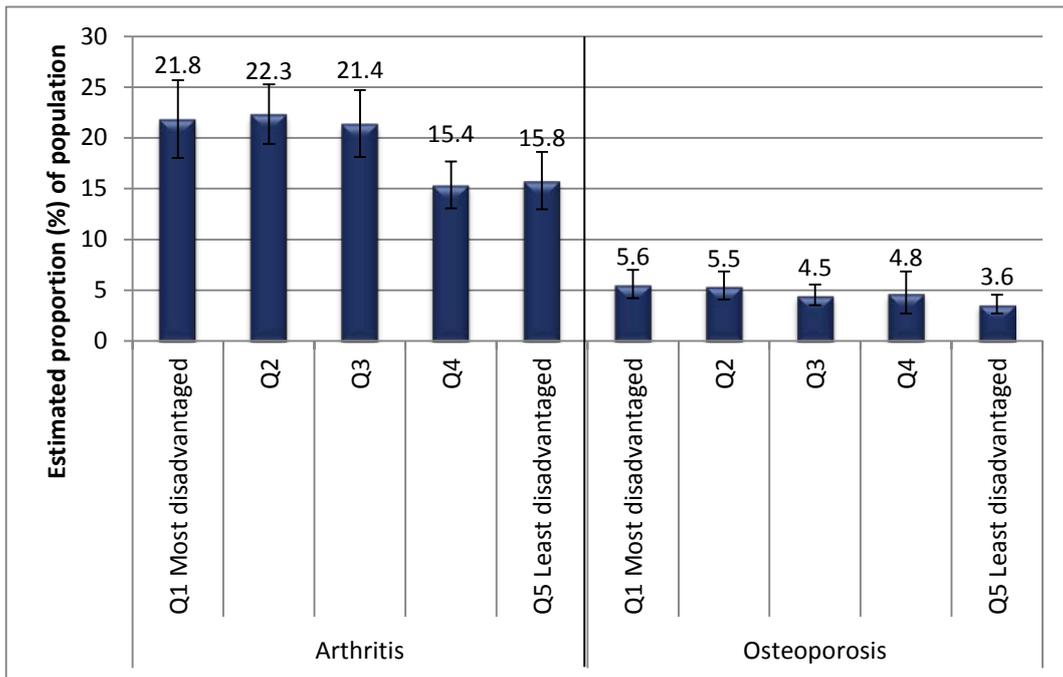
	Arthritis		Osteoporosis	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	4.7 *	(2.3 - 7.2)	N/A	(N/A - N/A)
Females	5.9	(3.5 - 8.2)	N/A	(N/A - N/A)
Persons	5.3	(3.5 - 7.0)	N/A	(N/A - N/A)
45 to 64 yrs				
Males	22.5	(19.4 - 25.6)	2.9	(1.7 - 4.0)
Females	30.6	(27.8 - 33.3)	7.6	(6.0 - 9.2)
Persons	26.5	(24.4 - 28.6)	5.2	(4.2 - 6.2)
65 yrs & over				
Males	40.5	(37.0 - 43.9)	8.3	(6.3 - 10.3)
Females	59.2	(56.5 - 62.0)	24.1	(21.8 - 26.5)
Persons	50.4	(48.2 - 52.7)	16.7	(15.1 - 18.3)
Total				
Males	15.4	(13.5 - 17.3)	2.2	(1.7 - 2.8)
Females	22.5	(20.6 - 24.4)	7.2	(6.0 - 8.4)
Persons	18.9	(17.6 - 20.2)	4.7	(4.0 - 5.4)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Females were significantly more likely than males to report having been diagnosed with arthritis and/or osteoporosis. The prevalence of arthritis and osteoporosis increased significantly with age.

Figure 7 shows the lifetime prevalence of arthritis and osteoporosis by SEIFA quintiles.

Figure 7: Prevalence of arthritis and osteoporosis, 16 years & over, by SEIFA quintiles in WA, HWSS 2015



The lifetime prevalence of arthritis was significantly higher in the most disadvantaged quintiles (Q1, Q2 and Q3) compared with the second least disadvantaged quintile (Q4; 15.4%). The lifetime prevalence of arthritis was also significantly higher in SEIFA quintile 2 compared with the least disadvantaged quintile (Q5). There were no significant differences in the lifetime prevalence of osteoporosis by SEIFA quintiles.

The standardised annual prevalence estimates of arthritis and osteoporosis for adults aged 25 years and over are shown in Table 11.

Table 11: Prevalence of arthritis and osteoporosis over time, 25 years & over, HWSS 2002–15

	Arthritis			Osteoporosis		
	Males	Females	Persons	Males	Females	Persons
2002	21.0	28.3	24.6	-	-	-
2003	23.0	28.7	25.9	2.0	8.2	5.1
2004	20.6	31.7	26.1	2.1	9.9	6.0
2005	21.9	28.4	25.1	2.7	8.8	5.8
2006	20.5	28.7	24.6	2.8	8.5	5.6
2007	20.0	28.3	24.2	2.8	8.2	5.5
2008	20.3	28.1	24.2	2.4	9.2	5.8
2009	19.6	27.4	23.5	2.4	8.6	5.5
2010	21.2	26.4	23.8	2.5	8.9	5.7
2011	18.1	27.0	22.6	2.6	8.1	5.4
2012	18.3	25.9	22.1	2.7	8.6	5.7
2013	18.6	26.5	22.5	2.9	8.1	5.5
2014	18.0	26.8	22.4	2.7	8.4	5.6
2015	18.3	25.9	22.1	2.7	8.4	5.6
Average	19.9	27.6	23.8	2.7	8.6	5.7

- This information is not available in 2002.

The prevalence of arthritis for males in 2015 was significantly lower than in 2003. For females, the prevalence of arthritis in 2015 was significantly lower than in 2004 and, for all persons, the 2015 estimate was significantly lower when compared with 2003-05 estimates.

There were no significant differences when the 2015 prevalence of osteoporosis was compared with previous years.

7.2 Heart disease and stroke

Cardiovascular disease, such as heart disease and stroke, is the largest cause of premature death in Australia and accounts for the highest proportion of health system costs, much of which is preventable.¹⁶ The lifetime prevalence of heart disease and/or stroke is shown in Table 12.

Table 12: Prevalence of heart disease and/or stroke, 16 years & over, HWSS 2015

	Heart Disease		Stroke	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Females	0.4 *	(2.7 - 4.9)	N/A	(N/A - N/A)
Persons	0.5 *	(0.1 - 0.9)	N/A	(N/A - N/A)
45 to 64 yrs				
Males	6.7	(5.0 - 8.5)	0.9 *	(0.5 - 1.4)
Females	3.8	(2.7 - 4.9)	0.9 *	(0.4 - 1.4)
Persons	5.3	(4.2 - 6.3)	0.9	(0.6 - 1.3)
65 yrs & over				
Males	27.7	(24.5 - 30.9)	8.7	(6.7 - 10.7)
Females	16.2	(14.2 - 18.2)	5.6	(4.3 - 6.8)
Persons	21.6	(19.7 - 23.4)	7.0	(5.9 - 8.2)
Total				
Males	6.4	(5.5 - 7.4)	2.0	(1.4 - 2.6)
Females	4.1	(3.6 - 4.7)	1.2	(1.0 - 1.5)
Persons	5.3	(4.7 - 5.8)	1.6	(1.3 - 1.9)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

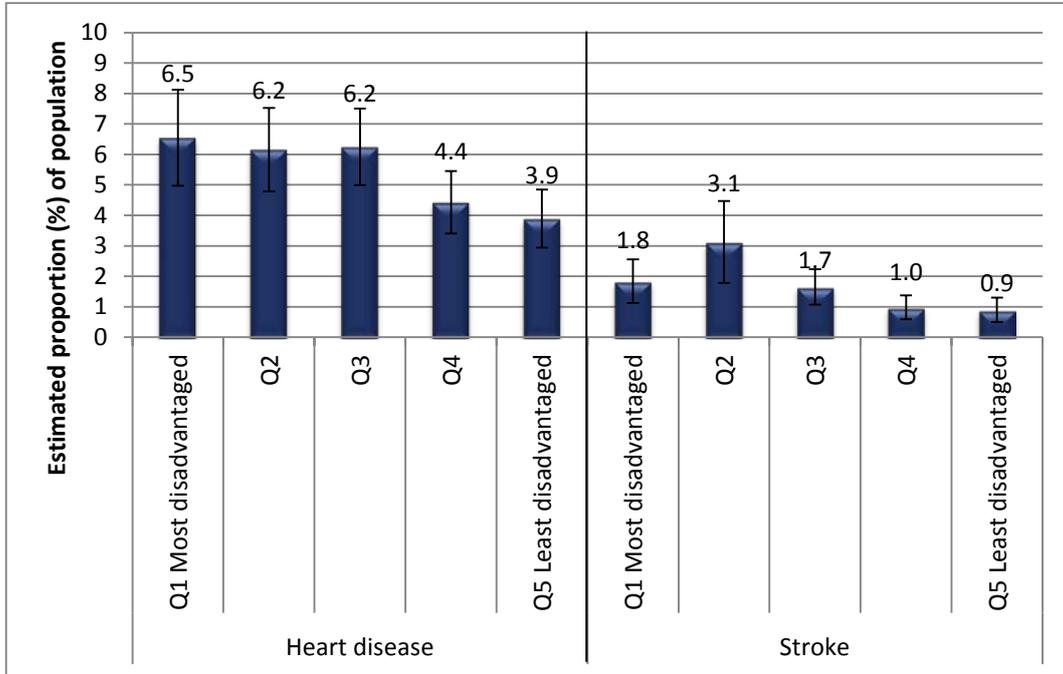
The prevalence of heart disease was significantly higher in males compared with females (6.4% compared with 4.1%). Adults aged 65 years and over were four times more likely to report heart disease compared with those aged 45 to 64 years.

The prevalence of stroke increased significantly with age (7.0% adults 65 years and over compared with 0.9% adults 45 to 64 years).

The prevalence of heart disease was significantly higher in the most disadvantaged quintile (Q1) and quintile 3 compared with the least disadvantaged quintile (Q5), as

shown in Figure 8. The prevalence of stroke was significantly higher in SEIFA quintile 2 compared with SEIFA quintile 4 and 5.

Figure 8: Prevalence of heart disease and stroke, 16 years & over, by SEIFA quintiles in WA, HWSS 2015



The standardised annual prevalence estimates of heart disease and stroke for adults aged 25 years and older are shown in Table 13.

Table 13: Prevalence of heart disease and stroke over time, 25 years & over, HWSS 2002–15

	Heart disease			Stroke		
	Males	Females	Persons	Males	Females	Persons
2002	9.2	6.5	7.8	2.3	1.1	1.7
2003	9.0	4.5	6.7	2.5	2.4	2.5
2004	9.7	6.4	8.1	3.1	2.1	2.6
2005	8.8	5.9	7.3	1.9	1.9	1.9
2006	9.2	5.4	7.6	2.6	1.6	2.1
2007	9.2	5.9	7.6	3.0	1.7	2.3
2008	7.8	5.1	6.4	2.7	2.2	2.4
2009	8.3	5.5	6.9	2.6	2.0	2.3
2010	9.0	5.1	7.0	2.4	1.6	2.0
2011	8.6	5.7	7.2	2.5	1.9	2.2
2012	8.2	4.8	6.5	2.3	1.5	1.9
2013	8.9	5.2	7.0	2.0	1.5	1.8
2014	8.0	5.1	6.5	1.8	1.6	1.7
2015	7.5	4.8	6.2	2.2	1.4	1.8
Average	8.6	5.3	6.9	2.4	1.7	2.0

The prevalence of heart disease among females and all persons in 2015 was significantly lower compared with 2002. The prevalence of stroke among females in 2015 was significantly lower than 2003.

7.3 Cancer and skin cancer

Cancer is the name given to diseases that are characterised by the abnormal proliferation of cells that can invade other tissues and spread through the body and do not respond to normal growth controls.¹⁷ In WA, there were 12,364 new cases of cancer recorded in 2014.¹⁸ According to the Cancer Council Australia, approximately 30% of cancer cases could be prevented by modifying lifestyle behaviours.¹⁹

Respondents were asked if they had ever been diagnosed with skin cancer or a cancer other than skin cancer. The prevalence of skin cancer and other cancer is shown in Table 14.

Table 14: Prevalence of cancer and skin cancer, 16 years & over, HWSS 2015

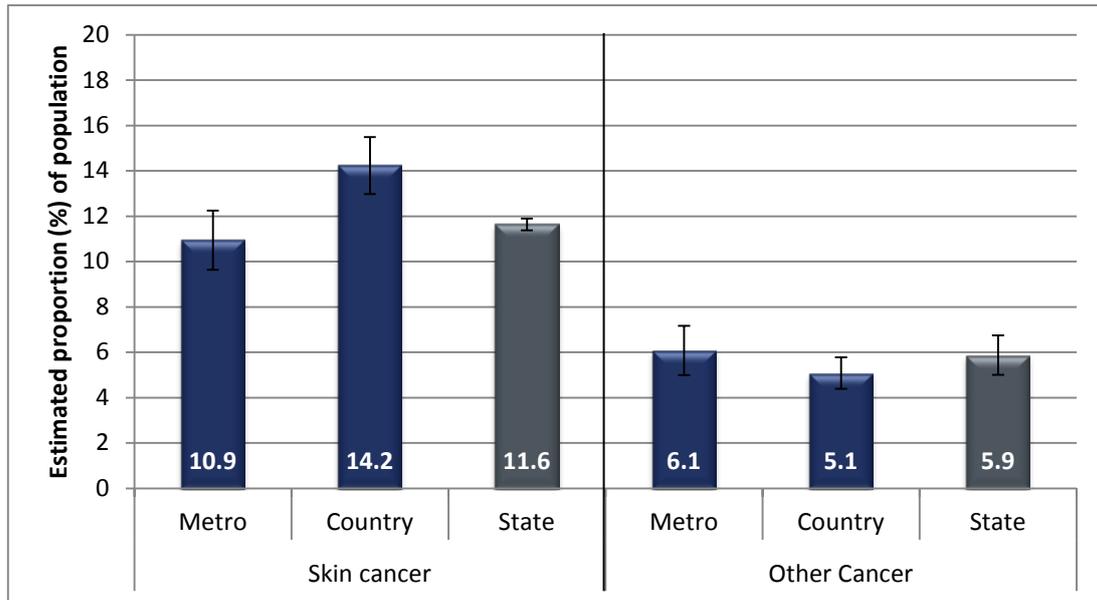
	Skin Cancer		Other Cancer	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	3.2 *	(0.8 - 5.7)	N/A	(N/A - N/A)
Females	2.8 *	(1.2 - 4.3)	3.1 *	(0.9 - 5.4)
Persons	3.0 *	(1.5 - 4.5)	2.3 *	(0.9 - 3.6)
45 to 64 yrs				
Males	16.3	(13.6 - 19.0)	6.3	(4.5 - 8.2)
Females	14.7	(12.7 - 16.8)	6.8	(5.3 - 8.2)
Persons	15.5	(13.8 - 17.2)	6.5	(5.4 - 7.7)
65 yrs & over				
Males	38.0	(34.7 - 41.4)	17.0	(14.4 - 19.7)
Females	29.2	(26.7 - 31.7)	16.5	(14.4 - 18.6)
Persons	33.3	(31.2 - 35.4)	16.7	(15.1 - 18.4)
Total				
Males	12.3	(10.6 - 14.1)	5.2	(4.1 - 6.4)
Females	10.9	(9.7 - 12.2)	6.5	(5.2 - 7.8)
Persons	11.6	(10.6 - 12.7)	5.9	(5.0 - 6.7)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

The prevalence of skin cancer was significantly higher than all other cancer for people 45 years and over (45 to 64 year olds; 15.5% compared with 6.5%, 65 years and over; 33.3% compared with 16.7%). The prevalence of both skin cancer and any other cancer increased significantly with age.

Figure 9 shows the prevalence of skin cancer and other cancer by geographic area of residence in WA. The prevalence of skin cancer was significantly higher in the country areas compared with the metro areas (14.2% compared with 10.9%).

Figure 9: Prevalence of skin cancer and cancer, 16 years & over, by geographic area of residence in WA, HWSS 2015



Due to changes in the way the question on cancer was asked, standardised annual prevalence estimates of cancer for adults aged 16 years and over can only be compared since 2007 (Table 15).

Table 15: Prevalence of cancer, excluding skin cancer, over time, 16 years & over, HWSS 2007–15

	Males	Females	Persons
2007	4.4	5.6	5.0
2008	4.5	5.3	4.9
2009	4.3	5.6	4.9
2010	4.9	5.8	5.3
2011	4.0	6.4	5.2
2012	4.4	6.6	5.5
2013	5.0	5.6	5.3
2014	4.4	6.0	5.2
2015	5.2	6.4	5.8
Average	5.1	6.5	5.8

The prevalence estimate in 2015 was not significantly different to previous years.

7.4 Diabetes

Diabetes is a condition where the body is unable to maintain normal blood glucose levels. Diabetes contributes significantly to ill health, disability and premature death in Australia.²⁰ Table 16 shows the prevalence of diabetes (of any type) in Western Australia. Table 16 also shows the proportion of diabetics with type 2 diabetes.

Table 16: Prevalence of all diabetes and proportion of diabetics with type 2 diabetes, 16 years & over, HWSS 2015

	All Diabetes (a)		Proportion of all Diabetes being Type 2 Diabetes (b)	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	0.9 *	(0.2 - 1.7)	70.3	(36.4 - 100.0)
Females	3.4 *	(1.4 - 5.3)	N/A	(N/A - N/A)
Persons	2.1	(1.1 - 3.1)	41.0 *	(15.1 - 66.8)
45 to 64 yrs				
Males	7.8	(5.8 - 9.9)	90.5	(83.8 - 97.3)
Females	6.5	(4.9 - 8.1)	71.1	(58.9 - 83.3)
Persons	7.2	(5.9 - 8.5)	81.7	(74.7 - 88.8)
65 yrs & over				
Males	21.2	(18.3 - 24.1)	94.8	(91.5 - 98.1)
Females	13.2	(11.3 - 15.1)	92.3	(88.2 - 96.3)
Persons	16.9	(15.2 - 18.6)	93.8	(91.2 - 96.3)
Total				
Males	6.0	(5.0 - 6.9)	91.1	(86.8 - 95.3)
Females	6.0	(4.8 - 7.2)	67.7	(57.7 - 77.7)
Persons	6.0	(5.2 - 6.8)	79.5	(73.7 - 85.3)

(a) Includes type 1 (insulin dependent, juvenile onset), type 2, gestational, other and unknown diabetes.

(b) Type 2 (non-insulin dependent, mature onset) diabetes.

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

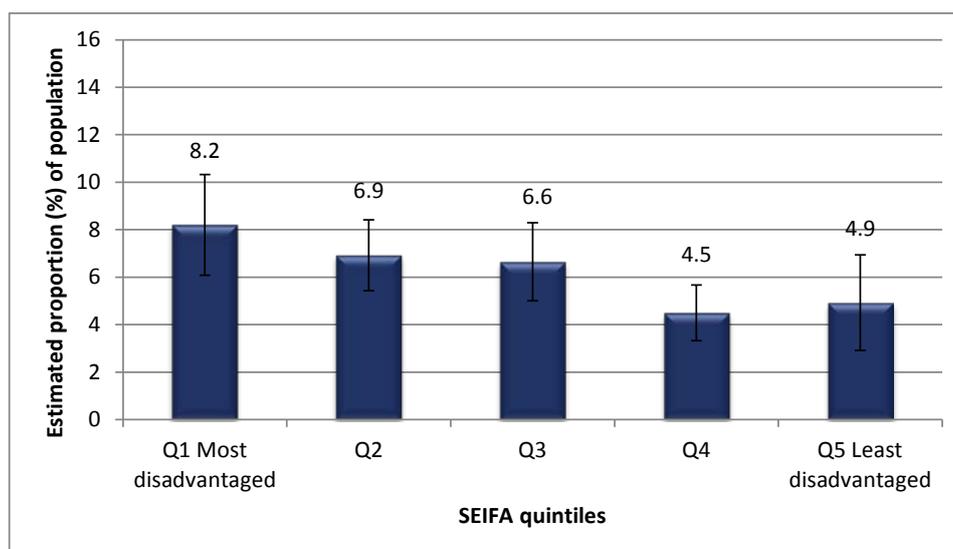
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Approximately one in eighteen people (6.0%) reported having ever been diagnosed with diabetes; this represents approximately 107,615 people in WA. The prevalence of diabetes increased significantly with age, with those aged 65 years and over being eight times more likely to report diabetes compared with those aged 16 to 44 years.

Of those persons 16 years and over who reported ever being diagnosed with diabetes, almost four in five (79.5%) were diagnosed with type 2 diabetes.

Figure 10 illustrates the prevalence of diabetes in WA adults by SEIFA quintiles. The prevalence of diabetes was significantly higher amongst people in geographic areas classified as most disadvantaged (Q1) (8.2%) compared with people in geographic areas in SEIFA quintile 4 (4.5%).

Figure 10: Prevalence of diabetes, 16 years & over, by SEIFA quintiles in WA, HWSS 2015

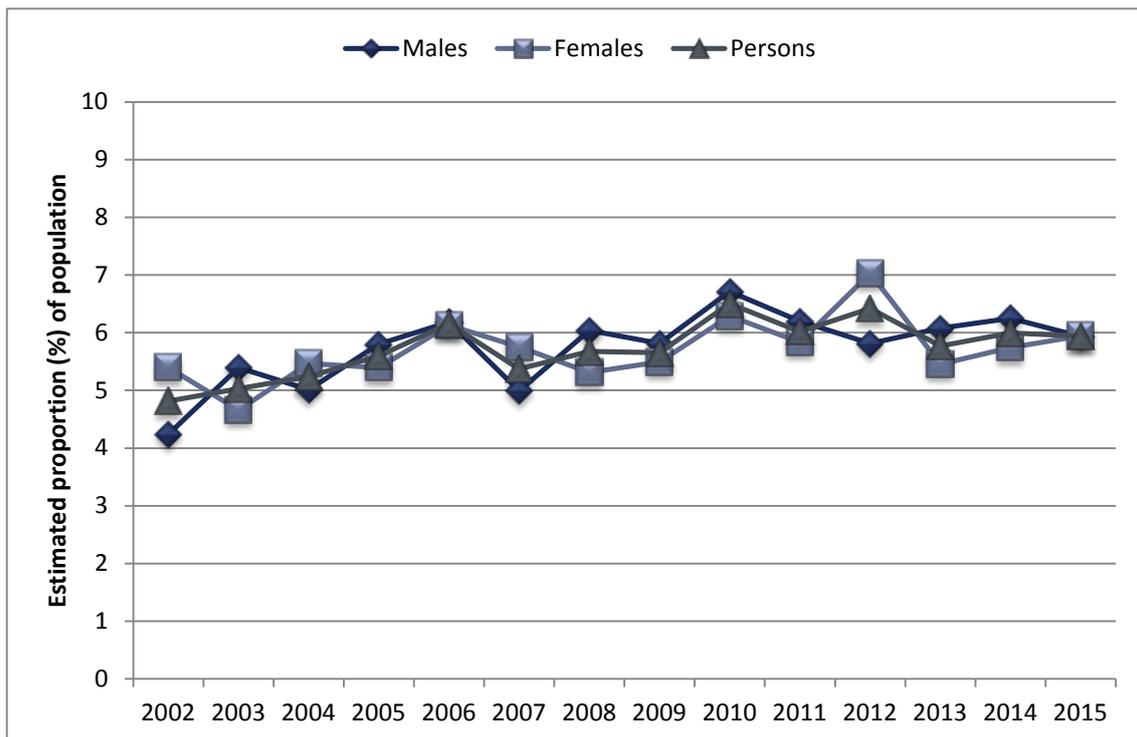


The standardised annual prevalence estimates of diabetes for adults aged 16 years and over are shown in Table 17 and Figure 11.

Table 17: Prevalence of diabetes over time, 16 years & over, HWSS 2002–15

	Males	Females	Persons
2002	4.2	5.4	4.8
2003	5.4	4.7	5.0
2004	5.0	5.5	5.2
2005	5.8	5.4	5.6
2006	6.2	6.1	6.2
2007	5.0	5.8	5.4
2008	6.0	5.3	5.7
2009	5.8	5.5	5.7
2010	6.7	6.3	6.5
2011	6.2	5.8	6.0
2012	5.8	7.0	6.4
2013	6.1	5.5	5.8
2014	6.3	5.7	6.0
2015	5.9	5.9	5.9
Average	5.8	5.7	5.7

Figure 11: Prevalence of diabetes over time, 16 years & over, HWSS 2002–15



There were no significant differences when the 2015 prevalence estimate for diabetes was compared with previous year's estimates.

7.5 Injury

Injury is a major cause of hospitalisation and death in Australia.²¹ One of the primary contributors to the injury burden arises from the management of injuries in older people that resulted from falls.²² Respondents were asked whether they had any injuries in the past 12 months that required treatment from a health professional and if so, whether these injuries were due to falls. Prevalence estimates for adults in WA are shown in Table 18.

Table 18: Prevalence of injuries and falls in past 12 months, 16 years & over, HWSS 2015

	Injury		Proportion of injuries due to falls (a)		Injury due to falls, all respondents (b)	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	31.5	(25.7 - 37.3)	27.5	(16.7 - 38.4)	8.7	(4.8 - 12.6)
Females	22.0	(17.5 - 26.5)	27.8	(16.9 - 38.8)	6.1	(3.3 - 8.9)
Persons	26.9	(23.2 - 30.7)	27.6	(19.8 - 35.5)	7.4	(5.0 - 9.9)
45 to 64 yrs						
Males	23.1	(19.8 - 26.3)	20.0	(13.8 - 26.2)	4.6	(3.1 - 6.1)
Females	22.4	(19.8 - 25.0)	34.3	(28.0 - 40.6)	7.7	(6.0 - 9.4)
Persons	22.7	(20.6 - 24.8)	27.0	(22.5 - 31.5)	6.1	(5.0 - 7.3)
65 yrs & over						
Males	14.4	(12.0 - 16.9)	33.1	(24.8 - 41.3)	4.8	(3.4 - 6.2)
Females	14.8	(12.9 - 16.8)	56.8	(49.7 - 63.9)	8.4	(6.9 - 9.9)
Persons	14.6	(13.1 - 16.2)	45.8	(40.2 - 51.4)	6.7	(5.7 - 7.7)
Total						
Males	26.4	(23.0 - 29.8)	26.0	(18.6 - 33.4)	6.9	(4.6 - 9.1)
Females	20.9	(18.4 - 23.4)	33.5	(27.1 - 39.9)	7.0	(5.4 - 8.6)
Persons	23.7	(21.6 - 25.8)	29.3	(24.3 - 34.3)	6.9	(5.6 - 8.3)

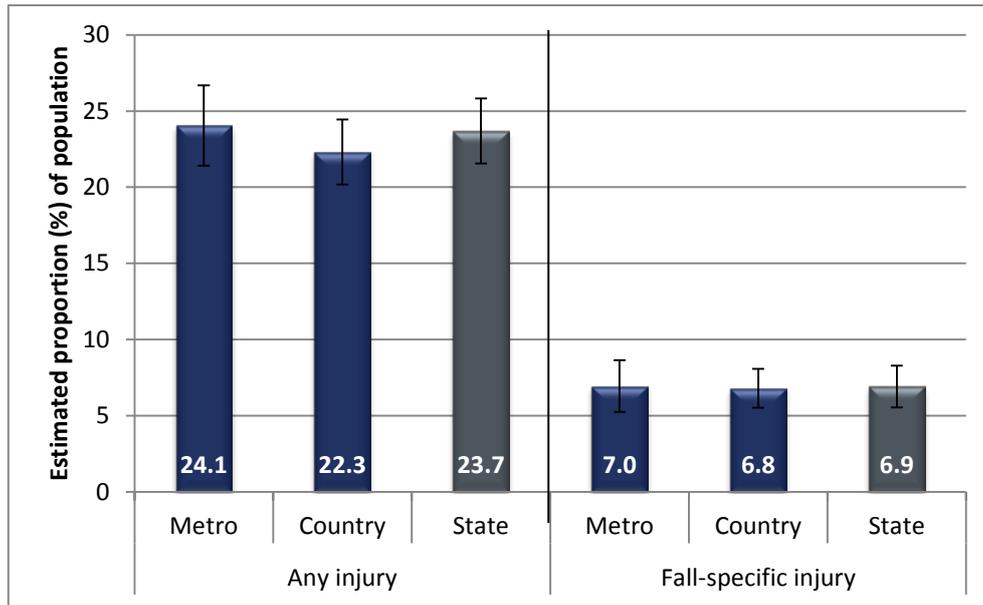
(a) As a proportion of respondents reporting an injury.

