5. Self-reported health and selected chronic diseases

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Introduction

Self-reported health status has been shown to be a reliable predictor of ill-health, future healthcare use and premature mortality, independent of other medical, behavioural or psychosocial risk factors (Burstrom & Fredlund 2001; Idler & Benyamini 1997; Miilunpalo et al. 1997). Survey respondents were asked to state their perception of their current health status by indicating whether, in general, they would say their health was excellent, very good, good, fair or poor.

Respondents were also asked whether they had at any time in their life been told by a doctor that they had any of the following conditions: heart disease, stroke, cancer, osteoporosis, arthritis and, for the first time, systemic lupus erythematosus (SLE). If respondents indicated that they had been told by a doctor that they had arthritis, they were then asked about the type of arthritis that they had.

Survey results

Self-reported health

- Almost half (46.6 per cent) of Victorian adults reported their health status as excellent or very good. A further 37.2 per cent reported their health status as good, while 16.0 per cent reported their health status as fair or poor. There was no difference in self-reported health status between males and females.
- Self-reported health, regardless of health status category, has remained constant in Victoria from 2005 to 2011–12.
- Self-reported health status was similar between adults who lived in rural and metropolitan Victoria.
- There were 12 LGAs where the proportion of adults who reported excellent or very good health was higher compared with all Victorian adults – Bayside (C), Boroondara (C), Frankston (C), Glen Eira (C), Melbourne (C), Mount Alexander (C), Moyne (S), Nillumbik (S), Port Phillip (C), Queenscliffe (B), Strathbogie (S) and Yarra (C).
- In contrast, the proportion of adults who reported fair or poor health was higher in the LGAs of Brimbank (C), Greater Dandenong (C), Hume (C), Whittlesea (C) and Yarriambiack (S) compared with all Victorian adults.

Selected chronic diseases

- In 2011–12 the prevalence of heart disease in Victorian adults was 7.0 per cent, stroke was 2.4 per cent, cancer was 7.0 per cent, osteoporosis was 5.3 per cent, SLE was 0.4 per cent and arthritis was 19.9 per cent.
- Regarding specific types of arthritis there was a higher prevalence of osteoarthritis (14.1 per cent) compared with rheumatoid arthritis (3.3 per cent). The prevalence of both types of arthritis was higher among women compared with men. Among obese adult Victorians, there was a higher prevalence of all types of arthritis compared with the prevalence of arthritis in all Victorians.

- The prevalence of heart disease was higher in men compared with women, while the prevalence of SLE and arthritis was higher in women compared with men. The prevalence of osteoporosis was higher in men aged 65 years or over and women and adults 55 years or over compared with the prevalence in all Victorian men, women and adults, respectively. There was no difference in the prevalence of stroke and cancer between the sexes.
- The prevalence of heart disease, stroke, cancer, osteoporosis or SLE was similar between adults who lived in rural and metropolitan Victoria, regardless of gender. In contrast, there was a higher prevalence of arthritis in men and adults but not women who lived in rural compared with metropolitan Victoria.
- Compared with all Victorian adults the prevalence of heart disease was higher in adults who lived in the LGAs of Casey (C) and Whittlesea (C).
- The prevalence of cancer was higher in adults who lived in the LGAs of Alpine (S), Gannawarra (S) and Strathbogie (S) compared with all Victorian adults.
- There was a higher prevalence of osteoporosis among people who lived in the LGAs of Hume (C) and Strathbogie (S) compared with all Victorian adults.
- The prevalence of SLE was higher in people who lived in the LGAs of Glenelg (S) and West Wimmera (S) compared with all Victorian adults.
- There were nine LGAs where the prevalence of arthritis was higher compared with all Victorian adults – Banyule (C), Central Goldfields (S), Gannawarra (S), Glenelg (S), Greater Bendigo (C), Pyrenees (S), Strathbogie (S), West Wimmera (S) and Yarriambiack (S).

Self-reported health

Table 5.1 shows self-reported health status, by sex. Overall, 11.7 per cent of people reported their health status as being 'excellent', 34.9 per cent reported their health status as 'very good', 37.2 per cent reported their health status as 'good', 13.0 per cent reported their health status as 'fair' and 3.0 per cent reported their health status as 'poor'. There were no significant differences between the sexes.

Table 5.1: Self-reported health status, by sex, Victoria, 2011–12

	Excellent			Very good			Good			Fair			Poor		
		95% CI			95% CI			95% CI			95% CI			95% CI	
	%	LL	UL	%	LL	UL	%	LL	UL	%	LL	UL	%	LL	UL
Males	11.7	10.8	12.7	33.7	32.2	35.2	38.1	36.6	39.6	13.6	12.7	14.7	2.7	2.2	3.3
Females	11.5	10.8	12.2	36.1	34.9	37.4	36.5	35.3	37.8	12.3	11.5	13.1	3.4	3.0	3.8
Persons	11.7	11.1	12.3	34.9	33.9	35.9	37.2	36.3	38.2	13.0	12.4	13.6	3.0	2.7	3.4

Data are age standardised to the 2011 Victorian population

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Table 5.2 shows self-reported health status, by age group and sex. In this table and those that follow, 'excellent' and 'very good' health status have been combined, as have 'fair' and 'poor' health status. Overall, the proportion of Victorian adults who reported excellent or very good health was 46.6 per cent, the proportion who reported good health was 37.2 per cent, and the proportion who reported fair or poor health was 16.0 per cent. There was no difference between the sexes.

There appeared to be an age-related pattern in the proportion of both men and women who reported fair or poor health, where the proportion increased with age. A significantly lower proportion of men and women aged 18–24 years reported fair

or poor health, while a significantly higher proportion of those aged 65 years or over reported fair or poor health compared with all men and women, respectively. This would be expected given that health usually deteriorates with age.

By contrast there did not appear to be an incremental age-related pattern in the proportion of adults who reported excellent or very good health, although a significantly lower proportion of those aged 65 years or over reported excellent or very good health.

Table 5.2: Self-reported health status, by age group and sex, Victoria, 2011–12

| Age group (years) | Excellent / Very good | | | Good | | | Fair / Poor | | |
| | % | 95% CI | | % | 95% CI | | % | 95% CI | |
		LL	UL		LL	UL		LL	UL
Males									
18–24	53.1	47.4	58.8	37.2	31.8	42.9	9.7	6.6	14.0
25–34	46.2	41.2	51.3	40.1	35.3	45.2	13.7	10.7	17.4
35–44	47.0	43.8	50.2	37.9	34.9	41.0	15.1	12.8	17.7
45–54	45.4	42.6	48.1	38.6	35.9	41.3	16.0	14.1	18.2
55–64	42.8	40.2	45.4	38.1	35.5	40.7	18.8	16.9	20.9
65+	39.8	37.8	41.9	37.1	35.1	39.2	22.3	20.6	24.1
Total	45.4	43.8	46.9	38.1	36.6	39.6	16.4	15.3	17.5
Females									
18–24	48.0	42.6	53.4	43.1	37.9	48.6	8.9	6.5	12.1
25–34	45.9	42.2	49.7	40.9	37.2	44.7	13.1	10.7	15.9
35–44	54.8	52.4	57.2	32.0	29.8	34.2	13.1	11.5	15.0
45–54	49.1	46.9	51.3	33.7	31.7	35.9	17.0	15.4	18.8
55–64	46.7	44.6	48.9	35.0	33.0	37.1	17.9	16.3	19.6
65+	41.7	40.0	43.4	35.2	33.5	36.9	22.6	21.1	24.2
Total	47.6	46.3	48.9	36.5	35.3	37.8	15.6	14.8	16.5
Persons									
18–24	50.6	46.7	54.6	40.1	36.3	44.0	9.3	7.2	11.9
25–34	46.1	42.9	49.2	40.5	37.5	43.7	13.4	11.4	15.7
35–44	51.0	49.0	53.0	34.9	33.0	36.8	14.1	12.7	15.7
45–54	47.3	45.5	49.0	36.1	34.4	37.8	16.5	15.2	17.9
55–64	44.8	43.1	46.5	36.5	34.9	38.2	18.4	17.1	19.7
65+	40.8	39.5	42.2	36.1	34.8	37.4	22.5	21.3	23.6
Total	46.6	45.6	47.6	37.2	36.3	38.2	16.0	15.3	16.7

Data are age-specific estimates, except for 'Total', which represent the estimates for Victoria and have been age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: **above**/**below** Victoria.

The trend over time of age-adjusted self-reported health status is presented in Figure 5.1. Self-reported health regardless of health status category remained constant in Victoria from 2005 to 2011–12.

Figure 5.1: Self-reported health status from 2005 to 2011–12, Victoria
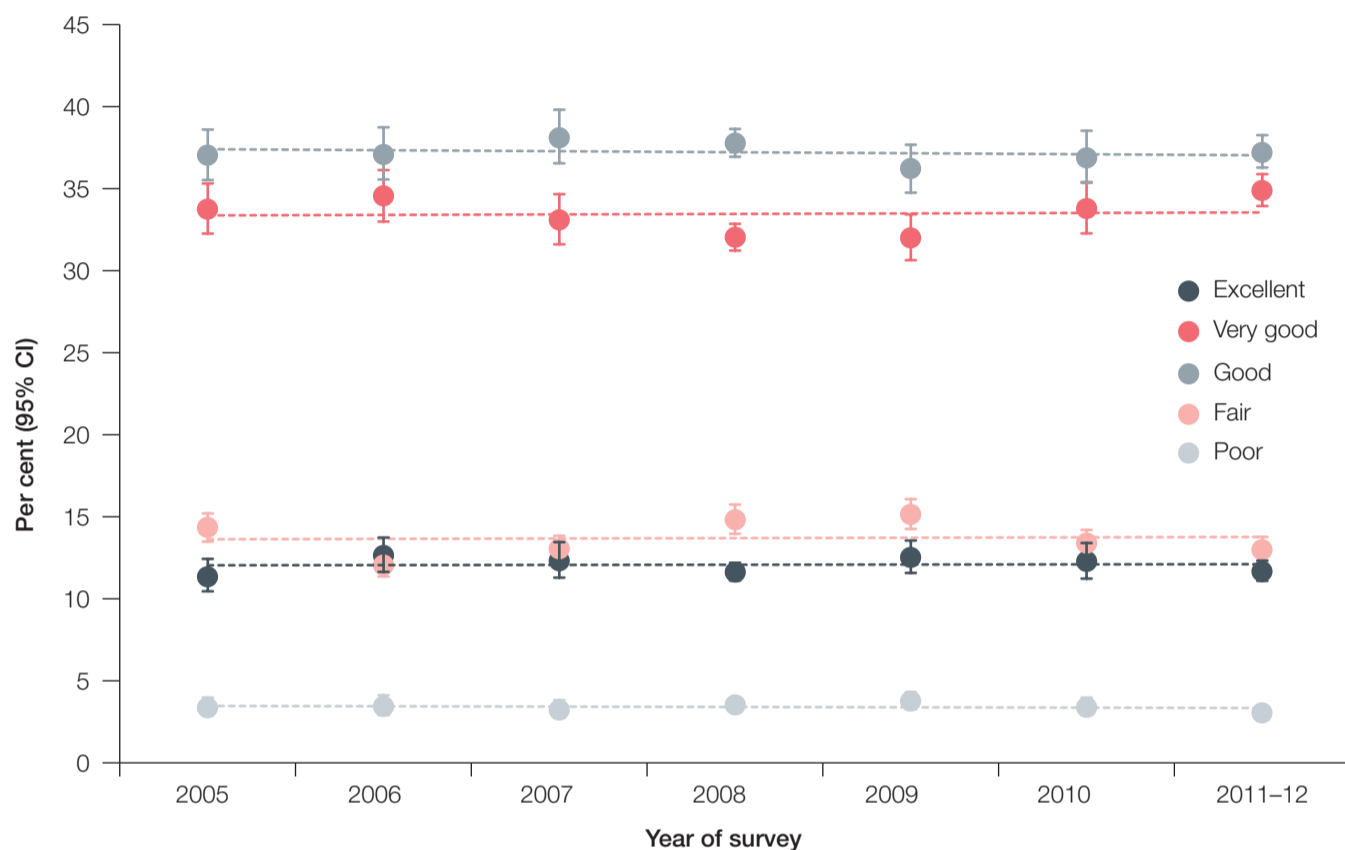
Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares regression was used to test for trends over time.

Table 5.3 shows self-reported health status by Department of Health region and sex. There were no significant differences in self-reported health status between men or women who lived in rural Victoria compared with their metropolitan counterparts. However, the proportion of women and adults who reported fair or poor health was significantly higher in women and people who lived in North & West Metropolitan Region compared with all Victorian women and adults, respectively.

Table 5.3: Self-reported health status, by Department of Health region and sex, Victoria, 2011–12

Region	Excellent / Very good %	95% CI LL	95% CI UL	Good %	95% CI LL	95% CI UL	Fair / Poor %	95% CI LL	95% CI UL
Males									
Eastern Metropolitan	48.9	45.1	52.7	37.2	33.6	40.9	13.7	11.5	16.4
North & West Metropolitan	43.5	40.9	46.2	36.9	34.4	39.5	19.4	17.4	21.6
Southern Metropolitan	46.8	43.5	50.1	37.9	34.9	41.1	15.2	13.1	17.7
Metropolitan males	46.0	44.2	47.8	37.3	35.6	39.1	16.6	15.3	17.9
Barwon-South Western	41.8	34.9	49.1	43.9	37.1	51.0	13.8	10.8	17.5
Gippsland	40.2	35.7	44.9	44.2	39.6	48.8	15.5	12.9	18.5
Grampians	48.7	43.7	53.7	35.9	31.2	40.9	15.2	12.6	18.1
Hume	42.5	38.6	46.5	42.4	38.5	46.5	14.8	12.4	17.4
Loddon Mallee	46.7	41.7	51.8	34.9	30.8	39.3	18.3	14.0	23.5
Rural males	43.5	40.5	46.5	40.8	37.7	43.9	15.5	13.7	17.4
Total	**45.4**	**43.8**	**46.9**	**38.1**	**36.6**	**39.6**	**16.4**	**15.3**	**17.5**
Females									
Eastern Metropolitan	48.1	44.5	51.6	37.9	34.4	41.5	13.8	12.1	15.7
North & West Metropolitan	44.3	42.3	46.4	36.9	34.8	38.9	18.6	17.1	20.3
Southern Metropolitan	49.6	46.8	52.3	34.9	32.3	37.7	15.3	13.5	17.3
Metropolitan females	47.3	45.7	48.8	36.2	34.8	37.7	16.3	15.3	17.4
Barwon-South Western	51.3	45.9	56.7	34.7	29.6	40.1	13.9	10.5	18.1
Gippsland	47.1	43.6	50.5	37.8	34.2	41.5	14.9	12.5	17.7
Grampians	47.4	43.5	51.4	38.4	34.4	42.5	13.8	11.2	16.9
Hume	50.5	47.2	53.7	35.0	32.0	38.1	14.3	12.3	16.6
Loddon Mallee	45.0	41.4	48.7	41.9	38.4	45.5	12.9	11.1	15.1
Rural females	48.4	46.4	50.4	37.4	35.4	39.5	13.9	12.6	15.4
Total	**47.6**	**46.3**	**48.9**	**36.5**	**35.3**	**37.8**	**15.6**	**14.8**	**16.5**
Persons									
Eastern Metropolitan	48.7	46.1	51.3	37.0	34.5	39.5	14.1	12.6	15.8
North & West Metropolitan	43.9	42.2	45.6	36.9	35.2	38.5	19.1	17.8	20.4
Southern Metropolitan	48.2	46.1	50.4	36.4	34.4	38.5	15.2	13.8	16.8
Metropolitan persons	46.7	45.5	47.9	36.7	35.5	37.9	16.5	15.6	17.3
Barwon-South Western	46.7	41.8	51.6	39.1	34.3	44.2	13.9	11.4	16.9
Gippsland	43.6	40.7	46.6	41.1	38.2	44.2	15.0	13.2	17.1
Grampians	48.2	44.9	51.6	36.9	33.7	40.2	14.5	12.6	16.6
Hume	46.5	43.9	49.2	38.7	36.1	41.4	14.5	12.9	16.2
Loddon Mallee	45.3	41.8	48.8	38.8	35.5	42.1	15.8	12.9	19.3
Rural persons	45.9	44.1	47.8	39.1	37.2	41.0	14.7	13.5	16.0
Total	**46.6**	**45.6**	**47.6**	**37.2**	**36.3**	**38.2**	**16.0**	**15.3**	**16.7**

Data were age-standardised to the 2011 Victorian population.

Metropolitan and rural regions are identified by colour as follows: metropolitan/rural.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: **above**/**below** Victoria.

Note that estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused' responses, not reported here.

Self-reported health and selected chronic diseases

Table 5.4, Figure 5.2 and Map 5.1 show self-reported health status by LGA. The proportion of adults who reported excellent or very good health was significantly higher in the LGAs of Bayside (C), Boroondara (C), Frankston (C), Glen Eira (C), Melbourne (C), Mount Alexander (S), Moyne (S), Nillumbik (S), Port Phillip (C), Queenscliffe (B), Strathbogie (S) and Yarra (C) compared with all Victorian adults. With the exception of the LGAs of Mount Alexander (S) and Strathbogie (S), which are of low SES (IRSED quintile 1 or 2), seven of the 12 LGAs are of high SES (IRSED quintile 4 or 5) and the remaining three are neither low nor high SES (IRSED quintile 3). This is not a surprising finding given that better health outcomes are associated with higher SES.

