



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

# Health and Wellbeing of Adults in Western Australia 2016, Overview and Trends

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## **Suggested citation**

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## **EXECUTIVE SUMMARY**

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 2016, 5,865 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.

This report describes the findings from the 2016 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.

Some key findings from the report include:

### **General health:**

- Almost nine out of ten adults (87.1%) aged 16 years and over reported that their health was the same or better than it had been the previous year.
- In 2016 approximately one out of five Western Australians were in a family where at least one person had a disability.

### **Chronic health conditions:**

- The prevalence of ever being diagnosed with arthritis, osteoporosis, heart disease, stroke, skin cancer, others cancers and diabetes all increased significantly with age.
- Around one-quarter (23.0%) of adults received an injury in the past 12 months that required treatment by a health care professional.
- Around one-quarter (24.0%) of adults with asthma has an asthma action plan.

### **Lifestyle and physiological risk factors:**

- The prevalence of current smokers decreased significantly from 2002 (21.6%) to 2016 (10.8%).
- Over one-quarter (27.4%) of the Western Australian population drank at levels likely to increase their risk of long-term alcohol related harm and one in ten (10.6%) drank at levels that increase their likelihood of short-term alcohol related harm.
- Almost two-thirds (63.5%) of adults aged 18 years and over did at least 150 minutes of moderate physical activity per week.
- There has been a significant increase in the prevalence of obesity in Western Australian adults from 2002 to 2016, increasing from 21.3 per cent to 28.4 per cent.
- The prevalence of adults aged 16 years and over never consuming meals from fast food outlets has increased significantly from 2002 (31.4%) to 2016 (43.0%).

### **Health service utilisation:**

- Nine out of ten adults (89.6%) visited a primary health care service in the last 12 months. Females were significantly more likely than males to visit allied, dental and alternative health care services.
- Older adults aged 65 years and over were significantly more likely to have used a primary, hospital based or allied health service than younger adults (16-64 years), but were significantly less likely to have used mental or alternative health services.
- The utilisation of dental health services was significantly lower in the most disadvantaged areas of WA compared with those living in the three least disadvantaged quintiles.
- Over half (55.9%) of adults aged 65 years and over received the flu vaccination.

## 1. INTRODUCTION

The WA Health and Wellbeing Surveillance System (HWSS) is a continuous data collection system which was developed to monitor the health and wellbeing of Western Australians. On average, 550 people throughout Western Australia (WA) are interviewed each month. The HWSS began in March 2002 and as at December 2016 over 92,000 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. A copy of the questionnaire is available on the intranet at:

[intranet.health.wa.gov.au/epidemiology/resources/index.cfm](http://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.

This report presents what WA adults aged 16 years and over said about their health and wellbeing in 2016. 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<sup>1,2</sup> but they do so consistently. This means that although the estimates for these indicators 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 Survey<sup>3</sup>, the 2012-13 Australian Aboriginal and Torres Strait Islander Health Survey<sup>4</sup>, or the 2014-15 National Aboriginal and Torres Strait Islander Social Survey<sup>5</sup> 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<sup>®</sup> 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 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 more about the HWSS and provides contact numbers for people to call for further 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 2016, this was the 2015 ERP released by the Australian Bureau of Statistics (ABS) in August 2016.<sup>6</sup>

### **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 unreliable, biased or not representative of the population. Each year since the HWSS began adjusted response rates of above 80 per cent have been attained. The response rate for each month of 2016 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 2016, 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	1371	486	885	143	742	77	622	70.3	83.8	89.0
Feb	1490	531	959	182	777	78	663	69.1	85.3	89.5
Mar	1280	487	793	141	652	66	542	68.3	83.1	89.1
Apr	1278	433	845	198	647	81	530	62.7	81.9	86.7
May	1278	499	779	155	624	39	550	70.6	88.1	93.4
Jun	1281	459	822	164	658	49	553	67.3	84.0	91.9
Jul	1278	459	819	159	660	47	576	70.3	87.3	94.0
Aug	1401	567	834	179	655	68	542	65.0	82.7	88.9
Sep	1504	609	895	176	719	75	597	66.7	83.0	88.8
Oct	1504	631	873	164	709	60	597	68.4	84.2	90.9
Nov	1501	628	873	200	673	38	599	68.6	89.0	94.0
Dec	750	278	472	94	378	32	311	65.9	82.3	90.7
<b>Total</b>	<b>15916</b>	<b>6067</b>	<b>9849</b>	<b>1955</b>	<b>7894</b>	<b>710</b>	<b>6682</b>	<b>67.8</b>	<b>84.6</b>	<b>90.4</b>

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.

#### **3.2 Confidence intervals**

Survey results are estimates of population values and will always contain some error because they are based on samples and not the entire population. Therefore, each table presents the best estimate of the prevalence of a condition or the best 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. 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.

One way to compare two prevalence estimates is to assess whether the difference between them is statistically significant. Statistical significant is a statement about the likelihood of finding being due to chance. Confidence intervals can be used to determine statistical significance. 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.

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.aspx](http://ww2.health.wa.gov.au/~-/media/Files/Corporate/Reports%20and%20publications/Population%20surveys/2003-Confidence_intervals_How_they_work.aspx)

Along with determining statistically significant differences confidence intervals can also be used to determine the level of stability around an estimate. 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.

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 per cent and 50 per cent have been annotated by an asterisk and should be used with caution. Estimates with RSEs above 50 per cent have been withheld.

### **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 at [epi@health.wa.gov.au](mailto:epi@health.wa.gov.au).

## **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 2016.

As questions on 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, 2016 estimates presented in trend tables may differ slightly from 2016 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.<sup>7</sup>

In this report when the acronym SEIFA is used it is referring to the Index of Relative Socio-economic Disadvantage (IRSD).<sup>8</sup> 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 WA by summarising characteristics of the population including low income, low educational attainment, high unemployment and jobs in relatively unskilled occupations.<sup>8</sup> 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.<sup>9</sup>

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](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

In 2016, 5,865 Western Australian's aged 16 years and over participated in the HWSS and of those, 83 identified as Aboriginal or Torres Strait Islander. The demographic characteristics of the adult sample that participated in the 2016 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 2016**

	Unweighted Sample (n)	Estimated Per Cent (%)
<b>Age</b>		
16 to 24 yrs	239	15.0
25 to 44 yrs	513	37.9
45 to 64 yrs	2,377	30.6
65 yrs & over	2,736	16.5
<b>Gender</b>		
Females	3,578	49.6
Males	2,287	50.4
<b>Australian Born</b>		
Yes	4,001	68.2
No	1,855	31.8
<b>Marital Status</b>		
Married	3,440	54.2
De facto	354	11.9
Widowed	822	3.4
Divorced	486	3.7
Separated	122	1.6
Never married	610	25.2
<b>Region of Residence</b>		
Metro	2,814	79.1
Rural	2,438	14.9
Remote	613	6.0
<b>Health Region</b>		
East Metro	900	27.4
Goldfields	294	2.0
Great Southern	497	3.1
Kimberley	178	2.0
Midwest	424	2.4
North Metro	966	26.2
Pilbara	141	2.1
South Metro	948	25.4
South West	1014	6.3
Wheatbelt	503	3.1
<b>ARIA+</b>		
Inner Regional	1,207	11.7
Major Cities	2,645	73.2
Outer Regional	1,274	8.7
Remote	516	4.3
Very Remote	223	2.2

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

**Table 3: Socioeconomic characteristics, 16 years & over, HWSS 2016**

	Unweighted Sample (n)	Estimated Per Cent (%)
<b>Current Place of Living</b>		
Rented from govt or public authority	189	1.5
Rented privately	476	16.1
Being paid off by you/your partner	1,166	33.9
Fully owned/outright owner	3,790	43.7
Other	180	4.7
<b>Current Living Arrangement</b>		
Living with parent(s)	235	14.8
Living with other family members	365	8.8
Living with friends	56	3.1
Living with a partner and children	985	28.1
Living with a partner but no children	2,654	34.4
Living alone	1,426	9.4
Living in a retirement village	59	0.3
Other living arrangement	60	1.1 *
<b>Household Income</b>		
Under \$20,000	544	6.7
\$20,000 to \$40,000	1,142	13.5
\$40,000 to \$60,000	577	10.2
\$60,000 to \$80,000	448	11.4
\$80,000 to \$100,000	377	12.3
\$100,000 to \$120,000	258	9.0
\$120,000 to \$140,000	237	10.5
More than \$140,000	620	26.4
<b>Household Spending</b>		
Spend more money than earn/get	219	4.2
Have just enough money to get by	913	16.1
Spend left over money	278	4.9
Save a bit every now and then	1,685	29.1
Save some regularly	1,784	35.5
Save a lot	485	10.2

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

**Table 4: Socioeconomic characteristics, 16 years & over, continued, HWSS 2016**

	Unweighted Sample (n)	Estimated Per Cent (%)
<b>Highest Level of Education (a)</b>		
Less than Year 10	537	3.2
Year 10 or Year 11	1,138	14.1
Year 12	571	15.6
TAFE/Trade qualification	2,368	39.2
Tertiary degree or equivalent	1,169	27.9
<b>Employment Status</b>		
Self employed	760	13.5
Employed for wages, salary or payment in kind	1,810	47.4
Unemployed for less than one year	69	3.0
Unemployed for more than one year	48	1.5
Engaged in home duties	246	6.4
Retired	2,638	17.3
Unable to work	128	1.8
A student	128	8.7
Other	30	0.3 *
<b>Receiving a Government Pension</b>		
Yes	2,318	18.7
No	3,484	81.3
<b>Possess a Government Health Care Card</b>		
Yes	2,588	26.4
No	3,198	73.6
<b>Possess Private Health Insurance</b>		
Yes - Hospital only	162	3.1
- Ancillary only	337	5.1
- Both hospital and ancillary	3,581	66.1
No	1,659	25.7

(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 2016**

	Working Away	Shift Work
	Estimated Per Cent (%)	Estimated Per Cent (%)
<b>Age</b>		
16 to 44 years	10.3	7.8
45 to 64 years	5.2	6.7
16 to 64 years	8.3	7.3
<b>Sex</b>		
Males	14.7	7.7
Females	N/A	6.9
Persons	8.3	7.3

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

## 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.<sup>10, 11</sup> 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, 16 years & over, HWSS 2016**

	Excellent		Very good		Good		Fair		Poor	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>										
Males	22.9	(16.6 - 29.2)	43.1	(35.7 - 50.5)	27.3	(20.9 - 33.8)	5.7	(3.0 - 8.4)	N/A	(N/A - N/A)
Females	24.6	(18.6 - 30.6)	42.4	(35.8 - 48.9)	26.1	(20.3 - 31.8)	5.4 *	(2.6 - 8.2)	N/A	(N/A - N/A)
Persons	23.7	(19.4 - 28.1)	42.7	(37.8 - 47.7)	26.7	(22.4 - 31.1)	5.6	(3.6 - 7.5)	1.2 *	(0.3 - 2.2)
<b>45 to 64 yrs</b>										
Males	15.0	(11.8 - 18.3)	37.8	(33.3 - 42.3)	31.8	(27.6 - 36.0)	10.6	(7.3 - 14.0)	4.7	(2.9 - 6.6)
Females	19.1	(16.4 - 21.8)	37.9	(34.5 - 41.2)	30.2	(27.0 - 33.3)	9.1	(7.0 - 11.2)	3.7	(2.3 - 5.1)
Persons	17.1	(15.0 - 19.2)	37.8	(35.0 - 40.6)	31.0	(28.4 - 33.6)	9.9	(7.9 - 11.9)	4.2	(3.1 - 5.4)
<b>65 yrs &amp; over</b>										
Males	13.8	(11.3 - 16.3)	30.7	(27.4 - 34.1)	38.3	(34.8 - 41.8)	12.6	(10.2 - 15.0)	4.6	(3.2 - 6.0)
Females	12.7	(10.7 - 14.6)	32.1	(29.4 - 34.9)	34.0	(31.2 - 36.7)	15.1	(13.0 - 17.2)	6.2	(4.8 - 7.5)
Persons	13.2	(11.6 - 14.8)	31.5	(29.3 - 33.6)	36.0	(33.8 - 38.2)	13.9	(12.3 - 15.5)	5.4	(4.4 - 6.4)
<b>Total</b>										
Males	19.1	(15.5 - 22.7)	39.6	(35.3 - 43.9)	30.4	(26.6 - 34.2)	8.3	(6.4 - 10.1)	2.7	(1.8 - 3.6)
Females	20.8	(17.6 - 24.1)	39.2	(35.6 - 42.7)	28.7	(25.6 - 31.9)	8.3	(6.6 - 9.9)	3.0	(2.1 - 4.0)
Persons	20.0	(17.5 - 22.4)	39.4	(36.6 - 42.2)	29.6	(27.1 - 32.0)	8.3	(7.0 - 9.5)	2.8	(2.2 - 3.5)

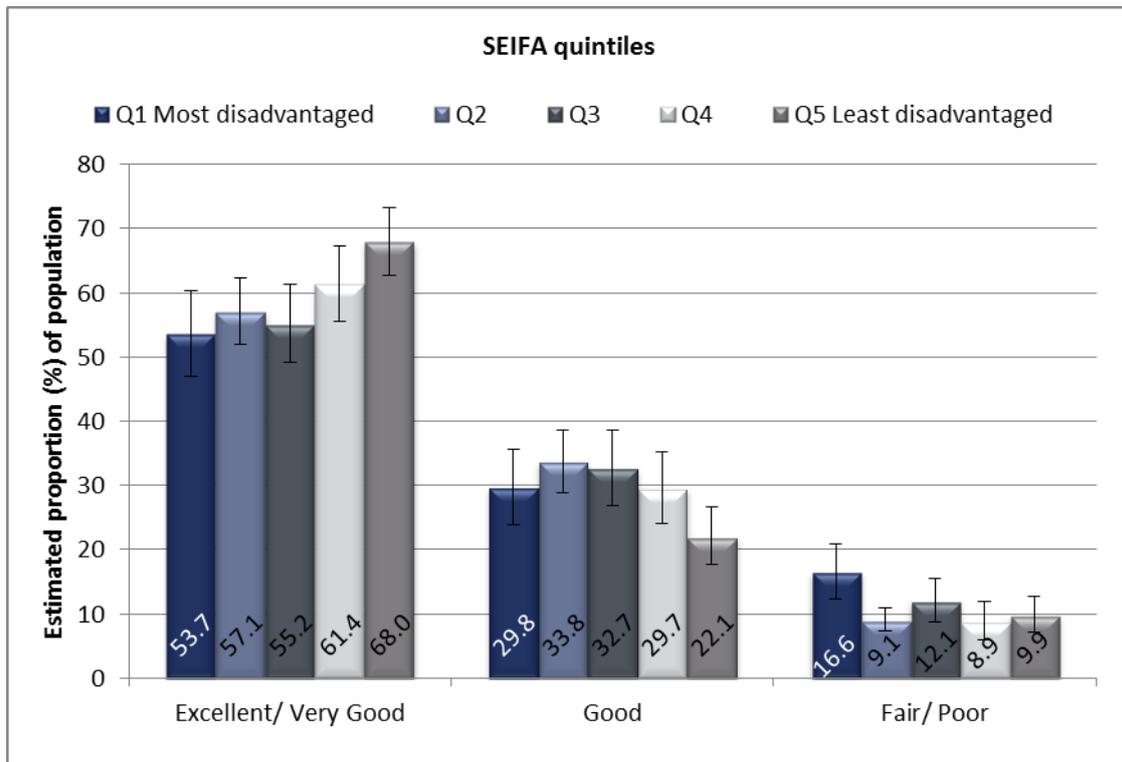
\* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

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: 66.4%, 45 to 64 years: 54.9% and 65 years and over: 44.7%). About one in nine people (11.1%) reported that their health was fair or poor. The proportion of people 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, 16 years & over, by SEIFA quintiles in WA, HWSS 2016**



The prevalence of excellent/ very good health was significantly lower in the three most disadvantaged quintiles (Q1, Q2 and Q3) compared with the least disadvantaged quintile (Q5).

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

**Table 7: Self-reported health status compared with one year ago, 16 years & over, HWSS 2016**

	Much better		Somewhat better		About the same		Somewhat worse		Much worse	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>										
Males	10.7	( 6.0- 15.4 )	23.1	( 17.0- 29.1 )	58.9	( 51.7- 66.0 )	6.4	( 3.3- 9.5 )	1.0	* ( 0.0- 2.0 )
Females	16.6	( 11.7- 21.6 )	15.6	( 11.0- 20.2 )	56.9	( 50.4- 63.4 )	8.6	( 4.9- 12.4 )	2.3	* ( 0.3- 4.3 )
Persons	13.6	( 10.2- 17.0 )	19.4	( 15.6- 23.3 )	57.9	( 53.0- 62.8 )	7.5	( 5.1- 9.9 )	1.6	* ( 0.5- 2.7 )
<b>45 to 64 yrs</b>										
Males	9.4	( 6.6- 12.3 )	14.6	( 11.3- 17.8 )	61.8	( 57.1- 66.4 )	13.0	( 9.3- 16.7 )	1.3	* ( 0.5- 2.0 )
Females	9.2	( 7.1- 11.3 )	10.0	( 8.0- 11.9 )	65.4	( 62.1- 68.8 )	12.5	( 10.0- 14.9 )	2.9	( 1.7- 4.1 )
Persons	9.3	( 7.5- 11.1 )	12.3	( 10.4- 14.2 )	63.6	( 60.7- 66.5 )	12.7	( 10.5- 15.0 )	2.1	( 1.4- 2.8 )
<b>65 yrs &amp; over</b>										
Males	4.1	( 2.7- 5.5 )	10.3	( 8.0- 12.5 )	64.7	( 61.3- 68.1 )	18.5	( 15.8- 21.3 )	2.4	( 1.4- 3.4 )
Females	4.6	( 3.4- 5.7 )	8.2	( 6.5- 9.8 )	65.8	( 63.0- 68.5 )	16.9	( 14.8- 19.1 )	4.5	( 3.3- 5.8 )
Persons	4.3	( 3.4- 5.2 )	9.2	( 7.8- 10.5 )	65.3	( 63.1- 67.4 )	17.7	( 16.0- 19.4 )	3.5	( 2.7- 4.4 )
<b>Total</b>										
Males	9.3	( 6.6- 12.0 )	18.5	( 15.1- 21.9 )	60.6	( 56.5- 64.8 )	10.3	( 8.2- 12.4 )	1.3	( 0.7- 1.9 )
Females	12.2	( 9.5- 14.9 )	12.6	( 10.1- 15.0 )	61.1	( 57.5- 64.7 )	11.3	( 9.2- 13.4 )	2.9	( 1.7- 4.0 )
Persons	10.7	( 8.8- 12.6 )	15.5	( 13.4- 17.7 )	60.9	( 58.1- 63.6 )	10.8	( 9.3- 12.3 )	2.1	( 1.4- 2.7 )

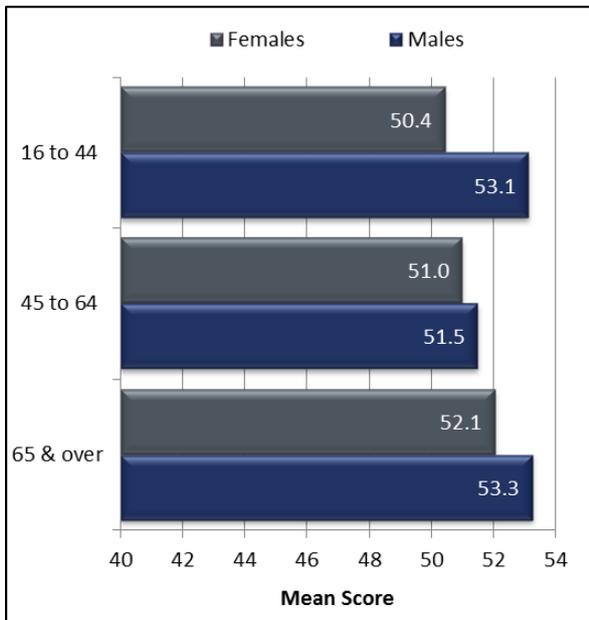
\* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

While three in five people (60.9%) reported their health status as about the same as one year ago, one in ten (10.7%) 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 (13.5% compared with 33.0%).

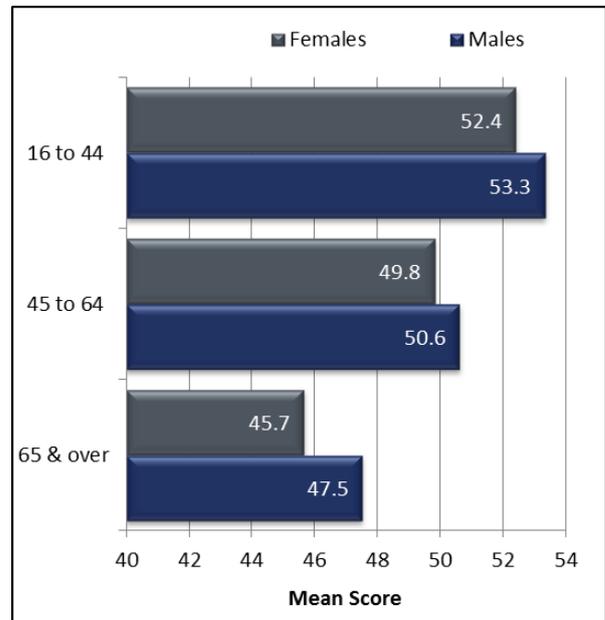
### 6.1 Mental and physical functioning

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.<sup>12</sup>

**Figure 2: Mean mental component scores (MCS), 16 years & over, HWSS 2016**



**Figure 3: Mean physical component scores (PCS), 16 years & over, HWSS 2016**

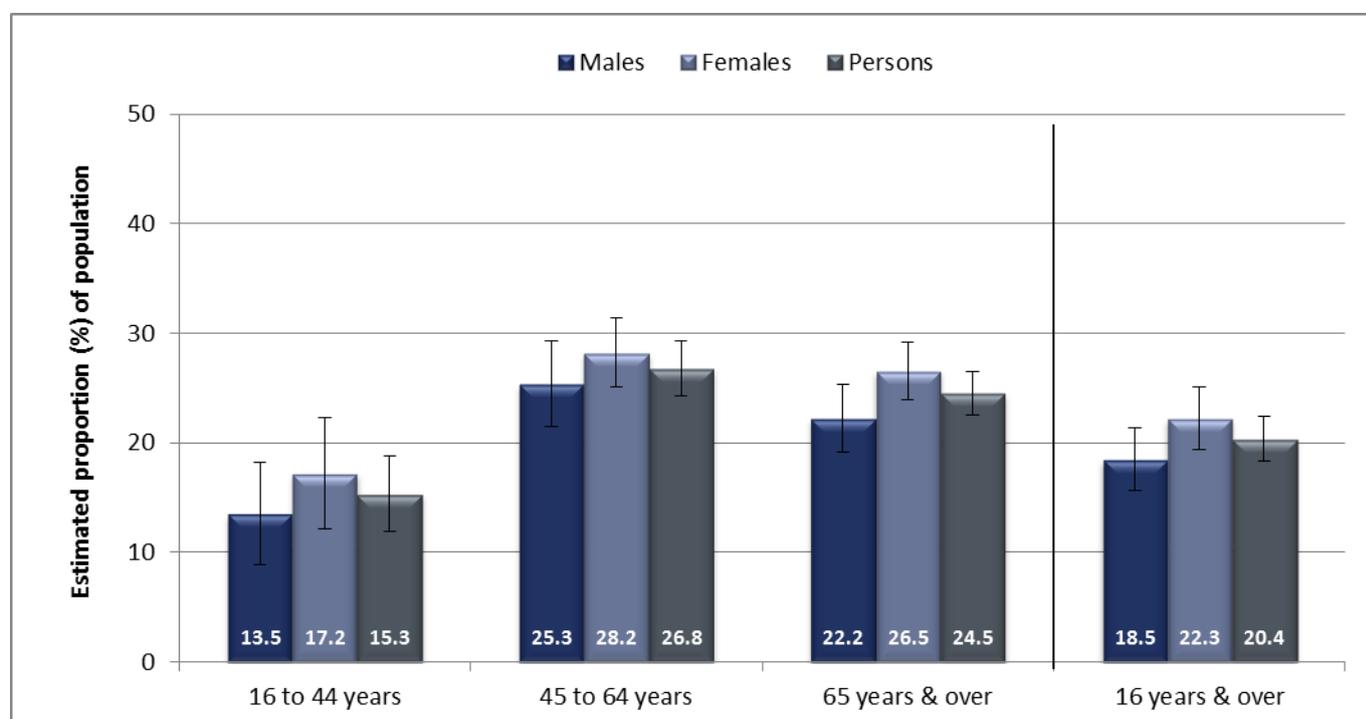


The PCS shows a significant decrease in age-related physical functioning for both males and females.

## 6.2 Disability

Disability may be experienced in terms of impairments of body functions and structures, activity limitations or participation restrictions.<sup>13</sup> 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). 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 (15.3% compared with 26.8% and 24.5%). In 2016 an estimated 419,599 Western Australians (20.4%) were in a family where at least one person had a disability.

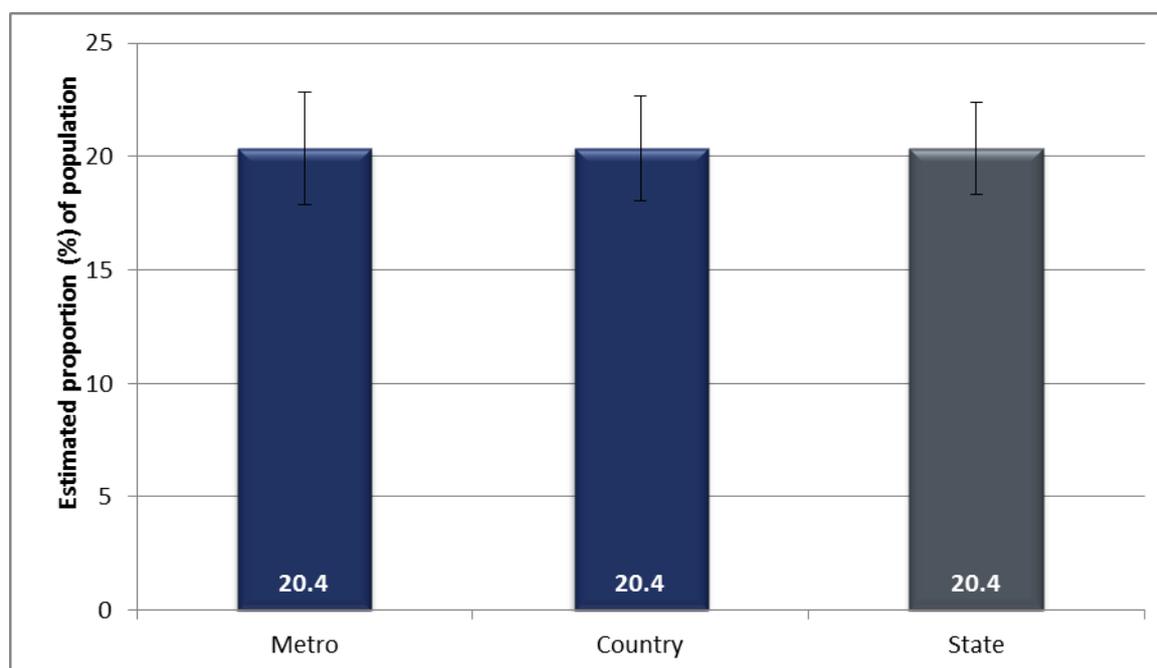
**Figure 4: Prevalence of disability, long-term illness or pain within the family that puts a burden on them personally or on their family, 16 years & over, HWSS 2016**



There was no difference by geographic area in 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 (Figure 5).

Table 8 shows how people rated the burden of the disability, long-term illness or pain on either them personally, or on their family. Of those with a family member with some form of disability, long-term illness or pain, one in five (21.4%) reported that this puts a big or very big burden on the family.

