Key points

People with asthma who smoke

- The proportion of smokers among people with asthma is similar to the proportion of smokers among people without asthma.
- Among people with asthma, those who are younger and live in localities that are relatively socioeconomically disadvantaged are most likely to smoke.

Passive smoke exposure in children with asthma

- Forty-one per cent of children with asthma and 38% of children without asthma live with one or more regular smokers.
- The higher rate of household exposure to smokers among children with asthma is most evident among boys aged 5 to 14 years, girls aged less than 5 years and people living in more socioeconomically disadvantaged areas.

Introduction

The adverse effects of active and passive smoking on the general public are well known and people with asthma who smoke have additional morbidity. Smokers with asthma have more symptoms, worse asthma control (Siroux et al. 2000), an accelerated decline in lung function (Lange et al. 1998), more airway inflammation (Chalmers et al. 2001), and a less beneficial response to inhaled corticosteroid treatment (Chalmers et al. 2002; Pedersen et al. 1996) compared with non-smokers with asthma.

In this chapter, we present data on smoking among people with asthma and on exposure to environmental tobacco smoke among children with asthma. The relation between these exposures and asthma outcomes is also discussed.

7.1 People with asthma who smoke

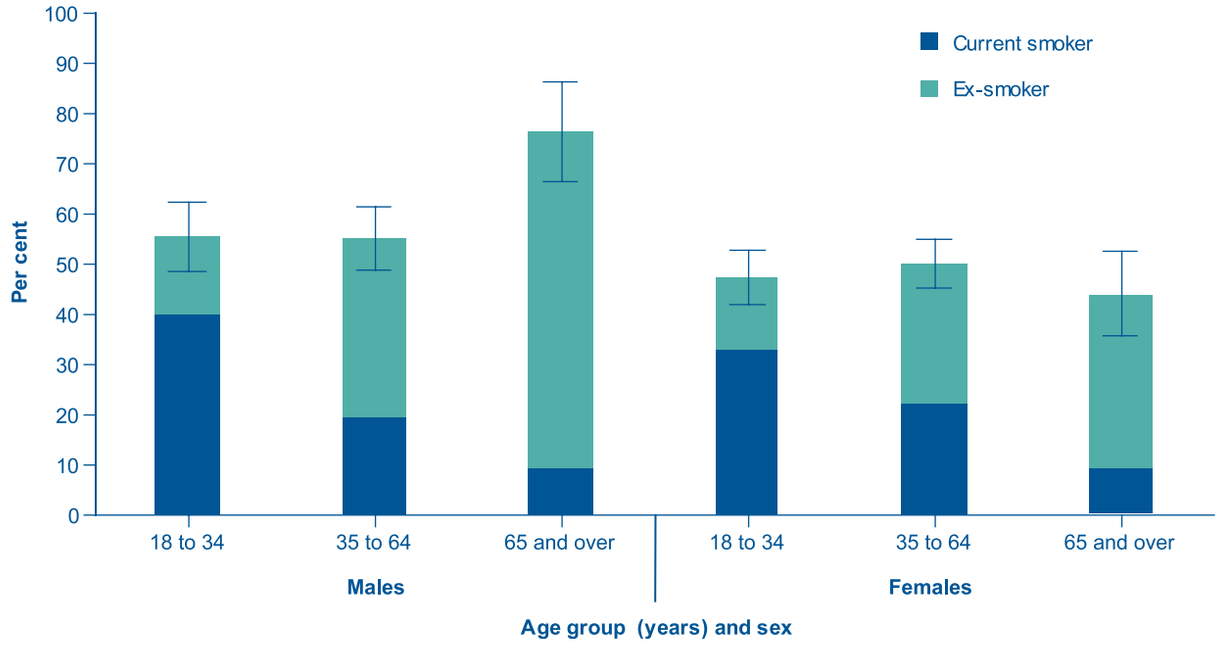
In this section, we present data from the 2001 National Health Survey on smoking status for people who report that they have had asthma diagnosed by a doctor and still get it. Overall, 25.9% (95% CI 23.5–28.2%) of people with current asthma were current smokers, including 27.4% of males and 24.8% of females with current asthma. This rate was not significantly different from that observed in people without asthma: 24.1% (95% CI 23.3–28.2%), including 27.7% of males and 20.6% of females without asthma.