By contrast the proportion of adults who reported excellent or very good health was significantly lower in the LGAs of Bass Coast (S), Brimbank (C), Greater Dandenong (C) and Whittlesea (C) compared with all Victorian adults. These LGAs are of low SES (IRSED quintile 1 or 2).

The proportion of adults who reported fair or poor health was significantly higher in the LGAs of Brimbank (C), Greater Dandenong (C), Hume (C), Whittlesea (C) and Yarriambiack (S) compared with all Victorian adults. These LGAs are of low SES (IRSED quintile 1 or 2).

By contrast the proportion of adults who reported fair or poor health was significantly lower in the LGAs of Benalla (RC), Boroondara (C), Colac-Otway (S), Glen Eira (C), Hepburn (S), Manningham (C), Mansfield (S), Nillumbik (S), Queenscliffe (B), Southern Grampians (S), Surf Coast (S), Towong (S), Wangaratta (RC) and Warrnambool (C) compared with all Victorian adults. There was no pattern in the SES level of the latter LGAs, determined by ISRED quintile.

Table 5.4: Self-reported health status, by LGA, Victoria, 2011–12

LGA	Excellent / Very good %	95% CI LL	95% CI UL	Good %	95% CI LL	95% CI UL	Fair / Poor %	95% CI LL	95% CI UL
Alpine (S)	47.0	37.6	56.6	33.6	25.3	43.1	19.3	11.7	30.0
Ararat (RC)	44.6	37.5	51.8	41.0	33.9	48.5	14.4	10.3	19.6
Ballarat (C)	50.9	44.4	57.4	36.4	30.2	43.0	12.3	9.0	16.5
Banyule (C)	52.2	46.2	58.2	31.0	25.8	36.7	16.7	12.3	22.3
Bass Coast (S)	35.7	29.1	42.9	46.6	38.6	54.6	17.7	12.1	25.2
Baw Baw (S)	49.7	43.3	56.0	37.4	31.5	43.7	12.9	9.4	17.3
Bayside (C)	60.4	52.4	67.9	31.0	24.3	38.5	8.5*	4.2	16.4
Benalla (RC)	50.1	41.1	59.0	40.0	31.4	49.3	9.8	7.2	13.0
Boroondara (C)	56.7	49.6	63.5	33.0	26.6	40.0	10.3	7.5	13.9
Brimbank (C)	35.2	30.0	40.7	41.1	35.5	46.9	23.8	19.4	28.8
Buloke (S)	40.8	33.1	49.0	37.6	31.3	44.2	21.6	14.9	30.1
Campaspe (S)	45.9	38.8	53.1	39.1	32.9	45.6	15.0	10.2	21.6
Cardinia (S)	48.0	42.3	53.8	38.4	32.9	44.2	12.9	9.8	16.7
Casey (C)	41.6	35.7	47.7	41.1	35.4	47.2	17.3	13.6	21.8
Central Goldfields (S)	40.7	30.6	51.7	41.2	31.3	51.9	18.0	13.9	23.0
Colac-Otway (S)	52.7	45.7	59.6	37.8	31.3	44.9	9.3	6.8	12.6
Corangamite (S)	43.0	35.4	50.9	42.6	34.9	50.6	14.3	10.7	18.9
Darebin (C)	42.4	36.7	48.3	36.7	30.9	43.0	20.8	16.5	26.0
East Gippsland (S)	43.4	36.5	50.5	38.7	32.0	45.9	17.9	13.2	23.7
Frankston (C)	54.0	47.7	60.2	31.8	26.4	37.8	13.9	10.2	18.6
Gannawarra (S)	39.3	31.5	47.7	45.5	37.6	53.6	14.9	10.5	20.8
Glen Eira (C)	55.4	49.0	61.6	34.7	28.8	41.1	9.6	7.1	12.8
Glenelg (S)	45.4	37.6	53.4	39.9	32.3	48.0	14.7	11.5	18.7
Golden Plains (S)	53.2	46.8	59.5	31.9	26.0	38.5	14.9	11.5	19.1
Greater Bendigo (C)	43.8	36.1	51.8	38.9	31.1	47.3	17.2	11.2	25.5
Greater Dandenong (C)	31.0	25.9	36.6	39.8	34.4	45.6	29.1	24.1	34.6
Greater Geelong (C)	45.1	37.9	52.5	39.1	32.0	46.6	15.2	11.3	20.2
Greater Shepparton (C)	45.1	37.9	52.5	39.6	32.5	47.2	15.1	11.5	19.8
Hepburn (S)	50.1	41.9	58.2	38.2	30.3	46.6	11.5	8.9	14.7
Hindmarsh (S)	44.0	35.9	52.5	36.0	29.1	43.5	19.6	13.9	27.0
Hobsons Bay (C)	42.9	36.8	49.2	41.3	35.3	47.6	15.8	12.3	20.2
Horsham (RC)	43.9	33.7	54.5	37.0	29.3	45.3	18.7	11.4	29.2
Hume (C)	39.8	34.3	45.7	38.0	32.5	43.8	21.8	17.5	26.9
Indigo (S)	52.8	45.4	60.0	33.8	27.2	41.1	13.4	9.1	19.5
Kingston (C)	46.5	39.8	53.3	36.2	30.0	42.9	17.4	13.0	22.8
Knox (C)	42.7	37.0	48.6	39.8	34.2	45.8	17.4	13.4	22.2
Latrobe (C)	40.7	34.8	46.9	43.7	37.6	49.9	15.3	12.1	19.3
Loddon (S)	46.6	38.3	55.1	34.7	28.0	42.1	18.4	12.6	26.0
Macedon Ranges (S)	51.1	44.6	57.6	35.7	29.5	42.3	13.1	9.5	17.8
Manningham (C)	53.2	46.3	59.9	37.3	30.7	44.4	9.1	6.7	12.2
Mansfield (S)	53.2	44.8	61.5	36.7	28.7	45.5	9.9	7.1	13.5
Maribyrnong (C)	49.0	42.8	55.3	33.9	28.1	40.3	16.9	13.4	21.1

Table 5.4: Self-reported health status, by LGA, Victoria, 2011–12 (continued)

LGA	Excellent / Very good			Good			Fair / Poor		
		95% CI			95% CI			95% CI	
	%	LL	UL	%	LL	UL	%	LL	UL
Maroondah (C)	51.0	44.4	57.5	34.7	28.7	41.2	14.3	10.6	18.9
Melbourne (C)	57.3	51.2	63.2	25.9	21.0	31.5	16.7	12.3	22.4
Melton (S)	40.7	35.1	46.4	40.6	35.2	46.3	18.7	14.7	23.6
Mildura (RC)	48.1	41.5	54.8	38.2	32.0	44.9	13.4	10.2	17.4
Mitchell (S)	42.6	36.0	49.4	40.9	34.3	47.9	16.2	12.3	21.0
Moira (S)	40.2	32.8	48.0	40.7	33.3	48.5	18.8	13.6	25.5
Monash (C)	43.2	36.9	49.7	39.6	33.4	46.2	16.8	12.8	21.9
Moonee Valley (C)	46.8	40.3	53.5	34.7	28.5	41.5	18.5	14.5	23.2
Moorabool (S)	47.5	41.1	53.9	39.8	33.6	46.3	12.2	9.3	15.9
Moreland (C)	42.4	36.4	48.6	39.3	33.3	45.7	18.2	14.4	22.7
Mornington Peninsula (S)	46.7	40.7	52.9	40.2	34.4	46.4	13.0	9.3	18.0
Mount Alexander (S)	55.9	47.8	63.7	30.4	23.4	38.3	13.6	9.5	19.2
Moyne (S)	54.7	47.9	61.3	31.3	25.8	37.4	14.0	10.0	19.3
Murrindindi (S)	40.6	32.3	49.5	40.9	33.1	49.3	17.8	12.0	25.5
Nillumbik (S)	56.6	49.6	63.2	33.4	27.4	40.1	9.4	5.8	14.9
Northern Grampians (S)	50.3	42.6	58.1	32.6	25.8	40.1	16.8	13.1	21.3
Port Phillip (C)	58.8	51.8	65.4	29.9	24.1	36.6	11.1	7.6	15.9
Pyrenees (S)	43.0	32.0	54.7	39.6	28.7	51.6	17.2	13.0	22.5
Queenscliffe (B)	59.0	48.4	68.9	32.5	23.5	43.0	8.4*	5.0	13.7
South Gippsland (S)	49.8	43.5	56.0	38.1	32.0	44.7	11.8	9.0	15.3
Southern Grampians (S)	54.1	44.6	63.3	36.2	27.4	46.0	9.6	7.3	12.4
Stonnington (C)	51.1	44.8	57.5	34.8	28.8	41.3	13.9	9.8	19.4
Strathbogie (S)	57.3	51.5	63.0	27.1	22.0	32.9	15.5	11.6	20.4
Surf Coast (S)	54.6	46.4	62.6	35.3	27.7	43.6	10.0	7.2	13.8
Swan Hill (RC)	45.9	38.8	53.1	38.1	31.3	45.3	16.1	11.3	22.3
Towong (S)	54.6	46.6	62.3	34.1	26.9	42.2	11.2	8.4	14.8
Wangaratta (RC)	48.0	41.3	54.8	42.3	35.7	49.2	9.3	6.6	13.0
Warrnambool (C)	52.6	46.2	58.9	36.8	30.7	43.3	10.6	7.8	14.3
Wellington (S)	42.7	35.5	50.3	43.8	36.4	51.4	13.2	10.0	17.3
West Wimmera (S)	42.0	35.5	48.8	37.2	30.9	44.0	19.9	15.3	25.6
Whitehorse (C)	50.9	44.2	57.6	35.2	28.9	42.0	13.6	10.4	17.6
Whittlesea (C)	34.4	29.2	39.9	42.3	36.7	48.2	22.8	18.4	28.0
Wodonga (RC)	47.9	41.0	54.8	40.1	33.5	47.0	11.8	9.0	15.4
Wyndham (C)	40.1	34.9	45.6	42.0	36.7	47.5	17.4	13.8	21.9
Yarra (C)	57.6	50.2	64.6	27.6	21.3	34.9	14.8	11.1	19.5
Yarra Ranges (S)	44.3	37.5	51.3	40.2	33.8	46.9	15.2	11.1	20.6
Yarriambiack (S)	40.0	32.9	47.6	33.2	26.2	41.0	26.7	19.3	35.5
Victoria	46.6	45.6	47.6	37.3	36.4	38.3	15.9	15.2	16.6

Data were age-standardised to the 2011 Victorian population, using 10-year age groups.

Metropolitan and rural LGAs are identified by colour as follows: metropolitan/rural.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

LGA= Local government area; B = Borough; C = City; S = Shire; RC = Rural City.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

* Estimate has a relative standard error of between 25 and 50 per cent and should be interpreted with caution.

Figure 5.2: Prevalence of fair or poor self-reported health, by LGA, Victoria, 2011–12

Data were age-standardised to the 2011 Victorian population using 10-year age groups.

The horizontal bars represent the 95% CI around the estimate for each LGA.

The vertical line on the graph is the Victorian estimate and the vertical column is the 95% CI around the estimate for Victoria.

Metropolitan and rural LGAs are identified by colour as follows: metropolitan/rural.

95% CI = 95 per cent confidence interval; LGA= local government area; B = Borough; C = City; S = Shire; RC = Rural City.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

Map 5.1: Prevalence of fair or poor self-reported health, by LGA, Victoria, 2011–12

Metropolitan LGAs

A significant HIGHER proportion of the adult population in this LGA has rated their health as fair or poor compared with the state estimate

Not significantly different from the state estimate

A signifcantly LOWER proportion of the adult population in this LGA has rated their health as fair or poor compared with the state estimate
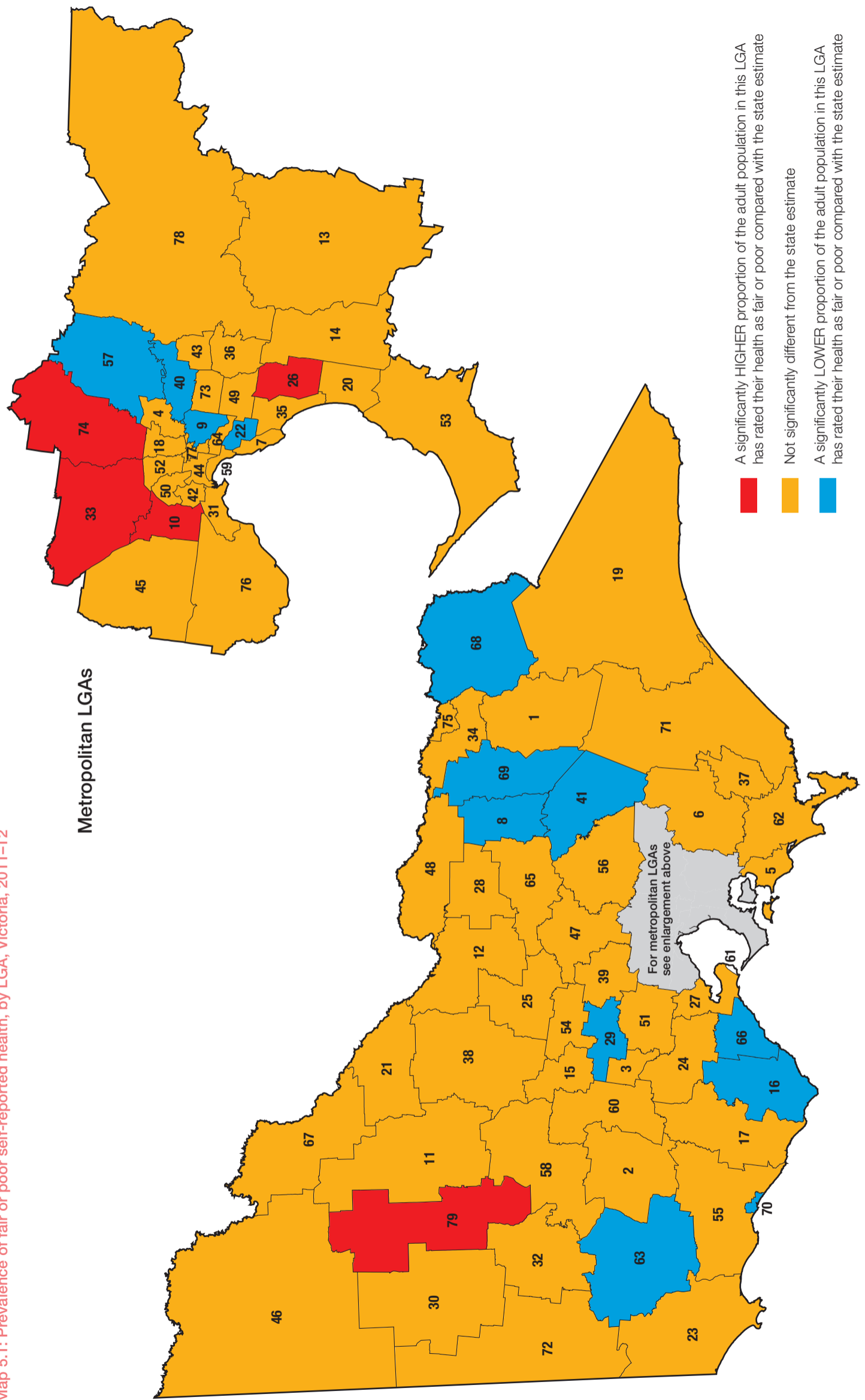
Note: Local government area (LGA) ID is based on the alphabetical order of LGA names (Table iii).

Self-reported health and selected chronic diseases

Table 5.5 shows self-reported health status by selected socioeconomic determinants, modifiable risk factors and health status.

Excellent or very good health

When compared with all Victorian men and women there were significantly *higher* proportions of men and women who reported excellent or very good health with the following characteristics:

- tertiary educated
- total annual household income of $100,000 or more
- low level of psychological distress
- sufficiently physically active
- met fruit and vegetable consumption guidelines
- BMI in the normal weight range.

When compared with all Victorian men there were significantly *higher* proportions of men who reported excellent or very good health with the following characteristics:

- non-smoker
- BMI in the underweight range.

When compared with all Victorian women there were significantly *higher* proportions of women who reported excellent or very good health with the following characteristics:

- employed
- low long-term risk of alcohol-related harm.

When compared with all Victorian men and women there were significantly *lower* proportions of men and women who reported excellent or very good health with the following characteristics:

- primary education only
- unemployed or not in the labour force
- total annual household income less than $40,000
- moderate, high or very high levels of psychological distress
- sedentary or insufficiently physically active
- met neither fruit nor vegetable consumption guidelines
- current smoker
- abstainer from alcohol
- obese
- diagnosed with diabetes by a doctor.

When compared with all Victorian men there were significantly *lower* proportions of men who reported excellent or very good health with the following characteristics:

- at long-term risk of alcohol-related harm.

Fair or poor health

When compared with all Victorian men and women there were significantly *higher* proportions of men and women who reported fair or poor health with the following characteristics:

- primary education only
- not in the labour force
- total annual household income less than $40,000
- moderate, high or very high levels of psychological distress
- sedentary or insufficiently physically active
- met neither fruit nor vegetable consumption guidelines
- current smoker
- abstainer from alcohol
- obese
- diagnosed with diabetes by a doctor.