(b) As a proportion of all respondents.

More than one in five people (23.7%) reported an injury in the past 12 months that required treatment from a health professional with almost one-third of these injuries (29.3%) being the result of a fall.

As shown in Figure 12, there were no significant differences in the prevalence of injuries or falls by geographic area of residence.

Figure 12: Prevalence of any injury and fall in the past 12 months, 16 years & over, by geographic area of residence in WA, HWSS 2015



The standardised annual prevalence estimates of injury requiring treatment by a health professional for adults aged 16 years and over are shown in Table 19 and the mean numbers of injuries are shown in Table 20. There were no significant differences in the prevalence of injuries over time or in the mean number of injuries over time.

Table 19: Prevalence of injuries (a), in the past 12 months, over time, 16 years & over, HWSS 2002–15

	Males	Females	Persons
2002	29.9	19.2	24.5
2003	30.5	19.1	24.8
2004	25.3	17.4	21.4
2005	26.8	16.9	21.9
2006	26.8	17.7	22.3
2007	29.4	19.5	24.4
2008	26.4	18.6	22.5
2009	24.5	18.7	21.6
2010	25.4	20.8	23.1
2011	27.4	21.7	24.6
2012	27.0	21.8	24.4
2013	26.5	19.3	22.9
2014	25.8	19.0	22.4
2015	26.5	20.8	23.7
Average	27.3	19.4	23.4

(a) Injuries in the past 12 months that required treatment from a health professional

Table 20: Mean number of injuries (a) in the past 12 months over time, 16 years & over, HWSS 2002–15

	Males	Females	Persons
2002	0.5	0.3	0.4
2003	0.5	0.3	0.4
2004	0.4	0.3	0.3
2005	0.4	0.2	0.3
2006	0.4	0.2	0.3
2007	0.5	0.3	0.4
2008	0.4	0.3	0.3
2009	0.3	0.3	0.3
2010	0.4	0.3	0.3
2011	0.5	0.3	0.4
2012	0.5	0.3	0.4
2013	0.4	0.3	0.4
2014	0.4	0.3	0.3
2015	0.4	0.3	0.4
Average	0.4	0.3	0.4

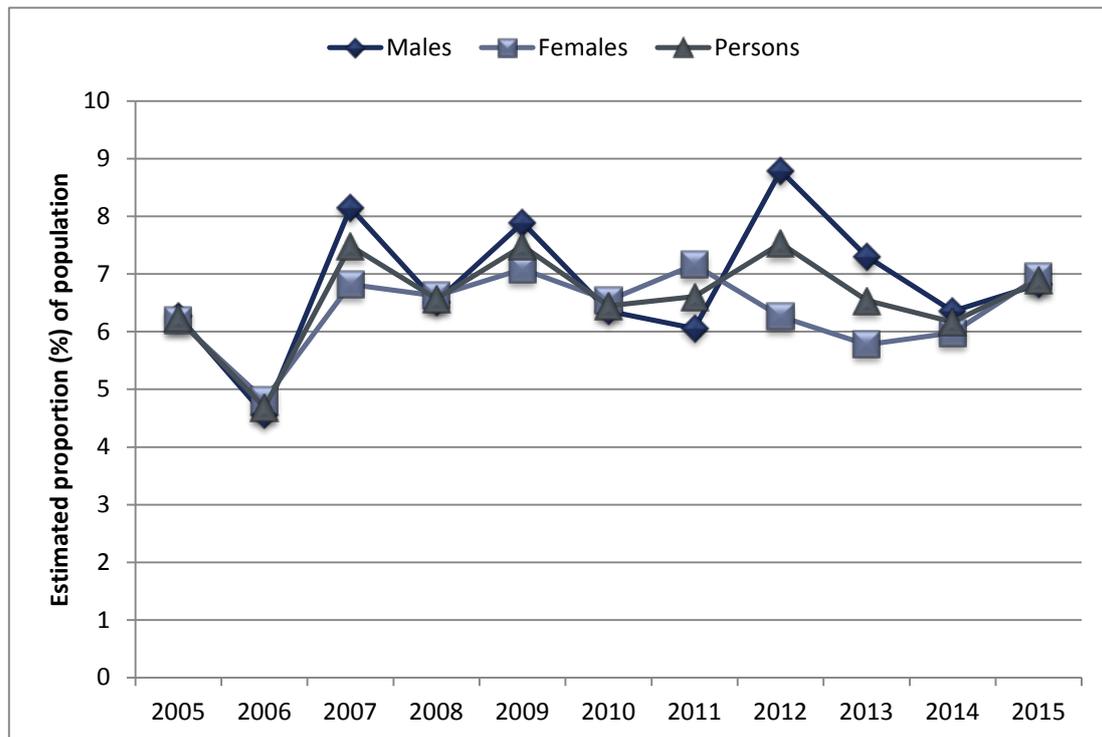
(a) Injuries in the past 12 months that required treatment from a health professional

It is possible to have a mean number of injuries that is less than one as the majority of people do not experience any injury in the previous year. However, a mean of 0.4

injuries still equates to 485,093 injuries among Western Australian adults that required treatment by a health care professional in 2015 alone.

Figure 13 illustrates the annual prevalence estimates for falls in the past 12 months, since 2005.

Figure 13: Prevalence of falls (a) in the last 12 months over time, 16 years & over, HWSS 2005–15



(a) Falls in the past 12 months that required treatment from a health professional

7.6 Asthma

Asthma is a common chronic condition defined clinically as the combination of variable respiratory symptoms (such as wheezing, coughing, tightness of the chest, breathing difficulty and shortness of breath) and excessive variation in lung function.²³ Respondents were asked whether a doctor had ever told them they had asthma and whether they had symptoms or had taken treatment for asthma during the past 12 months. Respondents who reported ever being diagnosed with asthma were also asked if they have an asthma action plan. The prevalence of asthma and asthma action plans (of those who reported having asthma) is shown in Table 21.

Table 21: Prevalence of asthma and asthma action plan, 16 years & over, HWSS 2015

	Lifetime (ever)		Period (current) (a)		Action plan (b)	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	16.5	(12.1 - 21.0)	8.2	(4.8 - 11.5)	16.7 *	(4.6 - 28.9)
Females	19.2	(14.9 - 23.5)	13.2	(9.4 - 17.0)	23.5	(13.2 - 33.8)
Persons	17.8	(14.7 - 20.9)	10.6	(8.1 - 13.1)	20.3	(12.4 - 28.1)
45 to 64 yrs						
Males	10.8	(8.3 - 13.2)	6.5	(4.6 - 8.5)	27.7	(16.8 - 38.6)
Females	14.2	(12.1 - 16.3)	10.4	(8.5 - 12.2)	40.0	(32.1 - 48.0)
Persons	12.5	(10.9 - 14.1)	8.5	(7.1 - 9.8)	34.7	(28.1 - 41.3)
65 yrs & over						
Males	9.1	(7.0 - 11.1)	4.9	(3.4 - 6.4)	23.2	(13.4 - 32.9)
Females	12.2	(10.4 - 14.0)	8.3	(6.7 - 9.9)	32.2	(24.7 - 39.7)
Persons	10.7	(9.4 - 12.1)	6.7	(5.6 - 7.8)	28.6	(22.6 - 34.6)
Total						
Males	13.7	(11.1 - 16.2)	7.2	(5.3 - 9.1)	20.0	(11.5 - 28.5)
Females	16.5	(14.1 - 18.9)	11.5	(9.4 - 13.6)	29.0	(22.2 - 35.8)
Persons	15.1	(13.3 - 16.8)	9.3	(7.9 - 10.8)	24.9	(19.5 - 30.2)

(a) Current asthma is defined as having had symptoms of, or treatment for, asthma in the previous twelve months.

(b) Written instructions, developed with a doctor, of what to do if the asthma is worse or out of control.

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Approximately one in eleven Western Australians (9.3%) have had symptoms of or taken treatment for asthma in the past 12 months. This is defined as current asthma and is equivalent to over 191,259 people in WA. Those aged 16 to 44 years were significantly more likely to report ever having symptoms of or taking treatment for asthma when compared with those aged 65 years and older (10.6% compared with 6.7%).

Figure 14 shows the prevalence of asthma (ever and current) by SEIFA quintiles. There were no statistically significant differences the prevalence of lifetime (ever) asthma. The prevalence of current asthma was significantly lower in the least disadvantaged quintile (Q5) compared with the most disadvantaged quintile (Q1) (5.6% compared with 15.1%).

Figure 14: Prevalence of asthma, 16 years & over, by SEIFA quintiles in WA, HWSS 2015

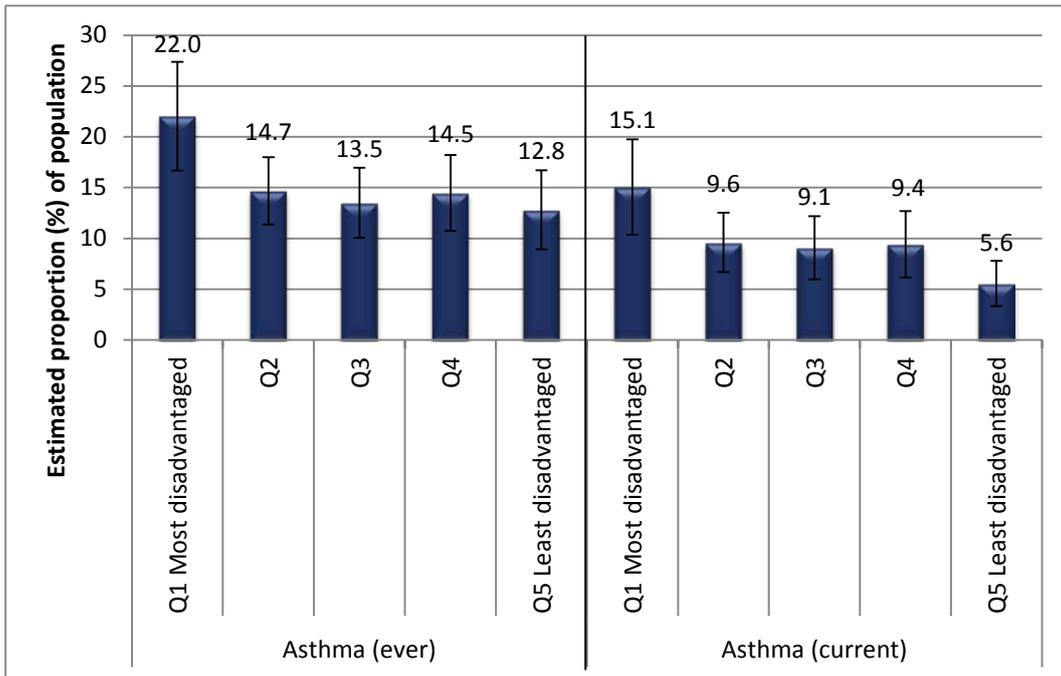
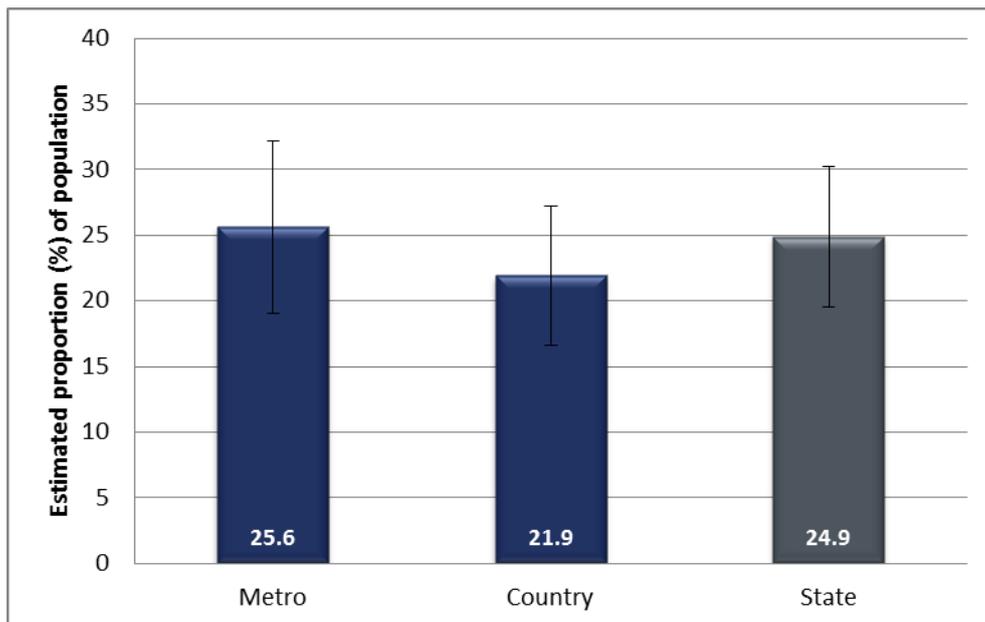


Figure 15 shows the prevalence of asthma action plans by geographic area of residence. There were no significant differences in the prevalence of having an asthma action plans by geographic area of residence.

Figure 15: Prevalence of asthma action plans, 16 years & over, by geographic area of residence in WA, HWSS 2015



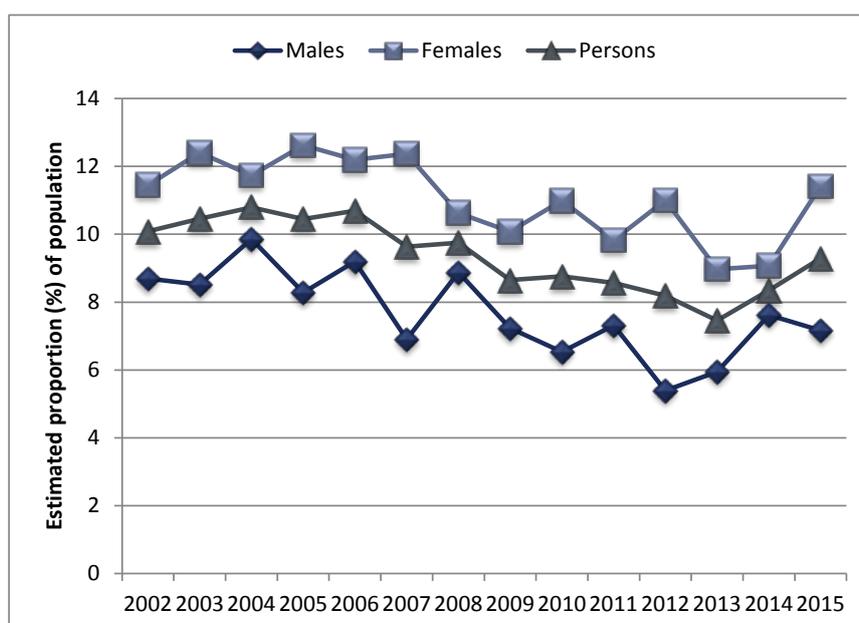
The standardised annual prevalence estimates of asthma for adults aged 16 years and over are shown in Table 22 and Figure 16. There were no significant differences when the prevalence of lifetime or current asthma in 2015 was compared with previous years.

Table 22: Prevalence of asthma over time, 16 years & over, HWSS 2002–15

	Lifetime (ever)			Period (current) (a)		
	Males	Females	Persons	Males	Females	Persons
2002	16.3	17.7	17.0	8.7	11.4	10.1
2003	15.9	18.5	17.2	8.5	12.4	10.5
2004	17.0	18.8	17.9	9.9	11.7	10.8
2005	14.5	18.1	16.3	8.3	12.6	10.4
2006	16.5	18.3	17.4	9.2	12.2	10.7
2007	15.5	21.4	18.5	6.9	12.4	9.6
2008	16.9	17.9	17.4	8.9	10.6	9.7
2009	14.0	16.3	15.2	7.2	10.1	8.6
2010	14.3	17.3	15.8	6.5	11.0	8.8
2011	13.2	17.2	15.2	7.3	9.8	8.6
2012	13.4	17.3	15.3	5.4	11.0	8.2
2013	11.5	14.9	13.2	6.0	9.0	7.5
2014	13.6	13.5	13.6	7.6	9.1	8.3
2015	13.6	16.5	15.0	7.2	11.4	9.3
Average	14.8	17.4	16.1	7.6	11.2	9.4

(a) Current asthma is defined as having had symptoms of, or treatment for, asthma in the previous twelve months.

Figure 16: Prevalence of current asthma (a) over time, 16 years & over, HWSS 2002–15



(a) Current asthma is defined as having had symptoms of, or treatment for, asthma in the previous twelve months.

Respondents who reported having ever been diagnosed with asthma were asked how often, in the last 4 weeks, their asthma interfered with daily activities. Of those people who have been diagnosed with asthma, approximately one in four (24.1%) said that during the last four weeks their asthma interfered with their daily activities some, all or most of the time. The prevalence of asthma interference is shown in Table 23.

Table 23: Prevalence of asthma interfering with daily activities in the last 4 weeks, 16 years & over, HWSS 2015

	All or most of the time		Some of the time		None of the time	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	N/A	(N/A - N/A)	17.5 *	(5.3 - 29.7)	75.8	(61.9 - 89.7)
Females	3.2 *	(0.2 - 6.3)	23.5	(13.1 - 34.0)	73.2	(62.5 - 84.0)
Persons	4.9 *	(0.3 - 9.4)	20.7	(12.7 - 28.6)	74.5	(65.8 - 83.1)
45 to 64 yrs						
Males	N/A	(N/A - N/A)	14.1 *	(6.6 - 21.6)	83.0	(74.6 - 91.4)
Females	5.4 *	(1.9 - 8.9)	21.4	(14.7 - 28.0)	73.2	(66.1 - 80.3)
Persons	4.3 *	(1.5 - 7.1)	18.2	(13.2 - 23.2)	77.5	(72.0 - 83.0)
65 yrs & over						
Males	N/A	(N/A - N/A)	12.1 *	(5.1 - 19.1)	83.4	(75.2 - 91.6)
Females	7.0 *	(2.8 - 11.3)	14.3	(9.2 - 19.4)	78.6	(72.3 - 84.9)
Persons	6.0 *	(2.9 - 9.2)	13.5	(9.3 - 17.6)	80.5	(75.5 - 85.5)
Total						
Males	N/A	(N/A - N/A)	16.2 *	(7.8 - 24.5)	78.3	(68.7 - 87.8)
Females	4.3 *	(2.1 - 6.5)	21.8	(15.1 - 28.4)	73.9	(67.1 - 80.8)
Persons	4.9 *	(1.9 - 7.9)	19.2	(14.0 - 24.5)	75.9	(70.2 - 81.6)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

7.7 Respiratory condition other than asthma

Respondents were asked whether a doctor had told them they had a respiratory problem other than asthma, such as chronic bronchitis, emphysema, or chronic lung disease that lasted six months or more.

The prevalence of respiratory conditions in WA is shown in Table 24. Both the prevalence of ever having had respiratory conditions and currently having respiratory conditions increased significantly with age.

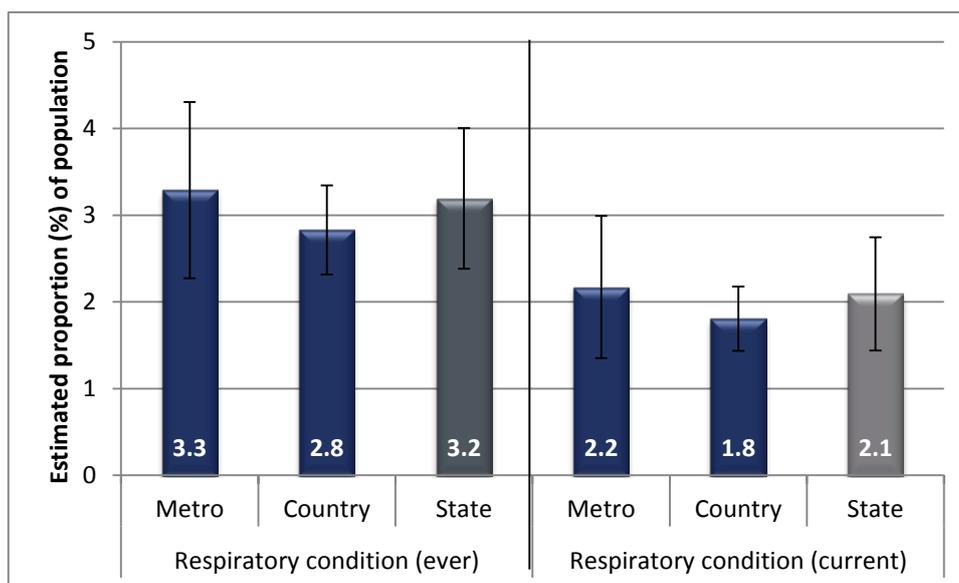
Table 24: Prevalence of respiratory conditions other than asthma, 16 years & over, HWSS 2015

	Lifetime (ever)		Period (current)	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Females	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Persons	N/A	(N/A - N/A)	N/A	(N/A - N/A)
45 to 64 yrs				
Males	3.9	(2.5 - 5.4)	2.7	(1.5 - 3.9)
Females	4.2	(3.0 - 5.4)	2.3	(1.5 - 3.2)
Persons	4.0	(3.1 - 5.0)	2.5	(1.8 - 3.3)
65 yrs & over				
Males	8.7	(6.8 - 10.7)	6.5	(4.8 - 8.2)
Females	7.3	(5.8 - 8.7)	5.9	(4.6 - 7.2)
Persons	8.0	(6.8 - 9.2)	6.2	(5.1 - 7.3)
Total				
Males	3.3	(1.9 - 4.6)	2.4 *	(1.1 - 3.6)
Females	3.1	(2.2 - 4.1)	1.8	(1.4 - 2.2)
Persons	3.2	(2.4 - 4.0)	2.1	(1.4 - 2.7)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Figure 17 shows the prevalence of respiratory conditions other than asthma by geographic area of residence. There were no statistically significant differences in the prevalence of respiratory conditions (ever or current) by geographic area.

Figure 17: Prevalence of respiratory conditions other than asthma, 16 years & over, by geographic area of residence in WA, HWSS 2015



The standardised annual prevalence estimates of a respiratory condition other than asthma for adults aged 16 years and over are shown in Table 25. Due to changes in the way the question was asked, the respiratory condition information is only comparable from 2007. The prevalence estimates for ever or current respiratory conditions have not changed significantly since 2007.

Table 25: Prevalence of respiratory conditions other than asthma over time, 16 years & over, HWSS 2007–15

	Lifetime (ever)			Period (current)		
	Males	Females	Persons	Males	Females	Persons
2007	3.6	3.2	3.4	2.6	1.8	2.2
2008	3.7	3.4	3.6	2.4	2.2	2.3
2009	3.9	3.0	3.4	2.5	1.7	2.1
2010	2.6	3.3	3.0	1.7	1.9	1.8
2011	3.8	3.3	3.5	2.7	1.9	2.3
2012	2.5	2.6	2.5	1.9	1.6	1.7
2013	3.9	2.6	3.3	2.6	1.6	2.1
2014	2.8	3.2	3.0	1.8	1.8	1.8
2015	3.2	3.1	3.2	2.3	1.8	2.0
Average	3.6	3.4	3.5	2.5	2.1	2.3

7.8 Mental health

Mental health conditions include both short-term conditions, such as depression and anxiety as well as long-term conditions, such as chronic depression and schizophrenia. Mental health problems are associated with high rates of co-morbid disorders such as physical disorders, epilepsy and diabetes.²⁴

Respondents were asked whether or not a doctor had diagnosed them with a number of common mental health conditions during the past 12 months. The population prevalence of each condition is shown in Table 26.

Table 26: Prevalence of mental health conditions, 16 years & over, HWSS 2015

	Anxiety		Depression		Stress-related problem		Other mental health condition	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs								
Males	8.4	(4.7- 12.2)	7.7	(4.2- 11.3)	8.1	(4.6- 11.6)	2.5 *	(0.5- 4.4)
Females	11.7	(8.2- 15.2)	8.8	(5.9- 11.7)	12.0	(8.5- 15.5)	3.4 *	(1.1- 5.7)
Persons	10.0	(7.5- 12.6)	8.2	(6.0- 10.5)	10.0	(7.5- 12.5)	2.9 *	(1.4- 4.4)
45 to 64 yrs								
Males	5.9	(4.0- 7.8)	7.0	(5.0- 9.0)	7.2	(5.2- 9.2)	2.0 *	(0.6- 3.3)
Females	9.4	(7.7- 11.1)	10.7	(8.7- 12.6)	12.4	(10.3- 14.4)	1.5	(0.8- 2.2)
Persons	7.6	(6.4- 8.9)	8.8	(7.4- 10.2)	9.8	(8.4- 11.2)	1.7	(1.0- 2.5)
65 yrs & over								
Males	2.9	(1.8- 4.0)	3.7	(2.5- 5.0)	3.3	(2.1- 4.5)	0.9 *	(0.3- 1.5)
Females	6.6	(5.2- 8.0)	5.2	(4.0- 6.5)	7.0	(5.6- 8.5)	0.6 *	(0.2- 1.1)
Persons	4.9	(3.9- 5.8)	4.5	(3.7- 5.4)	5.3	(4.3- 6.3)	0.7 *	(0.4- 1.1)
Total								
Males	6.9	(4.7- 9.0)	6.9	(4.9- 9.0)	7.1	(5.1- 9.2)	2.1 *	(0.9- 3.2)
Females	10.1	(8.2- 12.0)	8.8	(7.1- 10.4)	11.3	(9.3- 13.2)	2.3 *	(1.1- 3.6)
Persons	8.5	(7.0- 9.9)	7.8	(6.5- 9.1)	9.2	(7.8- 10.6)	2.2	(1.4- 3.0)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Adults aged 16 to 44 years had a significantly higher prevalence of anxiety, depression, stress-related problems and other mental health conditions diagnosed within the last 12 months compared with adults aged 65 years and over.

