Something in the Air

YOUNG PEOPLE'S PERCEPTIONS OF ASTHMA AND AIR QUALITY

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nfer

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INVESTOR IN PEOPLE

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The Advisory Committee

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Chapter 1:

The background to the study

Asthma is increasing. Changes in definition and diagnostic practice over time make quantification of the extent of the increase difficult. There is no real doubt, however, that the incidence and prevalence of asthma have increased considerably over recent decades (Lane *et al.,* 1996). Present prevalence is estimated at about one in ten children in Britain with a diagnosis of asthma, with a further five per cent undiagnosed (Holgate Report, 1995). Estimates produced by the National Asthma Campaign (Brodie, 1996) suggest that one in seven schoolchildren are affected by asthma at some point in their lives. The severity of asthma varies very considerably, both between and within individuals, from a mild inconvenience to a disabling condition, and, in rare cases, death.

The study reported here concerned young people with asthma aged from 11 to 16, and had three main aims:

- to investigate how these young people obtain information on air quality and how they respond to such information;
- to assess the role of parents and schools in providing such information, supporting pupils with asthma and helping them to make more informed choices; and
- to consider how such information could be better targeted for this group of young people.

Asthma, air quality and air pollution

It is not within the scope of this study to consider in detail definitions of asthma, air pollution and air quality. However, a brief discussion of these is relevant to the way the study was carried out.

Asthma is not easily defined: symptoms of asthma include wheezing, coughing, a feeling of a tight chest, or finding it hard to breathe, brought on by exposure to

environmental stimuli or exertion. Emotional factors and stress are also implicated. For the purposes of this study, school records of whether or not a pupil had asthma were regarded as providing a sufficiently valid definition. [1]

There are frequent references to air pollution in the media, although there appears to be no widely recognised definition. Air pollution is usually thought of as being the presence in the air of gases or particles not usually present, or at higher concentrations than would be regarded as 'normal'. It is often thought of as man-made, affecting only 'outdoor' air, and consisting primarily of factory emissions and traffic fumes. A recent study (NOP, 1996) noted that few adults who did not have asthma spontaneously linked indoor air quality with air pollution. Nearly three-quarters of those interviewed thought that air quality outside the home had more effect than that in the home. Yet smoking in particular, and indoor air quality more generally, are of particular concern to those with asthma. Most young people spend much of their time indoors, whether at home or at school, and indoor air quality may therefore be of greater importance than outdoor conditions. Considerations of air quality and the relationship with asthma must also include 'natural' factors such as pollen. There is also evidence of a relationship between the results of some climatic phenomena such as thunderstorms and lightning, although the mechanism is not clear (Holgate Report, 1995).

The significance of air pollution as a cause of asthma remains uncertain. A recent report by the Committee on the Medical Effects of Air Pollutants (Holgate, *op.cit.*) concluded that:

- the available evidence does not support the view that air pollution causes asthma;
- most people with asthma will not be affected by the levels of air pollution which occur in the UK; and
- other factors are of much greater importance.

There is, nevertheless, a public perception that air pollution causes ill health, and affects those with any form of respiratory disease. A study of attitudes to air pollution

[1] See Appendix, Section 2.

(NOP, 1996) found that 85 per cent of the adults interviewed felt that chemical pollution damaged health, and over half thought that vehicle exhaust fumes caused asthma. Air pollution was also widely believed to trigger asthma in susceptible individuals.

The research

The work reported here includes:

- a questionnaire completed by over 150 secondary[2] schools in England;
- a questionnaire completed by about 1,800 pupils in Years 7 to 11 (aged from 11 to 16) in these schools;
- discussions with over 80 pupils in ten schools; and
- a questionnaire completed by 55 special schools with secondary-age pupils.

The questionnaire surveys were carried out during January and February 1997, and the discussions about three months later.

The perceptions and understanding of the term 'air pollution' by young people may be limited to the very narrow interpretation, mainly traffic fumes and factory emissions, as described above. These pupils would not necessarily associate air pollution with the other, wider, aspects of air quality, which this study needed to address. Yet 'air quality' would, for many of these pupils, be an unfamiliar concept. The questionnaires, in particular that for pupils, were, therefore, designed to try to avoid making assumptions about what, if anything, respondents would understand by air pollution or air quality.

The report

Chapter 2 describes the results of the school survey, Chapters 3 and 4 focus on pupils, and Chapter 5 is about special schools. A summary of key findings is provided at the end of each of these chapters. Chapter 6 provides an overview and considers some of

[2] See Appendix for the definition of secondary schools used for this survey.

the implications of the findings. The Appendix includes details of the research design and methodology.

Boys and girls, and younger and older pupils, are likely to differ in terms of knowledge, awareness and attitudes. Responses to the survey of pupils have, therefore, been considered with respect to sex, and whether the pupil was at key stage 3 (Years 7, 8 and 9) or key stage 4 (Years 10 and 11). These are the major divisions in the organisation of the secondary curriculum in England. Any differences reported here were those found to be statistically significant.[3]

[3] Using χ^2 test at the 95 per cent significance level.
Detailed tables are available on request from the author.

Chapter 2:

The schools

As the number of pupils with asthma has risen, it has become more important for schools to be able to provide proper support for these pupils. Two recent examples emphasise this importance. In 1996, the Department of Health (DoH) and the Department for Education and Employment (DfEE) jointly issued a guide, *Supporting Pupils With Medical Needs In School* (GB. DfEE and DoH, 1996a), in conjunction with a Circular (GB. DfEE and DoH, 1996b) which set out the legal framework for the health and safety of pupils. The guide includes recommendations relevant to all pupils with medical needs, as well as a section specifically relating to asthma. In 1997, a National Asthma Campaign (NAC) conference took as its theme 'Conquering Asthma at School'. The main aim of the conference was to work towards guidelines for asthma in schools, including the identification of issues to be addressed in devising and implementing school asthma policies.

The current study included a questionnaire survey to mainstream schools covering a range of general topics related to pupils with asthma in schools and, more specifically, on asthma and air quality. The results of this are reported in this section, and those for the complementary study of special schools are reported in Chapter 5.

1 The responding schools

Early in 1997, questionnaires were sent to a sample of 184 secondary schools in England. The sampled schools represented the range of such schools, including independent, LEA-maintained and grant-maintained schools. For further details, see the Appendix. Table 2.1 summarises the basic characteristics of the responding schools.

Overall, the responding schools were broadly representative of secondary schools in England (see Appendix).

Table 2.1: Schools responding to the questionnaire

	Percentage of schools
Type of school:	
independent	17%
maintained middle	17%
maintained secondary	67%
Number of pupils in Years 7 to 11:	
up to 150	8%
151 to 600	42%
601 to 900	31%
over 900	20%
Region:	
north	31%
midlands	27%
south	41%
Overall academic level of school:*	
lowest 20 per cent	19%
second lowest 20 per cent	15%
middle 20 per cent	21%
second highest 20 per cent	8%
highest 20 per cent	17%
not available**	20%
Location of school:	
in a large town or city	28%
in a small town	53%
in the country	18%
no response	1%

Based on responses from 157 schools.
** Based on GCSE results.*
*** Includes middle schools.*

Table 2.2 shows the year groups of pupils completing the questionnaires.

Table 2.2: Year groups completing the questionnaire by school

	Percentage of schools
Year group:*	
7	27%
8	23%
9	18%
10	22%
11	19%
no response	1%

Based on responses from 157 schools.
**In some schools, pupils from more than one year group completed questionnaires, so percentages sum to more than 100.*
Most pupils who will be in Year 7 in the academic year in which they have their 12th birthday, Year 8 in the academic year of their 13th birthday, etc.

2 Identifying and supporting pupils with asthma

All the schools reported that they used one or more methods of obtaining information about which pupils have asthma, at or near the point when pupils enter the school. This is shown in Table 2.3.

Table 2.3: Obtaining information about pupils with asthma

	Percentage of schools
general medical questionnaire on entry to school	83%
specific asthma questionnaire on entry to school	5%
interview with parent or pupil on entry to school	32%
other	15%

Based on responses from 157 schools.
Percentages sum to more than 100 as schools could give more than one response.

Twenty-three schools made further comments. Eight of these noted that they made use of information from feeder schools, while the other comments were mainly to expand on how information was collected and used.

In about half the schools (46 per cent), the information obtained included details of pupils' current medication and/or treatment plan, while in a further 38 per cent the level of information held varied from pupil to pupil.

Table 2.4: Updating information about pupils with asthma

	Percentage of schools
termly	4%
annually	54%
other	36%
no response	5%

Based on responses from 157 schools.

Almost 60 per cent of schools updated information about pupils and asthma at least annually. However, a third of the schools (36 per cent) relied on pupils and parents notifying them of any relevant changes. Three schools had a policy of updating information every two years.

A few schools noted that observation by staff sometimes led to information being updated. For example, a school nurse explained that she collected information

> *when I see that a pupil is unwell.*

Another school commented:

> *On entry and as parents inform us. We gain a lot of information when pupils go on school trips.*

Analysis of information provided by participating schools showed that approximately 12 per cent of pupils, i.e. about one in eight, were identified by their schools as having asthma. The proportion varied from 13 per cent in Year 7 to 11 per cent in Year 11. The overall estimate is in line with those from other sources (Brodie, 1996). Of course, schools rely on information provided by pupils and their parents, and their records may show pupils as having asthma who no longer do so. In a study of pupils

of similar age by Balding (1997), almost 20 per cent of pupils reported symptoms indicative of asthma, or reported that they had asthma.

Who knows which pupils have asthma?

Schools were asked whether staff had access to information about which pupils had asthma, and about pupils' medication. The responses are summarised in Table 2.5.

Table 2.5: Access by school staff to information about pupils with asthma and their medication

	Percentage of schools in which the following staff have access to information about:	
	which pupils have asthma	**pupils' medication**
heads of year/ house	96%	43%
school nurse/ matron	66%	46%
form tutors	89%	40%
staff in the PE department	92%	45%
SEN coordinator	78%	25%
staff with pastoral responsibility	85%	30%
all teaching staff	69%	18%
all welfare staff	49%	23%
other	27%	20%
none of the above	0%	20%

Based on responses from 157 schools.
Percentages sum to more than 100, as respondents could tick all which applied

In almost 70 per cent of schools, all teaching staff had access to information about pupils with asthma. Overall, information was available to almost all heads of year/ house (96 per cent), and almost 90 per cent of form tutors. This indicated that the majority of pupils were in schools where there was a member of staff with direct pastoral responsibility who would be in a position to know about pupils' asthma. In a similar proportion of schools (92 per cent), PE staff had access to this information.

Many schools do not have a qualified nurse based on site, and in many areas the school nursing service in limited. About two-thirds (66 per cent) of schools indicated that the school nurse or matron had access to information about pupils with asthma,

but this almost certainly represents a high proportion of schools where there is a qualified nurse always available to pupils.

In about a quarter of schools (27 per cent), other staff were mentioned as having access to information. These included staff in the school office/ reception, as well as lunchtime supervisors and those described as first-aiders — it was unclear as to whether these also had other roles within the school. Comments from schools indicated a wide variety of practice, from ensuring that all staff have a list of pupils with medical conditions, to informing staff only 'if necessary' for severe cases. One school specifically mentioned that steps were taken to ensure that any staff taking pupils out of school were routinely informed about medical conditions and medication.

Access to information about pupils' medication was considerably lower. Unsurprisingly, the group with the highest reported access was school nurses/matrons (46 per cent) and staff with a direct pastoral role (heads of year/house and form tutors). PE staff were also relatively more likely than other teachers to have access to this information (35 to 40 per cent).

How the information is held

Schools were asked about where and in what format information was held. About 55 per cent of schools held information in some computer-based form, and similar proportions used paper lists. Almost the same number had information available in some form of record card or individual pupil file, commonly the main file recording all information about the pupil.

These figures, however, mask a wide variety of practices with regard to distribution or access. One school referred only to individual health records kept in a locked file in the Medical Room. Another school ensured that all teaching staff had a list of names, derived from a computer-based information system, the contents of which were checked annually by parents. One school referred to a handwritten health file for the whole school kept in the staff room.

Overall, the most common pattern, used in about half the schools, seemed to be a computer-based system, used to generate paper lists, individual record sheets, or both. A further 14 schools (nine per cent) referred to a computer-based system but provided no details. About 20 per cent of schools recorded information both individually and in some form of list for distribution/consultation, but did not refer to the use of computer-based information.