When compared with all Victorian women there was a significantly *higher* proportion of women who reported fair or poor health with the following characteristic:

- unemployed.

When compared with all Victorian men and women there were significantly *lower* proportions of men and women who reported fair or poor health with the following characteristics:

- tertiary educated
- currently employed
- total annual household income of $100,000 or more
- low level of psychological distress
- sufficiently physically active
- met fruit guidelines
- BMI in the normal weight range.

When compared with all Victorian men there was a significantly *lower* proportion of men who reported fair or poor health with the following characteristics:

- non-smoker
- BMI in the overweight range.

When compared with all Victorian women there was a significantly *lower* proportion of women who reported fair or poor health with the following characteristics:

- total annual household income between $40,000 to less than $100,000
- met both fruit and vegetable guidelines
- low long-term risk of alcohol-related harm.

Table 5.5: Self-reported health status, by selected socioeconomic determinants, modifiable risk factors and health status, Victoria, 2011–12

	Excellent / Very good			Good			Fair / Poor		
	%	95% CI		%	95% CI		%	95% CI	
		LL	UL		LL	UL		LL	UL
Males	**45.4**	**43.8**	**46.9**	**38.1**	**36.6**	**39.6**	**16.4**	**15.3**	**17.5**
Area of Victoria									
Rural	43.5	40.5	46.5	40.8	37.7	43.9	15.5	13.7	17.4
Metropolitan	46.0	44.2	47.8	37.3	35.6	39.1	16.6	15.3	17.9
Education level									
Primary	37.5	34.4	40.7	40.6	37.4	43.8	21.7	19.2	24.4
Secondary	43.8	41.2	46.5	39.4	36.9	42.0	16.6	14.7	18.7
Tertiary	55.2	52.7	57.7	33.3	31.0	35.8	11.2	9.8	12.8
Employment status (age < 65 years)									
Employed	48.4	46.3	50.6	38.6	36.5	40.7	12.9	11.6	14.4
Unemployed	34.3	27.5	41.8	47.4	39.6	55.2	18.3	13.5	24.2
Not in labour force	37.4	32.0	43.1	32.6	27.1	38.7	29.8	24.6	35.5
Total annual household income									
< $40,000	33.1	28.9	37.5	39.9	35.5	44.4	26.9	23.6	30.4
$40,000 to < $100,000	44.9	42.3	47.5	41.1	38.5	43.8	13.8	12.0	15.7
≥ $100,000	57.2	54.1	60.2	32.8	30.0	35.7	10.0	8.2	12.1
Psychological distress level [a]									
Low (< 16)	51.7	49.7	53.6	37.1	35.2	39.0	11.2	10.1	12.3
Moderate (16–21)	35.6	32.4	38.8	42.1	38.9	45.4	22.1	19.5	24.9
High (22–29)	21.4	17.3	26.2	38.9	33.8	44.3	39.3	34.1	44.8
Very high (≥ 30)	9.8*	5.9	15.8	31.8	23.9	40.8	58.4	49.1	67.1
Physical activity [b]									
Sedentary	24.6	19.1	31.0	42.4	35.7	49.5	32.9	26.9	39.5
Insufficient time and sessions	34.6	31.5	37.8	42.7	39.4	46.1	22.6	19.9	25.5
Sufficient time and sessions	51.4	49.5	53.2	36.5	34.7	38.3	11.9	10.8	13.1
Met fruit / vegetable guidelines [c]									
Both guidelines	68.2	60.7	74.9	20.7	16.4	25.7	11.1*	6.5	18.4
Vegetable guidelines [d]	64.4	58.1	70.3	25.1	20.4	30.5	10.3	6.7	15.6
Fruit guidelines [d]	51.5	49.0	54.1	36.5	34.1	39.0	11.9	10.5	13.4
Neither	41.3	39.3	43.4	39.3	37.4	41.3	19.1	17.6	20.7
Smoking status									
Current smoker	30.0	27.0	33.1	45.2	41.6	48.8	24.7	21.8	27.8
Ex-smoker	48.9	45.5	52.4	35.2	32.0	38.6	15.7	13.9	17.7
Non-smoker	50.9	48.8	52.9	36.1	34.2	38.1	12.8	11.5	14.3
Long-term risk of alcohol-related harm [e]									
Abstainer	38.1	33.9	42.5	40.3	36.0	44.8	21.5	17.8	25.7
Low risk	47.3	45.6	49.1	37.8	36.1	39.5	14.7	13.6	15.9
Risky or high risk	32.7	25.7	40.6	39.4	32.6	46.7	27.8	22.3	34.2
Body weight status [f]									
Underweight	56.8	47.6	65.5	22.0	16.9	28.0	21.3	14.6	30.0
Normal	54.9	52.5	57.3	32.5	30.3	34.8	12.4	10.9	14.1
Overweight	45.1	42.4	47.7	41.4	38.8	44.1	13.3	11.8	15.0
Obese	28.5	24.8	32.6	41.1	37.2	45.2	30.2	26.5	34.1
Diabetes (excluding gestational)									
No diabetes	47.0	45.4	48.6	37.7	36.2	39.3	15.1	14.0	16.2
Diabetes	18.1	14.8	22.1	45.4	38.8	52.2	26.8	20.5	34.1

a. Based on the Kessler 10 scale for psychological distress.
b. Based on national guidelines (DoHA 1999).
c. Based on national guidelines (NHMRC 2003).
d. Includes those meeting both guidelines.
e. Long-term risk of alcohol-related harm refers to the increased risk of developing various cancers, cirrhosis of the liver, cognitive problems and dementia, and alcohol dependence.
f. Based on body mass index (BMI).

Data were age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: **above**/**below** Victoria.

Note that estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused' responses, not reported here.

| | Excellent / Very good | | | Good | | | Fair / Poor | | |
| | | 95% CI | | | 95% CI | | | 95% CI | |
	%	LL	UL	%	LL	UL	%	LL	UL
Females	**47.6**	**46.3**	**48.9**	**36.5**	**35.3**	**37.8**	**15.6**	**14.8**	**16.5**
Area of Victoria									
Rural	48.4	46.4	50.4	37.4	35.4	39.5	13.9	12.6	15.4
Metropolitan	47.3	45.7	48.8	36.2	34.8	37.7	16.3	15.3	17.4
Education level									
Primary	35.8	33.3	38.5	39.3	36.2	42.4	24.8	22.1	27.6
Secondary	47.9	45.9	50.0	37.6	35.6	39.6	14.4	13.0	15.8
Tertiary	54.8	51.8	57.8	34.4	31.5	37.4	10.5	9.4	11.7
Employment status (age < 65 years)									
Employed	52.5	50.6	54.4	36.8	35.0	38.7	10.7	9.6	11.8
Unemployed	35.9	29.7	42.7	40.3	33.8	47.2	23.2	18.2	29.2
Not in labour force	42.7	40.0	45.5	36.3	33.7	39.1	20.8	18.7	23.0
Total annual household income									
< $40,000	35.5	32.5	38.6	38.6	35.6	41.8	25.7	23.1	28.3
$40,000 to < $100,000	50.0	47.8	52.2	36.6	34.4	38.8	13.3	11.9	14.8
≥ $100,000	65.4	62.3	68.4	27.2	24.4	30.1	7.4	6.0	9.1
Psychological distress level [a]									
Low (< 16)	56.9	55.2	58.6	33.5	31.9	35.2	9.5	8.6	10.4
Moderate (16–21)	39.1	36.7	41.5	41.0	38.6	43.4	19.7	18.0	21.5
High (22–29)	25.5	22.1	29.2	41.0	37.3	44.8	33.4	30.1	36.9
Very high (≥ 30)	13.8	9.8	19.3	36.8	30.6	43.5	49.1	42.9	55.4
Physical activity [b]									
Sedentary	24.1	19.2	29.7	35.6	30.5	41.0	36.1	30.7	41.9
Insufficient time and sessions	38.5	36.2	40.9	41.3	38.8	43.8	20.1	18.2	22.1
Sufficient time and sessions	54.1	52.5	55.7	34.2	32.7	35.8	11.5	10.6	12.5
Met fruit / vegetable guidelines [c]									
Both guidelines	61.0	56.2	65.5	29.8	25.6	34.4	9.2	6.9	12.2
Vegetable guidelines [d]	58.7	54.7	62.6	30.4	26.8	34.3	10.8	8.6	13.4
Fruit guidelines [d]	53.4	51.5	55.3	33.9	32.0	35.7	12.6	11.5	13.8
Neither	41.6	39.9	43.4	39.4	37.6	41.2	18.8	17.5	20.1
Smoking status									
Current smoker	32.3	29.3	35.4	43.6	40.3	47.0	23.9	21.3	26.8
Ex-smoker	47.9	43.9	51.9	36.5	32.5	40.6	15.5	13.1	18.2
Non-smoker	50.2	48.7	51.8	34.8	33.3	36.4	14.7	13.7	15.8
Long-term risk of alcohol-related harm [e]									
Abstainer	36.9	34.1	39.8	39.1	36.2	42.1	23.7	21.5	26.0
Low risk	50.9	49.4	52.3	35.9	34.5	37.3	13.2	12.3	14.1
Risky or high risk	48.5	41.8	55.3	33.6	28.0	39.7	17.5	12.6	23.9
Body weight status [f]									
Underweight	48.6	42.2	55.1	35.1	29.2	41.6	15.9	12.2	20.5
Normal	58.3	56.5	60.1	31.1	29.3	32.8	10.5	9.5	11.6
Overweight	46.1	43.4	48.8	38.8	36.1	41.5	15.0	13.2	16.9
Obese	27.5	24.6	30.7	42.7	39.0	46.4	29.6	26.3	33.1
Diabetes (excluding gestational)									
No diabetes	49.0	47.7	50.2	36.5	35.2	37.8	14.4	13.6	15.2
Diabetes	16.4	12.2	21.7	37.0	32.6	41.6	45.9	40.2	51.7

a. Based on the Kessler 10 scale for psychological distress.
b. Based on national guidelines (DoHA 1999).
c. Based on national guidelines (NHMRC 2003).
d. Includes those meeting both guidelines.
e. Long-term risk of alcohol-related harm refers to the increased risk of developing various cancers,

cirrhosis of the liver, cognitive problems and dementia, and alcohol dependence.
f. Based on body mass index (BMI).

Data were age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: **above**/**below** Victoria.

Note that estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused' responses, not reported here.

Further analysis was undertaken of the relationship between SES and age-adjusted self-reported health status by health status category using total annual household income as a measure of SES (Figure 5.3). The proportion of men and women who reported excellent or very good health significantly increased with increasing total annual household income. While there was no significant association between total annual household income and the proportion of men who reported good health, the proportion of women significantly declined with increasing total annual household income. The proportion of men and women who reported fair or poor health significantly declined with increasing total annual household income. These findings are consistent with the literature where poorer health outcomes are almost always associated with declining SES. These findings are presented in Table 5.5.

Figure 5.3: Self-reported health status, by total annual household income, Victoria, 2011–12
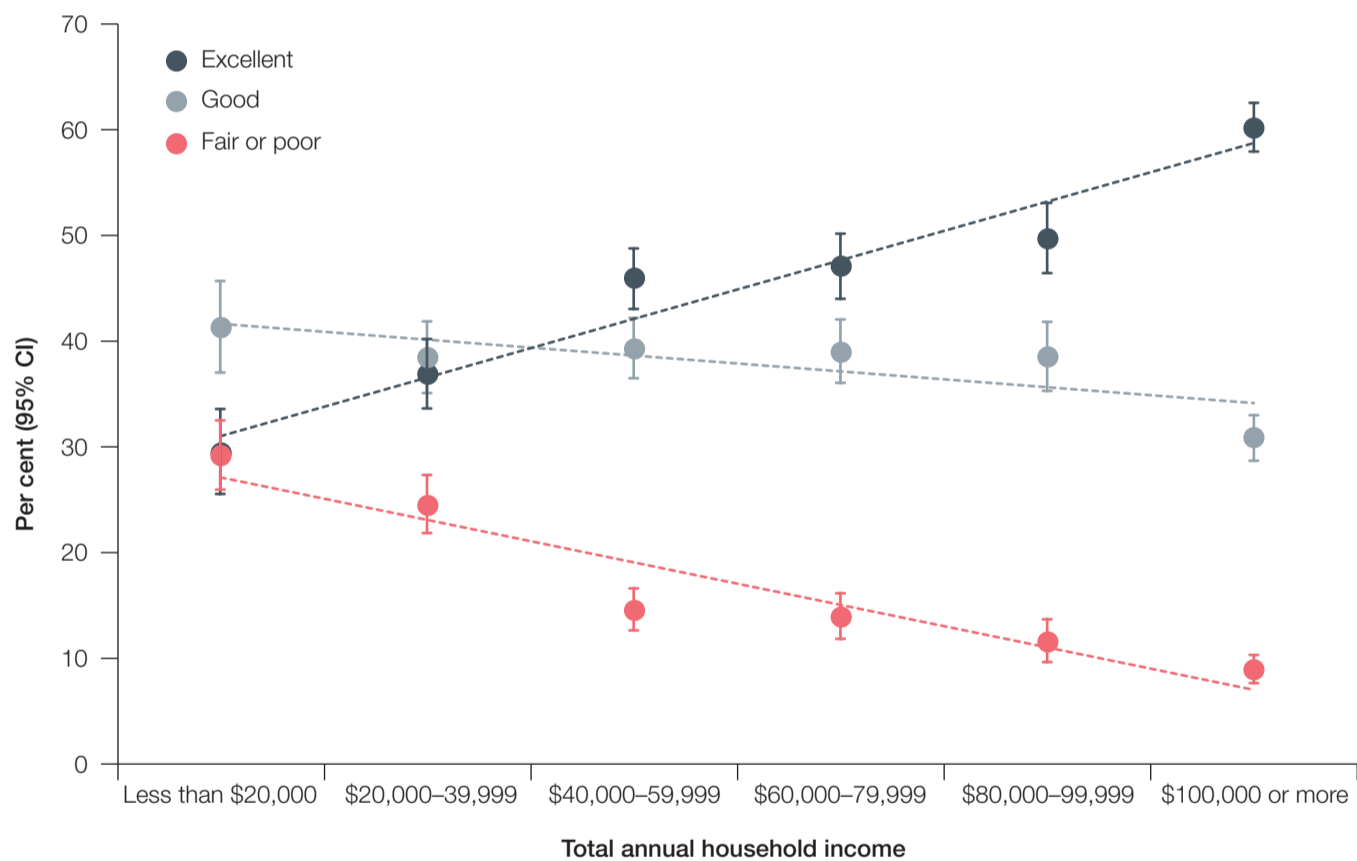
Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares linear regression was used to test for statistical significance.

Selected chronic diseases

Table 5.6 shows the lifetime prevalence of self-reported doctor-diagnosed heart disease, stroke, cancer, osteoporosis, SLE and arthritis, by age group and sex. Overall, the prevalence of heart disease in Victorian adults was 7.0 per cent, stroke 2.4 per cent, cancer 7.0 per cent, osteoporosis 5.3 per cent, SLE 0.4 per cent and arthritis 19.9 per cent.

Heart disease

The prevalence of heart disease was significantly higher in men compared with women. There was also an age-related increase in the prevalence of heart disease with men aged 55 years or over and women aged 65 years or over having a significantly higher prevalence compared with all Victorian men and women, respectively.

Stroke

Overall, the prevalence of stroke was not significantly different between the sexes. However, there was a significantly higher prevalence of stroke in men aged 65 years or over compared with women aged 65 years or over. Stroke was rarely reported in men and women aged 18–44 years but increasingly reported with increasing age thereafter. There was a significantly higher prevalence of stroke in both men and women aged 65 years or over compared with all Victorian men and women, respectively.

Cancer

The prevalence of cancer was not significantly different between the sexes. There was an age-related increase in the prevalence of cancer in both men and women, with men and women aged 55 years or over having a significantly higher prevalence compared with all Victorian men and women, respectively.

Osteoporosis

The prevalence of osteoporosis was significantly higher in men aged 65 years or over and women and adults 55 years or over compared with the prevalence in all Victorian men, women and adults, respectively. In contrast, the prevalence was significantly lower in men aged 35–44 years and women and adults aged 25–54 years compared with the prevalence in all Victorian men, women and adults, respectively.

Systemic lupus erythematosus

The prevalence of SLE was significantly higher in women compared with men. SLE is an autoimmune disease and autoimmune diseases tend to be more common in females compared with males. There was a significantly higher prevalence of SLE in women aged 55-64 years compared with all Victorian women.

Arthritis

The prevalence of arthritis was significantly higher in women compared with men. There was an age-related increase in the prevalence of arthritis in both men and women, with men and women aged 55 years or over having a significantly higher prevalence compared with all Victorian men and women, respectively.

