# 5. Asthma



rarat Ballarat Banyule Bass Coast Baw Baw Bayside Benalla Boroondara Brimbank Buloke Campaspe

# 5. Asthma

Asthma is a common, chronic disorder affecting the airways of the lungs. Narrowing of these air passages (caused by the inflammation and swelling of the airway lining, and the overproduction of mucus) results in airway obstruction and difficulty with breathing, which may be reversed either spontaneously or with medical treatment. The disease affects all age groups, but particularly young persons, and ranges in severity from intermittent, mild symptoms to a severe, incapacitating and life threatening disorder.

The self-reported prevalence of asthma has been shown to be higher than prevalence levels based on objective measures of lung function (Woolcock et al. 2001), which typically observe the prevalence of current or persistent asthma (wheezing episodes with abnormal airway function between episodes).

## **Survey results**

#### Asthma

- More than one in five persons (21.2 per cent) reported having ever been diagnosed by a doctor with asthma (asthma ever) and 10.7 per cent reported having experienced asthma symptoms in the last 12 months (current asthma).
- The prevalence of asthma ever remained constant between 2001 and 2008, however, the prevalence of current asthma decreased between 2001 and 2008.
- The prevalence of asthma ever and current asthma decreased with age.
- The prevalence of asthma ever and current asthma was higher for females, compared with males.
- The prevalence of current asthma was similar between the metropolitan and rural areas of Victoria. However, the Grampians region (13.4 per cent) had a higher prevalence rate for current asthma compared with the prevalence rate for Victoria (10.7 per cent).
- The LGAs of Benalla (17.2 per cent), Corangamite (16.1 per cent) and Ballarat (15.4 per cent) had higher prevalence rates of current asthma, compared with Victoria (10.7 per cent).
- Males and females who reported high or very high levels of psychological distress and rated their health as fair or poor had higher prevalence rates of current asthma, compared with the averages for Victorian males and females.
- Females who reported a body weight in the obese range had a higher prevalence rate of current asthma, compared with the average for Victorian females.

Respondents were asked whether a doctor had ever told them that they had asthma and, if so, whether they had had asthma symptoms (wheezing, coughing, shortness of breath, chest tightness) in the 12 months before the survey. Those persons who responded 'yes' to the first question are referred to as the population with 'asthma ever' in the analysis that follows. Those persons who responded 'yes' to the question about having had symptoms in the 12 months before the survey are referred to as the population with 'current asthma'.

More than one in five persons (21.2 per cent) reported having ever been diagnosed by a doctor with asthma in 2008 (table 5.1 and figure 5.1). The prevalence of asthma ever decreased with age and was higher for females (22.7 per cent), compared with males (19.5 per cent).

	Males				Females		Persons		
Age group (years)		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl
18-24	29.1	24.8	33.7	29.1	25.3	33.3	29.1	26.2	32.2
25-34	25.4	22.0	29.2	26.1	23.7	28.6	25.7	23.6	28.0
35-44	19.1	16.8	21.6	21.2	19.5	22.9	20.1	18.7	21.6
45-54	16.4	14.4	18.7	20.5	18.7	22.4	18.5	17.1	19.9
55-64	15.5	13.7	17.5	21.0	19.3	22.7	18.3	17.0	19.6
65+	13.5	12.1	15.1	19.9	18.5	21.5	17.1	16.0	18.2
Total	19.5	18.4	20.7	22.7	21.8	23.6	21.2	20.5	21.9

# Table 5.1: Prevalence of asthma ever<sup>(a)</sup>, by age group and sex, 2008

(a) Reported ever having been diagnosed with asthma by a doctor.

95% CI = 95 per cent confidence interval.

Data are crude estimates, except for the totals, which represent the estimates for Victoria and have been age standardised to the 2006 Victorian population. Estimates that are (statistically) significantly different to the corresponding estimate for Victoria are identified by colour as follows: above Victoria / below Victoria.





(a) Reported ever having been diagnosed with asthma by a doctor.Data are crude estimates, they have not been age standardised.