**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 geographic area of residence in WA, HWSS 2016**



**Table 8: Rating of burden due to disability, long-term illness or pain, 16 years & over, HWSS 2016**

	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
<b>16 to 44 yrs</b>										
Males	21.9 *	( 7.0 - 36.7 )	29.1 *	( 12.9 - 45.3 )	22.7 *	( 7.8 - 37.5 )	16.7 *	( 3.0 - 30.3 )	N/A	( N/A - N/A )
Females	4.7 *	( 0.3 - 9.2 )	56.5	( 41.0 - 71.9 )	29.9	( 16.1 - 43.7 )	7.5 *	( 0.8 - 14.3 )	N/A	( N/A - N/A )
Persons	12.5 *	( 5.0 - 20.0 )	44.1	( 31.9 - 56.3 )	26.6	( 16.5 - 36.7 )	11.7 *	( 4.3 - 19.0 )	N/A	( N/A - N/A )
<b>45 to 64 yrs</b>										
Males	18.6	( 11.7 - 25.6 )	36.1	( 27.4 - 44.7 )	24.6	( 17.2 - 32.0 )	9.4 *	( 4.5 - 14.2 )	11.4 *	( 5.2 - 17.5 )
Females	12.0	( 8.1 - 16.0 )	34.5	( 28.2 - 40.8 )	26.0	( 20.1 - 31.8 )	14.1	( 9.5 - 18.7 )	13.4	( 8.8 - 18.0 )
Persons	15.2	( 11.3 - 19.1 )	35.2	( 30.0 - 40.5 )	25.3	( 20.6 - 30.0 )	11.9	( 8.5 - 15.2 )	12.4	( 8.6 - 16.2 )
<b>65 yrs &amp; over</b>										
Males	18.3	( 12.5 - 24.1 )	29.9	( 22.6 - 37.3 )	24.5	( 17.8 - 31.2 )	20.2	( 13.8 - 26.6 )	7.1 *	( 3.3 - 10.8 )
Females	15.9	( 11.6 - 20.2 )	32.2	( 26.7 - 37.7 )	28.8	( 23.5 - 34.2 )	14.4	( 10.3 - 18.5 )	8.7	( 5.3 - 12.0 )
Persons	16.9	( 13.4 - 20.4 )	31.2	( 26.8 - 35.7 )	27.0	( 22.8 - 31.2 )	16.9	( 13.3 - 20.5 )	8.0	( 5.5 - 10.5 )
<b>Total</b>										
Males	19.9	( 13.2 - 26.5 )	32.2	( 24.6 - 39.7 )	23.8	( 17.0 - 30.6 )	14.3	( 8.4 - 20.2 )	9.9 *	( 4.5 - 15.4 )
Females	9.9	( 7.2 - 12.6 )	42.8	( 35.4 - 50.3 )	28.1	( 22.1 - 34.2 )	11.5	( 8.1 - 15.0 )	7.6	( 5.3 - 9.8 )
Persons	14.5	( 11.0 - 17.9 )	38.0	( 32.5 - 43.4 )	26.2	( 21.6 - 30.7 )	12.8	( 9.5 - 16.1 )	8.6	( 5.8 - 11.4 )

\* 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.

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 2016**

	Yes		No	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	1.4 *	( 0.2 - 2.6 )	98.6	( 97.4 - 99.8 )
Females	1.2 *	( 0.1 - 2.3 )	98.8	( 97.7 - 99.9 )
Persons	1.3 *	( 0.5 - 2.1 )	98.7	( 97.9 - 99.5 )
<b>45 to 64 yrs</b>				
Males	4.7	( 2.8 - 6.6 )	95.3	( 93.4 - 97.2 )
Females	3.3	( 2.2 - 4.5 )	96.7	( 95.5 - 97.8 )
Persons	4.0	( 2.9 - 5.1 )	96.0	( 94.9 - 97.1 )
<b>65 yrs &amp; over</b>				
Males	10.9	( 8.7 - 13.1 )	89.1	( 86.9 - 91.3 )
Females	16.9	( 14.7 - 19.0 )	83.1	( 81.0 - 85.3 )
Persons	14.1	( 12.5 - 15.6 )	85.9	( 84.4 - 87.5 )
<b>Total</b>				
Males	3.9	( 2.9 - 4.8 )	96.1	( 95.2 - 97.1 )
Females	4.6	( 3.8 - 5.5 )	95.4	( 94.5 - 96.2 )
Persons	4.2	( 3.6 - 4.9 )	95.8	( 95.1 - 96.4 )

\* 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.

In 2016, 4.2 per cent 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 87,367 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.<sup>14</sup> 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.<sup>15</sup> The lifetime prevalence of arthritis and/or osteoporosis is shown in Table 10.

**Table 10: Prevalence of arthritis and osteoporosis, 16 years & over, HWSS 2016**

	Arthritis		Osteoporosis	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	5.7 *	( 2.4 - 9.0 )	N/A	( N/A - N/A )
Females	6.7	( 4.1 - 9.4 )	1.3 *	( 0.3 - 2.3 )
Persons	6.2	( 4.1 - 8.3 )	0.7	( 0.2 - 1.3 )
<b>45 to 64 yrs</b>				
Males	24.5	( 20.6 - 28.5 )	4.3 *	( 1.9 - 6.7 )
Females	30.4	( 27.4 - 33.5 )	7.3	( 5.5 - 9.1 )
Persons	27.5	( 25.0 - 30.0 )	5.8	( 4.3 - 7.3 )
<b>65 yrs &amp; over</b>				
Males	42.3	( 38.7 - 45.9 )	8.2	( 6.3 - 10.1 )
Females	58.9	( 56.0 - 61.8 )	23.9	( 21.4 - 26.3 )
Persons	51.1	( 48.8 - 53.4 )	16.5	( 14.9 - 18.1 )
<b>Total</b>				
Males	17.1	( 14.6 - 19.5 )	2.7	( 1.8 - 3.5 )
Females	23.1	( 20.9 - 25.3 )	7.1	( 6.1 - 8.1 )
Persons	20.1	( 18.4 - 21.7 )	4.9	( 4.2 - 5.5 )

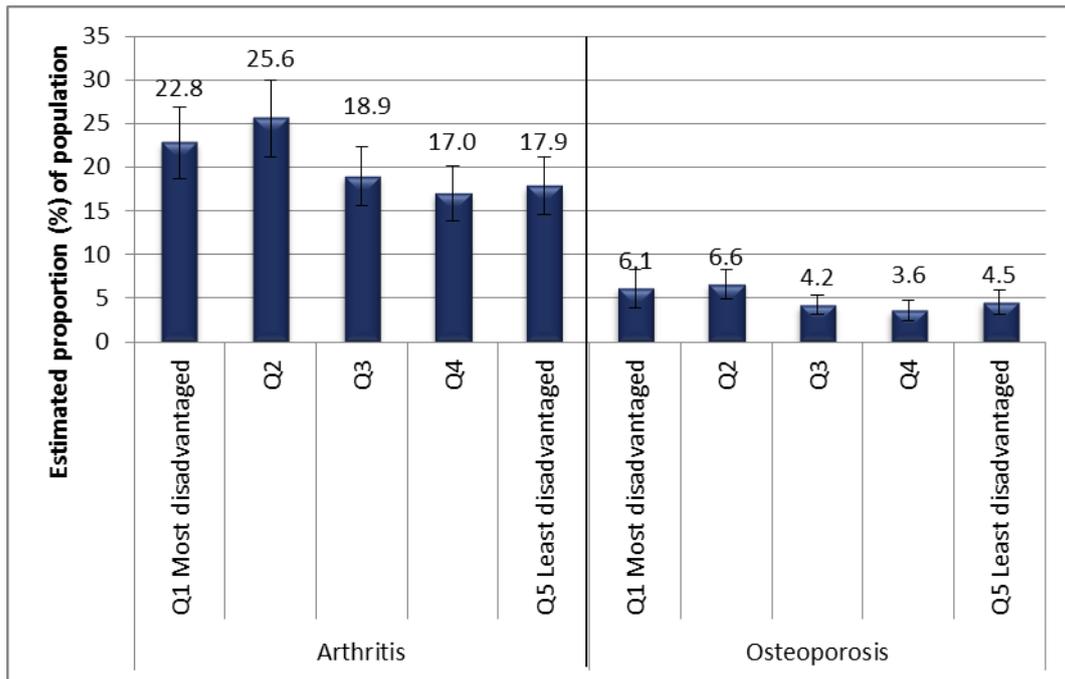
\* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

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

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

**Figure 6: Prevalence of arthritis and osteoporosis, 16 years & over, by SEIFA quintiles in WA, HWSS 2016**



The lifetime prevalence of arthritis was significantly higher in the second most disadvantaged quintile (Q2; 25.6%) compared with the two least disadvantaged quintiles (Q4; 17.0% and Q5; 17.9%). With regard to lifetime prevalence of osteoporosis, the prevalence was significantly higher in the second most disadvantaged quintile (Q2; 6.6%) when compared with the second least disadvantaged quintile (Q4; 3.6%).

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 2002–16**

	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
2016	19.8	26.9	23.4	3.1	8.2	5.6
<b>Average</b>	<b>19.9</b>	<b>27.5</b>	<b>23.7</b>	<b>2.7</b>	<b>8.6</b>	<b>5.7</b>

- This information is not available in 2002.

There is no difference in the lifetime prevalence of arthritis or osteoporosis for males, females or all persons when the 2016 estimates are 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.<sup>16</sup> The lifetime prevalence of heart disease and/or stroke is shown in Table 12.

**Table 12: Prevalence of heart disease and stroke, 16 years & over, HWSS 2016**

	Heart Disease		Stroke	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	N/A	( N/A - N/A )	N/A	( N/A - N/A )
Females	1.4 *	( 0.2 - 2.7 )	N/A	( N/A - N/A )
Persons	1.0 *	( 0.3 - 1.7 )	N/A	( N/A - N/A )
<b>45 to 64 yrs</b>				
Males	6.6	( 4.7 - 8.6 )	1.8 *	( 0.7 - 2.9 )
Females	2.6	( 1.5 - 3.8 )	1.3 *	( 0.6 - 2.0 )
Persons	4.6	( 3.5 - 5.8 )	1.6	( 0.9 - 2.2 )
<b>65 yrs &amp; over</b>				
Males	27.6	( 24.3 - 30.9 )	8.0	( 6.0 - 10.0 )
Females	15.8	( 13.8 - 17.9 )	6.0	( 4.7 - 7.4 )
Persons	21.4	( 19.5 - 23.3 )	6.9	( 5.7 - 8.1 )
<b>Total</b>				
Males	6.6	( 5.5 - 7.6 )	2.2	( 1.5 - 2.9 )
Females	4.3	( 3.5 - 5.2 )	1.9	( 1.2 - 2.6 )
Persons	5.5	( 4.8 - 6.1 )	2.0	( 1.5 - 2.6 )

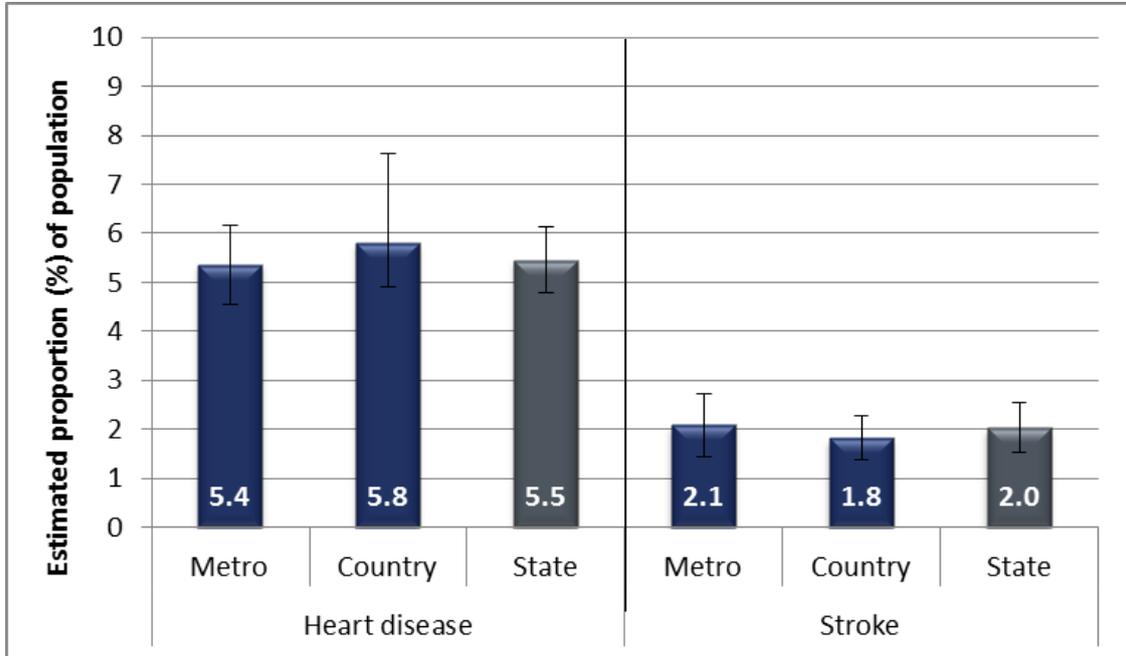
\* Prevalence estimate has a RSE between 25%-50% and should be used with caution.  
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

The prevalence of heart disease was significantly higher in males compared with females (6.6% compared with 4.3%). 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 (6.9% amongst adults 65 years and over compared with 1.6% for those aged 45 to 64 years).

As shown in Figure 7, there was no difference in the prevalence of heart disease or stroke by geographic area of residence.

**Figure 7: Prevalence of heart disease and/or stroke, 16 years & over, by geographic area of residence in WA, HWSS 2016**



The standardised annual prevalence estimates of heart disease and or 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 2002–16**

	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
2016	7.5	4.9	6.2	2.5	2.1	2.3
<b>Average</b>	<b>8.5</b>	<b>5.3</b>	<b>6.9</b>	<b>2.4</b>	<b>1.7</b>	<b>2.1</b>

The prevalence of heart disease or stroke for males, females and all persons remained unchanged from 2002 to 2016.

### 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.<sup>17</sup> In WA, there were 12,364 new cases of cancer recorded in 2014.<sup>18</sup> According to the Cancer Council Australia approximately 30 per cent of cancer cases could be prevented by modifying lifestyle behaviours.<sup>19</sup>

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 2016**

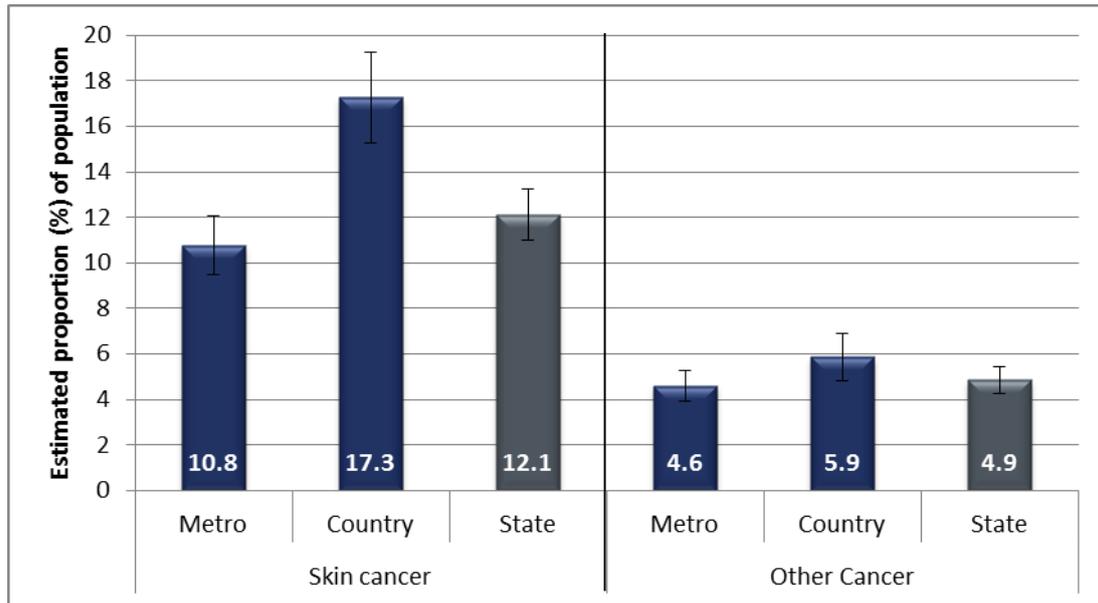
	Skin Cancer		Other Cancer	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	2.9 *	( 1.3 - 4.5 )	N/A	( N/A - N/A )
Females	3.4 *	( 1.5 - 5.4 )	0.5 *	( 0.1 - 1.0 )
Persons	3.2	( 1.9 - 4.4 )	0.4 *	( 0.0 - 0.8 )
<b>45 to 64 yrs</b>				
Males	17.2	( 13.8 - 20.5 )	4.3	( 2.8 - 5.8 )
Females	13.5	( 11.4 - 15.6 )	8.4	( 6.4 - 10.4 )
Persons	15.3	( 13.4 - 17.3 )	6.4	( 5.1 - 7.6 )
<b>65 yrs &amp; over</b>				
Males	39.9	( 36.3 - 43.5 )	19.0	( 16.1 - 21.8 )
Females	30.4	( 27.7 - 33.1 )	13.9	( 12.0 - 15.9 )
Persons	34.9	( 32.7 - 37.1 )	16.3	( 14.6 - 18.0 )
<b>Total</b>				
Males	13.0	( 11.2 - 14.7 )	4.4	( 3.6 - 5.2 )
Females	11.3	( 9.8 - 12.7 )	5.3	( 4.5 - 6.2 )
Persons	12.1	( 11.0 - 13.2 )	4.9	( 4.3 - 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.

The prevalence of skin cancer was significantly higher than all other cancer for all age groups (16 to 44 year olds: 3.2% compared with 0.4%, 45 to 64 year olds: 15.3% compared with 6.4%, 65 years and over: 34.9% compared with 16.3%). The prevalence of both skin cancer and any other cancer increased significantly with age.

Figure 8 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 (17.3% compared with 10.8%).

**Figure 8: Prevalence of skin cancer and cancer, 16 years & over, by geographic area of residence in WA, HWSS 2016**



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 2007–16**

	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
2016	4.2	5.2	4.7
<b>Average</b>	<b>4.5</b>	<b>5.9</b>	<b>5.2</b>

The prevalence of people ever diagnosed with cancer remained unchanged in males, females and all persons between 2007 and 2016.

## 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.<sup>20</sup> Table 16 shows the prevalence of diabetes (of any type) in WA. 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 2016**

	All Diabetes (a)		Proportion of diabetics with type 2 diabetes (b)	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	2.8 *	( 0.1 - 5.5 )	N/A	( N/A - N/A )
Females	2.0 *	( 0.8 - 3.3 )	53.8 *	( 23.1 - 84.5 )
Persons	2.4 *	( 0.9 - 4.0 )	40.9 *	( 10.0 - 71.9 )
<b>45 to 64 yrs</b>				
Males	9.7	( 7.2 - 12.2 )	84.7	( 76.7 - 92.8 )
Females	8.6	( 6.5 - 10.6 )	67.1	( 54.1 - 80.2 )
Persons	9.1	( 7.5 - 10.7 )	76.5	( 68.5 - 84.5 )
<b>65 yrs &amp; over</b>				
Males	17.5	( 14.7 - 20.2 )	92.9	( 88.4 - 97.4 )
Females	13.4	( 11.4 - 15.4 )	92.6	( 88.4 - 96.7 )
Persons	15.3	( 13.6 - 17.0 )	92.8	( 89.7 - 95.9 )
<b>Total</b>				
Males	7.2	( 5.4 - 8.9 )	76.6	( 63.0 - 90.2 )
Females	6.0	( 5.0 - 7.1 )	74.7	( 66.2 - 83.2 )
Persons	6.6	( 5.6 - 7.6 )	75.7	( 67.4 - 84.1 )

(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.

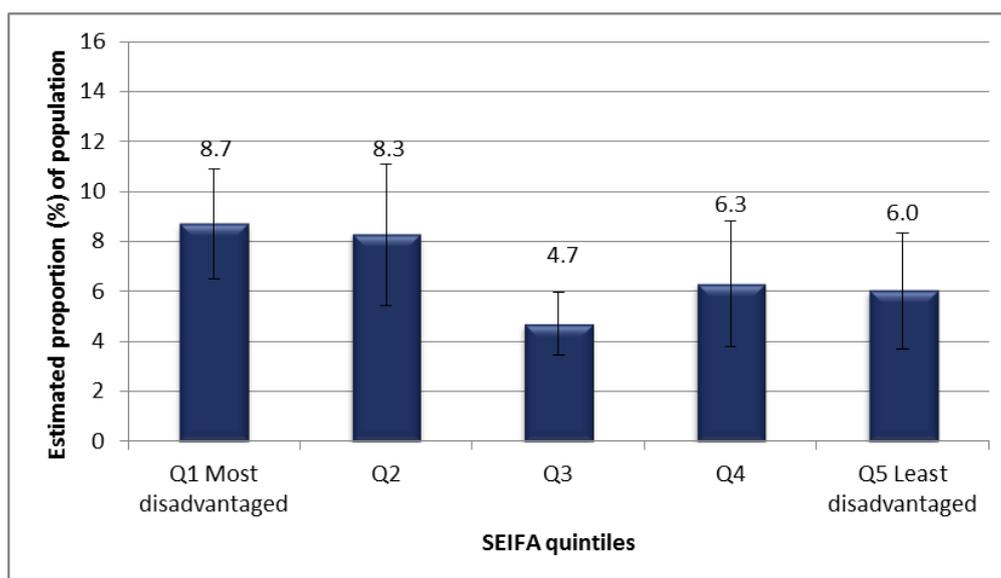
N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

Approximately one in fifteen people (6.6%) reported having ever been diagnosed with diabetes; this represents approximately 136,292 people in WA. The prevalence of diabetes increased significantly with age, with those aged 65 years and over being approximately six 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 (75.7%) were diagnosed with type 2 diabetes.

Figure 9 illustrates the prevalence of diabetes in WA adults by SEIFA quintiles. The prevalence of diabetes was significantly higher amongst people in the most disadvantaged quintile (8.7%) compared with people in SEIFA quintile 3 (4.7%).

**Figure 9: Prevalence of diabetes, 16 years & over, by SEIFA quintiles in WA, HWSS 2016**

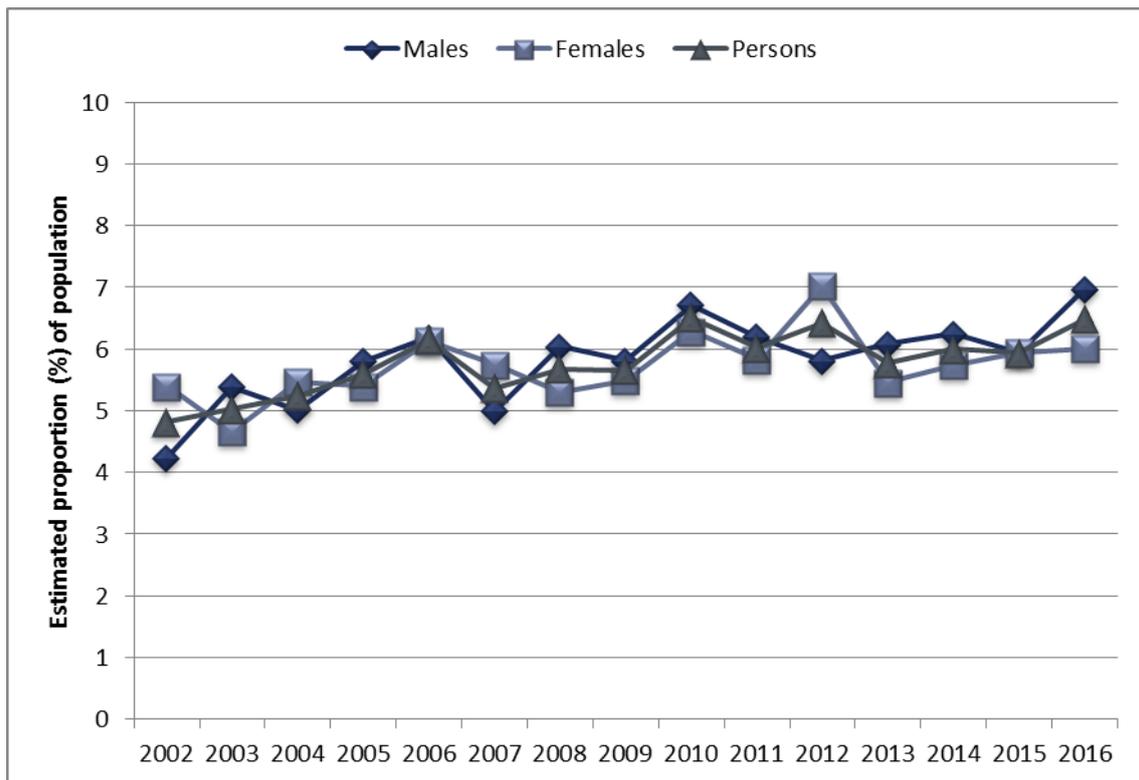


The standardised annual prevalence estimates of diabetes for adults aged 16 years and over are shown in Table 17 and Figure 10.

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

	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
2016	7.0	6.0	6.5
<b>Average</b>	<b>5.8</b>	<b>5.7</b>	<b>5.8</b>

Figure 10: Prevalence of diabetes over time, 16 years & over, HWSS 2002–16



The prevalence of diabetes for males and all persons in 2016 was significantly higher than 2002 however the prevalence of diabetes for females remained unchanged from 2002 to 2016.

## 7.5 Injury

Injury is a major cause of hospitalisation and death in Australia.<sup>21</sup> One of the primary contributors to the injury burden arises from the management of injuries in older people that resulted from falls.<sup>22</sup> 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 the past 12 months, 16 years & over, HWSS 2016**

	Injury		Proportion of injuries due to falls (a)		Injury due to falls, all respondents (b)	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	29.1	(22.5-35.8)	22.0	(12.2-31.8)	6.4	(3.4-9.4)
Females	23.3	(17.5-29.1)	23.2 *	(11.7-34.6)	5.4 *	(2.5-8.3)
Persons	26.3	(21.9-30.8)	22.5	(15.0-29.9)	5.9	(3.8-8.0)
<b>45 to 64 yrs</b>						
Males	22.5	(18.7-26.4)	25.4	(16.6-34.1)	5.7	(3.5-8.0)
Females	21.0	(18.1-24.0)	30.5	(23.4-37.7)	6.4	(4.7-8.1)
Persons	21.8	(19.4-24.2)	27.9	(22.2-33.5)	6.1	(4.7-7.5)
<b>65 yrs &amp; over</b>						
Males	13.6	(11.2-16.0)	49.3	(39.8-58.8)	6.7	(4.9-8.5)
Females	16.0	(13.9-18.1)	63.7	(56.8-70.6)	10.2	(8.5-11.9)
Persons	14.9	(13.3-16.4)	57.5	(51.8-63.2)	8.5	(7.3-9.8)
<b>Total</b>						
Males	24.7	(20.9-28.5)	25.2	(18.3-32.1)	6.2	(4.5-8.0)
Females	21.3	(18.2-24.5)	30.8	(23.6-37.9)	6.6	(4.9-8.2)
Persons	23.0	(20.6-25.5)	27.8	(22.8-32.7)	6.4	(5.2-7.6)

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

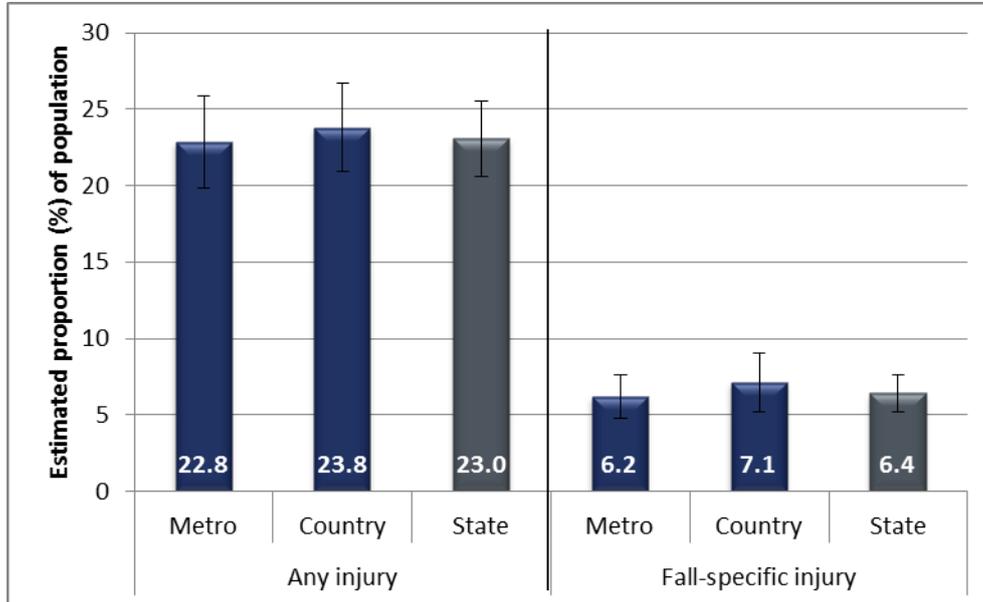
(b) As a proportion of all respondents.

