Key points

- People with asthma rate their health lower and have worse health-related quality of life than people without asthma.
- This difference is evident in physical, psychological and social domains of quality of life.
- There is a higher prevalence of depression and psychological distress in people with asthma than in people without asthma.
- A greater proportion of people with asthma report having days away from work or study over a 2-week period (11.4%) than people without asthma (7.9%).
- Approximately one-third to one-half of adults with asthma have moderate or severe disease.

  Disturbed sleep is a common problem among both adults and children with asthma.

Introduction

Traditional measures of disease impact, such as prevalence, mortality and hospitalisation rates, are important but are of limited use in understanding the extent of the effect of a disease on an individual. Health-related quality of life (HRQoL) is a term often used to describe an individual's perception of how a disease or condition affects their physical, psychological and social wellbeing. It is often used to measure the impact of a disease, such as asthma, on a person's health and everyday functioning (ACAM 2004). HRQoL measures can be used to describe and predict health outcomes, guide and assess clinical management, and direct clinical policy and the allocation of health resources. The effect that a health condition has on physical, psychological and social wellbeing depends upon the features of the condition and also on individual factors such as perception of health and the relative importance of each domain, which is based on their beliefs, experiences and expectations.

Measures of HRQoL may focus on impacts that are relevant to a specific disease (disease-specific) or, alternatively, on impacts that are relevant to a broad range of health conditions (generic). Both generic and disease-specific measures have a role in the assessment of HRQoL. Measures that are generic are most frequently used in health surveys to assess the overall impact of a person's health status on their quality life. Measures of HRQoL can be both brief and broadly focused, such as asking someone to rate their overall health status. Alternatively, they can be more complex and precise, such as a HRQoL profile, which measures impacts on physical, psychological and social wellbeing using a series of specifically targeted questions. The broadest measures endeavour to summarise the domains of HRQoL globally in a single question (global measures). A widely used example is the question 'In general, would you say your health is excellent, very good, good, fair or poor?' This question, which is the first question of the 36-item Medical Outcomes Study Short-Form (SF-36), is often referred to as the SF-1. It measures global HRQoL with less precision than the entire SF-36. However, the single question is more feasible than the 36-item question for use in large, multi-purpose surveys.

The SF-36 is an example of a HRQoL profile that has been widely used (McHorney et al. 1993, 1994). It measures eight dimensions of physical and psychological health referred to as: physical functioning, role physical, bodily pain, vitality, general health, social functioning, role emotional, and mental health. The questions can be summarised into a physical component summary score (PCS) and mental component summary score (MCS). Information from generic measures can be used to assess the quality of life of subgroups, such as those with asthma, relative to members of the general population or relative to reference values. The limitation of these generic questionnaires is that they may not adequately focus on those aspects of HRQOL that are particularly relevant to the people with specific diseases, such as asthma. Disease-specific measures, on the other hand, focus on the impacts that are relevant to a specific disease. These measures are designed for specific diagnostic or population groups, such as

people diagnosed with asthma. The rationale for these questionnaires is that they will be more relevant and more sensitive to the differences between population subgroups with the disease and responsive to changes over time (Patrick & Deyo 1989).

Among people with asthma, disease severity, the level of disease control and the impact of the disease on HRQoL are interrelated. People with inherently severe asthma can be expected, on average, to have worse outcomes and, hence, worse HRQoL than people with less severe disease. The extent to which asthma severity is modified by environmental factors and treatment reflects asthma control. During periods of poor asthma control, people with asthma report poorer HRQoL (Vollmer et al. 1999). Markers of asthma control such as increasing frequency and severity of asthma symptoms, increased used of 'relievers' and being woken up frequently at night due to asthma can, therefore, be used as predictors of asthma outcomes.

A number of aspects of the physical impact of disease and its effect on social functioning or role performance can be considered markers of disease control. These include reduced activity days, restricted physical activity, reduced functioning ability, and days lost from work or school. This chapter presents information on HRQoL and markers of control for asthma using data from the ABS National Health Survey and state health surveys.

8.1 Impact of asthma on self-assessed health

The presence of asthma is associated with a worse self-assessed health status. In the 2001 National Health Survey, respondents with asthma rated their health significantly worse than respondents without asthma (p trend <0.001). Although the definitions of asthma varied, in all surveys listed in Table 8.1, the distribution of responses on self-assessed health status was shifted towards a more adverse health status among people with asthma.