Differentials in smoking

Age and sex

The proportion of people with asthma who were current smokers decreased markedly with age (Figure 7.1). The highest proportions of current smokers among people with asthma were in the 18 to 34 years age group. In this group, 40% of males and 33% of females were current smokers. More females than males with asthma reported never having smoked. This was most pronounced in the 65 years and over age group, where 55.8% of females compared to 23.6% of males with asthma had never smoked. In the older age groups there was also a greater percentage of male ex-smokers. This raises the possibility that a substantial proportion of these older men actually had smoking-related lung disease, that is, COPD, rather than asthma and had quit smoking because of asthma.

Figure 7.1
Smoking status among people with current asthma, by age group and sex, people aged 18 years and over, Australia, 2001

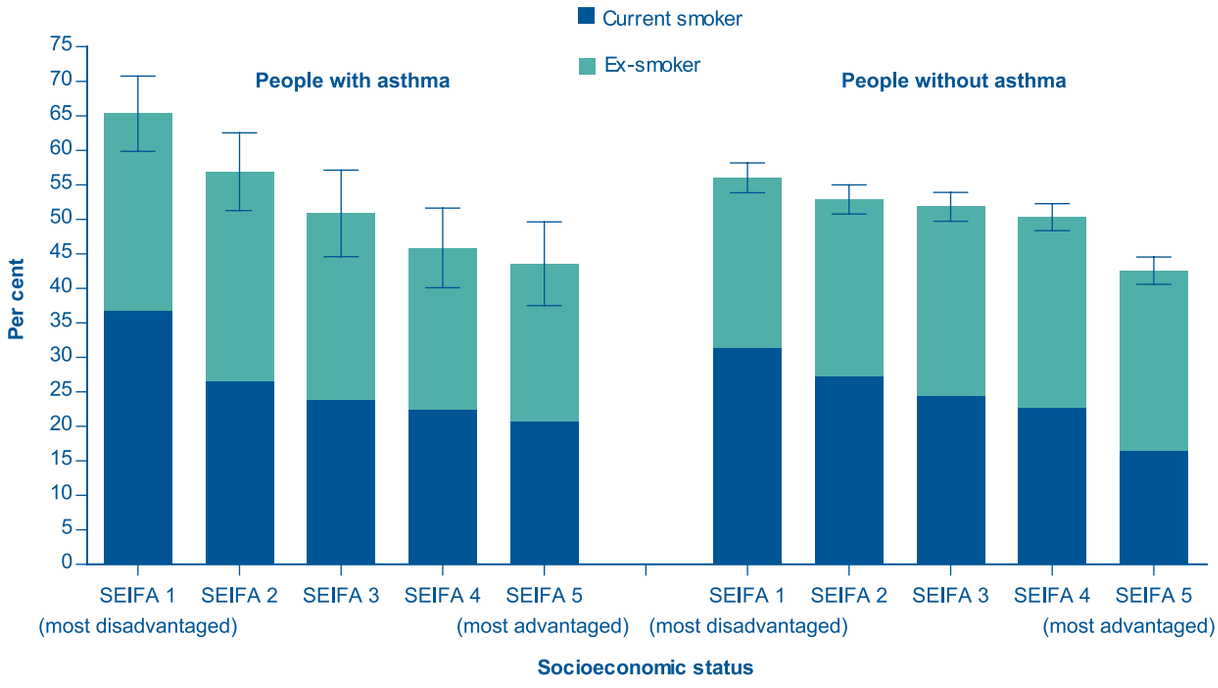


Source: ABS National Health Survey 2001.