Supporting pupils with asthma

Schools were asked about any specific measures they had adopted to help and advise pupils with asthma, and about the role of the Community Health Service in supporting and advising pupils with asthma. Most schools had access to some form of medical support through the school nursing service or, particularly for independent schools, a school nurse or doctor. The level of such provision varied and this was reflected in schools' responses. One independent school said:

> *Two RGNs are employed here. The sanatorium is staffed 24 hours a day by one of us. Both nurses are asthma trained.*

At the other extreme:

> *At present we have no visiting nurse or doctor.*

> *They [Community Health Service] don't have time.*

In the majority of schools, a nurse visited regularly, usually once a week, but one school noted that the nurse was available three days a week. Where nurses did visit regularly, many held some form of 'surgery' where pupils or their parents could request an appointment, or else a 'drop-in' clinic. About a quarter of schools offered one or other of these forms of support. These were available for all pupils, not just those with asthma, and are potentially an effective way of providing support and advice to pupils.

Other measures included:

- regular checks/updating of health-related records (12 per cent);

- seeing pupils as part of overall health monitoring, e.g. at entry to school or at specific ages (five per cent);
- ensuring good liaison between the school nurse, the home and the school, sometimes via the coordinator for special educational needs (11 per cent); and
- other activities (11 per cent).

Other activities mentioned were:

- ensuring that pupils knew that trained staff were available, and how to contact them;
- raising general pupil understanding of asthma through Asthma Awareness sessions, assemblies, personal, social and health education (PSHE), and by displaying posters in the school;
- setting up an Asthma Club;
- raising staff understanding and awareness by training, inviting the school nurse to attend a staff meeting, or making specific reference to asthma in a staff handbook;
- providing information to parents using the school prospectus or newsletters; and
- discussions with local asthma clinics or health centres.

Some schools noted that such support was regarded as part of teachers' general pastoral responsibilities.

One school asked 'Is this really the job of schools?', one commented that they currently did little because they did not have a school nurse, while another said asthma did not currently appear to be a problem.

3 Meeting training needs for asthma within the school

Schools were asked whether any staff had received training about asthma since September 1994. They were asked to include awareness-raising, attendance at external training courses specifically related to asthma, and training as part of a health and safety or first-aid course, in the period from September 1994. The responses are summarised in Table 2.6

Table 2.6: Staff training related to asthma

	Percentage of schools
first-aid training, not specifically related to asthma	41%
some training specifically related to asthma	34%
no training	5%
no response	20%

Based on responses from 157 schools.

Just over 40 per cent of schools (41 per cent) reported general first-aid training only, with no specific reference to asthma. This training covered a wide range of types and numbers of staff, ranging from one or two within a school to one school where all teaching staff had had at least one full day of first-aid training. These courses will usually have included some reference to asthma, but possibly only in the context of emergency treatment, rather than dealing with an ongoing condition.

A further 34 per cent of schools reported some form of in-service training more specifically concerned with asthma. Again, this took a wide variety of forms, but was most commonly a session of one to two hours, delivered by a school nurse, a doctor, or organised by the local health authority. One school had used one of its in-service training (INSET) days to raise awareness and then to formulate an asthma policy.

Although only five per cent of schools said that there had been no training in the relevant period, over 20 per cent did not respond to this question.

When asked whether there were unmet training needs with regard to asthma, schools were evenly divided between feeling that their training needs had been met (34 per cent), and believing that there were unmet needs (34 per cent), with 28 per cent being unsure.

Those schools with unmet needs (54 schools) were asked to identify the main reasons for this. Lack of suitable training opportunities, difficulty in releasing staff to attend training, and other training needs taking priority were each cited by over half of these schools. The cost of training was regarded as a problem by 23 schools.

Other comments included the following.

> *This is undoubtedly an important area. We also have pupils with hearing difficulties, speech impediments, epilepsy, etc., all and each of which need staff training to be carried out. We also have Government education demands and change aplenty!*

> *There has been nothing available for over two years.*

One respondent, a school nurse, cited transport difficulties in attending courses. A number of schools stressed the importance — and difficulty — of ensuring that new members of staff, and supply teachers, received appropriate training.

4 Access to inhalers

The current recommendation (GB. DfEE and DoH, 1996a) is that almost all pupils of secondary age should keep their inhalers with them at all times. This was the practice in over 60 per cent of the schools, although two schools (one per cent) said this was not the practice, and over a third (35 per cent) said this depended on the pupil. Although numbers were small, there was some indication that independent schools were more likely than maintained schools to report that pupils kept their inhalers with them at all times (81 per cent and 60 per cent respectively).

Several schools indicated that their policy was flexible.

> *Can be kept on person or placed with Year Tutor at child's parental request.*

> *Pupils are given the opportunity to deposit inhalers in the appropriate school office and some choose this option rather than carry them around.*

> *Some kept in PE dept — taken out when pupils go off site to do PE. Some in main office. Some pupils carry them with them.*

Other schools appear to have more restrictive policies.

> *Usually kept in school medical room under supervision of first-aider.*

Inhalers kept in central office to which pupils have immediate access.

Children come to office where inhalers are kept, with the medication book, where use of inhalers are [sic] recorded

Several schools commented that, while the policy was for each pupil to have their inhaler, pupils were not always reliable at remembering to keep their inhalers with them.

Spare labelled inhalers can be stored in school medical room in the event of pupils forgetting to bring their inhalers to school.

Sometimes children forget to bring them to school or leave them in cloakroom. Where they remember they keep them with them.

Almost 90 per cent of schools had facilities for pupils to keep spare reliever medication at school; and ten per cent of schools had a policy of encouraging pupils to keep spare inhalers at school. Three schools also kept inhalers, other than those for named individuals, for emergency use, whilst one said that

a local paediatrician is to supply a set of likely inhalers as spares.

Inhalers are prescription-only medicines, and the Circular, *Supporting Pupils with Medical Needs in School* (GB. DfEE and DoH, 1996b), notes that the Medicines Act (GB. Statutes, 1968) places restrictions on dealing with such medicines.

5 Policies for asthma

Relatively few schools, about 20 per cent, had a written policy for asthma, with policies in preparation in a further 12 per cent of schools. It may be that other schools include some reference to asthma in a more general school medical policy, staff handbook or similar document. Table 2.7 summarises the sources of information most widely used in helping to formulate these policies.

Table 2.7: Frequently cited information sources used in deriving an asthma policy

	Number of schools
National Asthma Campaign	33
Community Health Service	25
Local education authority	18
Local health authority	13

Based on responses from 52 schools with, or in the process of preparing, an asthma policy.

Some schools, while not having a formal policy, made available to staff a variety of information, such as guidelines from the local education authority and materials produced by the National Asthma Campaign.

Schools were asked to send copies of any policy documents or other materials related to asthma within the school. From the 22 sets of material received, it was clear that schools varied in their interpretation of what was meant by a policy. Some were either local education authority policy documents, or based on a generic local education authority policy adapted for the school. Thirteen schools provided copies of information which appeared to be designed primarily as reference information for teachers and/or other staff dealing with pupils, and who might need to understand asthma and provide appropriate support to those with asthma. These documents varied in length and detail: some ran to over ten pages and included descriptions of a wide variety of types of inhaler. Others were short, one page or less, usually including a very brief description of asthma, listing likely triggers, and describing the action to be taken in case a pupil became wheezy or breathless. A few included their aims in terms of welcoming and supporting pupils with asthma, but most provided only information and procedures. Three schools sent copies of guidelines which seemed to be addressed specifically to staff with nursing or similar qualifications.

Only four schools provided policies which appeared to be produced for parents and pupils. These had explicit statements of the aims of the policy and at least some indication as to how the policy would be monitored and evaluated.

The information provided by two schools covered just the essential facts of what needed to be done in the case of an asthma attack at school. In one case, this was a laminated sheet which was displayed in every room in the school.

Guidelines from other organisations

When asked whether their LEA had produced guidelines on asthma, almost a third of schools (32 per cent) said that they had, but a further third (36 per cent) did not know. This question was not applicable to the independent ant grant-maintained schools (17 per cent of schools). Only 14 per cent of schools said that their LEA did not have guidelines. Twenty-four per cent of schools knew of guidelines produced by their local health authorities, but over 60 per cent did not know if such guidelines existed.

6 Schools and smoking

Most schools (80 per cent) had a policy to restrict smoking by adults on school premises: this was almost equally divided between no smoking at all, or smoking in only one or two designated areas. In a further five per cent of schools, a policy was in preparation. A few schools commented that they were implementing local education authority policies with regard to smoking on school premises.

7 Asthma and air pollution

Schools were asked about any strategies used to raise pupils' awareness of issues relating to air pollution and health in general, and asthma in particular. They were asked to include areas addressed through the curriculum and the pastoral system, as well as any focused on particular groups of pupils, such as those with asthma. Almost three-quarters of schools (73 per cent) commented.

In many schools, these issues were addressed, more or less directly, through the curriculum in science, geography, PE and PSHE. Overall, almost half the schools (46 per cent) said related topics were addressed in science lessons, and a similar proportion (47 per cent) mentioned PSHE. Smaller percentages referred to geography (18 per cent), PE (11 per cent) and the pastoral system (ten per cent). Other areas of

the curriculum, including English, technology and integrated humanities, were mentioned less frequently. However, it was clear from the comments that while both air quality and asthma were given coverage in the curriculum, these two topics were not often linked, except with respect to smoking. Typical comments included the following.

> *Air pollution is a topic which occurs in geography and science at various stages in the curriculum. Not directly related to asthma.*
>
> *Air quality is addressed in geography but not relating to asthma.*
>
> *All pupils will have developed an awareness of the causes and consequences of air pollution through the National Curriculum in science at key stages 3 and 4. Similarly in geography. At no point is the link with breathing difficulties more than implicit. The PSHE system again only raises on implicit awareness.*
>
> *PSE lessons: asthma covered when topics such as smoking arise.*

It is worth considering these responses with reference to the National Curriculum. For example, the programme of study for science at key stage 3, i.e. Years 7, 8 and 9, states that pupils should be taught:

- how lung structure enables gas exchange to take place;
- how smoking affects lung structure and gas exchange;
- that the abuse of alcohol, solvents and other drugs affects health
- about possible effects of burning fossil fuels on the environment; and
- how acids in the atmosphere can lead to corrosion of metal and chemical weathering of rock.

This suggests that, even though pupils may be receiving all the relevant information, the relationship between air quality and respiratory health in general, and asthma in particular, will not necessarily be emphasised. Clearly, the science curriculum at this level has to select from a vast range of possible areas for study, and cannot cover every topic of interest. Young people see environmental issues as important. Morris with Schagen (1996), in a survey of over 400 Year 11 pupils, found that over 90 per

cent felt that they should understand environmental issues better, and almost half felt that air quality was a 'very serious issue'. There would seem to be scope for schools to build on this interest from pupils, as a foundation for linking asthma and air quality more specifically.

This was already in evidence in some schools.

> *Asthma is discussed during PSE lessons to raise awareness with those children who do not suffer. It is discussed during the science lessons when appropriate (i.e. pollution, clean air, etc.).*
>
> *PSE education with all years has a strong health input — which includes asthma awareness, pollution — environmental issues as well as visiting speakers.*
>
> *All Year 8 take part in a health roadshow organised by local health authority — includes information about asthma.*
> *Pastoral curriculum — Year 7 talk includes environmental issues and general health.*

Other schools, while not necessarily making explicit links between air quality and asthma, gave high priority to environmental and conservation issues in their teaching and other activities:

> *We are extremely active conservationists with high awareness of environmental issues.*
>
> *'The Environment' is an area about which most children are very interested. It is covered formally in science and humanities (geography) topics but is also visited in creative writing, personal and social education and even full school assemblies.*
>
> *Health education package in PSE programme Y8 and 10. Includes effect of pollution on health.*
>
> *Each year, we have a disability awareness week, during which asthma features prominently. We are also sensitive to the issue of air quality and in certain weather, including hot summer days, some pupils are instructed to stay indoors.*

Some schools clearly viewed asthma as an issue of concern to all pupils:

A Health Day was organised last year by the school nurse and the head of year for all Y7 pupils. It dealt with specific issues, including asthma and was presented by members of the local health authority. It is intended to repeat it this year.

A few schools mentioned activities aimed more specifically at pupils with asthma:

Three years ago the school had yoga sessions for pupils with asthma, so they could learn techniques to control breathing.

Updated information, i.e. posters, pamphlets and newspaper articles displayed around the medical room.

Health issue posters are displayed in the medical centre; these include posters about asthma from the National Asthma Campaign. Asthma is discussed in first-aid sessions.

Three schools said that they had banned the use of spray deodorants because of the effect these may have on pupils with asthma.

8 Other comments

Finally, schools were invited to add any further comments on asthma and air pollution. Thirty-four schools did so. Twelve of these noted the increase in the number of pupils with asthma, and a further two commented on the high incidence of asthma in their schools. Although four schools commented that they did not feel that air quality was a problem in their locality, 14 schools referred to a variety of local problems, including pollution from traffic, refineries and factories, dust from quarries, pollen from oil seed rape, and proximity to major airports. One school had noticed that pupils with asthma appeared to have fewer problems when abroad on school trips, and the head of a boarding school commented:

A fifth of our pupils are girls from Hong Kong, Japan and Korea. Many of these girls only suffer from asthma when at school here in the country.