Table 8.1
Self-assessed health in adults with and without current asthma, Australia, 1998–2004

		Results (%)			
Population/ study	Response	With asthma	(95% CI)	Without asthma	(95% CI)
In general, would you say your health is: excellent, very good, good, fair or poor?					
National Health Survey 2001 (1)	Excellent	10.8	(9.3–12.4)	19.9	(19.2–20.6)
Age 15 years and over	Very good	27.5	(25.2–29.8)	33.5	(32.6–34.3)
	Good	34.0	(31.6–36.4)	29.8	(28.9–30.6)
	Fair	20.0	(18.0–22.0)	12.5	(11.9–13.1)
	Poor	7.6	(6.3–8.8)	4.4	(4.0–4.8)
		(n=3,116)		(n=26,863)	
WA Health and Wellbeing Surveillance System 2004 (2)	Excellent	19.5	(16.0–23.1)	30.4	(29.0–31.9)
Age 15 years and over	Very good	33.7	(29.5–37.9)	39.1	(37.5–40.6)
	Good	28.6	(24.6–32.6)	21.9	(20.4–23.1)
	Fair	11.0	(8.2–13.7)	7.0	(6.2–7.8)
	Poor	7.2	(4.8–10.4)	1.8	(1.4–2.2)
		(n=399)		(n=3,607)	
Queensland Omnibus Survey 2004 (3)	Excellent	10.4	(7.1–13.7)	17.4	(15.7–19.1)
Age 18 years and over	Very good	34.2	(29.1–39.3)	38.1	(35.9–40.3)
	Good	33.6	(28.6–38.7)	30.0	(27.9–32.1)
	Fair	15.5	(11.6–19.4)	10.9	(9.5–12.3)
	Poor	5.4	(3.0–7.8)	3.5	(2.7–4.3)
		(n=336)		(n=1,895)	
NSW Health Survey 1998 (4)	Excellent	9.9	(8.1–11.7)	19.1	(18.2–19.9)
Age 16 years and over	Very good	33.8	(30.7–36.8)	35.8	(34.8–36.8)
	Good	32.2	(29.2–35.1)	29.8	(28.9–30.8)
	Fair	16.9	(14.8–18.9)	12.1	(11.4–12.7)