Socioeconomic disadvantage

Among people with asthma, those living in more socioeconomically disadvantaged localities had a higher prevalence of smoking than those living in less disadvantaged localities (Figure 7.2). This differential was more marked than that observed in the people without asthma and, hence, the prevalence of current smoking among people with asthma in the most disadvantaged group (36.7%) was higher than that observed among people without asthma (31.4%, p trend<0.001).

Figure 7.2
The proportion of current smokers and ex-smokers in people with and without asthma, by socioeconomic status, people aged 18 years and over, Australia, 2001



Note: SEIFA 1 represents the most disadvantaged socioeconomic quintile and SEIFA 5 the most advantaged.

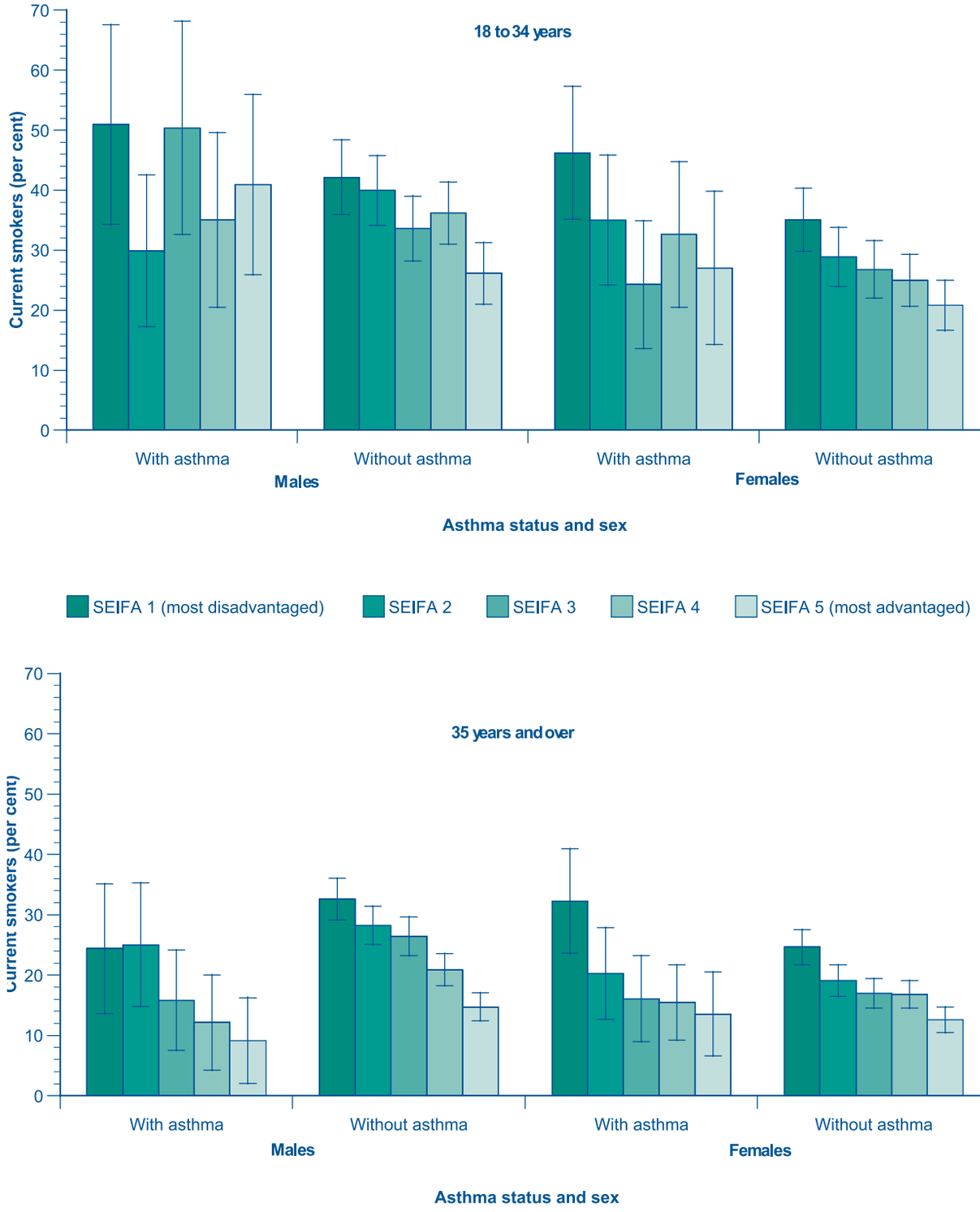
Source: ABS National Health Survey 2001.