9 Summary

One-hundred-and-fifty-seven schools completed and returned a questionnaire. These schools were broadly representative of schools in England with pupils of secondary age.

In most schools, teaching staff with direct pastoral responsibility, and staff in the PE department, had access to information about pupils with asthma. In two-thirds of schools, a school matron or nurse had access to this information.

Schools varied in how this information was stored and used, but about half used a computer-based system, generating pupil lists and/or individual records.

Less than 30 per cent of schools reported that any staff had had training specifically about asthma since September 1994, although a further 40 per cent reported staff training in general first aid during this period.

A third of schools reported unmet training needs with regard to asthma. Lack of suitable training opportunities, difficulty in releasing staff to attend training, the cost of training and other training needs taking priority were each cited as barriers to further asthma-related training by at least 20 schools.

In most schools, pupils could keep inhalers with them at all times.

About a third of schools had, or were in the process of preparing, an asthma policy, but schools varied greatly in how they interpreted the idea of a policy.

In over 80 per cent of schools, a smoking policy existed or was in preparation.

In most schools, no specific links between asthma and air quality were made in the curriculum, although both topics were addressed in most schools. A few schools did make more explicit links, and some schools gave high priority to air quality and conservation issues. A few schools reported special events or strategies to raise awareness about asthma.

Chapter 3:

The pupils

This chapter focuses on pupils with asthma, and in particular their views on how air quality affects them, how they obtain information, and their response to such information. Two methods were used to collect this information: a questionnaire to pupils and a series of group discussions in ten schools.

In the following sections, differences between boys and girls, and between younger and older pupils, are noted where these occurred.

1 The pupils responding

The pupils completing questionnaires had been identified by their schools as having asthma. The results described here are based on responses from 1,826 pupils, and the characteristics of these pupils are summarised in Table 3.1. Details of the administration of the survey are given in the Appendix.

Table 3.1: Pupils responding to the questionnaire

	Percentage of pupils
Sex:	
male	53%
female	46%
no response	1%
Year group:	
7	20%
8	22%
9	20%
10	19%
11	17%
other/ no response	2%
Home:	
in a large town or city	29%
in a small town	53%
in the country	15%
other/ no response	3%
Books at home:	
none or very few (0 — 10 books)	6%
enough to fill one shelf (11 — 25 books)	10%
enough to fill one bookcase (26 — 100 books)	27%
enough to fill two bookcases (101 — 200 books)	24%
enough to fill three or four bookcases (301 — 400 books)	16%
enough to fill five or more bookcases (more than 400 books)	16%
no response	1%
Usual method of travel to school: *	
walk	52%
cycle	5%
car	32%
bus/ coach	33%
other/ no response**	3%
Length of usual journey to school:	
less than 15 minutes	50%
15 to 30 minutes	37%
30 to 45 minutes	8%
45 minutes to 1 hour	3%
over an hour	1%
no response	1%

Based on responses from 1,826 pupils.

** Pupils could indicate more than one method, so percentages sum to more than 100.*

***This group includes 17 pupils who identified themselves as boarders, for whom the question was not relevant.*

The questionnaire survey

Slightly more than half the respondents were boys. The prevalence of asthma is rather greater amongst adolescent boys than amongst girls of the same age, although the difference reduces with age and is not evident amongst adults (see, for example, GB, DoH, 1995).

Although the sampling design was set up to achieve equal numbers of pupils in each of year groups 7 to 11, i.e. pupils mainly aged from 11 to 16, the achieved sample is biased slightly towards younger pupils. Although the questionnaire was administered at a period away from the main examination dates in schools, it is, perhaps, not surprising that older pupils are slightly under-represented.

In order to get some information on the socio-economic circumstances of the sampled pupils, they were asked to give the number of books in their homes. This question was used as a surrogate for more complex questions about the home backgrounds of pupils. Similar questions have been used in a variety of surveys. The observed pattern of responses in this survey is very close to that reported for England in Beaton *et al.*, 1996. This strongly suggests that the current survey is broadly representative of secondary age pupils as a whole. There is conflicting evidence about any relationship between asthma and socio-economic factors (Lane *et al.*, 1996).

Pupils were asked about their journey to school. The journey to school represents a period when pupils may have little control over their exposure to the possible effects of outdoor air quality. The length of time may be more important than the method of travel, and half the pupils in this survey had a journey time of over 15 minutes.

The interviews with pupils

In addition to the questionnaire survey, group interviews were carried out with 16 groups of pupils in ten schools: 54 girls and 31 boys from Years 7 to 10 took part in these discussions. See the Appendix for further details.

2 Pupils and asthma

Symptoms of asthma

Pupils were asked how often they experienced symptoms of asthma: wheezing, coughing, a tight chest, difficulty in breathing (see Table 3.2).

Table 3.2: Pupils' frequency of symptoms of asthma

	Percentage of pupils
every day/ most days	14%
every few days	21%
about once a week	16%
about once every two weeks	9%
about once a month	12%
every two or three months	13%
once or twice a year	15%
no response	1%

Based on responses from 1,826 pupils.

About 14 per cent had symptoms every day, with a further 37 per cent at least once a week. Girls reported symptoms of asthma slightly more frequently than did boys, with 46 per cent of boys and 56 per cent of girls experiencing symptoms at least once a week.

Pupils were also asked about how often they experienced sleep disturbance as a result of asthma. The responses are summarised in Table 3.3.

Table 3.3: Incidence of sleep disturbance due to asthma

	Percentage of pupils
every night	2%
about three nights a week	6%
one or two nights a week	14%
once or twice a month	20%
less than once a month	28%
never	30%
no response	<1%

Based on responses from 1,826 pupils.

About 22 per cent reported that asthma kept them awake, or woke them up, at least once a week. Again, boys reported fewer incidents than girls. Over 60 per cent of boys said that asthma very rarely or never woke them, or kept them awake, but the figure for girls was just over 50 per cent. Older pupils were slightly less affected than younger ones: 55 per cent of those in key stage 3 and 61 per cent of those in key stage 4 reported that they rarely or never experienced sleep disturbance caused by asthma.

Looking at the relationship between daytime and night-time effects, a fifth of pupils (19 per cent) reported that they were affected by asthma at least once a week during the day **and** had at least one disturbed night a week. At the other end of the spectrum, a third of pupils (33 per cent) reported that they experienced the effects of asthma about once a month or less frequently. No attempt was made in this survey to assess the underlying severity of pupils' asthma, for example by distinguishing between those pupils with few symptoms because their asthma was well controlled, and those showing similar patterns from less severe, and less well controlled, asthma. However, it is clear that asthma played a large part in the lives of many of these young people, and it is, therefore, a factor about which teachers and others in school need to be aware.

Pupils' understanding and awareness of asthma

Pupils were asked if they felt they knew enough about asthma, both generally and how it affected them individually (Table 3.4).

Table 3.4: Pupils' understanding and awareness of asthma

	Yes	No	Not sure	No response
Do you think that you know enough about asthma generally?	52%	17%	31%	<1%
Do you think that you know enough about how asthma affects you?	61%	16%	22%	<1%
Do you think that you know enough about how air quality can affect asthma?	47%	28%	25%	<1%
Do you think your family understand how asthma affects you?	79%	9%	12%	<1%

Based on responses from 1,826 pupils.

Although only about 17 per cent of these pupils did not feel that they knew enough, 30 per cent were unsure about asthma generally. Only about 20 per cent were unsure about asthma as it affected them. The figures for boys and girls were similar. In the interviews, some of the younger pupils said they would like more advice on how to use their inhalers. Almost 30 per cent of those responding to the survey did not think they knew enough about the relationship between asthma and air quality and a further 25 per cent were unsure: on this aspect boys were more likely to feel that that they knew enough, while girls were more likely to be unsure. Whilst air quality may not be important to all those with asthma, there was clearly a substantial group of pupils who felt that they lacked knowledge in this area.

The interviews explored in more depth how much pupils understood about asthma and air quality. Most pupils did not seem to have an understanding of air quality other than in very general terms: 'traffic fumes' and 'pollution' were frequently mentioned but only one or two of the oldest and most able pupils could express these ideas in terms of specific pollutants. This is not surprising given the results of a recent survey (NOP, 1996) among adults. This showed that most adults thought that chemical pollution (traffic fumes and other man-made emissions) was more important than biological pollution (including pollen, fungal spores and other substances naturally present in the environment). Pupils' responses to questions referring explicitly to air quality should, therefore, be treated with some caution.

Asthma and the family

About 80 per cent of the pupils completing questionnaires felt that their families understood how asthma affected them. Again, boys were more likely to express confidence and girls to be unsure. Older pupils were slightly less sure about whether their families understood: eight per cent of key stage 3 and 12 per cent of key stage 4 pupils felt that their families did not understand enough. Similarly in the interviews, there were some pupils who clearly felt that their families did not really appreciate the effects of asthma, although most found their families to be supportive and helpful.

Asthma at school

Pupils were asked which of three statements best described their attitude to having an asthma attack at school. Table 3.5 summarises their responses.

Table 3.5: Pupils' attitudes to having an asthma attack at school

	Percentage of pupils
I worry that no one will be able to help if I have a bad attack.	11%
I know that there are people who will be able to help if I need it.	64%
I can manage my own asthma and don't need help.	24%
No response	1%

Based on responses from 1,826 pupils.

Almost 90 per cent were not worried about what would happen if they had an asthma attack while at school, either because they could manage their own condition or because they knew that there would be those who could help. Although similar percentages of boys and girls expressed worries, there was a marked difference between boys and girls. Boys were more likely to say that they could handle the situation on their own, while girls were more likely to look for support from others. Not surprisingly, older pupils were much less dependent on other people: while the percentage of pupils who expressed worries was the same in each age group, 19 per cent of the younger pupils and 32 per cent of the older ones reported that they could manage their asthma on their own. When asked to add any further comments, pupils said that:

- there would always be those around who could help (20 per cent);
- asthma did not affect them severely (six per cent); and
- they made sure that their medication was available and knew how to use it (six per cent).

First-aiders and school nurses were seen as those who would be able to help, and a number of pupils commented that their friends would fetch adult help if needed.

The importance of having a school nurse on site was emphasised by many pupils in the interviews. The school nurse was generally seen as a trusted and knowledgeable adult.

Asthma management plans

Pupils were asked if they had an asthma management plan agreed with their doctor or nurse (see Table 3.6).

Table 3.6: Asthma management plan

	Yes	No	Not sure	No response
Do you have an asthma management plan agreed with your doctor or nurse?	38%	34%	27%	2%

Based on responses from 1,826 pupils.

Almost 40 per cent of pupils knew that they had an agreed plan, 34 per cent said they did not have one, and 27 per cent were unsure. The responses of younger and older pupils differed: while almost 40 per cent of pupils in key stage 3 reported that they had an asthma management plan, only about 30 per cent of key stage 4 pupils did so.

3 Asthma triggers

Pupils were asked whether given factors triggered their asthma. As a measure of the impact of these factors on a pupil's everyday life, pupils were also asked to indicate which three affected them most. Table 3.7 summarises the responses.

Table 3.7: Asthma triggers reported by pupils

	Makes my asthma worse	Doesn't affect me	Not sure / no response	Most important factor
Running around	82%	11%	7%	39%
Having a cold or other illness	79%	13%	8%	30%
Being in a place where people smoke	78%	15%	7%	40%
Doing sports	74%	16%	10%	35%
Hay fever or pollen	68%	23%	9%	30%
House dust mites	56%	20%	24%	16%
Hot summer days with no wind	53%	30%	17%	11%
Smoke from factories	47%	18%	35%	7%
Cold weather	43%	43%	14%	10%
Being near traffic	41%	40%	19%	6%
Getting upset, worried or anxious about things	39%	47%	14%	11%
Damp weather	31%	52%	17%	6%
Being near pets or animals	30%	56%	14%	15%
Being in a damp house	30%	38%	32%	4%
Being in big towns or cities	25%	50%	25%	2%
Getting excited about something	23%	63%	14%	2%
Open fires at home (e.g. coal, wood)	17%	58%	25%	2%
Sitting in a traffic jam	17%	66%	17%	2%
Some things that I eat and drink	16%	73%	11%	2%
Working in a school science lab	12%	76%	12%	1%
Gas fires or gas cookers	11%	71%	18%	1%
Being near a power station	10%	35%	55%	1%
Cage birds	10%	64%	26%	2%
Being in the country	9%	74%	17%	1%
Being outside	9%	74%	17%	<1%
Being indoors	8%	76%	16%	<1%
Some medicines (not the ones taken for asthma	8%	67%	25%	<1%
Thunderstorms	6%	78%	16%	1%
Being near the sea	3%	88%	9%	<1%

Based on responses from 1,826 pupils.
Information was missing for three per cent of pupils or fewer for each item.