Respondents were also asked whether they were currently receiving treatment for any of their mental health conditions. The prevalence of adults with any mental health condition as well as those currently receiving treatment for a mental health condition is shown in Table 27.

Table 27: Current mental health status, 16 years & over, HWSS 2015

	Any mental health condition (a)		Any condition currently receiving treatment for (b)	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	11.3	(7.3 - 15.3)	5.0	(2.6 - 7.3)
Females	18.7	(14.4 - 22.9)	8.7	(5.9 - 11.6)
Persons	14.9	(11.9 - 17.8)	6.8	(4.9 - 8.7)
45 to 64 yrs				
Males	10.7	(8.3 - 13.0)	7.1	(5.0 - 9.1)
Females	17.8	(15.4 - 20.1)	10.0	(8.1 - 11.9)
Persons	14.2	(12.5 - 15.9)	8.5	(7.1 - 9.9)
65 yrs & over				
Males	5.9	(4.4 - 7.5)	4.0	(2.7 - 5.4)
Females	12.1	(10.2 - 13.9)	6.7	(5.3 - 8.0)
Persons	9.2	(8.0 - 10.4)	5.4	(4.5 - 6.4)
Total				
Males	10.3	(8.0 - 12.6)	5.5	(4.0 - 6.9)
Females	17.3	(14.9 - 19.6)	8.8	(7.1 - 10.4)
Persons	13.8	(12.1 - 15.4)	7.1	(6.0 - 8.2)

(a) People who reported that they had been diagnosed with a mental health condition in the previous 12 months

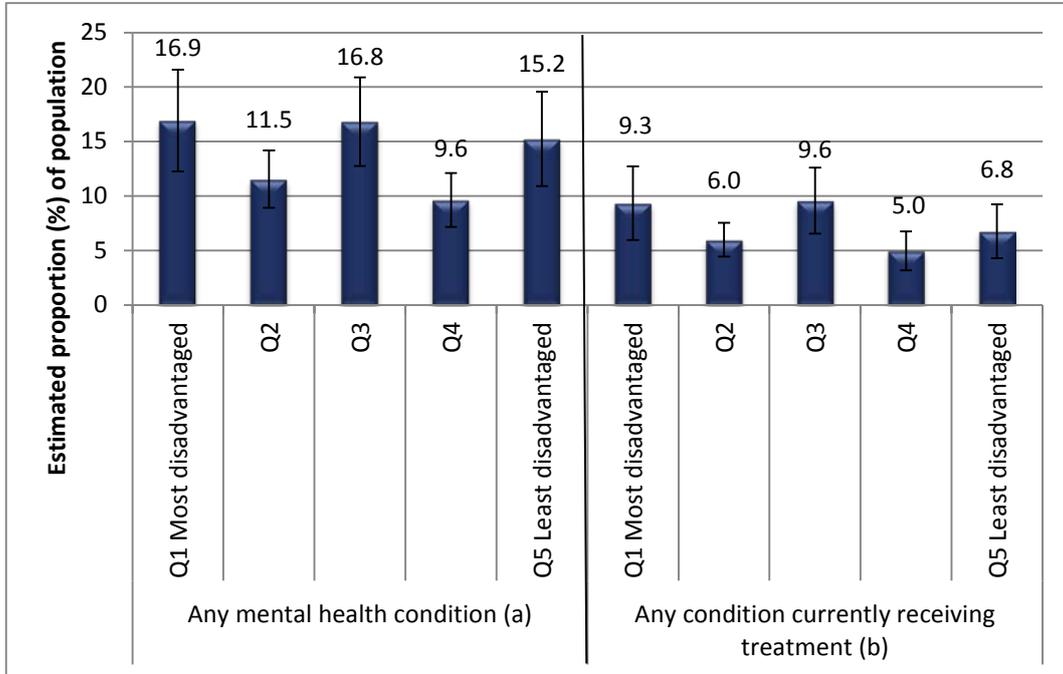
(b) People who reported that they are currently receiving treatment for a mental health condition.

Almost one in seven persons (13.8%) had been diagnosed with a mental health condition during the last 12 months while one in fourteen (7.1%) people were currently receiving treatment for such a mental health condition.

A significantly lower proportion of persons aged 65 years and over had been diagnosed with any mental health condition in the last 12 months compared with those aged 16 to 44 years and 45 to 64 years (9.2% compared with 14.9% and 14.2% respectively).

Figure 18 shows the prevalence of mental health conditions and current treatment by SEIFA quintiles.

Figure 18: Prevalence of current mental health conditions, by SEIFA quintiles in WA, HWSS 2015



- (a) People who reported that they had been diagnosed with a mental health condition in the previous 12 months.
- (b) People who reported that they are currently receiving treatment for a mental health condition.

There were no significant differences in the prevalence of adults receiving treatment for a mental health condition by SEIFA quintiles. However, the prevalence of mental health conditions was significantly higher for the most disadvantaged quintile (Q1) and quintile 3 compared with quintile 4 (16.9% and 16.8% respectively compared with 9.6%).

The standardised annual prevalence estimates for a current mental health condition for adults aged 16 years and over are shown in Table 28. There were no significant differences in the prevalence of mental health conditions over time.

Table 28: Prevalence of current mental health condition over time, 16 years & over, HWSS 2002–15

	Males	Females	Persons
2002	9.6	15.6	12.6
2003	10.6	18.2	14.4
2004	10.0	16.5	13.2
2005	-	-	-
2006	8.1	15.9	12.0
2007	10.7	15.8	13.3
2008	9.1	17.5	13.3
2009	10.7	16.8	13.7
2010	11.3	18.2	14.8
2011	10.7	18.3	14.4
2012	12.5	16.1	14.3
2013	11.4	19.2	15.3
2014	11.6	16.1	13.8
2015	10.3	17.3	13.8
Average	10.2	17.0	13.6

- This information is not available for 2005

8. LIFESTYLE BEHAVIOURS

There are many factors that influence a person's health, including genetics, lifestyle, environmental and social factors. These factors may have a positive effect on health, such as a high consumption of fruit and vegetables, or a negative effect, such as smoking and physical inactivity.²⁵ Modifiable lifestyle behaviours are also associated with the onset of physiological risk factors, such as high cholesterol, high blood pressure and obesity.

8.1 Smoking

Smoking increases the risk of a number of health conditions, including respiratory disease, coronary heart disease, stroke and several cancers, such as lung and mouth cancers.²⁶ Respondents were asked their smoking status, including cigarettes, cigars and pipes and whether or not people smoke in their home.

Current smoking status for Western Australian adults is shown in Table 29. Females were significantly more likely than males to report having never smoked (57.6% compared with 45.3%). Persons aged 16 to 44 and 45 to 65 years were significantly more likely than persons aged 65 years and over to report smoking daily (9.8% and 11.4% compared with 3.7%).

Table 29: Current smoking status, 16 years & over, HWSS 2015

	I smoke daily		I smoke occasionally		I don't smoke now but I used to		I've tried it a few times but never smoked regularly		I've never smoked	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	11.7	(7.3-16.1)	7.9	(4.2-11.7)	16.5	(12.4-20.7)	11.9	(7.7-16.1)	51.9	(45.9-58.0)
Females	7.8	(5.1-10.6)	1.4 *	(0.5- 2.3)	19.1	(15.2-23.0)	8.3	(5.5-11.1)	63.3	(58.4-68.3)
Persons	9.8	(7.2-12.5)	4.8	(2.8- 6.8)	17.8	(14.9-20.6)	10.2	(7.6-12.7)	57.5	(53.4-61.5)
45 to 64 yrs										
Males	12.0	(9.6-14.4)	1.8 *	(0.8- 2.9)	41.5	(37.6-45.4)	7.1	(5.1- 9.0)	37.6	(33.7-41.5)
Females	10.8	(8.9-12.7)	1.4	(0.6- 2.2)	33.2	(30.3-36.1)	6.5	(5.0- 8.0)	48.1	(45.0-51.1)
Persons	11.4	(9.8-13.0)	1.6	(1.0- 2.3)	37.4	(34.9-39.8)	6.8	(5.6- 8.0)	42.8	(40.3-45.3)
65 yrs & over										
Males	4.1	(2.9- 5.3)	1.0 *	(0.3- 1.7)	52.7	(49.2-56.2)	5.9	(4.2- 7.5)	36.3	(32.9-39.7)
Females	3.4	(2.4- 4.3)	1.1 *	(0.5- 1.6)	32.2	(29.6-34.8)	6.6	(5.2- 7.9)	56.8	(54.0-59.6)
Persons	3.7	(3.0- 4.5)	1.0	(0.6- 1.5)	41.8	(39.6-44.0)	6.2	(5.2- 7.3)	47.2	(45.0-49.4)
Total										
Males	10.7	(8.1-13.2)	5.1	(2.9- 7.2)	29.4	(26.6-32.3)	9.6	(7.2-12.0)	45.3	(41.8-48.8)
Females	8.0	(6.4- 9.5)	1.4	(0.8- 1.9)	25.6	(23.3-28.0)	7.5	(5.9- 9.0)	57.6	(54.7-60.4)
Persons	9.3	(7.8-10.8)	3.2	(2.1- 4.3)	27.6	(25.7-29.4)	8.5	(7.1-10.0)	51.4	(49.0-53.7)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

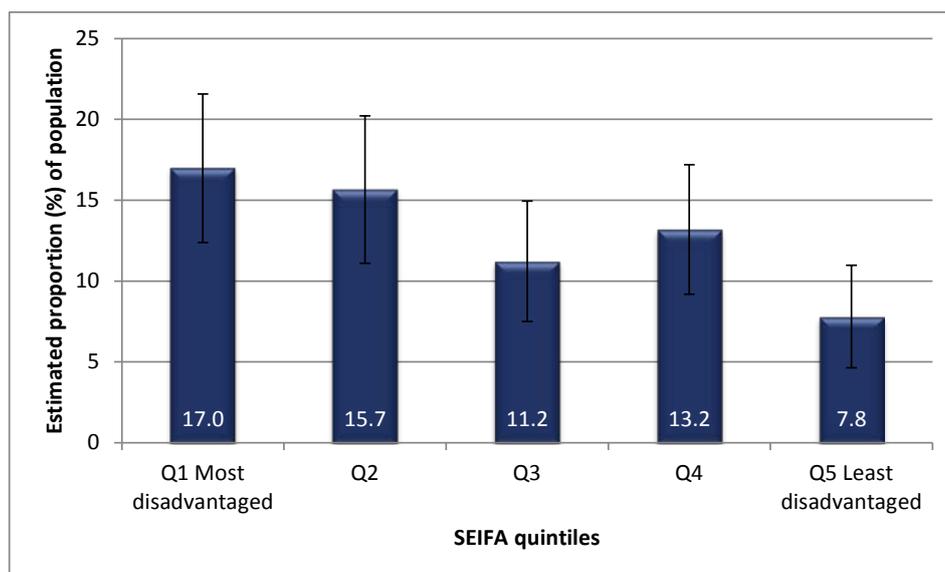
Current smoking status was re-categorised into those who smoke (daily or occasionally), ex-smokers and those who have never smoked regularly. Those who had smoked 100 or more cigarettes in their lifetime but no longer currently smoked were classified as ex-smokers, while those who had smoked less than 100 cigarettes were classified as having never smoked, or having never smoked regularly (Table 30).

Table 30: Lifetime smoking status, 16 years & over, HWSS 2015

	Smoker		Ex-smoker		Never smoked or never smoked regularly	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	19.6	(14.3 - 25.0)	18.9	(14.3 - 23.5)	61.5	(55.5 - 67.5)
Females	9.3	(6.4 - 12.1)	17.9	(14.1 - 21.7)	72.9	(68.4 - 77.4)
Persons	14.6	(11.4 - 17.8)	18.4	(15.4 - 21.4)	67.0	(63.1 - 70.9)
45 to 64 yrs						
Males	13.9	(11.3 - 16.5)	42.5	(38.6 - 46.4)	43.7	(39.7 - 47.6)
Females	12.2	(10.2 - 14.3)	31.5	(28.7 - 34.3)	56.3	(53.3 - 59.3)
Persons	13.0	(11.4 - 14.7)	37.0	(34.6 - 39.4)	50.0	(47.5 - 52.5)
65 yrs & over						
Males	5.1	(3.7 - 6.5)	51.0	(47.5 - 54.5)	43.8	(40.3 - 47.3)
Females	4.4	(3.4 - 5.5)	30.5	(27.9 - 33.0)	65.1	(62.5 - 67.7)
Persons	4.8	(3.9 - 5.6)	40.1	(37.9 - 42.3)	55.1	(52.9 - 57.3)
Total						
Males	15.7	(12.6 - 18.8)	30.8	(27.8 - 33.8)	53.5	(50.0 - 57.0)
Females	9.3	(7.7 - 11.0)	24.2	(21.9 - 26.4)	66.5	(63.9 - 69.1)
Persons	12.6	(10.8 - 14.4)	27.5	(25.6 - 29.4)	59.9	(57.7 - 62.2)

Persons aged 65 years and over were significantly less likely to be current smokers compared with people aged 16 to 44 years and 45 to 64 years (4.8% compared with 14.6% and 13.0%). Persons aged 16 to 44 years were significantly more likely to have never smoked or never smoked regularly compared with people aged 45-64 years and 65 years and over (67.0% compared with 50.0% and 55.1%).

Figure 19 shows the proportion of current smokers in WA by SEIFA quintiles. The prevalence of current smoking was significantly higher in the most disadvantaged quintiles (Q1 and Q2) compared with the least disadvantaged quintile (Q5) (17.0% and 15.7%, respectively compared with 7.8%).

Figure 19: Proportion of current smokers, 16 years & over, by SEIFA quintiles in WA, HWSS 2015


Respondents were asked whether or not their home was smoke free or if people occasionally or frequently smoke in their home. The majority (96.1%) of Western Australians live in a smoke free home (Table 31).

Table 31: Smoking within the home, 16 years & over, HWSS 2015

	Never		Occasionally		Frequently	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	95.5	(92.0 - 99.0)	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Females	96.8	(94.5 - 99.2)	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Persons	96.1	(94.0 - 98.3)	1.6 *	(0.4 - 2.9)	2.2 *	(0.5 - 4.0)
45 to 64 yrs						
Males	94.9	(93.3 - 96.5)	2.3 *	(1.1 - 3.4)	2.8	(1.7 - 4.0)
Females	96.2	(95.0 - 97.3)	1.7 *	(0.9 - 2.5)	2.2	(1.3 - 3.0)
Persons	95.5	(94.5 - 96.5)	2.0	(1.3 - 2.7)	2.5	(1.8 - 3.2)
65 yrs & over						
Males	96.3	(95.1 - 97.5)	1.4 *	(0.6 - 2.2)	2.3	(1.4 - 3.2)
Females	97.4	(96.6 - 98.2)	1.0 *	(0.6 - 1.5)	1.6	(0.9 - 2.2)
Persons	96.9	(96.2 - 97.6)	1.2	(0.8 - 1.7)	1.9	(1.3 - 2.5)
Total						
Males	95.4	(93.4 - 97.4)	1.7 *	(0.7 - 2.7)	2.9 *	(1.1 - 2.4)
Females	96.7	(95.5 - 98.0)	1.7 *	(0.6 - 2.7)	1.6	(0.9 - 2.4)
Persons	96.1	(94.9 - 97.3)	1.7	(1.0 - 2.4)	2.2	(1.3 - 3.2)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

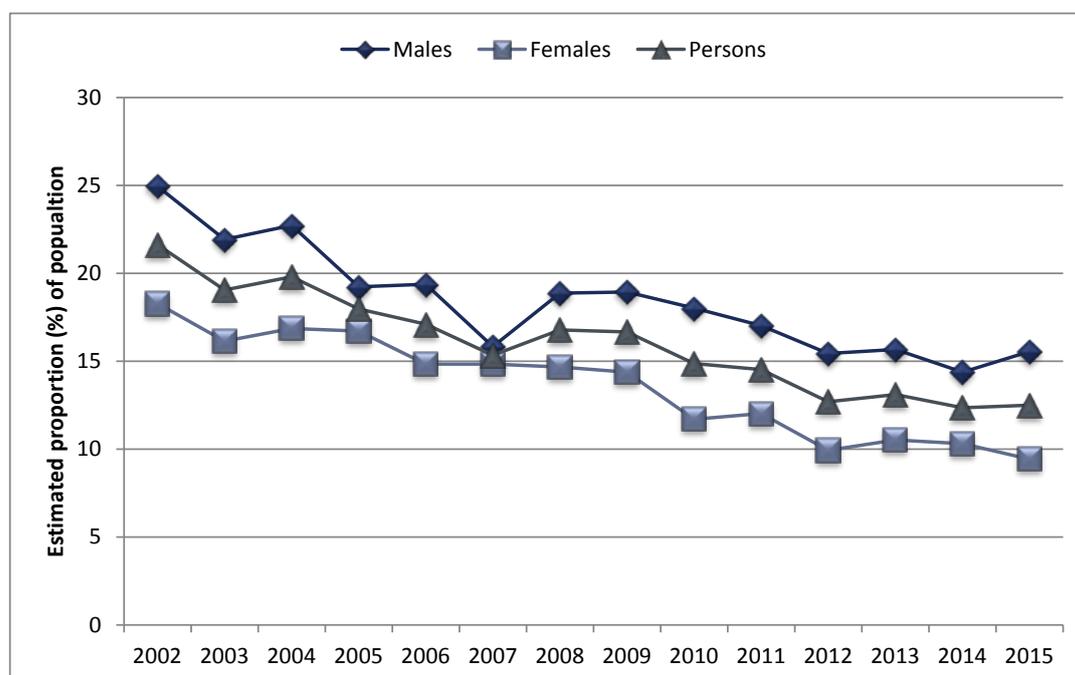
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

The standardised annual prevalence estimates of current smoking for adults aged 16 years and over are shown in Table 32 and Figure 20. The prevalence of male, female and total current smokers in 2015 was significantly lower compared with 2002.

Table 32: Prevalence of current smokers over time, 16 years & over, HWSS 2002–15

	Males	Females	Persons
2002	25.0	18.3	21.6
2003	21.9	16.2	19.0
2004	22.7	16.9	19.8
2005	19.2	16.7	18.0
2006	19.4	14.8	17.1
2007	15.8	14.8	15.3
2008	18.9	14.7	16.8
2009	18.9	14.4	16.7
2010	18.0	11.7	14.9
2011	17.0	12.0	14.5
2012	15.4	9.9	12.7
2013	15.7	10.5	13.1
2014	14.4	10.3	12.3
2015	15.6	9.4	12.5
Average	18.9	13.9	16.4

Figure 20: Prevalence of current smokers over time, 16 years & over, HWSS 2002–15



8.2 Alcohol

Excessive alcohol consumption increases the risk of some health conditions, including coronary heart disease, stroke, blood pressure, liver and pancreatic disease, as well as the risk of accidents, violence and anti-social behaviour and mental illness.²⁷ The current guidelines for the consumption of alcohol in Australia were developed by the National Health and Medical Research Council (NHMRC) in 2009.²⁸

Respondents were asked about their alcohol drinking habits, including how many days a week they usually drink and how many drinks they usually have. The alcohol information was categorised into risk levels based on the 2009 guidelines which categorises any drinking by adults aged less than 18 years as risky. The first is the potential for alcohol-related harm over a lifetime of drinking (Table 33) and the second is the risk of injury due to a single occasion of drinking (Table 34).

Table 33: Risk of long-term alcohol related harm, 16 years & over, HWSS 2015

	Doesn't drink/ drinking level undetermined		Low risk (a)		High risk (b)	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	34.1	(28.3 - 39.8)	23.7	(18.9 - 28.6)	42.2	(36.2 - 48.2)
Females	47.7	(42.4 - 53.1)	29.9	(25.2 - 34.7)	22.3	(18.3 - 26.4)
Persons	40.7	(36.7 - 44.7)	26.7	(23.3 - 30.1)	32.6	(28.8 - 36.4)
45 to 64 yrs						
Males	22.4	(19.1 - 25.6)	36.1	(32.3 - 39.9)	41.6	(37.7 - 45.5)
Females	39.4	(36.4 - 42.3)	45.9	(42.9 - 49.0)	14.7	(12.4 - 16.9)
Persons	30.8	(28.6 - 33.1)	41.0	(38.6 - 43.4)	28.2	(25.8 - 30.5)
65 yrs & over						
Males	31.0	(27.8 - 34.3)	50.7	(47.2 - 54.2)	18.2	(15.6 - 20.9)
Females	52.5	(49.7 - 55.2)	43.3	(40.6 - 46.1)	4.2	(3.1 - 5.3)
Persons	42.4	(40.2 - 44.6)	46.8	(44.6 - 49.0)	10.8	(9.4 - 12.2)
Total						
Males	30.1	(26.7 - 33.4)	31.5	(28.4 - 34.5)	38.4	(34.9 - 42.0)
Females	46.0	(43.0 - 49.0)	37.1	(34.4 - 39.9)	16.9	(14.7 - 19.1)
Persons	38.0	(35.7 - 40.3)	34.3	(32.2 - 36.3)	27.8	(25.6 - 30.0)

(a) Drinks two or less standard drinks on any one day.

(b) Drinks more than two standard drinks on any one day.

Approximately one-third of people aged 16 to 44 years (32.6%) drink at levels considered to be high risk for long-term harm. Males in all age groups were significantly more likely to report drinking at levels considered high risk for long-term harm compared with females. For all persons, the proportion drinking at high risk levels for long-term harm was significantly lower for adults aged 65 years and over compared with those aged 16 to 44 years and 45 to 64 years (10.8% compared with 32.6% and 28.2% respectively) (Table 33).

Table 34: Risk of short-term alcohol related harm, 16 years & over, HWSS 2015

	Doesn't drink/ drinking level undetermined		Low risk (a)		High risk (b)	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	34.1	(28.3 - 39.8)	47.0	(41.0 - 53.0)	18.9	(14.2 - 23.6)
Females	47.7	(42.4 - 53.1)	45.3	(40.0 - 50.5)	7.0	(4.6 - 9.3)
Persons	40.7	(36.7 - 44.7)	46.2	(42.2 - 50.2)	13.1	(10.4 - 15.8)
45 to 64 yrs						
Males	22.4	(19.1 - 25.6)	65.1	(61.4 - 68.9)	12.5	(10.0 - 15.0)
Females	39.4	(36.4 - 42.3)	58.2	(55.2 - 61.2)	2.5	(1.5 - 3.4)
Persons	30.8	(28.6 - 33.1)	61.7	(59.3 - 64.1)	7.5	(6.1 - 8.9)
65 yrs & over						
Males	31.0	(27.8 - 34.3)	64.9	(61.5 - 68.2)	4.1	(2.8 - 5.5)
Females	52.5	(49.7 - 55.2)	47.4	(44.7 - 50.2)	N/A	(N/A - N/A)
Persons	42.4	(40.2 - 44.6)	55.6	(53.4 - 57.8)	2.0	(1.3 - 2.6)
Total						
Males	30.1	(26.7 - 33.4)	55.2	(51.6 - 58.7)	14.8	(12.1 - 17.5)
Females	46.0	(43.0 - 49.0)	49.6	(46.6 - 52.6)	4.4	(3.2 - 5.6)
Persons	38.0	(35.7 - 40.3)	52.4	(50.1 - 54.7)	9.6	(8.1 - 11.2)

(a) Drinks four or less standard drinks on any one day.

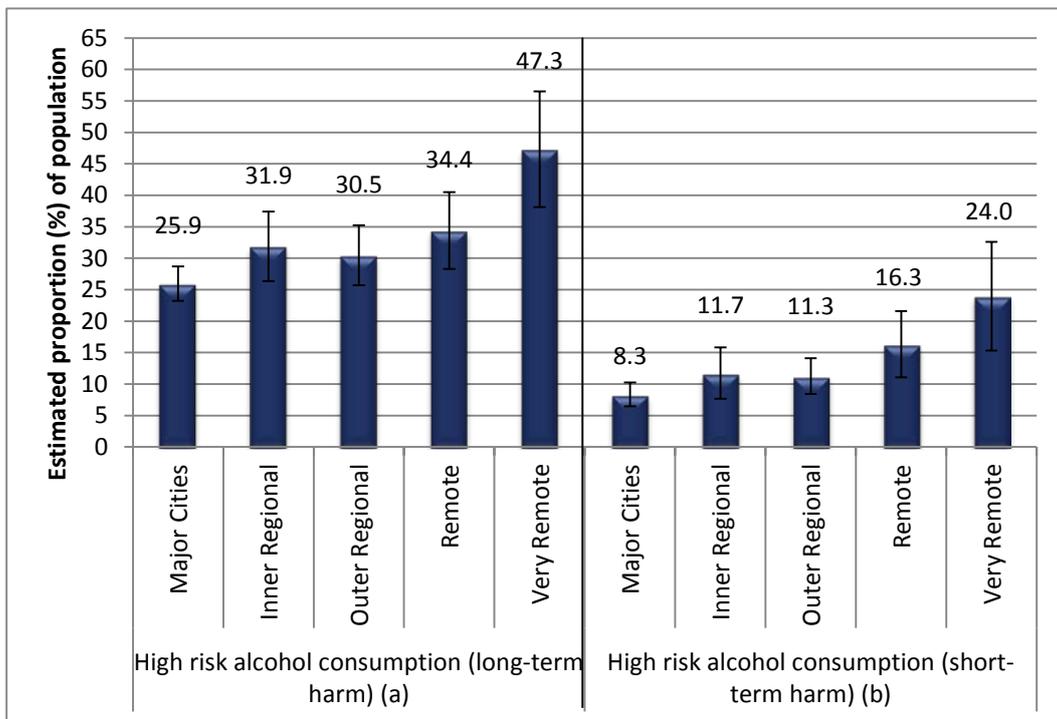
(b) Drinks more than four standard drinks on any one day.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

The prevalence of the population drinking at levels considered high risk for short-term harm decreased significantly with age (13.1% for 16 to 44 year olds, 7.5% for 45 to 64 year olds and 2.0% for those aged 65 years and over). Overall, males were significantly more likely than females to report drinking at levels considered high risk for short-term alcohol related harm (14.8% compared with 4.4%) (Table 34).

Figure 21 shows the proportion of people who consume alcohol at high risk levels for long-term and short-term harm by ARIA. The prevalence of high risk alcohol consumption for long-term harm is significantly higher in very remote areas of WA (47.3%) compared with areas classified as major cities (25.9%), inner regional (31.9%) or outer regional (30.5%). The prevalence of alcohol consumption for high risk levels for short-term harm was highest in very remote areas of the State (24.0%), however it was not statistically different from any other ARIA classified area.

Figure 21: Prevalence of high risk alcohol consumption for long-term (a) and short-term (b) harm, 16 years & over, by ARIA in WA, HWSS 2015



(a) Drinks more than two standard drinks on any one day.
 (b) Drinks more than four standard drinks on any one day.