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

More than one in five people (23.0%) reported an injury in the past 12 months that required treatment from a health professional with one in four (27.8%) of these injuries being the result of a fall.

As shown in Figure 11, there were no significant differences in the prevalence of injuries or falls by geographic area of residence.

**Figure 11: Prevalence of any injury and fall in the past 12 months, 16 years & over, by geographic area of residence in WA, HWSS 2016**



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 2002–16**

	<b>Males</b>	<b>Females</b>	<b>Persons</b>
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
2016	24.8	21.3	23.0
<b>Average</b>	<b>27.2</b>	<b>19.5</b>	<b>23.3</b>

(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 2002–16**

	<b>Males</b>	<b>Females</b>	<b>Persons</b>
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
2016	0.4	0.3	0.3
<b>Average</b>	<b>0.4</b>	<b>0.3</b>	<b>0.4</b>

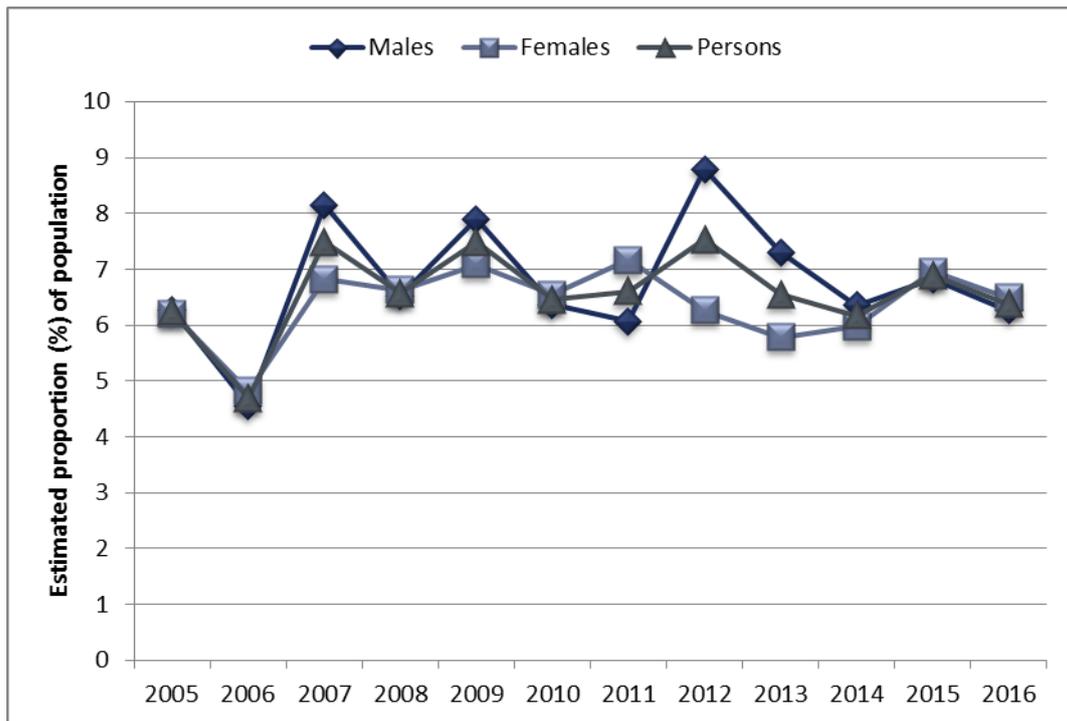
(a) Injuries in the past 12 months that required treatment from a health professional

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 0.3

injuries still equates to 475,128 injuries among Western Australian adults that required treatment by a health care professional in 2016 alone.

The annual prevalence estimate for falls in the past 12 months remained unchanged between 2005 and 2016 (Figure 12).

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



(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.<sup>23</sup> 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 (for those who reported having asthma) is shown in Table 21.

**Table 21: Prevalence of asthma and asthma action plan, 16 years & over, HWSS 2016**

	Lifetime (ever)		Period (current) (a)		Action plan (b)	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	20.7	( 14.5 - 26.9 )	8.7	( 4.6 - 12.7 )	12.7 *	( 3.6 - 21.7 )
Females	16.9	( 11.8 - 22.0 )	10.1	( 6.0 - 14.2 )	30.1	( 15.7 - 44.5 )
Persons	18.9	( 14.8 - 22.9 )	9.4	( 6.5 - 12.2 )	20.3	( 11.9 - 28.6 )
<b>45 to 64 yrs</b>						
Males	10.2	( 7.6 - 12.8 )	4.9	( 3.1 - 6.7 )	18.1 *	( 7.7 - 28.5 )
Females	14.7	( 12.3 - 17.2 )	10.0	( 8.0 - 12.0 )	37.9	( 29.4 - 46.5 )
Persons	12.4	( 10.7 - 14.2 )	7.4	( 6.1 - 8.8 )	29.8	( 23.1 - 36.6 )
<b>65 yrs &amp; over</b>						
Males	8.3	( 6.3 - 10.3 )	5.0	( 3.4 - 6.6 )	25.4	( 14.4 - 36.4 )
Females	13.8	( 11.8 - 15.8 )	8.9	( 7.3 - 10.6 )	35.7	( 28.2 - 43.1 )
Persons	11.2	( 9.8 - 12.6 )	7.1	( 5.9 - 8.3 )	32.1	( 25.9 - 38.3 )
<b>Total</b>						
Males	15.6	( 12.1 - 19.1 )	7.0	( 4.7 - 9.2 )	14.8	( 7.8 - 21.8 )
Females	15.7	( 12.9 - 18.5 )	9.9	( 7.7 - 12.1 )	33.2	( 24.6 - 41.8 )
Persons	15.6	( 13.4 - 17.9 )	8.4	( 6.8 - 10.0 )	24.0	( 18.2 - 29.8 )

(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. Presented only for those with asthma.

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

Around one in six Western Australians (15.6%) have ever had asthma. 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 (18.9% compared with 11.2%).

Approximately one in twelve Western Australians (8.4%) have had symptoms of or taken treatment for asthma in the past 12 months. This is the definition of current asthma and is equivalent to over 173,243 people in WA. As shown in Figure 13, there were no differences in the prevalence of asthma (ever and current) by geographic area of residence.

**Figure 13: Prevalence of asthma, 16 years & over, by geographic area of residence, HWSS 2016**

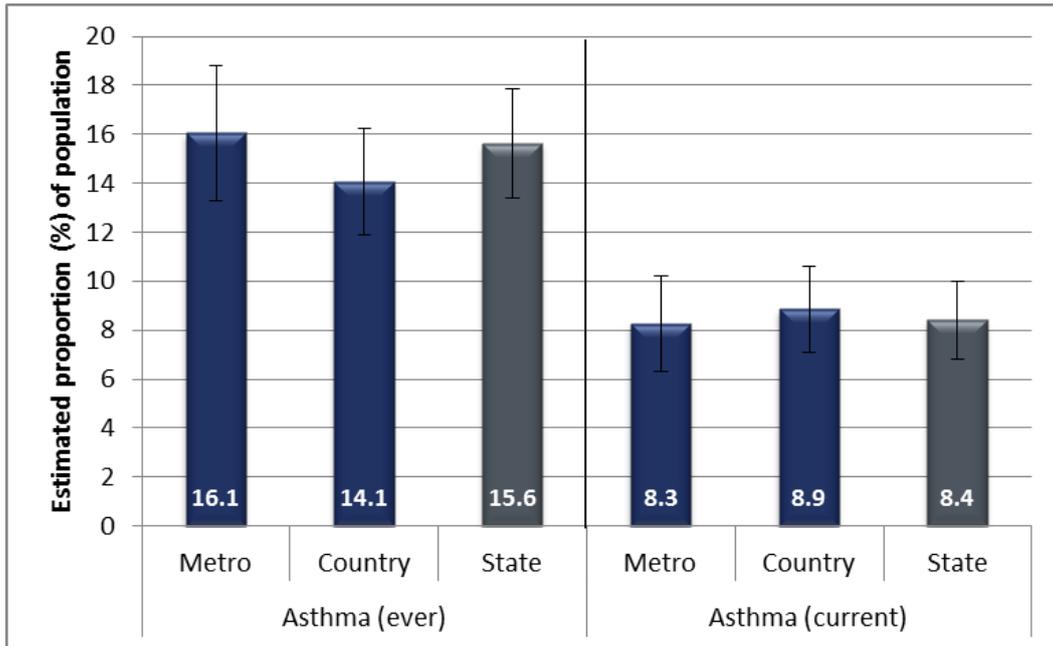
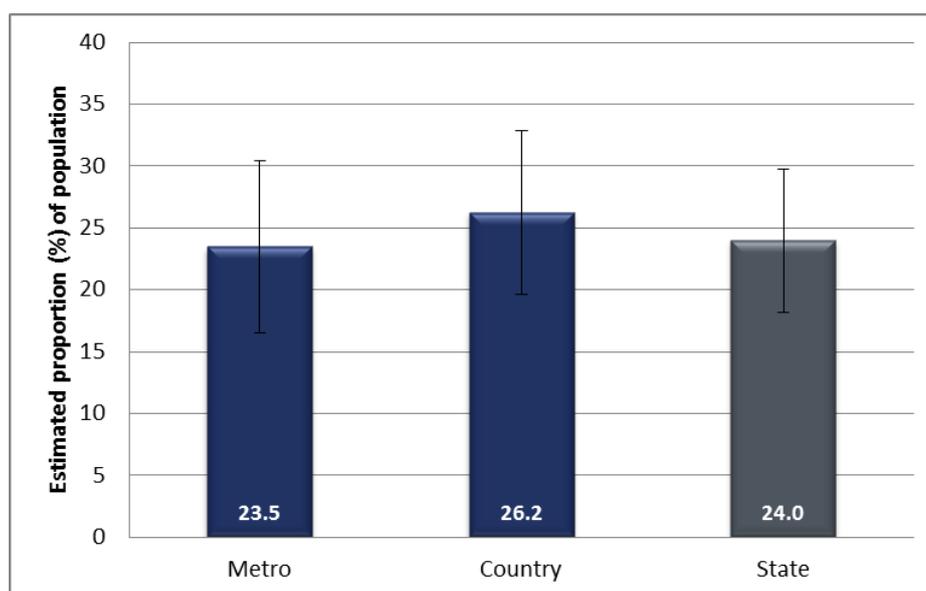


Figure 14 shows the prevalence of asthma action plans by geographic area of residence. There were no significant differences in the prevalence of having an asthma action plans by geographic area of residence.

**Figure 14: Prevalence of asthma action plans, 16 years & over, by geographic area of residence in WA, HWSS 2016**

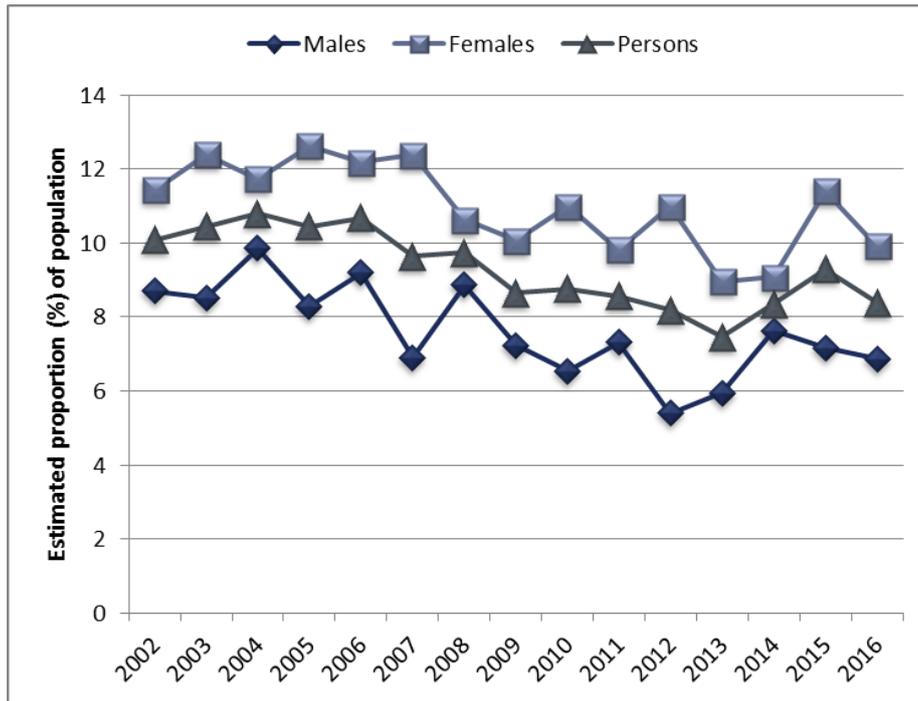
The standardised annual prevalence estimates of asthma for adults aged 16 years and over are shown in Table 22 and Figure 15. The prevalence of lifetime and period asthma remained unchanged from 2002 to 2016.

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

	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
2016	15.3	15.7	15.5	6.9	9.9	8.4
<b>Average</b>	<b>14.8</b>	<b>17.4</b>	<b>16.1</b>	<b>7.5</b>	<b>11.1</b>	<b>9.3</b>

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

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



(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 (24.5%) 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 2016**

	All or most of the time		Some of the time		None of the time	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	N/A	( N/A - N/A )	17.5 *	( 5.7 - 29.3 )	81.7	( 69.9 - 93.6 )
Females	N/A	( N/A - N/A )	26.7 *	( 12.6 - 40.7 )	65.5	( 48.8 - 82.1 )
Persons	N/A	( N/A - N/A )	21.5	( 12.4 - 30.6 )	74.6	( 64.3 - 85.0 )
<b>45 to 64 yrs</b>						
Males	N/A	( N/A - N/A )	15.6 *	( 7.2 - 24.1 )	82.9	( 74.3 - 91.6 )
Females	7.7 *	( 2.5 - 12.9 )	17.1	( 10.9 - 23.3 )	75.2	( 67.7 - 82.7 )
Persons	5.1 *	( 1.9 - 8.3 )	16.5	( 11.5 - 21.6 )	78.4	( 72.6 - 84.1 )
<b>65 yrs &amp; over</b>						
Males	11.5 *	( 3.7 - 19.3 )	16.7 *	( 6.7 - 26.7 )	71.8	( 60.1 - 83.4 )
Females	7.7 *	( 3.3 - 12.1 )	16.9	( 11.0 - 22.9 )	75.4	( 68.5 - 82.2 )
Persons	9.0	( 5.1 - 13.0 )	16.9	( 11.7 - 22.1 )	74.1	( 68.1 - 80.1 )
<b>Total</b>						
Males	1.8 *	( 0.4 - 3.2 )	17.1 *	( 8.4 - 25.7 )	81.2	( 72.4 - 89.9 )
Females	N/A	( N/A - N/A )	22.4	( 14.3 - 30.5 )	69.8	( 60.1 - 79.5 )
Persons	4.8 *	( 0.7 - 8.8 )	19.7	( 13.8 - 25.7 )	75.5	( 68.7 - 82.3 )

\* 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.

## 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.

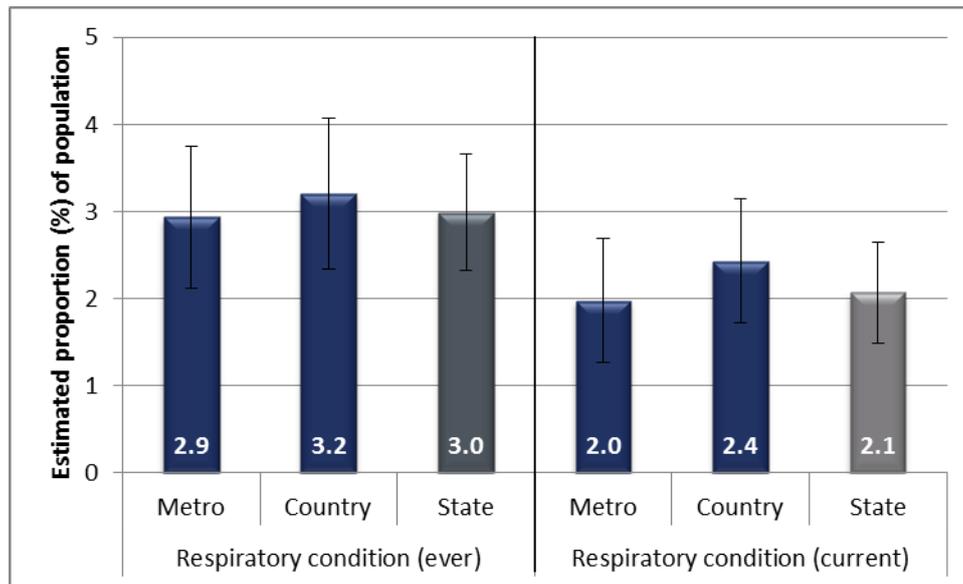
**Table 24: Prevalence of respiratory conditions other than asthma, 16 years & over, HWSS 2016**

	Lifetime (ever)		Period (current)	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	N/A	(N/A - N/A)	N/A	(N/A - N/A)
Females	1.1 *	(0.1 - 2.0)	N/A	(N/A - N/A)
Persons	1.3 *	(0.3 - 2.4)	N/A	(N/A - N/A)
<b>45 to 64 yrs</b>				
Males	2.4	(1.4 - 3.5)	1.4 *	(0.6 - 2.2)
Females	4.8	(3.1 - 6.4)	3.2	(1.9 - 4.5)
Persons	3.6	(2.6 - 4.5)	2.3	(1.5 - 3.1)
<b>65 yrs &amp; over</b>				
Males	6.7	(5.0 - 8.5)	5.2	(3.7 - 6.6)
Females	7.7	(6.2 - 9.2)	6.1	(4.8 - 7.5)
Persons	7.3	(6.1 - 8.4)	5.7	(4.7 - 6.7)
<b>Total</b>				
Males	2.6	(1.5 - 3.7)	1.8 *	(0.8 - 2.8)
Females	3.4	(2.6 - 4.1)	2.3	(1.7 - 2.9)
Persons	3.0	(2.3 - 3.7)	2.1	(1.5 - 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 16 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 16: Prevalence of respiratory conditions other than asthma, 16 years & over, by geographic area of residence in WA, HWSS 2016**



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 lifetime and period prevalence of respiratory conditions remained unchanged from 2007 to 2016.

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

	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
2016	2.5	3.3	2.9	1.7	2.3	2.0
<b>Average</b>	<b>3.2</b>	<b>3.2</b>	<b>3.2</b>	<b>2.2</b>	<b>1.9</b>	<b>2.0</b>

## 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.<sup>24</sup>

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 2016**

	Anxiety		Depression		Stress-related problem		Other mental health condition	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>								
Males	8.6	( 4.9-12.3 )	5.3	( 2.9- 7.8 )	7.5	( 4.0-11.0 )	2.9 *	( 1.0- 4.8 )
Females	15.8	( 10.5-21.0 )	15.0	( 9.8-20.2 )	17.1	( 11.8-22.5 )	4.5 *	( 1.3- 7.7 )
Persons	12.1	( 8.8-15.3 )	10.0	( 7.1-12.9 )	12.2	( 8.9-15.4 )	3.7 *	( 1.9- 5.6 )
<b>45 to 64 yrs</b>								
Males	6.7	( 4.3- 9.2 )	7.4	( 5.0- 9.8 )	6.9	( 4.6- 9.1 )	2.1 *	( 0.6- 3.5 )
Females	10.6	( 8.3-12.9 )	10.1	( 7.9-12.2 )	12.7	( 10.3-15.1 )	2.3	( 1.3- 3.4 )
Persons	8.7	( 7.0-10.3 )	8.7	( 7.1-10.3 )	9.8	( 8.1-11.4 )	2.2	( 1.3- 3.1 )
<b>65 yrs &amp; over</b>								
Males	3.7	( 2.4- 5.0 )	3.9	( 2.5- 5.2 )	3.7	( 2.4- 4.9 )	1.2 *	( 0.4- 2.0 )
Females	6.1	( 4.8- 7.5 )	6.3	( 4.9- 7.7 )	5.8	( 4.5- 7.1 )	0.7 *	( 0.2- 1.2 )
Persons	5.0	( 4.0- 6.0 )	5.2	( 4.2- 6.2 )	4.8	( 3.9- 5.7 )	0.9 *	( 0.5- 1.4 )
<b>Total</b>								
Males	7.3	( 5.1- 9.4 )	5.7	( 4.2- 7.3 )	6.7	( 4.7- 8.8 )	2.4	( 1.3- 3.5 )
Females	12.5	( 9.6-15.3 )	11.9	( 9.1-14.7 )	13.8	( 10.9-16.6 )	3.2 *	( 1.5- 4.9 )
Persons	9.9	( 8.1-11.7 )	8.8	( 7.2-10.4 )	10.2	( 8.4-12.0 )	2.8	( 1.8- 3.8 )

\* 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 2016**

	Any mental health condition (a)		Any condition currently receiving treatment for (b)	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	12.5	( 8.1 - 16.9 )	4.8 *	( 2.2 - 7.4 )
Females	24.2	( 18.3 - 30.1 )	13.8	( 8.7 - 18.9 )
Persons	18.1	( 14.4 - 21.8 )	9.2	( 6.3 - 12.0 )
<b>45 to 64 yrs</b>				
Males	12.5	( 9.4 - 15.6 )	6.7	( 4.4 - 8.9 )
Females	19.0	( 16.1 - 21.8 )	10.6	( 8.4 - 12.9 )
Persons	15.7	( 13.6 - 17.8 )	8.6	( 7.0 - 10.2 )
<b>65 yrs &amp; over</b>				
Males	6.8	( 5.1 - 8.5 )	3.7	( 2.4 - 5.0 )
Females	11.1	( 9.3 - 12.9 )	6.3	( 4.9 - 7.8 )
Persons	9.1	( 7.8 - 10.3 )	5.1	( 4.1 - 6.1 )
<b>Total</b>				
Males	11.6	( 9.1 - 14.2 )	5.2	( 3.6 - 6.8 )
Females	20.2	( 17.1 - 23.4 )	11.5	( 8.8 - 14.2 )
Persons	15.9	( 13.8 - 18.0 )	8.3	( 6.7 - 9.9 )

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

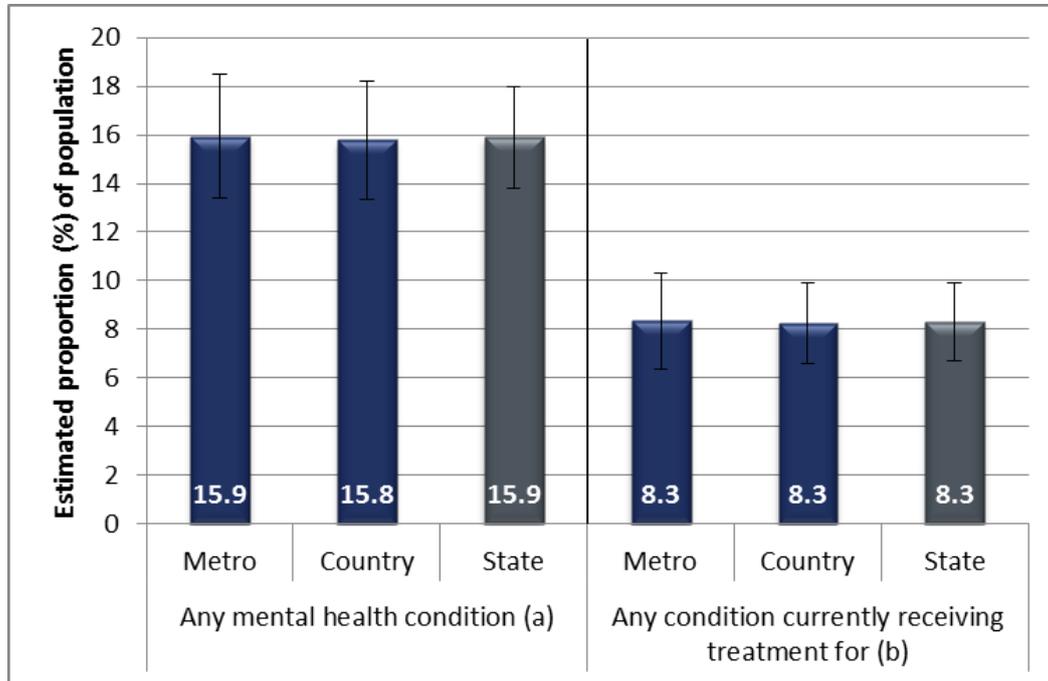
(b) People who reported that they are currently receiving treatment for a mental health condition.

Almost one in six persons (15.9%) had been diagnosed with a mental health condition during the last 12 months while one in twelve (8.3%) 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 (9.1% compared with 18.1% and 15.7% respectively).

Figure 17 shows the prevalence of mental health conditions and current treatment by geographic area of residence.

**Figure 17: Prevalence of current mental health conditions, by geographic area of residence in WA, HWSS 2016**



- (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 with a mental health condition or receiving treatment for a mental health condition by geographic area of residence.

The standardised annual prevalence estimates for a current mental health condition for adults aged 16 years and over are shown in Table 28. Compared with the 2002 prevalence, the prevalence of all persons with a current mental health condition in 2016 was significantly higher.

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

	<b>Males</b>	<b>Females</b>	<b>Persons</b>
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
2016	11.7	20.3	16.0
<b>Average</b>	<b>10.3</b>	<b>17.1</b>	<b>13.7</b>

- 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.<sup>25</sup> 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.<sup>26</sup> 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 (56.4% compared with 47.3%). 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 (8.4% and 11.4% compared with 4.5%).

Table 29: Current smoking status, 16 years &amp; over, HWSS 2016

	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
<b>16 to 44 yrs</b>										
Males	9.6	( 5.2-13.9 )	3.3 *	( 1.2- 5.3 )	20.8	(14.5-27.1 )	12.6	( 7.4-17.7 )	53.8	(46.4-61.2 )
Females	7.2	( 4.3-10.1 )	1.6 *	( 0.1- 3.0 )	20.5	(14.6-26.4 )	9.8	( 5.8-13.8 )	60.9	(54.4-67.5 )
Persons	8.4	( 5.8-11.1 )	2.4 *	( 1.2- 3.7 )	20.7	(16.3-25.0 )	11.2	( 7.9-14.5 )	57.3	(52.3-62.2 )
<b>45 to 64 yrs</b>										
Males	13.0	( 9.9-16.2 )	2.0 *	( 1.0- 3.1 )	36.7	(32.4-41.1 )	6.3	( 4.2- 8.4 )	41.9	(37.3-46.5 )
Females	9.8	( 7.7-11.9 )	2.0 *	( 1.0- 3.0 )	31.7	(28.5-34.8 )	8.3	( 6.3-10.2 )	48.3	(44.8-51.8 )
Persons	11.4	( 9.5-13.3 )	2.0	( 1.3- 2.7 )	34.2	(31.5-36.9 )	7.3	( 5.8- 8.7 )	45.1	(42.2-48.0 )
<b>65 yrs &amp; over</b>										
Males	4.7	( 3.4- 6.1 )	0.6 *	( 0.1- 1.2 )	52.9	(49.3-56.5 )	6.4	( 4.7- 8.2 )	35.4	(31.9-38.8 )
Females	4.3	( 3.1- 5.4 )	0.7 *	( 0.2- 1.1 )	31.1	(28.4-33.8 )	6.8	( 5.4- 8.3 )	57.2	(54.3-60.1 )
Persons	4.5	( 3.6- 5.4 )	0.7 *	( 0.3- 1.0 )	41.3	(39.0-43.6 )	6.6	( 5.5- 7.8 )	46.9	(44.6-49.2 )
<b>Total</b>										
Males	9.9	( 7.3-12.4 )	2.5	( 1.3- 3.6 )	30.6	(26.8-34.3 )	9.7	( 6.8-12.6 )	47.3	(43.1-51.6 )
Females	7.5	( 5.8- 9.1 )	1.5 *	( 0.7- 2.4 )	25.8	(22.6-29.0 )	8.8	( 6.6-11.0 )	56.4	(52.8-60.0 )
Persons	8.7	( 7.2-10.2 )	2.0	( 1.3- 2.7 )	28.2	(25.7-30.7 )	9.3	( 7.4-11.1 )	51.8	(49.0-54.6 )

\* 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).