Table 5.2 and figure 5.2 show the prevalence of current asthma by sex and age group. Almost eleven per cent (10.7 per cent) of persons had experienced asthma symptoms in the previous 12 months. The prevalence of current asthma decreased with age and was higher for females (12.3 per cent), compared with males (8.9 per cent).

	Males				Females		Persons		
Age group (years)		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl
18-24	9.9	7.4	13.0	14.9	11.9	18.5	12.4	10.4	14.7
25-34	10.6	8.5	13.1	12.0	10.3	13.9	11.3	9.9	12.8
35-44	9.8	8.1	11.8	11.6	10.3	13.1	10.7	9.6	11.9
45-54	7.9	6.5	9.7	11.9	10.4	13.5	9.9	8.9	11.1
55-64	7.5	6.2	9.1	12.1	10.8	13.5	9.8	8.9	10.9
65+	7.4	6.3	8.6	12.8	11.6	14.2	10.4	9.5	11.3
Total	8.9	8.2	9.7	12.3	11.6	13.1	10.7	10.1	11.2

Table 5.2: Prevalence of current asthma<sup>(a)</sup>, by age group and sex, 2008

(a) Reported ever having been diagnosed with asthma by a doctor and reported experiencing symptoms in previous 12 months.

95% CI = 95 per cent confidence interval.

Data are crude estimates, except for the totals, which represent the estimates for Victoria and have been age standardised to the 2006 Victorian population.



### Figure 5.2: Prevalence of current asthma<sup>(a)</sup>, by age group and sex, 2008

(a) Reported ever having been diagnosed with asthma by a doctor and reported experiencing symptoms in previous 12 months. Data are crude estimates, they have not been age standardised.

Table 5.3 shows the prevalence of asthma for the period 2001–2008. The prevalence of asthma ever (having ever been diagnosed by a doctor with asthma) remained constant between 2001 and 2008. However, the prevalence of current asthma (experiencing asthma symptoms in the previous 12 months) decreased over this period for Victoria. Among males and females, the prevalence of current asthma decreased for females, but not for males.

#### Table 5.3: Prevalence of asthma, by sex, 2001–2008

	2001	2002	2003	2004	2005	2006	2007	2008		
	Per cent									
Asthma ever <sup>(a)</sup>										
Males	19.9	19.4	18.3	18.2	19.7	19.6	18.5	19.5		
Females	23.5	23.6	22.0	21.9	22.2	22.4	22.6	22.7		
Persons	21.8	21.7	20.2	20.1	21.0	21.1	20.6	21.2		
Current asthma <sup>(b)</sup>										
Males	9.6	9.5	9.5	8.6	9.5	9.2	8.7	8.9		
Females	14.2	15.4	13.7	12.1	13.0	11.9	12.1	12.3		
Persons	12.1	12.6	11.6	10.4	11.3	10.6	10.4	10.7		

(a) Reported ever having been diagnosed with asthma by a doctor.

(b) Reported ever having been diagnosed with asthma by a doctor and reported experiencing symptoms in previous 12 months.

Data are age standardised to the 2006 Victorian population.

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

# Asthma by region and LGA

The prevalence of current asthma was similar between the metropolitan (10.6 per cent) and rural (11.0 per cent) areas of Victoria (table 5.4). However, the prevalence of asthma was higher in the Grampians region (13.4 per cent) compared with Victoria (10.7 per cent). The prevalence of current asthma ranged from 9.9 per cent in the Gippsland region to 13.4 per cent in the Grampians region.