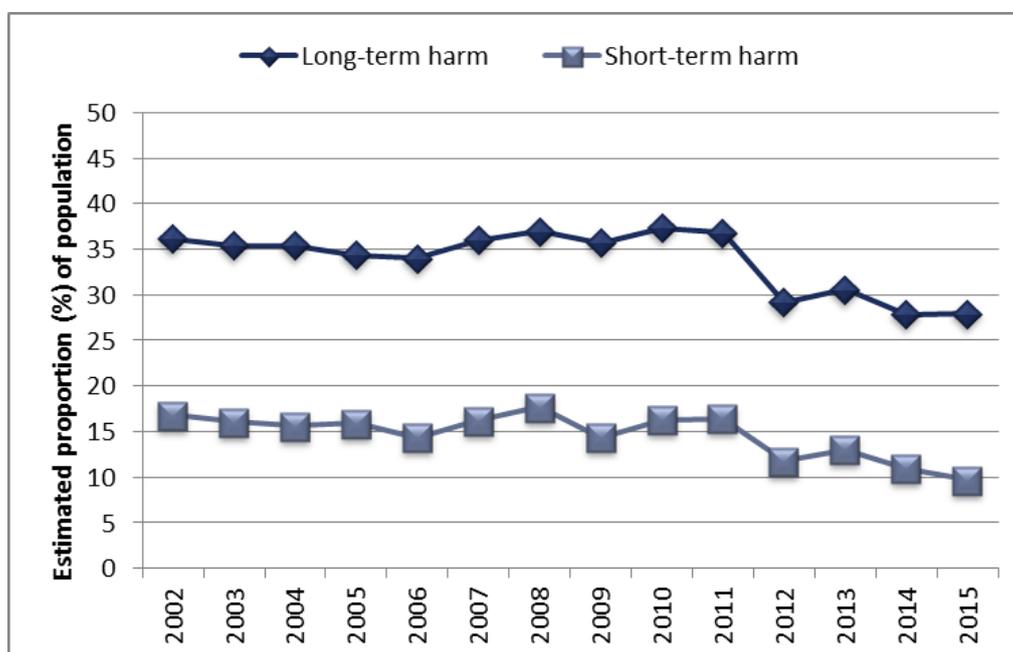
The standardised annual prevalence estimates of high risk long-term and short-term alcohol related harm for Western Australian adults aged 16 years and over are shown in Table 35 and Figure 22.

Table 35: Prevalence of high risk alcohol consumption for long-term & short-term harm over time, 16 years & over, HWSS 2002–15

	Risk of long-term harm (a)			Risk of short-term harm (b)		
	Males	Females	Persons	Males	Females	Persons
2002	49.6	22.6	36.2	25.1	8.5	16.8
2003	46.8	23.9	35.4	23.7	8.3	16.0
2004	47.8	22.9	35.4	24.6	6.6	15.6
2005	46.8	21.8	34.3	23.4	8.5	15.9
2006	45.1	22.8	34.0	21.2	7.5	14.4
2007	48.0	23.9	36.0	22.2	10.3	16.2
2008	48.0	25.9	37.0	24.8	10.6	17.7
2009	46.9	24.4	35.7	21.2	7.5	14.4
2010	49.1	25.5	37.4	24.3	8.2	16.3
2011	48.2	25.4	36.8	22.6	10.3	16.4
2012	39.7	18.6	29.2	17.6	5.9	11.8
2013	42.1	19.1	30.6	20.5	5.5	13.0
2014	37.0	18.7	27.9	15.4	6.6	11.0
2015	38.7	17.1	27.9	14.8	4.5	9.7
Average	46.1	23.0	34.5	22.2	8.3	15.3

(a) Drinks more than two standard drinks on any one day.
 (b) Drinks more than four standard drinks on any one day.

Figure 22: Prevalence of high risk alcohol consumption for long-term & short-term harm over time, 16 years & over, HWSS 2002–15



The prevalence of females drinking at levels associated with long-term harm in 2015 was the lowest recorded since data collection began in 2002, and was significantly lower than 2002-11. The prevalence of males and all persons drinking at levels associated with long-term harm was significantly lower in 2015 when compared with 2002-11.

In 2015 the prevalence of males, females and all persons drinking at levels associated with short-term harm was the lowest recorded since data collection began in 2002, and was significantly lower than 2002-2011.

8.3 Nutrition

Fruit and Vegetables

Diet has an important effect on health and can influence the risk of various diseases, including coronary heart disease, type 2 diabetes, stroke, some cancers and obesity.²⁹ The 2013 Australian Dietary Guidelines by the National Health and Medical Research Council (NHMRC) are presented in Table 36.

Respondents were asked to self-report how many serves of fruit they usually eat each day, where a serve of fruit is equal to one medium piece, two small pieces of fruit or a cup of diced fruit. They were also asked to self-report how many serves of vegetables they usually eat each day, where a serve of vegetables is equal to half a cup of cooked vegetables or one cup of salad. As the consumption of half serves is not captured in the questions currently asked in the HWSS, for the purposes of reporting, the recommended number of serves will be rounded down to the nearest whole number (Table 36).

Table 36: NHMRC Australian Dietary Guidelines for fruit and vegetable daily consumption guidelines and HWSS reporting definitions, adults 16 years & over

	Minimum recommended serves of fruit per day	Minimum recommended serves of vegetables per day		Minimum serves of vegetables per day for HWSS reporting	
	Females and Males	Females	Males	Females	Males
16-18 years	2	5	5.5	5	5
19-50 years	2	5	6	5	6
51- 70 years	2	5	5.5	5	5
70 + years	2	5	5	5	5

Table 37 shows the proportion of adults, 16 years and over, by the number of serves of fruit they usually eat daily. Almost all adults (94.4%) ate some fruit each day, with the majority eating two or more serves of fruit daily.

Table 37: Serves of fruit consumed daily, 16 years & over, HWSS 2015

	Doesn't eat fruit		Eats less than one serve of fruit daily		Eats one serve of fruit daily		Eats two or more serves of fruit daily	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs								
Males	5.4	(3.1 - 7.7)	12.2	(8.0 - 16.4)	36.4	(30.6 - 42.1)	46.0	(40.0 - 52.0)
Females	6.5	(4.2 - 8.8)	5.8	(3.8 - 9.8)	36.5	(31.2 - 41.8)	51.2	(45.8 - 56.5)
Persons	5.9	(4.3 - 7.5)	9.1	(6.7 - 11.5)	36.4	(32.5 - 40.4)	48.5	(44.5 - 52.6)
45 to 64 yrs								
Males	5.6	(4.0 - 7.3)	12.6	(9.9 - 15.3)	35.3	(31.4 - 39.2)	46.5	(42.5 - 50.4)
Females	6.6	(5.1 - 8.1)	8.1	(6.5 - 9.8)	29.5	(26.7 - 32.2)	55.8	(52.7 - 58.8)
Persons	6.1	(5.0 - 7.2)	10.4	(8.8 - 12.0)	32.4	(30.0 - 34.8)	51.1	(48.6 - 53.6)
65 yrs & over								
Males	4.1	(2.8 - 5.4)	10.1	(8.0 - 12.2)	28.5	(25.4 - 31.7)	57.3	(53.8 - 60.7)
Females	3.1	(2.2 - 4.0)	5.4	(4.2 - 6.7)	26.7	(24.2 - 29.2)	64.8	(62.1 - 67.5)
Persons	3.6	(2.8 - 4.3)	7.6	(6.4 - 8.8)	27.5	(25.6 - 29.5)	61.3	(59.1 - 63.4)
Total								
Males	5.3	(3.9 - 6.6)	12.0	(9.5 - 14.5)	34.9	(31.5 - 38.3)	47.8	(44.3 - 51.4)
Females	6.0	(4.7 - 7.2)	6.4	(5.3 - 7.6)	32.7	(29.7 - 35.6)	54.9	(51.9 - 57.9)
Persons	5.6	(4.7 - 6.5)	9.3	(7.9 - 10.6)	33.8	(31.5 - 36.1)	51.3	(49.0 - 53.7)

Table 38 shows the proportion of adults, 16 years and over, by the number of serves of vegetables they usually eat daily. The majority of adults ate two (27.8%) or three (23.5%) serves of vegetables daily.

Table 38: Serves of vegetables consumed daily, 16 years & over, HWSS 2015

	Doesn't eat vegetables		Eats vegetables less often than daily		Eats one serve of vegetables daily		Eats two serves of vegetables daily		Eats three serves of vegetables daily		Eats four serves of vegetables daily		Eats five or more serves of vegetables daily	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs														
Males	1.5 *	(0.4 - 2.6)	1.3 *	(0.3 - 2.2)	23.5	(18.5 - 28.4)	30.9	(25.3 - 36.4)	18.5	(14.0 - 23.0)	13.2	(8.9 - 17.5)	11.2	(6.9 - 15.4)
Females	N/A	(N/A - N/A)	2.0 *	(0.6 - 3.4)	14.7	(10.6 - 18.8)	28.5	(23.7 - 33.3)	25.5	(20.8 - 30.1)	16.8	(13.0 - 20.6)	11.8	(8.4 - 15.2)
Persons	1.1 *	(0.3 - 1.9)	1.6 *	(0.8 - 2.5)	19.2	(16.0 - 22.5)	29.7	(26.0 - 33.4)	21.9	(18.6 - 25.1)	14.9	(12.1 - 17.8)	11.5	(8.7 - 14.2)
45 to 64 yrs														
Males	0.8 *	(0.2 - 1.3)	3.8	(2.0 - 5.6)	21.9	(18.5 - 25.3)	26.5	(23.0 - 29.9)	22.1	(18.8 - 25.5)	13.9	(11.2 - 16.6)	11.0	(8.5 - 13.5)
Females	0.7 *	(0.3 - 1.2)	1.3 *	(0.6 - 1.9)	11.8	(9.8 - 13.8)	25.6	(23.0 - 28.3)	27.2	(24.5 - 30.0)	17.2	(14.9 - 19.5)	16.1	(13.9 - 18.3)
Persons	0.8	(0.4 - 1.1)	2.5	(1.6 - 3.5)	16.9	(14.9 - 18.8)	26.0	(23.9 - 28.2)	24.7	(22.5 - 26.8)	15.6	(13.8 - 17.3)	13.6	(11.9 - 15.2)
65 yrs & over														
Males	0.8 *	(0.2 - 1.4)	2.1	(1.1 - 3.1)	19.4	(16.6 - 22.1)	25.8	(22.8 - 28.9)	23.1	(20.1 - 26.1)	16.9	(14.1 - 19.6)	11.9	(9.7 - 14.2)
Females	0.9 *	(0.4 - 1.4)	2.3	(1.5 - 3.1)	11.5	(9.7 - 13.2)	23.8	(21.4 - 26.2)	29.5	(26.9 - 32.1)	18.5	(16.3 - 20.7)	13.5	(11.7 - 15.4)
Persons	0.9	(0.5 - 1.2)	2.2	(1.6 - 2.9)	15.1	(13.5 - 16.8)	24.8	(22.8 - 26.7)	26.5	(24.5 - 28.5)	17.8	(16.0 - 19.5)	12.8	(11.3 - 14.2)
Total														
Males	1.2 *	(0.5 - 1.8)	2.2	(1.4 - 3.0)	22.4	(19.5 - 25.3)	28.8	(25.5 - 32.1)	20.3	(17.6 - 23.0)	13.9	(11.4 - 16.5)	11.2	(8.8 - 13.7)
Females	0.8 *	(0.2 - 1.4)	1.8	(1.0 - 2.6)	13.3	(11.0 - 15.5)	26.8	(24.2 - 29.5)	26.7	(24.1 - 29.3)	17.2	(15.1 - 19.4)	13.4	(11.5 - 15.3)
Persons	1.0	(0.5 - 1.4)	2.0	(1.4 - 2.5)	17.9	(16.0 - 19.7)	27.8	(25.7 - 29.9)	23.5	(21.6 - 25.3)	15.6	(13.9 - 17.2)	12.3	(10.7 - 13.9)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

The proportion of adults aged 16 years and over meeting the 2013 Australian Dietary Guidelines for fruit and vegetable consumption (rounded down to the nearest whole number) is shown in Table 39.

Table 39: Prevalence of sufficient daily fruit consumption and vegetable consumption[^], 16 years and over, HWSS 2015

	Sufficient daily fruit consumption		Sufficient daily vegetable consumption	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	46.0	(40.0 - 52.0)	4.5 *	(2.0 - 7.0)
Females	51.2	(45.8 - 56.5)	11.8	(8.4 - 15.2)
Persons	48.5	(44.5 - 52.6)	8.0	(5.9 - 10.1)
45 to 64 yrs				
Males	46.5	(42.5 - 50.4)	7.6	(5.6 - 9.6)
Females	55.8	(52.7 - 58.8)	16.1	(13.9 - 18.3)
Persons	51.1	(48.6 - 53.6)	11.9	(10.3 - 13.4)
65 yrs & over				
Males	57.3	(53.8 - 60.7)	11.9	(9.7 - 14.2)
Females	64.8	(62.1 - 67.5)	13.5	(11.7 - 15.4)
Persons	61.3	(59.1 - 63.4)	12.8	(11.3 - 14.2)
Total				
Males	47.8	(44.3 - 51.4)	6.5	(5.0 - 8.1)
Females	54.9	(51.9 - 57.9)	13.4	(11.5 - 15.3)
Persons	51.3	(49.0 - 53.7)	9.9	(8.7 - 11.2)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

[^] See Table 36.

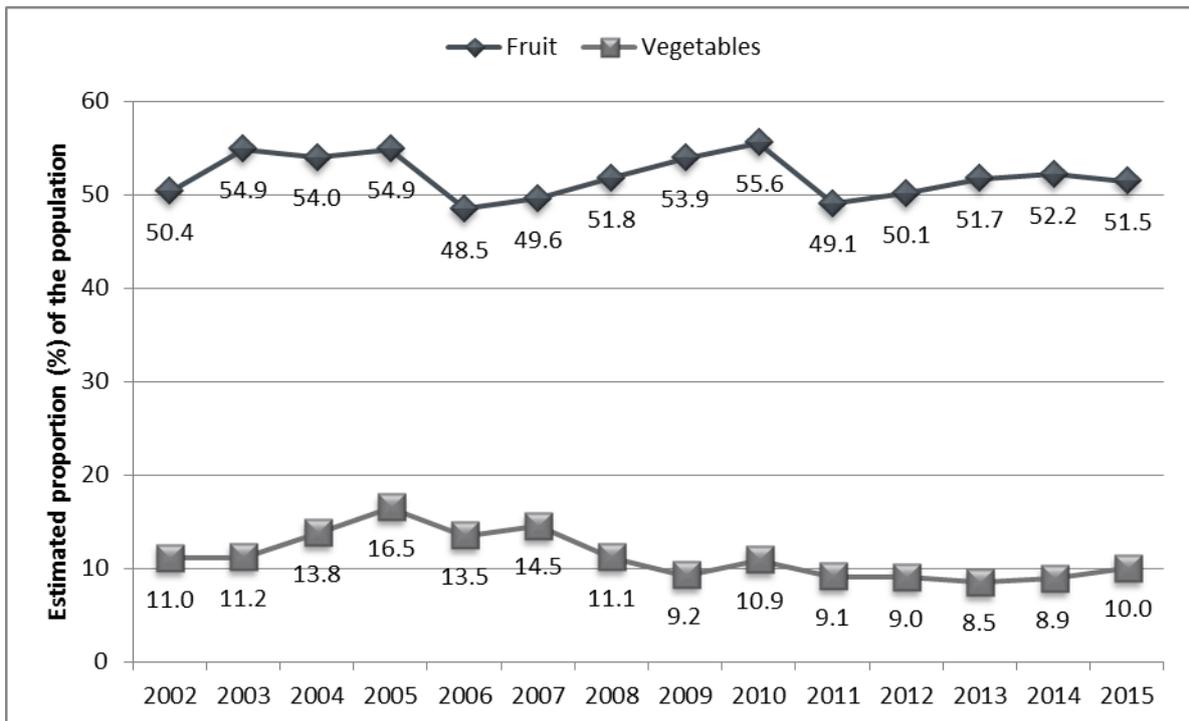
Approximately half (51.3%) of persons aged 16 years and over reported eating sufficient daily serves of fruit. Females were significantly more likely to eat sufficient serves of fruit daily compared with males (54.9% compared with 47.8%). Persons aged 65 years and over were also significantly more likely to eat sufficient serves of fruit daily compared with respondents aged 16 to 44 and 65 years and over (61.3% compared with 48.5% and 51.1%).

Almost one in ten (9.9%) Western Australians aged 16 years and over eat sufficient daily serves of vegetables. Females were significantly more likely to eat sufficient serves of vegetables compared with males (13.4% compared with 6.5%). Adults aged 16 to 44 were significantly less likely to eat sufficient serves of vegetables

compared with adults aged 45 to 64 years and 65 years and over (8.0% compared with 11.9% and 12.8%).

The standardised annual prevalence estimates for sufficient fruit and vegetables consumed daily for adults aged 16 years and over, based on the 2013 Australian Dietary Guidelines (rounded down to the nearest whole number) are shown in Figure 23. The mean serves of fruit and vegetables eaten daily are shown in Table 40.

Figure 23: Prevalence of sufficient fruit & vegetables consumption[^] over time, 2013 Australian Dietary Guidelines for fruit and vegetable consumption, 16 years & over, HWSS 2002–15



[^] For reporting purposes guidelines that include half serves have been rounded down to the nearest whole number.

The prevalence of sufficient fruit consumption in 2015 (51.5%) was significantly lower compared with 2010 (55.6%). For vegetable consumption, the prevalence reported in 2015 (10.0%) was significantly lower compared with 2004-07.

Table 40: Mean serves of fruit and vegetables over time, 16 years & over, HWSS 2002–15

	Fruit			Vegetables		
	Males	Females	Persons	Males	Females	Persons
2002	1.6	1.8	1.7	2.5	2.9	2.7
2003	1.7	1.9	1.8	2.5	3.0	2.8
2004	1.7	1.9	1.8	2.7	3.1	2.9
2005	1.7	1.8	1.8	3.0	3.2	3.1
2006	1.5	1.7	1.6	2.8	3.1	3.0
2007	1.6	1.7	1.6	2.8	3.2	3.0
2008	1.6	1.8	1.7	2.6	3.0	2.8
2009	1.7	1.8	1.7	2.5	2.9	2.7
2010	1.7	1.8	1.8	2.6	3.0	2.8
2011	1.5	1.7	1.6	2.5	2.9	2.7
2012	1.6	1.7	1.7	2.4	2.9	2.6
2013	1.6	1.7	1.7	2.4	2.8	2.6
2014	1.6	1.8	1.7	2.5	2.8	2.7
2015	1.7	1.8	1.7	2.6	2.9	2.8
Average	1.6	1.8	1.7	2.6	3.0	2.8

The mean serves of fruit eaten in 2015 was significantly higher for all persons (1.7 serves per day) compared with 2011 (1.6 serves per day).

The mean serves of vegetables consumed in 2015 was significantly lower for males compared with 2005-07. For females the 2015 mean was significantly lower compared with 2005 and 2007, while for all persons the 2015 mean was significantly lower compared with 2005-2007 but significantly higher compared with 2013.

Milk

Milk has various health benefits and is a good source of many nutrients including calcium, protein, vitamin A, vitamin D, vitamin B12 and zinc. The 2013 Australian Dietary Guidelines recommends the consumption of mostly reduced fat milk and/or alternatives to ensure that nutrition requirements are met within energy requirements.²⁹ Respondents were asked what type of milk they usually consume, shown in Table 41.

Table 41: Type of milk consumed, 16 years & over, HWSS 2015

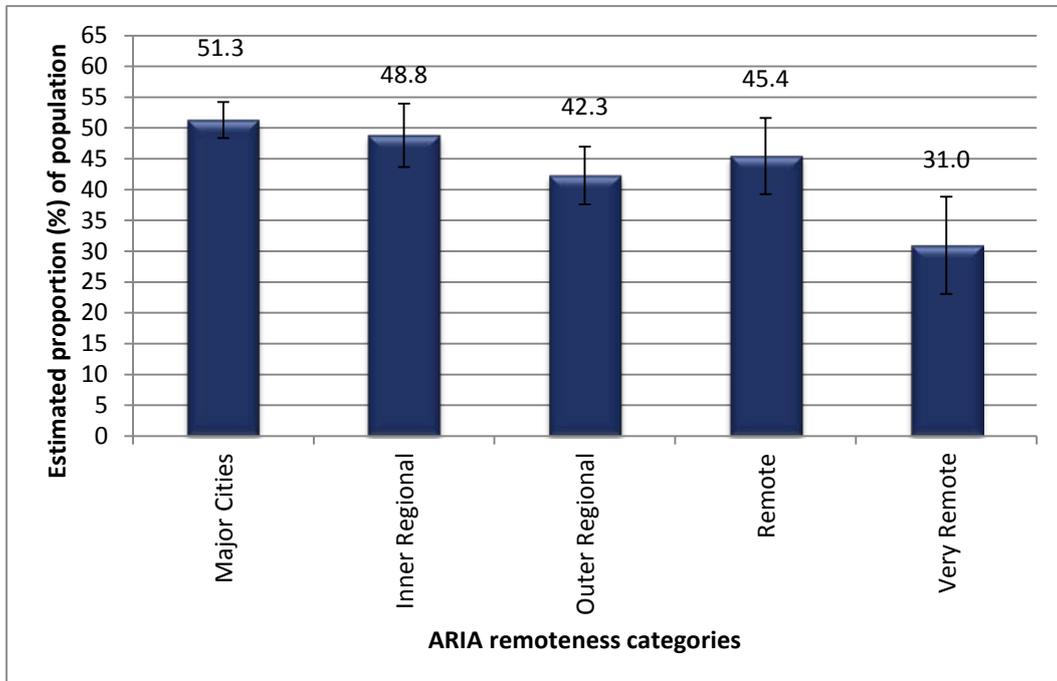
	Full fat/whole		Low/reduced fat/ skim milk		Other		Don't use milk	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs								
Males	46.1	(40.1 - 52.1)	43.2	(37.4 - 49.1)	2.6 *	(0.2 - 4.9)	8.1	(4.6 - 11.6)
Females	38.0	(32.9 - 43.1)	46.6	(41.3 - 51.9)	5.3 *	(2.6 - 7.9)	10.2	(6.5 - 13.8)
Persons	42.2	(38.2 - 46.2)	44.8	(40.9 - 48.8)	3.9	(2.1 - 5.6)	9.1	(6.6 - 11.6)
45 to 64 yrs								
Males	39.1	(35.3 - 43.0)	51.3	(47.3 - 55.2)	2.5	(1.4 - 3.6)	7.1	(5.2 - 9.0)
Females	28.5	(25.8 - 31.2)	61.6	(58.7 - 64.6)	3.8	(2.6 - 4.9)	6.1	(4.7 - 7.5)
Persons	33.8	(31.4 - 36.2)	56.4	(54.0 - 58.9)	3.1	(2.3 - 3.9)	6.6	(5.5 - 7.8)
65 yrs & over								
Males	41.9	(38.4 - 45.3)	47.7	(44.2 - 51.2)	2.6	(0.2 - 3.8)	7.8	(5.9 - 9.6)
Females	33.3	(30.7 - 35.9)	56.7	(53.9 - 59.4)	3.6	(2.5 - 4.7)	6.4	(5.0 - 7.7)
Persons	37.3	(35.2 - 39.5)	52.5	(50.3 - 54.7)	3.2	(2.4 - 4.0)	7.0	(5.9 - 8.2)
Total								
Males	43.4	(39.8 - 46.9)	46.3	(42.8 - 49.8)	2.6 *	(1.2 - 3.9)	7.8	(5.7 - 9.8)
Females	34.3	(31.5 - 37.1)	52.9	(49.9 - 55.9)	4.5	(3.1 - 6.0)	8.3	(6.3 - 10.2)
Persons	38.9	(36.6 - 41.2)	49.6	(47.3 - 51.9)	3.5	(2.5 - 4.5)	8.0	(6.6 - 9.4)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Females were significantly more likely to report using low/reduced fat or skim milk compared with males (52.9% compared with 46.3%), particularly over the age of 45 years. Adults aged 16 to 44 years were less likely to report using low/reduced fat or skim milk compared with adults aged 45 years and over.

Figure 24 shows the consumption of low/ reduced fat or skim milk in Western Australia by ARIA. The proportion of adults in very remote areas of the State (31.0%) consuming low/ reduced fat or skim milk was significantly lower compared with areas classified as major cities (51.3%), inner regional (48.8%) and remote (45.4%).

Figure 24: Low/ reduced fat or skim milk consumption, 16 years & over, by ARIA in WA, HWSS 2015



Food security

Respondents were asked whether there was any time in the last 12 months when they had run out of food and could not afford to buy more (Table 42). An estimated 79,225 people in Western Australia ran out of food and could not afford to buy any more within the previous twelve months, with the majority of those being in the 16 to 44 year age group.

Table 42: Ran out of food and could not afford to buy more, 16 years & over, HWSS 2015

	Yes		No	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	4.4 *	(1.5 - 7.3)	95.6	(92.7 - 98.5)
Females	6.3	(3.9 - 8.8)	93.7	(91.2 - 96.1)
Persons	5.3	(3.5 - 7.2)	94.7	(92.8 - 96.5)
45 to 64 yrs				
Males	2.4 *	(1.0 - 3.7)	97.6	(96.3 - 99.0)
Females	3.2	(2.0 - 4.4)	96.8	(95.6 - 98.0)
Persons	2.8	(1.9 - 3.7)	97.2	(96.3 - 98.1)
65 yrs & over				
Males	1.0 *	(0.4 - 1.7)	99.0	(98.3 - 99.6)
Females	0.9 *	(0.4 - 1.3)	99.1	(98.7 - 99.6)
Persons	0.9	(0.6 - 1.3)	99.1	(98.7 - 99.4)
Total				
Males	3.3 *	(1.7 - 4.9)	96.7	(95.1 - 98.3)
Females	4.4	(3.1 - 5.8)	95.6	(94.2 - 96.9)
Persons	3.9	(2.8 - 4.9)	96.1	(95.1 - 97.2)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Fast food

Respondents were asked how many times a week on average they would eat fast food meals, such as burgers, pizza, chicken or chips from fast food outlets. The population prevalence of fast food consumption is shown in Table 43.