The table summarises pupils' perceptions, and reflects both pupils' own understanding of their condition, and the circumstances of their daily lives. A factor triggering asthma in an individual may be seen as important by that individual either because of the potency of the trigger or because it is commonly encountered in everyday life. Conversely, there are factors which pupils will recognise as triggers, but which are not seen as having a major impact, possibly because they represent relatively rare events. Overall, however, there is a clear pattern in that those triggers reported as affecting their asthma by high proportions of pupils were those which were seen as important by relatively high numbers of pupils, and vice versa.

The average number of factors which affected their asthma was 8.7 for boys, and 10.0 for girls. There was no clear relationship between the number of triggers identified and pupils' ages.

Important triggers

- **Exercise**, either running around or doing sports, was reported as triggering asthma by 85 per cent of pupils (80 per cent of boys and 90 per cent of girls). Over half the pupils (56 per cent overall) reported some form of exercise as a major factor (almost 50 per cent of boys and over 60 per cent of girls).

- Similarly, **being in a place where people smoke** was a factor for almost 80 per cent of pupils and an important factor for 40 per cent. There were marked differences with age: while ten per cent of pupils in key stage 3 reported that being in a smoky place did not affect their asthma, the corresponding value was 22 per cent for pupils in key stage 4. Similarly, this was reported as an important trigger by almost 45 per cent of those in key stage 3, and by less than 35 per cent of those in key stage 4. However, it may be that this reflects the fact that older teenagers are more likely to be smokers, and have friends who smoke, and therefore they may be less willing to admit that this caused them any problems.

- Although a similar proportion (nearly 80 per cent) of pupils found that **having a cold or other illness** made their asthma worse, only 30 per cent reported this as a

major trigger, perhaps because it is likely to be more seasonal. Girls were more likely to give this as a trigger (85 per cent of girls and 73 per cent of boys), although the proportions of boys and girls giving this as a major trigger were similar. Older pupils were slightly more likely to say that this did not effect them, although the proportion giving this as a major trigger did not vary with age.

- Almost 70 per cent of pupils said that they were affected by **hay fever or pollen** — again, this is seasonal and was reported as a major factor by 30 per cent of pupils. Although fewer boys than girls said that hay fever affected their asthma, similar proportions gave this as a major trigger. This may be because boys tend to spend more time on outdoor activities than do girls. Older pupils were more likely to give this a major trigger, perhaps because the association of hay fever with the examination season becomes more important to older pupils.

- Over half the pupils, and slightly more girls than boys, reported that **house dust mites** affected them. About 15 per cent gave this as one of the three most important triggers.

- **Hot summer days with no wind** affected a similar proportion of pupils: it is not clear whether this is because of association with pollen, accumulation of ozone or other factors. This was a major factor for relatively few pupils — about ten per cent — but this may again reflect relatively rare exposure.

- **Smoke from factories** affected nearly half the pupils, but again this was an important trigger for relatively few pupils (less than ten per cent). Although similar proportions of boys and girls said smoke from factories affected them, there was a difference among those not affected, in that girls were considerably more likely than boys to be unsure. Again, there was a relationship with age: while over 50 per cent of pupils in key stage 3 reported that they were affected, less than 40 per cent of those in key stage 4 said this. Younger pupils were also more likely than older ones to give this as a major trigger. About a fifth of the pupils indicated that they lived near factories or industrial areas. These pupils were more likely to

indicate that smoke from factories affected their asthma than did those living elsewhere (57 per cent as against 45 per cent), but were no more likely to give it as a major factor.

- **Cold weather** was seen as a factor by over 40 per cent of pupils, with a marked difference between boys and girls, 36 and 51 per cent respectively giving this as a trigger. However, it was particularly important for only about ten per cent, with no difference between boys and girls. This was slightly more likely to be reported as a major factor by older pupils: eight per cent of pupils in key stage 3 and 13 per cent in key stage 4.

- **Being near traffic and/or in big towns and cities** also affected nearly 50 per cent of pupils, with boys and girls equally affected, as were pupils from all year groups. Only a small proportion (seven per cent, similar for boys and girls) felt that this was a major factor.

- For almost a quarter of pupils, **getting excited** made their asthma worse, while almost 40 per cent were affected by **anxiety or worry**. These factors overlap to some extent, with almost half the pupils affected by at least one of these. The proportions were very different for boys and girls — less than 40 per cent of boys, but almost 60 per cent of girls, said that getting excited and/or being worried made their asthma worse. Almost 20 per cent of girls, but less than ten per cent of boys, gave excitement or anxiety as a major factor.

- **Pets and animals** affected 30 per cent of pupils, and were important for half of these (15 per cent overall).

- None of the other triggers were seen as important by more than ten per cent of pupils. Damp weather and being in a damp house were each reported as triggers by about 30 per cent of pupils. No other factor was reported by more than 20 per cent of pupils.

Pupils were asked if there were other factors which made their asthma worse. Overall, few other triggers were mentioned, but each of the following was given by at least 30 pupils:

- feathers, pillows, blankets, etc.;
- heat;
- dust;
- coughing or laughing; and
- running in hot weather.

The pupils involved in the group discussions usually had a good understanding of which factors had most effect on them. Several commented that it was the combination of factors that caused a problem. Some pupils commented that walking in an area with high levels of traffic pollution was a problem only if they had a lot to carry, e.g. a musical instrument, or when going up steep hills. Others noted that traffic fumes were a problem only in conjunction with particular climatic factors.

4 Information about asthma and air pollution

General sources of information

Pupils were given a list of possible sources of information about links between asthma and air quality, and asked whether they knew about each and, if so, whether they had found if helpful. Results are summarised in Table 3.8, and are based on all pupils completing at least one question relating to information sources.

Table 3.8: Sources of information about air quality and asthma

	found to be helpful	known about but not found to be helpful	not known about
Family doctor/local asthma clinic	75%	8%	17%
Information leaflets	60%	10%	30%
Family, relations, or friends	52%	15%	34%
Radio or television programmes	40%	17%	43%
Hospital doctor/hospital asthma clinic	40%	7%	53%
Books	31%	8%	60%
School lessons	22%	12%	66%
Magazines	20%	10%	70%
Pharmacy/chemist	18%	7%	75%
National Asthma Campaign	15%	4%	81%
Radio or television advertisements	13%	10%	77%
Newspapers	12%	10%	78%
Department of Health	12%	4%	84%
Asthma Helpline	9%	4%	87%
National Society for Clean Air and Environmental Protection	5%	3%	92%
Friends of the Earth	4%	3%	93%
British Lung Foundation	4%	3%	93%
Department of the Environment	4%	2%	94%
Greenpeace	3%	3%	94%
Internet or World Wide Web	3%	2%	95%

Based on responses from 1,628 pupils responding to at least one question about information sources.

Pupils were probably more likely to remember those sources which they found helpful than those sources which they had encountered but not found to be useful. There is, therefore, a need for a degree of caution in interpreting the column 'known about but not found to be helpful' in the above table.

Overall, the sources of information which pupils were most likely to have come across were

- their family doctor and/or local asthma clinic;
- information leaflets;
- family, relations and friends; and
- radio and television programmes.

These, and hospital doctor/hospital asthma clinic, were also the sources most commonly reported as helpful. Girls were more likely than boys to report that they did not know about hospital asthma clinics as a source of information (58 per cent of girls and 49 per cent of boys), and correspondingly less likely to give this as a helpful source (36 per cent to 43 per cent). Older pupils were less likely to regard family, relations and friends as a helpful source of information (54 per cent of pupils in key stage 3 and 48 per cent of those in key stage 4).

It is interesting to consider the effectiveness of some sources less commonly reported as encountered by pupils. As noted earlier, there is likely to be some under-reporting of sources which pupils have not found to be helpful. For example, relatively few pupils (about 40 per cent) reported that they were aware of books as a possible source of information. Nevertheless, among these 40 per cent, over three-quarters felt that books were useful. Similarly, pharmacies, the National Asthma Campaign, and the Department of Health were seen as helpful by a high proportion of those indicating that they were aware of these sources.

Newspapers, meanwhile, were seen as helpful by only about ten per cent of pupils, overall half of those who knew about these as a possible source. Older pupils were more likely to know of newspapers as a source of information, and to find them helpful. Ten per cent of pupils in key stage 3 and 15 per cent of those in key stage 4 found them helpful.

Magazines were seen as useful sources by almost a quarter of girls, but by only about 15 per cent of boys.

Information for local area or specific days

Pupils were also asked about ways of finding out about air quality locally or for specific days, and Table 3.9 summarises the responses.

Table 3.9: Sources of information about asthma and air quality locally or for specific days

	found to be helpful	known about but not found to be helpful	not known about
Weather forecasts on TV	63%	21%	16%
Pollen count	44%	11%	45%
Weather forecasts on local radio stations	26%	13%	61%
Teletext/Ceefax services on television	22%	10%	68%
Local papers	18%	10%	72%
Weather forecasts on national radio	16%	9%	75%
National papers	15%	10%	75%
Department of the Environment Helpline on air quality	4%	3%	93%
Local air quality helplines	3%	2%	95%
Internet or World Wide Web	2%	1%	97%
Local council	1%	1%	98%

Based on responses from 1,628 pupils responding to at least one question about information sources.

Over 80 per cent of pupils were aware of **television weather forecasts** as a source of such information, and almost two-thirds of pupils overall found these helpful. About 55 per cent of pupils were aware of **pollen counts**, and over 40 per cent found these useful. Relatively few pupils — about 40 per cent — were aware of **weather forecasts** on local radio stations, and about a quarter found these helpful.

A quarter to a third of pupils knew about **Teletext and Ceefax services on television, local papers, weather forecasts on national radio** and **national papers** as possible sources of information, and in each case 15 to 20 per cent of pupils found these useful. Older pupils were slightly more likely to know about national and local newspapers, and to find them useful, than were younger pupils.

Less than ten per cent of pupils knew about the Department of the Environment Helpline on air quality, local helplines, local councils or the Internet as sources of information. Except in the case of the DoE helpline, which is nationally available and free, these are sources of information not readily available to everyone.

Pupils were asked which of the sources of information listed in Tables 3.8 and 3.9 they had found most helpful. These were:

- family doctor/local asthma clinic (27 per cent);
- family, relations and friends (14 per cent);
- weather forecast (12 per cent);
- the pollen count (11 per cent);
- hospital doctor/hospital asthma clinic (nine per cent); and
- information leaflets (nine per cent).

There was little variation by sex or year group, except that younger pupils and girls were slightly more likely to give family, relations and friends, and family doctors and local asthma clinics, as being among the most useful sources.

What pupils said in the interviews

The main aim of the interviews was to explore in more depth how much pupils understood about asthma and air quality, the sorts of information they used, and what information they would like. As noted earlier, many pupils did not seem to have a clear understanding of air quality.

Most pupils said that **information about air quality and asthma should be more easily available**, but there was little evidence that they had sought such information. For example, although the majority of pupils said, sometimes after being shown materials, that they had heard of the National Asthma Campaign, few had heard of or considered using the Asthma Helpline.

Most of the pupils involved in the group discussions appeared to pay at least some attention to **radio and television weather forecasts**, including pollen counts and pollution information included in these. Information from Ceefax and Teletext was also seen as useful, partly because it is available at any time. Several pupils said that information at breakfast time, before leaving for school, was the most valuable.

Pupils were mixed in their response to getting **information from doctors, nurses and asthma clinics**. Some felt that these were very useful sources, but others were less sure. A number of pupils felt that it was not always easy to understand what they were being told: some pupils said that they pretended to understand because they did not want to appear stupid, or because it was 'less hassle'. Pupils did not like having to arrange an appointment, sometimes with a long wait for one, waiting around at the hospital when they got there, and sometimes feeling pressured not to take up too much time.

There were also mixed views about the usefulness of **freephones or other helplines**, partly because pupils had different views of what these might provide. Several pupils said that this was something parents might use, but not them, and lack of access to a telephone, or problems with the cost of calls, were seen as difficulties. One local freephone, apparently run by a large chemical factory, was not trusted to give reliable information. Many pupils, however, felt that having someone they could talk to, without having to arrange an appointment, for information or advice would be valuable: pupils felt they would be able ask questions more freely than when in a face-to-face situation with a doctor or nurse.