	Males				Females		Persons			
Region		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl	
Barwon-South Western	8.9	6.3	12.3	11.7	9.3	14.7	10.2	8.4	12.5	
Eastern Metropolitan	9.2	7.3	11.4	12.4	10.6	14.6	10.8	9.5	12.4	
Gippsland	7.6	5.7	10.0	12.5	10.4	15.0	9.9	8.5	11.6	
Grampians	10.3	7.8	13.5	16.4	13.3	20.0	13.4	11.2	15.8	
Hume	7.9	6.3	9.9	13.6	11.9	15.5	10.8	9.6	12.2	
Loddon Mallee	8.5	6.1	11.5	14.3	12.2	16.6	11.4	9.8	13.3	
North and West Metropolitan	9.0	7.7	10.5	12.0	10.8	13.3	10.5	9.6	11.5	
Southern Metropolitan	8.8	7.3	10.7	11.8	10.3	13.4	10.3	9.2	11.5	
Metropolitan	9.0	8.1	10.0	12.0	11.1	12.9	10.6	9.9	11.2	
Rural	8.6	7.4	9.9	13.5	12.3	14.7	11.0	10.2	11.9	
Total	8.9	8.2	9.7	12.3	11.6	13.1	10.7	10.1	11.2	

 Table 5.4: Prevalence of current asthma<sup>(a)</sup>, by rurality and Department of Health region, 2008

(a) Reported ever having been diagnosed with asthma by a doctor and reported experiencing symptoms in previous 12 months.

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

95% CI = 95 per cent confidence interval.

Data are age standardised to the 2006 Victorian population.

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

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Figure 5.3, figure 5.4 and table 5.5 show the prevalence of current asthma by LGA, for males and females, respectively. Current asthma prevalence ranged from 6.4 per cent in the LGA of Wellington to 17.2 per cent in Benalla. The LGAs of Benalla (17.2 per cent), Corangamite (16.1 per cent) and Ballarat (15.4 per cent) had prevalence rates for current asthma that were higher than the rate for Victoria (10.7 per cent).

Among males, the prevalence rate for current asthma was higher in Indigo (21.9 per cent) and Glenelg (16.6 per cent) compared with the rate for males in Victoria (8.9 per cent).

Prevalence rates were higher for females in Corangamite (23.3 per cent), Central Goldfields (22.8 per cent), Golden Plains (19.5 per cent), Ballarat (19.4 per cent), Queenscliffe (18.9 per cent) and Benalla (18.4 per cent), compared with the rate for females in Victoria (12.3 per cent).