Table 5.6: Prevalence of selected chronic diseases, by age group and sex, Victoria, 2011–12

Age group (years)	Heart disease %	95% CI LL	95% CI UL	Stroke %	95% CI LL	95% CI UL	Cancer %	95% CI LL	95% CI UL	Osteoporosis %	95% CI LL	95% CI UL	Systemic Lupus Erythematosus %	95% CI LL	95% CI UL	Arthritis %	95% CI LL	95% CI UL
Males																		
18–24	0.9*	0.4	2.0	**	**	**	**	**	**	0.0	-	-	0.0	-	-	0.8*	0.4	1.8
25–34	1.3*	0.5	3.4	**	**	**	1.8*	0.7	4.5	**	**	**	**	**	**	4.0*	2.2	7.3
35–44	2.5	1.6	3.7	0.8*	0.4	1.7	2.5	1.7	3.5	0.6*	0.3	1.3	**	**	**	6.8	5.4	8.4
45–54	4.6	3.5	5.9	1.1	0.7	1.8	5.4	4.3	6.8	1.7	1.1	2.6	**	**	**	12.4	10.8	14.3
55–64	13.2	11.5	15.1	3.3	2.5	4.3	9.5	8.1	11.1	3.4	2.6	4.4	0.3*	0.1	0.6	27.5	25.2	29.8
65+	27.9	26.1	29.8	8.6	7.5	9.8	19.8	18.2	21.4	7.4	6.4	8.5	0.3*	0.2	0.6	40.4	38.4	42.5
Total	8.7	8.2	9.3	2.6	2.3	2.9	6.7	6.2	7.3	2.4	2.1	2.7	0.2*	0.1	0.3	15.6	14.8	16.5
Females																		
18–24	1.1*	0.5	2.5	**	**	**	**	**	**	**	**	**	**	**	**	2.2*	1.0	4.8
25–34	0.8*	0.4	1.7	1.0*	0.5	2.1	1.9*	1.0	3.7	0.7*	0.4	1.5	0.1*	0.0	0.3	4.9	3.6	6.7
35–44	1.5	0.9	2.4	0.7*	0.4	1.2	3.7	2.9	4.6	1.0	0.7	1.6	0.5*	0.3	1.1	6.9	5.9	8.2
45–54	3.0	2.3	3.8	1.5	1.0	2.1	7.4	6.3	8.7	4.7	3.9	5.7	0.9	0.6	1.4	23.0	21.2	24.9
55–64	6.9	5.9	8.1	3.0	2.3	3.9	11.9	10.6	13.4	13.3	11.9	14.9	1.1	0.8	1.7	43.4	41.2	45.5
65+	17.7	16.4	19.1	6.1	5.3	7.1	16.8	15.6	18.2	26.2	24.6	27.7	0.9	0.6	1.3	61.2	59.5	63.0
Total	5.5	5.1	5.9	2.2	2.0	2.5	7.3	6.7	7.8	8.0	7.6	8.4	0.6	0.5	0.8	23.7	23.1	24.4
Persons																		
18–24	1.0*	0.6	1.7	**	**	**	**	**	**	**	**	**	**	**	**	1.5*	0.8	2.7
25–34	1.0*	0.5	2.0	0.7*	0.3	1.4	1.9*	1.1	3.3	0.5*	0.3	1.1	**	**	**	4.5	3.2	6.2
35–44	2.0	1.5	2.7	0.8	0.5	1.2	3.1	2.5	3.7	0.8	0.6	1.2	0.3*	0.2	0.6	6.8	6.0	7.8
45–54	3.8	3.1	4.5	1.3	1.0	1.7	6.5	5.6	7.4	3.2	2.7	3.9	0.5	0.3	0.7	17.8	16.5	19.2
55–64	10.0	9.0	11.1	3.1	2.6	3.8	10.7	9.8	11.8	8.4	7.6	9.4	0.7	0.5	1.0	35.6	34.0	37.2
65+	22.3	21.2	23.5	7.2	6.6	8.0	18.2	17.1	19.2	17.6	16.6	18.7	0.6	0.5	0.8	51.8	50.5	53.2
Total	7.0	6.7	7.3	2.4	2.2	2.6	7.0	6.6	7.4	5.3	5.1	5.6	0.4	0.3	0.5	19.9	19.4	20.5

Data are age-specific estimates, except for 'Total', which represent the estimates for Victoria and have been age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

** Estimate has a RSE greater than 50 per cent and is not reported as it is unreliable for general use.

The trend over time from 2003 to 2011–12 of the age-adjusted and crude prevalence of heart disease (Figure 5.4), stroke, cancer (Figure 5.5), osteoporosis (Figure 5.6) and arthritis was investigated. The purpose of adjusting for age is to eliminate age as a possible explanation for any observed changes. As the Victorian population age structure is changing with an increasing proportion of Victorians falling into the older age categories, and the aforementioned diseases are age-related (i.e. increasing in prevalence with age), the crude prevalence estimates give a realistic picture of any absolute increases that are observed. Crude prevalence estimates are also useful for service planning purposes. Therefore both age-adjusted prevalence estimates (also known as age-standardised) and crude prevalence estimates are presented for the following health conditions.
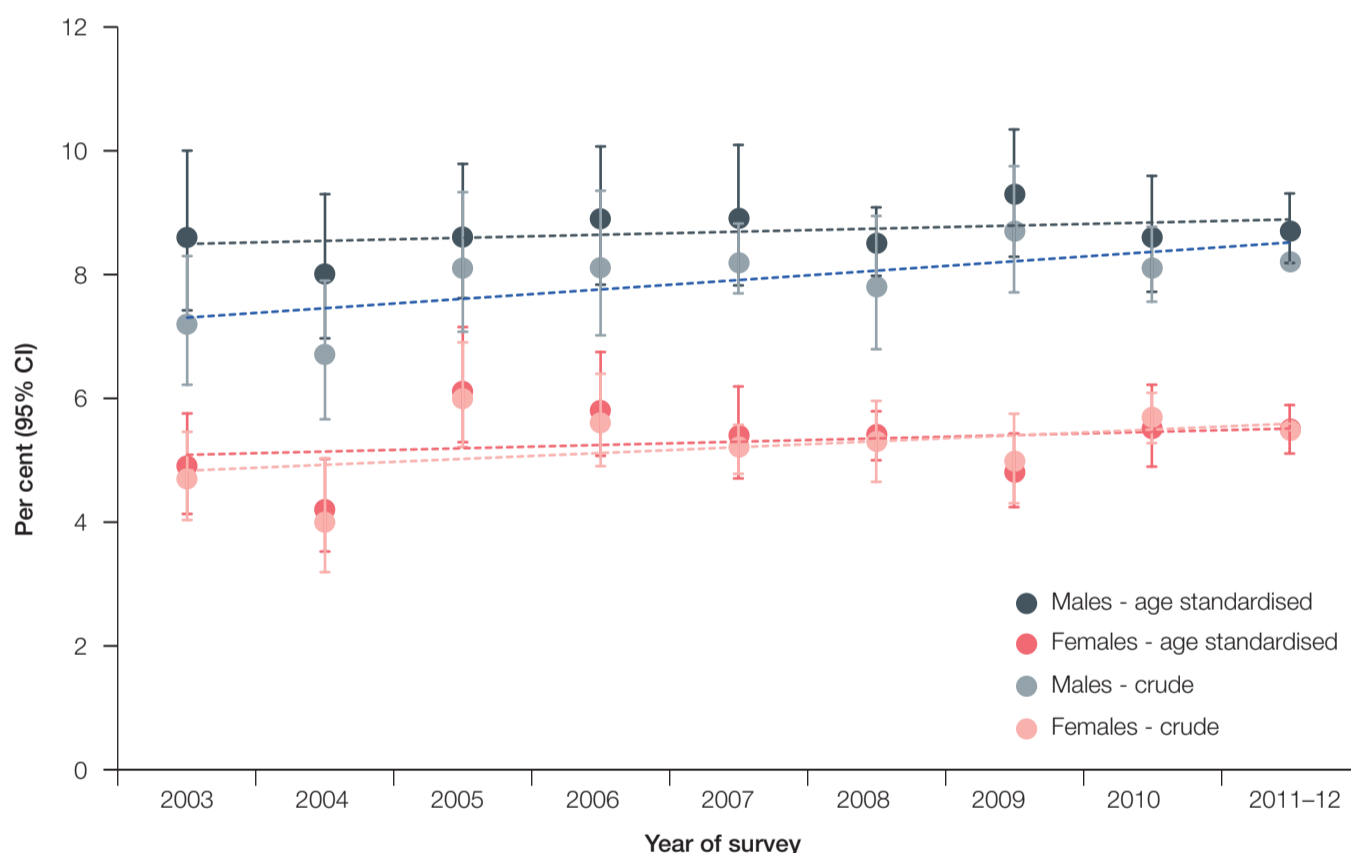
Stroke

The lifetime prevalence of self-reported doctor-diagnosed stroke remained constant between 2003 and 2011–12 irrespective of whether the estimates were adjusted for age or not.

Heart disease

The lifetime prevalence of self-reported doctor-diagnosed heart disease remained constant in women and adults between 2003 and 2011–12 irrespective of whether the estimates were adjusted for age or not. However, while the age-adjusted prevalence of heart disease in men also remained unchanged, the crude prevalence significantly increased between 2003 and 2011–12. The increase appears to be due to the increasing proportion of older men in Victoria.

Figure 5.4: Prevalence of heart disease, from 2003 to 2011–12, Victoria

Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

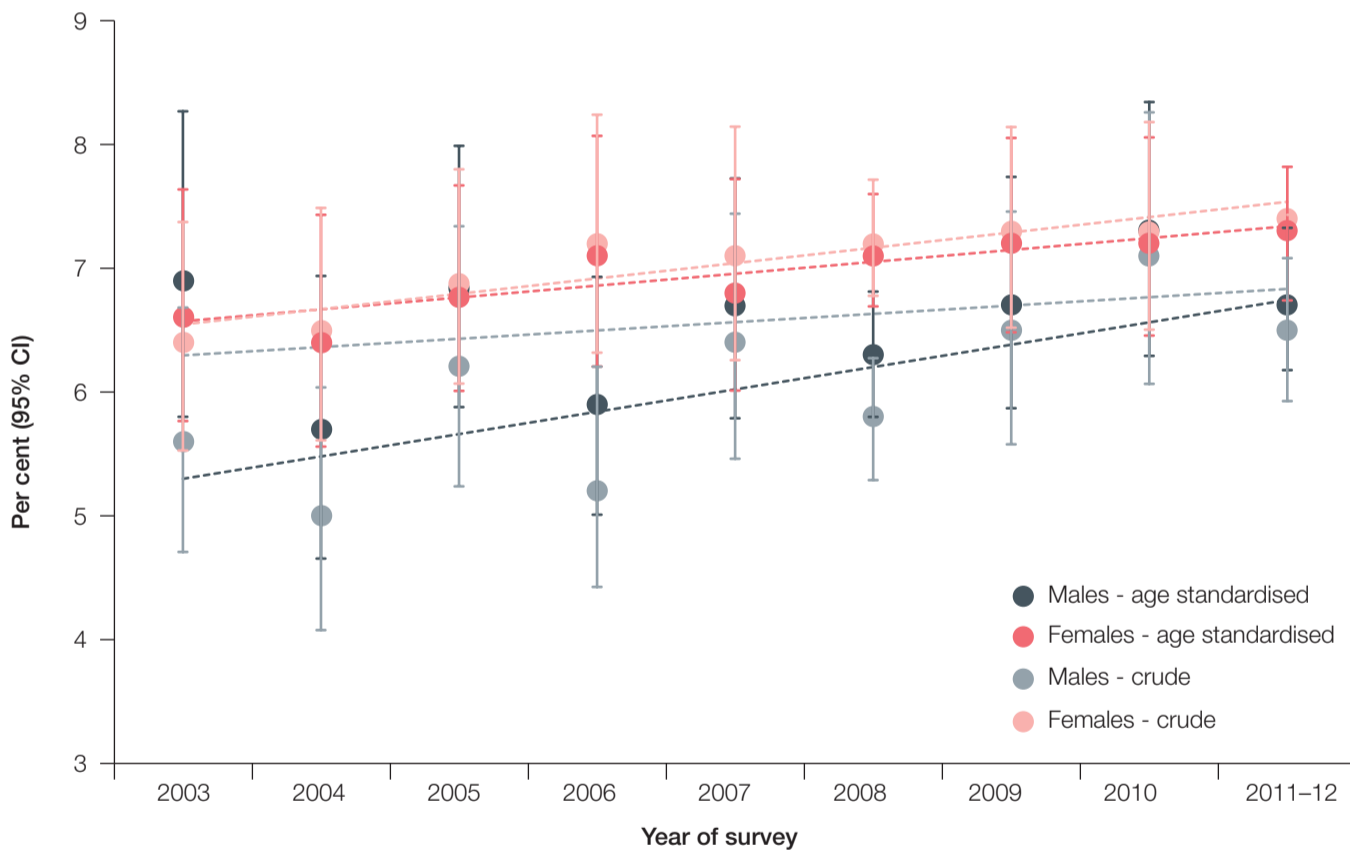Ordinary least squares regression was used to test for trends over time.

Cancer

The lifetime prevalence of self-reported doctor-diagnosed cancer significantly increased in women and adults between 2003 and 2011–12 irrespective of whether the estimates were adjusted for age or not. By contrast while the crude prevalence of cancer also significantly increased in men, the age-adjusted prevalence remained constant, suggesting that the increase in cancer in men is primarily due to the increasing proportion of older men in Victoria. However, the findings for women suggest that there is an increase in the prevalence of cancer in women above and beyond what would be expected due to the increase in the ageing population.

Breast cancer is the most common form of cancer in Australian women, accounting for more than 27 per cent of cases. Moreover Australian statistics show that while the crude incidence rate of breast cancer is increasing (presumably due

to the increase in the ageing population), the incidence of age-adjusted breast cancer stabilised after 1995. However, there has been much attention recently to the finding that there is substantial over-diagnosis of invasive breast cancer due to breast cancer screening by mammography, with 15–25 per cent of breast cancers detected and treated that may not become clinically apparent during a woman's lifetime (Kalager et al. 2012). Given that there has been a substantial increase in mammographic screening over the past decade, it is possible that the finding from the Victorian Population Health Survey of a significant increase in self-reported, age-adjusted cancer reflects an increase in diagnosis (BreastScreen Victoria 2013).

Figure 5.5: Prevalence of cancer, from 2003 to 2011–12, Victoria

Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares regression was used to test for trends over time.

Osteoporosis

The lifetime prevalence of self-reported doctor-diagnosed osteoporosis significantly increased in both men and women between 2003 and 2011–12 irrespective of whether the estimates were adjusted for age or not. The increase in prevalence of osteoporosis is above and beyond the increase that would be expected due to the increase in the ageing population. Osteoporosis is a condition known to be significantly under-diagnosed and hence there has been a major change in its management by medical practitioners over the decade from 1998 to 2008, with the management rate doubling due to greater awareness by medical practitioners (AIHW 2011). The findings from the Victorian Population Health Survey may reflect an increase in diagnosis.

Figure 5.6: Prevalence of osteoporosis, from 2003 to 2011–12, Victoria

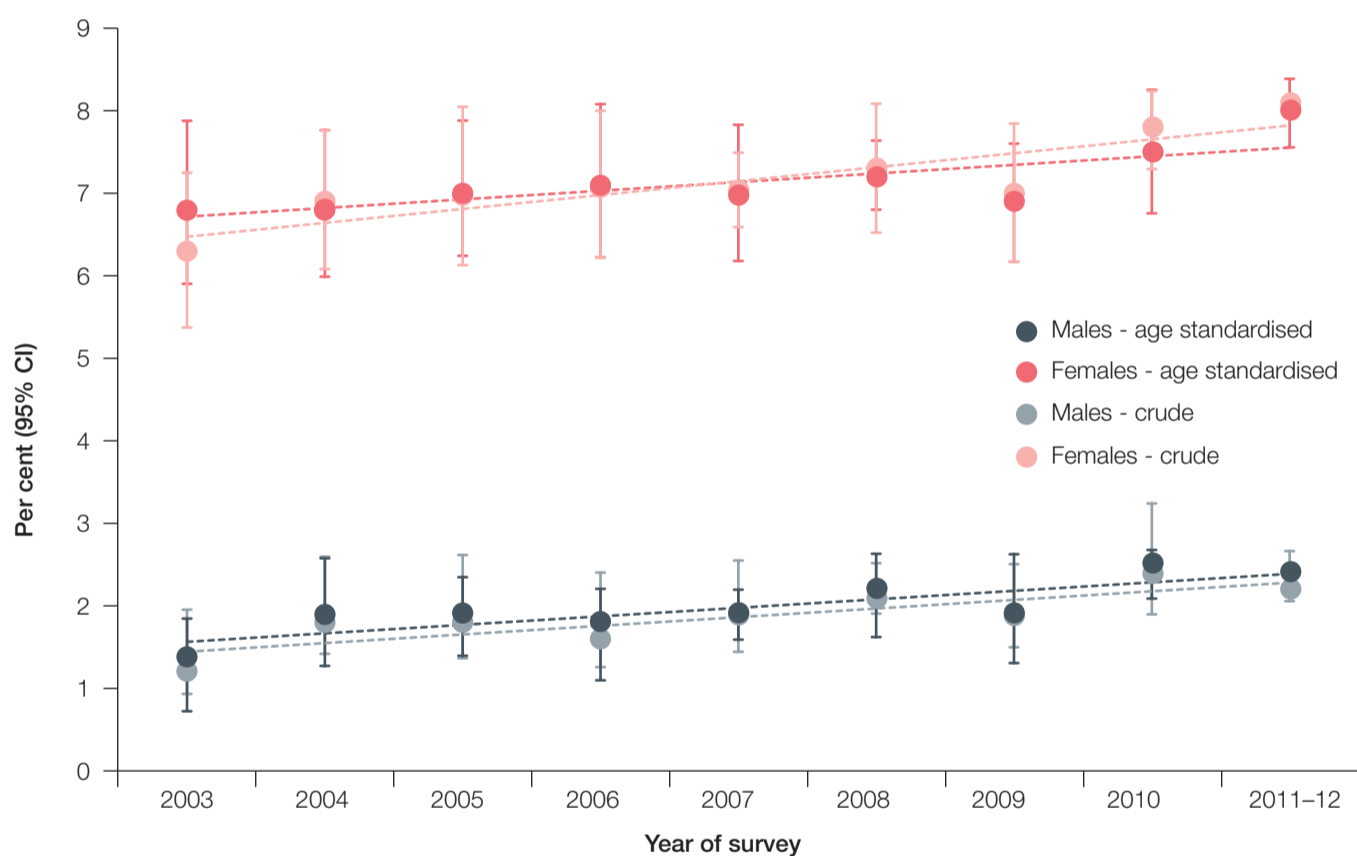Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares regression was used to test for trends over time..