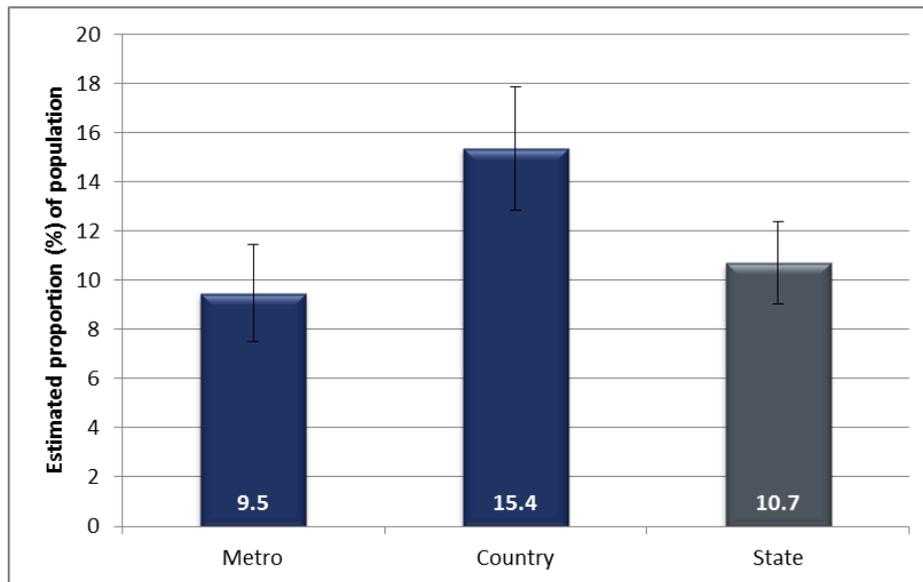
**Table 30: Lifetime smoking status, 16 years & over, HWSS 2016**

	Smoker		Ex-smoker		Never smoked or never smoked regularly	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	12.9	( 8.1 - 17.6 )	21.1	( 14.5 - 27.7 )	66.0	( 58.8 - 73.3 )
Females	8.8	( 5.5 - 12.0 )	19.2	( 13.4 - 25.0 )	72.1	( 65.9 - 78.2 )
Persons	10.9	( 8.0 - 13.8 )	20.2	( 15.7 - 24.6 )	69.0	( 64.2 - 73.8 )
<b>45 to 64 yrs</b>						
Males	15.0	( 11.8 - 18.3 )	35.4	( 31.1 - 39.7 )	49.5	( 44.9 - 54.2 )
Females	11.8	( 9.5 - 14.1 )	31.1	( 27.9 - 34.2 )	57.1	( 53.7 - 60.6 )
Persons	13.4	( 11.4 - 15.4 )	33.3	( 30.6 - 35.9 )	53.3	( 50.5 - 56.2 )
<b>65 yrs &amp; over</b>						
Males	5.4	( 3.9 - 6.8 )	52.9	( 49.3 - 56.5 )	41.8	( 38.2 - 45.3 )
Females	4.9	( 3.7 - 6.2 )	28.6	( 26.0 - 31.3 )	66.4	( 63.7 - 69.2 )
Persons	5.1	( 4.2 - 6.1 )	40.0	( 37.7 - 42.3 )	54.8	( 52.6 - 57.1 )
<b>Total</b>						
Males	12.4	( 9.6 - 15.1 )	30.3	( 26.5 - 34.2 )	57.3	( 53.1 - 61.5 )
Females	9.0	( 7.2 - 10.8 )	24.5	( 21.3 - 27.7 )	66.5	( 63.1 - 69.9 )
Persons	10.7	( 9.0 - 12.4 )	27.4	( 25.0 - 29.9 )	61.8	( 59.1 - 64.6 )

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 (5.1% compared with 10.9% and 13.4%). Persons aged 16 to 44 years were significantly more likely to have never smoked or never smoked regularly compared with people aged 45 to 64 years and 65 years and over (69.0% compared with 53.3% and 54.8%).

Figure 18 shows the proportion of current smokers in WA by geographic area of residence. The prevalence of current smoking was significantly higher in the country compared with the metro areas (15.4% compared with 9.5%).

**Figure 18: Proportion of current smokers, 16 years & over, by geographic area of residence in WA, HWSS 2016**



Respondents were asked whether or not their home was smoke free or if people occasionally or frequently smoke in their home. The majority (96.6%) of Western Australians live in a smoke free home (Table 31).

**Table 31: Smoking within the home, 16 years & over, HWSS 2016**

	Never		Occasionally		Frequently	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	97.6	(96.2-99.1)	1.3 *	(0.1- 2.5)	1.1 *	(0.2- 2.0)
Females	95.2	(91.9-98.5)	N/A	(N/A- N/A)	3.2 *	(0.3- 6.1)
Persons	96.5	(94.7-98.3)	1.4 *	(0.4- 2.5)	2.1 *	(0.6- 3.6)
<b>45 to 64 yrs</b>						
Males	95.7	(93.7-97.7)	2.7 *	(1.0- 4.4)	1.6 *	(0.5- 2.6)
Females	96.2	(94.8-97.5)	1.5 *	(0.7- 2.3)	2.3	(1.2- 3.4)
Persons	95.9	(94.7-97.1)	2.1	(1.2- 3.0)	2.0	(1.2- 2.7)
<b>65 yrs &amp; over</b>						
Males	98.0	(97.2-98.8)	1.0 *	(0.4- 1.5)	1.0 *	(0.5- 1.6)
Females	98.0	(97.3-98.8)	1.0 *	(0.4- 1.6)	0.9 *	(0.5- 1.4)
Persons	98.0	(97.5-98.6)	1.0	(0.6- 1.4)	1.0	(0.6- 1.3)
<b>Total</b>						
Males	97.1	(96.1-98.1)	1.7 *	(0.8- 2.5)	1.2	(0.7- 4.1)
Females	96.0	(94.2-97.8)	1.5 *	(0.5- 2.4)	2.5 *	(1.0- 4.1)
Persons	96.6	(95.5-97.6)	1.6	(0.9- 2.2)	1.9	(1.0- 2.7)

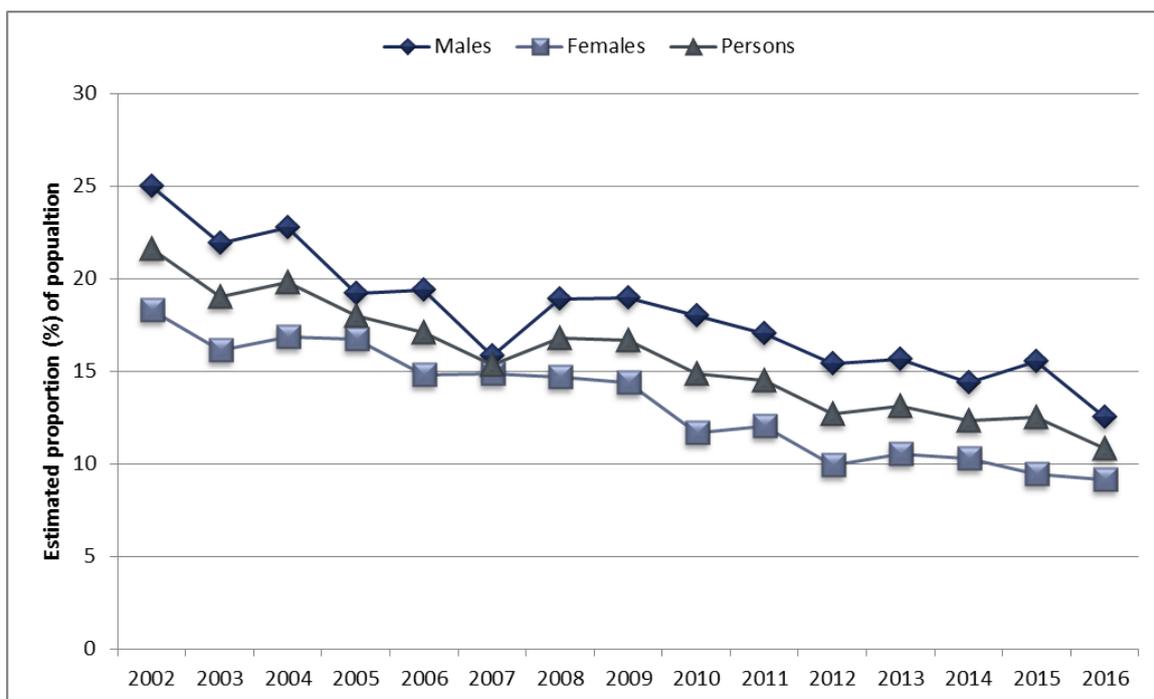
\* Prevalence estimate has a RSE between 25%-50% and should be used with caution.  
 N/A Prevalence estimate has a RSE greater than 50% and is considered too unreliable for general use.

The standardised annual prevalence estimate of current smoking for adults aged 16 years and over continues to decline (Table 32 and Figure 19). For all persons, the prevalence estimate of current smokers in 2016 was significantly lower than 2002 to 2011. A similar pattern was observed for males from 2002-10 and for females from 2002-09.

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

	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
2016	12.5	9.1	10.8
<b>Average</b>	<b>18.6</b>	<b>13.8</b>	<b>16.2</b>

**Figure 19: Prevalence of current smokers over time, 16 years & over, HWSS 2002–16**



## 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.<sup>27</sup> The current guidelines for the consumption of alcohol in Australia were developed by the National Health and Medical Research Council (NHMRC) in 2009.<sup>28</sup>

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 2016**

	Doesn't drink/ drinking level undetermined		Low risk (a)		High risk (b)	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	38.0	(30.7 - 45.3)	20.6	(14.9 - 26.3)	41.4	(34.1 - 48.7)
Females	54.9	(48.4 - 61.5)	22.2	(17.3 - 27.2)	22.8	(16.9 - 28.7)
Persons	46.2	(41.2 - 51.2)	21.4	(17.6 - 25.2)	32.4	(27.6 - 37.2)
<b>45 to 64 yrs</b>						
Males	23.0	(19.0 - 27.0)	38.3	(33.9 - 42.8)	38.6	(34.2 - 43.1)
Females	38.6	(35.2 - 41.9)	45.6	(42.1 - 49.0)	15.9	(13.3 - 18.4)
Persons	30.8	(28.1 - 33.4)	41.9	(39.1 - 44.8)	27.3	(24.6 - 29.9)
<b>65 yrs &amp; over</b>						
Males	27.0	(23.9 - 30.2)	52.7	(49.1 - 56.3)	20.3	(17.4 - 23.1)
Females	50.0	(47.1 - 52.9)	46.1	(43.2 - 49.0)	3.9	(2.9 - 4.9)
Persons	39.2	(37.0 - 41.4)	49.2	(46.9 - 51.5)	11.6	(10.1 - 13.1)
<b>Total</b>						
Males	31.8	(27.5 - 36.0)	30.9	(27.3 - 34.5)	37.3	(33.1 - 41.5)
Females	49.0	(45.4 - 52.7)	33.6	(30.6 - 36.7)	17.3	(14.1 - 20.6)
Persons	40.3	(37.5 - 43.1)	32.3	(29.9 - 34.6)	27.4	(24.7 - 30.1)

(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 (32.4%) 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. 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 (11.6% compared with 27.3% and 32.4% respectively) (Table 33).

**Table 34: Risk of short-term alcohol related harm, 16 years & over, HWSS 2016**

	Doesn't drink/ drinking level undetermined		Low risk (a)		High risk (b)	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	38.0	(30.7 - 45.3)	41.2	(34.0 - 48.3)	20.8	(14.5 - 27.1)
Females	54.9	(48.4 - 61.5)	36.4	(30.1 - 42.8)	8.6	(5.0 - 12.2)
Persons	46.2	(41.2 - 51.2)	38.9	(34.1 - 43.7)	14.9	(11.2 - 18.7)
<b>45 to 64 yrs</b>						
Males	23.0	(19.0 - 27.0)	63.5	(59.0 - 68.1)	13.4	(10.0 - 16.9)
Females	38.6	(35.2 - 41.9)	59.1	(55.7 - 62.5)	2.4	(1.3 - 3.4)
Persons	30.8	(28.1 - 33.4)	61.3	(58.5 - 64.2)	7.9	(6.1 - 9.7)
<b>65 yrs &amp; over</b>						
Males	27.0	(23.9 - 30.2)	69.4	(66.1 - 72.7)	3.6	(2.3 - 4.8)
Females	50.0	(47.1 - 52.9)	49.8	(46.9 - 52.8)	0.2 *	(0.0 - 0.3)
Persons	39.2	(37.0 - 41.4)	59.0	(56.8 - 61.2)	1.8	(1.2 - 2.4)
<b>Total</b>						
Males	31.8	(27.5 - 36.0)	52.3	(48.0 - 56.7)	15.9	(12.3 - 19.5)
Females	49.0	(45.4 - 52.7)	45.8	(42.2 - 49.3)	5.2	(3.3 - 7.1)
Persons	40.3	(37.5 - 43.1)	49.1	(46.3 - 51.9)	10.6	(8.5 - 12.7)

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

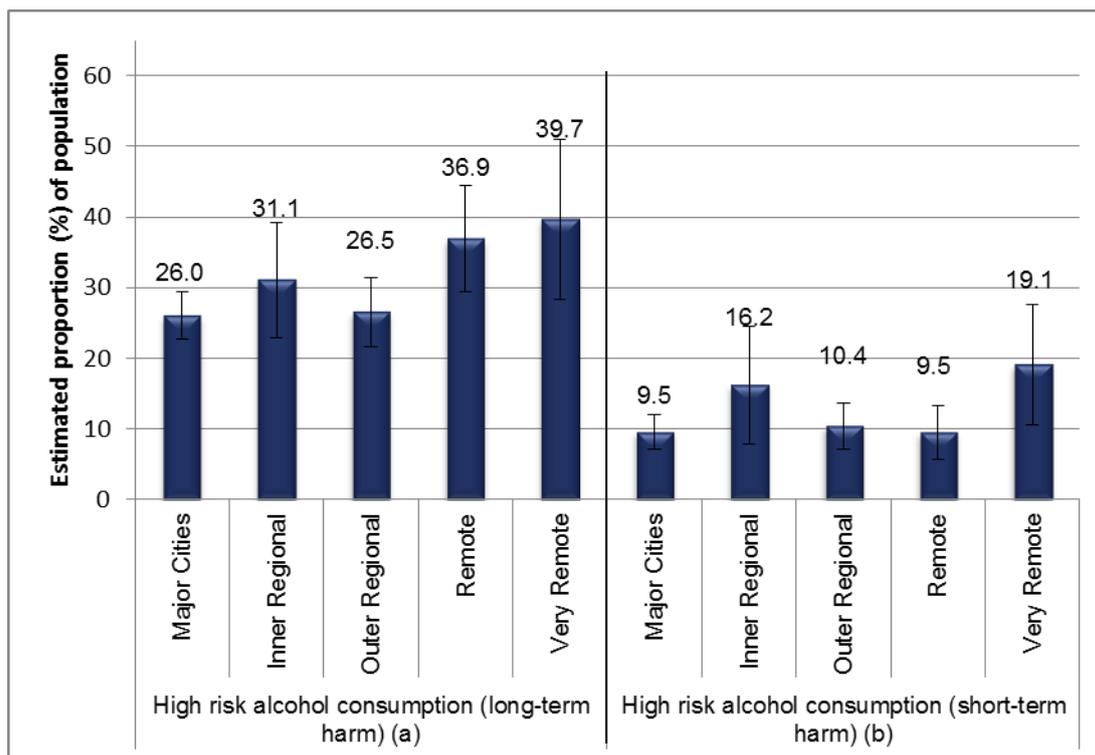
(b) Drinks more than four standard drinks on any one day.

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 (14.9% for 16 to 44 year olds, 7.9% for 45 to 64 year olds and 1.8% 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 (15.9% compared with 5.2%) (Table 34).

Figure 20 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 remote areas of WA (36.9%) when compared with major cities (26.0%). There was no difference in the prevalence of high risk alcohol consumption for short-term harm by ARIA.

**Figure 20: Prevalence of high risk alcohol consumption for long-term and short-term harm, 16 years & over, by ARIA in WA, HWSS 2016**



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

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

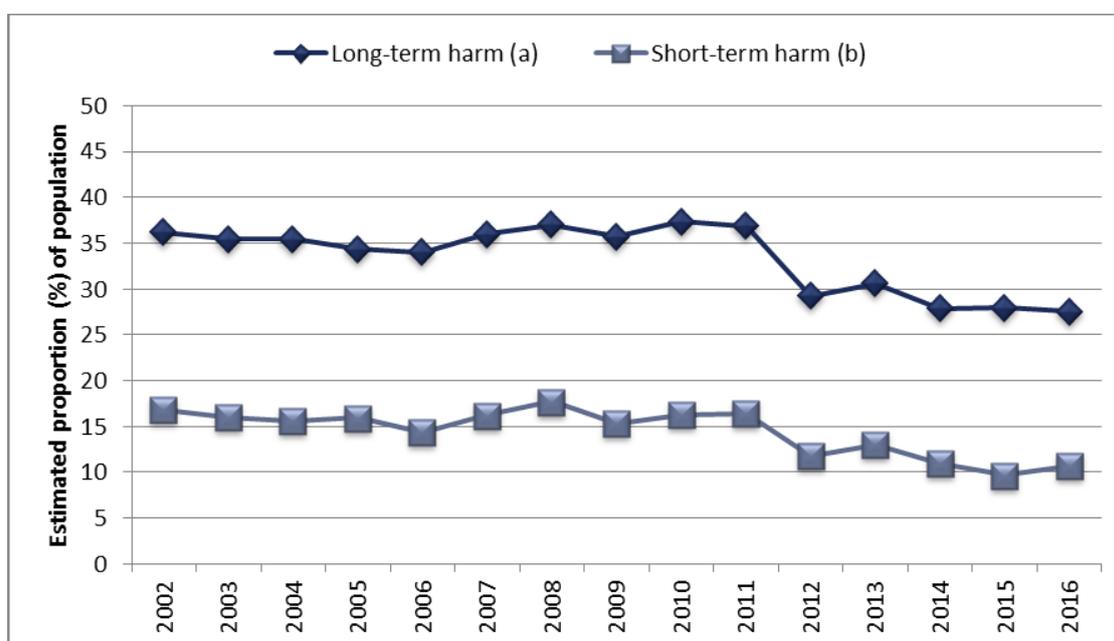
The standardised annual prevalence estimates of high risk long-term and short-term alcohol related harm for Western Australian adults aged 16 years and over are shown in Table 35 and Figure 21. The prevalence of all persons drinking at levels associated with short-term harm was significantly lower in 2016 compared with 2002-11 prevalence, with a similar pattern observed for males and females.

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

	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	21.8	8.9	15.3
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
2016	37.6	17.5	27.5	16.1	5.3	10.7
<b>Average</b>	<b>45.8</b>	<b>22.8</b>	<b>34.3</b>	<b>22.0</b>	<b>8.2</b>	<b>15.1</b>

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

**Figure 21: Prevalence of high risk alcohol consumption for long-term and short-term harm over time, 16 years & over, HWSS 2002–16**



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

## 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.<sup>29</sup> 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, 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 aged 16 years and over, by the number of serves of fruit they usually eat daily. Almost all adults (91.9%) ate some fruit each day while less than half (47.5%) ate two or more serves of fruit daily.

Table 37: Serves of fruit consumed daily, 16 years &amp; over, HWSS 2016

	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
<b>16 to 44 yrs</b>								
Males	9.9	( 5.7 - 14.1 )	14.4	( 9.4 - 19.4 )	34.4	( 27.4 - 41.4 )	41.3	( 34.0 - 48.7 )
Females	9.3	( 5.3 - 13.2 )	4.3 *	( 1.5 - 7.2 )	40.6	( 34.0 - 47.2 )	45.8	( 39.2 - 52.4 )
Persons	9.6	( 6.7 - 12.5 )	9.5	( 6.6 - 12.5 )	37.4	( 32.6 - 42.2 )	43.5	( 38.5 - 48.5 )
<b>45 to 64 yrs</b>								
Males	7.8	( 5.5 - 10.1 )	14.8	( 11.3 - 18.4 )	31.6	( 27.4 - 35.8 )	45.8	( 41.2 - 50.4 )
Females	7.2	( 5.4 - 9.0 )	7.0	( 5.3 - 8.8 )	33.4	( 30.2 - 36.7 )	52.4	( 48.9 - 55.8 )
Persons	7.5	( 6.0 - 8.9 )	10.9	( 8.9 - 12.9 )	32.5	( 29.9 - 35.2 )	49.1	( 46.2 - 52.0 )
<b>65 yrs &amp; over</b>								
Males	5.0	( 3.5 - 6.5 )	8.7	( 6.7 - 10.6 )	32.8	( 29.4 - 36.2 )	53.6	( 49.9 - 57.2 )
Females	3.7	( 2.7 - 4.7 )	6.6	( 5.3 - 8.0 )	28.5	( 25.8 - 31.1 )	61.2	( 58.3 - 64.0 )
Persons	4.3	( 3.4 - 5.2 )	7.6	( 6.4 - 8.8 )	30.5	( 28.4 - 32.6 )	57.6	( 55.3 - 59.9 )
<b>Total</b>								
Males	8.5	( 6.1 - 10.9 )	13.7	( 10.7 - 16.6 )	33.3	( 29.2 - 37.3 )	44.6	( 40.3 - 48.8 )
Females	7.6	( 5.5 - 9.8 )	5.6	( 4.0 - 7.2 )	36.3	( 32.7 - 39.9 )	50.5	( 46.9 - 54.1 )
Persons	8.1	( 6.5 - 9.7 )	9.6	( 8.0 - 11.3 )	34.8	( 32.1 - 37.5 )	47.5	( 44.7 - 50.3 )

Table 38 shows the proportion of adults aged 16 years and over, by the number of serves of vegetables they usually eat daily. The majority of adults ate two (30.2%) or three (22.7%) serves of vegetables daily.

Table 38: Serves of vegetables consumed daily, 16 years &amp; over, HWSS 2016

	Doesn't eat vegetables		Eats less than one serve of vegetables 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
<b>16 to 44 yrs</b>														
Males	1.4 *	( 0.1 - 2.8 )	4.5 *	( 1.2 - 7.8 )	20.4	( 14.3 - 26.4 )	30.3	( 23.8 - 36.9 )	21.7	( 15.4 - 28.0 )	12.0	( 7.3 - 16.8 )	9.6 *	( 4.6 - 14.5 )
Females	N/A	( N/A - N/A )	N/A	( N/A - N/A )	19.7	( 14.1 - 25.3 )	32.8	( 26.4 - 39.2 )	24.4	( 19.0 - 29.8 )	11.9	( 7.6 - 16.2 )	9.7	( 6.3 - 13.1 )
Persons	0.9 *	( 0.2 - 1.7 )	2.9 *	( 1.1 - 4.7 )	20.0	( 15.9 - 24.2 )	31.5	( 26.9 - 36.1 )	23.0	( 18.8 - 27.1 )	12.0	( 8.8 - 15.2 )	9.7	( 6.6 - 12.7 )
<b>45 to 64 yrs</b>														
Males	0.9 *	( 0.1 - 1.7 )	4.0 *	( 2.0 - 5.9 )	24.0	( 19.9 - 28.2 )	31.0	( 26.8 - 35.1 )	17.4	( 14.0 - 20.8 )	13.1	( 9.8 - 16.4 )	9.7	( 6.9 - 12.4 )
Females	0.6 *	( 0.0 - 1.2 )	1.7 *	( 0.8 - 2.6 )	14.1	( 11.6 - 16.6 )	27.2	( 24.1 - 30.3 )	25.4	( 22.4 - 28.4 )	17.8	( 15.2 - 20.4 )	13.3	( 10.9 - 15.6 )
Persons	0.7 *	( 0.2 - 1.3 )	2.8	( 1.8 - 3.9 )	19.1	( 16.6 - 21.5 )	29.1	( 26.5 - 31.7 )	21.4	( 19.1 - 23.7 )	15.4	( 13.3 - 17.5 )	11.5	( 9.7 - 13.3 )
<b>65 yrs &amp; over</b>														
Males	0.8 *	( 0.2 - 1.4 )	2.1	( 1.1 - 3.1 )	19.0	( 16.2 - 21.8 )	29.5	( 26.2 - 32.9 )	21.8	( 18.8 - 24.8 )	16.9	( 14.2 - 19.7 )	9.9	( 7.6 - 12.2 )
Females	1.2 *	( 0.6 - 1.8 )	2.5	( 1.6 - 3.3 )	12.8	( 10.9 - 14.6 )	27.1	( 24.5 - 29.7 )	25.8	( 23.2 - 28.4 )	16.9	( 14.7 - 19.1 )	13.7	( 11.6 - 15.7 )
Persons	1.0	( 0.6 - 1.5 )	2.3	( 1.7 - 2.9 )	15.7	( 14.0 - 17.3 )	28.2	( 26.1 - 30.3 )	23.9	( 22.0 - 25.9 )	16.9	( 15.2 - 18.7 )	11.9	( 10.4 - 13.4 )
<b>Total</b>														
Males	1.2 *	( 0.4 - 2.0 )	4.0	( 2.1 - 5.9 )	21.3	( 17.7 - 24.8 )	30.4	( 26.6 - 34.2 )	20.4	( 16.8 - 24.0 )	13.1	( 10.3 - 15.9 )	9.6	( 6.8 - 12.5 )
Females	0.6 *	( 0.3 - 0.9 )	1.6 *	( 0.8 - 2.3 )	16.8	( 13.7 - 19.8 )	30.1	( 26.6 - 33.6 )	24.9	( 22.0 - 27.9 )	14.6	( 12.2 - 17.0 )	11.5	( 9.6 - 13.5 )
Persons	0.9 *	( 0.4 - 1.3 )	2.8	( 1.7 - 3.8 )	19.0	( 16.7 - 21.4 )	30.2	( 27.7 - 32.8 )	22.7	( 20.3 - 25.0 )	13.8	( 12.0 - 15.7 )	10.6	( 8.8 - 12.3 )

\* 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.