Pupils commented that any **leaflets** or similar materials needed to be 'interesting' and 'easy to read', and suggested that pictures and cartoons should be used, rather than large amounts of text. Leaflets need to be targeted for fairly small age ranges: what is appropriate to an 11-year-old may be regarded as 'too young' by 15-year-olds, and yet many of these older pupils do not find reading easy or pleasurable. They also commented that information needed to be kept up-to-date — for instance in referring to inhalers currently being prescribed. Two pupils felt that the leaflets provided with inhalers could include more information about living with asthma, and not just details directly related to the medication. One pupil suggested a weekly newsletter, posted to pupils' homes, including current air quality information.

When asked whether a **magazine** specifically about asthma would be interesting, most pupils did not welcome the idea. They did, however, want more information in

the magazines that they read already: sports and pop music magazines, and magazines aimed at teenage girls. They wanted information, presented in a lively format, making use of illustrations and cartoons. They also suggested using 'real-life' stories and articles about sports personalities, pop stars and other role models who have asthma.

Some pupils said that there should be more about asthma in the **television and radio programmes** favoured by teenagers, and possibly an asthma 'story' in a programme such as *EastEnders*.

As ways of making information more easily available, one pupil said that a **poster campaign** advertising the helpline number would be effective, and another suggested a **high-street 'Asthma Shop'** which anyone could visit.

These young people with asthma saw the school as having a role in helping all pupils to understand asthma better. One school had a counsellor — her precise role was not clear but pupils felt her to be reliable, well-informed and supportive. In one school, a theatre group had presented a play about sex, drugs and drinking. These themes had been addressed in the curriculum both before and after the visit. The pupils interviewed all felt that they had learned a lot from this — it had been 'funny as well as serious' — and thought something similar about asthma would be a good idea. Class or small group discussions, in tutor periods or PSE lessons, where pupils with asthma could share experiences with other pupils, were also suggested, as were talks in school by asthma specialists. Charity weeks supporting relevant charities were also seen as a way of raising general awareness. A school 'asthma club' was suggested, and a number of pupils said that schools could display current air quality information.

While a few pupils suggested that computer programmes and the Internet could be used more, more felt that there would be problems of access or cost.

5 How pupils with asthma respond to air quality

Pupils were asked about what they did to minimise the effect of air quality on their asthma. The responses are summarised in Table 3.10.

Table 3.10: Pupils' reactions to poor air quality

If I think the air quality will be poor, I:	often	some-times	never	no response
make sure that I have my reliever medication (usually a blue inhaler) with me	59%	27%	9%	5%
stay away from places with lots of cigarette smoke	54%	30%	11%	5%
make sure I use preventer medication (usually a brown inhaler) as my doctor or nurse has told me	38%	30%	22%	10%
stay away from places with lots of pollen	31%	35%	27%	7%
do less running about	28%	49%	18%	5%
take medicine for hay fever	23%	23%	45%	9%
go outside as much as possible	22%	37%	31%	10%
miss games lessons at school	8%	42%	42%	8%
stay indoors as much as possible	7%	29%	56%	9%
take a day off school	4%	32%	55%	9%
miss a school trip	1%	15%	73%	10%
miss lessons in science labs	1%	7%	82%	10%

Based on responses from 1,826 pupils.

There are aspects of these results which may cause some concern. Firstly, it is clear that there are pupils who do **not** keep their reliever inhalers with them at all times. This is despite recommendations that they should do so and the considerable efforts in recent years to ensure that schools make this possible. Similarly, those pupils prescribed preventer medication should be using it every day, regardless of air quality or other factors. With proper management, very few pupils should need to miss games lessons, or take time off school, because of their asthma.

Differences between boys and girls

There were some differences between boys and girls, although none of these were very marked.

Boys were **less** likely than girls to:

- ensure that their reliever medication was available;
- avoid cigarette smoke;
- avoid pollen;
- reduce the amount of exercise being taken; and
- take medicine for hay fever.

Boys were **more** likely than girls to:

- go outside as much as possible;
- take a day off school; and
- miss a school trip.

Younger and older pupils

There were also some differences by age. About 60 per cent of those in key stage 3 and 44 per cent in key stage 4 often avoided places with lots of cigarette smoke. Pupils in key stage 3 were slightly more likely to use their preventer medication, or to go outside as much as possible, than those in key stage 4. Younger pupils were slightly less likely to use medication for hay fever, or to miss games lessons at school.

Other responses to poor air quality

When invited to report on other actions taken to reduce the effects of asthma, about 800 pupils commented, but most of these merely repeated what had already been said. However, almost 200 pupils (about ten per cent) noted that they concentrated on their breathing, or consciously tried to relax. Among pupils interviewed, several noted that they were influenced by weather forecasts in deciding whether to take their inhalers to school, take medication for hay fever or choose a different route to school.

In the interviews, pupils frequently said that they did not feel that they had sufficient control over their exposure to triggers, particularly traffic fumes on the journey to and from school, exercise (where some pupils felt that PE teachers expected too much from pupils with asthma), and cigarette smoke. This latter was a problem for some

pupils where others in their family were smokers, and for some when using public transport: they could either sit with their friends in a smoking area on the bus or sit in a non-smoking area apart from their friends.

Pupils completing the questionnaire were asked about who made decisions about how they should respond to poor air quality: see Table 3.11.

Table 3.11: How pupils should act when air quality is poor

Decisions mainly taken by:	Percentage of pupils
parents/guardians	15%
parents/ guardians and pupils	34%
pupil alone	29%
somebody else	<1%
no one decides	8%
doesn't affect pupil	12%
no response	2%

Based on responses from 1,826 pupils.

Among those pupils affected by air quality, most were involved in decisions about what they should or should not do when air quality was poor. Girls were more likely than boys (38 per cent and 31 per cent respectively) to report that decisions were made jointly between pupils and their parents or guardians. Older pupils were more likely to make decisions on their own (41 per cent of key stage 4 and 21 per cent of key stage 3 pupils), and less likely to report that parents or guardians had any part in the decision.

6 How asthma affects pupils' lives

Pupils were asked to indicate to what extent asthma affected their everyday lives and those of their families (Table 3.12).

For most pupils, asthma did not have a major impact on what they and their families did. Many commented that they ensured that their medication was available, or that their asthma was relatively mild. For a minority of pupils, asthma had a much more

major effect on their lives. Avoiding smoky places, and not being able to take part in energetic activities, especially in cold weather, were frequently mentioned. High levels of pollen also caused some pupils or their families to modify their behaviour: one girl commented that she could not visit her grandparents' farm in the summer.

Table 3.12: Decisions about activities by pupils and their families

Asthma affects:	a lot	sometimes	occasionally	never	not sure/ no response
the choices my family makes about places to visit	2%	14%	20%	49%	15%
the choices my family makes about where to go on holiday	2%	7%	10%	66%	15%
where I go in my spare time	1%	18%	20%	54%	7%
what I do in my spare time	2%	20%	28%	42%	8%

Based on responses from 1,826 pupils.
Information was missing for less than three per cent of pupils for each item.

Girls, and younger pupils, were most likely to say that their everyday lives were affected by asthma. For example, 46 per cent of boys and 36 per cent of girls said that asthma never affected what they did in their spare time. The corresponding figures for key stage 3 and key stage 4 are 37 per cent and 48 per cent.

The pupils interviewed also varied greatly in the extent to which they saw asthma as affecting their lives. For some, it appeared to be a dominant factor, while for others it was much more minor. Asthma seemed to be less of an issue with the older pupils, but there are a number of possible explanations for the apparent lesser impact of asthma on older pupils. Older pupils are likely to be more confident about managing their condition, but it may also be that older pupils want to be seen as 'normal' and are less willing to admit that asthma affects them.

Many of the pupils interviewed did not carry their inhalers at all times, and with some there seemed to be considerable reluctance to use them at all. Again, this was more apparent in the older pupils. Pupils found carrying inhalers inconvenient, and did not wish to appear to be different from their friends. Some also did not like using inhalers

because of perceived after-effects, and because they wanted manage without medication. Pupils mentioned controlling their breathing, drinking cold water, or inhaling steam as methods to avoid using an inhaler.

Self-image — 'street cred' — was very important to some of the pupils interviewed: these pupils gave this as a reason for not following some of the suggestions for dealing with asthma, such as covering their faces with a scarf in cold weather.

7 Teachers' awareness of links between asthma and air quality

Pupils' responses to the questionnaire indicated that they did not feel confident in their teachers' knowledge about asthma and air quality (Table 3.13).

Table 3.13: Pupils' perception of teachers' awareness of links between asthma and air quality

	Percentage of pupils
All or most of them know enough	14%
About half and half	26%
Most of them don't know enough	21%
Not sure	38%
No response	2%

Based on responses from 1,826 pupils.

Only 14 per cent felt that all or most of their teachers knew enough, but 40 per cent were unsure or did not respond. Boys, and younger pupils, expressed slightly more confidence in teachers' knowledge.

In the interviews, many pupils expressed concern at the apparent lack of understanding of asthma by teachers. One 12-year-old girl said

> *I don't think the teachers know about it [asthma] unless they've got it...they don't know what you're going through.*

A group of eight 15-year-olds said that although some teachers were sympathetic, the majority did not seem to understand how alarming asthma could be, and some

teachers expected pupils suffering an attack to stay on their own until they were sufficiently recovered to continue with lessons.

8 Information on asthma and air quality

Finally, pupils were asked to suggest ways in which information about air quality and asthma could be improved for young people. About 40 per cent of the pupils responded. However, many of the comments did not directly address the question: 22 per cent replied about asthma generally, and three per cent about the treatment of asthma. Only six per cent made comments directly linking asthma and air quality. A further 14 per cent made suggestions about improving the environment generally, but without specifically linking this with asthma. The responses of some of these pupils will be considered in more detail in the next chapter.

9 Summary

In total, 1,826 pupils with asthma returned valid questionnaires. These pupils were broadly representative of pupils in England in terms of the schools they attended.

Fifty-five per cent of girls and 45 per cent of boys experienced symptoms of asthma (wheezing, coughing, tight chest, finding it hard to breathe) at least once a week.

The majority of pupils felt that their families understood how asthma affected them, but only 50 to 60 per cent felt that they knew enough about asthma, how it affects them individually, and about how air quality can affect asthma.

Less than 40 per cent of pupils knew that they had an asthma management plan agreed with their doctor or nurse, with a further 27 per cent unsure.

The most important trigger factors were:

- exercise;
- being in smoky places;
- house dust mites;
- cold weather;
- being near pets or animals.
- colds and illnesses;
- hay fever or pollen;
- hot summer days with no wind;
- anxiety; and

The most useful sources of information about asthma and air quality were seen to be

- family doctors and local asthma clinics;
- family, relations and friends; and
- radio and television programmes.
- information leaflets;
- hospital doctors and asthma clinics;

Weather forecasts and pollen counts were useful sources of information about air quality locally or for specific days.

When faced with poor air quality, pupils used their preventer medication, made sure they had access to reliever medication, and avoided exercise.

Most pupils took responsibility for deciding how to act when air quality was poor, either on their own or jointly with parents or guardians.

Most pupils reported that asthma never or only occasionally affected what they and their families did.

Many pupils felt that teachers did not understand enough about the links between asthma and air quality.

Chapter 4:

Focusing on air quality

The previous chapter looked at all the pupils responding to the survey. Air quality, and that of outdoor air in particular, was very important to some of these pupils. This chapter will look in more detail at the pupils for whom air quality is particularly important.

1 Outdoor and indoor air quality

Pupils were asked to indicate which of a range of trigger factors made their asthma worse, and which triggers were most important to them (see Chapter 3). These trigger factors can be broadly classified as being associated with:

- outdoor air quality;
- indoor air quality; and
- other factors.

These factors have been classified as shown in Table 4.1. For some triggers, the classification is clear, for example smoke from factories. For other factors, however, such as being in the country, the position is less well defined.

Table 4.1: Classification of trigger factors

Outdoor air quality	Indoor air quality	Other
being near a power station	being near pets or animals	running around
hot summer days with no wind	being indoors	getting excited about something
being in the country	cage birds	some things that I eat and drink
smoke from factories	being in a place where people smoke	doing sports
thunderstorms	being in a damp house	cold weather
being near traffic	house dust mites	getting upset, worried or anxious about things
damp weather	working in a school science lab	having a cold or other illness
hay fever or pollen	open fires at home	some medicines
being in big towns or cities	gas fires or gas cookers	
being outside		
sitting in a traffic jam		
being near the sea		

Table 4.2 summarises the number of triggers from the list provided noted by pupils as affecting their asthma, and Table 4.3 is based on the factors which pupils said were the most important to them.

Table 4.2: Number of triggers by type of trigger

Number of triggers	Outdoor	Indoor	Other
0	8%	8%	4%
1 - 2	33%	46%	20%
3 - 4	33%	34%	45%
5 - 6	19%	11%	27%
7 or more	7%	1%	4%
Total	**100%**	**100%**	**100%**

Based on responses by 1,826 pupils.