Arthritis

The lifetime prevalence of self-reported doctor-diagnosed arthritis remained constant between 2003 and 2011–12 irrespective of whether the estimates were adjusted for age or not.

Table 5.7 shows the lifetime prevalence of self-reported doctor diagnosed heart disease, stroke, cancer, osteoporosis, SLE and arthritis, by Department of Health region and sex.

Heart disease

There were no significant differences in the prevalence of heart disease in men or women who lived in rural compared with metropolitan Victoria. Similarly, there were no significant regional differences in the prevalence of heart disease in either men or women.

Stroke

There were no significant differences in the prevalence of stroke in men or women who lived in rural compared with metropolitan Victoria. However, there was a significantly higher prevalence of stroke in men and adults who lived in Grampians Region compared with all Victorian men and adults, respectively.

Cancer

There were no significant differences in the prevalence of cancer in men or women who lived in rural compared with metropolitan Victoria. Similarly, there were no significant regional differences in the prevalence of cancer in either men or women.

Osteoporosis

There were no significant differences in the prevalence of osteoporosis in men or women who lived in rural compared with metropolitan Victoria. Similarly, there were no significant regional differences in the prevalence of osteoporosis in either men or women.

Systemic lupus erythematosus

There were no significant differences in the prevalence of SLE in men or women who lived in rural compared with metropolitan Victoria. However, there was a significantly higher prevalence of SLE in women who lived in Gippsland Region compared with all Victorian women.

Arthritis

There was a significantly higher prevalence of arthritis in men and adults but not women, who lived in rural compared with metropolitan Victoria. There was also a significantly higher prevalence of arthritis in men who lived in Gippsland Region, Grampians Region and Loddon Mallee Region compared with all Victorian men. By contrast there was a significantly lower prevalence in men who lived in Southern Metropolitan Region compared with all Victorian men.

Table 5.7: Prevalence of selected chronic diseases, by Department of Health region and sex, Victoria, 2011–12

Region	Heart disease %	95% CI LL	UL	Stroke %	95% CI LL	UL	Cancer %	95% CI LL	UL	Osteoporosis %	95% CI LL	UL	Systemic Lupus Erythematosus %	95% CI LL	UL	Arthritis %	95% CI LL	UL
Males																		
Eastern Metropolitan	8.1	6.9	9.5	2.1	1.5	2.9	7.0	5.6	8.7	2.0	1.5	2.8	**	**	**	14.7	13.0	16.4
North & West Metropolitan	8.4	7.4	9.5	2.6	2.0	3.3	6.2	5.2	7.5	2.8	2.2	3.5	**	**	**	15.2	13.8	16.7
Southern Metropolitan	9.7	8.4	11.1	2.6	1.8	3.7	5.9	4.9	7.1	1.9	1.3	2.7	**	**	**	13.0	11.7	14.5
Metropolitan males	8.7	8.0	9.4	2.4	2.0	2.9	6.4	5.7	7.1	2.3	1.9	2.7	0.2*	0.1	0.3	14.4	13.5	15.3
Barwon-South Western	9.8	6.7	14.0	2.7	1.9	3.8	7.7	5.8	10.0	2.3	1.5	3.7	**	**	**	19.9	14.5	26.6
Gippsland	9.8	8.1	11.8	2.8	2.0	3.8	7.0	5.7	8.6	2.0	1.3	3.0	**	**	**	19.5	17.1	22.3
Grampians	9.0	7.7	10.4	4.0	3.0	5.4	7.7	6.5	9.2	2.8	2.1	3.6	0.1*	0.0	0.3	19.6	17.0	22.5
Hume	9.3	8.1	10.7	2.4	1.8	3.1	8.1	6.8	9.7	2.3	1.7	2.9	0.4*	0.2	0.8	16.5	14.9	18.3
Loddon Mallee	7.4	6.3	8.8	2.9	2.1	4.0	7.3	6.1	8.7	3.4	2.5	4.6	**	**	**	19.4	17.3	21.8
Rural males	9.0	8.0	10.2	2.9	2.5	3.3	7.5	6.8	8.3	2.6	2.2	3.0	0.2*	0.1	0.3	19.4	17.0	22.0
Total	8.7	8.2	9.3	2.6	2.3	2.9	6.7	6.2	7.3	2.4	2.1	2.7	0.2*	0.1	0.3	15.6	14.8	16.5

Metropolitan and rural regions are identified by colour as follows: metropolitan/rural.

Data were age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: **above**/below Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

** Estimate has a RSE greater than 50 per cent and is not reported as it is unreliable for general use.

Note that estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused' responses, not reported here.

Table 5.7: Prevalence of selected chronic diseases, by Department of Health region and sex, Victoria, 2011–12 (continued)

Region	Heart disease %	95% CI LL	UL	Stroke %	95% CI LL	UL	Cancer %	95% CI LL	UL	Osteoporosis %	95% CI LL	UL	Systemic Lupus Erythematosus %	95% CI LL	UL	Arthritis %	95% CI LL	UL
Females																		
Eastern Metropolitan	5.0	3.9	6.2	2.1	1.6	2.8	7.6	6.5	8.9	7.8	6.9	8.8	0.6*	0.3	1.0	22.9	21.3	24.5
North & West Metropolitan	5.8	5.0	6.6	2.2	1.7	2.7	6.4	5.6	7.2	9.1	8.3	10.0	0.4	0.3	0.7	24.6	23.4	25.9
Southern Metropolitan	5.5	4.7	6.4	2.2	1.7	2.9	8.3	7.0	9.8	7.0	6.2	8.0	0.6*	0.3	1.0	22.0	20.6	23.4
Metropolitan females	5.4	4.9	5.9	2.2	1.9	2.5	7.4	6.7	8.1	8.1	7.6	8.6	0.5	0.4	0.7	23.3	22.5	24.1
Barwon-South Western	5.4	4.2	6.9	2.8*	1.3	6.0	7.1	5.5	9.2	7.4	6.0	9.1	0.9*	0.5	1.7	25.1	22.8	27.6
Gippsland	4.8	4.0	5.7	2.2	1.5	3.3	6.7	5.7	7.9	8.3	7.2	9.6	1.2	0.8	1.9	22.8	20.9	24.7
Grampians	7.0	5.5	8.8	2.9	2.0	4.0	6.6	5.6	7.8	7.0	6.0	8.2	0.6*	0.3	1.1	25.0	22.9	27.1
Hume	5.4	4.7	6.3	1.9	1.5	2.4	7.2	6.3	8.2	7.9	7.0	8.8	0.9*	0.5	1.4	24.9	23.4	26.5
Loddon Mallee	5.8	4.8	6.9	2.3	1.8	3.0	6.6	5.6	7.7	8.0	7.0	9.2	0.8*	0.5	1.4	27.3	23.6	31.3
Rural females	5.6	5.1	6.2	2.4	1.8	3.2	6.9	6.3	7.6	7.7	7.2	8.3	0.9	0.7	1.1	25.1	23.8	26.5
Total	5.5	5.1	5.9	2.2	2.0	2.5	7.3	6.7	7.8	8.0	7.6	8.4	0.6	0.5	0.8	23.7	23.1	24.4

Metropolitan and rural regions are identified by colour as follows: metropolitan/rural.

Data were age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

** Estimate has a RSE greater than 50 per cent and is not reported as it is unreliable for general use.

Note that estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused' responses, not reported here.

Table 5.7: Prevalence of selected chronic diseases, by Department of Health region and sex, Victoria, 2011–12 (continued)

Region	Heart disease			Stroke			Cancer			Osteoporosis			Systemic Lupus Erythematosus			Arthritis		
	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL
Persons																		
Eastern Metropolitan	6.3	5.6	7.2	2.1	1.7	2.6	7.3	6.4	8.3	5.2	4.6	5.8	0.3*	0.2	0.6	19.1	18.0	20.4
North & West Metropolitan	7.0	6.4	7.7	2.3	2.0	2.8	6.3	5.6	7.1	6.1	5.6	6.8	0.3	0.2	0.4	20.1	19.2	21.1
Southern Metropolitan	7.4	6.7	8.2	2.4	1.9	3.0	7.1	6.3	8.0	4.7	4.1	5.3	0.5*	0.3	0.8	17.8	16.8	18.8
Metropolitan persons	6.9	6.5	7.3	2.3	2.0	2.6	6.9	6.4	7.4	5.4	5.1	5.7	0.3	0.3	0.5	19.1	18.5	19.7
Barwon-South Western	7.4	5.8	9.5	2.6	1.7	3.9	7.2	6.0	8.7	5.0	4.1	6.0	0.5*	0.3	0.9	23.1	19.2	27.5
Gippsland	7.0	6.1	8.1	2.4	1.9	3.1	6.8	6.0	7.8	5.3	4.6	6.1	0.7	0.5	1.0	21.2	19.6	22.8
Grampians	7.8	6.9	8.9	3.4	2.7	4.3	7.1	6.3	8.0	5.0	4.4	5.7	0.4*	0.2	0.6	22.5	20.7	24.3
Hume	7.4	6.7	8.2	2.1	1.8	2.6	7.6	6.8	8.5	5.2	4.6	5.7	0.6	0.4	1.0	20.8	19.6	22.0
Loddon Mallee	6.6	5.9	7.5	2.6	2.1	3.2	6.9	6.1	7.9	5.9	5.1	6.7	0.5	0.3	0.8	23.6	21.0	26.3
Rural persons	7.3	6.7	7.9	2.6	2.3	3.0	7.2	6.7	7.7	5.3	4.9	5.7	0.5	0.4	0.7	22.4	20.9	24.0
Total	7.0	6.7	7.3	2.4	2.2	2.6	7.0	6.6	7.4	5.3	5.1	5.6	0.4	0.3	0.5	19.9	19.4	20.5

Metropolitan and rural regions are identified by colour as follows: metropolitan/rural.

Data were age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

** Estimate has a RSE greater than 50 per cent and is not reported as it is unreliable for general use.

Note that estimates may not add to 100 per cent due to a proportion of 'don't know' or 'refused' responses, not reported here.

Self-reported health and selected chronic diseases

Table 5.8 shows the lifetime prevalence of self-reported doctor diagnosed heart disease, stroke, cancer, osteoporosis, SLE and arthritis, by LGA.

Heart disease

The prevalence of heart disease was significantly higher in people who lived in the LGAs of Casey (C) and Whittlesea (C) compared with all Victorian adults. By contrast the prevalence was significantly lower in people who lived in Boroondara (C), Maribyrnong (C), Southern Grampians (S) and Swan Hill (RC) compared with all Victorian adults. Figure 5.7 shows the prevalence of heart disease, by LGA.

Stroke

Overall the majority of stroke prevalence estimates by LGA had relative standard errors between 25 and 50 per cent, indicating that their reliability is questionable. This is due to the very low numbers. However, there were a few notable findings. The prevalence of stroke was significantly higher in people who lived in the LGA of Ballarat (C) compared with all Victorian adults. By contrast the prevalence was significantly lower in people who lived in Brimbank (C) compared with all Victorian adults.

Cancer

The prevalence of cancer was significantly higher in people who lived in the LGAs of Alpine (S), Gannawarra (S) and Strathbogie (S) compared with all Victorian adults. By contrast the prevalence was significantly lower in people who lived in Brimbank (C), Southern Grampians (S) and Warrnambool (C) compared with all Victorian adults. Figure 5.8 shows the prevalence of cancer, by LGA.

Osteoporosis

The prevalence of osteoporosis was significantly higher in people who lived in the LGAs of Hume (C) and Strathbogie (S) compared with all Victorian adults. By contrast the prevalence was significantly lower in people who lived in the LGAs of Mornington Peninsula (S), Queenscliffe (B) and Southern Grampians (S) compared with all Victorian adults. Figure 5.9 shows the prevalence of osteoporosis, by LGA.

Systemic lupus erythematosus

The prevalence of SLE was significantly higher in people who lived in the LGAs of Glenelg (S) and West Wimmera (S) compared with all Victorian adults. However, since the prevalence of SLE in the general population is very low, the analysis of the data by LGA resulted in small numbers. Most estimates could not be reported because they had relative standard errors in excess of 50 per cent.

Arthritis

The prevalence of arthritis was significantly higher in people who lived in the LGAs of Banyule (C), Central Goldfields (S), Gannawarra (S), Glenelg (S), Greater Bendigo (C), Pyrenees (S), Strathbogie (S), West Wimmera (S) and Yarriambiack (S) compared with all Victorian adults. By contrast the prevalence was significantly lower in people who lived in Bayside (C), Glen Eira (C) and Port Phillip (C) compared with all Victorian adults. Figure 5.10 shows the prevalence of arthritis, by LGA.

Table 5.8: Prevalence of selected chronic diseases, by LGA, Victoria, 2011–12

LGA	Heart disease %	Heart disease 95% CI LL	Heart disease 95% CI UL	Stroke %	Stroke 95% CI LL	Stroke 95% CI UL	Cancer %	Cancer 95% CI LL	Cancer 95% CI UL	Osteoporosis %	Osteoporosis 95% CI LL	Osteoporosis 95% CI UL	Systemic Lupus Erythematosus %	SLE 95% CI LL	SLE 95% CI UL	Arthritis %	Arthritis 95% CI LL	Arthritis 95% CI UL
Alpine (S)	6.8	5.0	9.3	1.9*	1.1	3.3	9.7	7.5	12.5	5.2	3.6	7.5	**	**	**	19.3	16.4	22.6
Ararat (RC)	5.7	4.2	7.5	2.0*	1.1	3.6	7.3	5.4	9.6	5.2	3.8	7.2	**	**	**	23.4	19.1	28.3
Ballarat (C)	8.1	6.2	10.6	4.6	3.1	6.9	6.3	4.8	8.4	4.4	3.1	6.3	**	**	**	21.9	18.6	25.5
Banyule (C)	6.8	4.9	9.4	2.5*	1.5	4.3	7.0	5.1	9.5	5.5	3.9	7.7	**	**	**	24.6	20.5	29.2
Bass Coast (S)	7.0	5.5	8.9	1.5*	0.9	2.5	7.3	4.9	10.6	3.8	2.4	6.0	0.5*	0.2	1.1	22.3	18.0	27.3
Baw Baw (S)	6.6	4.8	9.0	2.4*	1.5	4.0	6.9	4.9	9.5	4.2	3.0	5.9	**	**	**	21.8	17.9	26.2
Bayside (C)	5.3	4.0	7.0	2.7*	1.6	4.5	6.5	4.6	9.0	4.4	3.0	6.4	**	**	**	15.9	13.3	18.9
Benalla (RC)	6.3	4.4	8.8	2.0*	1.2	3.4	6.8	4.9	9.3	5.8	4.3	7.7	**	**	**	22.6	19.3	26.1
Boroondara (C)	4.8	3.5	6.6	1.2*	0.6	2.2	9.6	6.7	13.5	4.6	3.4	6.3	**	**	**	16.2	13.4	19.5
Brimbank (C)	6.2	4.2	9.1	1.0*	0.5	2.0	4.0	2.5	6.2	7.1	5.2	9.6	**	**	**	16.4	13.6	19.7
Buloke (S)	7.7	5.7	10.5	2.7	1.7	4.2	12.4*	7.0	21.0	7.1	5.5	9.1	**	**	**	21.5	18.3	25.1
Campaspe (S)	6.5	4.9	8.6	1.5*	0.8	2.7	6.0	4.5	8.1	5.9	4.2	8.3	**	**	**	20.6	17.0	24.7
Cardinia (S)	6.8	4.7	9.7	2.0*	0.9	4.3	5.5	3.7	8.0	4.0	2.5	6.2	**	**	**	19.0	15.5	23.1
Casey (C)	10.1	7.8	13.1	2.6*	1.4	4.6	7.4	5.3	10.1	5.6	4.0	7.9	**	**	**	18.6	15.7	21.9
Central Goldfields (S)	7.5	5.8	9.7	2.6	1.6	4.1	7.4	5.6	9.7	5.9	4.4	8.0	**	**	**	24.2	20.3	28.5
Colac-Otway (S)	7.9	6.1	10.1	2.8	1.7	4.4	9.0	6.4	12.4	5.9	4.4	7.8	**	**	**	21.0	17.8	24.7
Corangamite (S)	9.5*	4.9	17.6	1.8*	1.0	3.2	6.5	4.7	8.9	4.5	3.1	6.6	**	**	**	20.7	17.4	24.4
Darebin (C)	6.6	4.9	9.0	2.0*	1.1	3.6	6.7	4.8	9.2	6.8	5.1	9.1	0.0	-	-	21.0	17.6	24.9
East Gippsland (S)	9.0	5.9	13.6	2.2*	1.3	3.7	6.8	5.0	9.2	6.4	4.4	9.5	0.8*	0.4	1.6	19.0	15.5	23.0
Frankston (C)	7.6	5.4	10.6	1.9*	0.9	3.8	9.5	5.9	14.9	4.0	2.8	5.7	**	**	**	20.8	17.6	24.5
Gannawarra (S)	8.7	6.6	11.4	1.3*	0.7	2.5	10.2	7.6	13.4	6.0	4.4	8.3	**	**	**	24.5	20.5	28.8
Glen Eira (C)	6.5	4.9	8.7	1.8*	1.0	3.3	6.9	5.0	9.5	4.8	3.0	7.6	1.1*	0.4	2.8	16.6	14.3	19.1
Glenelg (S)	7.2	5.5	9.5	1.7*	0.8	3.2	7.3	5.4	9.7	6.9	4.8	9.6	1.7*	0.8	3.4	27.0	23.4	30.9
Golden Plains (S)	7.8	5.8	10.4	1.5*	0.7	3.2	6.6	4.7	9.3	4.9	3.1	7.4	**	**	**	21.6	18.4	25.2