# Table 5.5: Prevalence of current asthma<sup>(a)</sup>, by LGA, 2008

		Males			Females			Persons	
LGA		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl
Alpine (S)	4.4	2.0	9.3	9.4	6.2	14.1	7.3	5.0	10.7
Ararat (RC)	5.1	2.6	9.8	16.7	11.7	23.2	9.7	7.0	13.5
Ballarat (C)	10.7	6.4	17.4	19.4	14.1	26.0	15.4	11.6	20.3
Banyule (C)	11.9	6.7	20.5	12.1	8.1	17.8	12.2	8.6	17.2
Bass Coast (S)	4.7	2.5	8.7	16.9	11.3	24.6	12.2	8.0	18.2
Baw Baw (S)	11.9	7.4	18.4	12.5	9.1	17.0	12.6	9.3	16.8
Bayside (C)	4.7	2.1	10.1	10.7	7.1	15.8	8.1	5.5	11.8
Benalla (RC)	14.1	8.0	23.7	18.4	14.1	23.6	17.2	12.7	22.8
Boroondara (C)	5.3	2.9	9.8	12.8	8.5	18.9	9.3	6.5	13.2
Brimbank (C)	7.9	4.8	12.7	14.9	11.0	20.0	11.9	9.1	15.5
Buloke (S)	8.4	5.5	12.8	16.1	11.3	22.4	13.5	9.7	18.5
Campaspe (S)	9.1	5.3	15.3	13.4	9.7	18.1	11.8	8.7	15.9
Cardinia (S)	10.9	6.3	18.0	12.1	7.6	18.8	10.5	7.2	15.2
Casey (C)	11.8	7.6	17.8	13.9	9.9	19.2	12.8	9.7	16.8
Central Goldfields (S)	9.4	4.7	17.9	22.8	15.9	31.5	14.9	10.4	20.9
Colac-Otway (S)	8.9	5.4	14.1	10.5	6.9	15.5	10.5	7.2	15.1
Corangamite (S)	9.0	5.6	14.4	23.3	17.1	30.9	16.1	11.9	21.3
Darebin (C)	10.7	7.0	16.2	9.3	6.4	13.4	10.0	7.0	14.2
East Gippsland (S)	9.0	5.0	15.5	10.4	6.9	15.6	9.9	6.8	14.3
Frankston (C)	10.5	6.9	15.8	11.6	8.2	16.1	11.3	8.6	14.8
Gannawarra (S)	12.0	7.3	19.0	13.6	8.7	20.6	11.4	8.4	15.4
Glen Eira (C)	5.7	3.0	10.7	10.4	6.8	15.5	8.5	5.8	12.2
Glenelg (S)	16.6	10.0	26.3	12.6	8.4	18.5	14.3	10.0	20.0
Golden Plains (S)	9.6	6.0	15.0	19.5	13.6	27.2	14.1	10.2	19.2
Greater Bendigo (C)	10.3	5.4	18.9	15.3	11.4	20.4	12.2	8.8	16.7
Greater Dandenong (C)	10.6	6.4	17.0	9.9	6.7	14.4	10.5	7.5	14.4
Greater Geelong (C)	7.8	4.5	13.3	10.0	6.6	14.9	9.1	6.4	12.7
Greater Shepparton (C)	6.4	3.8	10.6	13.3	9.5	18.4	10.0	7.4	13.3
Hepburn (S)	8.5	3.9	17.3	15.7	10.3	23.2	11.2	7.4	16.6
Hindmarsh (S)	4.5	2.3	8.9	12.7	8.9	17.7	9.0	6.5	12.2
Hobsons Bay (C)	9.6	5.7	15.6	13.4	9.4	18.8	11.5	8.4	15.6
Horsham (RC)	12.8	7.7	20.7	11.3	7.9	16.1	13.2	9.1	18.7
Hume (C)	12.5	7.9	19.3	13.8	9.8	19.2	12.8	9.6	16.8
Indigo (S)	21.9	15.7	29.6	13.4	8.5	20.4	16.1	11.0	22.8
Kingston (C)	6.6	3.4	12.6	12.0	7.8	18.0	9.4	6.6	13.3
Knox (C)	12.9	8.6	19.0	13.1	8.5	19.6	12.4	9.2	16.6
Latrobe (C)	6.5	3.5	11.8	12.0	8.1	17.6	9.1	6.4	12.8
Loddon (S)	4.6	2.5	8.3	14.8	9.4	22.5	10.2	6.8	15.0
Macedon Ranges (S)	4.0	1.6	9.5	15.2	9.5	23.5	9.7	6.4	14.4
Manningham (C)	9.0	4.6	17.0	11.3	7.5	16.5	9.7	6.8	13.8

(a) Reported ever having been diagnosed with asthma by a doctor and reported experiencing symptoms in previous 12 months.

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

95% CI = 95 per cent confidence interval.

Data are age standardised to the 2006 Victorian population.