	Poor	7.2	(5.8–8.7)	3.0	(2.7–3.4)
		(n=3,764)		(n=15,597)	

(continued)

Table 8.1 (continued)
Self-assessed health in adults with and without current asthma, Australia, 1998–2004

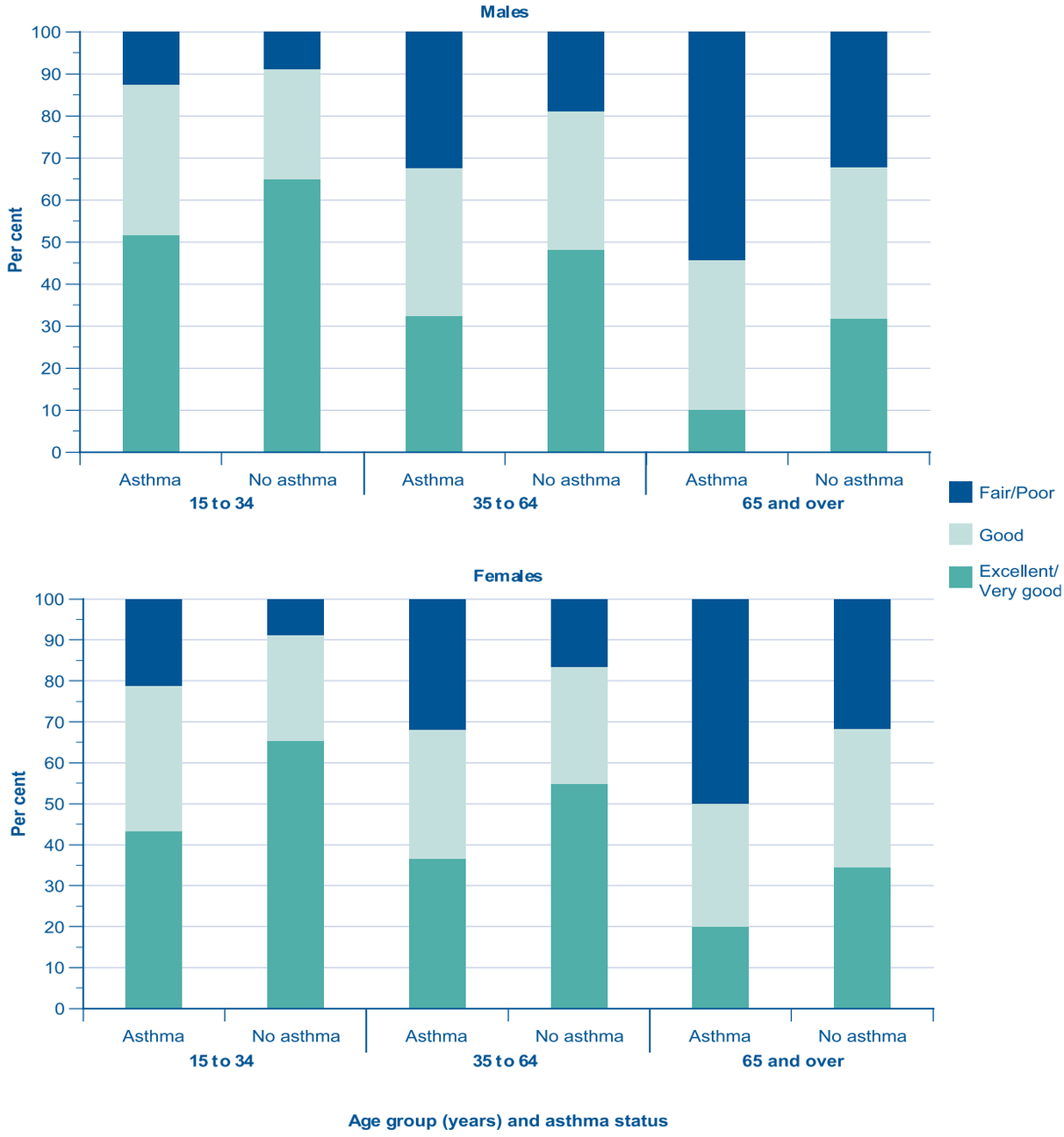
Population/ study	Response	Results (%)			
		With asthma	(95% CI)	Without asthma	(95% CI)
Victorian Population Health Survey 2003 (5)	Excellent	9.5	(4.5–11.5)	13.0	(11.8–14.2)
	Very good	29.0	(25.8–32.1)	34.9	(33.3–36.5)
Age 18 years and over	Good	42.3	(39.0–45.6)	37.7	(35.9–39.4)
	Fair	14.4	(12.2–16.6)	12.3	(11.1–13.5)
	Poor	4.6	(4.2–5.0)	2.1	(0.7–3.5)
		(n=877)		(n=6623)	
Overall, how would you rate your health during the past 4 weeks? Excellent, very good, good, fair, poor or very poor?					
NSW Health Survey 2003 (4)	Excellent	14.6	(11.8–17.5)	23.3	(22.2–24.5)
	Very good	25.9	(22.5–29.3)	31.0	(29.7–32.2)
Age 16 years and over	Good	30.1	(26.6–33.5)	27.6	(26.5–28.8)
	Fair	19.4	(16.6–22.2)	12.6	(11.7–13.4)
	Poor	7.5	(5.8–9.1)	4.2	(3.7–4.7)
	Very poor	2.5	(1.6–3.4)	1.2	(0.9–1.4)
		(n=1,524)		(n=11,484)	
NSW Health Survey 2002 (4)	Excellent	13.0	(10.4–15.5)	24.5	(23.3–25.7)
	Very good	24.5	(21.2–27.8)	30.0	(28.7–31.2)
Age 16 years and over	Good	31.6	(28.0–35.3)	27.8	(26.6–29.0)
	Fair	19.9	(16.8–23.1)	12.3	(11.4–13.2)
	Poor	8.2	(6.4–9.9)	4.0	(3.5–4.5)
	Very poor	2.8	(1.9–3.7)	1.3	(1.0–1.7)
		(n=1,468)		(n=11,154)	