Table 43: Meals from fast food outlets per week, 16 years & over, HWSS 2015

	Never		Less than once a week		Once or twice a week		Three or four times per week		Five or more times per week	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	25.8	(20.8 - 30.8)	22.5	(17.1 - 27.9)	41.9	(36.0 - 47.9)	6.5	(3.5 - 9.5)	3.2 *	(1.2 - 5.2)
Females	40.1	(34.9 - 45.2)	20.1	(16.0 - 24.3)	37.6	(32.3 - 42.8)	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Persons	32.7	(29.1 - 36.4)	21.3	(17.9 - 24.8)	39.8	(35.9 - 43.8)	4.2	(2.5 - 5.8)	2.0 *	(0.9 - 3.1)
45 to 64 yrs										
Males	42.4	(38.6 - 46.3)	28.1	(24.5 - 31.7)	27.6	(23.9 - 31.2)	1.7 *	(0.4 - 2.9)	0.3 *	(0.0 - 0.5)
Females	59.1	(56.1 - 62.1)	22.8	(20.3 - 25.3)	17.9	(15.4 - 20.3)	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Persons	50.7	(48.2 - 53.2)	25.4	(23.2 - 27.6)	22.7	(20.5 - 25.0)	1.0 *	(0.3 - 1.6)	0.1 *	(0.0 - 0.2)
65 yrs & over										
Males	59.8	(56.4 - 63.3)	26.0	(22.9 - 29.1)	12.9	(10.5 - 15.3)	1.0 *	(0.3 - 1.8)	N/A	(N/A - N/A)
Females	74.8	(72.3 - 77.2)	18.2	(16.0 - 20.4)	6.9	(5.4 - 8.4)	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Persons	67.8	(65.7 - 69.9)	21.9	(20.0 - 23.7)	9.7	(8.3 - 11.1)	0.5 *	(0.2 - 0.9)	N/A	(N/A - N/A)
Total										
Males	35.9	(32.7 - 39.1)	24.7	(21.5 - 27.9)	33.3	(29.8 - 36.8)	4.2	(2.5 - 5.9)	1.9 *	(0.8 - 3.0)
Females	51.8	(48.8 - 54.8)	20.6	(18.3 - 22.9)	26.3	(23.3 - 29.3)	1.0 *	(0.2 - 1.7)	N/A	(N/A - N/A)
Persons	43.8	(41.6 - 46.0)	22.7	(20.7 - 24.7)	29.8	(27.5 - 32.1)	2.6	(1.7 - 3.5)	1.1 *	(0.5 - 1.7)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Females were significantly more likely to never eat fast food meals than males (51.8% compared with 35.9%). The proportion of people never eating from fast food outlets increased significantly with age.

The mean meals consumed from fast food outlets per week were 0.6 meals (0.5 for females and 0.8 for males).

Older adult nutrition

Respondents aged 65 years and over were asked how many meals they eat each day and whether their teeth or dentures affect the type of food they are able to eat.

The majority of adults aged 65 years and over (81.2%) eat three meals a day (Table 44). The food eaten by one in ten (10.4%) adults aged 65 years and over was affected by the condition of their teeth or dentures (Table 45).

Table 44: Number of meals eaten each day, 65 years & over, HWSS 2015

	One		Two		Three		Four or more	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Males	2.2	(1.2 - 3.3)	18.4	(15.7 - 21.1)	78.6	(75.7 - 81.5)	0.8 *	(0.2 - 1.4)
Females	1.6	(0.9 - 2.3)	13.6	(11.7 - 15.4)	83.5	(81.5 - 85.5)	1.4	(0.8 - 2.0)
Persons	1.9	(1.3 - 2.5)	15.8	(14.2 - 17.4)	81.2	(79.5 - 82.9)	1.1	(0.7 - 1.5)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Table 45: Teeth or dentures affect food eaten, 65 years & over, HWSS 2015

	Yes		No	
	%	95% CI	%	95% CI
Males	10.0	(7.8 - 12.2)	90.0	(87.8 - 92.2)
Females	10.7	(9.0 - 12.3)	89.3	(87.7 - 91.0)
Persons	10.4	(9.0 - 11.7)	89.6	(88.3 - 91.0)

8.4 Physical activity and sedentary behaviour

Physical activity reduces the risk of cardiovascular disease, some cancers and type 2 diabetes as well as helps to improve musculoskeletal health, maintain body weight and reduce symptoms of depression.³⁰

Respondents were asked to rate their own physical activity level (Table 46).

Approximately half of all Western Australian adults reported that they were either active or very active (50.6%)

Table 46: Self-reported level of physical activity, 16 years & over, HWSS 2015

	Very active		Active		Moderately active		Not very active		Not at all active	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	27.1	(21.9 - 32.3)	33.4	(27.5 - 39.2)	26.1	(21.1 - 31.2)	11.2	(7.5 - 15.0)	N/A	(N/A - N/A)
Females	15.5	(11.9 - 19.1)	29.4	(24.6 - 34.3)	39.7	(34.4 - 45.0)	13.1	(9.6 - 16.6)	2.3 *	(0.7 - 3.9)
Persons	21.5	(18.3 - 24.7)	31.5	(27.7 - 35.3)	32.7	(28.9 - 36.4)	12.1	(9.6 - 14.7)	2.2 *	(0.8 - 3.6)
45 to 64 yrs										
Males	20.5	(17.3 - 23.7)	32.3	(28.6 - 35.9)	33.5	(29.7 - 37.3)	11.2	(8.7 - 13.7)	2.5 *	(1.3 - 3.8)
Females	18.9	(16.4 - 21.4)	26.7	(24.1 - 29.4)	37.8	(34.9 - 40.8)	13.5	(11.5 - 15.6)	2.9	(2.0 - 3.9)
Persons	19.7	(17.7 - 21.8)	29.5	(27.3 - 31.8)	35.7	(33.3 - 38.1)	12.4	(10.7 - 14.0)	2.7	(1.9 - 3.5)
65 yrs & over										
Males	16.4	(13.9 - 19.0)	32.3	(29.0 - 35.6)	36.0	(32.7 - 39.4)	11.4	(9.2 - 13.6)	3.8	(2.5 - 5.1)
Females	15.0	(13.0 - 17.0)	27.2	(24.7 - 29.6)	37.0	(34.3 - 39.7)	14.8	(12.9 - 16.8)	6.0	(4.7 - 7.4)
Persons	15.7	(14.0 - 17.3)	29.6	(27.6 - 31.6)	36.5	(34.4 - 38.7)	13.2	(11.8 - 14.7)	5.0	(4.0 - 5.9)
Total										
Males	23.5	(20.5 - 26.5)	32.9	(29.5 - 36.3)	29.8	(26.7 - 32.9)	11.2	(9.0 - 13.5)	2.5 *	(1.2 - 3.8)
Females	16.5	(14.4 - 18.5)	28.2	(25.5 - 30.9)	38.7	(35.7 - 41.6)	13.5	(11.5 - 15.5)	3.1	(2.2 - 4.0)
Persons	20.0	(18.2 - 21.9)	30.6	(28.4 - 32.8)	34.2	(32.0 - 36.4)	12.4	(10.9 - 13.9)	2.8	(2.0 - 3.6)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use

Respondents were asked how they usually spend most of the day. Population estimates are shown in Table 47.

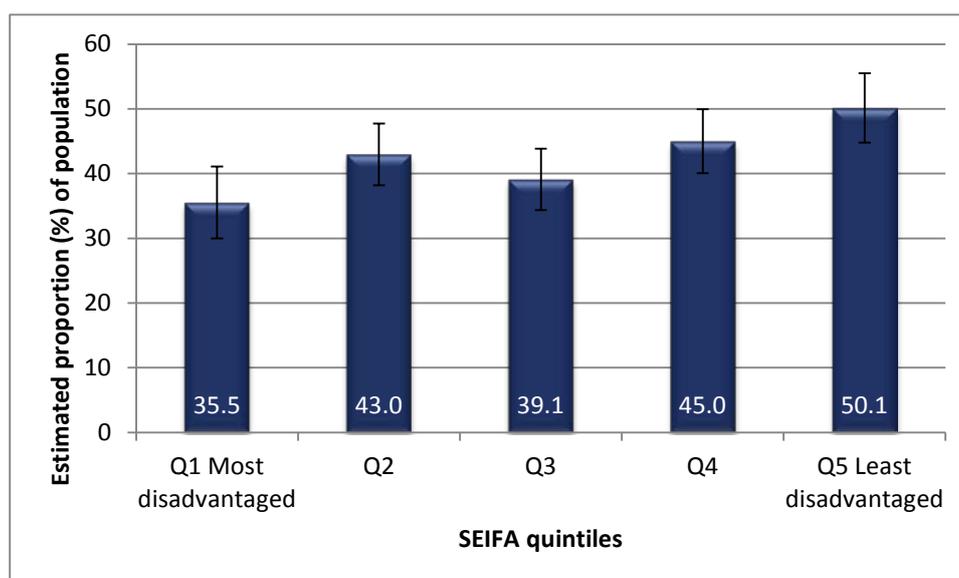
Table 47: How usually spend day, 16 years & over, HWSS 2015

	Sitting		Standing		Walking		Heavy labour/ physically demanding work	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs								
Males	44.2	(38.3 - 50.1)	15.6	(11.1 - 20.0)	19.6	(14.7 - 24.5)	20.6	(15.3 - 25.8)
Females	42.9	(37.6 - 48.2)	25.7	(21.1 - 30.3)	28.5	(21.1 - 33.3)	2.9 *	(1.2 - 4.7)
Persons	43.6	(39.6 - 47.6)	20.4	(17.2 - 23.6)	23.9	(20.4 - 27.3)	12.1	(9.1 - 15.1)
45 to 64 yrs								
Males	48.3	(44.3 - 52.2)	16.4	(13.4 - 19.4)	19.3	(16.4 - 22.3)	16.0	(13.1 - 22.3)
Females	38.6	(35.6 - 41.6)	24.1	(21.4 - 26.7)	32.3	(29.5 - 35.2)	5.0	(3.5 - 6.5)
Persons	43.5	(39.6 - 44.1)	20.2	(18.2 - 22.2)	25.8	(23.7 - 27.9)	10.6	(8.9 - 12.2)
65 yrs & over								
Males	46.2	(42.7 - 49.7)	19.6	(16.8 - 22.5)	28.9	(25.8 - 32.1)	5.2	(3.9 - 6.6)
Females	38.0	(35.3 - 40.7)	22.4	(20.0 - 24.8)	37.2	(34.5 - 40.0)	2.3	(1.4 - 3.2)
Persons	41.9	(39.6 - 44.1)	21.1	(19.2 - 23.0)	33.3	(31.2 - 35.4)	3.7	(2.9 - 4.5)
Total								
Males	45.7	(42.2 - 49.2)	16.4	(13.8 - 19.1)	20.9	(18.0 - 23.8)	16.9	(13.9 - 20.0)
Females	40.7	(37.8 - 43.7)	24.6	(22.1 - 27.2)	31.2	(28.5 - 33.9)	3.5	(2.4 - 4.5)
Persons	43.3	(41.0 - 45.6)	20.5	(18.6 - 22.3)	25.9	(24.0 - 27.9)	10.3	(8.6 - 12.0)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Males were significantly more likely than females to spend most of their day in heavy labour/physically demanding work (16.9% compared with 3.5%). Females were significantly more likely than males to spend most of their day standing (24.6% compared with 16.4%) or walking (31.2% compared with 20.9%).

Spending most of the day sitting was the only activity found to be statistically significant by SEIFA quintiles. Figure 25 shows the variation in the proportion of people that spend most of their day sitting by SEIFA quintiles. The prevalence of spending most of the day sitting was significantly higher in the least disadvantaged SEIFA quintile (Q5; 50.1%) compared with the most disadvantaged quintile (Q1) (35.5%) and quintile 3 (39.1%).

Figure 25: Spend day mostly sitting, 16 years & over, by SEIFA quintiles in WA, HWSS 2015

In 2014 the Australian Department of Health reviewed Australia's Physical Activity and Sedentary Behaviour Guidelines and stated that adults aged 18 to 64 years should complete at least 75 to 150 minutes of vigorous physical activity or 150 to 300 minutes of moderate physical activity per week.³¹

With no new guideline explicitly defined in the 2014 Physical Activity and Sedentary Behaviour guidelines for adults aged 65 years and over, the 2005 recommendation of 30 minutes of moderate physical activity most days of the week, preferably all, is the most recent advice available.

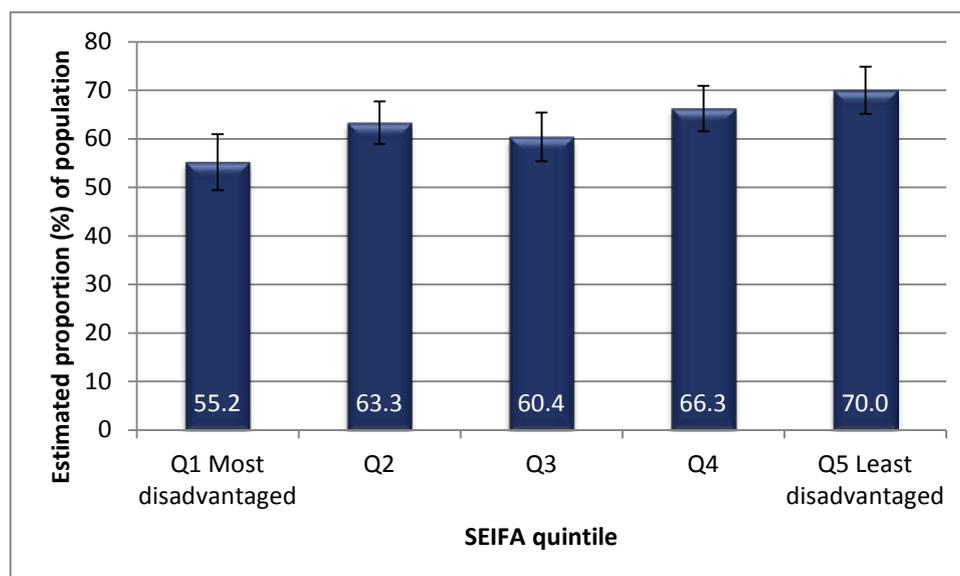
To avoid reporting against multiple guidelines, all persons aged 18 years and over will be defined as completing sufficient (or recommended) levels of physical activity if they complete at least 150 minutes of moderate physical activity in the last week. The questions used to estimate the amount of physical activity undertaken in a week are taken from the Active Australia Survey.³²

Table 48 presents the proportion of adults 18 years and over completing sufficient levels of physical activity. Almost two-thirds (63.7%) of adults were sufficiently active for good health while just over one in seven (15.1%) did no leisure time physical activity. The proportion of adults completing sufficient amounts of physical activity per week decreased significantly with age.

Table 48: Physical activity level, measured by the 2014 Australian Physical Activity and Sedentary Behaviour guidelines, 18 years & over, HWSS 2015

	Does no leisure time physical activity per week		Does less than 150 mod mins physical activity per week		Does at least 150 mod mins physical activity per week	
	%	95% CI	%	95% CI	%	95% CI
18 to 44 yrs						
Males	10.8	(6.6 - 15.0)	15.4	(11.0 - 19.8)	73.8	(68.2 - 79.4)
Females	10.9	(7.1 - 14.7)	24.9	(20.0 - 29.7)	64.3	(58.8 - 69.7)
Persons	10.9	(8.0 - 13.7)	19.9	(16.6 - 23.2)	69.2	(65.3 - 73.2)
45 to 64 yrs						
Males	16.8	(13.9 - 19.8)	19.8	(16.8 - 22.9)	63.3	(59.5 - 67.1)
Females	15.7	(13.6 - 17.9)	23.3	(20.7 - 25.9)	61.0	(58.0 - 64.0)
Persons	16.3	(14.5 - 18.1)	21.6	(19.5 - 23.6)	62.2	(59.8 - 64.6)
65 yrs & over						
Males	21.2	(18.3 - 24.0)	21.5	(18.6 - 24.4)	57.3	(53.8 - 60.8)
Females	30.3	(27.7 - 32.9)	26.7	(24.2 - 29.2)	43.0	(40.2 - 45.8)
Persons	26.0	(24.1 - 28.0)	24.3	(22.4 - 26.1)	49.7	(47.5 - 51.9)
Total						
Males	14.3	(11.9 - 16.8)	17.7	(15.1 - 20.3)	68.0	(64.7 - 71.2)
Females	15.9	(13.8 - 18.0)	24.7	(22.1 - 27.3)	59.4	(56.5 - 62.4)
Persons	15.1	(13.5 - 16.7)	21.2	(19.3 - 23.0)	63.7	(61.5 - 66.0)

Figure 26 shows the proportion of adults aged 18 years and over meeting the recommended levels of physical activity by SEIFA quintiles. The prevalence of meeting the physical activity recommendations was significantly higher in the least disadvantaged quintile (Q5) compared with the most disadvantaged quintile (Q1) (70.0% compared with 55.2%).

Figure 26: Proportion of people meeting the physical activity recommendation, 18 years & over, by SEIFA quintiles in WA, HWSS 2015

The standardised annual estimates of the proportion of adults, 18 years and over, completing the recommended 150 minutes or more of moderate intensity physical activity per week is shown in Table 49.

Table 49: Proportion adults completing recommended levels of physical activity over time by sex, 18 years & over, HWSS 2007–15

	Males	Females	Persons
2007	59.5	53.0	56.2
2008	61.4	55.6	58.6
2009	65.7	57.7	61.7
2010	66.0	61.0	63.5
2011	66.6	59.6	63.1
2012	68.4	58.3	63.4
2013	67.8	58.7	63.2
2014	67.7	60.6	64.1
2015	68.0	59.6	63.8
Average	65.0	57.4	61.1

The prevalence of adults 18 years and over meeting sufficient levels of physical activity (63.8%) in 2015 was significantly higher than in 2007-08 (Table 49). The prevalence of males meeting sufficient levels of physical activity in 2015 (68.0%) was

significantly higher than 2007-08 and the prevalence of females meeting sufficient levels of physical activity (59.6%) was significantly higher than 2007 (Table 49).

The mean minutes spent in physical activity per week, for respondents who indicated some level of physical activity, are shown in Table 50.

Table 50: Trend for mean time (a) spent in physical activity per week, 18 years & over, HWSS 2007–15

	Males	Females	Persons
2007	345.2	252.4	298.8
2008	352.2	271.4	312.0
2009	387.7	292.1	340.0
2010	405.8	307.3	357.2
2011	379.7	299.7	339.4
2012	397.5	302.2	350.0
2013	396.8	304.5	350.7
2014	393.4	305.5	349.1
2015	415.0	303.4	359.4
Average	381.4	288.7	334.2

(a) Refers to the mean time spent in moderate physical activity per week, where vigorous activity has been doubled.

The mean minutes spent in physical activity for males and all persons in 2015 was significantly higher compared to 2007-08. For females, the 2015 mean minutes spent in physical activity was significantly higher compared with 2007.

Sedentary leisure-time activity, such as television viewing, is strongly associated with both overweight and obesity.³³

Table 51 shows how many hours per week people spend in screen-based sedentary leisure time activities such as watching TV or DVDs, using a computer, Smartphone or tablet device for the Internet or to play games, excluding work time.

Table 51: Time spent watching TV/DVDs or using a computer/Smartphone/tablet device per week, 16 years & over, HWSS 2015

	None		Less than 7 hrs		7 to less than 14 hrs		14 to less than 21 hrs		21+ hrs	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	1.9 *	(0.3- 3.4)	14.8	(10.8- 18.8)	24.8	(19.7- 30.0)	27.0	(21.4- 32.5)	31.5	(25.8- 37.2)
Females	3.2 *	(1.3- 5.0)	13.7	(10.0- 17.4)	27.1	(22.4- 31.7)	31.0	(26.1- 35.8)	25.1	(20.2- 30.0)
Persons	2.5	(1.3- 3.7)	14.3	(11.6- 17.0)	25.9	(22.5- 29.4)	28.9	(25.2- 32.6)	28.4	(24.6- 32.2)
45 to 64 yrs										
Males	0.9 *	(0.3- 1.4)	11.2	(8.7- 13.8)	22.0	(18.7- 25.3)	31.9	(28.2- 35.6)	34.0	(30.2- 37.7)
Females	1.4	(0.7- 2.1)	9.0	(7.2- 10.9)	21.7	(19.2- 24.3)	32.8	(30.0- 35.7)	35.0	(32.1- 37.9)
Persons	1.1	(0.7- 1.6)	10.1	(8.6- 11.7)	21.9	(19.8- 23.9)	32.4	(30.0- 34.7)	34.5	(32.1- 36.8)
65 yrs & over										
Males	0.6 *	(0.1- 1.1)	4.1	(2.8- 5.4)	12.1	(9.9- 14.4)	28.6	(25.5- 31.8)	54.5	(51.0- 58.0)
Females	0.9	(0.5- 1.3)	4.6	(3.4- 5.8)	13.1	(11.2- 15.0)	26.4	(23.9- 28.9)	54.9	(52.1- 57.7)
Persons	0.8	(0.5- 1.1)	4.4	(3.5- 5.2)	12.7	(11.2- 14.1)	27.5	(25.5- 29.5)	54.7	(52.5- 57.0)
Total										
Males	1.4 *	(0.5- 2.2)	12.1	(9.8- 14.5)	22.1	(19.1- 25.1)	28.7	(25.5- 32.0)	35.7	(32.3- 39.0)
Females	2.3	(1.3- 3.3)	10.7	(8.7- 12.8)	23.1	(20.5- 25.6)	30.8	(28.1- 33.5)	33.2	(30.4- 35.9)
Persons	1.8	(1.2- 2.5)	11.4	(9.9- 13.0)	22.6	(20.6- 24.5)	29.7	(27.6- 31.9)	34.4	(32.2- 34.4)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

8.5 Sleep

There is growing recognition of the importance of sleep to good health, with insufficient sleep linked to cardiovascular disease, increased risk of mortality, depression as well as injury and/or accidents.³⁴ Sleep duration recommendations vary by age group. Those aged 16 to 17 years are recommended to sleep between 8 to 10 hours a night, 18 to 64 year olds are recommended to sleep 7 to 9 hours a night and adults aged 65 years and over are recommended to sleep 7 to 8 hours per night.³⁵

Respondents were asked how many hours sleep they get on a usual night. Table 52 shows the prevalence of the population meeting the recommended hours of sleep. Two thirds of adults (66.7%) reported sleeping the recommended number of hours per night. Those aged 65 years and over were significantly less likely than respondents aged 16 to 44 years and 45 to 64 years to sleep the recommended number of hours a night (53.1% compared with 70.5% and 67.0%). Overall, respondents reported sleeping an average of 7.2 hours per night.

Table 52: Proportion of adults sleeping the recommended number of hours on a usual night, 16 years & over, HWSS 2015

	Sleeps the recommended number of hours per night		Does not sleep the recommended number of hours per night	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	69.6	(64.1 - 75.2)	30.4	(24.8 - 35.9)
Females	71.5	(66.7 - 76.3)	28.5	(23.7 - 33.3)
Persons	70.5	(66.8 - 74.3)	29.5	(25.7 - 33.2)
45 to 64 yrs				
Males	68.7	(65.1 - 72.3)	31.3	(27.7 - 34.9)
Females	65.4	(62.4 - 68.3)	34.6	(31.7 - 37.6)
Persons	67.0	(64.7 - 69.4)	33.0	(30.6 - 35.3)
65 yrs & over				
Males	56.8	(53.3 - 60.3)	43.2	(39.7 - 46.7)
Females	49.7	(46.9 - 52.5)	50.3	(47.5 - 53.1)
Persons	53.1	(50.8 - 55.3)	46.9	(44.7 - 49.2)
Total				
Males	67.5	(64.2 - 70.7)	32.5	(29.3 - 35.8)
Females	66.0	(63.2 - 68.7)	34.0	(31.3 - 36.8)
Persons	66.7	(64.6 - 68.9)	33.3	(31.1 - 35.4)

9. PHYSIOLOGICAL RISK FACTORS

Biomedical factors such as high cholesterol, high blood pressure, and overweight or obesity can be major contributors to ill health and chronic disease. These risk factors are expressed through bodily changes and are highly interrelated.²⁵ Biomedical risk factors, such as high blood pressure and high cholesterol are managed through a combination of clinical practice, medications, population-based interventions and lifestyle behaviours.³⁶

9.1 Cholesterol level

High cholesterol is a major risk factor for coronary heart disease and stroke.³⁶ Respondents were asked when they last had their cholesterol measured and whether or not they have had high cholesterol.

Table 54 shows the proportion of adults by when their cholesterol was last tested. Table 53 shows the proportion of adults who have been told by a doctor that they have high cholesterol levels. The prevalence of ever and current high cholesterol diagnosis increased significantly with age for both sexes.

Table 53: Prevalence of diagnosed high cholesterol levels, 16 years & over, HWSS 2015

	Lifetime (ever)		Point (current)	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	16.1	(10.9 - 21.3)	7.2	(3.7 - 10.7)
Females	12.5	(8.3 - 16.8)	3.4 *	(1.1 - 5.8)
Persons	14.3	(10.9 - 17.7)	5.3	(3.2 - 7.4)
45 to 64 yrs				
Males	36.8	(32.9 - 40.7)	24.2	(20.7 - 27.7)
Females	29.4	(26.5 - 32.2)	18.2	(15.8 - 20.7)
Persons	33.2	(30.7 - 35.6)	21.3	(19.1 - 23.4)
65 yrs & over				
Males	42.5	(39.0 - 46.0)	37.0	(33.5 - 40.5)
Females	45.1	(42.3 - 47.9)	36.5	(33.7 - 39.2)
Persons	43.9	(41.7 - 46.1)	36.7	(34.5 - 38.9)
Total				
Males	29.5	(26.6 - 32.4)	19.8	(17.5 - 22.1)
Females	26.1	(23.9 - 28.4)	16.3	(14.7 - 18.0)
Persons	27.8	(26.0 - 29.6)	18.1	(16.7 - 19.5)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

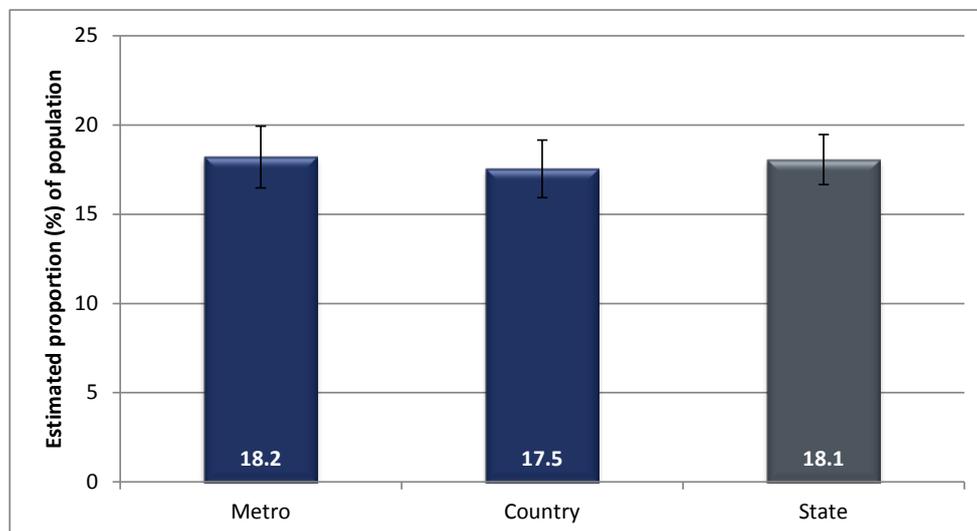
Table 54: Cholesterol level last tested, 16 years & over, HWSS 2015

	Never		Within 6 mths		6 mths to 1 yr		1 to 2 yrs		2 or more yrs ago		Unsure	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs												
Males	46.0	(39.9 - 52.1)	15.6	(11.6 - 19.6)	12.1	(8.6 - 15.5)	9.0	(5.7 - 12.4)	8.3	(5.0 - 11.5)	9.1	(5.9 - 12.2)
Females	41.3	(36.0 - 46.7)	20.9	(16.8 - 25.1)	13.6	(10.0 - 17.1)	8.0	(5.3 - 10.7)	7.8	(5.1 - 10.5)	8.3	(5.5 - 11.2)
Persons	43.7	(39.7 - 47.8)	18.2	(15.3 - 21.1)	12.8	(10.3 - 15.3)	8.5	(6.4 - 10.7)	8.0	(5.9 - 10.2)	8.7	(6.6 - 10.8)
45 to 64 yrs												
Males	3.8	(2.3 - 5.3)	48.9	(45.0 - 52.9)	25.5	(22.0 - 29.1)	9.9	(7.6 - 12.8)	7.4	(5.3 - 9.5)	4.5	(2.8 - 6.3)
Females	5.6	(4.2 - 7.1)	44.8	(41.7 - 47.8)	25.3	(22.7 - 28.0)	12.6	(10.6 - 14.7)	7.6	(5.8 - 9.3)	4.1	(3.0 - 5.2)
Persons	4.7	(0.8 - 5.8)	46.8	(44.4 - 49.3)	25.4	(23.2 - 27.6)	11.2	(9.7 - 12.8)	7.5	(6.1 - 8.8)	4.3	(3.3 - 5.4)
65 yrs & over												
Males	1.7 *	(0.7 - 2.6)	66.5	(63.3 - 69.8)	18.7	(15.9 - 21.4)	3.5	(2.2 - 4.8)	2.8	(1.7 - 3.9)	6.9	(5.1 - 8.6)
Females	1.0	(0.5 - 1.4)	59.4	(56.7 - 62.2)	19.9	(17.6 - 22.1)	6.1	(4.7 - 7.4)	3.5	(2.5 - 4.5)	10.2	(8.6 - 11.9)
Persons	1.3	(0.8 - 1.8)	62.8	(60.6 - 64.9)	19.3	(17.6 - 21.0)	4.9	(3.9 - 5.8)	3.2	(2.4 - 3.9)	8.6	(7.4 - 9.8)
Total												
Males	26.7	(22.8 - 30.5)	33.2	(30.3 - 36.1)	17.1	(14.8 - 20.3)	8.5	(6.5 - 10.4)	7.2	(5.3 - 9.1)	7.4	(5.5 - 9.2)
Females	23.5	(20.4 - 26.7)	34.8	(32.2 - 37.4)	18.2	(16.2 - 20.3)	9.1	(7.5 - 10.6)	7.0	(5.5 - 8.5)	7.4	(5.8 - 8.9)
Persons	25.1	(22.6 - 27.6)	34.0	(32.0 - 36.0)	17.7	(16.1 - 19.2)	8.8	(7.5 - 10.0)	7.1	(5.9 - 8.3)	7.4	(6.2 - 8.6)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Figure 27 shows the proportion of adults with current high cholesterol by geographic area of residence. There were no statistically significant differences.