People aged 18 to 34 years had higher smoking rates than people aged 34 years and over. Moreover, people aged 18 to 34 years with asthma often smoked more than those without asthma in the corresponding socioeconomic groups (Figure 7.3).

The trend for an increasing proportion of smokers with increasing socioeconomic disadvantage was most pronounced in females with asthma aged 35 years and over, with 13.6% in the most advantaged group reporting current smoking compared to 32.3% of those in the most socioeconomically disadvantaged group. This latter proportion was much higher than the proportion of female smokers aged 35 years and over without asthma for the same socioeconomic group (24.6%).

Figure 7.3

Proportion of people who are current smokers in people with and without asthma, by broad age group, sex and socioeconomic status, people aged 18 years and over, Australia, 2001



Note: SEIFA 1 represents the most disadvantaged socioeconomic quintile and SEIFA 5 the most advantaged.

Source: ABS National Health Survey 2001.

Summary

Young people with asthma and people living in socioeconomically disadvantaged areas are more commonly smokers than their contemporaries who do not have asthma. This places them in double jeopardy: from their asthma and from their smoking habit. Further investigation is required to understand the basis of this association and to develop appropriate public health action.

7.2 Passive smoke exposure in children with asthma

Exposure to environmental tobacco smoke (ETS) in childhood is a recognised risk factor for the development of asthma symptoms and also for the worsening of pre-existing asthma. It has been shown that exposure to ETS increases the risk of onset of wheezing illness in young children (Martinez et al. 1992) and that the association between ETS exposure and childhood wheezing illness is most consistent at high levels of exposure (NHMRC 1997). These findings are supported by evidence from international studies which conclude that parental smoking is associated with more severe asthma in children (Strachan & Cook 1998), and that exposure to ETS after birth is a likely cause of wheezing or other acute respiratory illness in young children (Strachan & Cook 1997). Cohort studies have shown that children with pre-existing asthma who are exposed to ETS have increased morbidity and asthma symptoms (Murray & Morrison 1989), more frequent exacerbations (Chilmonczyk et al. 1993), more severe asthma symptoms (Murray & Morrison 1993; Strachan & Cook 1998), impaired lung function (Chilmonczyk et al. 1993; Murray & Morrison 1989), and increased airway reactivity (Murray & Morrison 1989; Oddoze et al. 1999) or peak flow variability (Fielder et al. 1999; Frischer et al. 1993). There is also evidence that health service use is increased in children exposed to ETS. Such children are more likely to attend emergency departments with asthma (Evans et al. 1987). Prevention of indoor smoking leads to a reduction in hospital admissions in children with asthma (Gurkan et al. 2000). Recovery after hospitalisation, measured by use of reliever medication and number of symptomatic days, is also impaired in children exposed to ETS (Abulhosn et al. 1997).