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<sup>^</sup>, 16 years & over, HWSS 2016**

	Sufficient daily fruit consumption		Sufficient daily vegetable consumption	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	41.3	( 34.0 - 48.7 )	1.8 *	( 0.4 - 3.3 )
Females	45.8	( 39.2 - 52.4 )	9.7	( 6.3 - 13.1 )
Persons	43.5	( 38.5 - 48.5 )	5.7	( 3.8 - 7.5 )
<b>45 to 64 yrs</b>				
Males	45.8	( 41.2 - 50.4 )	7.4	( 5.1 - 9.6 )
Females	52.4	( 48.9 - 55.8 )	13.3	( 10.9 - 15.6 )
Persons	49.1	( 46.2 - 52.0 )	10.3	( 8.7 - 11.9 )
<b>65 yrs &amp; over</b>				
Males	53.6	( 49.9 - 57.2 )	9.9	( 7.6 - 12.2 )
Females	61.2	( 58.3 - 64.0 )	13.7	( 11.6 - 15.7 )
Persons	57.6	( 55.3 - 59.9 )	11.9	( 10.4 - 13.4 )
<b>Total</b>				
Males	44.6	( 40.3 - 48.8 )	4.7	( 3.6 - 5.9 )
Females	50.5	( 46.9 - 54.1 )	11.5	( 9.6 - 13.5 )
Persons	47.5	( 44.7 - 50.3 )	8.1	( 7.0 - 9.3 )

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

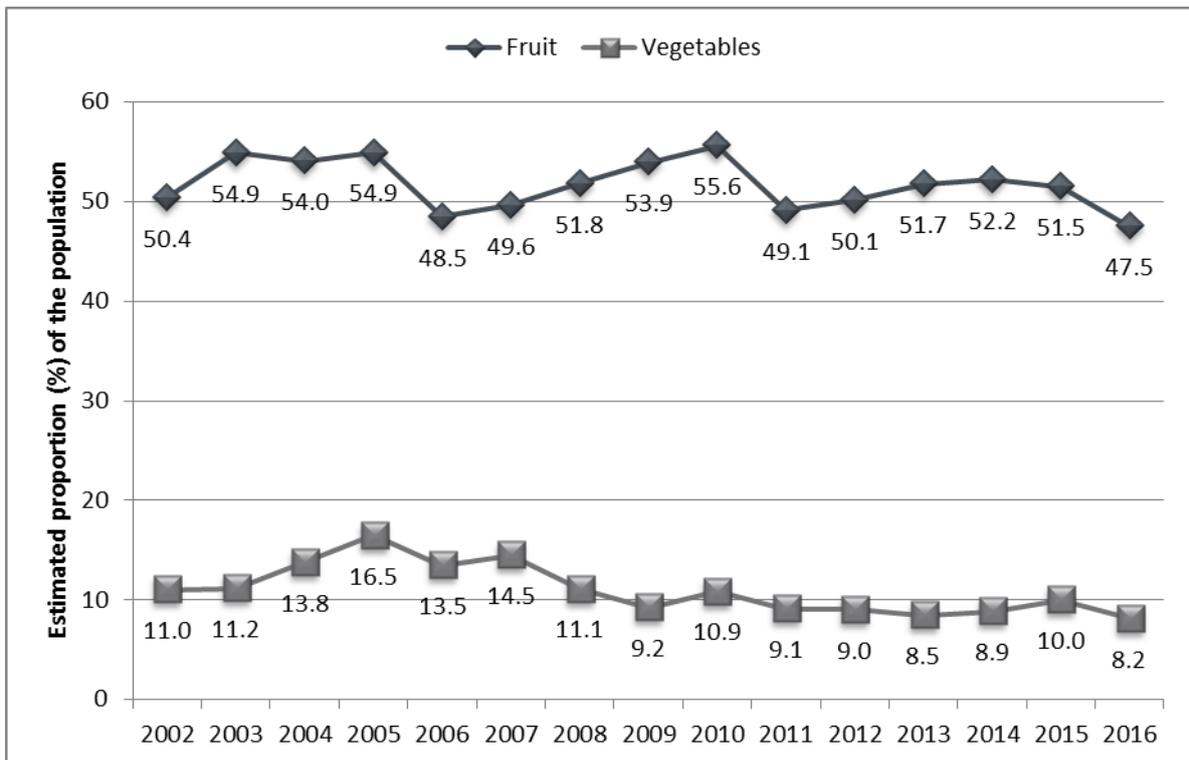
<sup>^</sup> See Table 36.

Less than half (47.5%) of persons aged 16 years and over reported eating sufficient daily serves of fruit. Persons aged 65 years and over were significantly more likely to eat sufficient serves of fruit daily compared with respondents aged 16 to 44 and 45 to 64 years and over (57.6% compared with 43.5% and 49.1%).

Approximately one in twelve (8.1%) 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 (11.5% compared with 4.7%). 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 (5.7% compared with 10.3% and 11.9%).

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 22. The mean serves of fruit and vegetables eaten daily are shown in Table 40.

**Figure 22: Prevalence of sufficient fruit & vegetables consumption<sup>^</sup> over time, 2013 Australian Dietary Guidelines for fruit and vegetable consumption, 16 years & over, HWSS 2002–16**



<sup>^</sup> See Table 36.

The prevalence of sufficient fruit consumption in 2016 was significantly lower compared with 2003. The prevalence of sufficient vegetable consumption in 2016 was significantly lower compared with the prevalence in 2002.

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

	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
2016	1.5	1.6	1.6	2.5	2.8	2.6
<b>Average</b>	<b>1.6</b>	<b>1.8</b>	<b>1.7</b>	<b>2.6</b>	<b>3.0</b>	<b>2.8</b>

The mean serves of fruit eaten by adults in 2016 was significantly lower when compared with 2002-2005. The mean serves of vegetables consumed by adults in 2016 was significantly lower than the means in 2003-08 (Table 40).

## 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.<sup>29</sup> Respondents were asked what type of milk they usually consume, shown in Table 41.

**Table 41: Type of milk consumed, 16 years & over, HWSS 2016**

	Full fat/whole		Low/reduced fat/ skim milk		Other		Don't use milk	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>								
Males	55.9	(48.5 - 63.4)	31.5	(24.5 - 38.5)	4.5 *	(0.3 - 8.6)	8.1	(4.2 - 12.0)
Females	41.0	(34.4 - 47.6)	41.5	(35.0 - 47.9)	9.1	(5.2 - 13.0)	8.4	(4.8 - 12.0)
Persons	48.7	(43.7 - 53.7)	36.3	(31.6 - 41.1)	6.7	(3.8 - 9.6)	8.3	(5.6 - 10.9)
<b>45 to 64 yrs</b>								
Males	41.2	(36.7 - 45.7)	47.3	(42.7 - 51.9)	3.4	(1.8 - 5.0)	8.1	(5.6 - 10.5)
Females	31.5	(28.3 - 34.7)	54.8	(51.4 - 58.3)	4.6	(3.1 - 6.1)	9.1	(7.1 - 11.1)
Persons	36.4	(33.6 - 39.1)	51.0	(48.2 - 53.9)	4.0	(2.9 - 5.1)	8.6	(7.0 - 10.2)
<b>65 yrs &amp; over</b>								
Males	41.2	(37.7 - 44.7)	49.5	(45.9 - 53.2)	2.3	(1.2 - 3.4)	6.9	(5.0 - 8.8)
Females	32.3	(29.6 - 34.9)	57.7	(54.8 - 60.5)	3.9	(2.8 - 5.1)	6.1	(4.8 - 7.5)
Persons	36.5	(34.3 - 38.7)	53.9	(51.6 - 56.1)	3.2	(2.4 - 4.0)	6.5	(5.4 - 7.6)
<b>Total</b>								
Males	49.2	(44.9 - 53.5)	39.1	(35.0 - 43.2)	3.8 *	(1.5 - 6.1)	7.9	(5.7 - 10.2)
Females	36.6	(32.9 - 40.2)	48.4	(44.8 - 52.0)	6.8	(4.7 - 8.9)	8.2	(6.3 - 10.2)
Persons	42.9	(40.1 - 45.7)	43.7	(41.0 - 46.5)	5.3	(3.7 - 6.9)	8.1	(6.6 - 9.6)

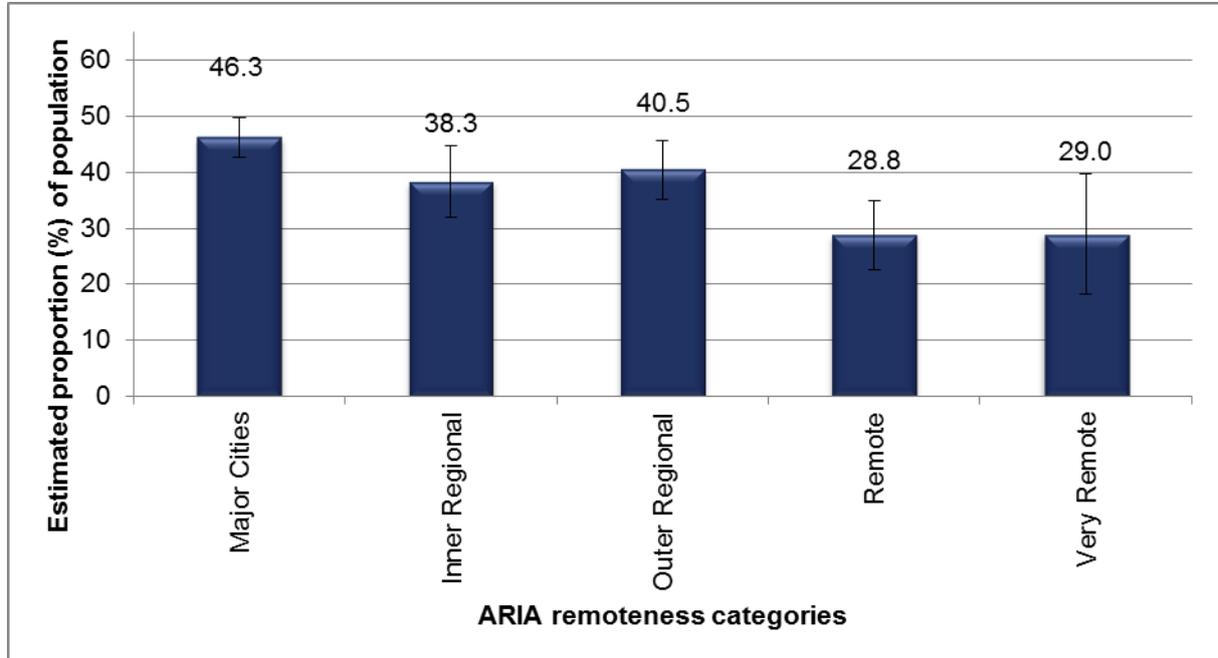
\* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

Females were significantly more likely to report using low/reduced fat or skim milk compared with males (48.4% compared with 39.1%), 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 23 shows the consumption of low/ reduced fat or skim milk in WA by ARIA. The proportion of adults in remote (28.8%) or very remote areas of the State (29.0%)

consuming low/ reduced fat or skim milk was significantly lower compared with areas classified as major cities (46.3%).

**Figure 23: Low/ reduced fat or skim milk consumption, 16 years & over, by ARIA in WA, HWSS 2016**



## 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 64,784 people in WA ran out of food and could not afford to buy any more within the previous twelve months. Those aged 16 to 44 years and 45 to 64 years were significantly more likely to have experienced this compared with those aged 65 years and over (4.3% and 2.5% compared with 0.6%).

**Table 42: Ran out of food and could not afford to buy more, 16 years & over, HWSS 2016**

	Yes		No	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	4.6 *	( 2.1 - 7.2 )	95.4	( 92.8 - 97.9 )
Females	3.9 *	( 1.9 - 5.9 )	96.1	( 94.1 - 98.1 )
Persons	4.3	( 2.6 - 5.9 )	95.7	( 94.1 - 97.4 )
<b>45 to 64 yrs</b>				
Males	2.9 *	( 1.2 - 4.6 )	97.1	( 95.4 - 98.8 )
Females	2.1	( 1.2 - 3.1 )	97.9	( 96.9 - 98.8 )
Persons	2.5	( 1.5 - 3.5 )	97.5	( 96.5 - 98.5 )
<b>65 yrs &amp; over</b>				
Males	0.4 *	( 0.1 - 0.7 )	99.6	( 99.3 - 99.9 )
Females	0.8 *	( 0.2 - 1.4 )	99.2	( 98.6 - 99.8 )
Persons	0.6 *	( 0.3 - 0.9 )	99.4	( 99.1 - 99.7 )
<b>Total</b>				
Males	3.5	( 2.0 - 4.9 )	96.5	( 95.1 - 98.0 )
Females	2.8	( 1.7 - 3.9 )	97.2	( 96.1 - 98.3 )
Persons	3.1	( 2.2 - 4.1 )	96.9	( 95.9 - 97.8 )

\* 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 2016**

	Never		Less than once a week		Once or twice a week		Three or more times per week	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>								
Males	31.5	(24.1 - 39.0)	22.1	(16.2 - 28.0)	39.6	(32.6 - 46.7)	6.7 *	(3.3 - 10.0)
Females	34.0	(28.0 - 40.0)	20.6	(15.7 - 25.4)	41.2	(34.4 - 47.9)	4.3 *	(1.1 - 7.4)
Persons	32.7	(28.0 - 37.5)	21.4	(17.5 - 25.2)	40.4	(35.5 - 45.3)	5.5	(3.2 - 7.8)
<b>45 to 64 yrs</b>								
Males	39.8	(35.4 - 44.2)	31.2	(26.8 - 35.5)	27.3	(23.0 - 31.6)	1.8 *	(0.5 - 3.0)
Females	55.9	(52.4 - 59.4)	24.5	(21.5 - 27.4)	18.9	(16.0 - 21.8)	0.7 *	(0.1 - 1.3)
Persons	47.8	(44.9 - 50.7)	27.8	(25.2 - 30.5)	23.1	(20.5 - 25.8)	1.2 *	(0.5 - 1.9)
<b>65 yrs &amp; over</b>								
Males	64.1	(60.7 - 67.6)	24.5	(21.4 - 27.6)	10.3	(8.1 - 12.5)	1.1 *	(0.3 - 1.8)
Females	73.8	(71.2 - 76.4)	20.9	(18.5 - 23.3)	5.1	(3.8 - 6.3)	N/A	(N/A - N/A)
Persons	69.2	(67.1 - 71.4)	22.6	(20.6 - 24.5)	7.5	(6.3 - 8.8)	0.6 *	(0.3 - 1.0)
<b>Total</b>								
Males	39.1	(34.8 - 43.3)	25.2	(21.7 - 28.7)	31.4	(27.3 - 35.4)	4.3	(2.5 - 6.2)
Females	47.7	(44.2 - 51.3)	21.8	(19.1 - 24.5)	28.0	(24.1 - 31.9)	2.5 *	(0.8 - 4.1)
Persons	43.4	(40.6 - 46.1)	23.5	(21.3 - 25.7)	29.7	(26.9 - 32.5)	3.4	(2.2 - 4.7)

\* 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.

The mean meals consumed from fast food outlets per week were 0.6 meals (0.6 for females and 0.7 for males). Females were significantly more likely to never eat fast food meals than males (47.7% compared with 39.1%). The proportion of people never eating from fast food outlets increased significantly with age.

The prevalence of adults aged 16 years and over never consuming meals from fast food outlets has increased significantly while the prevalence of adults consuming meals less than once a week has decreased significantly between 2007 and 2016 (Table 44).

**Table 44: Meals from fast food outlets per week over time, 16 years & over, HWSS 2007-16**

	<b>Never</b>	<b>Less than once a week</b>	<b>Once or twice a week</b>	<b>Three or more times a week</b>
2007	31.4	33.0	31.4	4.3
2008	33.7	31.2	31.5	3.5
2009	37.6	28.7	30.0	3.6
2010	33.4	30.9	31.5	4.2
2011	36.1	28.8	31.3	3.7
2012	42.3	24.0	30.3	3.4
2013	40.2	26.0	30.3	3.5
2014	44.0	24.2	28.3	3.6
2015	43.8	22.7	29.8	3.7
2016	43.0	23.7	29.9	3.4
<b>Average</b>	<b>38.0</b>	<b>27.6</b>	<b>30.6</b>	<b>3.8</b>

## 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 (82.2%) eat three meals a day (Table 45). The food eaten by approximately one in ten (9.6%) adults aged 65 years and over was affected by the condition of their teeth or dentures (Table 46).

**Table 45: Number of meals eaten each day, 65 years & over, HWSS 2016**

	One		Two		Three		Four or more	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Males	1.7 *	( 0.8 - 2.7 )	16.0	( 13.5 - 18.6 )	80.5	( 77.8 - 83.3 )	1.7 *	( 0.8 - 2.5 )
Females	1.7	( 0.9 - 2.4 )	14.0	( 12.0 - 16.0 )	83.7	( 81.5 - 85.8 )	0.6 *	( 0.2 - 1.1 )
Persons	1.7	( 1.1 - 2.3 )	15.0	( 13.4 - 16.6 )	82.2	( 80.5 - 83.9 )	1.1	( 0.6 - 1.6 )

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

**Table 46: Teeth or dentures affect food eaten, 65 years & over, HWSS 2016**

	Yes		No	
	%	95% CI	%	95% CI
Males	8.3	( 6.4 - 10.2 )	91.7	( 89.8 - 93.6 )
Females	10.8	( 9.0 - 12.6 )	89.2	( 87.4 - 91.0 )
Persons	9.6	( 8.3 - 10.9 )	90.4	( 89.1 - 91.7 )

## 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.<sup>30</sup>

Respondents were asked to rate their own physical activity level (Table 47).

Approximately half of Western Australian adults reported that they were either active or very active (50.3%).

**Table 47: Self-reported level of physical activity, 16 years & over, HWSS 2016**

	Very active		Active		Moderately active		Not very active		Not at all active	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>										
Males	26.9	(20.2-33.6)	31.3	(24.4-38.2)	31.2	(24.5-38.0)	8.9	(4.8-12.9)	N/A	(N/A-N/A)
Females	15.3	(10.4-20.3)	27.7	(22.2-33.3)	43.6	(36.9-50.3)	12.0	(8.3-15.8)	N/A	(N/A-N/A)
Persons	21.3	(17.0-25.5)	29.6	(25.1-34.0)	37.2	(32.4-42.1)	10.4	(7.7-13.2)	1.5 *	(0.2-2.8)
<b>45 to 64 yrs</b>										
Males	23.7	(19.8-27.6)	32.1	(27.7-36.5)	28.6	(24.7-32.5)	11.0	(7.8-14.2)	4.6	(2.6-6.7)
Females	17.7	(14.9-20.5)	28.1	(25.0-31.2)	36.6	(33.2-39.9)	14.3	(11.9-16.7)	3.3	(2.1-4.5)
Persons	20.7	(18.3-23.1)	30.1	(27.4-32.8)	32.6	(30.0-35.2)	12.7	(10.7-14.7)	4.0	(2.8-5.2)
<b>65 yrs &amp; over</b>										
Males	18.2	(15.4-21.0)	33.0	(29.6-36.3)	34.2	(30.8-37.7)	12.1	(9.7-14.4)	2.5	(1.5-3.6)
Females	14.4	(12.4-16.5)	30.1	(27.4-32.8)	36.3	(33.5-39.0)	13.2	(11.3-15.1)	6.0	(4.6-7.4)
Persons	16.2	(14.5-17.9)	31.5	(29.3-33.6)	35.3	(33.1-37.5)	12.6	(11.2-14.1)	4.4	(3.5-5.3)
<b>Total</b>										
Males	24.6	(20.7-28.5)	31.8	(27.8-35.8)	30.9	(27.0-34.8)	10.0	(7.6-12.4)	2.7	(1.5-4.0)
Females	15.9	(13.2-18.6)	28.3	(25.2-31.3)	40.2	(36.5-43.8)	12.9	(10.9-15.0)	2.7	(1.7-3.8)
Persons	20.3	(17.9-22.7)	30.0	(27.5-32.6)	35.5	(32.8-38.2)	11.5	(9.9-13.1)	2.7	(1.9-3.5)

\* 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

Respondents were asked how they usually spend most of the day. Population estimates are shown in Table 48.

Table 48: How usually spend day, 16 years &amp; over, HWSS 2016

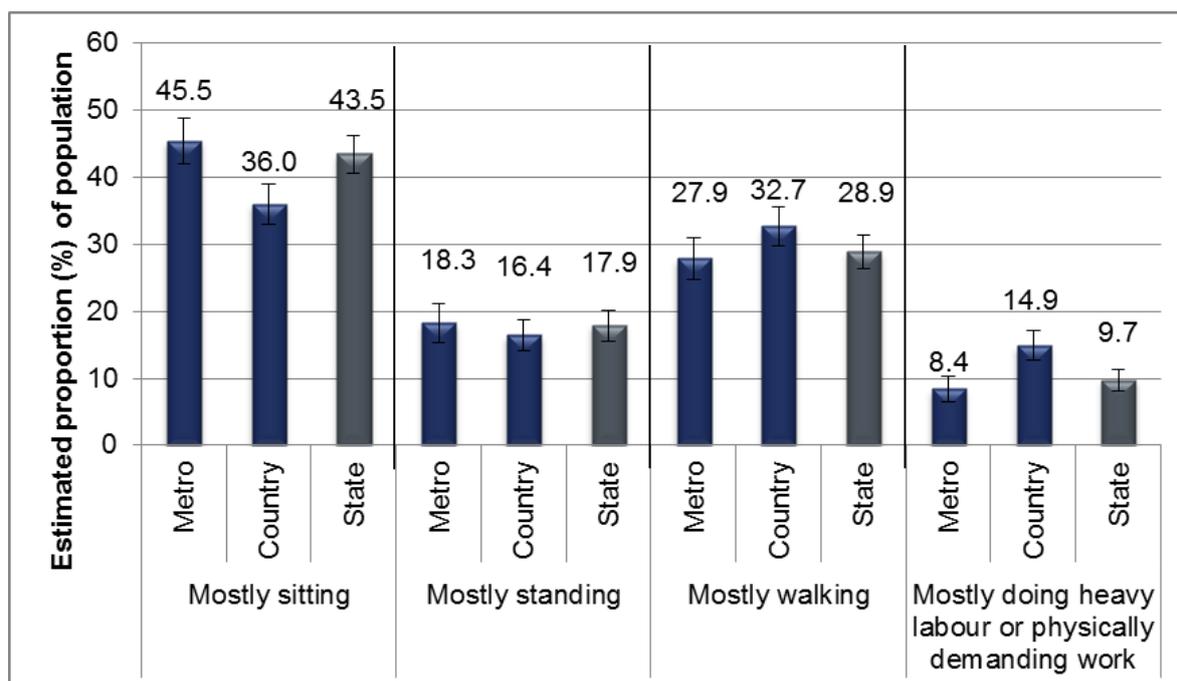
	Sitting		Standing		Walking		Heavy labour/ physically demanding work	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>								
Males	41.7	(34.4 - 49.0)	19.4	(12.9 - 26.0)	21.4	(15.3 - 27.5)	17.5	(12.4 - 22.5)
Females	47.6	(40.9 - 54.2)	18.2	(13.1 - 23.3)	32.0	(13.1 - 38.2)	2.2 *	(0.9 - 3.5)
Persons	44.5	(39.6 - 49.5)	18.9	(14.7 - 23.0)	26.5	(22.1 - 30.9)	10.1	(7.3 - 12.8)
<b>45 to 64 yrs</b>								
Males	46.8	(42.2 - 51.4)	11.1	(8.3 - 13.9)	24.2	(20.2 - 28.1)	17.9	(14.5 - 28.1)
Females	38.8	(35.4 - 42.2)	23.2	(20.2 - 26.1)	32.7	(29.4 - 36.0)	5.3	(3.8 - 6.8)
Persons	42.8	(39.1 - 43.7)	17.1	(15.0 - 19.2)	28.4	(25.8 - 31.0)	11.6	(9.7 - 13.5)
<b>65 yrs &amp; over</b>								
Males	44.3	(40.7 - 47.9)	15.4	(12.7 - 18.0)	34.2	(30.8 - 37.7)	6.1	(4.4 - 7.7)
Females	38.8	(36.0 - 41.7)	17.0	(14.8 - 19.2)	40.3	(37.4 - 43.2)	3.9	(2.7 - 5.0)
Persons	41.4	(39.1 - 43.7)	16.2	(14.5 - 17.9)	37.4	(35.2 - 39.7)	4.9	(3.9 - 5.9)
<b>Total</b>								
Males	43.7	(39.4 - 47.9)	16.3	(12.6 - 20.0)	24.2	(20.6 - 27.8)	15.8	(12.9 - 18.8)
Females	43.3	(39.7 - 47.0)	19.5	(16.7 - 22.4)	33.7	(30.3 - 37.1)	3.5	(2.6 - 4.3)
Persons	43.5	(40.7 - 46.3)	17.9	(15.6 - 20.2)	28.9	(26.4 - 31.4)	9.7	(8.1 - 11.3)

\* 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 (15.8% compared with 3.5%) while females were significantly more likely than males to spend most of their day walking (33.7% compared with 24.2%).

Figure 24 shows the prevalence of how people usually spend their day, by geographic area of residence. Those living in metro areas were significantly more likely to spend most of their day sitting (45.5%) compared with those living in country areas (36.0%). Those living in country areas were significantly more likely to spend most of their day doing heavy labour or physically demanding work compared with those living in metro areas (14.9% compared with 8.4%).

**Figure 24: How usually spend day, 16 years & over, by geographic area of residence in WA, HWSS 2016**



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.<sup>31</sup>

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.<sup>32</sup>

Table 49 presents the proportion of adults 18 years and over completing sufficient levels of physical activity. Almost two-thirds (63.5%) of adults were sufficiently active for good health while just over one in seven (15.2%) did no leisure time physical activity. Adults aged 65 years and over were significantly less likely to complete 150

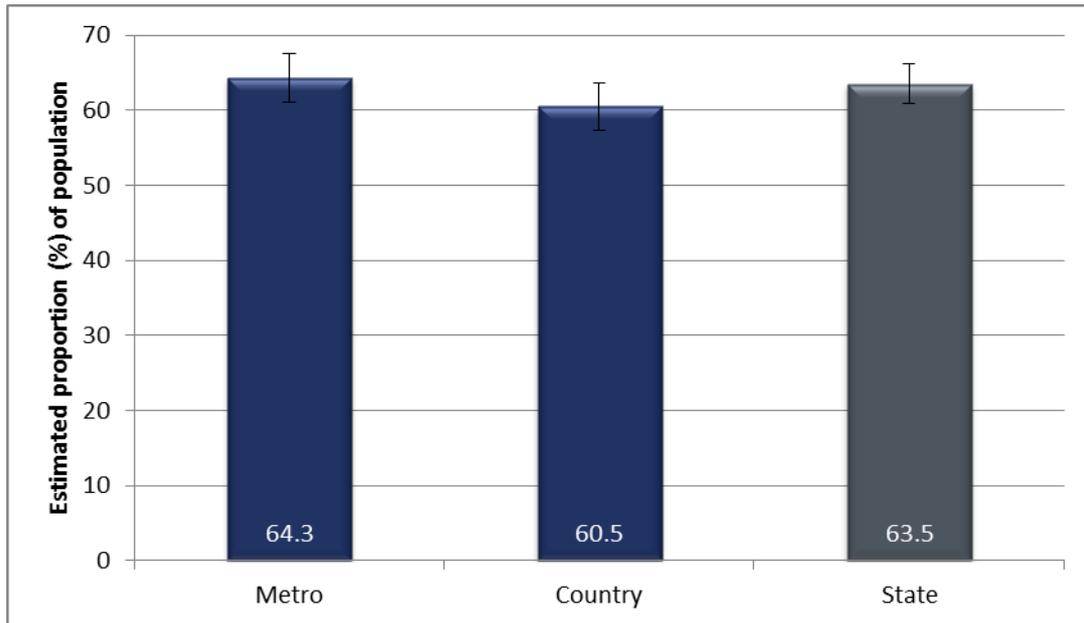
minutes of moderate physical activity per week when compared with those aged 18 to 44 years and 45 to 64 years (53.3% compared with 67.8% and 62.2% respectively).

**Table 49: Physical activity level, measured by the 2014 Australian Physical Activity and Sedentary Behaviour guidelines, 18 years & over, HWSS 2016**

	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
<b>18 to 44 yrs</b>						
Males	10.6	( 5.8 - 15.4)	17.0	( 11.5 - 22.5)	72.4	( 65.6 - 79.2)
Females	10.7	( 6.4 - 15.0)	26.5	( 20.1 - 33.0)	62.7	( 55.8 - 69.7)
Persons	10.7	( 7.4 - 13.9)	21.6	( 17.3 - 25.8)	67.8	( 62.9 - 72.7)
<b>45 to 64 yrs</b>						
Males	18.8	( 15.3 - 22.4)	18.1	( 14.7 - 21.4)	63.1	( 58.7 - 67.5)
Females	15.7	( 13.2 - 18.1)	23.0	( 20.0 - 25.9)	61.4	( 58.0 - 64.8)
Persons	17.3	( 15.1 - 19.4)	20.5	( 18.3 - 22.8)	62.2	( 59.5 - 65.0)
<b>65 yrs &amp; over</b>						
Males	21.6	( 18.6 - 24.5)	17.4	( 14.8 - 20.1)	61.0	( 57.5 - 64.5)
Females	27.4	( 24.8 - 29.9)	26.2	( 23.6 - 28.7)	46.5	( 43.6 - 49.4)
Persons	24.6	( 22.7 - 26.6)	22.1	( 20.2 - 23.9)	53.3	( 51.0 - 55.6)
<b>Total</b>						
Males	15.0	( 12.1 - 17.8)	17.4	( 14.3 - 20.5)	67.6	( 63.7 - 71.5)
Females	15.4	( 13.0 - 17.7)	25.3	( 21.9 - 28.7)	59.3	( 55.7 - 62.9)
Persons	15.2	( 13.3 - 17.0)	21.3	( 19.0 - 23.6)	63.5	( 60.8 - 66.2)

There was no difference in the prevalence of adults aged 18 years and over meeting the recommended levels of physical activity by geographic area of residence (Figure 25).

**Figure 25: Proportion of people meeting the physical activity recommendation, 18 years & over, by geographic area of residence in WA, HWSS 2016**



The standardised annual estimates of the proportion of adults aged 18 years and over, completing the recommended 150 minutes or more of moderate intensity physical activity per week is shown in Table 50.