Figure 27: Prevalence of current high cholesterol, 16 years & over, by geographic area of residence in WA, HWSS 2015



The cholesterol information has not always been asked of adults 16 to 24 years. Therefore, the standardised annual prevalence estimates of high cholesterol for adults aged 25 years and over are shown in Table 55. There were no statistically significant differences in the lifetime or current prevalence of high cholesterol when 2015 estimates are compared with 2003.

Table 55: Prevalence of high cholesterol over time, 25 years & over, HWSS 2003–15

	Lifetime (ever)			Period (current) (a)		
	Males	Females	Persons	Males	Females	Persons
2003	32.2	30.6	31.4	19.8	19.2	19.5
2004	32.8	31.9	32.3	21.8	18.8	20.3
2005	30.9	30.5	30.7	16.3	14.0	15.2
2006	29.8	30.3	30.1	19.8	18.0	18.9
2007	31.9	29.3	30.6	20.3	19.8	20.1
2008	29.5	27.3	28.4	18.2	17.2	17.7
2009	31.3	27.6	29.5	20.9	18.5	19.7
2010	32.6	31.3	32.0	21.4	20.7	21.1
2011	33.6	29.3	31.5	22.9	18.5	20.7
2012	30.2	26.1	28.1	20.2	16.8	18.5
2013	29.1	26.9	28.0	19.8	18.4	19.1
2014	30.4	27.8	29.1	20.4	17.8	19.1
2015	31.3	27.3	29.3	20.9	17.1	19.0
Average	31.6	29.0	30.3	20.4	18.2	19.3

(a) Current high cholesterol is defined as having high cholesterol or taking medication.

9.2 Blood pressure

High blood pressure is a major risk factor for the development of coronary artery disease, stroke and renal failure.³⁷

Respondents were asked when they last had their blood pressure measured and if a doctor has ever told them that they have high blood pressure. Of those who have had their blood pressure measured, an estimate of the prevalence of people who have had high blood pressure as well as people who currently have high blood pressure or who are being treated for high blood pressure is shown in Table 56. The prevalence for ever being diagnosed with high blood pressure and a current diagnosis of high blood pressure both increased significantly with age. Table 57 shows the proportion of adults by when their blood pressure was last tested.

Table 56: Prevalence of high blood pressure, 16 years & over, HWSS 2015

	Lifetime (ever)		Point (current)	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	9.3	(6.4 - 12.3)	2.7 *	(1.3 - 4.0)
Females	11.1	(8.1 - 14.2)	3.4	(1.9 - 4.9)
Persons	10.2	(8.1 - 12.4)	3.0	(2.0 - 4.1)
45 to 64 yrs				
Males	30.5	(27.0 - 34.0)	23.2	(19.9 - 26.4)
Females	26.8	(24.1 - 29.5)	19.0	(16.6 - 21.3)
Persons	28.7	(26.4 - 30.9)	21.1	(19.1 - 23.1)
65 yrs & over				
Males	51.6	(48.1 - 55.1)	47.5	(44.0 - 51.1)
Females	53.1	(50.3 - 55.9)	47.2	(44.4 - 50.0)
Persons	52.4	(50.2 - 54.6)	47.4	(45.2 - 49.6)
Total				
Males	22.6	(20.3 - 24.9)	16.1	(14.4 - 17.8)
Females	23.4	(21.3 - 25.4)	15.9	(14.5 - 17.3)
Persons	23.0	(21.4 - 24.5)	16.0	(14.9 - 17.1)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Table 57: Blood pressure last tested, 16 years & over, HWSS 2015

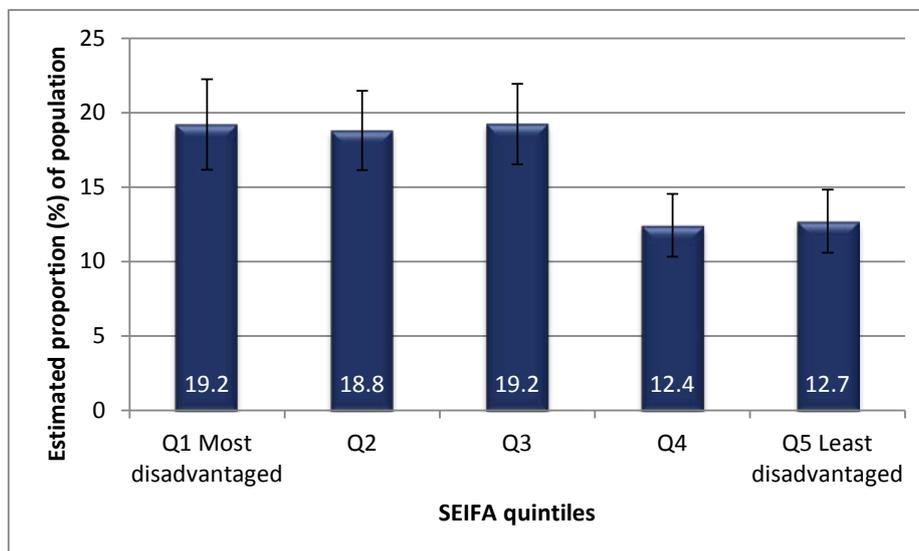
	Never		Within 6 mths		6 mths to 1 yr		1 to 2 yrs		2 or more yrs ago		Unsure	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs												
Males	8.2	(4.7 - 11.8)	51.6	(45.6 - 57.6)	16.2	(12.2 - 20.3)	10.7	(6.5 - 14.9)	5.7 *	(2.7 - 8.7)	7.6	(4.7 - 10.5)
Females	3.3 *	(0.9 - 5.6)	66.7	(61.6 - 71.8)	16.9	(12.9 - 20.9)	5.0	(2.9 - 7.1)	4.2 *	(1.8 - 6.5)	4.0 *	(1.9 - 6.1)
Persons	5.8	(3.7 - 8.0)	58.9	(54.9 - 62.9)	16.5	(13.7 - 19.4)	7.9	(5.5 - 10.4)	4.9	(3.0 - 6.9)	5.9	(4.0 - 7.7)
45 to 64 yrs												
Males	N/A	(N/A - N/A)	75.3	(71.8 - 78.8)	15.0	(12.2 - 17.9)	4.1	(2.6 - 5.7)	3.8	(2.2 - 5.3)	1.5 *	(0.4 - 2.7)
Females	N/A	(N/A - N/A)	74.2	(71.5 - 76.9)	15.1	(12.9 - 17.2)	5.1	(3.7 - 6.5)	3.2	(2.0 - 4.4)	2.3	(1.3 - 3.3)
Persons	N/A	(N/A - N/A)	74.7	(72.5 - 76.9)	15.1	(13.3 - 16.9)	4.6	(3.6 - 5.7)	3.5	(2.5 - 4.5)	1.9	(1.2 - 2.7)
65 yrs & over												
Males	N/A	(N/A - N/A)	92.0	(90.2 - 93.9)	4.9	(3.5 - 6.4)	1.3 *	(0.4 - 2.1)	N/A	(N/A - N/A)	1.2 *	(0.5 - 1.9)
Females	N/A	(N/A - N/A)	89.1	(87.4 - 90.8)	4.8	(3.7 - 6.0)	1.5	(0.8 - 2.3)	1.2 *	(0.5 - 1.8)	3.3	(2.3 - 4.3)
Persons	N/A	(N/A - N/A)	90.5	(89.2 - 91.8)	4.9	(3.9 - 5.8)	1.4	(0.9 - 2.0)	0.8 *	(0.4 - 1.2)	2.3	(1.7 - 2.9)
Total												
Males	4.6	(2.7 - 6.6)	64.7	(61.1 - 68.4)	14.2	(11.8 - 16.6)	7.3	(4.9 - 9.7)	4.3	(2.6 - 6.0)	4.8	(3.2 - 6.5)
Females	1.7 *	(0.5 - 3.0)	72.8	(70.0 - 75.6)	14.3	(12.1 - 16.5)	4.4	(3.3 - 5.6)	3.4	(2.1 - 4.6)	3.4	(2.2 - 4.5)
Persons	3.2	(2.0 - 4.4)	68.7	(66.4 - 71.1)	14.2	(12.6 - 15.9)	5.9	(4.5 - 7.2)	3.8	(2.8 - 4.9)	4.1	(3.1 - 5.1)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Figure 28 shows the proportion of adults with current high blood pressure by SEIFA quintiles.

Figure 28: Prevalence of current high blood pressure, 16 years & over, by SEIFA quintiles in WA, HWSS 2015



The prevalence of current high blood pressure was significantly lower in the least disadvantaged SEIFA quintiles (Q4 and Q5) compared with the other three quintiles (Q1 – Q3).

The blood pressure information has not always been asked of adults aged 16 to 24 years. Therefore, the standardised annual prevalence estimates of high blood pressure for adults aged 25 years and over are shown in Table 58.

Table 58: Prevalence of high blood pressure over time, 25 years & over, HWSS 2003–15

	Lifetime (ever)			Period (current) (a)		
	Males	Females	Persons	Males	Females	Persons
2003	24.7	29.7	27.2	16.2	18.8	17.5
2004	26.4	30.9	28.7	17.1	20.4	18.8
2005	26.2	29.1	27.7	17.6	17.8	17.7
2006	27.1	30.7	28.9	18.5	19.2	18.9
2007	28.4	30.2	29.3	18.5	19.4	19.0
2008	26.2	29.3	27.7	18.2	19.4	18.8
2009	27.0	28.8	27.9	19.9	19.3	19.6
2010	29.8	29.2	29.5	21.0	19.0	20.0
2011	26.7	27.6	27.1	18.3	19.2	18.7
2012	24.8	26.7	25.8	18.6	19.0	18.8
2013	26.4	24.6	25.5	19.2	17.1	18.2
2014	27.2	25.5	26.3	19.3	17.9	18.6
2015	25.0	26.3	25.6	18.9	18.4	18.6
Average	27.1	28.5	27.8	19.1	18.9	19.0

(a) Refers to having been diagnosed by a doctor with high blood pressure and either still having high blood pressure or still taking medication for high blood pressure.

There were no statistically significant differences in the prevalence of current or lifetime high blood pressure when 2015 estimates are compared with previous years.

9.3 Body Weight

Obesity is associated with type 2 diabetes, cardiovascular disease, some cancers and arthritis.³⁸

Respondents were asked how tall they are and how much they weigh. A Body Mass Index (BMI) was derived from these figures by dividing weight in kilograms by height in metres squared after adjustment for errors in the self-reported height and weight.³⁹ The BMIs were then classified as not overweight or obese (BMI<25), overweight (25≤BMI<30) or obese (BMI≥30),⁴⁰ as shown in Table 59.

Just over two-thirds of adults (67.1%) reported height and weight measurements that classified them as overweight or obese. Over one quarter of adults reported height and weight measurements that classified them as obese (26.9%). Females were significantly more likely to be classified as not overweight or obese than males (38.9% compared with 27.4%). The proportion of respondents classified as obese was significantly higher for persons aged 45 years and over compared with those age 16 to 44 years.

Table 59: Prevalence by BMI categories, 16 years & over, HWSS 2015

	Not overweight or obese		Overweight		Obese	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	36.0	(29.8 - 42.1)	44.3	(38.3 - 50.4)	19.7	(15.2 - 24.2)
Females	48.9	(43.3 - 54.4)	32.2	(26.9 - 37.5)	18.9	(15.2 - 22.6)
Persons	42.0	(37.8 - 46.2)	38.7	(34.6 - 42.8)	19.3	(16.4 - 22.3)
45 to 64 yrs						
Males	15.0	(12.2 - 17.7)	45.2	(41.2 - 49.1)	39.9	(35.9 - 43.8)
Females	27.6	(24.8 - 30.4)	37.7	(34.7 - 40.8)	34.6	(31.7 - 37.6)
Persons	21.1	(19.1 - 23.1)	41.5	(39.0 - 44.1)	37.3	(34.8 - 39.8)
65 yrs & over						
Males	21.7	(18.8 - 24.7)	51.4	(47.8 - 54.9)	26.9	(23.8 - 30.0)
Females	29.5	(26.9 - 32.2)	34.4	(31.6 - 37.1)	36.1	(33.3 - 38.9)
Persons	25.8	(23.8 - 27.8)	42.6	(40.3 - 44.8)	31.7	(29.6 - 33.8)
Total						
Males	27.4	(23.8 - 31.0)	45.6	(42.1 - 49.2)	27.0	(24.1 - 29.9)
Females	38.9	(35.7 - 42.0)	34.3	(31.4 - 37.2)	26.8	(24.5 - 29.1)
Persons	32.9	(30.5 - 35.3)	40.2	(37.8 - 42.5)	26.9	(25.0 - 28.8)

Figure 29 shows adults aged 16 years and over classified as overweight or obese based on BMI by ARIA. The proportion of adults classified as overweight or obese was significantly higher in areas of WA classified as inner regional (73.2%), remote (73.7%) or very remote (80.3%) compared with areas of WA classified as major cities (64.9%).

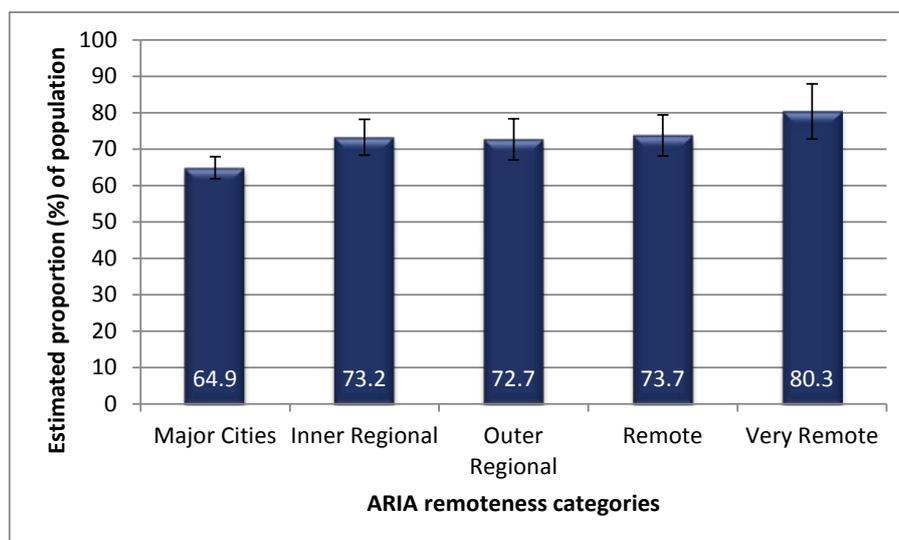
Figure 29: Prevalence of overweight and obesity by BMI, 16 years & over, by ARIA in WA, HWSS 2015

Table 60 shows the prevalence over time for three BMI categories; not overweight or obese, overweight and obese. For males, females and all persons, the prevalence of obesity was significantly higher in 2015 compared with 2002.

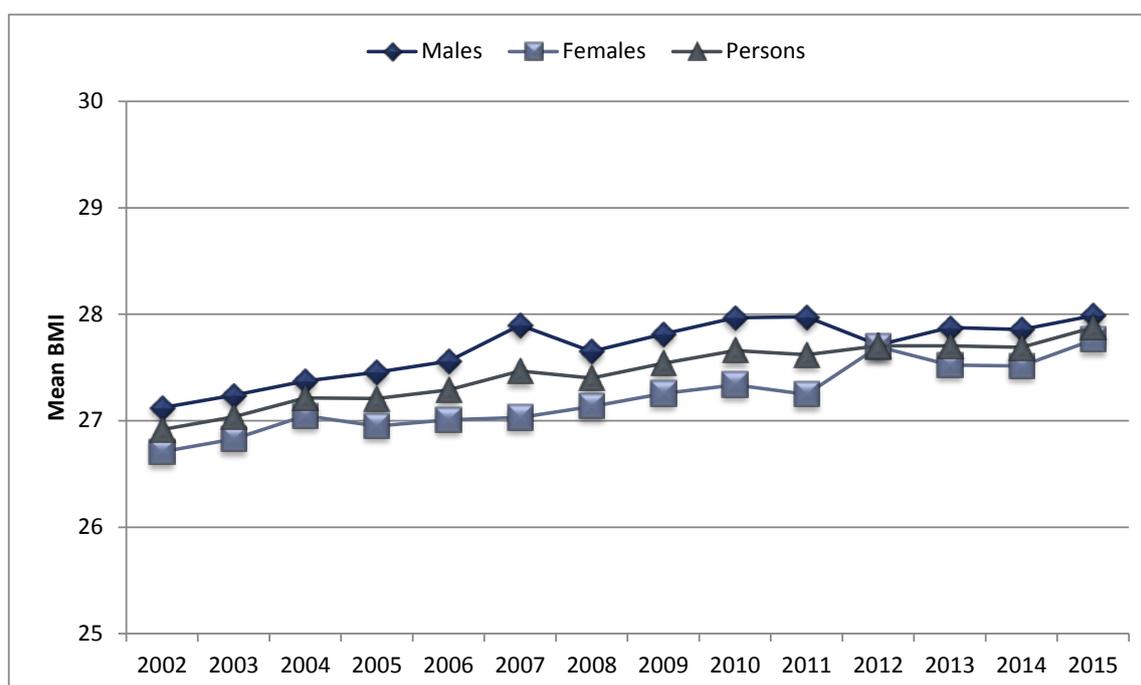
Table 60: Prevalence by BMI categories over time, 16 years & over, HWSS 2002–15

	Not overweight or obese			Overweight			Obese		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
2002	31.8	45.4	38.5	47.8	32.5	40.2	20.5	22.1	21.3
2003	32.1	44.8	38.3	46.8	33.1	40.1	21.1	22.1	21.6
2004	28.7	42.2	35.3	49.5	33.9	41.8	21.8	24.0	22.9
2005	28.2	44.5	36.2	48.9	29.7	39.5	22.9	25.9	24.3
2006	28.7	42.4	35.5	47.4	33.3	40.4	23.9	24.3	24.1
2007	27.6	43.0	35.2	45.4	31.9	38.7	27.1	25.2	26.1
2008	30.2	43.0	36.4	44.2	31.7	38.1	25.6	25.3	25.4
2009	26.2	40.8	33.4	46.9	32.7	39.9	26.9	26.5	26.7
2010	26.2	41.5	33.7	46.9	32.3	39.7	26.9	26.2	26.6
2011	26.3	41.3	33.6	47.3	32.9	40.3	26.4	25.8	26.1
2012	29.4	38.4	33.8	43.5	32.2	38.0	27.1	29.4	28.3
2013	26.3	41.0	33.5	45.5	31.5	38.7	28.2	27.5	27.9
2014	28.0	39.2	33.5	44.2	33.3	38.9	27.9	27.5	27.7
2015	27.3	38.7	32.8	45.5	34.4	40.1	27.1	26.9	27.0
Average	28.3	42.0	35.0	46.5	32.3	39.5	25.2	25.7	25.4

The standardised annual mean BMI estimates for adults aged 16 years and over are shown in Table 61 and Figure 30.

Table 61: Mean BMI over time, 16 years & over, HWSS 2002–15

	Males	Females	Persons
2002	27.1	26.7	26.9
2003	27.2	26.8	27.0
2004	27.4	27.0	27.2
2005	27.5	27.0	27.2
2006	27.6	27.0	27.3
2007	27.9	27.0	27.5
2008	27.7	27.1	27.4
2009	27.8	27.3	27.5
2010	28.0	27.3	27.7
2011	28.0	27.2	27.6
2012	27.7	27.7	27.7
2013	27.9	27.5	27.7
2014	27.9	27.5	27.7
2015	28.0	27.8	27.9
Average	27.7	27.2	27.4

Figure 30: Mean BMI over time, 16 years & over, HWSS 2002–15

The standardised mean BMI has been increasing slightly over time. For males, the mean BMI in 2015 was significantly higher compared with 2002-03. For females, the mean BMI in 2015 is significantly higher than 2002-03 and 2005-07. For all persons, the mean BMI in 2015 is significantly higher than the 2002-06 and 2008 means.

Respondents were also asked to provide their waist circumference as waist circumference may predict future health risks more accurately than BMI alone. Adults with a waist circumference of 80-87cm for females and 94-101cm for males were categorised as abdominally overweight and having an increased risk of developing chronic conditions, while adults with a waist circumference of ≥ 88 cm for females and ≥ 102 cm for males were categorised as abdominally obese and having a highly increased risk of developing chronic conditions.⁴¹

Population prevalence estimates are displayed in Table 62. Over one-quarter of adults (27.6%) reported waist measurements that classified them as overweight or obese. Males were significantly more likely than females to be abdominally underweight or normal weight. The proportion of respondents classified as abdominally overweight or obese was significantly higher for persons aged 45 years and over compared with those aged 16 to 44 years.

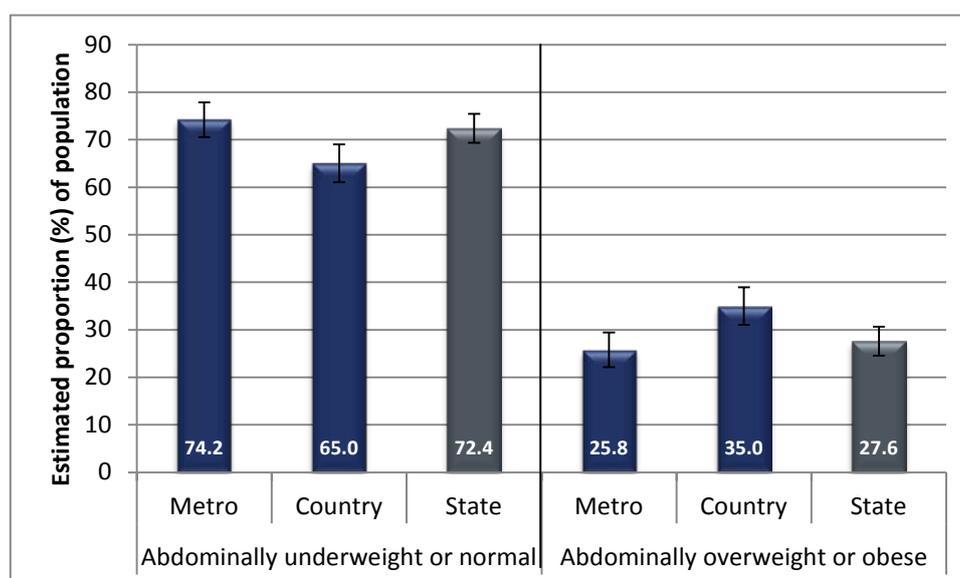
Table 62: Classification of waist circumference, 16 years & over, HWSS 2015

	Abdominally underweight or normal		Abdominally overweight		Abdominally obese	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	85.7	(80.7 - 90.8)	9.5	(5.5 - 13.4)	4.8 *	(1.5 - 8.1)
Females	65.3	(52.8 - 77.7)	14.2 *	(5.8 - 22.6)	20.5 *	(10.0 - 31.0)
Persons	81.6	(76.8 - 86.4)	10.4	(6.8 - 14.0)	8.0	(4.5 - 11.4)
45 to 64 yrs						
Males	70.8	(66.4 - 75.2)	18.7	(14.9 - 22.5)	10.5	(7.5 - 13.6)
Females	45.2	(37.8 - 52.5)	20.3	(14.7 - 25.8)	34.6	(27.6 - 41.5)
Persons	65.2	(61.4 - 69.1)	19.0	(15.9 - 22.2)	15.7	(12.8 - 18.6)
65 yrs & over						
Males	57.3	(52.9 - 61.8)	26.3	(22.3 - 30.2)	16.4	(13.1 - 19.7)
Females	38.5	(31.0 - 46.1)	19.7	(13.9 - 25.5)	41.7	(34.1 - 49.4)
Persons	53.8	(49.9 - 57.7)	25.0	(21.6 - 28.4)	21.2	(18.1 - 24.3)
Total						
Males	76.9	(73.6 - 80.1)	14.8	(12.2 - 17.4)	8.3	(6.2 - 10.4)
Females	54.9	(47.5 - 62.4)	17.0	(12.0 - 21.9)	28.1	(21.8 - 34.4)
Persons	72.4	(69.3 - 75.4)	15.3	(13.0 - 17.6)	12.3	(10.2 - 14.5)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Figure 31 shows the prevalence of weight by classification of waist circumference by geographic area of residence. Residents in the country areas were significantly more likely to be abdominally overweight or obese compared with residents in the metro area.

Figure 31: Classification of waist circumference, 16 years & over, by geographic area of residence in WA, HWSS 2015



Respondents were also asked for their perceptions of their own weight (Table 63). Perceptions of weight have been reported against BMI based weight categories derived from corrected self-reported height and weight.³⁹ Of those people with a BMI that classified them as overweight, the majority (54.8%) perceived their weight to be normal rather than overweight (44.1%). A similar result was seen in people with BMIs that classified them as obese; with 3 out of 4 (75.2%) perceiving themselves to be overweight, rather than very overweight (12.7%).