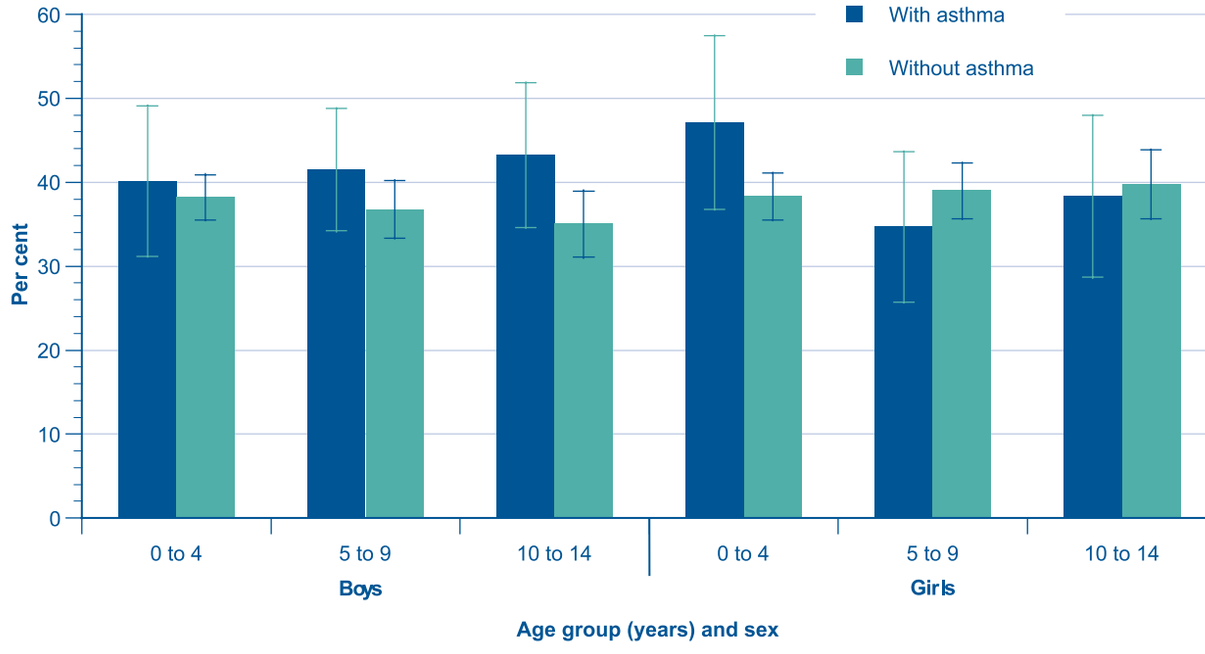
In 2001, 41% of children aged 0 to 14 years with asthma had one or more regular smokers in their household and were potentially exposed to cigarette smoke in their home. This was higher than the proportion of children without asthma who were similarly exposed (38%, p=0.04) (ABS National Health Survey (confidentialised unit record files)).

Differentials in children exposed to passive smoke

Age and sex

Among boys of all ages and girls aged less than 5 years who had current asthma, a higher proportion lived with a smoker than children of similar age and sex who did not have asthma. This difference was not evident among girls aged 5 years and over (Figure 7.4).

Figure 7.4
Percentage of children with and without current asthma with one or more cigarette smokers in the household, by age group and sex, age 0 to 14 years, Australia, 2001