Note: The definitions for current asthma were: NSW Health Survey, Queensland Omnibus Survey and WA Health and Wellbeing Surveillance System: Doctor diagnosis of asthma plus treatment or symptoms of asthma in the last 12 months; Victorian Population Health Survey: Doctor diagnosis of asthma plus symptoms of asthma in the last 12 months; National Health Survey: 'Yes' to the question 'Have you ever been diagnosed by a doctor with asthma?' and 'Yes' to 'Do you still get asthma?'

Sources: (1) ABS National Health Survey 2001 (CURF); (2) Health and Wellbeing Surveillance System unpublished data, 2004, Health Information Centre, Department of Health WA, 2004; (3) Queensland Omnibus Survey 2004, unpublished data, Health Information Branch, Queensland Health, 2004; (5) Victorian Population Health Survey 2003, Department of Human Services (unpublished data); (4) Centre for Epidemiology and Research 2003, 2004; Public Health Division 2001.

This disparity was evident in all age groups but it was greatest in the oldest age group, in both males and females, and least among young males (Figure 8.1).

Figure 8.1
Self-assessed health status in adults with and without current asthma, by broad age group and sex, people aged 15 years and over, Australia, 2001



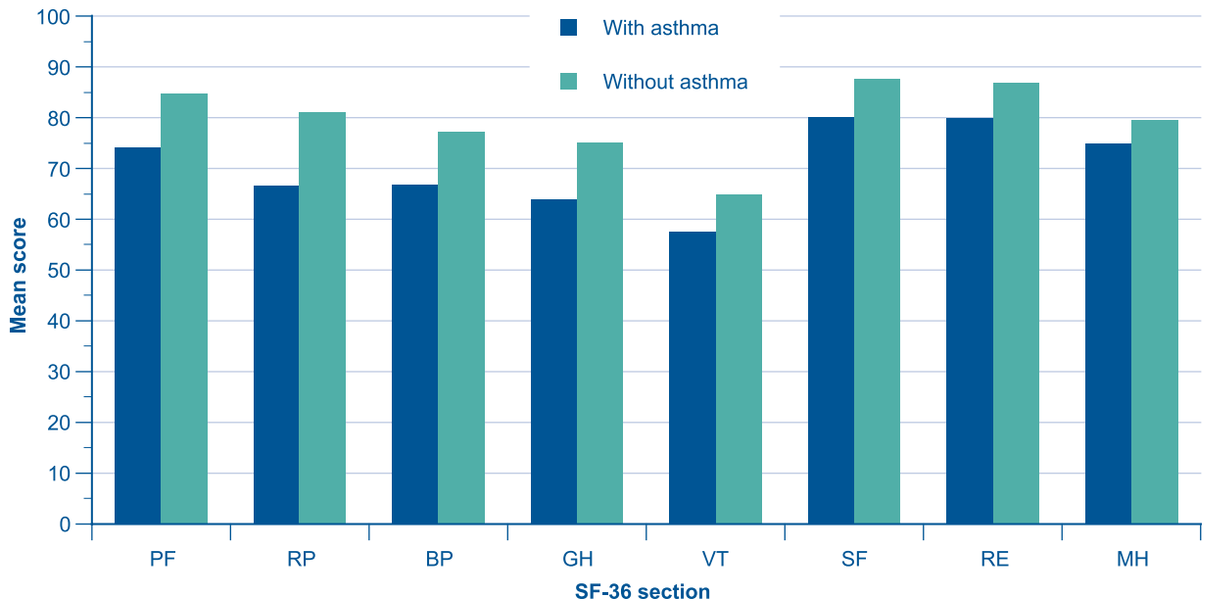
Source: ABS National Health Survey 2001.

8.2 Impact of asthma on the domains of HRQoL

Health-related quality of life measures are commonly described in terms of dimensions that fall into the physical, psychological and social domains. Available evidence suggests that in most dimensions, the HRQoL of people with asthma is worse than that observed in people without the disease. In a survey conducted in South Australia in 1998 (Wilson et al. 2002), people with asthma had lower (worse) scores than people without asthma for all eight dimensions of the SF-36 (Figure 8.2).

Figure 8.2

SF-36 scores in people with and without asthma, people aged 15 years and over, South Australia, 1998



Note: PF—physical functioning, RP—role: physical, BP—bodily pain, GH—general health, VT—vitality, SF—social functioning, RE—role: emotional, MH—mental health. There was a significant difference between the mean scores of people in metropolitan areas with and without asthma for all domains ($p<0.001$ except for RE, where $p=0.003$).

Source: Wilson et al. 2002.

The tables in the following sections summarise the available data on the three core domains of HRQoL (physical, psychological and social) measured in people with asthma. Where available, comparative data from the same survey in people without asthma are also provided.

Physical domain of HRQoL

In the South Australian survey (Wilson et al. 2002), adults with asthma had lower (worse) scores in the three physical components of the SF-36 health questionnaire (physical functioning, role: physical, and bodily pain) than people without asthma (Figure 8.2). Two other population surveys found that adults with asthma had lower physical component summary scores from the SF-12 (an abbreviated version of the SF-36) than those without asthma (Table 8.2).

Table 8.2

Physical component of quality of life, adults, Australia, 1998–2001

Population/study	Response	Results (95% CI)			
		With asthma	(95% CI)	Without asthma	(95%CI) p value
Physical Component Summary Score (PCS) for SF-12					
SA Health and Wellbeing Survey 2000 (1) Age 18 years and over	PCS (mean score)	46.2 (n=324)	(45.2–47.2)	49.7 (n=2,212)	(49.3–50.1) p<0.05
WANTS Survey 2000 (WA, NT and SA) (2) Age 18 years and over	PCS (mean score)	47.6 (n=834)		50.2 (n=6,609)	p<0.01

Note: The definitions for current asthma were: 'Yes' to the question 'Have you ever been diagnosed by a doctor with asthma?' and 'Yes' to 'Do you still have/get asthma?'

Sources: (1) Avery et al. 2004a; (2) Adams et al. 2004b.

Psychological domain of HRQoL

People with asthma report worse psychological health than people without asthma. When general measures of psychological health are used, such as those in the SF-12 (Table 8.3) and SF-36 (Figure 8.2), these differences are small but statistically significant. Specific measures of anxiety and depression levels have identified greater differences between people with and without asthma. A recent study from South Australia reported a higher prevalence of depression among people with asthma compared to people without asthma (Goldney et al. 2003). Furthermore, this study found that people with more severe symptoms of asthma (shortness of breath, waking at night with asthma symptoms or morning symptoms) were more likely to suffer from major depression than those without severe symptoms.