Table 4.3: Number of important triggers by type of trigger

Number of triggers	Outdoor	Indoor	Other
0	41%	33%	15%
1	47%	48%	40%
2	11%	18%	36%
3	1%	2%	10%
Total	**100%**	**100%**	**100%**

Based on responses by 1,644 pupils listing three important triggers.

Of course, the number of triggers does not, in itself, measure the impact of air quality on an individual, but responses relating to important triggers may reasonably be supposed to include at least an element of the perceived impact. A pupil will regard a trigger as important if it has a very pronounced effect and/or is frequently encountered. For example, although pupils reported more 'outdoor' triggers than 'indoor' ones, 'indoor' triggers were more commonly given among those regarded by pupils as having most impact. For most pupils, at least one aspect of outdoor air quality affected their asthma. Indoor air quality and other factors not directly linked to air quality were, however, of more consequence. This was apparent both in terms of the number of triggers and in when considering only those factors regarded as most important by pupils.

Almost half the girls, but only 36 per cent of the boys, gave no outdoor factors among the three most important ones. In contrast, 40 per cent of boys, and over 50 per cent of girls, gave two or three factors not connected with air quality as important. Older pupils were slightly less likely to regard indoor air quality factors as important.

2 Pupils for whom outdoor air quality is important

Pupils for whom outdoor air quality is important have most to gain from increasing their understanding of air quality issues. Pupils giving at least one aspect of outdoor air quality as an important trigger were compared with pupils not affected in this way. The 'affected' group consists of just over 1,000 pupils, 55 per cent of the total sample.

Those pupils affected by outdoor air quality were broadly similar to pupils not affected in terms of their reported symptoms of asthma and level of knowledge about asthma. In particular, they were equally like to say that they felt that they knew enough about how air quality can affect asthma.

Considering useful sources of information, pupils affected by outdoor air quality responded in much the same way as those not affected, but with some exceptions to this general pattern. Pupils affected by outdoor air quality were more likely to find the following sources of information useful:

- local pharmacies and chemists (20 per cent compared with 15 per cent);
- television weather forecasts (67 per cent compared with 59 per cent); and
- pollen counts (50 per cent compared with 37 per cent)

and slightly more likely to feel that their family doctor was helpful (77 per cent compared with 72 per cent).

Pupils for whom outdoor air quality was important were **more** likely to:

- take medicine for hay fever (54 per cent compared with 35 per cent);
- stay away from places with lots of pollen (74 per cent compared with 56 per cent); and
- stay indoors as much possible (38 per cent compared with 32 per cent).

However, these pupils were **less** likely to report that air quality often affected how much running around they did (24 per cent compared with 32 per cent).

When asked who decided what pupils should do on days with poor air quality, almost nine per cent of the 'affected' pupils said that air quality did not affect them. While this is significantly lower than the 15 per cent of 'unaffected' pupils, this still suggests a degree of inconsistency in pupils' responses.

When asked about how asthma affects the their everyday lives, and those of their families, pupils for whom outdoor air quality was important responded in a very similar way to those for whom it was less important. There was a small but significant difference in one aspect: pupils in the 'affected' group were slightly more

likely to report that asthma affected the choices their families made about places to visit.

Pupils' ideas on improving information on asthma and air quality

As noted in Chapter 3, most pupils did not provide much in the way of relevant material when asked to suggest ways in which information about air quality and asthma could be improved for young people. Further analysis of the comments made was carried out for those pupils giving one or more 'outdoor' factors as being important to them, and who had made comments specifically relating to asthma and air quality, or about improving the environment generally. There were 208 such pupils, and their comments are summarised in Table 4.4.

Table 4.4: Pupils' suggestions on air quality

	Percentage of pupils
Reductions in traffic, changes in fuel used	40%
Reduction in factory emissions, relocation of industry	23%
Restrictions on smoking	22%
Conveying information through weather forecasts etc.	12%
Leaflets etc. on asthma	10%
Improving general awareness of asthma	8%
Better advice needed	3%

Based on responses from 208 pupils.
Percentages sum to more than 100, as pupils could make more than one comment.

This group of pupils had been identified as being those where at least one aspect of outdoor air quality was a major trigger for their asthma and whose responses, when asked to comment on information about asthma and air quality, were the most relevant. Even here, many of the comments were not directly relevant to information needs, and most were related to improving air quality. This apparent lack of awareness is consistent with the impressions gained from the interviews that pupils were not used to thinking in terms of a general relationship between asthma and air quality. This in turn implies that education about these issues should be a component

in any strategies to improve the way in which young people use information about air quality.

Television and radio

Among those pupils who did comment directly on information about air quality, local and national television and radio, usually as part of weather forecasts, were the media most frequently mentioned. Both the need for clarity and the need for this information to be provided routinely were stressed.

> *The air quality and pollen count should be on national TV every night and warnings should be issued to sufferers if the air quality is very poor or if the pollen is very high.*
>
> *I want the air quality to be shown more clearly and more often on the weather forecasts.*
>
> *I've hardly ever seen information about air quality during the winter, so a more comprehensive forecast* ***all year*** *is needed, so that the levels of air pollution/ quality can be regularly seen.*
>
> *The television is the main source of information, especially for youth, so it would be useful if on* ***all*** *weather forecasts (and some radio) air quality and pollen counts could be included.*
>
> *Weather forecasts should be clearer or have young children's versions.*

This message about consistency — needing to know that information on air quality can be obtained every day — also emerged in the group discussions.

Pupils also wanted forecasts for longer periods ahead:

> *...to say what the air will be like, not just for that day but for about five days ahead...*

One pupil said that more information on radio at breakfast time would be useful.

Leaflets

Leaflets about asthma were the other main source of information mentioned by pupils. Suggestions included general information leaflets for those with asthma, leaflets aimed at those without asthma to help them understand the condition better, and leaflets addressing the issues of air quality more directly. Again, the need for clarity and simplicity was stressed:

> *In leaflets, lots more illustrations would make them much more attractive and interesting, which would attract younger readers and would help them to understand more about air quality and what they can do to improve it.*
>
> *Leaflets which are easier to understand. Not as much to read.*
>
> *...make it more fun for asthmatics to learn about it like using cartoon characters and making colourful leaflets to read.*
>
> *Put it in to booklets, put it in an easier way, so people can understand, and use pictures, and explain what air quality is about.*

One pupil seemed to want more detailed information available in a leaflet:

> *Leaflet guide indicating a table in which you follow, showing you the risks, e.g. temperature, pollen factor, wind chill factor, say how they all affect asthma.*

Other types of information

Suggestions made by a few pupils included using clubs for young people with asthma, videos, newspapers and magazines to convey information about the relationship between asthma and air quality, as well as documentary-type programmes on television and radio.

Availability of information

While only one pupil said that she had had plenty of information, seven said that information was lacking or hard to find:

...people who just started to have asthma should have more information so they are confident [and] they could go out without worrying about an asthma attack.

I don't know much about how to improve air quality or any signs that the air is not good quality so I think I would like to know more.

At the moment I know almost nothing about how air quality does affect me, and what I do know is from myself learning about how I feel in different air qualities and where I am in relation to the countryside, factories, the sea, etc.

3 Summary

Over 90 per cent of pupils were affected by at least one aspect of outdoor air quality, for example smoke from factories, being near traffic, or pollen. A similar proportion were affected by at least one aspect of indoor air quality, such as being near pets or being exposed to cigarette smoke.

Over half the pupils gave at least one aspect of outdoor air quality among the three most important triggers of their asthma, and over 60 per cent gave at least one aspect of indoor air quality.

Pupils giving at least one aspect of outdoor air quality as an important trigger did not differ significantly from other pupils in terms of their reported symptoms of asthma and level of knowledge about asthma, both generally and in relation to air quality.

Pupils most affected by outdoor air quality were slightly more likely to:

- take note of weather forecasts and pollen counts;
- take medicine for hay fever;
- avoid pollen; and
- report that asthma affected the places their families chose to visit.

Pupils' responses were not always consistent, and almost ten per cent of those giving at least one outdoor air quality factor as an important trigger said that air quality did not affect them.

The suggestions on improving information about asthma and air quality made by over 200 pupils for whom outdoor air quality was important were analysed. Most comments were concerned more with environmental improvement than with information needs.

Pupils wanted

- information on air quality to be provided routinely as part of television and radio weather forecasts;
- longer-term weather forecasts; and
- printed information to be attractive, interesting and easy to read.

Chapter 5:

The special schools

A sample of 100 special schools with secondary age pupils were sent a questionnaire on asthma and air quality. Over half (55 schools) responded: see the Appendix for further details. The questionnaire was similar to that sent to mainstream schools, but modified to suit the circumstances of special schools.

1 The schools responding

Over the last few years, many pupils who would formerly have attended special schools have been integrated into mainstream education. This tends to mean that those pupils attending special schools are those with the most profound difficulties, among which asthma may be relatively minor: see Table 5.1. Many special schools cater for pupils with a wide range of difficulties: responses from the 55 schools indicated that on average schools had pupils from three or four of the categories given.

Table 5.1: The special needs of pupils in the schools

Schools catering for pupils with:	Percentage of schools
emotional and behavioural difficulties	66%
epilepsy	66%
severe learning difficulties	56%
physical difficulties	56%
communication difficulties	54%
autism	54%
hearing impairment	53%
visual impairment	49%
moderate learning difficulties	47%
specific learning difficulties	26%
other difficulties	9%

Based on responses from 55 schools.
Percentages sum to more than 100 as schools could make more than one response.

Special schools, by their nature, have high staffing ratios compared with mainstream schools, and most will have at least some staff with nursing qualifications. Special schools tend to be small: those responding to this study ranged from those with less than 15 pupils of secondary school age to those with nearly 200, with a median of 40.

Table 5.2: The location of the responding schools

	Percentage of schools
in a large town or city	44%
in a small town	42%
in the country	14%

Based on responses from 55 schools.

Table 5.2 shows the locations of these schools. Special schools were more likely to be located in large centres of population than were mainstream schools. Apart from one school which did not provide information, all the schools took pupils on a non-residential basis, and six also offered some form of boarding provision.

2 Pupils with asthma

The number of pupils in a school with asthma varied from none to 31 (representing 0 per cent to 40 per cent of pupils), with about half the schools having ten per cent or fewer pupils with asthma. Most of the pupils with asthma were reported as able to manage their asthma for all or most of the time, but 56 pupils were identified as not being able to do so. Although this represents an average of one pupil per school, in fact the number per school varied from none (in about half the schools) to five or more pupils in four schools. Seven schools reported that they had one pupil for whom asthma was a severe limitation (defined as resulting in the pupil being unable to participate in the curriculum for at least ten per cent of the time because of asthma), and in a further three schools there were two such pupils.

3 Training for asthma

Schools were asked whether there had been any form of staff training specifically related to asthma since September 1994. Schools were asked to include awareness

raising, attendance at external training courses specifically related to asthma, and training as part of health and safety or first-aid courses.

Table 5.3: Staff training related to asthma

	Percentage of schools
first-aid training, not specifically related to asthma	16%
some training specifically related to asthma	53%
no training	2%
no response	29%

Based on responses from 55 schools.

Over half the schools (29) reported that there had been some relevant training. This was a markedly higher proportion than in mainstream schools. In many of these schools, the training consisted of basic awareness raising. This was sometimes for specific groups of staff, such as classroom assistants, but more commonly included a wide range of teaching and non-teaching staff. Several schools also reported more specific training related to asthma. Nineteen schools described training undertaken by their school nurse(s), including attending seminars on developing a school asthma policy, asthma study days involving local hospitals or paediatricians, and completion of the Asthma Diploma. One school reported that its three school nurses had an updating session with a paediatric consultant on an annual basis.

Two schools reported that one or more of their staff had asthma themselves, or were the parents of children with asthma, and so had a good understanding of the condition.

Despite the higher level of training in special schools, the overall perception of unmet training needs was very similar to that in mainstream schools: 18 schools (34 per cent) felt that there were unmet needs and 16 (29 per cent) were unsure. The cost of training was seen to be an obstacle by only two schools, while 13 reported that other training needs took priority. Lack of suitable training was noted by six schools, and difficulty in releasing staff in eight. Unlike mainstream schools, most special schools had qualified nursing staff on site full time or nearly so. Sufficient expertise was,

therefore, felt to be available, but a number of schools said that they would like all staff to have training:

> *There should be no reason why training should not be available. As a relatively new head, I have relied upon the in-house expertise of the school nurse, but feel that all staff should have the opportunity to do INSET.*

4 Asthma policies

Only 14 of the 55 schools (25 per cent) reported that they had an asthma policy, or that one was in preparation, and six sent relevant documentation.