**Table 50: Proportion of adults completing recommended levels of physical activity over time, 18 years & over, HWSS 2007–16**

	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
2016	67.7	59.5	63.6
<b>Average</b>	<b>65.1</b>	<b>57.6</b>	<b>61.3</b>

The prevalence of adults 18 years and over meeting sufficient levels of physical activity (63.6%) in 2016 was significantly higher than in 2007. The prevalence of

males and females meeting sufficient levels of physical activity in 2016 was also significantly higher than in 2007 (Table 50).

The mean minutes spent in physical activity per week, for respondents who indicated some level of physical activity, are shown in Table 51.

**Table 51: Mean time (a) spent in physical activity per week over time, 18 years & over, HWSS 2007–16**

	<b>Males</b>	<b>Females</b>	<b>Persons</b>
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
2016	423.0	293.8	359.0
<b>Average</b>	<b>383.7</b>	<b>289.3</b>	<b>335.7</b>

(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 2016 was significantly higher compared with 2007-08. For females, the 2016 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.<sup>33</sup>

Table 52 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 52: Time spent watching TV/DVDs or using a computer/Smartphone/tablet device per week, 16 years & over, HWSS 2016**

	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
<b>16 to 44 yrs</b>										
Males	3.2 *	( 0.7- 5.7 )	16.0	( 10.1-21.8 )	22.4	( 16.3-28.5 )	27.0	( 20.4-33.5 )	31.4	( 24.4-38.4 )
Females	3.2 *	( 1.0- 5.5 )	12.1	( 7.4-16.9 )	28.6	( 22.9-34.4 )	31.5	( 25.2-37.7 )	24.5	( 19.0-30.0 )
Persons	3.2 *	( 1.5- 4.9 )	14.1	( 10.3-17.9 )	25.4	( 21.2-29.7 )	29.1	( 24.6-33.7 )	28.1	( 23.6-32.6 )
<b>45 to 64 yrs</b>										
Males	2.9 *	( 1.2- 4.5 )	7.1	( 5.0- 9.3 )	23.0	( 19.0-27.1 )	35.9	( 31.3-40.5 )	31.1	( 27.0-35.2 )
Females	2.1 *	( 1.0- 3.2 )	6.9	( 5.1- 8.7 )	17.6	( 15.0-20.3 )	35.2	( 31.8-38.5 )	38.2	( 34.8-41.6 )
Persons	2.5	( 1.5- 3.5 )	7.0	( 5.6- 8.4 )	20.3	( 17.9-22.8 )	35.5	( 32.7-38.4 )	34.6	( 32.0-37.3 )
<b>65 yrs &amp; over</b>										
Males	1.8 *	( 0.9- 2.8 )	4.1	( 2.7- 5.4 )	12.9	( 10.5-15.2 )	23.5	( 20.4-26.5 )	57.7	( 54.2-61.3 )
Females	1.6	( 0.9- 2.3 )	3.3	( 2.3- 4.2 )	9.9	( 8.1-11.7 )	24.2	( 21.7-26.6 )	61.1	( 58.3-64.0 )
Persons	1.7	( 1.1- 2.3 )	3.7	( 2.8- 4.5 )	11.3	( 9.8-12.8 )	23.8	( 21.9-25.8 )	59.5	( 57.3-61.8 )
<b>Total</b>										
Males	2.9 *	( 1.5- 4.3 )	11.4	( 8.2-14.7 )	21.1	( 17.6-24.7 )	29.2	( 25.3-33.0 )	35.4	( 31.4-39.4 )
Females	2.6	( 1.4- 3.8 )	8.9	( 6.4-11.5 )	21.9	( 18.8-25.0 )	31.3	( 27.9-34.8 )	35.2	( 32.0-38.4 )
Persons	2.7	( 1.8- 3.7 )	10.2	( 8.1-12.3 )	21.5	( 19.2-23.9 )	30.2	( 27.7-32.8 )	35.3	( 32.7-37.9 )

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

## 8.5 Sleep

There is 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.<sup>34</sup> 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.<sup>35</sup>

Respondents were asked how many hours sleep they get on a usual night. Table 53 shows the prevalence of the population meeting the recommended hours of sleep. Two thirds of adults (66.0%) 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 (52.9% compared with 69.6% and 66.7%). Overall, respondents reported sleeping an average of 7.2 hours per night.

**Table 53: Proportion of adults sleeping the recommended number of hours on a usual night, 16 years & over, HWSS 2016**

	Sleeps the recommended number of hours per night		Does not sleep the recommended number of hours per night	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	69.1	(62.2 - 75.9)	30.9	(24.1 - 37.8)
Females	70.2	(64.1 - 76.2)	29.8	(23.8 - 35.9)
Persons	69.6	(65.0 - 74.2)	30.4	(25.8 - 35.0)
<b>45 to 64 yrs</b>				
Males	66.6	(62.1 - 71.1)	33.4	(28.9 - 37.9)
Females	66.7	(63.4 - 70.0)	33.3	(30.0 - 36.6)
Persons	66.7	(63.9 - 69.4)	33.3	(30.6 - 36.1)
<b>65 yrs &amp; over</b>				
Males	54.8	(51.2 - 58.4)	45.2	(41.6 - 48.8)
Females	51.1	(48.2 - 54.0)	48.9	(46.0 - 51.8)
Persons	52.9	(50.5 - 55.2)	47.1	(44.8 - 49.5)
<b>Total</b>				
Males	66.1	(62.1 - 70.1)	33.9	(29.9 - 37.9)
Females	65.8	(62.4 - 69.2)	34.2	(30.8 - 37.6)
Persons	66.0	(63.4 - 68.6)	34.0	(31.4 - 36.6)

## 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.<sup>25</sup> 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.<sup>36</sup>

### 9.1 Cholesterol

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

Table 55 shows the proportion of adults by when their cholesterol was last tested. Table 54 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 54: Prevalence of diagnosed high cholesterol levels, 16 years & over, HWSS 2016**

	Lifetime (ever)		Point (current)	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	10.2 *	( 4.5 - 16.0 )	4.5 *	( 0.5 - 8.5 )
Females	7.7 *	( 3.7 - 11.6 )	4.1 *	( 0.9 - 7.3 )
Persons	9.0	( 5.4 - 12.6 )	4.3 *	( 1.7 - 6.9 )
<b>45 to 64 yrs</b>				
Males	33.4	( 28.9 - 37.9 )	21.8	( 18.0 - 25.6 )
Females	26.1	( 23.1 - 29.1 )	15.5	( 13.1 - 17.9 )
Persons	29.7	( 27.0 - 32.5 )	18.7	( 16.4 - 20.9 )
<b>65 yrs &amp; over</b>				
Males	40.7	( 37.1 - 44.3 )	34.4	( 30.9 - 37.9 )
Females	43.7	( 40.7 - 46.6 )	36.5	( 33.6 - 39.3 )
Persons	42.3	( 40.0 - 44.6 )	35.5	( 33.3 - 37.7 )
<b>Total</b>				
Males	25.2	( 21.9 - 28.6 )	17.1	( 14.6 - 19.7 )
Females	23.2	( 20.8 - 25.6 )	16.0	( 14.1 - 17.9 )
Persons	24.2	( 22.2 - 26.3 )	16.6	( 15.0 - 18.2 )

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

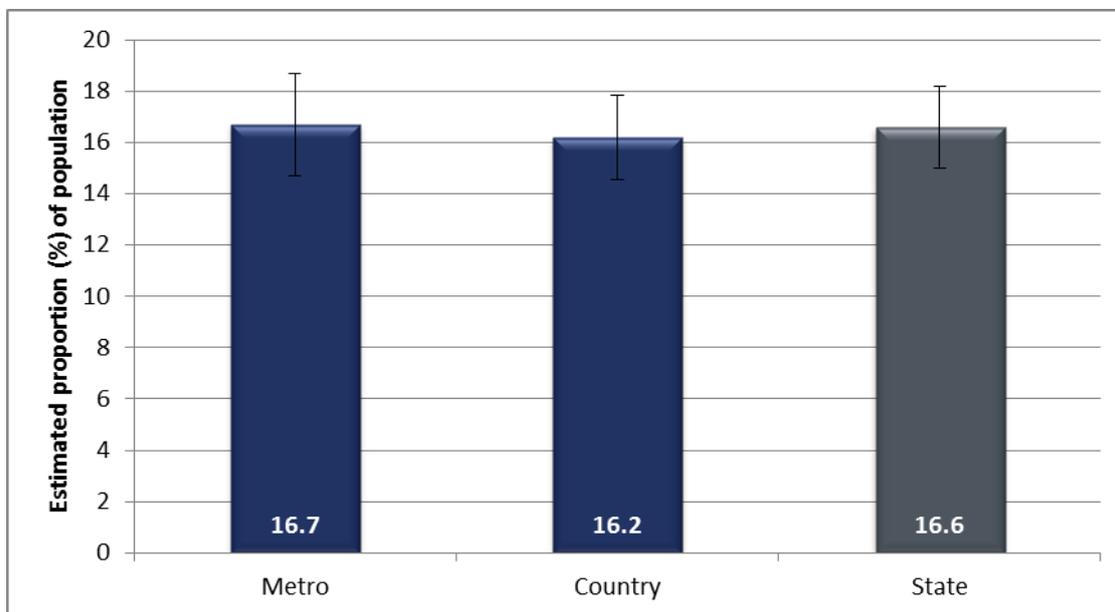
Table 55: Cholesterol level last tested, 16 years &amp; over, HWSS 2016

	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
<b>16 to 44 yrs</b>												
Males	41.8	( 34.6 - 49.0 )	16.7	( 10.8 - 22.5 )	12.6	( 6.9 - 18.2 )	5.9	( 3.1 - 8.7 )	10.6	( 6.3 - 15.0 )	12.4	( 7.7 - 17.1 )
Females	46.0	( 39.4 - 52.6 )	20.3	( 14.6 - 26.0 )	12.7	( 8.4 - 17.0 )	6.6 *	( 3.3 - 9.9 )	6.6	( 3.7 - 9.4 )	7.9	( 4.6 - 11.1 )
Persons	43.8	( 38.9 - 48.8 )	18.4	( 14.3 - 22.5 )	12.6	( 9.0 - 16.2 )	6.2	( 4.1 - 8.4 )	8.7	( 6.0 - 11.3 )	10.2	( 7.3 - 13.1 )
<b>45 to 64 yrs</b>												
Males	5.0	( 3.0 - 7.0 )	48.5	( 43.9 - 53.1 )	24.7	( 20.6 - 28.8 )	11.1	( 8.3 - 13.9 )	6.7	( 4.6 - 8.8 )	4.0	( 2.4 - 5.6 )
Females	4.4	( 3.0 - 5.7 )	43.5	( 40.0 - 46.9 )	27.2	( 24.1 - 30.4 )	12.2	( 10.0 - 14.5 )	6.5	( 5.0 - 8.1 )	6.2	( 4.5 - 8.0 )
Persons	4.7	( 3.5 - 5.9 )	46.0	( 43.1 - 48.9 )	26.0	( 23.4 - 28.6 )	11.7	( 9.8 - 13.5 )	6.6	( 5.3 - 7.9 )	5.1	( 3.9 - 6.3 )
<b>65 yrs &amp; over</b>												
Males	1.2 *	( 0.5 - 1.9 )	64.5	( 61.1 - 68.0 )	20.1	( 17.1 - 23.1 )	4.6	( 3.2 - 6.0 )	2.5	( 1.5 - 3.5 )	7.1	( 5.3 - 9.0 )
Females	1.6	( 0.9 - 2.4 )	57.6	( 54.8 - 60.5 )	20.3	( 18.0 - 22.7 )	5.0	( 3.8 - 6.3 )	3.2	( 2.3 - 4.2 )	12.2	( 10.3 - 14.0 )
Persons	1.4	( 0.9 - 1.9 )	60.9	( 58.6 - 63.1 )	20.2	( 18.3 - 22.1 )	4.8	( 3.9 - 5.8 )	2.9	( 2.2 - 3.6 )	9.8	( 8.5 - 11.1 )
<b>Total</b>												
Males	24.3	( 20.2 - 28.5 )	33.7	( 30.0 - 37.5 )	17.4	( 14.1 - 20.8 )	7.3	( 5.5 - 9.1 )	8.2	( 5.7 - 10.6 )	9.0	( 6.4 - 11.7 )
Females	25.3	( 21.6 - 29.1 )	34.0	( 30.8 - 37.3 )	18.5	( 16.0 - 21.0 )	8.1	( 6.2 - 9.9 )	6.0	( 4.4 - 7.5 )	8.1	( 6.3 - 9.9 )
Persons	24.8	( 22.0 - 27.6 )	33.9	( 31.4 - 36.3 )	18.0	( 15.9 - 20.1 )	7.7	( 6.4 - 9.0 )	7.1	( 5.6 - 8.5 )	8.6	( 7.0 - 10.2 )

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

Figure 26 shows the proportion of adults with current high cholesterol by geographic area of residence. There were no statistically significant differences.

**Figure 26: Prevalence of current high cholesterol, 16 years & over, by geographic area of residence in WA, HWSS 2016**



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 56. The prevalence of lifetime high cholesterol was significantly lower in 2016 compared with 2003 for females and all persons.

**Table 56: Prevalence of high cholesterol over time, 25 years & over, HWSS 2003–16**

	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
2016	26.6	24.1	25.4	17.9	16.6	17.2
<b>Average</b>	<b>31.4</b>	<b>28.7</b>	<b>30.1</b>	<b>20.3</b>	<b>18.2</b>	<b>19.2</b>

(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.<sup>37</sup>

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 57. The prevalence for ever being diagnosed with high blood pressure and a current diagnosis of high blood pressure both increased significantly with age. Table 58 shows the proportion of adults by when their blood pressure was last tested.

**Table 57: Prevalence of high blood pressure, 16 years & over, HWSS 2016**

	Lifetime (ever)		Point (current)	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	7.7	( 4.6 - 10.7 )	2.4 *	( 1.0 - 3.8 )
Females	8.6	( 5.5 - 11.7 )	3.2 *	( 1.4 - 5.0 )
Persons	8.1	( 6.0 - 10.3 )	2.8	( 1.7 - 3.9 )
<b>45 to 64 yrs</b>				
Males	31.4	( 27.1 - 35.7 )	24.2	( 20.1 - 28.2 )
Females	24.2	( 21.4 - 27.1 )	16.8	( 14.4 - 19.2 )
Persons	27.8	( 25.2 - 30.4 )	20.5	( 18.1 - 22.9 )
<b>65 yrs &amp; over</b>				
Males	50.3	( 46.7 - 54.0 )	46.1	( 42.4 - 49.7 )
Females	51.3	( 48.4 - 54.3 )	46.6	( 43.7 - 49.5 )
Persons	50.9	( 48.6 - 53.2 )	46.3	( 44.1 - 48.6 )
<b>Total</b>				
Males	21.6	( 19.0 - 24.3 )	15.9	( 13.9 - 18.0 )
Females	21.2	( 19.0 - 23.3 )	15.2	( 13.6 - 16.8 )
Persons	21.4	( 19.7 - 23.1 )	15.6	( 14.3 - 16.9 )

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

Table 58: Blood pressure last tested, 16 years &amp; over, HWSS 2016

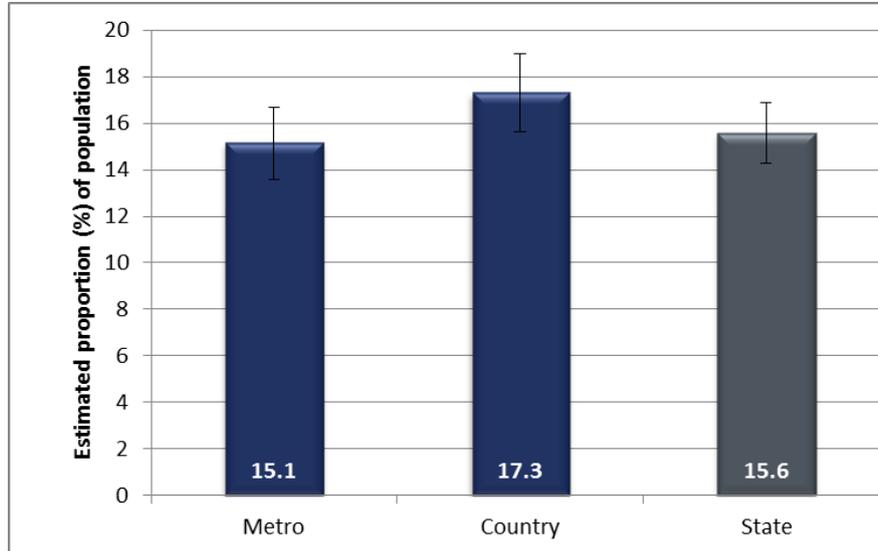
	Never		Within 6 mths		6 mths to 1 yr		1 to 2 yrs		2 or more yrs ago		Unsure	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>												
Males	2.4 *	( 0.8- 4.1)	56.8	(49.5-64.0)	17.2	(11.8-22.7)	6.7	( 3.5- 9.9)	7.3 *	( 3.2-11.5)	9.5	( 5.6-13.4)
Females	3.7 *	( 1.2- 6.2)	66.8	(60.7-72.8)	12.1	( 8.5-15.7)	4.2	( 2.2- 6.1)	5.9 *	( 2.5- 9.4)	7.4	( 3.8-11.0)
Persons	3.0 *	( 1.5- 4.5)	61.6	(56.8-66.4)	14.7	(11.4-18.1)	5.5	( 3.6- 7.4)	6.7	( 4.0- 9.4)	8.5	( 5.8-11.1)
<b>45 to 64 yrs</b>												
Males	N/A	( N/A- N/A)	75.2	(71.3-79.2)	14.2	(11.0-17.4)	4.5	( 2.6- 6.3)	3.7	( 2.1- 5.4)	1.8 *	( 0.7- 2.9)
Females	N/A	( N/A- N/A)	75.5	(72.6-78.4)	15.7	(13.3-18.2)	4.3	( 2.9- 5.7)	2.4	( 1.4- 3.3)	2.0	( 1.2- 2.9)
Persons	N/A	( N/A- N/A)	75.4	(72.9-77.8)	15.0	(12.9-17.0)	4.4	( 3.2- 5.5)	3.1	( 2.1- 4.0)	1.9	( 1.2- 2.6)
<b>65 yrs &amp; over</b>												
Males	N/A	( N/A- N/A)	89.4	(87.2-91.6)	7.0	( 5.1- 8.9)	0.9 *	( 0.3- 1.5)	1.2 *	( 0.4- 2.0)	1.5 *	( 0.7- 2.4)
Females	N/A	( N/A- N/A)	89.5	(87.8-91.2)	5.3	( 4.1- 6.6)	1.4	( 0.8- 2.1)	0.3 *	( 0.1- 0.6)	3.3	( 2.3- 4.4)
Persons	N/A	( N/A- N/A)	89.4	(88.1-90.8)	6.1	( 5.0- 7.2)	1.2	( 0.7- 1.6)	0.7 *	( 0.3- 1.1)	2.5	( 1.8- 3.2)
<b>Total</b>												
Males	1.5 *	( 0.6- 2.4)	67.4	(63.3-71.5)	14.7	(11.6-17.9)	5.1	( 3.3- 7.0)	5.3	( 3.0- 7.6)	5.9	( 3.8- 8.1)
Females	1.9 *	( 0.6- 3.2)	73.5	(70.2-76.7)	12.0	(10.0-14.0)	3.7	( 2.6- 4.8)	3.9	( 2.1- 5.7)	5.0	( 3.1- 6.9)
Persons	1.7	( 0.9- 2.5)	70.4	(67.8-73.1)	13.4	(11.5-15.3)	4.4	( 3.4- 5.5)	4.6	( 3.1- 6.1)	5.5	( 4.0- 6.9)

\* 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.

Figure 27 shows the proportion of adults with current high blood pressure by geographic area of residence.

**Figure 27: Prevalence of current high blood pressure, 16 years & over, by geographic area of residence, HWSS 2016**



There was no difference in the prevalence of high blood pressure by geographic area of residence (Figure 27).

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 59.

**Table 59: Prevalence of high blood pressure over time, 25 years & over, HWSS 2003–16**

	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
2016	25.0	23.9	24.5	18.5	17.0	17.8
<b>Average</b>	<b>27.0</b>	<b>28.3</b>	<b>27.7</b>	<b>19.2</b>	<b>18.8</b>	<b>19.0</b>

(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 significant differences in the prevalence of current high blood pressure when 2016 estimates are compared with previous years. The prevalence of lifetime high blood pressure was significantly lower in 2016 when compared with 2003-10 estimates for females, however for males and all persons the 2016 prevalence remains unchanged from 2003 figures.

### 9.3 Body weight

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

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.<sup>39</sup> The BMIs were then classified as not overweight or obese (BMI<25), overweight (25≤BMI<30) or obese (BMI≥30),<sup>40</sup> as shown in Table 60.

Based on self-reported height and weight measurements, around two-thirds of adults (65.7%) were classified as overweight or obese with over one quarter of adults classified as obese (28.4%). Females were significantly more likely to be classified

as not overweight or obese than males (42.1% compared with 26.8%). The prevalence of obesity was significantly higher for persons aged 45 years and over compared with those aged 16 to 44 years.

**Table 60: Prevalence by BMI categories, 16 years & over, HWSS 2016**

	Not overweight or obese		Overweight		Obese	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	34.2	(26.9 - 41.4)	41.6	(34.1 - 49.1)	24.2	(17.4 - 31.1)
Females	55.2	(48.7 - 61.8)	27.7	(22.1 - 33.3)	17.1	(12.7 - 21.5)
Persons	44.2	(39.0 - 49.3)	35.0	(30.2 - 39.8)	20.8	(16.6 - 25.0)
<b>45 to 64 yrs</b>						
Males	15.6	(12.2 - 19.0)	46.2	(41.5 - 51.0)	38.2	(33.6 - 42.7)
Females	28.7	(25.4 - 32.0)	32.6	(29.3 - 36.0)	38.7	(35.2 - 42.2)
Persons	22.0	(19.6 - 24.4)	39.6	(36.6 - 42.5)	38.4	(35.5 - 41.3)
<b>65 yrs &amp; over</b>						
Males	23.5	(20.3 - 26.7)	44.3	(40.6 - 48.0)	32.2	(28.8 - 35.7)
Females	27.9	(25.2 - 30.6)	37.0	(34.1 - 40.0)	35.1	(32.1 - 38.0)
Persons	25.8	(23.7 - 27.9)	40.5	(38.2 - 42.9)	33.7	(31.5 - 35.9)
<b>Total</b>						
Males	26.8	(22.7 - 30.9)	43.5	(39.1 - 47.8)	29.8	(25.8 - 33.7)
Females	42.1	(38.3 - 46.0)	30.9	(27.7 - 34.0)	27.0	(24.2 - 29.7)
Persons	34.3	(31.4 - 37.2)	37.3	(34.6 - 40.1)	28.4	(26.0 - 30.9)

Figure 28 shows adults aged 16 years and over classified as overweight or obese based on BMI by ARIA. The prevalence of overweight or obesity was significantly higher in areas of WA classified as remote (75.1%) compared with areas of WA classified as major cities (63.5%).

**Figure 28: Prevalence of overweight and obesity by BMI, 16 years & over, by ARIA in WA, HWSS 2016**

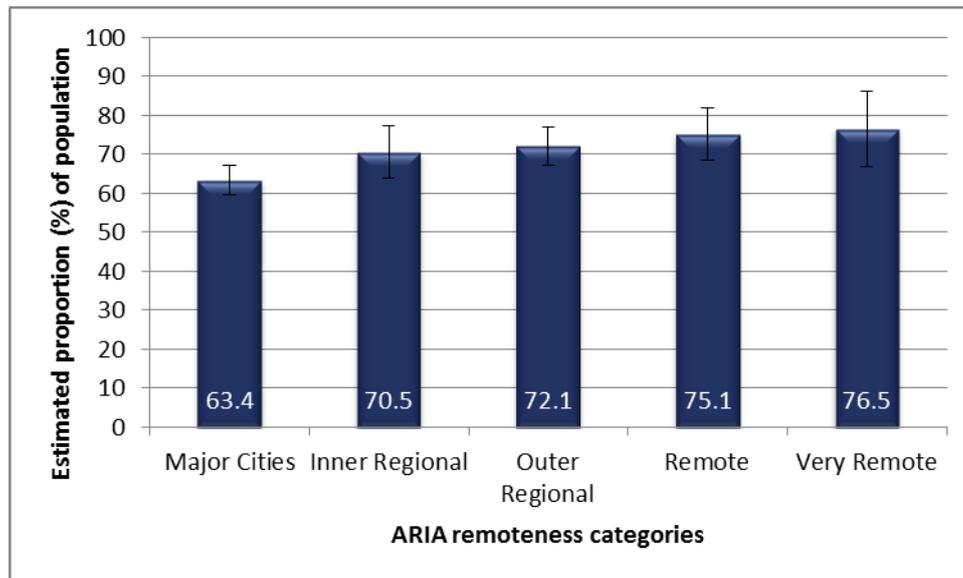


Table 61 shows the prevalence over time for three BMI categories; not overweight or obese, overweight and obese. For males, females and all persons, the prevalence of obesity was significantly higher in 2016 compared with 2002.

**Table 61: Prevalence by BMI categories over time, 16 years & over, HWSS 2002–16**

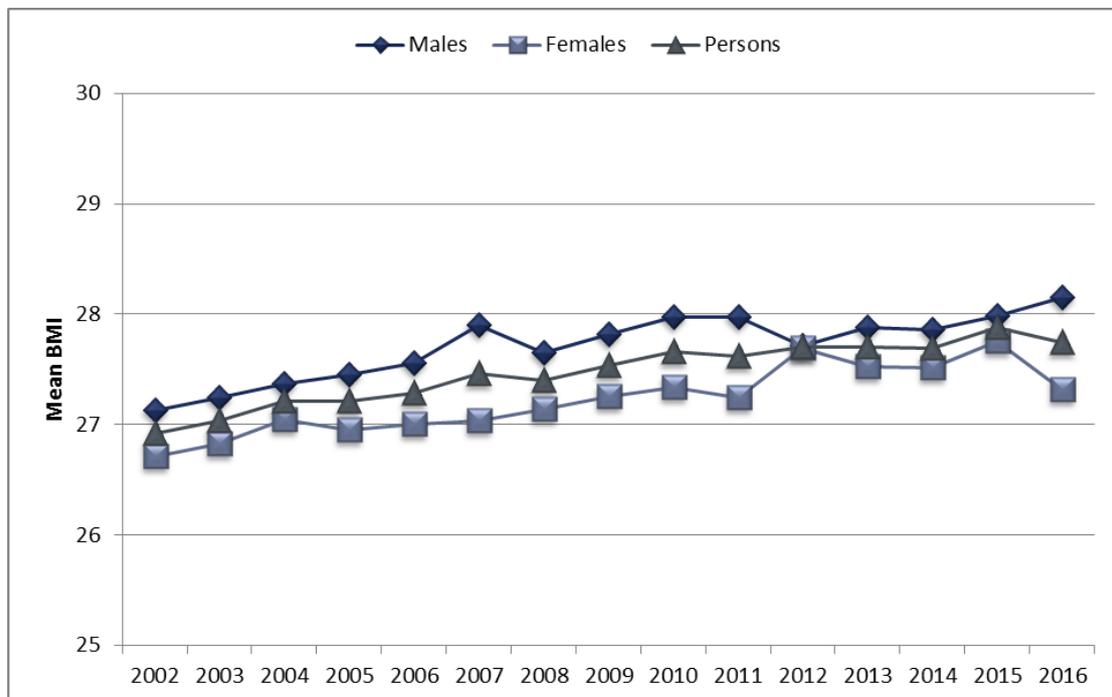
	Not overweight or obese			Overweight			Obese		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
2002	31.8	45.4	38.5	47.8	32.5	40.2	20.5	22.1	21.3
2003	32.1	44.8	38.3	46.8	33.1	40.1	21.1	22.1	21.6
2004	28.7	42.2	35.3	49.5	33.9	41.8	21.8	24.0	22.9
2005	28.2	44.5	36.2	48.9	29.7	39.5	22.9	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
2016	26.9	42.0	34.3	43.4	30.8	37.2	29.7	27.1	28.4
<b>Average</b>	<b>28.2</b>	<b>42.0</b>	<b>35.0</b>	<b>46.4</b>	<b>32.2</b>	<b>39.4</b>	<b>25.4</b>	<b>25.8</b>	<b>25.6</b>

The standardised annual mean BMI estimates for adults aged 16 years and over are shown in Table 62 and Figure 29.