Table 8.3
Psychological component of quality of life, adults, Australia, 1998–2004

Population/study	Response	Results			
		With asthma	(95% CI)	Without asthma	(95% CI) p value
Mental component summary (MCS) for SF-12					
SA Health and Wellbeing Survey 2000 (1) Age 18 years and over	MCS (mean score)	51.5 (n=324)	(50.5–52.4)	52.4 (n=2212)	(52.0–52.7)
WANTS Survey, WA, NT and SA 2000 (2) Age 18 years and over	MCS (mean score)	50.9 (n=834)		52.2 (n=6,609)	p<0.05
Kessler-10 Psychological Distress Scale					
WA Health and Wellbeing Surveillance System, 2004 (3) Age 18 years and over	Low (<16) Moderate (16–21) High (22–29) Very high (>=30)	57.3% 23.9% 11.3% 7.7% (n=399)	(52.9–61.6) (20.0–27.6) (8.2–15.1) (4.6–11.9)	74.9% 16.8% 6.0% 2.3% (n=3,208)	(73.6–76.3) (15.6–17.9) (5.2–6.7) (1.8–2.8)
SA Monitoring and Surveillance system July 2002–June 2004 (4) Age 16 years and over	Low/ mod (<21) High/ very high (>=22)	84.7% 15.6% (n=1,433)	(82.5–86.3) (13.3–17.6)	90.2% 9.8% (n=11,450)	(89.6–90.8) (9.2–10.4)
NSW Health Survey 2003 Age 16 years and over (5)	Low (<16) Moderate (16≤21) High (22≤30) Very high (≤30)	57.8% 25.7% 10.5% 6.0% (n=1,505)	(54.1–61.5) (22.4–29.1) (8.4–12.6) (4.4–7.6)	68.4% 21.2% 8.1% 2.4% (n=11,347)	(67.1–69.6) (20.1–22.3) (7.3–8.8) (2.0–2.8)
Victorian Population Health Survey 2003, (6) Age 18 years and over	Low (<16) Moderate (16–21) High (22–29) Very high (≤30)	53.6% 26.9% 11.7% 5.6%	(49.2–56.9) (23.0–30.8) (8.8–14.6) (3.8–7.4)	68.1% 20.0% 7.8% 2.2%	(66.5–69.7) (18.6–21.4) (6.8–8.8) (1.8–2.6)
WANTS Survey WA, NT and SA 2000 (2) Age 18 years and over	12–15 (low risk) 16–29 (medium risk) 30–50 (high risk)	59.5% 36.9% 3.6% (n=834)		68.9% 28.5% 2.7% (n=6,609)	p<0.01 for difference between the groups
PRIME-MD questionnaire					
SA Omnibus 1998 (7) Age 15 years and over	Major depression* All depression**	14.4% 22.1% (n=299)	(10.4–18.4) (17.4–26.8)	5.7% 16.7% (n=2,711)	(4.8–6.6) (15.3–18.1) * p=0.000 **p=0.03

Notes: The definitions for current asthma were: NSW Health Survey, SA Monitoring and Surveillance System and WA Health and Wellbeing Surveillance System: Doctor diagnosis of asthma plus treatment or symptoms of asthma in the last 12 months; Victorian Population Health Survey: Doctor diagnosis of asthma plus symptoms of asthma in the last 12 months; National Health Survey, SA Health and Wellbeing, SA Omnibus and WANTS survey: 'Yes' to the question 'Have you ever been diagnosed by a doctor with asthma?' and 'Yes' to 'Do you still have/get asthma?'

Sources: (1) Avery et al. 2004a; (2) Adams et al. 2004b; (3) Health Information Centre, Department of Health WA, unpublished data, 2004; (4) Avery et al. 2004b; (5) Centre for Epidemiology and Research 2004; (6) Victorian Department of Human Services, unpublished data, 2004; (7) Goldney et al. 2003.

Social domain of HRQoL

The social domain of HRQoL refers to the ability to perform roles and activities. This has most commonly been measured as time away from work or other usual activities.

Asthma accounts for a large proportion of days lost from work or study (Table 8.4). In the 2001 ABS National Health Survey, the proportion of people with current asthma who had taken time off work or study in the previous 2 weeks because of any illness (11.4%) was higher than the proportion of people without asthma who had taken time off for any illness (7.9%, p<0.001). The proportion of people with asthma who actually attributed days off work or study to asthma was 2.6%. Among children aged 2 to 12 years with asthma, 58% were limited in their normal activity in the last year, resulting in an average of 9.3 days of reduced activity in 2001.