Respondents were then asked what they were trying to do about their weight (Table 64). Intentions to change weight have been reported against BMI calculations based on self-reported height and weight. Approximately half (49.3%) of people with a BMI that classified them as overweight had intentions to lose weight, while this increased to almost three quarters (71.9%) among people with a BMI that classified them as obese.

Table 63: Prevalence of self-perception of body weight, 16 years & over, by Body Mass Index classification, HWSS 2015

Body Mass index classification	Self-perception of body weight							
	Underweight		Normal weight		Overweight		Very overweight	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Underweight	69.3	(43.5 - 95.0)	30.0 *	(4.4 - 55.7)	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Normal weight	8.7	(5.6 - 11.8)	86.2	(82.8 - 89.5)	4.8	(3.3 - 6.2)	N/A	(N/A - N/A)
Overweight	0.8 *	(0.1 - 1.5)	54.8	(51.1 - 58.5)	44.1	(40.4 - 47.8)	0.3 *	(0.0 - 0.6)
Obese	N/A	(N/A - N/A)	11.9	(9.1 - 14.7)	75.2	(71.8 - 78.7)	12.7	(10.1 - 15.4)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.
 N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Table 64: Prevalence of intentions to change weight, 16 years & over, by Body Mass Index classification, HWSS 2015

Body Mass index classification	Intentions around weight							
	Lose weight		Gain weight		Stay the same weight		I am not trying to do anything about my weight	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Underweight	N/A	(N/A - N/A)	44.2 *	(13.9 - 74.5)	N/A	(N/A - N/A)	53.2 *	(22.8 - 83.7)
Normal weight	18.8	(15.3 - 22.4)	9.1	(5.7 - 12.5)	33.0	(28.5 - 37.5)	39.1	(34.4 - 43.8)
Overweight	49.3	(45.6 - 53.1)	2.7 *	(1.2 - 4.2)	23.8	(20.8 - 26.7)	24.2	(21.2 - 27.2)
Obese	71.9	(68.7 - 75.2)	N/A	(N/A - N/A)	10.1	(7.9 - 12.2)	17.9	(15.1 - 20.7)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.
 N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

10. HEALTH SERVICE UTILISATION

Health services are the way in which health care is provided to patients and the general population and consist of many different forms, including GP, hospital, dental, mental and alternative health services.²⁵ Respondents were asked whether they had used a number of common health services within the past 12 months, shown in Table 65 and how often they visited them, shown in Table 66.

While nine in ten adults (89.9%) reported having used primary health services (e.g. visiting a GP) within the past 12 months, only 7.9% reported having used mental health services during this period. A significantly higher proportion of females reported using primary, allied, dental and alternative health services compared with males. Persons aged 65 years and over were significantly more likely than those aged 16 to 64 to use primary or hospital based health services, but significantly less likely than these younger age groups to use mental health or alternative health services.

The most used health service was primary health services, with a mean of 4.5 visits in the past 12 months, followed by allied health services with 3.4 visits. Females had a significantly higher mean number of visits for primary, allied and dental health services in the past 12 months compared with males.

Table 65: Health service utilisation in the past 12 months, 16 years & over, HWSS 2015

	Primary (a)		Hospital based (b)		Allied (c)		Dental		Mental (d)		Alternative (e)	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs												
Males	82.6	(78.2 - 86.9)	23.4	(18.3 - 28.5)	41.0	(35.1 - 46.9)	48.0	(42.1 - 54.0)	7.8	(5.0 - 10.6)	8.8	(5.1 - 12.5)
Females	91.7	(88.8 - 94.6)	31.4	(26.4 - 36.4)	50.4	(45.1 - 55.8)	61.4	(56.2 - 66.5)	13.0	(9.4 - 16.6)	15.3	(11.4 - 19.1)
Persons	87.0	(84.3 - 89.6)	27.3	(23.7 - 30.9)	45.5	(41.5 - 49.6)	54.5	(50.4 - 58.5)	10.3	(8.0 - 12.6)	11.9	(9.2 - 14.6)
45 to 64 yrs												
Males	91.1	(88.9 - 93.4)	25.1	(21.8 - 28.4)	53.7	(49.7 - 57.6)	52.6	(48.7 - 56.5)	5.9	(4.0 - 7.8)	7.9	(5.8 - 10.0)
Females	92.1	(90.4 - 93.7)	25.3	(22.7 - 27.8)	63.0	(60.1 - 65.9)	66.0	(63.1 - 68.9)	7.9	(6.4 - 9.5)	13.9	(11.8 - 16.0)
Persons	91.6	(90.2 - 93.0)	25.2	(23.1 - 27.3)	58.3	(55.8 - 60.8)	59.3	(56.8 - 61.7)	6.9	(5.7 - 8.2)	10.9	(9.4 - 12.4)
65 yrs & over												
Males	96.7	(95.6 - 97.9)	35.4	(32.0 - 38.7)	61.0	(57.6 - 64.4)	59.4	(56.0 - 62.8)	2.2	(1.1 - 3.2)	3.6	(2.4 - 4.9)
Females	96.2	(95.1 - 97.3)	33.2	(30.6 - 35.8)	61.2	(58.4 - 63.9)	56.6	(53.8 - 59.4)	1.7	(1.0 - 2.4)	6.7	(5.2 - 8.1)
Persons	96.5	(95.7 - 97.3)	34.2	(32.1 - 36.3)	61.1	(58.9 - 63.3)	57.9	(55.7 - 60.1)	1.9	(1.3 - 2.5)	5.2	(4.3 - 6.2)
Total												
Males	87.2	(84.7 - 89.7)	25.7	(22.7 - 28.7)	47.8	(44.2 - 51.3)	51.1	(47.6 - 54.7)	6.4	(4.7 - 8.1)	7.7	(5.6 - 9.9)
Females	92.6	(90.9 - 94.2)	29.9	(27.1 - 32.6)	56.1	(53.1 - 59.1)	62.0	(59.1 - 64.8)	9.5	(7.6 - 11.5)	13.4	(11.2 - 15.5)
Persons	89.9	(88.3 - 91.4)	27.7	(25.7 - 29.8)	51.9	(49.6 - 54.2)	56.5	(54.2 - 58.8)	7.9	(6.7 - 9.2)	10.5	(9.0 - 12.0)

(a) e.g. medical specialist, general practitioner, community health centre, community or district nurses.

(b) e.g. overnight stay, accident and emergency Department or outpatients.

(c) e.g. optician, physiotherapist, chiropractor, podiatrist, dietician, nutritionist, occupational therapist, diabetes/other health educator.

(d) e.g. psychiatrist, psychologist or counsellor.

(e) e.g. acupuncturist, naturopath, homeopath or any other alternative health service.

Table 66: Mean visits to health services in the past 12 months, 16 years & over, HWSS 2015

	Primary (a)		Hospital based (b)		Allied (c)		Dental		Mental (d)		Alternative (e)	
	mean	95% CI	mean	95% CI	mean	95% CI	mean	95% CI	mean	95% CI	mean	95% CI
16 to 44 yrs												
Males	3.2	(2.4- 4.1)	0.6 *	(0.2- 0.9)	2.5	(1.9- 3.2)	0.8	(0.7- 1.0)	0.5	(0.2- 0.7)	0.3 *	(0.1- 0.4)
Females	5.1	(4.2- 5.9)	0.7	(0.5- 0.9)	4.3	(3.1- 5.4)	1.3	(1.1- 1.5)	1.1	(0.6- 1.6)	0.9	(0.5- 1.2)
Persons	4.1	(3.5- 4.7)	0.6	(0.4- 0.8)	3.4	(2.7- 4.0)	1.0	(0.9- 1.2)	0.8	(0.5- 1.0)	0.5	(0.3- 0.7)
45 to 64 yrs												
Males	4.2	(3.6- 4.7)	0.5	(0.4- 0.6)	2.9	(2.4- 3.5)	1.0	(0.9- 1.1)	0.5	(0.3- 0.7)	0.4	(0.2- 0.6)
Females	4.7	(4.3- 5.1)	0.5	(0.4- 0.6)	4.3	(3.7- 4.8)	1.2	(1.2- 1.3)	0.5	(0.4- 0.7)	0.7	(0.5- 0.8)
Persons	4.4	(4.1- 4.8)	0.5	(0.4- 0.5)	3.6	(3.2- 4.0)	1.1	(1.0- 1.2)	0.5	(0.4- 0.6)	0.6	(0.4- 0.7)
65 yrs & over												
Males	6.1	(5.7- 6.6)	0.7	(0.6- 0.8)	2.6	(2.2- 2.9)	1.2	(1.1- 1.3)	0.1 *	(0.1- 0.2)	0.2 *	(0.0- 0.4)
Females	5.8	(5.5- 6.1)	0.6	(0.5- 0.7)	3.2	(2.9- 3.5)	1.0	(1.0- 1.1)	0.1	(0.0- 0.1)	0.4	(0.2- 0.5)
Persons	5.9	(5.7- 6.2)	0.7	(0.6- 0.7)	2.9	(2.6- 3.2)	1.1	(1.1- 1.2)	0.1	(0.1- 0.1)	0.3	(0.2- 0.4)
Total												
Males	4.0	(3.4- 4.5)	0.6	(0.4- 0.7)	2.7	(2.3- 3.0)	0.9	(0.8- 1.0)	0.4	(0.3- 0.5)	0.3	(0.2- 0.4)
Females	5.1	(4.6- 5.5)	0.6	(0.5- 0.7)	4.1	(3.4- 4.7)	1.2	(1.1- 1.3)	0.7	(0.5- 1.0)	0.7	(0.5- 0.9)
Persons	4.5	(4.2- 4.9)	0.6	(0.5- 0.7)	3.4	(3.0- 3.7)	1.1	(1.0- 1.1)	0.6	(0.4- 0.7)	0.5	(0.4- 0.6)

(a) e.g. medical specialist, general practitioner, community health centre, community or district nurses.

(b) e.g. overnight stay, emergency department or outpatients.

(c) e.g. optician, physiotherapist, chiropractor, podiatrist, dietician, nutritionist, occupational therapist, diabetes/other health educator.

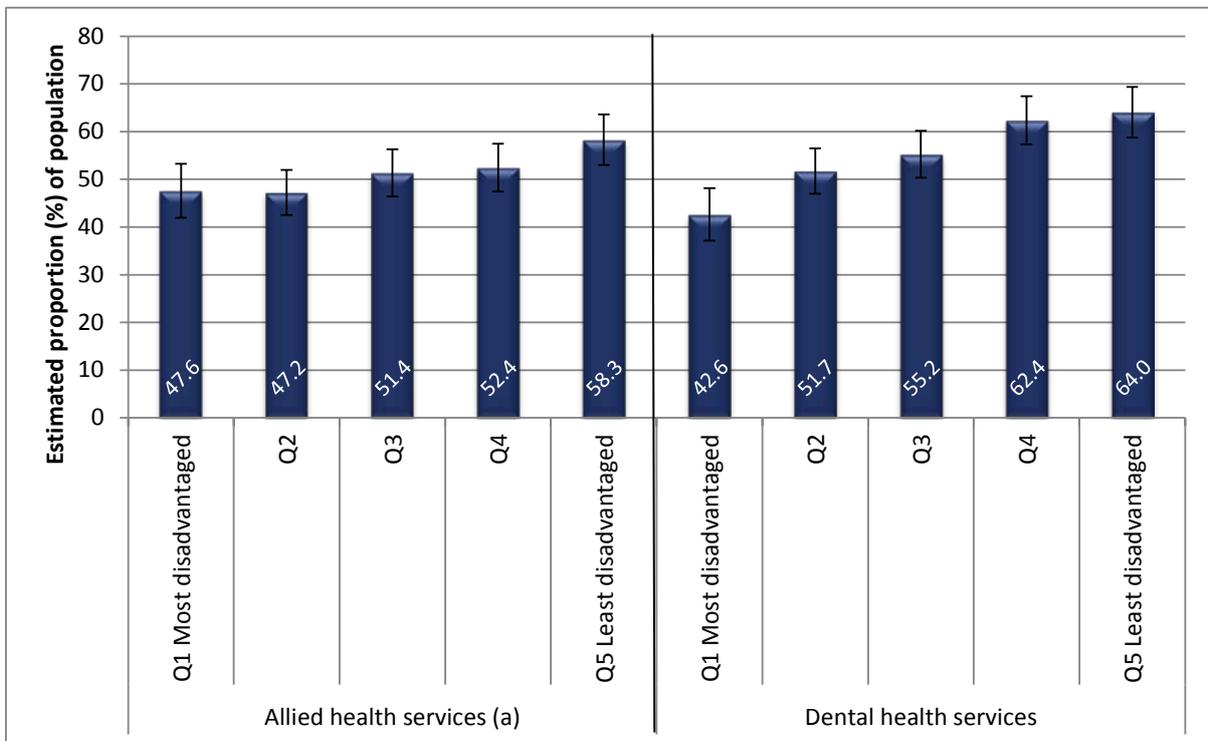
(d) e.g. psychiatrist, psychologist or counsellor.

(e) e.g. acupuncturist, naturopath, homeopath or any other alternative health service.

* Mean estimate has a RSE between 25%-50% and should be used with caution.

Health service utilisation by each SEIFA quintile was investigated for all six health services asked about in the HWSS. In 2015 significant differences across SEIFA quintiles were evident for allied health services and dental health services (Figure 32). The prevalence of using allied health services was significantly higher in the least disadvantaged quintile (Q5) compared with SEIFA quintile 2 (58.3% compared with 47.2%). The prevalence of using dental health services was significantly higher in the least disadvantaged quintile (Q5) compared with the most disadvantaged quintile (Q1) (64.0% compared with 42.6%).

Figure 32: Health service utilisation in the past 12 months, allied and dental health services, 16 years & over, by SEIFA quintiles in WA, HWSS 2015



(a) e.g. optician, physiotherapist, chiropractor, podiatrist, dietician, nutritionist, occupational therapist, diabetes/other health educator.

Annual flu vaccinations and a single pneumonia vaccination are recommended for adults aged 65 years and over and are available free of charge.⁴² Respondents aged 65 years and older were asked about flu and pneumonia vaccinations. Population prevalence estimates are shown in Table 67.

Table 67: Vaccinations received, 65 years & over, HWSS 2015

	Pneumonia vaccine within 5 years		Flu vaccine during April to September 2015	
	%	95% CI	%	95% CI
Males	35.3	(31.8 - 38.8)	55.1	(50.1 - 60.1)
Females	44.1	(41.2 - 46.9)	58.4	(54.5 - 62.3)
Persons	39.9	(37.7 - 42.2)	56.9	(53.7 - 60.0)

A significantly higher proportion of females reporting having the pneumonia vaccination within the last five years compared with males (44.1% compared with 35.3%).

11. PSYCHOSOCIAL

Mental health involves the capacity to interact with people and the environment and refers to the ability to negotiate the social interactions and challenges of life without experiencing undue emotional or behavioural incapacity.⁴³ Mental health is also referred to as psychosocial health as it involves aspects of both social and psychological behaviour.

11.1 Psychological distress

Psychological distress may be determined in ways other than having been diagnosed or treated for a mental health condition.²⁵ The Kessler 10 (K10) is a standardised instrument consisting of ten questions that measure psychological distress by asking about levels of anxiety and depressive symptoms experienced in the past four weeks. Each item on the K10 is scored and then summed, resulting in a range of possible scores from 10 to 50, which have then been categorised into low, moderate, high and very high levels of psychological distress (Table 68).^{44,45}

Low psychological distress is regarded as not requiring any intervention, while moderate and high levels require self-help and very high levels require professional help.⁴⁵

Table 68: Psychological distress, as measured by Kessler 10, 16 years & over, HWSS 2015

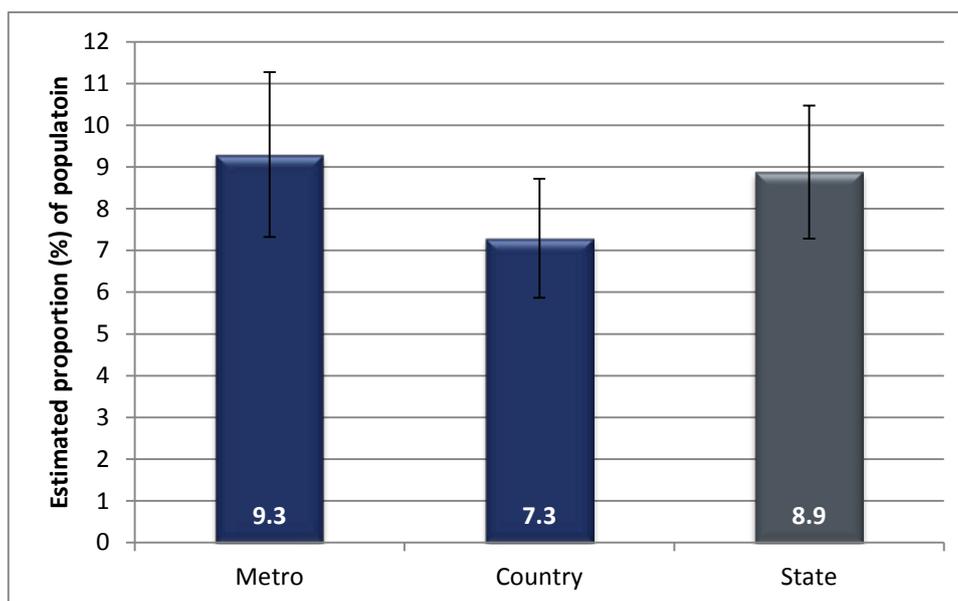
	Low		Moderate		High		Very high	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs								
Males	72.6	(67.1 - 78.2)	16.0	(11.8 - 20.2)	8.3	(4.6 - 12.0)	3.0 *	(0.3 - 5.8)
Females	72.3	(67.5 - 77.1)	17.3	(13.4 - 21.2)	7.9	(4.9 - 11.0)	2.5 *	(0.8 - 4.2)
Persons	72.5	(68.8 - 76.1)	16.7	(13.8 - 19.5)	8.1	(5.7 - 10.6)	2.8 *	(1.1 - 4.4)
45 to 64 yrs								
Males	82.1	(79.0 - 85.1)	12.0	(9.4 - 14.7)	3.6	(2.3 - 4.9)	2.3 *	(1.0 - 3.6)
Females	75.9	(73.2 - 78.5)	14.8	(12.6 - 17.0)	6.3	(4.8 - 7.8)	3.0	(2.0 - 4.1)
Persons	79.0	(77.0 - 81.0)	13.4	(11.7 - 15.1)	4.9	(3.9 - 5.9)	2.7	(1.8 - 3.5)
65 yrs & over								
Males	86.5	(84.2 - 88.9)	9.4	(7.4 - 11.4)	3.0	(1.9 - 4.2)	1.1 *	(0.3 - 1.8)
Females	81.5	(79.3 - 83.6)	13.6	(11.7 - 15.5)	3.7	(2.7 - 4.8)	1.2 *	(0.6 - 1.9)
Persons	83.8	(82.3 - 85.4)	11.6	(10.3 - 13.0)	3.4	(2.6 - 4.2)	1.2	(0.7 - 1.6)
Total								
Males	77.6	(74.3 - 80.8)	13.8	(11.4 - 16.3)	6.1	(4.0 - 8.2)	2.5 *	(1.0 - 4.1)
Females	74.9	(72.3 - 77.6)	15.9	(13.7 - 18.1)	6.7	(5.0 - 8.4)	2.4	(1.5 - 3.4)
Persons	76.3	(74.2 - 78.4)	14.9	(13.2 - 16.5)	6.4	(5.0 - 7.7)	2.5	(1.6 - 3.4)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

High or very high levels of psychological distress were reported for 8.9% of the population, which is equivalent to approximately 182,055 people.

Figure 33 shows the proportion of adults with high/ very high levels of psychological distress by geographic area of residence. There was no difference in the proportion of adults with high/ very high levels of psychological distress based on geographic area of residence.

Figure 33: Prevalence of high/very high psychological distress, measured by the Kessler 10, 16 years & over, by geographic area of residence in WA, HWSS 2015



The standardised annual prevalence estimates of high or very high levels of psychological distress for adults aged 16 years & over are shown in Table 69. The prevalence estimates for 2015 were not significantly different from any previous year.

Table 69: Prevalence of high and very high psychological distress, as measured by the Kessler 10, 16 years & over, HWSS 2002–15

	Males	Females	Persons
2002	7.5	10.2	8.9
2003	8.3	10.5	9.4
2004	8.1	10.3	9.2
2005	6.6	9.4	8.0
2006	7.4	11.5	9.5
2007	6.3	7.7	7.0
2008	6.9	11.9	9.4
2009	6.8	9.4	8.1
2010	7.6	9.8	8.7
2011	6.9	9.7	8.3
2012	5.8	9.0	7.4
2013	6.4	9.9	8.2
2014	5.8	7.8	6.8
2015	8.5	9.2	8.8
Average	7.1	9.7	8.4

11.2 Major life events

Major life events can have strong influences on a person's subjective well-being.⁴⁶ Respondents were asked whether they had personally been affected by major life events in the past 12 months, shown in Table 70.

The most frequently reported major life events were the death of someone close (23.6%) followed by moving house (10.6%) and financial hardship (11.7%). Respondents aged 16 to 44 years were significantly more likely to have moved house or had a relationship breakdown in the last 12 months than those aged 45 years and over, and were also more likely to have been robbed or burgled in the last 12 months than those aged 65 years and over.

Those aged 16 to 44 years and 45 to 64 years were significantly more likely to have experienced financial hardship in the past 12 months when compared with those aged 65 years and over (13.9% and 11.9% compared with 3.8%).

Further, a serious illness in the past 12 months was significantly more likely to be experienced by those aged 65 years and over when compared with those aged 16 to 44 years (12.6% compared with 5.4%).

Table 70: Prevalence by major life events experienced, 16 years & over, HWSS 2015

	Moved house		Robbed or burgled		Death of someone close		Relationship breakdown		Serious injury		Financial hardship		Loss of driver's licence		Seriously ill		Other major event	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs																		
Males	16.3	(11.4-21.2)	9.0	(4.8-13.2)	19.8	(14.9-24.6)	9.7	(5.7-13.6)	8.5	(4.4-12.5)	12.5	(8.1-16.8)	1.5 *	(0.5-2.6)	3.7 *	(1.1-6.2)	11.2	(7.4-15.0)
Females	15.3	(11.3-19.3)	5.5	(2.9-8.1)	22.9	(18.5-27.3)	11.3	(8.0-14.6)	4.7 *	(1.9-7.6)	15.4	(11.9-18.8)	1.4 *	(0.4-2.5)	7.2	(4.4-9.9)	11.6	(8.3-14.9)
Persons	15.8	(12.6-19.0)	7.3	(4.8-9.9)	21.3	(18.0-24.6)	10.4	(7.9-13.0)	6.7	(4.2-9.2)	13.9	(11.1-16.7)	1.5 *	(0.7-2.2)	5.4	(3.5-7.2)	11.4	(8.8-13.9)
45 to 64 yrs																		
Males	4.7	(2.9-6.5)	5.4	(3.5-7.3)	26.4	(23.0-29.8)	4.1	(2.5-5.7)	6.1	(4.3-7.8)	11.0	(8.6-13.4)	1.5 *	(0.5-2.6)	8.1	(6.1-10.2)	10.3	(7.9-12.7)
Females	5.5	(4.0-7.0)	5.3	(3.9-6.6)	25.8	(23.3-28.4)	5.5	(4.2-6.8)	6.0	(4.5-7.5)	12.8	(10.7-14.9)	0.8 *	(0.2-1.4)	11.5	(9.6-13.4)	15.5	(13.2-17.7)
Persons	5.1	(3.9-6.3)	5.3	(4.1-6.5)	26.1	(24.0-28.3)	4.8	(3.8-5.9)	6.0	(4.9-7.2)	11.9	(10.3-13.5)	1.1 *	(0.5-1.7)	9.8	(8.4-11.2)	12.9	(11.2-14.5)
65 yrs & over																		
Males	3.1	(1.9-4.2)	2.9	(1.7-4.1)	24.2	(21.2-27.2)	2.3	(1.2-3.3)	4.5	(3.1-5.9)	3.6	(2.4-4.8)	1.7 *	(0.8-2.7)	12.0	(9.8-14.3)	7.0	(5.2-8.8)
Females	4.1	(2.9-5.2)	3.1	(2.1-4.0)	28.3	(25.8-30.9)	3.3	(2.3-4.3)	5.4	(4.2-6.7)	4.0	(3.0-4.9)	1.6	(0.9-2.2)	13.2	(11.2-15.1)	7.9	(6.4-9.5)
Persons	3.6	(2.8-4.4)	3.0	(2.2-3.7)	26.4	(24.5-28.4)	2.8	(2.1-3.5)	5.0	(4.1-5.9)	3.8	(3.0-4.5)	1.7	(1.1-2.2)	12.6	(11.2-14.1)	7.5	(6.3-8.7)
Total																		
Males	10.8	(8.0-13.6)	7.0	(4.6-9.4)	22.4	(19.5-25.3)	6.9	(4.6-9.2)	7.2	(4.9-9.5)	10.7	(8.2-13.2)	1.5	(0.8-2.2)	6.3	(4.7-7.8)	10.3	(8.1-12.5)
Females	10.4	(8.2-12.5)	5.0	(3.6-6.5)	24.7	(22.3-27.2)	8.1	(6.4-9.9)	5.2	(3.7-6.8)	12.6	(10.7-14.5)	1.3	(0.7-1.8)	9.5	(7.9-11.1)	12.1	(10.3-14.0)
Persons	10.6	(8.8-12.4)	6.0	(4.6-7.4)	23.6	(21.7-25.5)	7.5	(6.1-9.0)	6.2	(4.8-7.6)	11.7	(10.1-13.2)	1.4	(0.9-1.8)	7.9	(6.8-9.0)	11.2	(9.8-12.7)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

11.3 Feeling lack of control

Perceptions of control relate to an individual's belief as to whether outcomes are determined by external events outside their control or by their own actions.⁴⁷

Feelings of lack of control have been found to have adverse effects on health and to increase the risk of mortality.^{48,49}

Respondents were asked to rate how often during the past four weeks they felt a lack of control over their life in general, their personal life and their health. Table 71 shows self-reported lack of control over life in general.