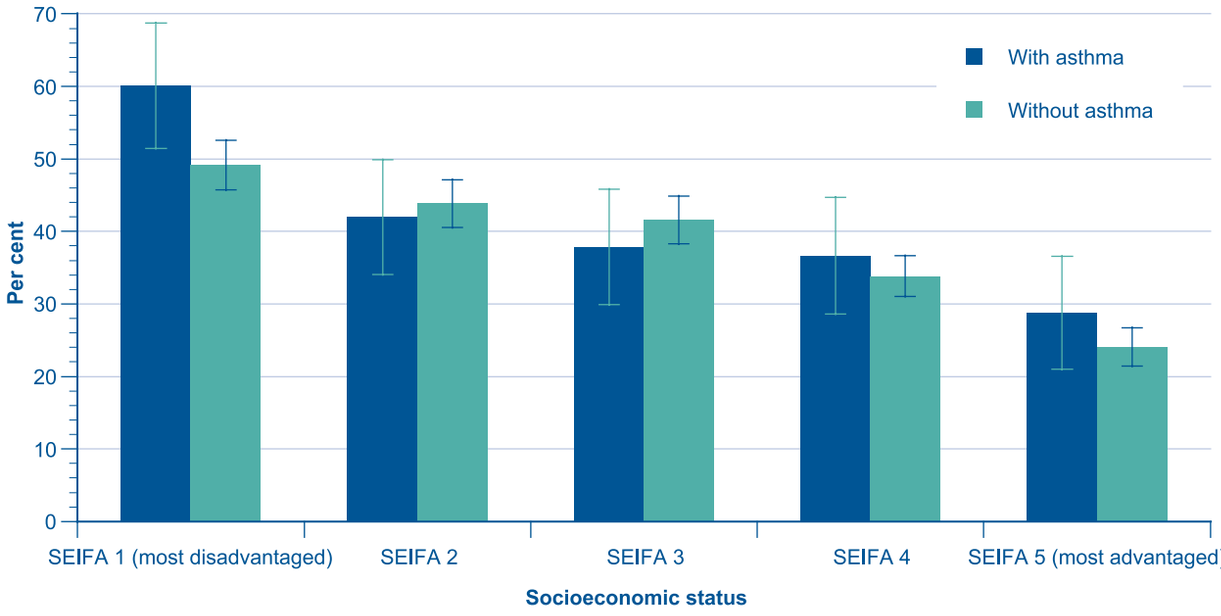


Source: ABS National Health Survey 2001.

Socioeconomic disadvantage

There were more children with current asthma who had one or more regular smokers living in the household in areas of relative socioeconomic disadvantage compared to more advantaged areas (p <0.001 for comparison of the most disadvantaged quintile with the two most advantaged quintiles) (Figure 7.5). Within the area of most socioeconomic disadvantage, 60.1% of children with asthma lived with one or more cigarette smokers compared to 49.1% of children without asthma.

Figure 7.5
Children with and without current asthma with one or more cigarette smokers in the household, by socioeconomic status, age 0 to 14 years, Australia, 2001



Note: SEIFA 1 represents the most disadvantaged socioeconomic quintile and SEIFA 5 the most advantaged.

Source: ABS National Health Survey 2001.

Smoking in homes where children reside

Some state health surveys in Australia have included questions investigating whether smoking occurred within the home, which enabled the identification of children who lived in homes where smoking occurred. Children in these households were likely to experience passive smoke exposure. Data from these surveys in New South Wales and Western Australia suggest that there is little difference in exposure to passive smoking for children with and without asthma (Table 7.1).

These data differ from the ABS National Health Survey data, which refer to children residing with a smoker. The data presented in Table 7.1 are more likely to reflect passive smoke exposure.

Table 7.1
Children who live in homes where smoking occurs in the home, Australia, 2001–2004

Population/study	Measure	Response	Rates (%)			
			With asthma	(95% CI)	Without asthma	(95% CI)
2001 NSW Child Health Survey Age 0 to 12 years (n=9,425)	Do you or the other smokers living in this house-hold....?	Always or usually smoke outside	25.8%	(21.1 to 30.5)	23.7	(22.5 to 25.0)
		Sometimes/usually/ always smoke inside	11.1%	(8.8 to 13.3)	10.1%	(9.3 to 11.0)
2004 Health and Wellbeing Surveillance System, Western Australia Age 0 to 15 years (n=715)	Which of the following best describes your home situation?	My home is smoke free (includes smoking is allowed outside only)	91.0%	(85.1–97.0)	90.4	(88.1–92.7)
		People occasionally smoke in the house	4.0%	(1.1–10.1)	5.4	(3.8–7.5)
		People frequently smoke in the house	5.0%	(1.6–11.8)	4.2	(2.9–6.1)

Note: Definition for current asthma was child ever been told by a doctor, nurse or at a hospital has asthma AND had symptoms of asthma or medication for treatment or prevention of asthma in the last 12 months.

Sources: NSW Child Health Survey 2001 (Centre for Epidemiology and Research 2002); 2004 Health and Wellbeing Surveillance System, Health Information Centre, WA Department of Health (unpublished data) 2005.

Summary

Many children with asthma live with smokers and are, therefore, potentially exposed to cigarette smoke in their home. The association between household exposure to a smoker and the presence of asthma was most evident in boys aged 5 to 14 years and girls aged less than 5 years and also among children living in more socioeconomically disadvantaged areas.