Table 8.4
Social component of quality of life, adults and children with current asthma, Australia, 1998–2001

Population/study	Measure	Results	(95% CI)
Days away from work school or usual activities			
National Health Survey 2001(1) All ages	Any days away from work/study in last 2 weeks	11.4% with asthma (n=3,157)	(10.1–12.7%)
		7.9% without asthma (n=23,705)	(7.5–8.3%)
	Any days away from work/school due to asthma in last 2 weeks	2.6% (n=1,926)	(1.9–3.2%)
Queensland Chronic Disease Survey 2000 (2) Age 18 years and over	Days in the last 12 months when could not work/study/manage day-to-day activities due to asthma		
	None	23.4%	(18.5–28.3%)
	1–2 days	12.0%	(8.3–15.7%)
	3–4 days	10.3%	(6.8–13.8%)
	5–9 days	17.5%	(13.1–21.9%)
	10–19 days	10.7%	(7.2–14.3%)
	20+ days	26.1% (n=291)	(21.1–31.2%)
SA Omnibus Survey 1998 (3) Age 15 years and over	Number of days lost due to asthma	13.6	(10.1–18.0)
Activity limitations			
National Health Survey 2001 (1) All ages	Any other days of reduced activity in the last 2 weeks (other than days off work/school)	17.5% with asthma (n=3,157)	(15.9–19.7%)
		10.0% without asthma (n=23,705)	(9.5–10.4%)
	Any other days of reduced activity due to asthma in last 2 weeks (other than days off work/school)	3.2% (n=1,926)	(2.5–4.0%)
NSW Health Survey 1998 (4) Age16 years and over	Days in the last 12 months when asthma interfered with ability to work/study/ manage day-to-day activities		
	None	79.9%	(78.2–81.6)
	1–2 days	5.6%	(4.5–6.6)
	3–4 days	3.8%	(2.9–4.6)
	5–9 days	3.9%	(3.1–4.6)
	10–19 days	3.0%	(2.2–3.7)
	20+ days	3.9% (n=3,764)	(3.2–4.7)
Qld Chronic Disease Survey 2000 (2) Age 18 years and over	Did asthma interfere with ability to work/study/ manage day-to-day activities last 12 months? (If 'Yes' for the first question they were asked to respond to the second part)		
	Yes	36.7%	(33.4–40.1) (n=795)
	A little bit	23%	(18.2–27.8)
	Moderate	32%	(26.6–37.4)
	Quite a lot	28.5%	(23.3–33.7)
	Extremely	16.5% (n=291)	(12.2–20.8)

(continued)

Table 8.4 (continued)
Social component of quality of life, adults and children with current asthma, Australia, 1998-2001

Population/study	Measure	Results	(95% CI)
NSW Health Survey 1998 (4) Age 16 years and over	Yes	33.1% (n=1,897)	(30.2–35.9)
	A little bit Moderately Quite a lot Extremely	33.0% 34.3% 19.9% 12.6% (n=680)	(27.9–38.0) (29.3–39.4) (16.2–23.6) (9.4–15.8)
CHILDREN Limitations in core activities in last 12 months			
NSW Child Health Survey 2001 (5) Age 2 to 12 years	Asthma limited the child's usual activities in the last 12 months	58.2% Mean of 9.3 days Median 2 days (n=1,243)	(55.5–60.9)

Note: The definitions for current asthma were: NSW Health Survey and Queensland Chronic Disease Survey: Doctor diagnosis of asthma plus treatment or symptoms of asthma in the last 12 months; SA Omnibus Survey and National Health Survey: 'Yes' to the question 'Have you ever been diagnosed by a doctor with asthma?' and 'Yes' to 'Do you still have/get asthma?'

Sources:(1) ABS 2001 National Health Survey (CURF); (2) Epidemiology Services Unit 2002; (3) Wilson et al. 2002; (4) Epidemiology Services Unit 2002; (5) Centre for Epidemiology and Research 2002.

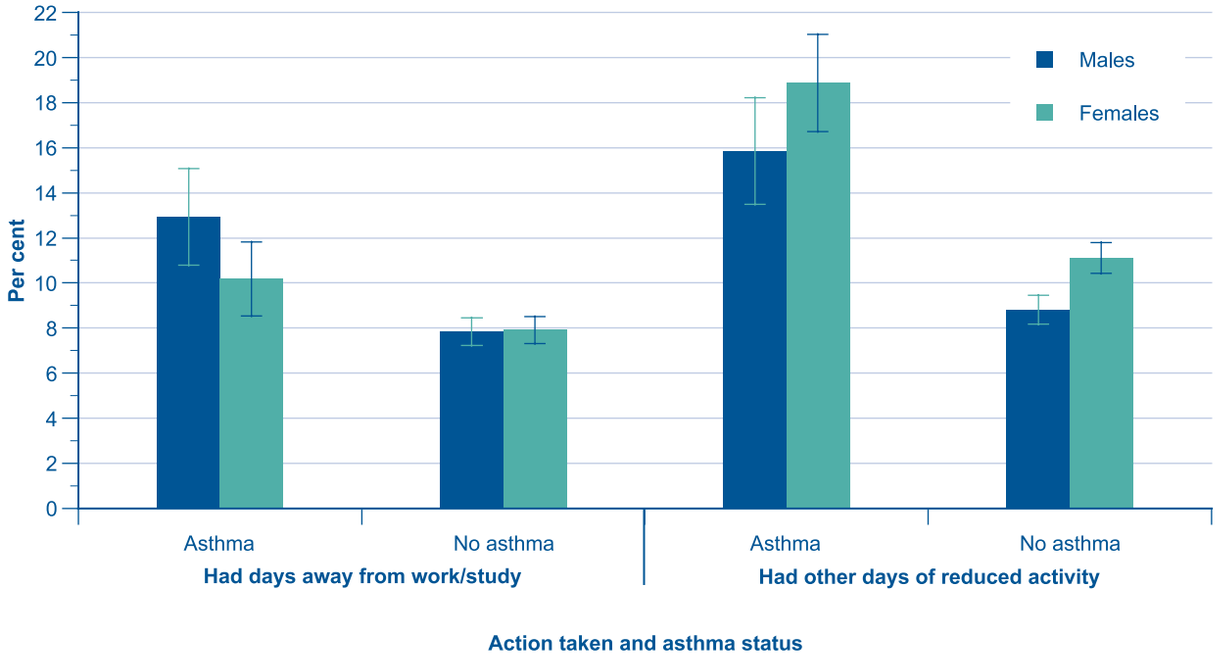
Among participants in the 2001 National Health Survey who had current asthma, more males than females had taken days off work or study because of asthma in the previous 2 weeks (p=0.02) (Figure 8.3). There was no difference in the proportion of males and females who had other days of reduced activity due to their asthma (p=0.39).