Table 5.8: Prevalence of selected chronic diseases, by LGA, Victoria, 2011–12 (continued)

LGA	Heart disease			Stroke			Cancer			Osteoporosis			Systemic Lupus Erythematosus			Arthritis		
	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL
Greater Bendigo (C)	6.1	4.4	8.4	3.4	2.2	5.2	6.4	4.7	8.6	6.3	4.7	8.5	**	**	**	27.8	21.9	34.6
Greater Dandenong (C)	9.1	6.7	12.1	2.8*	1.7	4.7	6.1	4.3	8.5	6.4	4.3	9.3	0.0	-	-	17.5	14.6	20.9
Greater Geelong (C)	7.9	5.1	12.0	2.7*	1.5	4.7	7.5	5.6	10.1	4.8	3.4	6.7	0.5*	0.2	1.3	23.2	17.6	30.0
Greater Shepparton (C)	8.1	6.2	10.4	2.3*	1.4	3.9	7.5	5.6	9.9	4.6	3.3	6.3	**	**	**	19.0	16.1	22.3
Hepburn (S)	8.8	6.9	11.2	3.2	2.1	4.9	8.1	6.1	10.9	5.2	3.8	7.0	**	**	**	19.4	16.6	22.5
Hindmarsh (S)	7.8	6.1	9.9	2.0*	1.2	3.3	7.9	5.7	10.8	5.5	4.1	7.5	**	**	**	21.0	18.0	24.3
Hobsons Bay (C)	8.1	5.9	11.1	3.1	2.0	4.7	6.5	4.7	8.9	5.1	3.6	7.1	**	**	**	17.7	14.9	20.9
Horsham (RC)	6.5	4.8	8.7	3.3	2.1	5.2	8.4	5.9	11.9	5.3	3.9	7.4	**	**	**	26.3	18.5	36.0
Hume (C)	7.4	5.3	10.3	3.8*	2.1	6.8	6.6*	3.5	12.2	7.8	5.6	10.8	**	**	**	23.1	20.0	26.6
Indigo (S)	6.9	4.7	10.2	3.2*	1.9	5.4	8.5*	5.1	13.8	3.7	2.6	5.3	0.0	-	-	20.3	17.1	24.0
Kingston (C)	6.3	4.3	9.1	2.7*	1.6	4.7	7.0	5.0	9.7	4.5	3.0	6.8	0.0	-	-	18.2	15.5	21.1
Knox (C)	6.4	4.7	8.7	2.4*	1.4	4.0	7.0	5.1	9.4	4.6	3.1	6.7	**	**	**	23.3	20.1	27.0
Latrobe (C)	5.6	4.1	7.5	2.9*	1.5	5.4	6.1	4.5	8.2	6.9	5.2	9.1	**	**	**	22.3	19.2	25.7
Loddon (S)	5.3	3.8	7.3	3.0	1.9	4.7	5.1	3.7	7.0	5.6	4.2	7.6	**	**	**	22.8	19.3	26.6
Macedon Ranges (S)	6.4	4.8	8.6	1.2*	0.6	2.5	6.1	4.5	8.3	4.7	3.1	7.0	**	**	**	20.5	17.7	23.6
Manningham (C)	7.5	5.2	10.6	2.4*	1.5	4.0	6.6	4.9	8.8	5.9	4.3	8.0	**	**	**	21.6	17.8	25.8
Mansfield (S)	8.0	6.1	10.6	3.4*	1.8	6.4	8.4	6.0	11.6	5.0	3.6	6.9	**	**	**	20.7	17.5	24.3
Maribyrnong (C)	3.9	2.5	6.1	2.0*	1.0	4.2	6.7	4.7	9.5	5.3	3.7	7.5	0.0	-	-	19.3	16.2	22.8
Maroondah (C)	6.8	4.7	9.9	2.2*	1.3	3.6	8.9	6.8	11.5	5.1	3.7	7.0	0.0	-	-	16.1	13.2	19.6
Melbourne (C)	6.2	4.4	8.5	1.5*	0.6	3.5	6.7	4.9	9.0	6.1	4.2	8.9	0.0	-	-	16.8	13.9	20.1
Melton (S)	5.3	3.2	8.5	2.9*	1.4	6.0	5.2	3.2	8.3	5.7	3.8	8.5	**	**	**	22.2	18.7	26.1
Mildura (RC)	8.1	5.9	11.1	3.4	2.1	5.4	7.4	5.6	9.9	5.6	4.0	7.7	**	**	**	21.0	17.7	24.8

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* Estimate has a relative standard error of between 25 and 50 per cent and should be interpreted with caution.

** Estimate has a RSE greater than 50 per cent and is not reported as it is unreliable for general use.

Table 5.8: Prevalence of selected chronic diseases, by LGA, Victoria, 2011–12 (continued)

LGA	Heart disease %	95% CI LL	UL	Stroke %	95% CI LL	UL	Cancer %	95% CI LL	UL	Osteoporosis %	95% CI LL	UL	Systemic Lupus Erythematosus %	95% CI LL	UL	Arthritis %	95% CI LL	UL
Mitchell (S)	6.7	5.0	9.0	2.0*	1.1	3.4	6.9	5.0	9.6	5.0	3.5	6.9	**	**	**	21.9	18.8	25.5
Moira (S)	8.8	6.6	11.7	2.0	1.3	3.2	6.4	4.8	8.5	5.3	4.0	7.0	**	**	**	19.9	17.1	23.0
Monash (C)	5.8	4.3	7.8	2.1*	1.2	3.6	6.9	5.2	9.0	4.6	3.4	6.2	**	**	**	18.3	15.6	21.2
Moonee Valley (C)	8.0	5.8	11.0	2.5*	1.4	4.1	7.2	5.0	10.1	5.9	4.3	8.1	0.0	-	-	21.6	18.1	25.6
Moorabool (S)	8.5	6.5	11.1	3.1	2.0	4.9	7.9	5.9	10.5	5.9	4.4	7.8	**	**	**	20.0	16.2	24.5
Moreland (C)	6.7	5.0	9.0	2.9	1.8	4.5	5.4	3.9	7.6	6.6	5.0	8.8	0.6*	0.2	1.5	19.6	16.8	22.8
Mornington Peninsula (S)	6.9	5.2	9.0	1.9*	1.1	3.2	9.3	6.3	13.7	3.0	2.1	4.3	**	**	**	17.5	14.5	20.8
Mount Alexander (S)	6.0	4.3	8.4	2.5	1.5	3.9	8.8*	5.3	14.3	4.5	3.3	6.1	0.4*	0.1	0.9	19.5	16.1	23.5
Moyne (S)	7.4	5.4	10.0	2.0*	1.2	3.5	7.4	5.6	9.7	5.5	3.6	8.2	0.0	-	-	23.3	19.9	27.1
Murrindindi (S)	5.9	4.0	8.6	1.6*	0.9	2.6	8.0	6.2	10.3	5.5	4.0	7.6	**	**	**	21.9	18.6	25.6
Nillumbik (S)	7.0	4.9	9.8	3.2*	1.7	5.9	7.2	5.3	9.8	3.8	2.5	5.8	**	**	**	18.7	15.5	22.5
Northern Grampians (S)	8.9	6.4	12.3	2.9*	1.7	4.7	7.6	5.3	10.9	7.0	5.4	9.0	**	**	**	23.7	20.1	27.7
Port Phillip (C)	5.5	3.9	7.8	1.8*	0.7	4.1	5.8	4.2	7.9	4.6	3.3	6.5	**	**	**	13.8	11.5	16.4
Pyrenees (S)	6.2	4.8	8.1	2.5	1.6	3.9	8.1	4.9	12.9	4.8	3.5	6.6	**	**	**	31.9	22.3	43.3
Queenscliffe (B)	5.5	3.9	7.7	2.0*	1.1	3.4	7.7	5.8	10.1	3.0	2.0	4.4	**	**	**	17.3	13.9	21.3
South Gippsland (S)	8.2	6.2	10.6	1.8	1.1	2.8	7.7	5.7	10.4	4.4	3.3	5.9	**	**	**	20.6	17.5	24.0
Southern Grampians (S)	4.5	3.3	6.1	2.2*	1.3	3.9	4.6	3.4	6.4	3.0	2.0	4.5	**	**	**	20.8	15.9	26.7
Stonnington (C)	7.5	5.4	10.4	**	**	**	7.0	5.2	9.3	5.4	3.9	7.4	**	**	**	16.8	14.1	19.9
Strathbogie (S)	7.2	4.9	10.4	2.4	1.6	3.6	10.4	7.8	13.8	8.6	6.2	11.8	**	**	**	25.5	20.6	31.2
Surf Coast (S)	5.6	4.1	7.7	2.6*	1.5	4.3	7.6	5.7	10.1	5.3	3.5	8.0	**	**	**	20.0	16.9	23.6
Swan Hill (RC)	4.7	3.4	6.4	3.0*	1.7	5.0	4.8	3.4	6.9	5.3	4.0	7.1	**	**	**	19.7	16.4	23.6
Towong (S)	5.5	4.0	7.5	1.6*	0.9	3.0	10.9*	5.5	20.4	4.0	2.8	5.6	**	**	**	19.3	16.3	22.7
Wangaratta (RC)	6.4	4.8	8.6	1.5*	0.8	2.9	6.6	4.9	8.9	4.8	3.4	6.6	**	**	**	18.6	15.3	22.4
Warrnambool (C)	8.3	6.5	10.5	2.3*	1.4	3.9	4.2	2.9	6.0	6.0	4.3	8.2	**	**	**	18.9	16.2	21.9
Wellington (S)	7.0	4.8	10.1	3.0	2.0	4.6	6.8	4.7	9.8	5.0	3.5	6.9	0.7*	0.3	1.7	20.1	16.3	24.6

Table 5.8: Prevalence of selected chronic diseases, by LGA, Victoria, 2011–12 (continued)

LGA	Heart disease	95% CI		Stroke	95% CI		Cancer	95% CI		Osteoporosis	95% CI		Systemic Lupus Erythematosus	95% CI		Arthritis	95% CI	
	%	LL	UL	%	LL	UL	%	LL	UL	%	LL	UL	%	LL	UL	%	LL	UL
West Wimmera (S)	7.4	5.3	10.1	3.3*	1.6	6.9	8.5	6.0	11.8	4.6	3.3	6.2	2.9*	1.4	6.0	26.4	22.7	30.4
Whitehorse (C)	7.7	5.8	10.2	2.4*	1.4	4.1	7.2*	4.0	12.6	5.3	4.0	7.1	0.8*	0.3	1.9	17.2	14.5	20.2
Whittlesea (C)	9.8	7.4	12.9	3.0*	1.7	5.2	8.4	6.1	11.5	6.8	5.0	9.2	**	**	**	22.0	18.6	25.9
Wodonga (RC)	9.2	6.2	13.6	2.3*	1.4	3.8	8.3	6.2	11.0	5.8	4.1	8.2	**	**	**	24.2	19.7	29.4
Wyndham (C)	5.6	3.8	8.1	2.4*	1.3	4.6	5.9	4.0	8.6	5.8	3.9	8.4	0.0	-	-	18.1	14.9	21.7
Yarra (C)	7.0	4.2	11.2	2.9*	1.7	4.9	7.1	5.1	10.0	5.7	4.1	7.8	**	**	**	18.0	15.0	21.4
Yarra Ranges (S)	6.7	4.8	9.2	2.0*	1.0	4.2	5.4	3.9	7.4	5.5	4.0	7.6	**	**	**	21.3	18.4	24.5
Yarriambiack (S)	9.6*	5.4	16.5	2.6	1.6	4.1	7.8	5.7	10.7	5.1	3.8	6.8	0.0	-	-	26.5	21.7	32.0
Victoria	6.9	6.6	7.3	2.4	2.2	2.6	7.0	6.6	7.4	5.3	5.0	5.6	0.4	0.3	0.5	19.8	19.2	20.3

Data are age-standardised to the 2011 Victorian population, using 10-year age groups.

Metropolitan and rural LGAs are identified by colour as follows: metropolitan/rural.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

LGA= Local government area; B = Borough; C = City; S = Shire; RC = Rural City.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

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** Estimate has a RSE greater than 50 per cent and is not reported as it is unreliable for general use.

Figure 5.7: Prevalence of heart disease, by LGA, Victoria, 2011–12

Data were age-standardised to the 2011 Victorian population using 10-year age groups.

The horizontal bars represent the 95% CI around the estimate for each LGA.