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

		Males			Females			Persons	
LGA		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl		Lower 95% Cl	Upper 95% Cl
Mansfield (S)	6.9	3.7	12.5	9.9	6.5	14.9	8.0	5.4	11.6
Maribyrnong (C)	3.3	1.4	7.5	9.3	6.2	13.8	6.4	4.4	9.4
Maroondah (C)	6.2	3.4	11.3	12.4	7.8	19.2	9.8	6.5	14.4
Melbourne (C)	8.5	4.8	14.5	13.8	9.2	20.2	9.4	6.5	13.4
Melton (S)	6.7	3.8	11.7	15.7	11.7	20.8	11.3	8.5	15.0
Mildura (RC)	7.4	3.8	13.7	13.8	9.1	20.4	10.7	7.5	15.1
Mitchell (S)	9.5	5.5	16.0	10.5	6.6	16.3	9.9	6.8	14.1
Moira (S)	5.3	2.1	12.9	17.0	12.1	23.3	11.4	7.8	16.4
Monash (C)	8.9	5.2	15.0	13.2	9.5	18.0	11.4	8.5	15.1
Moonee Valley (C)	8.6	4.9	14.7	12.2	8.2	17.7	10.3	7.4	14.2
Moorabool (S)	9.6	5.6	15.9	13.3	9.0	19.1	11.7	8.4	16.1
Moreland (C)	9.5	5.9	15.2	11.7	8.1	16.6	10.4	7.6	14.1
Mornington Peninsula (S)	10.9	6.1	18.6	15.5	10.5	22.2	13.5	9.5	18.8
Mount Alexander (S)	6.6	3.9	10.9	12.5	8.1	18.8	9.0	6.4	12.4
Moyne (S)	6.6	3.9	10.9	12.8	8.8	18.2	10.4	7.4	14.4
Murrindindi (S)	11.6	5.7	22.1	18.9	12.5	27.6	15.1	10.2	21.8
Nillumbik (S)	8.2	4.4	14.9	9.2	5.7	14.6	9.1	6.2	13.3
Northern Grampians (S)	6.3	4.0	9.8	9.8	6.7	14.2	8.3	6.1	11.1
Port Phillip (C)	6.4	3.4	11.8	8.2	5.5	12.2	7.8	5.1	11.7
Pyrenees (S)	15.2	8.5	25.8	13.2	9.6	17.9	13.4	9.1	19.2
Queenscliffe (B)	7.9	3.5	16.9	18.9	15.0	23.5	12.2	7.5	19.3
Southern Grampians (S)	6.7	3.4	12.9	11.3	7.3	17.0	9.1	6.1	13.5
South Gippsland (S)	5.0	2.6	9.4	13.8	9.2	20.2	9.3	6.5	13.1
Stonnington (C)	7.3	4.3	12.0	12.1	8.5	16.8	9.5	7.0	12.8
Strathbogie (S)	6.9	3.7	12.3	8.5	5.3	13.3	7.9	5.4	11.5
Surf Coast (S)	6.3	3.2	12.1	12.3	8.6	17.3	9.1	6.6	12.5
Swan Hill (RC)	11.1	5.8	20.0	9.8	6.1	15.3	10.0	6.6	15.0
Towong (S)	3.9	1.7	8.6	11.3	7.5	16.7	7.7	5.2	11.5
Wangaratta (RC)	9.6	5.5	16.3	12.0	8.5	16.7	12.5	9.6	16.1
Warrnambool (C)	8.4	4.9	13.8	15.8	11.2	21.8	12.8	9.5	17.1
Wellington (S)	4.2	1.7	9.9	8.9	5.8	13.3	6.4	4.2	9.6
West Wimmera (S)	7.5	3.7	14.6	18.0	12.8	24.7	12.3	8.5	17.5
Whitehorse (C)	11.0	6.5	17.9	17.7	12.3	24.9	13.3	9.4	18.4
Whittlesea (C)	7.3	4.0	13.1	8.0	5.5	11.5	7.8	5.5	11.0
Wodonga (RC)	7.4	4.8	11.3	13.6	9.9	18.2	10.7	8.2	13.8
Wyndham (C)	10.8	6.8	16.9	13.1	9.6	17.6	12.2	9.2	16.0
Yarra (C)	9.6	6.4	14.2	11.6	8.1	16.2	10.8	8.1	14.2
Yarra Ranges (S)	8.0	4.4	14.1	10.7	7.2	15.4	9.4	6.7	13.2
Yarriambiack (S)	7.6	4.9	11.7	17.8	12.3	25.2	14.3	9.9	20.3
Total	8.9	8.2	9.7	12.3	11.6	13.1	10.7	10.1	11.2

# Table 5.5: Prevalence of current asthma<sup>(a)</sup>, by LGA, 2008 (continued)



Figure 5.3: Prevalence of current asthma<sup>(a)</sup>, by LGA, males, 2008

Figure 5.4: Prevalence of current asthma<sup>(a)</sup>, by LGA, females, 2008

Per cent

Metropolitan and rural LGAs are identified by colour as follows: metropolitan / rural. LGA = local government area.

Per cent

Data are age standardised to the 2006 Victorian population.