Among the policy documents sent by schools, one was a general medical policy, with reference to asthma, whilst the other five were specifically about asthma. One was a draft of an LEA policy on procedures for use with pupils with asthma. It included specific reference to some of the additional difficulties which may arise in special schools, e.g. for pupils who are physically handicapped, or with communication difficulties.

Table 5.4: Frequently cited information sources used in deriving an asthma policy

	Number of schools
National Asthma Campaign	5
Local education authority	5
Local health authority	6
Community Health Service	6

Based on responses from 14 schools with, or in the process of preparing, an asthma policy. Responses sum to more than 14 as schools could make more than one response

Two of the policies were closely modelled on the guidelines produced by the National Asthma Campaign. One policy, from a school catering for pupils with a very wide range of special educational needs, included clear information as to the responsibilities of various members of staff.

- The **school nurse** was to set up a staff meeting in July of each year with the Asthma Nurse to update staff knowledge on asthma and training on administering medication, in preparation for pupils moving into new classes in September.
- **All staff** were to ensure the classroom environment and activities were suited to a child with asthma.
- The **Staff Training Coordinator** was required to notify staff of courses on asthma and arrange for interested staff to attend.

Schools were asked if they were aware of any guidelines on asthma produced by their local education authority, health authority or environmental health department. About a third of the schools (18 schools) were aware of LEA guidelines, but half (27 schools) were unsure. Half (28 schools) knew of local health authority guidelines, with about a third (19 schools) unsure. Because many special schools are dealing with pupils with medical conditions, it is not surprising that they show a relatively high level of awareness of health authority guidelines. Only seven schools (13 per cent) were aware of environmental health department guidelines.

5 Asthma and air quality

As noted earlier, special schools tend to be small and diverse. The challenges facing a school catering primarily for pupils with emotional and behavioural difficulties differ from those in a school for pupils with severe learning difficulties, and are different again in schools for pupils with multiple physical disabilities. Questions about asthma and air quality were therefore asked in a more open-ended way than for the mainstream schools.

Eleven of the 55 schools said that air quality was an important factor in asthma management in their schools, and a further eight were unsure. The effects of smoking were mentioned by four schools, and the effects of heating systems by three schools. Pollution from traffic was a problem for three schools. In many special schools, pupils arrive and leave using school coaches, and this was seen as a particular problem.

> *Staff are very aware that pupils can be affected by fumes from coaches parked in the school drive while collecting and delivering pupils. Drivers are instructed to turn off engines when parked but they frequently fail to do so.*

Three schools said that air quality was not an issue for them because of their rural locations:

> *The school is situated in a rural area: air pollution is not an issue for us.*
>
> *Air quality is expected to be good as we are on the edge of town and close to countryside.*

On the other hand, another rural school said that air quality was a problem

> *at particular seasonal times because of location in a rural/ agricultural area.*

Training and the provision of information for staff about air quality in relation to asthma were not seen as priorities by schools. The following comments were typical:

> *Has not been a priority at present although we are well aware that we will need to do this in time.*
>
> *None — advice from first-aiders only.*

However, many schools did ensure that more general information about asthma was available to staff, and many noted the importance of school nurses in raising their colleagues' awareness and understanding.

Several schools commented that they took note of the pollen count, and took steps to minimise the effect of high levels of pollen, e.g. by keeping pupils indoors, or away from school fields. Several schools mentioned weather forecasts and Ceefax/Teletext as a way of identifying periods of poor air quality, but it was not clear if this was done in any systematic way, or merely by interested individuals.

6 Summary

Completed questionnaires were received from 55 special schools in England. These schools catered for pupils with a wide variety of special needs.

The number of pupils with asthma in these schools varied from none to 31 (0 to 40 per cent). Most pupils were reported as able to manage their asthma for all or most of the time. The number not able to do so varied from none (in half the schools) to five or more in four schools. Ten schools reported that they had one or more pupils unable to participate in the normal curriculum for at least ten per cent of the time because of their asthma.

Over half the schools reported some form of staff training directly related to asthma since September 1994: in one in three schools, school nurses had had training related to asthma in this period.

One in three schools felt that there were unmet training needs with regard to asthma, and a similar number were unsure. Other training needs were seen as more important in 13 of these schools.

Fourteen of the 55 schools said that they had, or were preparing, an asthma policy.

One in five schools said that air quality was important in the management of asthma: the factors affecting air quality which were mentioned most frequently were traffic pollution, school heating systems and smoking.

While training staff about the relationship between asthma and air quality was not seen as a priority, many schools ensured that information was available to staff.

Although schools referred to weather forecasts and Ceefax/Teletext as sources of information about air quality, it was not clear if any systematic use was made of this information.

Chapter 6:

Overview and implications

This study has looked at young people with asthma, and had three main aims:

- to investigate how these young people obtained information on air quality and how they responded to this information;
- to assess the role of schools and parents in providing such information, supporting pupils with asthma, and helping them to make informed choices; and
- to consider how such information could be better targeted for this group of people with asthma.

1 The scope of the research

Questionnaires were completed by over 1,800 young people aged 11 to 16: these were pupils who had been identified by their schools as having asthma. Representatives of over 150 secondary schools and 55 special schools also completed questionnaires. These questionnaire surveys were supplemented by discussions with over 80 young people from ten schools.

Before addressing the three main issues, it is important to assess the impact of asthma on pupils' lives, and how much pupils understand about asthma, air quality and the links between these.

2 Pupils with asthma

Asthma clearly had an effect on the lives of many of these young people.

- Over 50 per cent of the pupils said that they often avoided places with lots of cigarette smoke because of their asthma.
- Over 30 per cent often avoided places with high pollen levels.
- About 15 per cent sometimes missed school trips.

- Almost ten per cent often missed games lessons at school, and a further 40 per cent did so occasionally.
- Although less than five per cent of pupils often missed school because of their asthma, over 40 per cent did so occasionally.
- A few pupils (less than ten per cent) said that they sometimes missed science lessons because of their asthma.

These results suggest that there was a substantial group of pupils whose access to the normal school curriculum, and in particular to PE, was significantly restricted.

Nevertheless, only a small minority of pupils reported that asthma had a great effect on what they did and where they went in their spare time. Most pupils said that asthma never or only occasionally affected their choices about what they did or where they went. Pupils' comments, both to the questionnaire and in the interviews, suggested that many of these young people did not want to let asthma have a restricting effect on their lives. It was also clear in the interviews that many did not like appearing to be 'special', and wished to make the same choices about what to do as their peers.

Some pupils did not keep their reliever inhalers with them at all times. Sometimes this was because carrying the inhaler was felt to be inconvenient, but for some pupils it was because doing so emphasised their feelings of embarrassment or 'being different'.

In the group discussions, it was not uncommon for pupils to say that they felt that they did not have enough control over their exposure to asthma triggers. Pupils had to travel get to school, regardless of the effects on their asthma of climatic conditions or traffic pollution. Some PE, and other, teachers were seen as lacking understanding of asthma, and expecting too much from pupils.

Pupils' understanding of asthma

A substantial minority of the pupils involved felt that they did not know enough about asthma generally, or how it affected them. Less than 40 per cent knew that they had

an asthma management plan agreed with their doctor or nurse. Almost 30 per cent were unsure — this suggests that many pupils did not recognise this form of words.

Pupils' understanding of air quality

Air quality is not a clearly defined concept. Pupils responding to the questionnaire were not asked directly about their understanding of air quality, but only a handful of the 85 pupils taking part in the group discussions seemed to a have a clear understanding of what is meant by this term. The remainder thought of it as being essentially about the effects of pollution from traffic and industry, with relatively few referring to pollen, house dust or the effects of smoking.

Asthma and air quality — the links

About half the pupils felt that they knew enough about how air quality can affect asthma. If, however, as was strongly suggested by the interview data, many pupils did not have a good understanding of air quality, there must be doubts about whether pupils' expressed levels of knowledge can be taken at face value. Air quality is of more importance to some young people with asthma than to others, but over 90 per cent reported that at least one aspect of air quality affected them. It is clear that a considerable minority of pupils would benefit from better information and understanding of air quality and asthma.

3 How information was obtained

- Their **families** were seen as important sources of help and information by most pupils with asthma.

- Most pupils said that their **family doctors** and **local asthma clinics** provided valuable support and advice. About half saw **hospital doctors and asthma clinics** as useful.

  Some pupils interviewed said that it was difficult to ask doctors questions, and that they did not always understand what doctors told them.

- **Information leaflets** were generally seen to be useful.

  Pupils involved in the group discussions commented that these were not always written in ways which appealed to their age group.

- **Weather forecasts**, with **pollen counts** and **air quality information**, were felt to be useful by many pupils.

  In the discussions, pupils commented that they would like more consistency in when and how the information was presented.

- Some of the pupils interviewed suggested that **telephone helplines** were for adults, not for them, and that the cost of access could be a problem.

  Others felt that a helpline, especially a free one, could be very helpful, allowing them to get information and to ask questions which they felt embarrassed about asking doctors or nurses.

- The majority of pupils completing the questionnaire seemed to be unaware of many of the possible sources of information about asthma and air quality. Few of these pupils knew of the nationally available Asthma Helpline run by the National Asthma Campaign, or the Air Quality Helpline run by the Department of the Environment.

- Pupils interviewed all said that information should be more easily available, but many did not seem to have made use of the information which was available.

- Some pupils suggested that they would like information delivered to their homes on a weekly or monthly basis.

  Whilst this would probably not be feasible, it does add weight to the suggestion that many young pupils will not actively seek information, but would make use of it if it were sufficiently easy to obtain, and carefully targeted for their age group.

4 How could information be improved?

Information must be **authoritative, up-to-date, and accessible**. Young people need to know how to access it, and how to use it to help them decide on medication, on where to go and what to do.

It may not be clear to all pupils, especially the younger ones, as to **how they should respond to information**. As young people gain more experience of their own asthma, they will understand more of the particular triggers, or combinations of triggers, which affect them. Until they have acquired that understanding, knowing that air quality will be 'poor' may be of little use in itself. Some young people will need more help than others in learning how best to synthesise available information and their own experience of their response to particular aspects of air quality.

Information also needs to be very clearly and carefully **targeted** to the appropriate age range: what is appropriate for 11-year-olds will not be appropriate for 16-year-olds. Even for the older pupils, careful consideration needs to be given to ensuring that information is accessible to those with limited reading skills.

Some pupils found **difficulties in dealing with health professionals**, and local doctors and clinics were generally seen as more helpful than hospital-based services. Some pupils felt that they were under pressure not to take up too much time, or did not wish to show that they did not understand what they were being told. There may be particular problems as young people move from the care of paediatric specialists to adult chest physicians who have less experience of dealing with younger patients.

Young people are subject to the **effects of peer pressure** in many aspects of their lives, and the activities enjoyed by young people are not always compatible with the best conditions for minimising the effects of asthma. Information for young people can help in two ways:

- by providing information in ways which acknowledge this and by providing strategies for balancing health needs with self-image; and

- by educating all young people, so that they can be more supportive towards, and understanding of, those with asthma.

Not all the young people surveyed carried their reliever inhalers at all times, either because it was inconvenient or because it made them feel 'different'. While the message that pupils should always have access to their medication represents an ideal, it is important that health education recognises the reality of this reluctance. For example, information provided at times when young people are leaving home for the day may be more effective in reminding them to take their inhalers with them than would similar information provided in mid-evening.

While **weather forecasts**, which often include air quality information and pollen counts, were seen as useful, pupils noted a number of ways in which they felt that these could be improved. Weather forecasts often include a great deal of information in a relatively short time period: some pupils would welcome a simpler format, and perhaps a special weather forecast aimed specifically at younger people. In the interviews, a common view was that young people wanted consistency, to know that air quality information would be available every day, not just on some days. Against this must be balanced the loss of impact of information which is provided too often. A pollen count all through the winter month would seem inappropriate. But perhaps it is not always clear to young people whether lack of information on air quality in a particular weather bulletin can be taken as meaning that no problems are expected.

Pupils' views on the usefulness of **telephone helplines** varied, perhaps related to different interpretations of the term. There is clearly a difference between a helpline giving pre-recorded air quality data and one giving access to trained staff available to answer questions and provide advice and information. A minority of pupils felt that helplines were more appropriate for adults, but there did seem to be widespread support for a free helpline, with trained personnel able to answer young people's questions. Yet, among the pupils surveyed, only 15 per cent knew of the Asthma Helpline run by the National Asthma Campaign. Making more pupils aware of this

helpline could be an effective means of improving their understanding of asthma and of air quality.