The vertical line on the graph is the Victorian estimate and the vertical column is the 95% CI around the estimate for Victoria.
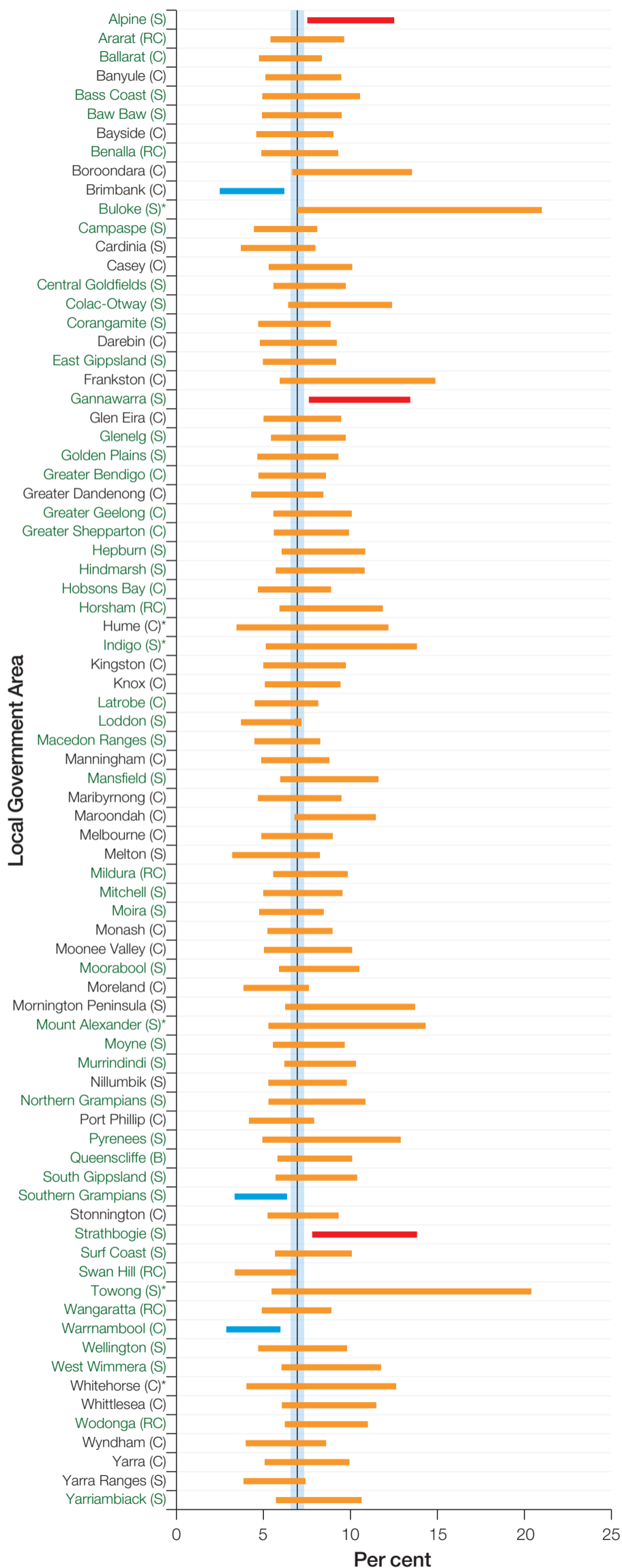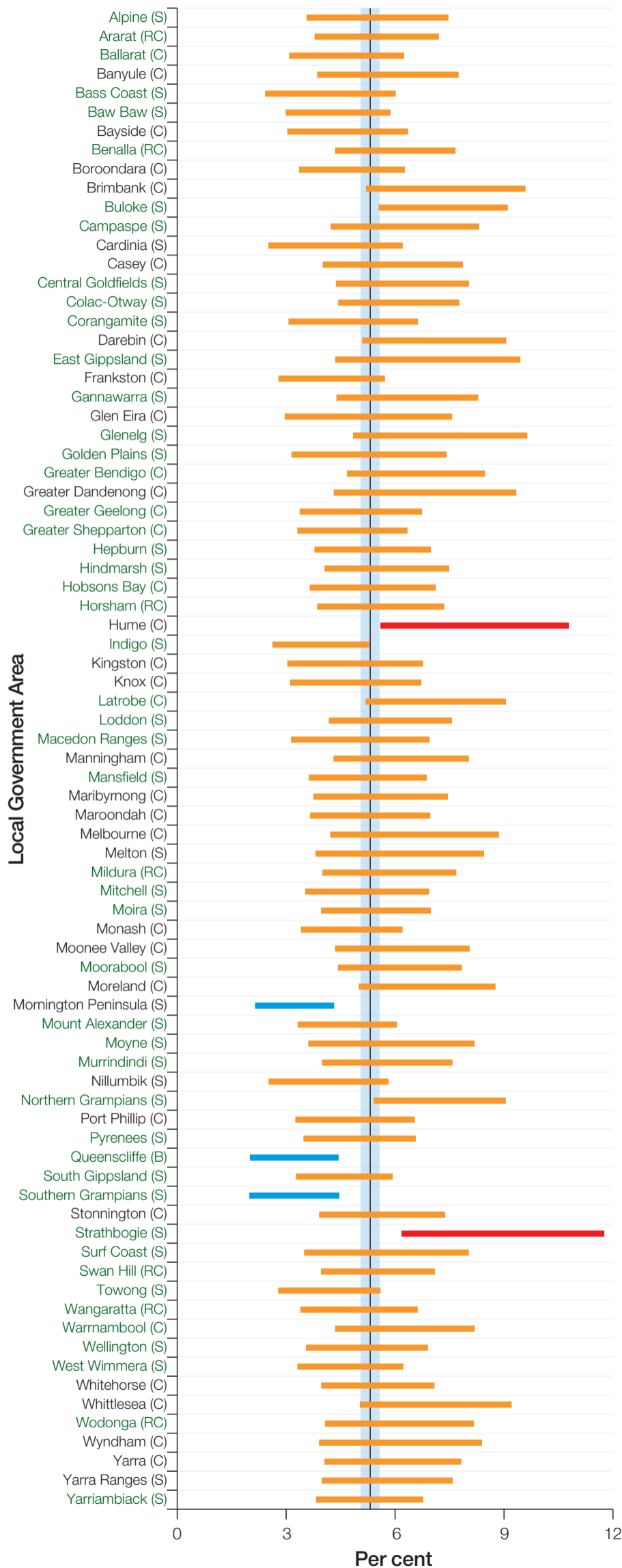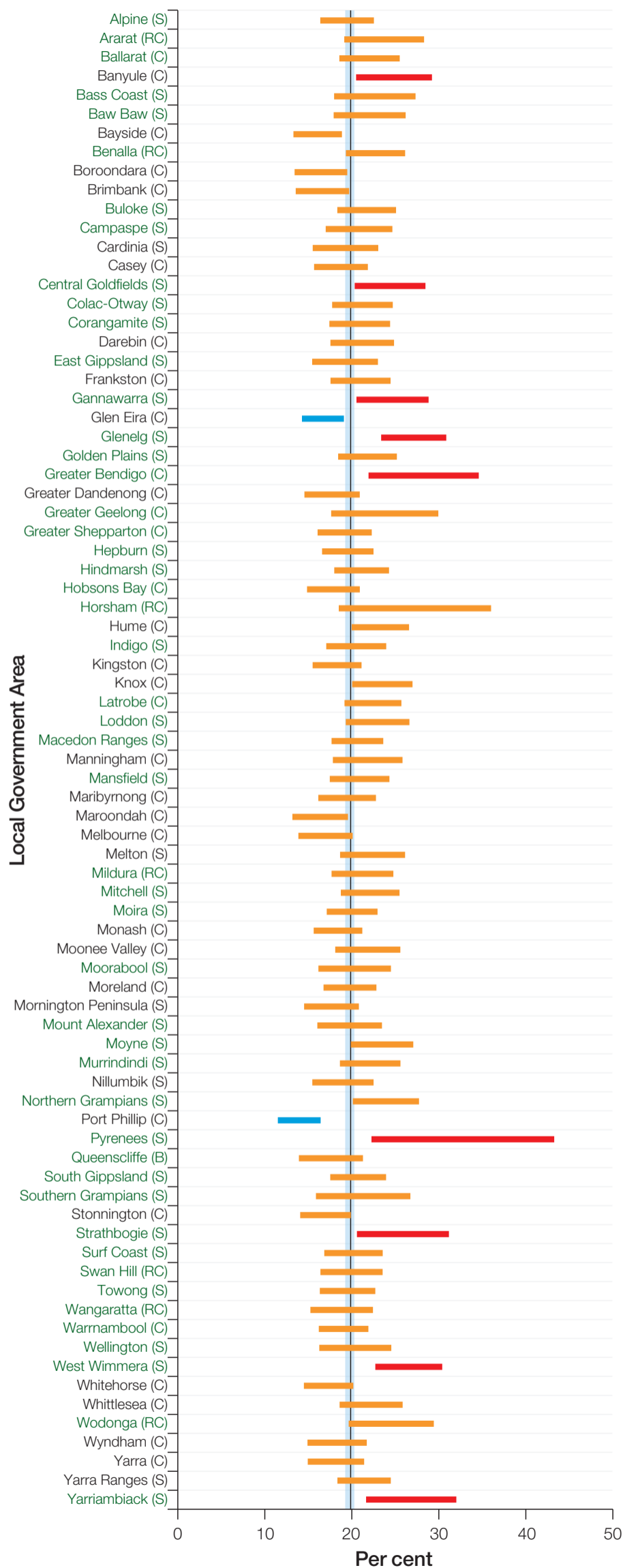
Metropolitan and rural LGAs are identified by colour as follows: metropolitan/rural.

95% CI = 95 per cent confidence interval; LGA= local government area; B = Borough; C = City; S = Shire; RC = Rural City.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

Figure 5.8: Prevalence of cancer by LGA, Victoria, 2011–12

Data were age-standardised to the 2011 Victorian population using 10-year age groups.

The horizontal bars represent the 95% CI around the estimate for each LGA.

The vertical line on the graph is the Victorian estimate and the vertical column is the 95% CI around the estimate for Victoria.

Metropolitan and rural LGAs are identified by colour as follows: metropolitan/rural.

95% CI = 95 per cent confidence interval; LGA= local government area; B = Borough; C = City; S = Shire; RC = Rural City.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: **above**/**below** Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

Figure 5.9: Prevalence of osteoporosis by LGA, Victoria, 2011–12

Data were age-standardised to the 2011 Victorian population using 10-year age groups.

The horizontal bars represent the 95% CI around the estimate for each LGA.

The vertical line on the graph is the Victorian estimate and the vertical column is the 95% CI around the estimate for Victoria.

Metropolitan and rural LGAs are identified by colour as follows: metropolitan/rural.

95% CI = 95 per cent confidence interval; LGA= local government area; B = Borough; C = City; S = Shire; RC = Rural City.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: **above**/**below** Victoria.

Figure 5.10: Prevalence of arthritis by LGA, Victoria, 2011–12

Data were age-standardised to the 2011 Victorian population using 10-year age groups.

The horizontal bars represent the 95% CI around the estimate for each LGA.

The vertical line on the graph is the Victorian estimate and the vertical column is the 95% CI around the estimate for Victoria.

Metropolitan and rural LGAs are identified by colour as follows: metropolitan/rural.

95% CI = 95 per cent confidence interval; LGA= local government area; B = Borough; C = City; S = Shire; RC = Rural City.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

Type of arthritis

Respondents who indicated that they had arthritis were asked to specify the type of arthritis. Table 5.9 shows the prevalence of self-reported arthritis, by type and sex. Overall, there was a significantly higher prevalence of osteoarthritis (14.1 per cent) compared with rheumatoid arthritis (3.3 per cent). The prevalence in women of osteoarthritis (17.4 per cent) and rheumatoid arthritis (3.9 per cent) was significantly higher compared with the prevalence in men of osteoarthritis (10.4 per cent) and rheumatoid arthritis (2.5 per cent), respectively.

Table 5.9: Prevalence of self-reported arthritis, by type and sex, Victoria, 2011–12

Type of arthritis	%	Arthritis 95% CI	
		LL	UL
Males			
No arthritis	84.4	83.5	85.2
Osteoarthritis	10.4	9.9	11.0
Rheumatoid Arthritis	2.5	2.2	2.9
Other	0.9*	0.5	1.6
Females			
No arthritis	76.3	75.6	76.9
Osteoarthritis	17.4	16.8	18.0
Rheumatoid Arthritis	3.9	3.6	4.3
Other	0.6	0.5	0.8
Persons			
No arthritis	80.1	79.5	80.6
Osteoarthritis	14.1	13.7	14.5
Rheumatoid Arthritis	3.3	3.0	3.5
Other	0.8	0.5	1.1

Data were age-standardised to the 2011 Victorian population.

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

Arthritis by body weight

Excess body weight or obesity is a risk factor for both osteoarthritis and rheumatoid arthritis (ARC 2009; Symmons & Harrison 2000). The prevalence of self-reported arthritis by type of arthritis, BMI category and sex is presented in Table 5.10.

There was a significantly higher prevalence of all types of arthritis in obese men, women and adults compared with the prevalence in all Victorian men, women and adults. In contrast, there was a significantly lower prevalence in men and adults with a BMI in the normal weight range and women in the under and normal weight ranges compared with all Victorian men, adults and women, respectively.

There was a significantly higher prevalence of osteoarthritis in obese men, women and adults compared with all Victorian men, women and adults. By contrast there was a significantly lower prevalence of osteoarthritis in men, women and adults with a BMI in the normal weight range compared with all Victorian men, women and adults, respectively.

There was a significantly higher prevalence of rheumatoid arthritis in obese people compared with Victorian adults.

Table 5.10: Prevalence of self-reported arthritis, by type of arthritis, BMI category and sex, Victoria, 2011–12

Body weight status	No arthritis			Arthritis (all)			Osteoarthritis			Rheumatoid Arthritis			Other		
	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL	%	95% CI LL	UL
Males															
Underweight	85.7	77.2	91.3	14.3	8.7	22.8	8.3*	3.9	16.9	4.8*	2.4	9.3	0.0	-	-
Normal	86.8	85.5	87.9	13.2	12.1	14.5	8.3	7.4	9.2	2.2	1.7	2.9	0.7*	0.4	1.2
Overweight	83.9	82.3	85.3	16.1	14.7	17.7	11.0	10.1	11.9	2.5	2.0	3.1	1.2*	0.4	3.1
Obese	80.4	78.5	82.1	19.6	17.9	21.5	13.0	11.7	14.5	3.6	2.7	4.9	0.8*	0.5	1.3
Total	**84.4**	**83.5**	**85.2**	**15.6**	**14.8**	**16.5**	**10.4**	**9.9**	**11.0**	**2.5**	**2.2**	**2.9**	**0.9***	**0.5**	**1.6**
Females															
Underweight	81.9	77.9	85.3	18.1	14.7	22.1	13.6	10.4	17.5	3.7*	2.1	6.2	**	**	**
Normal	79.9	78.9	80.8	20.1	19.2	21.1	15.0	14.1	15.9	3.1	2.7	3.6	0.4*	0.3	0.8
Overweight	75.7	74.5	77.0	24.3	23.0	25.5	17.4	16.4	18.4	4.6	3.8	5.5	0.6	0.4	1.0
Obese	68.2	65.1	71.1	31.8	28.9	34.9	24.2	21.3	27.3	5.0	4.2	6.0	0.8	0.5	1.2
Total	**76.3**	**75.6**	**76.9**	**23.7**	**23.1**	**24.4**	**17.4**	**16.8**	**18.0**	**3.9**	**3.6**	**4.3**	**0.6**	**0.5**	**0.8**
Persons															
Underweight	83.4	80.0	86.4	16.6	13.6	20.0	11.5	8.9	14.7	4.0	2.6	6.3	**	**	**
Normal	82.8	82.0	83.6	17.2	16.4	18.0	12.1	11.5	12.8	2.8	2.4	3.2	0.6	0.4	0.8
Overweight	80.4	79.2	81.5	19.6	18.5	20.8	13.7	13.1	14.4	3.3	2.9	3.8	1.0*	0.4	2.3
Obese	74.0	72.3	75.7	26.0	24.3	27.7	18.7	17.2	20.3	4.4	3.7	5.3	0.8	0.6	1.1
Total	**80.1**	**79.5**	**80.6**	**19.9**	**19.4**	**20.5**	**14.1**	**13.7**	**14.5**	**3.3**	**3.0**	**3.5**	**0.8**	**0.5**	**1.1**

Data were age-standardised to the 2011 Victorian population

LL/UL 95% CI = lower/upper limit of 95 per cent confidence interval.

Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above/below Victoria.

* Estimate has a relative standard error (RSE) of between 25 and 50 per cent and should be interpreted with caution.

** Estimate has a RSE greater than 50 per cent and is not reported as it is unreliable for general use.

The relationship was investigated between SES and the age-adjusted lifetime prevalence of self-reported doctor-diagnosed heart disease, stroke, cancer, osteoporosis and arthritis, using total annual household income as a measure of SES. This was not undertaken for SLE as the prevalence estimates were too low to allow for this type of analysis. As previously noted, most health outcomes follow a *typical* SES gradient whereby poorer health outcomes are associated with declining SES.

Heart disease

Statistically significant typical SES gradients were observed for men and adults in the prevalence of heart disease, where prevalence declined with increasing total annual household income. However, no significant SES gradient was observed in women. This is depicted in Figure 5.11.

Figure 5.11: Prevalence of heart disease, by total annual household income, Victoria, 2011–12
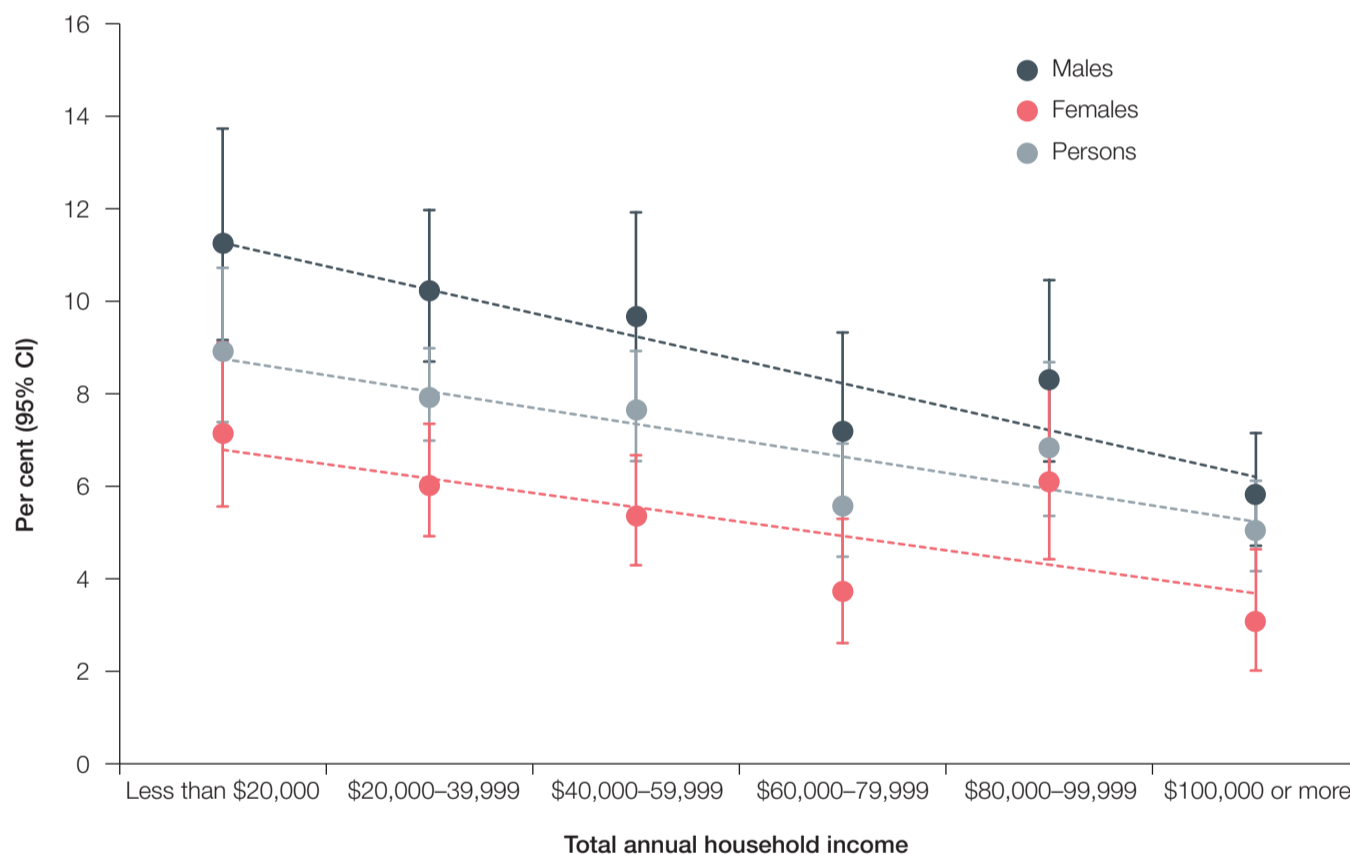
Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval; NS = not significant.