Figure 8.3
Action taken in last 2 weeks for asthma, by sex, all ages, Australia, 2001

Source: ABS National Health Survey 2001.

More people with asthma (17.5%) than people without asthma (10%) reported having reduced activity days, other than those related to work or study, in the previous 2 weeks (Figure 8.4) ($p<0.001$). Only 3.2% of people with asthma attributed these reduced activity days to asthma. These observations imply either that people with asthma underestimate the impact of asthma on their ability to undertake activities, or that people with asthma are more likely to have other illnesses that interfere with these activities.

Figure 8.4
Action taken in last 2 weeks for any reason, people with and without current asthma, by sex, all ages, Australia, 2001



Source: ABS National Health Survey 2001.

8.3 Markers of asthma control

There is a clear relationship between asthma severity and asthma control. The underlying severity of asthma in an individual may be modified by changes in the environment (e.g. reduction in exposure to known triggers of asthma such as dust mites). It may also be influenced by treatment for asthma. Ultimately, the changes in these environmental and treatment factors will impact on the individual's symptoms and their ability to function. This outcome is referred to as 'asthma control'. It reflects the combined effect of underlying disease severity, environmental exposures, and the effectiveness of treatment.

Several markers of asthma control have been used in population and clinical studies. These include increasing frequency and severity of asthma symptoms, increased use of bronchodilators ('relievers'), being woken up frequently at night due to asthma, reduced days of activity, restricted physical activity, reduced functioning ability, and days lost from work or school. These last four markers of asthma control overlap with the impact of asthma on the social domain of HRQoL reported in the previous section.

Assessment of the severity of asthma

The National Asthma Council (NAC 2002) recommends using a number of indicators to classify asthma severity at diagnosis.

Children with asthma are grouped into three broad patterns of asthma, which can be considered to reflect disease severity, using the NAC guidelines:

- Infrequent episodic asthma—isolated episodes of asthma which can last 1–2 days up to 1–2 weeks and are usually triggered by an environmental allergen or an upper respiratory tract infection. These children are asymptomatic in between the episodes, which are usually 6–8 weeks apart.
- Frequent episodic asthma—the interval between the episodes is shorter than for infrequent episodic asthma (less than 6 weeks) and the children have minimal symptoms in the interval period (e.g. exercise-induced wheeze).
- Persistent asthma—these children may have acute episodes like those seen in frequent and infrequent episodic asthma, but they also have symptoms on most of the days in the interval periods (e.g. sleep disturbance due to wheeze or cough, early morning chest tightness, exercise intolerance and spontaneous wheeze). Some children may have mild symptoms 4–5 days per week, while others may have frequent severe symptoms.

Among adults, persistent asthma is graded as mild, moderate or severe using the criteria listed in Table 8.5. The individual is assigned to the most severe grade in which a feature occurs (NAC 2002).

Table 8.5
NAC Asthma Management Handbook assessment of asthma severity in adults

Symptoms/indicators	Mild	Moderate	Severe and/or life-threatening
Wheeze, tightness, cough, dyspnoea	Occasional (e.g. with viral infection or exercise)	Most days	Every day
Nocturnal symptoms	Absent	<once/week	>once/week
Asthma symptoms on wakening	Absent	<once/week	>once/week
Hospital admission or ED attendance in past year (for adults)	Absent	Usually not	Usually
Previous life-threatening attack (ICU or ventilator)	Absent	Usually not	May have a history
Bronchodilator use	< twice/week	Most days	>3 to 4 times/day
FEV_1 (% predicted)	>80%	60–80%	<60%
Peak flow on waking (% recent best)	>90%	80–90%	<80%