**Table 62: Mean BMI over time, 16 years & over, HWSS 2002–16**

	<b>Males</b>	<b>Females</b>	<b>Persons</b>
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
2016	28.2	27.3	27.7
<b>Average</b>	<b>27.7</b>	<b>27.2</b>	<b>27.5</b>

**Figure 29: Mean BMI over time, 16 years & over, HWSS 2002–16**



The overall trend for the standardised mean BMI has been increasing slightly over time. For males, females and all persons the mean BMI in 2016 was significantly higher compared with 2002.

Respondents were 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.<sup>39</sup> Of those people with a BMI that classified them as overweight, the majority (58.4%) perceived their weight to be normal rather than overweight (39.8%). A similar result was seen in people with BMIs that classified them as obese; with almost three out of four (73.3%) perceiving themselves to be overweight, rather than very overweight (9.9%).

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. Under half (45.9%) of people with a BMI that classified them as overweight had intentions to lose weight, while this increased to around two thirds (69.1%) among people with a BMI that classified them as obese.

**Table 63: Prevalence of self-perception of body weight, by Body Mass Index classification, 16 years & over, HWSS 2016**

Body Mass index classification	Self-perception of body weight							
	Underweight		Normal weight		Overweight		Very overweight	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Underweight	39.1 *	( 11.8 - 66.4 )	59.1	( 31.4 - 86.9 )	N/A	( N/A - N/A )	N/A	( N/A - N/A )
Normal weight	10.7	( 7.2 - 14.2 )	83.3	( 79.3 - 87.3 )	6.0	( 3.9 - 8.1 )	N/A	( N/A - N/A )
Overweight	N/A	( N/A - N/A )	58.4	( 54.1 - 62.7 )	39.8	( 35.6 - 44.0 )	N/A	( N/A - N/A )
Obese	N/A	( N/A - N/A )	15.0	( 11.4 - 18.6 )	73.3	( 68.5 - 78.1 )	9.9	( 7.2 - 12.6 )

\* 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 64: Prevalence of intentions to change weight, by Body Mass Index classification, 16 years & over, HWSS 2016**

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 )	26.1 *	( 1.9 - 50.3 )	9.0 *	( 0.1 - 17.9 )	64.9	( 38.7 - 91.1 )
Normal weight	20.9	( 16.0 - 25.8 )	10.7	( 7.0 - 14.3 )	28.4	( 23.6 - 33.2 )	40.0	( 34.5 - 45.5 )
Overweight	45.9	( 41.4 - 50.4 )	2.2 *	( 0.7 - 3.7 )	24.1	( 20.2 - 28.0 )	27.8	( 23.9 - 31.7 )
Obese	69.1	( 64.4 - 73.7 )	N/A	( N/A - N/A )	9.4	( 6.9 - 12.0 )	19.8	( 16.3 - 23.3 )

\* 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.

## 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.<sup>25</sup> 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 and Table 67.

While nine in ten (89.6%) adults used primary health services (e.g. visited a GP) within the past 12 months, only 8.9 per cent reported having used mental health services during this period. A significantly higher proportion of females reported using 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 years to use primary, hospital based or allied health services but significantly less likely than these younger age groups to use mental health or alternative health services.

The most commonly used health service at a population level was primary health care services, with a mean of 4.4 visits in the past 12 months, followed by allied health services with 3.0 visits. Females had a significantly higher mean number of visits for primary, allied, dental and mental health services in the past 12 months compared with males (Table 66).

Table 67 presents the mean number of visits to health services amongst those who used the type of service at least once in the past 12 months. Of those who used a mental health care service in the past 12 months, the mean number of visits was 8.8 times a year.

Table 65: Health service utilisation in the past 12 months, 16 years &amp; over, HWSS 2016

	Primary (a)		Hospital based (b)		Allied (c)		Dental		Mental (d)		Alternative (e)	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>												
Males	86.0	(81.5 - 90.6)	21.7	(16.1 - 27.3)	39.1	(31.8 - 46.4)	43.2	(36.0 - 50.5)	9.1	(5.4 - 12.7)	7.7	(4.0 - 11.4)
Females	89.6	(85.0 - 94.2)	24.2	(18.7 - 29.6)	53.2	(46.6 - 59.9)	53.0	(46.3 - 59.6)	14.6	(9.4 - 19.7)	13.1	(9.1 - 17.1)
Persons	87.7	(84.5 - 91.0)	22.9	(19.0 - 26.8)	46.0	(41.0 - 51.0)	47.9	(43.0 - 52.9)	11.7	(8.6 - 14.9)	10.3	(7.6 - 13.0)
<b>45 to 64 yrs</b>												
Males	85.6	(82.3 - 88.9)	25.2	(21.4 - 29.0)	51.4	(46.7 - 56.0)	54.1	(49.5 - 58.7)	5.9	(3.4 - 8.4)	8.4	(5.8 - 11.0)
Females	93.7	(92.2 - 95.1)	26.5	(23.4 - 29.7)	63.4	(60.0 - 66.7)	68.5	(65.3 - 71.7)	8.9	(6.7 - 11.0)	13.0	(10.7 - 15.3)
Persons	89.6	(87.8 - 91.4)	25.9	(23.4 - 28.3)	57.3	(54.5 - 60.2)	61.3	(58.4 - 64.1)	7.4	(5.8 - 9.0)	10.7	(8.9 - 12.4)
<b>65 yrs &amp; over</b>												
Males	95.2	(93.8 - 96.7)	37.7	(34.2 - 41.2)	58.1	(54.5 - 61.7)	53.7	(50.1 - 57.3)	2.3	(1.2 - 3.3)	3.0	(1.8 - 4.1)
Females	96.1	(95.0 - 97.2)	33.6	(30.9 - 36.4)	69.6	(67.0 - 72.3)	58.3	(55.4 - 61.1)	2.7	(1.7 - 3.7)	6.4	(5.0 - 7.8)
Persons	95.7	(94.8 - 96.6)	35.5	(33.3 - 37.7)	64.2	(62.0 - 66.4)	56.1	(53.9 - 58.4)	2.5	(1.8 - 3.2)	4.8	(3.9 - 5.7)
<b>Total</b>												
Males	87.3	(84.6 - 90.0)	25.2	(21.9 - 28.6)	45.8	(41.5 - 50.0)	48.2	(43.9 - 52.4)	7.1	(5.0 - 9.2)	7.2	(5.0 - 9.4)
Females	92.0	(89.5 - 94.4)	26.6	(23.5 - 29.6)	59.2	(55.6 - 62.9)	58.7	(55.0 - 62.3)	10.7	(7.9 - 13.5)	11.9	(9.7 - 14.1)
Persons	89.6	(87.8 - 91.4)	25.9	(23.6 - 28.1)	52.5	(49.6 - 55.3)	53.4	(50.5 - 56.2)	8.9	(7.1 - 10.6)	9.5	(8.0 - 11.1)

(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 &amp; over, HWSS 2016

	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
<b>16 to 44 yrs</b>												
Males	3.1	( 2.6 - 3.6 )	0.5 *	( 0.2 - 0.9 )	2.0	( 1.5 - 2.6 )	0.6	( 0.5 - 0.8 )	0.6 *	( 0.3 - 0.9 )	0.3 *	( 0.1 - 0.5 )
Females	4.5	( 3.7 - 5.4 )	0.5	( 0.3 - 0.6 )	3.1	( 2.4 - 3.9 )	1.0	( 0.8 - 1.2 )	1.8	( 1.0 - 2.6 )	0.7	( 0.4 - 0.9 )
Persons	3.8	( 3.3 - 4.3 )	0.5	( 0.3 - 0.7 )	2.6	( 2.1 - 3.0 )	0.8	( 0.7 - 0.9 )	1.2	( 0.8 - 1.6 )	0.5	( 0.3 - 0.6 )
<b>45 to 64 yrs</b>												
Males	4.1	( 3.6 - 4.6 )	0.5	( 0.4 - 0.6 )	2.8	( 1.8 - 3.8 )	0.9	( 0.8 - 1.1 )	0.3 *	( 0.2 - 0.5 )	0.7 *	( 0.2 - 1.2 )
Females	4.8	( 4.3 - 5.3 )	0.5	( 0.4 - 0.7 )	4.1	( 3.4 - 4.9 )	1.4	( 1.3 - 1.5 )	0.5	( 0.3 - 0.6 )	0.6	( 0.4 - 0.7 )
Persons	4.5	( 4.1 - 4.8 )	0.5	( 0.4 - 0.6 )	3.5	( 2.8 - 4.1 )	1.2	( 1.1 - 1.2 )	0.4	( 0.3 - 0.5 )	0.6	( 0.4 - 0.9 )
<b>65 yrs &amp; over</b>												
Males	6.1	( 5.6 - 6.6 )	0.8	( 0.6 - 1.0 )	2.4	( 2.1 - 2.7 )	1.0	( 0.9 - 1.1 )	0.2 *	( 0.0 - 0.4 )	0.2 *	( 0.1 - 0.3 )
Females	6.0	( 5.6 - 6.3 )	0.8	( 0.6 - 0.9 )	4.1	( 3.7 - 4.5 )	1.1	( 1.0 - 1.2 )	0.1 *	( 0.1 - 0.2 )	0.3	( 0.2 - 0.4 )
Persons	6.0	( 5.7 - 6.3 )	0.8	( 0.7 - 0.9 )	3.3	( 3.1 - 3.6 )	1.1	( 1.0 - 1.1 )	0.2 *	( 0.1 - 0.3 )	0.3	( 0.2 - 0.3 )
<b>Total</b>												
Males	3.9	( 3.6 - 4.2 )	0.6	( 0.4 - 0.8 )	2.3	( 1.9 - 2.8 )	0.8	( 0.7 - 0.9 )	0.5	( 0.3 - 0.6 )	0.4	( 0.2 - 0.6 )
Females	4.9	( 4.4 - 5.3 )	0.5	( 0.5 - 0.6 )	3.6	( 3.2 - 4.1 )	1.1	( 1.0 - 1.2 )	1.1	( 0.7 - 1.5 )	0.6	( 0.4 - 0.7 )
Persons	4.4	( 4.1 - 4.7 )	0.6	( 0.4 - 0.7 )	3.0	( 2.7 - 3.3 )	1.0	( 0.9 - 1.0 )	0.8	( 0.5 - 1.0 )	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.

Table 67: Mean visits to health services in the past 12 months of those who attended the service, 16 years &amp; over, HWSS 2016

	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
<b>16 to 44 yrs</b>												
Males	3.7	( 3.1 - 4.2 )	2.4 *	( 0.9 - 4.0 )	5.2	( 4.1 - 6.3 )	1.5	( 1.3 - 1.6 )	6.6	( 4.3 - 8.9 )	4.3	( 3.0 - 5.6 )
Females	5.0	( 4.1 - 6.0 )	2.0	( 1.5 - 2.4 )	5.9	( 4.7 - 7.2 )	1.9	( 1.5 - 2.2 )	12.4	( 9.4 - 15.4 )	5.1	( 3.8 - 6.4 )
Persons	4.3	( 3.8 - 4.9 )	2.2	( 1.4 - 3.0 )	5.6	( 4.8 - 6.5 )	1.7	( 1.5 - 1.9 )	10.1	( 7.9 - 12.3 )	4.8	( 3.8 - 5.7 )
<b>45 to 64 yrs</b>												
Males	4.8	( 4.3 - 5.3 )	1.8	( 1.6 - 2.1 )	5.4	( 3.6 - 7.2 )	1.7	( 1.6 - 1.9 )	5.4	( 3.1 - 7.7 )	8.3 *	( 2.7 - 13.9 )
Females	5.1	( 4.6 - 5.6 )	2.1	( 1.6 - 2.5 )	6.5	( 5.4 - 7.6 )	2.0	( 1.9 - 2.1 )	5.4	( 4.2 - 6.6 )	4.5	( 3.7 - 5.3 )
Persons	5.0	( 4.6 - 5.3 )	2.0	( 1.7 - 2.2 )	6.0	( 5.0 - 7.0 )	1.9	( 1.8 - 2.0 )	5.4	( 4.2 - 6.6 )	6.0	( 3.7 - 8.3 )
<b>65 yrs &amp; over</b>												
Males	6.4	( 5.9 - 6.9 )	2.2	( 1.8 - 2.6 )	4.2	( 3.7 - 4.7 )	1.9	( 1.8 - 2.1 )	10.0 *	( 2.6 - 17.4 )	5.7	( 3.3 - 8.1 )
Females	6.2	( 5.8 - 6.6 )	2.3	( 1.8 - 2.7 )	5.9	( 5.4 - 6.5 )	1.9	( 1.8 - 2.0 )	4.8	( 3.2 - 6.5 )	5.4	( 4.2 - 6.5 )
Persons	6.3	( 6.0 - 6.6 )	2.2	( 1.9 - 2.6 )	5.2	( 4.8 - 5.6 )	1.9	( 1.8 - 2.0 )	7.0	( 3.6 - 10.4 )	5.4	( 4.4 - 6.5 )
<b>Total</b>												
Males	4.5	( 4.1 - 4.8 )	2.2	( 1.5 - 2.9 )	5.1	( 4.3 - 5.9 )	1.7	( 1.6 - 1.7 )	6.5	( 4.7 - 8.2 )	5.8	( 3.6 - 8.0 )
Females	5.3	( 4.8 - 5.8 )	2.1	( 1.8 - 2.3 )	6.1	( 5.4 - 6.8 )	1.9	( 1.8 - 2.1 )	10.3	( 8.0 - 12.5 )	4.9	( 4.1 - 5.7 )
Persons	4.9	( 4.6 - 5.2 )	2.1	( 1.8 - 2.5 )	5.7	( 5.1 - 6.2 )	1.8	( 1.7 - 1.9 )	8.8	( 7.1 - 10.4 )	5.3	( 4.3 - 6.2 )

(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.

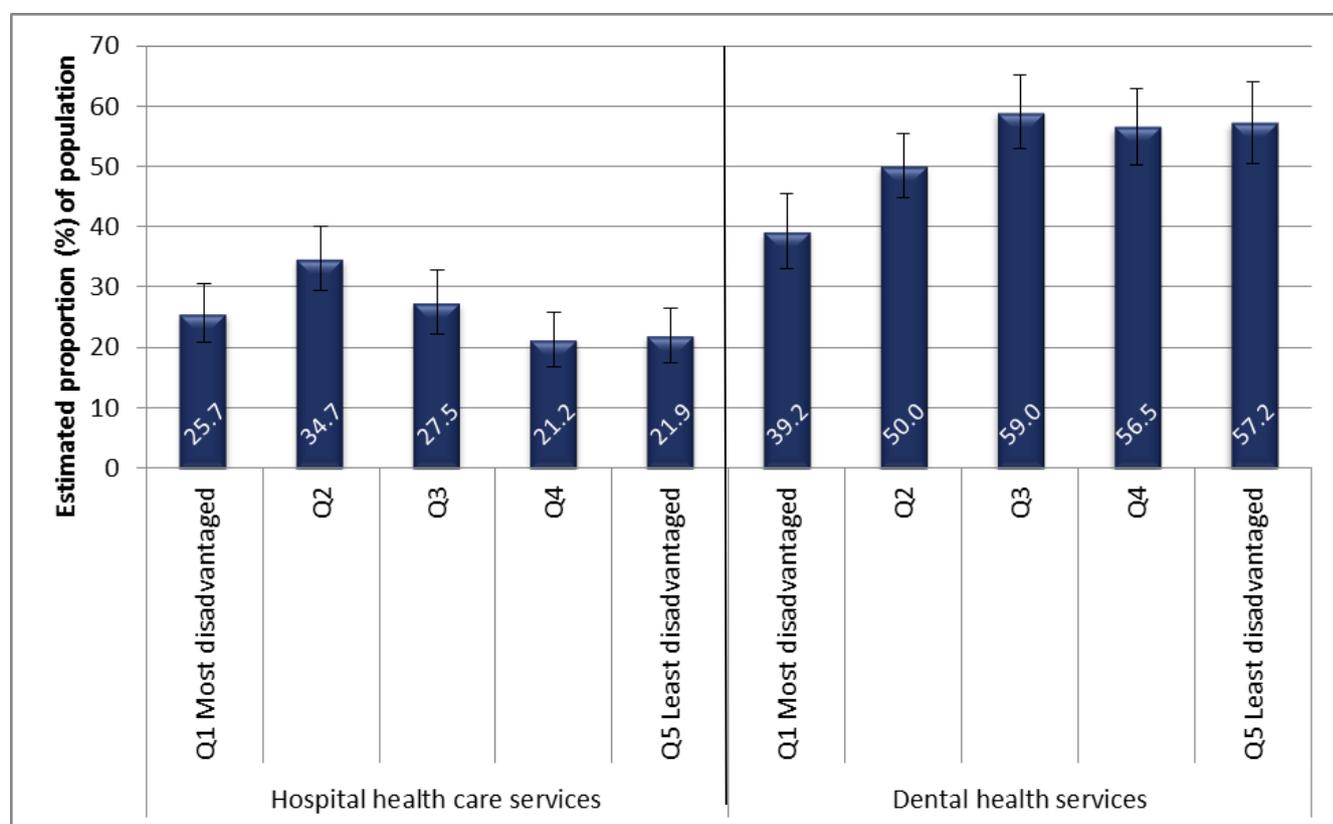
(d) e.g. psychiatrist, psychologist or counsellor.

(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.

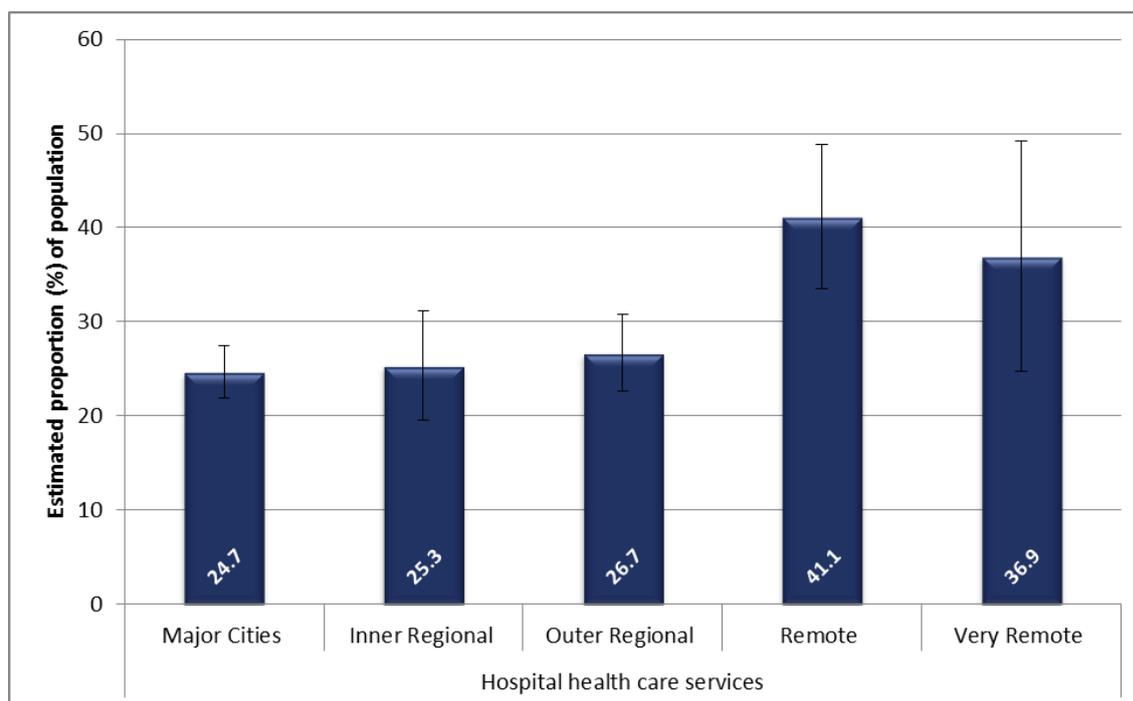
Health service utilisation by each SEIFA quintile was investigated for all six health services asked about in the HWSS. In 2016 significant differences across SEIFA quintiles were evident for hospital health services and dental health services (Figure 30). The prevalence of using hospital health services was significantly higher in the second most disadvantaged quintile (Q2) compared with the two least disadvantaged quintiles (Q4 and Q5) (34.7% compared with 21.2% and 21.9%). The prevalence of using dental health services was significantly lower in the most disadvantaged quintile (Q1) compared with the three least disadvantaged quintiles (Q3, Q4 and Q5) (39.2% compared with 59.0%, 56.5% and 57.2%).

**Figure 30: Health service utilisation in the past 12 months, hospital and dental health services, 16 years & over, by SEIFA quintiles in WA, HWSS 2016**



Of the health services asked about in the HWSS, only hospital based health services had a significant difference in utilisation by ARIA with those in remote areas significantly more likely to have used a hospital health care service when compared with those in areas of the State classified as major cities, inner regional areas or outer regional areas (41.1% compared with 24.7, 25.3% 26.7%) (Figure 31).

**Figure 31: Hospital based health service utilisation in the past 12 months, 16 years & over, by ARIA in WA, HWSS 2016**



Annual flu vaccinations are recommended for adults aged 65 years and over and are available free of charge.<sup>41</sup> Respondents aged 65 years and over were asked if they had received the flu vaccination since the first of March 2016 (Table 68).

**Table 68: Prevalence of flu vaccinations received<sup>^</sup>, 65 years & over, HWSS 2016**

	%	95% CI
Males	50.7	( 45.6 - 55.7 )
Females	60.9	( 56.8 - 65.0 )
Persons	55.9	( 52.7 - 59.2 )

<sup>^</sup>Based on data collected between April and September 2016

It is estimated that between April and September 2016, just over half (55.9%) of adults aged 65 years and over in WA had received a flu vaccination since the first of March. A significantly higher proportion of females reported having the flu vaccination in 2016 when compared with males (60.9% compared with 50.7%).

## 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.<sup>42</sup> 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.<sup>25</sup> 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 69).<sup>43,44</sup>

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.<sup>44</sup>

**Table 69: Psychological distress as measured by Kessler 10, 16 years & over, HWSS 2016**

	Low		Moderate		High		Very high	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>								
Males	79.3	(73.6 - 85.0)	13.1	( 8.2 - 18.0)	4.9 *	( 2.3 - 7.5)	2.7 *	( 0.7 - 4.8 )
Females	70.7	(64.3 - 77.0)	12.0	( 7.5 - 16.6)	14.1	( 8.9 - 19.3)	3.2 *	( 1.1 - 5.3 )
Persons	75.1	(70.8 - 79.4)	12.6	( 9.2 - 15.9)	9.4	( 6.4 - 12.3)	3.0 *	( 1.5 - 4.4 )
<b>45 to 64 yrs</b>								
Males	78.6	(74.5 - 82.7)	11.6	( 8.9 - 14.3)	7.9	( 4.5 - 11.2)	1.9 *	( 0.6 - 3.2 )
Females	75.0	(71.9 - 78.1)	16.6	(13.9 - 19.3)	6.4	( 4.5 - 8.2)	2.0	( 1.1 - 2.9 )
Persons	76.8	(74.2 - 79.4)	14.1	(12.2 - 16.0)	7.1	( 5.2 - 9.1)	2.0	( 1.2 - 2.8 )
<b>65 yrs &amp; over</b>								
Males	87.7	(85.5 - 90.0)	8.8	( 6.9 - 10.7)	3.0	( 1.8 - 4.2)	0.5 *	( 0.0 - 0.9 )
Females	82.8	(80.6 - 85.0)	11.7	( 9.8 - 13.6)	4.0	( 2.8 - 5.2)	1.5	( 0.8 - 2.2 )
Persons	85.1	(83.5 - 86.7)	10.4	( 9.0 - 11.7)	3.5	( 2.7 - 4.4)	1.0	( 0.6 - 1.5 )
<b>Total</b>								
Males	80.4	(77.1 - 83.7)	12.0	( 9.2 - 14.8)	5.5	( 3.7 - 7.3)	2.1 *	( 1.0 - 3.3 )
Females	74.1	(70.7 - 77.6)	13.4	(10.9 - 15.9)	10.0	( 7.2 - 12.7)	2.5	( 1.4 - 3.7 )
Persons	77.3	(74.9 - 79.7)	12.7	(10.8 - 14.5)	7.7	( 6.0 - 9.4)	2.3	( 1.5 - 3.2 )

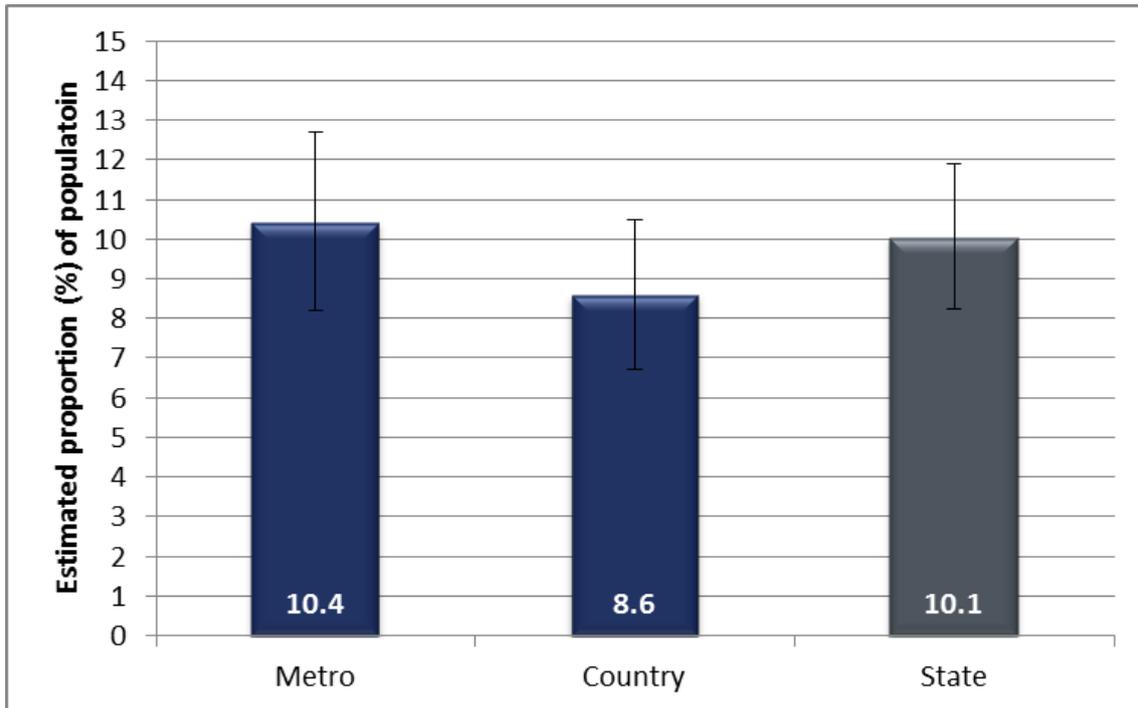
\* Prevalence estimate has a RSE between 25%-50% and should be used with caution.

High or very high levels of psychological distress were reported for 10.0% of the population, which is equivalent to approximately 207,312 people.

Figure 32 shows the proportion of adults with high and very high levels of psychological distress by geographic area of residence. There was no difference in the proportion of adults with high and very high levels of psychological distress based on geographic area of residence.

The standardised annual prevalence estimates of high or very high levels of psychological distress for adults aged 16 years and over are shown in Table 70. The prevalence of high and very high psychological distress has remained unchanged from 2002 to 2016 for males, females and all persons.

**Figure 32: Prevalence of high and very high psychological distress as measured by the Kessler 10, 16 years & over, by geographic area of residence in WA, HWSS 2016**



**Table 70: Prevalence of high and very high psychological distress as measured by the Kessler 10, 16 years & over, HWSS 2002–16**

	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
2016	7.7	12.4	10.1
<b>Average</b>	<b>7.1</b>	<b>9.7</b>	<b>8.4</b>

## 11.2 Major life events

Major life events can have strong influences on a person's subjective well-being.<sup>45</sup> Respondents were asked whether they had personally been affected by major life events in the past 12 months, shown in Table 71.

The most frequently reported major life events were the death of someone close (26.2%) followed by moving house (11.7%) and financial hardship (10.8%).