The line on the graph is the Victorian estimate, it does not show the 95% CI. See the relevant table for the 95% CI for Victoria (Total).

# Asthma by selected health indicators

Table 5.6 shows the prevalence of current asthma by selected health indicators, for males and females, respectively. The table shows that males and females who reported high or very high levels of psychological distress and rated their health as fair or poor had higher prevalence rates of current asthma, than the average rates for all Victorian males and females. The table also shows that females who reported a body weight in the obese range had a higher prevalence rate of current asthma, than the average for all Victorian females.

Table 5.6: Prevalence of current asthma<sup>(a)</sup>, by sex and selected health indicators, 2008

	Males			Females			
		Lower 95% Cl	Upper 95% Cl		Lower 95% CI	Upper 95% Cl	
Level of psychological distress <sup>(b)</sup>							
Low (10-15)	7.6	6.7	8.6	10.3	9.5	11.3	
Moderate (16-21)	11.1	9.5	13.0	13.9	12.4	15.4	
High (22–29)	12.7	9.8	16.3	16.8	14.6	19.3	
Very high (30-50)	18.5	13.0	25.7	27.3	22.8	32.4	
Physical activity <sup>(c)</sup>							
Sedentary	6.3	4.1	9.4	9.4	6.7	13.2	
Insufficient time and/or sessions	8.6	7.2	10.3	11.9	10.5	13.4	
Sufficient time and sessions	8.8	7.8	9.8	12.3	11.3	13.2	
Alcohol consumption <sup>(d)</sup>							
At risk or high risk of long-term harm	10.7	7.5	15.1	16.2	11.9	21.7	
At risk or high risk of short-term harm	9.3	8.3	10.4	13.4	12.2	14.6	
Abstainer from alcohol	8.1	6.2	10.4	11.3	9.7	13.1	
Nutrition <sup>(e)</sup>							
Met guidelines for fruit and vegetable consumption	6.0*	3.5	10.0	13.1	10.6	16.0	
Met guidelines for vegetable consumption	5.7	3.7	8.6	13.9	11.5	16.7	
Met guidelines for fruit consumption	8.8	7.6	10.1	11.2	10.3	12.2	
Did not meet guidelines for either fruit or vegetables	9.2	8.2	10.3	13.2	12.2	14.4	
Smoking status							
Non-smoker	9.2	8.1	10.4	11.8	11.0	12.8	
Ex-smoker	8.8	7.1	11.0	14.2	12.0	16.8	
Current	7.7	6.3	9.4	13.7	12.0	15.7	
Self-rated health							
Excellent or very good	6.3	5.3	7.4	9.1	8.2	10.1	
Good	9.3	8.1	10.7	12.8	11.6	14.0	
Fair or poor	12.9	11.0	15.0	19.8	17.8	21.9	
Body weight status <sup>(f)</sup>							
Underweight	4.6*	2.4	8.7	13.3	9.9	17.8	
Normal weight	7.5	6.4	8.7	9.7	8.9	10.7	
Overweight	9.5	8.2	10.9	13.9	12.3	15.7	
Obese	11.7	9.4	14.3	17.3	15.0	19.8	
Total	8.9	8.2	9.7	12.3	11.6	13.1	

(a) Reported ever having been diagnosed with asthma by a doctor and reported experiencing symptoms in previous 12 months.

(b) Based on Kessler 10 Psychological Distress Scale (K10).

(c) Based on national guidelines (DoHA 1999) and excludes adults aged less than 19 years.

(d) Based on national guidelines (NHMRC 2001).

(e) Based on national guidelines (NHMRC 2003).

(f) Based on Body Mass Index (BMI) score.

95% CI = 95 per cent confidence interval.

Data are age standardised to the 2006 Victorian population.

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

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

# References

DoHA (Department of Health and Ageing) 1999, National physical activity guidelines for adults, DoHA, Canberra.

NHMRC (National Health and Medical Research Council) 2001, Australian alcohol guidelines: health risks and benefits, NHMRC, Canberra.

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