The supplementary (SAND) asthma module of the BEACH general practice survey (see Appendix 1, Section A1.3) was used on four occasions between 1999 and 2002, to estimate the distribution of severity of asthma among patients attending GPs (AIHW GPSCU 2000, 2001). Severity was categorised based on the groupings in Table 8.5, with the addition of a 'very mild' category for those with episodic asthma only. The distribution of patients among the levels of severity did not change significantly between 1999 and 2002 (Henderson et al. 2004). Thirty-two per cent of adult patients with asthma were classified by GPs as having moderate and severe asthma. In that same period, 23% of children with asthma were classified as have frequent episodic or persistent asthma. Most children and adults attending GPs were assessed as having infrequent episodic asthma and mild or very mild asthma, respectively (Table 8.6).

Table 8.6
Assessment of asthma severity according to the SAND asthma module, adults and children, 1999–2003

Features	1999	2000–01	2002	2003
Adults (≥18 years)				
Severe	7.9%	5.5%	5.5%	Severe + moderate 28%
Moderate	27.7%	24.5%	27.2%	
Mild	27.3%	Mild + very mild 70%	31.4%	
Very mild	32.9%		35.9%	
Children (<18 years)				
Persistent	4.9%	5.1%	2.1%	Persistent + frequent 23.0%
Frequent episodic	21.0%	20.3%	15.5%	
Infrequent episodic	68.5%	74.6%	82.5%	
Time period	30/3/99 to 7/6/99	28/11/00 to 15/01/01	04/04/02 to 06/05/02	23/9/03 to 27/10/03
Sample	4,285 encounters from 213 GPs Patients with asthma (480 adults, 143 children)	5,495 encounters from 95 GPs Patients with asthma (543 adults, 118 children)	3,070 encounters from 105 GPs Patients with asthma (312 adults, 97 children)	2,527 encounters from 87 GPs Patients with asthma (367 total)

Sources: AIHW GPSCU 2000, 2001, 2003, 2004, Henderson et al. 2004.

In the New South Wales Health Survey in 1997, 54% of adults with asthma met one or more of the following criteria, which were adapted for survey use from the NAC criteria for moderate to severe asthma (Marks et al. 2000):

- sleep disturbed by asthma 3–4 nights or more in the last month;
- used reliever medication half the days, or more, during the last month;
- asthma interfered with ability to work, study or manage day-to-day activities to a moderate, or greater, extent during the last month;
- visited general practitioner for an attack of asthma 3 or more times in the last 12 months.

There is a large difference in the proportion of people classified as having moderate or severe asthma when the GP data (Table 8.6) and general population data from the New South Wales Health Survey are compared. This can be partly explained by the differences in the methods used for assessing asthma severity, the populations surveyed, and years when the surveys were conducted. The difference reflects uncertainty about the true proportion of people with moderate to severe asthma in the population.

Sleep disturbance due to asthma

People with severe and/or poorly controlled asthma may be awoken from sleep with asthma symptoms. This sleep disturbance due to asthma is an important adverse outcome of the illness and is also regarded as a valuable marker of disease control. Population surveys confirm that this is a common problem in both adults and children with asthma (Table 8.7). In New South Wales in 2001, 48.2% of children with current asthma had disturbed sleep in the last month that was attributed to asthma (Centre for Epidemiology and Research 2002).

Table 8.7
Proportion of adults with current asthma whose sleep was disturbed by asthma, Australia, 1998-2000

Population/study	Response	Rates	(95% CI)
Number of nights in the last month that sleep been disturbed by asthma			
Qld Chronic Disease Survey 2000 (1) Age 18 years and over	No nights 1–2 nights 3–4 nights 5–9 nights 10–19 nights 20+ nights (n=291)	52.3% 16.2% 9.3% 7.0% 7.2% 7.9%	(46.6–58.0) (12.0–20.4) (6.0–12.6) (4.1–9.9) (4.2–10.2) (4.8–11.0)
NSW Health Survey 1997–98 (2) Age 16 years and over	No nights 1–2 nights 3–4 nights 5–9 nights 10–19 nights 20+ nights (n=3,764)	61.7% 15.0% 7.8% 6.2% 5.2% 4.1%	(59.5–63.8) (13.3–16.7) (6.7–9.0) (5.0–7.4) (4.2–6.1) (3.4–4.8)
Woken at night			
SA Omnibus 1998 (3) Age 15 years and over	Weekly or more	13.3%	(9.9–17.7)

Sources: (1) Epidemiology Services Unit 2002; (2) Public Health Division 2001; (3) Wilson et al. 2002.

Summary

Asthma has a measurable impact on how people assess their overall health status. Most of the impact of asthma is on physical functioning and on the ability to perform social roles, such as work or study. Recent evidence suggests there is an important association between depression and asthma.

There are limited data on the prevalence of various levels of asthma severity and control in the general community. It is likely that between one-third and a half of adults with asthma have moderate or severe disease.