Respondents aged 16 to 44 years were significantly more likely to have moved house in the last 12 months than those aged 45 years and over, and were also more likely to have been robbed or burgled, experienced a relationship breakdown 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 (12.5% and 11.5% compared with 3.9%).

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 (12.5% compared with 6.6%).

**Table 71: Prevalence by major life events experienced, 16 years & over, HWSS 2016**

	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
<b>16 to 44 yrs</b>																		
Males	15.9	(10.6 - 21.2)	9.9	( 5.3 - 14.6)	24.6	(18.3 - 30.8)	7.7	( 4.4 - 11.1)	6.1 *	( 3.0 - 9.1)	11.5	( 7.4 - 15.7)	1.9 *	( 0.2 - 3.6)	6.0 *	( 2.8 - 9.3)	7.9	( 4.4 - 11.5 )
Females	20.4	(14.5 - 26.3)	5.7	( 3.0 - 8.4)	25.8	(19.7 - 31.9)	8.8	( 5.1 - 12.6)	3.3 *	( 1.4 - 5.3)	13.5	( 9.1 - 17.8)	1.5 *	( 0.0 - 3.0)	7.2	( 4.2 - 10.3)	8.4	( 4.5 - 12.3 )
Persons	18.1	(14.1 - 22.1)	7.9	( 5.1 - 10.6)	25.2	(20.8 - 29.6)	8.3	( 5.8 - 10.8)	4.8	( 2.9 - 6.6)	12.5	( 9.4 - 15.5)	1.7 *	( 0.6 - 2.8)	6.6	( 4.4 - 8.9)	8.2	( 5.5 - 10.8 )
<b>45 to 64 yrs</b>																		
Males	5.2	( 3.3 - 7.0)	5.0	( 3.0 - 7.0)	30.2	(25.8 - 34.5)	6.5	( 4.1 - 8.9)	7.3	( 4.9 - 9.7)	13.1	(10.0 - 16.3)	N/A	( N/A - N/A)	10.2	( 7.4 - 12.9)	7.6	( 5.2 - 10.0 )
Females	5.4	( 3.8 - 6.9)	4.0	( 2.8 - 5.2)	26.2	(23.2 - 29.1)	4.3	( 3.0 - 5.7)	6.5	( 4.8 - 8.3)	9.9	( 7.8 - 12.0)	0.4 *	( 0.0 - 0.8)	11.9	( 9.6 - 14.3)	15.0	(12.5 - 17.6)
Persons	5.3	( 4.1 - 6.5)	4.5	( 3.3 - 5.7)	28.2	(25.6 - 30.8)	5.4	( 4.1 - 6.8)	6.9	( 5.4 - 8.4)	11.5	( 9.6 - 13.4)	0.6 *	( 0.0 - 1.3)	11.0	( 9.2 - 12.84)	11.3	( 9.6 - 13.1 )
<b>65 yrs &amp; over</b>																		
Males	3.3	( 2.1 - 4.6)	4.4	( 2.9 - 5.9)	26.0	(22.8 - 29.2)	1.9 *	( 0.9 - 2.8)	4.7	( 3.2 - 6.1)	3.9	( 2.5 - 5.2)	1.4 *	( 0.6 - 2.2)	13.4	( 11.0 - 15.9)	6.7	( 4.9 - 8.6 )
Females	3.4	( 2.3 - 4.4)	3.5	( 2.4 - 4.6)	26.2	(23.6 - 28.7)	2.2	( 1.4 - 3.1)	4.7	( 3.5 - 5.9)	3.9	( 2.9 - 5.0)	2.2	( 1.3 - 3.2)	11.7	( 9.9 - 13.6)	8.6	( 7.0 - 10.3 )
Persons	3.3	( 2.5 - 4.2)	3.9	( 3.0 - 4.9)	26.1	(24.1 - 28.1)	2.1	( 1.4 - 2.7)	4.7	( 3.7 - 5.6)	3.9	( 3.1 - 4.7)	1.8	( 1.2 - 2.5)	12.5	(10.99 - 14.0)	7.7	( 6.5 - 9.0 )
<b>Total</b>																		
Males	10.7	( 7.7 - 13.7)	7.6	( 5.0 - 10.2)	26.5	(22.8 - 30.2)	6.5	( 4.5 - 8.4)	6.2	( 4.4 - 8.1)	10.8	( 8.4 - 13.3)	1.5 *	( 0.5 - 2.5)	8.4	( 6.4 - 10.4)	7.7	( 5.6 - 9.7 )
Females	12.7	( 9.5 - 16.0)	4.8	( 3.3 - 6.2)	26.0	(22.7 - 29.3)	6.3	( 4.3 - 8.3)	4.6	( 3.4 - 5.7)	10.7	( 8.3 - 13.1)	1.3 *	( 0.5 - 2.1)	9.5	( 7.7 - 11.3)	10.5	( 8.3 - 12.7 )
Persons	11.7	( 9.5 - 13.9)	6.2	( 4.7 - 7.7)	26.2	(23.8 - 28.7)	6.4	( 5.0 - 7.8)	5.4	( 4.3 - 6.5)	10.8	( 9.1 - 12.5)	1.4	( 0.8 - 2.0)	8.9	( 7.6 - 10.3)	9.1	( 7.5 - 10.6 )

\* 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.<sup>46</sup>

Feelings of lack of control have been found to have adverse effects on health and to increase the risk of mortality.<sup>47,48</sup>

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 72 shows self-reported lack of control over life in general.

**Table 72: Lack of control over life in general during past four weeks, 16 years & over, HWSS 2016**

	Never		Rarely		Sometimes		Often		Always	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>										
Males	66.1	( 59.4- 72.8 )	18.1	( 12.9- 23.3 )	13.5	( 8.6- 18.4 )	1.3 *	( 0.4- 2.2 )	N/A	( N/A- N/A )
Females	55.1	( 48.5- 61.8 )	18.7	( 13.3- 24.2 )	17.5	( 12.2- 22.7 )	6.7 *	( 2.8- 10.7 )	1.9 *	( 0.4- 3.4 )
Persons	60.8	( 56.0- 65.6 )	18.4	( 14.6- 22.2 )	15.4	( 11.8- 19.0 )	3.9 *	( 1.9- 5.9 )	1.5 *	( 0.6- 2.3 )
<b>45 to 64 yrs</b>										
Males	64.6	( 60.1- 69.1 )	15.1	( 11.7- 18.5 )	16.1	( 12.6- 19.5 )	1.8 *	( 0.8- 2.7 )	2.4 *	( 0.8- 4.1 )
Females	60.9	( 57.5- 64.3 )	18.2	( 15.6- 20.9 )	15.9	( 13.3- 18.6 )	3.6	( 2.3- 5.0 )	1.3 *	( 0.6- 2.0 )
Persons	62.7	( 59.9- 65.6 )	16.7	( 14.5- 18.8 )	16.0	( 13.8- 18.2 )	2.7	( 1.9- 3.5 )	1.9	( 1.0- 2.8 )
<b>65 yrs &amp; over</b>										
Males	74.6	( 71.5- 77.7 )	13.4	( 11.0- 15.9 )	10.0	( 7.9- 12.0 )	1.1 *	( 0.4- 1.9 )	0.9 *	( 0.3- 1.4 )
Females	71.7	( 69.1- 74.4 )	13.2	( 11.2- 15.2 )	12.9	( 10.9- 14.9 )	1.7	( 0.9- 2.5 )	0.4 *	( 0.1- 0.7 )
Persons	73.1	( 71.1- 75.1 )	13.3	( 11.8- 14.9 )	11.5	( 10.1- 12.9 )	1.4	( 0.9- 2.0 )	0.6	( 0.3- 0.9 )
<b>Total</b>										
Males	67.0	( 63.1- 70.9 )	16.5	( 13.5- 19.5 )	13.7	( 10.9- 16.6 )	1.4	( 0.8- 2.0 )	1.4 *	( 0.7- 2.2 )
Females	59.8	( 56.1- 63.5 )	17.6	( 14.7- 20.6 )	16.2	( 13.3- 19.0 )	4.9	( 2.8- 7.0 )	1.5 *	( 0.7- 2.3 )
Persons	63.4	( 60.7- 66.1 )	17.0	( 14.9- 19.2 )	15.0	( 12.9- 17.0 )	3.1	( 2.0- 4.2 )	1.5	( 0.9- 2.0 )

\* 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 73 and how often people reported feeling a lack of control over their health in the past four weeks is shown in Table 74.

**Table 73: Lack of control over personal life during past four weeks, 16 years & over, HWSS 2016**

	Never		Rarely		Sometimes		Often		Always	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>										
Males	69.0	(62.3-75.7)	17.0	(11.8-22.1)	10.8	(6.2-15.3)	N/A	(N/A-N/A)	N/A	(N/A-N/A)
Females	59.4	(52.8-66.1)	19.3	(13.6-24.9)	14.5	(9.9-19.1)	4.5 *	(1.1-8.0)	2.3 *	(0.2-4.3)
Persons	64.4	(59.6-69.1)	18.1	(14.2-21.9)	12.6	(9.4-15.8)	3.4 *	(1.3-5.6)	1.6 *	(0.4-2.7)
<b>45 to 64 yrs</b>										
Males	67.9	(63.5-72.2)	14.3	(11.0-17.5)	14.6	(11.2-17.9)	1.7 *	(0.7-2.7)	1.6 *	(0.2-3.0)
Females	64.1	(60.7-67.5)	18.9	(16.0-21.7)	13.8	(11.3-16.2)	2.6	(1.4-3.8)	0.7 *	(0.2-1.2)
Persons	66.0	(63.2-68.8)	16.6	(14.4-18.7)	14.2	(12.1-16.2)	2.1	(1.4-2.9)	1.2 *	(0.4-1.9)
<b>65 yrs &amp; over</b>										
Males	80.3	(77.6-83.1)	10.7	(8.5-12.9)	7.4	(5.6-9.1)	1.1 *	(0.3-2.0)	0.5 *	(0.1-0.8)
Females	76.9	(74.4-79.4)	10.7	(8.9-12.6)	10.3	(8.5-12.1)	1.5 *	(0.7-2.2)	0.6 *	(0.2-1.1)
Persons	78.5	(76.7-80.4)	10.7	(9.3-12.1)	8.9	(7.6-10.2)	1.3	(0.7-1.9)	0.6 *	(0.3-0.9)
<b>Total</b>										
Males	70.4	(66.5-74.3)	15.2	(12.2-18.2)	11.4	(8.7-14.1)	2.0 *	(0.5-3.4)	1.1 *	(0.4-1.7)
Females	63.9	(60.2-67.6)	17.7	(14.6-20.7)	13.5	(11.0-16.0)	3.4 *	(1.6-5.2)	1.5 *	(0.4-2.6)
Persons	67.2	(64.5-69.9)	16.4	(14.2-18.6)	12.5	(10.6-14.3)	2.7 *	(1.5-3.9)	1.3 *	(0.6-1.9)

\* 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.

**Table 74: Lack of control over health during past four weeks, 16 years & over, HWSS 2016**

	Never		Rarely		Sometimes		Often		Always	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>										
Males	76.9	(71.0-82.8)	9.4	(5.5-13.2)	9.9	(5.5-14.2)	3.1 *	(1.0-5.3)	0.8 *	(0.1-1.4)
Females	65.6	(59.4-71.9)	17.0	(11.8-22.1)	11.4	(7.7-15.1)	3.5 *	(1.0-6.0)	2.5 *	(0.4-4.5)
Persons	71.4	(67.1-75.8)	13.0	(9.8-16.3)	10.6	(7.8-13.5)	3.3 *	(1.7-5.0)	1.6 *	(0.5-2.7)
<b>45 to 64 yrs</b>										
Males	65.9	(61.4-70.3)	13.3	(10.3-16.4)	15.5	(11.9-19.2)	2.7 *	(1.3-4.2)	2.6 *	(1.0-4.1)
Females	61.2	(57.8-64.6)	17.1	(14.4-19.8)	14.0	(11.6-16.4)	4.7	(3.2-6.3)	2.9	(1.6-4.2)
Persons	63.5	(60.7-66.4)	15.2	(13.2-17.3)	14.8	(12.6-17.0)	3.7	(2.7-4.8)	2.7	(1.7-3.7)
<b>65 yrs &amp; over</b>										
Males	73.2	(70.1-76.4)	11.6	(9.3-13.9)	11.0	(8.7-13.2)	2.6	(1.4-3.8)	1.6 *	(0.8-2.5)
Females	68.7	(66.0-71.4)	11.3	(9.5-13.2)	14.5	(12.4-16.5)	3.4	(2.3-4.5)	2.1	(1.3-3.0)
Persons	70.8	(68.8-72.9)	11.5	(10.0-12.9)	12.8	(11.3-14.3)	3.0	(2.2-3.8)	1.9	(1.3-2.5)
<b>Total</b>										
Males	73.0	(69.4-76.5)	10.9	(8.6-13.3)	11.8	(9.1-14.4)	2.9	(1.7-4.2)	1.4	(0.8-2.1)
Females	64.8	(61.4-68.2)	16.0	(13.2-18.8)	12.8	(10.7-14.9)	3.9	(2.5-5.3)	2.5	(1.4-3.7)
Persons	68.9	(66.4-71.4)	13.5	(11.6-15.3)	12.3	(10.6-13.9)	3.4	(2.4-4.3)	2.0	(1.3-2.6)

\* 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 75 shows the prevalence of adults who reported often or always feeling a lack of control.

**Table 75: Often or always perceive a lack of control, 16 years & over, HWSS 2016**

	General		Personal		Health	
	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>						
Males	2.3 *	( 0.9 - 3.7 )	3.3 *	( 0.5 - 6.0 )	3.9 *	( 1.6 - 6.1 )
Females	8.7	( 4.5 - 12.8 )	6.8 *	( 2.9 - 10.7 )	6.0 *	( 2.7 - 9.2 )
Persons	5.4	( 3.2 - 7.5 )	5.0	( 2.6 - 7.4 )	4.9	( 2.9 - 6.9 )
<b>45 to 64 yrs</b>						
Males	4.2	( 2.3 - 6.1 )	3.3 *	( 1.6 - 5.0 )	5.3	( 3.2 - 7.4 )
Females	5.0	( 3.5 - 6.5 )	3.3	( 2.0 - 4.5 )	7.6	( 5.7 - 9.6 )
Persons	4.6	( 3.4 - 5.8 )	3.3	( 2.2 - 4.4 )	6.5	( 5.0 - 7.9 )
<b>65 yrs &amp; over</b>						
Males	2.0	( 1.0 - 3.0 )	1.6 *	( 0.7 - 2.5 )	4.2	( 2.8 - 5.6 )
Females	2.1	( 1.3 - 2.9 )	2.1	( 1.2 - 3.0 )	5.5	( 4.1 - 6.9 )
Persons	2.1	( 1.4 - 2.7 )	1.9	( 1.2 - 2.5 )	4.9	( 3.9 - 5.9 )
<b>Total</b>						
Males	2.8	( 1.9 - 3.8 )	3.0 *	( 1.4 - 4.6 )	4.4	( 3.0 - 5.8 )
Females	6.4	( 4.2 - 8.6 )	4.9	( 2.8 - 7.0 )	6.4	( 4.6 - 8.2 )
Persons	4.6	( 3.4 - 5.8 )	4.0	( 2.6 - 5.3 )	5.4	( 4.2 - 6.5 )

\* 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.<sup>49</sup> 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 76 shows the prevalence of adults who had suicidal thoughts over the past 12 months and Table 77 shows the prevalence of adults who had a friend or family member attempt suicide over the past 12 months.

**Table 76: Suicide thoughts over past 12 months, 16 years & over, HWSS 2016**

		Seriously thought about ending own life	
		%	95% CI
<b>16 to 44 yrs</b>			
Males	5.6 *	( 2.6 - 8.6 )	
Females	10.0	( 5.7 - 14.2 )	
Persons	7.7	( 5.1 - 10.3 )	
<b>45 to 64 yrs</b>			
Males	7.5	( 4.6 - 10.4 )	
Females	4.7	( 3.3 - 6.1 )	
Persons	6.1	( 4.5 - 7.7 )	
<b>65 yrs &amp; over</b>			
Males	3.7	( 2.3 - 5.1 )	
Females	2.5	( 1.6 - 3.3 )	
Persons	3.0	( 2.2 - 3.8 )	
<b>Total</b>			
Males	5.9	( 4.0 - 7.7 )	
Females	7.0	( 4.7 - 9.3 )	
Persons	6.4	( 5.0 - 7.9 )	

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

Adults aged 16 to 44 years were significantly more likely to report having thought about ending their own life in the last 12 months compared with respondents aged 65 years and over (7.7% compared with 3.0%).

**Table 77: Friends/ family suicide attempts over past 12 months, 16 years & over, HWSS 2016**

	Friend(s) attempted		Family attempted	
	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>				
Males	11.1	( 6.0 - 16.2 )	4.3 *	( 1.5 - 7.1 )
Females	14.5	( 9.7 - 19.2 )	7.3	( 3.8 - 10.8 )
Persons	12.7	( 9.2 - 16.2 )	5.7	( 3.5 - 8.0 )
<b>45 to 64 yrs</b>				
Males	4.8	( 3.0 - 6.6 )	4.2 *	( 1.8 - 6.6 )
Females	7.4	( 5.5 - 9.3 )	5.5	( 3.9 - 7.0 )
Persons	6.1	( 4.8 - 7.4 )	4.8	( 3.4 - 6.3 )
<b>65 yrs &amp; over</b>				
Males	1.2 *	( 0.4 - 2.0 )	1.6 *	( 0.8 - 2.4 )
Females	2.4	( 1.6 - 3.3 )	3.1	( 2.1 - 4.2 )
Persons	1.8	( 1.3 - 2.4 )	2.4	( 1.7 - 3.1 )
<b>Total</b>				
Males	7.7	( 4.8 - 10.5 )	3.9	( 2.2 - 5.6 )
Females	10.2	( 7.6 - 12.8 )	6.0	( 4.1 - 7.9 )
Persons	8.9	( 7.0 - 10.8 )	4.9	( 3.7 - 6.2 )

\* 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 almost seven times more likely to report this compared with those aged 65 years and over (12.7% compared with 1.8%). The proportion of adults who reported that family member(s) has attempted suicide in the past 12 months also decreased significantly with age (5.7% for adults 16 to 44 years compared with 2.4% 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.<sup>50,51</sup> 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 78.

**Table 78: Number of groups/ associations belonging to, 16 years & over, HWSS 2016**

	None		One		Two		Three		Four or more	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>										
Males	43.0	(35.6 - 50.3)	26.8	(20.1 - 33.5)	13.2	(8.3 - 18.2)	9.2	(5.1 - 13.3)	7.8	(4.2 - 11.4)
Females	47.3	(40.7 - 54.0)	25.7	(19.9 - 31.4)	12.4	(8.3 - 16.4)	6.4	(3.6 - 9.1)	8.3	(5.0 - 11.6)
Persons	45.1	(40.1 - 50.1)	26.2	(21.8 - 30.7)	12.8	(9.6 - 16.0)	7.8	(5.3 - 10.4)	8.0	(5.6 - 10.5)
<b>45 to 64 yrs</b>										
Males	44.5	(39.9 - 49.1)	23.8	(20.1 - 27.5)	17.4	(13.8 - 21.0)	9.1	(6.5 - 11.8)	5.1	(3.3 - 6.9)
Females	43.8	(40.4 - 47.3)	26.7	(23.6 - 29.8)	13.4	(11.2 - 15.7)	9.4	(7.2 - 11.5)	6.7	(5.1 - 8.3)
Persons	44.2	(41.3 - 47.1)	25.2	(22.8 - 27.7)	15.4	(13.3 - 17.6)	9.3	(7.5 - 11.0)	5.9	(4.7 - 7.1)
<b>65 yrs &amp; over</b>										
Males	36.7	(33.2 - 40.1)	29.3	(26.0 - 32.6)	16.9	(14.2 - 19.6)	9.4	(7.2 - 11.5)	7.8	(5.9 - 9.7)
Females	34.5	(31.8 - 37.3)	28.9	(26.2 - 31.5)	16.4	(14.3 - 18.5)	12.4	(10.5 - 14.4)	7.8	(6.3 - 9.2)
Persons	35.5	(33.3 - 37.7)	29.1	(27.0 - 31.2)	16.6	(14.9 - 18.3)	11.0	(9.6 - 12.4)	7.8	(6.6 - 9.0)
<b>Total</b>										
Males	42.5	(38.2 - 46.7)	26.3	(22.4 - 30.1)	15.1	(12.1 - 18.0)	9.2	(6.8 - 11.6)	7.0	(4.9 - 9.0)
Females	44.0	(40.3 - 47.7)	26.5	(23.4 - 29.7)	13.4	(11.2 - 15.6)	8.4	(6.7 - 10.0)	7.7	(5.9 - 9.5)
Persons	43.2	(40.4 - 46.1)	26.4	(23.9 - 28.9)	14.2	(12.4 - 16.1)	8.8	(7.3 - 10.2)	7.3	(6.0 - 8.7)

Over one third (43.2%) of adults reported belonging to no groups or associations of any kind.

## 12. SOCIAL CHARACTERISTICS

In Australia, private health insurance operates in conjunction with the publicly funded universal healthcare cover, Medicare. Private health insurance can be purchased by individuals to contribute to the cost of private patient hospital care as well as ancillary medical services such as dental care, optical, chiropractic and physiotherapy treatments.

Persons aged 45 to 64 years were significantly more likely to have both hospital and ancillary private health insurance when compared with those aged 65 years and over and persons aged 16 to 44 years were significantly more likely to have no form of private health insurance when compared with those aged 45 to 64 years (Table 79).

**Table 79: Private health insurance status, 16 years & over, HWSS 2016**

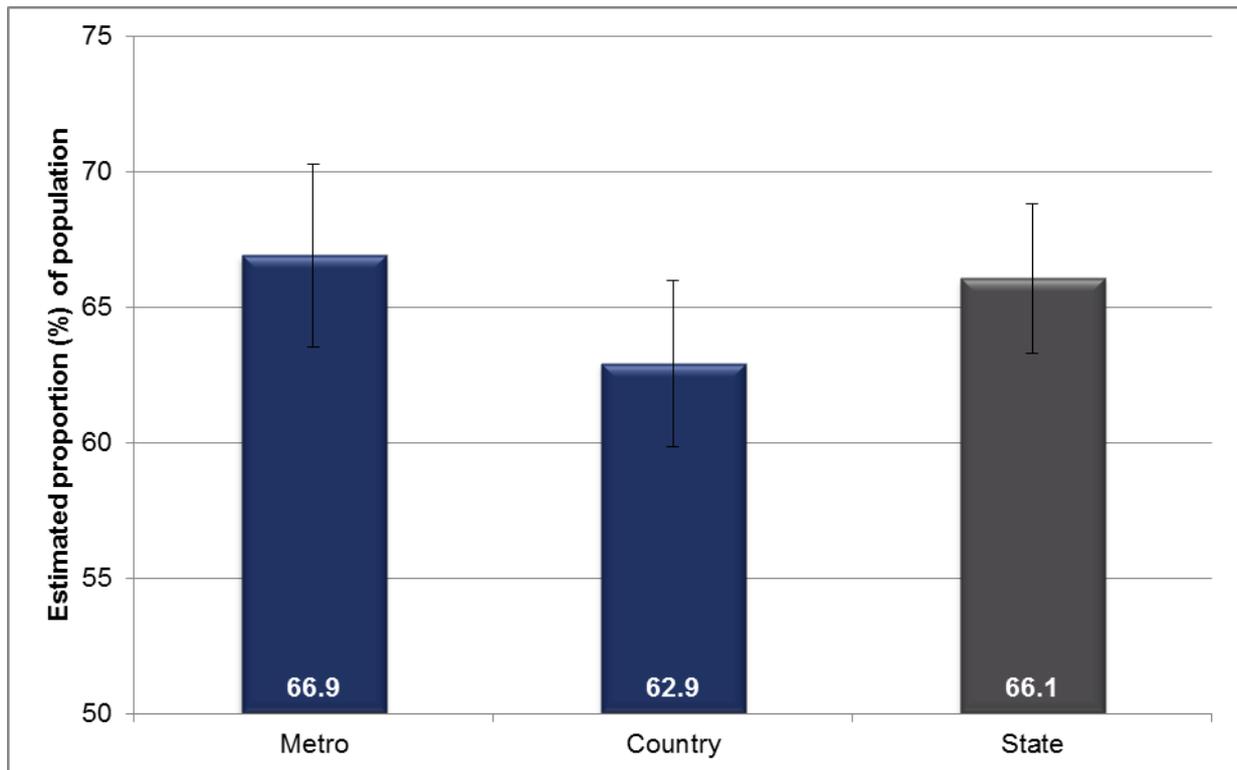
	None		Hospital Only		Ancillary Only		Both Hospital and Ancillary	
	%	95% CI	%	95% CI	%	95% CI	%	95% CI
<b>16 to 44 yrs</b>								
Males	29.2	( 22.3 - 36.2 )	N/A	( N/A - N/A )	N/A	( N/A - N/A )	65.1	( 57.6 - 72.6 )
Females	26.2	( 20.0 - 32.3 )	3.6 *	( 0.5 - 6.7 )	4.8 *	( 1.7 - 7.9 )	65.4	( 58.7 - 72.1 )
Persons	27.7	( 23.1 - 32.4 )	3.6 *	( 1.1 - 6.0 )	3.5 *	( 1.5 - 5.4 )	65.2	( 60.2 - 70.3 )
<b>45 to 64 yrs</b>								
Males	23.3	( 19.5 - 27.1 )	2.7 *	( 1.2 - 4.2 )	6.2	( 3.4 - 8.9 )	67.9	( 63.5 - 72.2 )
Females	17.9	( 15.3 - 20.4 )	1.6 *	( 0.8 - 2.4 )	8.4	( 6.4 - 10.4 )	72.1	( 69.0 - 75.2 )
Persons	20.6	( 18.3 - 22.9 )	2.2	( 1.3 - 3.0 )	7.3	( 5.6 - 9.0 )	70.0	( 67.3 - 72.7 )
<b>65 yrs &amp; over</b>								
Males	28.7	( 25.5 - 32.0 )	4.4	( 2.9 - 5.9 )	5.7	( 4.1 - 7.4 )	61.1	( 57.6 - 64.7 )
Females	29.2	( 26.6 - 31.8 )	3.2	( 2.1 - 4.2 )	6.1	( 4.7 - 7.4 )	61.6	( 58.8 - 64.4 )
Persons	29.0	( 26.9 - 31.0 )	3.7	( 2.8 - 4.6 )	5.9	( 4.8 - 7.0 )	61.4	( 59.2 - 63.6 )
<b>Total</b>								
Males	27.3	( 23.4 - 31.2 )	3.4 *	( 1.3 - 5.4 )	4.0	( 2.4 - 5.5 )	65.4	( 61.2 - 69.6 )
Females	24.1	( 20.9 - 27.3 )	2.9 *	( 1.3 - 4.5 )	6.2	( 4.5 - 7.9 )	66.8	( 63.2 - 70.4 )
Persons	25.7	( 23.2 - 28.2 )	3.1	( 1.8 - 4.5 )	5.1	( 3.9 - 6.2 )	66.1	( 63.3 - 68.8 )

\* 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.

There was no difference in the prevalence of people with hospital and ancillary private health insurance by geographic area of residence (Figure 33).

**Figure 33: Prevalence of population with both hospital and ancillary private health insurance, 16 years & over, by geographic area of residence in WA, HWSS 2016**



The prevalence of people with both hospital and ancillary private health insurance has increased significantly between 2008 and 2016 and the prevalence of people without any form of private health insurance has decreased significantly over the same time period (Table 80).

**Table 80: Private health insurance status over time, 16 years & over, HWSS 2008-2016**

	None	Hospital Only	Ancillary Only	Both Hospital and Ancillary
2008	34.9	3.0	4.4	57.8
2009	33.2	2.7	4.1	60.1
2010	30.9	2.7	4.3	62.1
2011	28.1	2.9	5.5	63.4
2012	29.1	3.1	5.0	62.8
2013	26.7	2.9	5.2	65.2
2014	26.8	2.1	5.5	65.6
2015	22.7	2.0	6.5	68.8
2016	25.7	3.0	5.1	66.2
<b>Average</b>	<b>29.2</b>	<b>2.7</b>	<b>5.0</b>	<b>63.2</b>

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