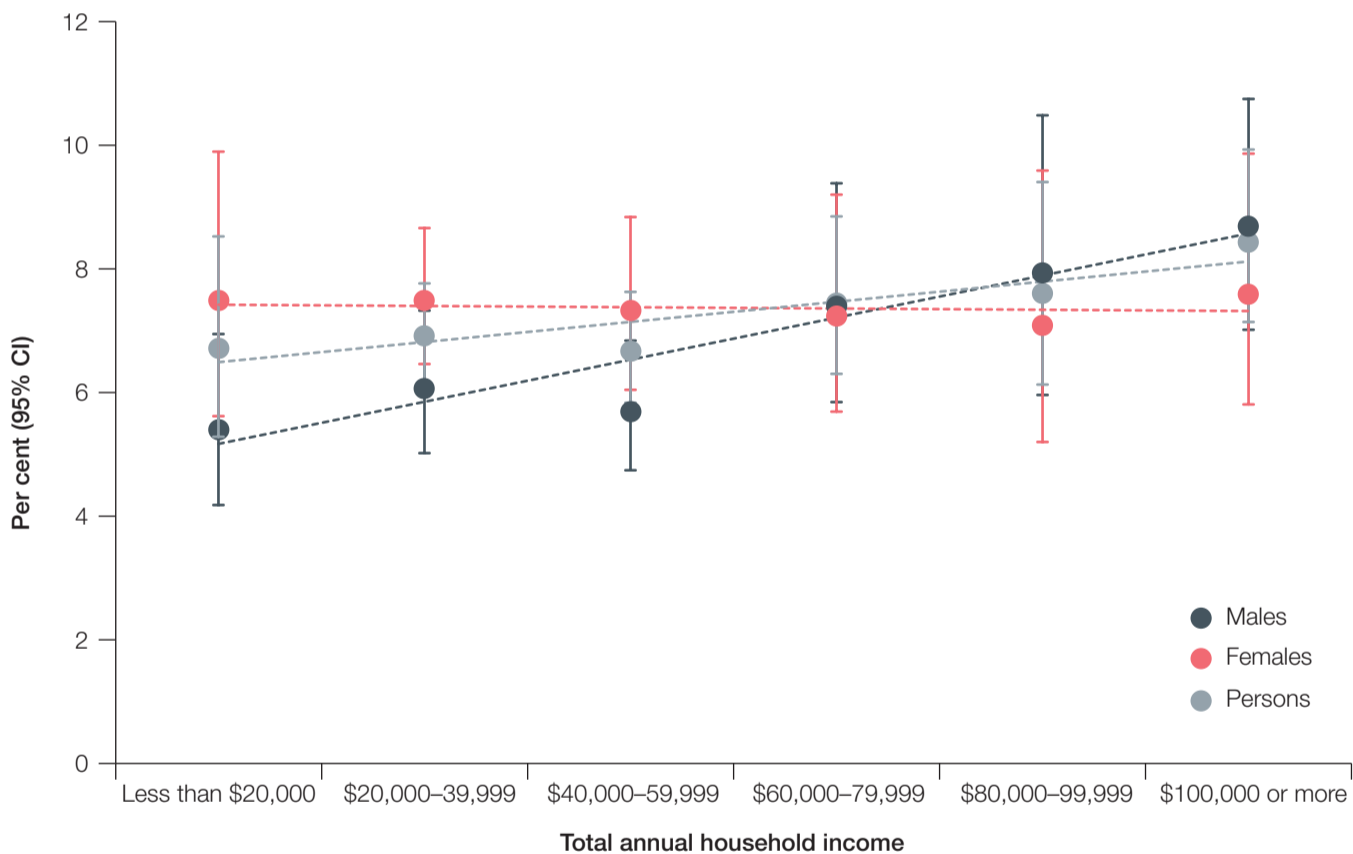Ordinary least squares linear regression was used to test for statistical significance.

Stroke

Statistically significant typical SES gradients were observed for men, women and adults in the prevalence of stroke, where prevalence declined with increasing total annual household income. This is depicted in Figure 5.12.

Figure 5.12: Prevalence of stroke, by total annual household income, Victoria, 2011–12
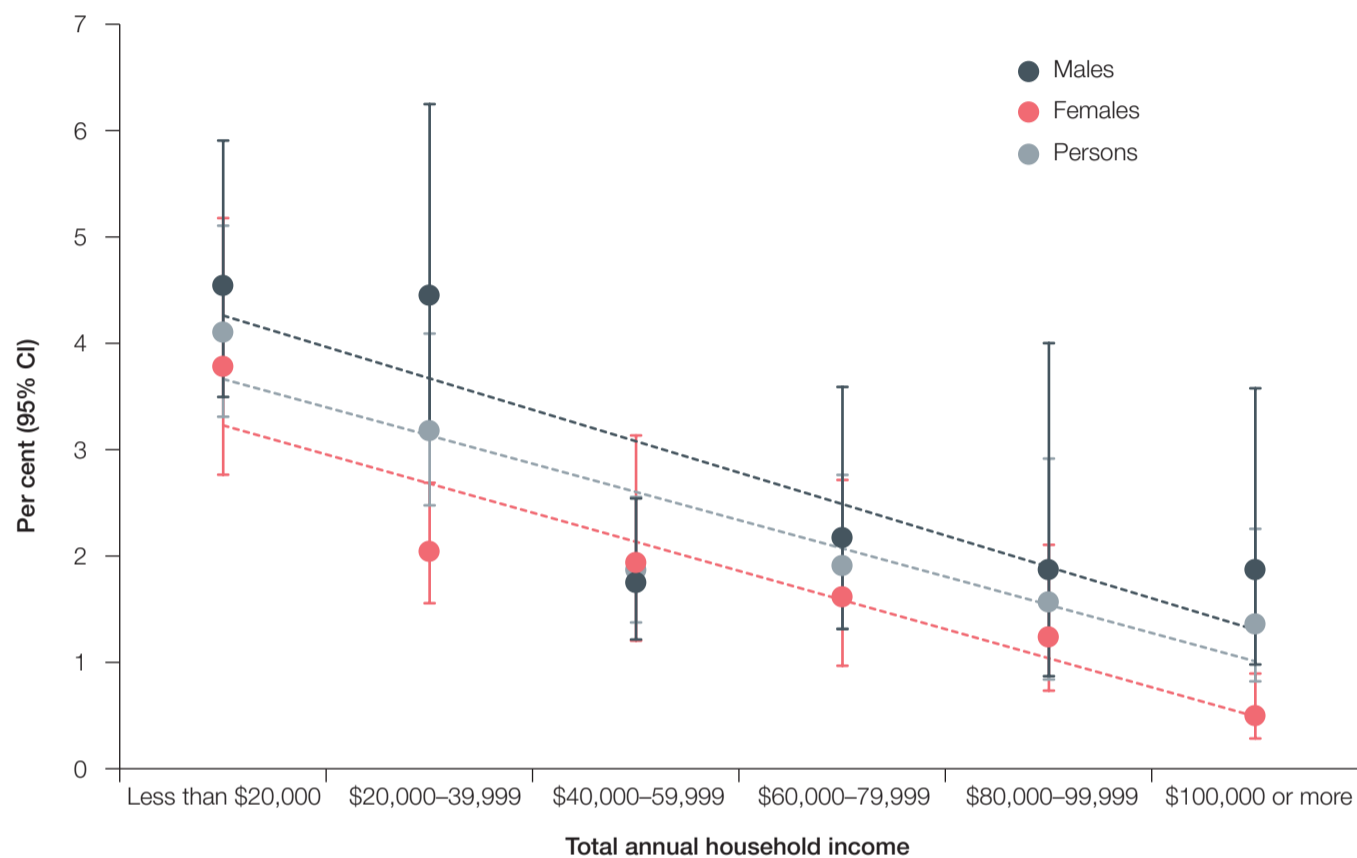
Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares linear regression was used to test for statistical significance.

Cancer

Statistically significant typical SES gradients were not observed for men, women and adults in the prevalence of cancer. By contrast statistically significant reverse gradients were observed in men and adults, where the prevalence of cancer increased with increasing total annual household income. There was no association between the prevalence of cancer and SES in women. This is depicted in Figure 5.13.

Prostate cancer is the most common form of cancer in men and higher SES men are at greater risk of prostate cancer, which may be partly explained by higher rates of screening for prostate cancer (Rundle et al. 2013). It is possible that this, at least in part, may explain the Victorian Population Health Survey finding in men. However, prevalence is not the same as mortality and

it is well documented that men of lower SES are more likely to die from prostate cancer due to the disease being diagnosed at a more advanced stage and having less access to more aggressive treatments (Cheng et al. 2009; Rapiti et al. 2009).

Breast cancer is the most common form of cancer in women (Cancer Australia 2013). No significant differences by SES have been observed in the detection of breast cancer conducted by breast cancer screening programs in Australia (AIHW 2013). However, breast cancer is one of the relatively rare health outcomes that has repeatedly been shown to follow a reverse SES gradient, with higher SES women experiencing a higher incidence (Dano et al. 2003).

Figure 5.13: Prevalence of cancer, by total annual household income, Victoria, 2011–12

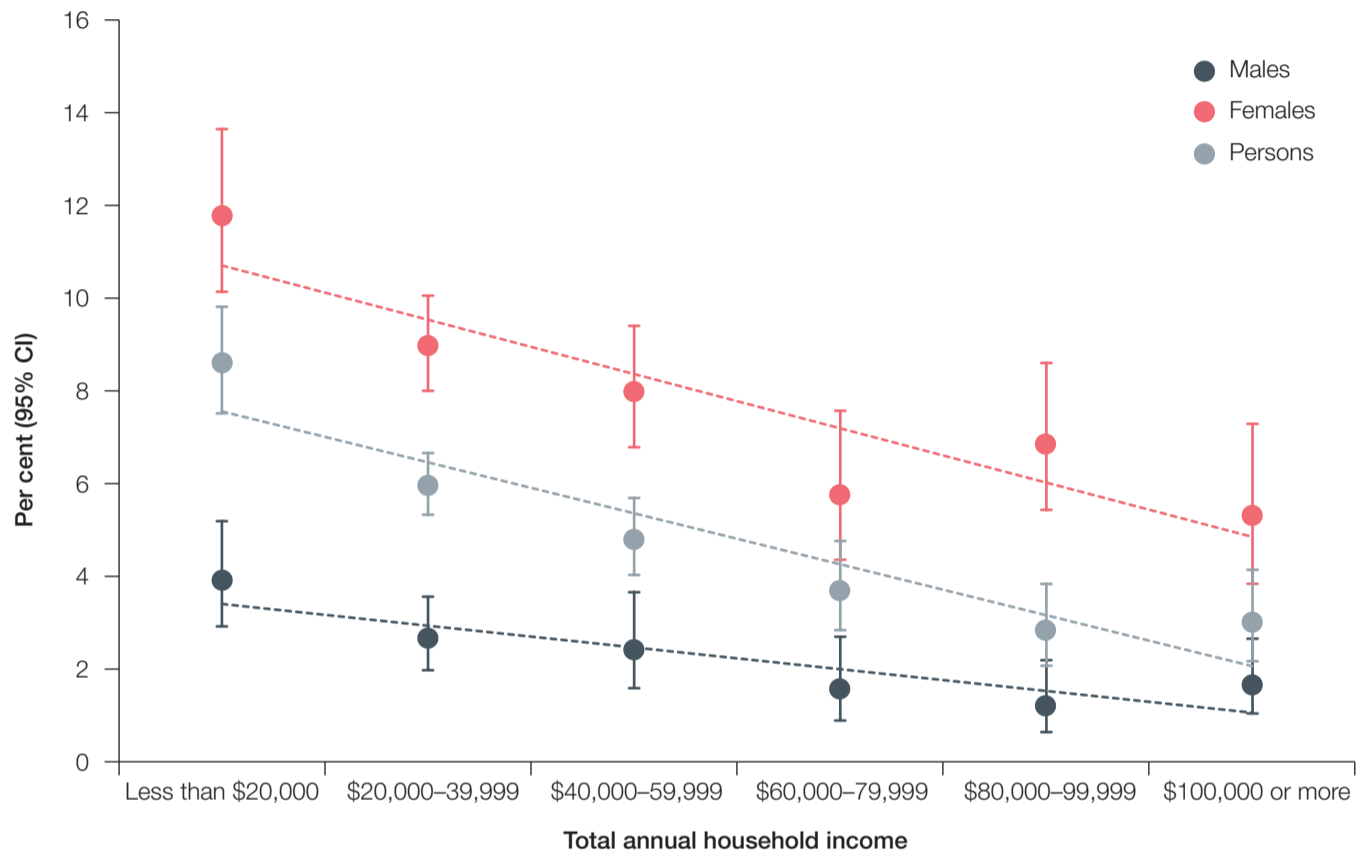Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares linear regression was used to test for statistical significance.

Osteoporosis

Statistically significant typical SES gradients were observed for men, women and adults in the prevalence of osteoporosis, where prevalence declined with increasing total annual household income. This is depicted in Figure 5.14.

Figure 5.14: Prevalence of osteoporosis, by total annual household income, Victoria, 2011–12

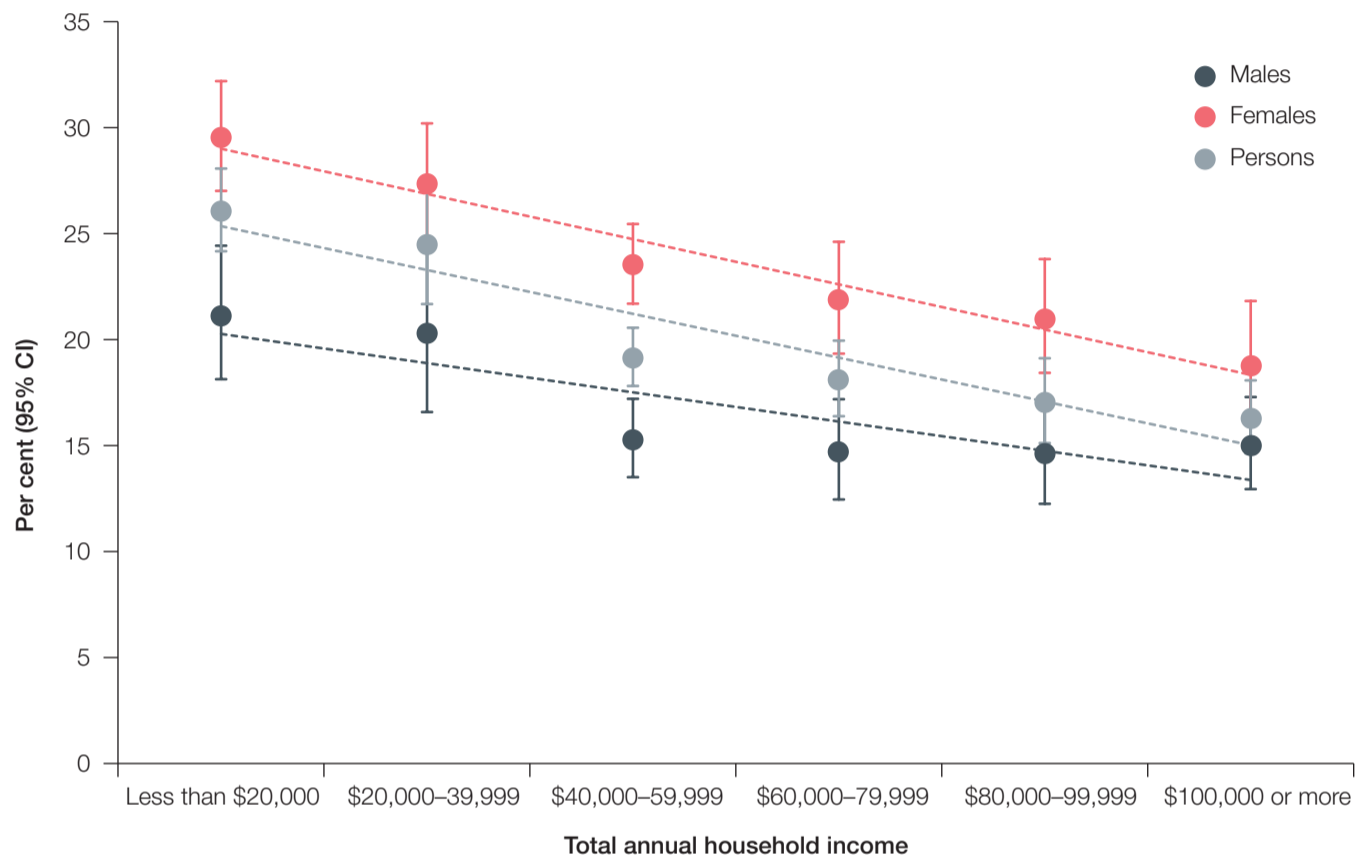Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares linear regression was used to test for statistical significance.

Arthritis

Statistically significant typical SES gradients were observed for men, women and adults in the prevalence of arthritis, where prevalence declined with increasing total annual household income. This is depicted in Figure 5.15.

Figure 5.15: Prevalence of arthritis, by total annual household income, Victoria, 2011–12

Data were age-standardised to the 2011 Victorian population.

95% CI = 95 per cent confidence interval.

Ordinary least squares linear regression was used to test for statistical significance.

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