Table 71: Lack of control over life in general during past four weeks, 16 years & over, HWSS 2015

	Never		Rarely		Sometimes		Often		Always	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	62.1	(56.2-67.9)	20.5	(15.5-25.4)	11.1	(7.7-14.5)	4.3 *	(1.4-7.1)	2.1 *	(0.4-3.9)
Females	55.9	(50.6-67.9)	20.0	(15.7-24.4)	17.2	(13.3-21.1)	5.5	(2.8-8.2)	1.3 *	(0.1-2.6)
Persons	59.1	(55.1-63.1)	20.3	(17.0-23.6)	14.0	(11.4-16.7)	4.9	(2.9-6.8)	1.7 *	(0.6-2.8)
45 to 64 yrs										
Males	71.0	(67.5-74.6)	13.7	(10.9-16.5)	11.5	(9.1-14.0)	3.1	(1.8-4.3)	0.6 *	(0.0-1.2)
Females	58.5	(55.5-61.5)	17.8	(15.5-20.2)	17.1	(14.8-19.5)	5.3	(3.9-6.8)	1.2 *	(0.5-2.0)
Persons	64.8	(62.4-67.2)	15.8	(14.0-17.6)	14.3	(12.6-16.0)	4.2	(3.3-5.1)	0.9 *	(0.4-1.4)
65 yrs & over										
Males	78.7	(75.9-81.5)	12.5	(10.3-14.8)	6.9	(5.1-8.6)	1.3 *	(0.5-2.0)	0.6 *	(0.1-1.2)
Females	71.6	(69.1-74.2)	14.1	(12.1-16.1)	11.2	(9.4-12.9)	2.3	(1.5-3.1)	0.8 *	(0.3-1.3)
Persons	74.9	(73.0-76.8)	13.4	(11.9-14.9)	9.1	(7.9-10.4)	1.8	(1.2-2.4)	0.7 *	(0.4-1.1)
Total										
Males	67.2	(63.8-70.7)	17.3	(14.4-20.1)	10.6	(8.6-12.6)	3.5	(1.8-5.1)	1.4 *	(0.5-2.4)
Females	59.4	(56.4-62.4)	18.4	(15.9-20.8)	16.1	(13.9-18.3)	4.9	(3.4-6.4)	1.2 *	(0.5-1.9)
Persons	63.3	(61.1-65.6)	17.8	(15.9-19.7)	13.3	(11.8-14.9)	4.2	(3.1-5.3)	1.3 *	(0.7-1.9)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

How often people reported feeling a lack of control over their personal life in the past four weeks is shown in Table 72 and how often people reported feeling a lack of control over their health in the past four weeks is shown in Table 73.

Table 72: Lack of control over personal life during past four weeks, 16 years & over, HWSS 2015

	Never		Rarely		Sometimes		Often		Always	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	66.0	(60.3-71.7)	18.9	(14.4-23.4)	11.2	(7.2-15.1)	2.2 *	(0.4-4.1)	1.7 *	(0.1-3.3)
Females	63.9	(58.8-69.1)	14.8	(10.9-18.7)	16.5	(12.4-20.5)	3.7	(2.0-5.5)	N/A	(N/A-N/A)
Persons	65.0	(61.2-68.9)	16.9	(13.9-19.9)	13.7	(10.9-16.6)	3.0	(1.7-4.2)	1.4 *	(0.4-2.4)
45 to 64 yrs										
Males	74.5	(71.2-77.9)	13.1	(10.5-15.7)	8.9	(6.7-11.0)	2.7	(1.5-3.9)	N/A	(N/A-N/A)
Females	64.3	(61.3-67.3)	15.9	(13.6-18.2)	15.0	(12.8-17.2)	4.1	(2.8-5.4)	N/A	(N/A-N/A)
Persons	69.4	(67.2-71.7)	14.5	(12.7-16.2)	11.9	(10.4-13.5)	3.4	(2.5-4.3)	0.7 *	(0.2-1.2)
65 yrs & over										
Males	81.1	(78.4-83.8)	11.5	(9.3-13.7)	5.8	(4.3-7.4)	1.1 *	(0.3-1.8)	0.4 *	(0.0-0.9)
Females	77.5	(75.2-79.8)	10.9	(9.2-12.7)	9.2	(7.6-10.8)	1.8	(1.1-2.6)	N/A	(N/A-N/A)
Persons	79.2	(77.4-81.0)	11.2	(9.8-12.6)	7.6	(6.5-8.8)	1.5	(0.9-2.0)	0.5 *	(0.2-0.8)
Total										
Males	70.8	(67.5-74.2)	16.1	(13.4-18.7)	9.7	(7.4-12.0)	2.2	(1.1-3.3)	1.2 *	(0.3-2.2)
Females	66.4	(63.5-69.2)	14.5	(12.3-16.7)	14.8	(12.5-17.0)	3.5	(2.5-4.5)	0.8 *	(0.2-1.5)
Persons	68.6	(66.4-66.4)	15.3	(13.6-17.0)	12.2	(10.6-13.8)	2.9 *	(2.1-3.6)	1.0 *	(0.5-1.6)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Table 73: Lack of control over health during past four weeks, 16 years & over, HWSS 2015

	Never		Rarely		Sometimes		Often		Always	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	70.7	(65.2-76.2)	14.3	(10.3-18.2)	10.1	(6.3-13.9)	2.7 *	(1.0-4.4)	N/A	(N/A-N/A)
Females	60.8	(55.5-66.0)	17.2	(13.1-21.3)	14.6	(10.8-18.4)	3.2 *	(1.4-5.0)	4.3 *	(1.9-6.7)
Persons	65.9	(62.0-69.7)	15.7	(12.8-18.5)	12.3	(9.6-15.0)	2.9	(1.7-4.2)	3.3 *	(1.5-5.0)
45 to 64 yrs										
Males	70.2	(66.6-73.7)	13.1	(10.4-15.8)	11.7	(9.2-14.1)	3.2	(1.9-4.6)	1.8 *	(0.9-2.8)
Females	61.8	(58.9-64.8)	14.5	(12.2-16.7)	16.7	(14.4-19.0)	5.7	(4.2-7.2)	1.3	(0.8-1.9)
Persons	66.0	(63.7-68.4)	13.8	(12.0-15.5)	14.2	(12.5-15.8)	4.5	(3.5-5.5)	1.6	(1.0-2.2)
65 yrs & over										
Males	71.1	(67.9-74.3)	12.7	(10.4-15.1)	12.0	(9.7-14.3)	2.9	(1.7-4.0)	1.3 *	(0.5-2.1)
Females	68.4	(65.8-71.0)	12.0	(10.2-13.8)	14.5	(12.5-16.5)	2.9	(2.1-3.8)	2.2	(1.3-3.0)
Persons	69.7	(67.6-71.7)	12.3	(10.9-13.8)	13.3	(11.8-14.8)	2.9	(2.2-3.6)	1.8	(1.2-2.3)
Total										
Males	70.6	(67.3-73.8)	13.7	(11.3-16.0)	10.8	(8.6-13.1)	2.9	(1.9-3.9)	2.0 *	(0.6-3.4)
Females	62.4	(59.4-65.3)	15.5	(13.2-17.7)	15.2	(13.1-17.4)	3.9	(2.9-5.0)	3.0	(1.7-4.3)
Persons	66.5	(64.3-68.7)	14.6	(12.9-16.2)	13.0	(11.5-14.6)	3.4	(2.7-4.1)	2.5 *	(1.6-3.5)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Table 74 shows the prevalence of adults who reported often or always feeling a lack of control.

Table 74: Often or always perceive a lack of control, 16 years & over, HWSS 2015

	General		Personal		Health	
	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs						
Males	6.4 *	(3.0 - 9.7)	3.9 *	(1.5 - 6.4)	5.0 *	(2.0 - 7.9)
Females	6.8	(3.9 - 9.8)	4.8	(2.7 - 6.9)	7.5	(4.5 - 10.4)
Persons	6.6	(4.4 - 8.8)	4.3	(2.7 - 5.9)	6.2	(4.1 - 8.3)
45 to 64 yrs						
Males	3.7	(2.3 - 5.1)	3.5	(2.0 - 4.9)	5.1	(3.5 - 6.7)
Females	6.6	(5.0 - 8.2)	4.8	(3.5 - 6.2)	7.0	(5.5 - 8.6)
Persons	5.1	(4.1 - 6.2)	4.1	(3.1 - 5.1)	6.1	(4.9 - 7.2)
65 yrs & over						
Males	1.9 *	(0.9 - 2.8)	1.5 *	(0.6 - 2.4)	4.2	(2.8 - 5.5)
Females	3.1	(2.2 - 4.0)	2.4	(1.5 - 3.2)	5.1	(3.9 - 6.3)
Persons	2.5	(1.9 - 3.2)	2.0	(1.3 - 2.6)	4.7	(3.8 - 5.6)
Total						
Males	4.9	(3.0 - 6.8)	3.4	(2.0 - 4.8)	4.9	(3.2 - 6.6)
Females	6.1	(4.5 - 7.7)	4.4	(3.2 - 5.6)	6.9	(5.3 - 8.6)
Persons	5.5	(4.3 - 6.7)	3.9	(3.0 - 4.8)	5.9	(4.7 - 7.1)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

11.4 Suicide ideation

Mental health problems are associated with higher rates of death from many causes, including suicide.⁵⁰ Respondents were asked whether or not they had suicidal thoughts in the past 12 months and if friends or family had attempted suicide in the past 12 months.

Table 75 shows the prevalence of adults who had suicidal thoughts over the past 12 months and Table 76 shows the prevalence of adults who had a friend or family member attempt suicide over the past 12 months.

Table 75: Suicide thoughts over past 12 months, 16 years & over, HWSS 2015

		Seriously thought about ending own life	
		%	95% CI
16 to 44 yrs			
Males	6.9	(3.7 - 10.1)	
Females	5.9	(3.1 - 8.6)	
Persons	6.4	(4.2 - 8.5)	
45 to 64 yrs			
Males	4.2	(2.5 - 5.9)	
Females	5.3	(3.9 - 6.7)	
Persons	4.8	(3.6 - 5.9)	
65 yrs & over			
Males	2.5	(1.5 - 3.6)	
Females	2.6	(1.7 - 3.4)	
Persons	2.6	(1.9 - 3.2)	
Total			
Males	5.4	(3.6 - 7.3)	
Females	5.1	(3.6 - 6.7)	
Persons	5.3	(4.1 - 6.5)	

Adults aged 16 to 44 years were more than twice as likely to report having thought about ending their own life in the last 12 months compared with respondents aged 65 years and over. This difference was statistically significant (6.4% compared with 2.6%).

Table 76: Friends/ family suicide attempts over past 12 months, 16 years & over, HWSS 2015

	Friend(s) attempted		Family attempted	
	%	95% CI	%	95% CI
16 to 44 yrs				
Males	7.3	(4.5 - 10.0)	4.5 *	(2.0 - 7.0)
Females	7.9	(5.1 - 10.7)	6.7	(4.0 - 9.5)
Persons	7.6	(5.6 - 9.5)	5.6	(3.7 - 7.4)
45 to 64 yrs				
Males	6.1	(4.2 - 8.1)	3.0	(1.6 - 4.4)
Females	6.8	(5.2 - 8.5)	6.8	(5.2 - 8.4)
Persons	6.5	(5.2 - 7.8)	4.9	(3.8 - 6.0)
65 yrs & over				
Males	2.9	(1.8 - 4.1)	1.6 *	(0.7 - 2.5)
Females	1.9	(1.2 - 2.6)	3.8	(2.7 - 4.9)
Persons	2.4	(1.7 - 3.0)	2.8	(2.0 - 3.5)
Total				
Males	6.3	(4.6 - 7.9)	3.6	(2.2 - 5.1)
Females	6.6	(5.0 - 8.1)	6.2	(4.7 - 7.8)
Persons	6.4	(5.3 - 7.6)	4.9	(3.9 - 6.0)

* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

The proportion of adults who reported that friend(s) had tried to end their own life in the past 12 months decreased significantly with age, with those aged 16 to 44 years three times more likely to report this compared with those aged 65 years and over (7.6% compared with 2.4%). The proportion of adults who reported that family member(s) has attempted suicide in the past 12 months also decreased significantly with age (5.6% for adults 16 to 44 years compared with 2.8% for adults 65 years and over).

11.5 Social support

Social support relates to the resources available within communities and is believed to have a positive influence on health status.^{51,52} As a surrogate measure of social support, respondents were asked how many groups/associations they belong to, including church, social groups, political and professional groups, shown in Table 77.

Table 77: Number of groups/ associations belonging to, 16 years & over, HWSS 2015

	None		One		Two		Three		Four or more	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
16 to 44 yrs										
Males	38.0	(32.1 - 43.9)	24.1	(19.2 - 29.0)	18.7	(13.8 - 23.5)	9.1	(5.7 - 12.4)	10.1	(6.6 - 13.7)
Females	39.0	(33.8 - 44.3)	22.9	(18.3 - 27.5)	17.5	(13.6 - 21.4)	11.8	(8.4 - 15.1)	8.8	(6.0 - 11.7)
Persons	38.5	(34.5 - 42.5)	23.5	(20.2 - 26.9)	18.1	(15.0 - 21.2)	10.4	(8.0 - 12.7)	9.5	(7.2 - 11.8)
45 to 64 yrs										
Males	38.5	(34.6 - 42.3)	26.4	(22.8 - 29.9)	19.4	(16.3 - 22.5)	8.6	(6.4 - 10.9)	7.2	(5.2 - 9.2)
Females	46.2	(43.1 - 49.2)	23.0	(20.4 - 25.5)	15.3	(13.1 - 17.5)	7.5	(6.0 - 9.0)	8.0	(6.3 - 9.7)
Persons	42.3	(39.8 - 44.8)	24.7	(22.5 - 26.9)	17.4	(15.5 - 19.3)	8.1	(6.7 - 9.4)	7.6	(6.3 - 8.9)
65 yrs & over										
Males	39.6	(36.2 - 43.0)	29.1	(25.9 - 32.3)	16.4	(13.8 - 19.1)	7.8	(5.9 - 9.7)	7.0	(5.3 - 8.8)
Females	38.9	(36.1 - 41.6)	26.4	(24.0 - 28.9)	17.7	(15.6 - 19.9)	9.3	(7.8 - 10.9)	7.6	(6.2 - 9.0)
Persons	39.2	(37.0 - 41.4)	27.7	(25.7 - 29.7)	17.1	(15.4 - 18.8)	8.6	(7.4 - 9.8)	7.3	(6.2 - 8.5)
Total										
Males	38.4	(34.9 - 41.9)	25.5	(22.6 - 28.5)	18.5	(15.7 - 21.4)	8.7	(6.8 - 10.7)	8.8	(6.7 - 10.8)
Females	41.2	(38.3 - 44.1)	23.5	(21.0 - 26.1)	16.9	(14.7 - 19.0)	10.0	(8.2 - 11.9)	8.4	(6.8 - 10.0)
Persons	39.8	(37.5 - 42.1)	24.5	(22.6 - 26.5)	17.7	(15.9 - 19.5)	9.4	(8.0 - 10.7)	8.6	(7.3 - 9.9)

Over one third (39.8%) of adults reported belonging to no groups or associations of any kind. There were no statistically significant differences in the proportion of adults that belonged to no groups or associations by age or sex.

REFERENCES

1. Taylor A.W., Dal Grande E., Gill T.K., Chittleborough C.R., Wilson D.H., Adams R.J., Grant J.F., Phillips P.J., Appleton S. and Ruffin R.E., 2006, 'How valid are self-reported height and weight? A comparison between CATI self-report and clinic measurements using a large representative cohort study', *Australian and New Zealand Journal of Public Health*, 30(3): 238-46.

2. Stockwell T., Donath S., Cooper-Stanbury M., Chikritzhs T., Catalano P. and Mateo C., 2004, 'Under-reporting of alcohol consumption in household surveys: a comparison of quantity-frequency, graduated-frequency and recent recall', *Addiction*, 99(8): 1024-33.

3. Australian Bureau of Statistics, 2010, National Aboriginal and Torres Strait Islander Social Survey, 2008, cat. no. 4714.0, ABS, Canberra. Accessed: 19 December, 2013. Available from: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4714.02008?OpenDocument>.

4. Australian Bureau of Statistics, 2013, Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia 2012-13, cat. no. 4727.0.55.001, ABS, Canberra. Accessed: 23 January 2013. Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4727.0.55.001>.

5. Australian Bureau of Statistics, 2015, Population by age and sex, Regions of Australia, cat. no. 3235.0, ABS, Canberra. Accessed: 18 January, 2016. Available from: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3235.02014?OpenDocument>.

6. Australian Bureau of Statistics, 2013, Technical paper: Socio-Economic Indexes for Areas (SEIFA), 2011. Cat. no. 2033.0.55.001, ABS, Canberra. Accessed: 17 February 2016. Available from: [http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/22CEDA8038AF7A0DCA257B3B00116E34/\\$File/2033.0.55.001%20seifa%202011%20technical%20paper.pdf](http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/22CEDA8038AF7A0DCA257B3B00116E34/$File/2033.0.55.001%20seifa%202011%20technical%20paper.pdf).

7. Australian Bureau of Statistics, 2013, 2033.0.55.001 - Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011. IRSD, ABS, Canberra. Accessed: 17 February, 2016. Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2033.0.55.001main+features100052011>.

8. Australian Population and Migration Research Centre, 2015, ARIA (Accessibility/Remoteness Index of Australia), University of Adelaide, Adelaide. Accessed: 17th

February, 2016. Available from:

http://www.adelaide.edu.au/apmrc/research/projects/category/about_aria.html.

9. DeSalvo K.B., Bloser N., Reynolds K., He J. and Muntner P., 2005, 'Mortality Prediction with a Single General Self-Rated Health Question', *Journal of General Internal Medicine*, 21(3): 267-75.

10. French D., Browning C., Kendig H., Luszcz M., Saito Y., Sargent-Cox K. and Anstey K., 2012, 'A simple measure with complex determinants: investigation of correlates of self-rated health in older men and women from three continents', *BMC Public Health*, 12: 649.

11. Ware J., Kosinski M., Dewey J. and Gandek B., 2001, How to Score and Interpret Single-Item Health Status Measures: A Manual for Users of the SF-8 Health Survey™ (With a Supplement on the SF-6™ Health Survey) Quality Metric Inc and Health Assessment Lab, Lincoln RI.

12. Australian Bureau of Statistics, 2013, Disability, Ageing and Carers, Australia: Summary of Findings, 2012, Cat. No. 4430.0, ABS, Canberra. Accessed: 18 January, 2016. Available from:

<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/A813E50F4C45A338CA257C21000E4F36?opendocument>.

13. Tomlin S., Radomiljac A. and Kay A., 2015, Health and Wellbeing of Adults in Western Australia 2014, Overview and Trends, Department of Health, Western Australia. Available from:

http://ww2.health.wa.gov.au/~/_/media/Files/Corporate/Reports%20and%20publications/Population%20surveys/2041-HWSS-Adults-WA-Overview-and-Trends.aspx.

14. Australian Institute of Health and Welfare, 2006, Australia's Health 2006, cat. no. AUS37, AIHW, Canberra. Accessed: 15 February, 2007. Available from:

<http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442453483>.

15. Australian Institute of Health and Welfare, 2015, Arthritis, osteoporosis and other musculoskeletal conditions, AIHW, Canberra. Accessed: 12 April, 2016. Available from: <http://www.aihw.gov.au/arthritis-and-musculoskeletal-conditions/>.

16. Australian Institute of Health and Welfare, 2011, Cardiovascular disease: Australian facts 2011, cat. no. CVD 53, AIHW, Canberra. Accessed: 4 January, 2013. Available from: <http://www.aihw.gov.au/publication-detail/?id=10737418510>.

17. Australian Institute of Health and Welfare and Australasian Association of Cancer Registries, 2014, Cancer in Australia: in brief 2014. Cancer series no 91. Cat. no. 89,

AIHW, Canberra. Available from:

<http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129550276>.

18. Threlfall T.J. and Thompson J.R., 2015, Cancer incidence and mortality in Western Australia, 2014, Department of Health Perth. .

19. Cancer Council Australia, 2015, Preventing Cancer. Accessed: 10 August, 2015. Available from: <http://www.cancer.org.au/preventing-cancer/>.

20. Australian Institute of Health and Welfare, 2015, Diabetes mellitus, AIHW, Canberra. Accessed: 12 April, 2016. Available from: <http://www.aihw.gov.au/diabetes/>.

21. Australian Institute of Health and Welfare, 2013, Injury, AIHW, Canberra. Accessed: 19 December, 2013. Available from: <http://www.aihw.gov.au/injury/>.

22. Bradley C. and Pointer S., 2009, Hospitalisations due to falls by older people, Australia 2005-06, cat. no. INJCAT 122, AIHW, Canberra. Accessed: 9 December, 2011. Available from: <http://www.aihw.gov.au/publication-detail/?id=6442468218&tab=2>.

23. National Asthma Council Australia, 2015, Australian Asthma Handbook - Quick reference guide. Version 1.1, National Asthma Council Australia, Melbourne. Available from: <http://www.athmahandbook.org.au>.

24. Australian Institute of Health and Welfare, 2015, Mental health services - in brief 2015. Cat. no. HSE 169, AIHW, Canberra. Available from: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129554173>.

25. Crouchley K., Daly A. and Molster C., 2006, An Overview of the Health and Wellbeing of Young Adults in Western Australia 2002-2005, Department of Health, Perth.

26. Australian Institute of Health and Welfare, 2008, Indicators for chronic disease and their determinants, 2008, cat. no. PHE 75, AIHW, Canberra. Accessed: 19 December, 2013. Available from: <http://www.aihw.gov.au/publication-detail/?id=6442468072>.

27. Australian Institute of Health and Welfare, 2014, National Drug Strategy Household Survey detailed report 2013. Drug statistics series no. 28. Cat. no. PHE 183, AIHW, Canberra. Available from: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129549848>.

28. National Health and Medical Research Council, 2009, Australian Guidelines: To Reduce Health Risks from Drinking Alcohol, NHMRC, Canberra. Accessed: 19 December, 2013. Available from: http://www.nhmrc.gov.au/files_nhmrc/publications/attachments/ds10-alcohol.pdf.
29. National Health and Medical Research Council, 2013, Australian Dietary Guidelines, NHMRC, Canberra. Accessed: 19 February 2013. Available from: http://www.nhmrc.gov.au/files_nhmrc/publications/attachments/n55_australian_dietary_guidelines.pdf.
30. World Health Organisation, 2009, Global Health Risks: Mortality and burden of disease attributable to selected major risks, WHO, Geneva. Accessed: 12 August 2015. Available from: http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf.
31. Department of Health, 2014, Australia's physical activity and sedentary behaviour guidelines: Adults, Department of Health, Canberra.
32. Australian Institute of Health and Welfare, 2003, The Active Australia Survey, A guide and manual for implementation, analysis and reporting, cat. no. CVD 22, AIHW, Canberra. Accessed: 30 January 2014. Available from: <http://www.aihw.gov.au/publication-detail/?id=6442467449>.
33. Giles-Corti B., Macintyre S., Clarkson J., Pikora T. and Donovan R., 2003, 'Environmental and Lifestyle Factors Associated with Overweight and Obesity in Perth, Australia', *The Science of Health Promotion*, 18(1): 93-102.
34. Access Economics, 2004, Wake Up Australia: the value of healthy sleep, Access Economics, Sydney. Accessed: 19 December, 2013. Available from: <http://www.sleep.org.au/documents/item/69>.
35. Sleep Health Foundation, 2015, Sleep Health Facts: Sleep needs across the lifespan, Sleep Health Foundation, Blacktown. Accessed: 23 June, 2015. Available from: <http://www.sleephealthfoundation.org.au/files/pdfs/Sleep-Needs-Across-Lifespan.pdf>.
36. Australian Institute of Health and Welfare, 2012, Australia's health 2012, cat no AUS 156, AIHW, Canberra. Available from: <http://www.aihw.gov.au/publication-detail/?id=10737422172>.
37. Australian Institute of Health and Welfare, 2014, Australia's health 2014. Australia's health series no. 14. Cat. no. AUS 178, AIHW, Canberra. Accessed: 19

August 2015. Available from:

<http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129547726>.

38. Cameron A., Zimmet P., Dunstan D., Dalton M., Shaw J., Welborn T., Owen N., Salmon J. and Jolley D., 2003, 'Overweight and obesity in Australia: the 1999–2000 Australian Diabetes, Obesity and Lifestyle Study (AusDiab)', *The Medical Journal of Australia*, 178(9): 427-32.

39. Hayes A., Kortt M., Clarke P. and Brandup J., 2008, 'Estimating equations to correct self-reported height and weight: implications for prevalence of overweight and obesity in Australia', *Australian and New Zealand Journal of Public Health*, 32(6): 542-45.

40. Centers for Disease Control and Prevention, 2015, Healthy Weight - it's not a diet, it's a lifestyle! About BMI for Adults, CDC, Atlanta, GA. Accessed: 30 March, 2015. Available from: http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/.

41. Australian Institute of Health and Welfare, 2003, A growing problem: trends and patterns in overweight and obesity among adults in Australia, cat. no. AUS 36, AIHW, Canberra. Accessed: 19 February, 2010. Available from: <http://www.aihw.gov.au/publications/aus/bulletin08/bulletin08.pdf>.

42. Department of Health, 2014, The Australian Immunisation Handbook 10th Edition 2013 (updated January 2014), Department of Health, Canberra.

43. Australian Institute of Health and Welfare, 1998, National Health Priority Areas Report, Mental Health: A report focussing on depression, cat. no. PHE 11, AIHW, Canberra. Accessed: 15 February, 2007. Available from: <http://www.aihw.gov.au/publication-detail/?id=6442467062>.

44. Australian Bureau of Statistics, 2003, Information Paper: Use of the Kessler Psychological Distress Scale in ABS Health Surveys, Australia 2001, cat. no. 4817.0.55.001, ABS, Canberra. Accessed: 19 December, 2013. Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4817.0.55.001>.

45. Saunders D. and Daly A., 2000, Collaborative Health and Well-being Survey: Psychological distress in the Western Australian population, Department of Health, Perth.

46. Luhamann M., Hofmann W., Eid M. and Lucas R., 2012 'Subjective Well-Being and Adaptation to Life Events: A Meta-Analysis on Differences Between Cognitive and Affective Well-Being', *Journal of Personal Social Psychology*, 102(3): 592-615.

47. Australian Bureau of Statistics, 2004, Information Paper, Measuring Social Capital: An Australian Framework and Indicators, cat. no. 1378.0, ABS, Canberra. Accessed: 12 April, 2007. Available from: [http://www.ausstats.abs.gov.au/ausstats/free.nsf/0/13C0688F6B98DD45CA256E360077D526/\\$File/13780_2004.pdf](http://www.ausstats.abs.gov.au/ausstats/free.nsf/0/13C0688F6B98DD45CA256E360077D526/$File/13780_2004.pdf).
48. Cabinet Office, 2004, Work Stress and Health: the Whitehall II study, CCSU, London. Accessed: 17 February 2013. Available from: <https://www.ucl.ac.uk/whitehallIII/pdf/wii-booklet>.
49. Bailis D.S., Seagall A., Mahon M.J., Chipperfield J.G. and Dunn E.M., 2001, 'Perceived control in relation to socioeconomic and behavioural resources for health', *Social Science and Medicine*, 52: 1661-76.
50. World Health Organisation, Information sheet: Premature death among people with severe mental disorders, WHO, Accessed: 17th Feb 2016. Available from: http://www.who.int/mental_health/management/info_sheet.pdf.
51. Pevalin DJ. and Rose D., 2003, Social Capital for Health: Investigating the links between social capital and health using the British Household Panel Survey, University of Essex for NHS, Essex.
52. Australian Bureau of Statistics, 2004, Characteristics of people reporting good or better health, 2001, ABS, Canberra. Accessed: 19 December, 2013. Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/ProductsbyReleaseDate/E8CD6F5CEDC09587CA2572E6001858BF?OpenDocument>.



This document can be made available in alternative formats on request for a person with a disability.

© Department of Health 2016

Copyright to this material is vested in the State of Western Australia unless otherwise indicated. Apart from any fair dealing for the purposes of private study, research, criticism or review, as permitted under the provisions of the *Copyright Act 1968*, no part may be reproduced or re-used for any purposes whatsoever without written permission of the State of Western Australia.