Research carried out for Teletext Limited has shown that 80 per cent of younger teenagers are in households with access to at least one television with **Teletext/ Ceefax** capability. About 40 per cent of these pupils use Teletext or Ceefax at least once a week. These services are potentially a powerful means of providing information to young people. Yet only about 30 per cent of the young people surveyed knew of air quality information available through these services, and about 20 per cent found the information useful. There is clearly scope for ensuring that the availability of this information is more widely known, and consideration could be given to changing the format, or having additional information targeted at this age group.

Recent campaigns to increase public awareness of the effects of exposure to the sun have led to improved **coverage in the media**. This is particularly evident in women's magazines, which traditionally address topics related to health and appearance. The links between asthma and air quality could be looked at in a similar way, but it is not easy to identify appropriate publications, particularly those that might be read by adolescent boys. Suggestions from pupils interviewed included using 'real-life' stories, and articles about sports personalities, pop stars and other role models who have asthma.

School lessons were seen as providing information on the links between asthma and air quality by about a fifth of pupils. It may be that much of the appropriate information is already being delivered through the science curriculum and through personal and health education within the school. The links between air quality and asthma could be made more explicitly, as already happens in some schools.

5 Pupils and teachers

The majority of pupils responding to the survey were unsure as to whether their teachers understood enough about the links between air quality and asthma. Pupils'

feelings that teachers in general did not understand asthma came over particularly clearly in the group discussions, although school nurses, and some individual teachers, were seen as helpful and supportive. These young people spend a lot of time in school, and the way in which schools respond to and support pupils with asthma is important to their educational success, as well as to their health and social development. Schools may need to consider how best to ensure that all staff have sufficient understanding of these issues, and that this is reflected in pupils' confidence in the staff.

6 The role of schools

Most of the schools responding to the survey seemed to take their responsibilities towards pupils with asthma seriously, ensuring that staff were aware of pupils with asthma, that pupils had easy access to inhalers, and having an effective procedure for dealing with emergencies. In many schools, the school nurse had a particularly important role.

A few schools had a clear 'asthma-friendly' policy, welcoming pupils with asthma, ensuring that all pupils and staff understood asthma, and making the school environment and activities suitable for pupils with asthma.

Some schools took a more active role in providing support to those with asthma than did others, although a way of working which is appropriate to one school may not be applicable elsewhere. A partnership between schools, local Community Health Services, GPs and hospitals could help to ensure that all pupils get the advice and support that they need.

Pupils with asthma made a number of suggestions about ways in which schools could help to provide information. These included using school noticeboards or assemblies to give information about air quality, and giving asthma a higher profile in the PSHE curriculum. In one school, the drugs education programme had been based on a visit by a theatre group with supporting activities before and after the visit. Pupils had

enjoyed this and felt that they had learned a great deal: this is a model which could also be used for asthma.

7 Pupils and their families

Most pupils felt that their families were supportive and understanding about their asthma. Older pupils were slightly less likely to feel that their parents were supportive. Forty per cent of younger pupils, but only 20 per cent of older pupils, said that their parents had a role in deciding how the pupil should respond when air quality was poor. The different information needs of parents and children, as well as this shift in decision-making, need careful consideration.

8 Conclusion

The pupils participating in this survey provided a body of information on how asthma affected them, and on the ways in which they obtained and used information about asthma and air quality. The evidence presented here has shown that pupils' levels of understanding of asthma, of air quality, and of the links between these, could all be improved. It has demonstrated that pupils want more information. At the same time, many pupils are not making use of the information which is already available. The provision of better information is likely to lead to an improvement in pupils' control of their asthma, which will in turn benefit their personal, social and academic development.

Four key aspects have emerged from this study.

- Information must be carefully targeted, both in content and format, taking into consideration pupils' ages and interests. The ways in which information is provided must also acknowledge that, while asthma is a common condition, young people do not want it to limit their activities or make them appear to be different from their peers.

- Pupils can make informed judgements about how to respond to variations in air quality only if they have a sufficient understanding of the links between asthma and air quality. Schools could play an important part here, in making these links more explicitly in the curriculum. Some schools may feel that this is not part of their role, or that they do not have the required expertise. Coordination between health professionals, health educators and schools could ensure that young people are helped to understand these links.

- Many pupils find that doctors and asthma clinics are important and helpful sources of information about asthma and air quality. How can health professionals improve the ways in which they communicate with those young people who do not respond so positively? How can they help pupils to synthesise factual information and personal experience, so that individual pupils can learn how to respond appropriately to variations in air quality?

- Pupils need to be aware of the wide variety of sources of information which already exists, and ways of increasing levels of awareness of these sources should be investigated.

The views and concerns of the adolescents involved in this study deserve the consideration of schools, doctors, nurses, health educators and all those involved with helping and supporting young people with asthma.

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Appendix

Research design and methodology

1 Pro forma to schools

In July 1996, a brief pro forma was sent to 12 secondary schools to provide guidance on some issues connected with the administration of the main survey. Eight schools responded. All indicated that they would, in principle, be prepared to participate in such a survey, and that they would be able to identify pupils with asthma. They were asked whether it would be more appropriate to administer the questionnaire to a group of pupils in school, or for pupils to complete it in their own time. Respondents differed on this point (see Section 4 below).

2 The sample of mainstream schools

The project aimed to achieve 200 completed school questionnaires, with questionnaires from 1,500 pupils with asthma in these schools. At the first stage, a sample of 400 schools with secondary-age pupils in England was selected from NFER's Register of Schools. The sample was selected to be representative of all such schools in terms of type of school (independent, maintained middle, and maintained secondary), size, location and overall academic level. There is a wide variety of forms of educational provision within England, making the definition of a secondary school unclear. For the purposes of this study, secondary schools were defined as including maintained middle schools providing mainly secondary education, and those independent schools with pupils in Year 9.

These schools were contacted and asked if they would participate in the survey and, if so, to provide details of the numbers of pupils with asthma in each of Years 7 to 11. In total, 218 schools agreed to take part. As replies were received, it became evident that the total number of pupils with asthma, using one year group from each of these schools, would greatly exceed 1,500. Not all schools who agreed to participate were invited to do so, and almost 2,700 pupil questionnaires were sent to 184 schools. Selection was made to achieve a balance of pupil numbers across the five year groups

and to ensure that Year 7 and 8 pupils were selected from both middle and secondary schools.

The returns from schools, in conjunction with information from NFER's Register of Schools, were analysed to provide an estimate of the proportion of pupils recorded by their schools as having asthma (see Chapter 2). These figures were in line with estimates from other sources (Brodie, 1996).

3 The school questionnaires

One-hundred-and-fifty-seven school questionnaires were completed and returned.

Table A1: Responding schools compared with all schools in England with pupils of secondary age

	Sample	All schools
School type		
independent	17%	25%
maintained middle	17%	8%
secondary	67%	67%
Number of pupils aged 12 to 16		
up to 150	8%	18%
151 – 600	42%	31%
601 – 900	31%	27%
over 900	20%	24%
Location		
metropolitan	32%	33%
non-metropolitan	68%	67%
Region		
north	31%	28%
midlands	27%	25%
south	41%	47%
Overall academic level of school*		
lowest 20 per cent	19%	20%
second lowest 20 per cent	15%	14%
middle 20 per cent	21%	14%
second highest 20 per cent	8%	12%
highest 20 per cent	17%	23%
not available**	20%	18%

Sample figures based on responses from 157 schools.
Figures for all schools based on all schools in England with pupils of secondary age.
** based on GCSE results.*
*** including middle schools.*

The questionnaires were completed by a variety of staff within schools.

Table A2: The roles of respondents to the school questionnaire

	Percentage of schools
Head	15%
Deputy head	25%
Special needs coordinator	4%
Health coordinator	3%
Other teaching post with special responsibilities*	13%
Administrative staff	7%
Nurse/matron/first-aider	18%
Other	5%
No response	10%

Based on responses from 157 schools.
** e.g. head of year/faculty/subject.*

4 The pupil questionnaires

In view of the responses to the pro forma, schools were asked to arrange for the questionnaires to be completed in the manner which each school felt to be most appropriate: see Table A3. Each pupil was asked to put his or her completed questionnaire into an envelope, and to seal this before returning it to the teacher or other member of staff in charge.

Table A3: Method of completion of questionnaires

	Percentage of schools
in a group in school	34%
individually, at school	22%
individually, pupils could take the questionnaire home	47%
other	1%
no response	1%

Based on responses from 157 schools.
Percentages sum to more than 100, as some schools used more than one method.

By the closing date, over 1,800 pupil questionnaires had been returned from 166 schools (some schools returned pupil questionnaires but not school questionnaires, and vice versa). Some of the pupils asked to complete a questionnaire did not feel that

it was applicable, perhaps because their condition was very mild, or because the information held by the schools was no longer accurate. The responses to about ten questionnaires suggested that they had been completed by, or with a considerable input from, parents or other adults. These questionnaires were not included in the analysis, where the interest was in **pupils'** attitudes and responses. A similarly small number of pupils had completed only a very small proportion of the questions — these questionnaires were also excluded. In some schools, not all the questionnaires were returned: this could be because pupils were absent, or chose not to complete and return the questionnaire, possibly because they did not feel that the questionnaire was relevant to them. Response rates within schools varied, but in about half the schools at least half the expected number of questionnaires expected were returned.

Questionnaires from 1,826 pupils were available for analysis. Some of the characteristics of these pupils are described in Table 3.1. Table A4 compares the responding pupils with pupils from all the relevant schools in England, in terms of the characteristics of the schools attended.

Table A4: Responding pupils compared with all pupils in schools in England with pupils of secondary age

	Sample	All schools
School type		
independent	12%	8%
maintained middle	15%	3%
maintained secondary	73%	90%
Number of pupils aged 12 to 16		
up to 150	5%	2%
151 – 600	34%	20%
601 – 900	32%	34%
over 900	29%	44%
Location		
metropolitan	30%	37%
non-metropolitan	70%	63%
Region		
north	33%	32%
midlands	28%	24%
south	38%	45%
Overall academic level of school*		
lowest 20 per cent	17%	22%
second lowest 20 per cent	17%	18%
middle 20 per cent	24%	19%
second highest 20 per cent	9%	17%
highest 20 per cent	15%	19%
not available**	17%	5%

Sample figures based on responses from 1,826 pupils.
Figures for all schools based on pupils in all schools in England with pupils of secondary age.
** based on GCSE results.*
*** including middle schools.*

Possibly because there are fewer external demands on them, middle schools were more likely to participate than were independent and maintained secondary schools. Middle schools tend to be smaller, leading to the under-representation of pupils from larger schools in the achieved sample. In terms of the overall academic level of the schools attended, pupils responding are broadly in line with expectations.

In Chapter 3, it was noted that, in terms of books in the home, responding pupils were very similar to those taking part in the Third International Maths and Science Study

(Beaton *et al.*, 1996). This is a strong indicator that a representative sample of pupils was obtained. The patterns of responses to this question were broadly similar for boys and girls, and for pupils from different year groups.

Within the sample, the proportion of boys did not vary significantly with year group. Boys were slightly more likely to be attending independent schools than were girls, and slightly less likely to be attending maintained secondary schools.

Table A5: Sex of pupils and type of school attended

	Sex	
Type of school	**Boys**	**Girls**
independent	14%	10%
middle	16%	14%
maintained secondary	70%	76%
Total	100%	100%

Based on responses from 1,826 pupils.

Some of the analysis reported in Chapter 3 is based on a subset of pupils who answered at least one of the questions related to information sources. In terms of the characteristics reported in Table A4, these pupils did not differ from those not responding to any of these questions.

5 The pupil interviews

After all the questionnaire returns were available, a list of all those schools which were willing to allow pupils to take part in small group discussions, and where at least four pupils were also willing to participate, was compiled. This list included about 40 schools. From this, ten schools were identified for group discussions, and a further ten were selected in reserve. In view of the timing of the group interviews, in May and June, it was decided to not to include any Year 11 pupils. Schools were selected to cover a range of school types, sizes and locations, and to include pupils from Years 7 to 10.

In total, 54 girls and 31 boys from ten schools took part in the discussions.

Table A6: The schools visited

School	Type and location	Number of pupils	Year group
A	middle school in the Yorkshire conurbation (Bradford)	2 girls, 6 boys (2 groups)	7
B	comprehensive in a small town in the north-west of England (Blackpool)	4 girls, 5 boys (2 groups)	9
C	comprehensive in an industrial town in north-east England (Hull)	8 girls, 3 boys (2 groups)	8
D	comprehensive in a small midlands town	4 girls, 2 boys	7
E	comprehensive in a small town in SW England (Melton Mowbray)	6 girls, 2 boys	10
F	comprehensive in a the Birmingham conurbation (Sutton Coldfield)	2 girls, 3 boys	7
G	comprehensive in small town in the north of England (Derbyshire)	7 girls, 3 boys (2 groups)	10
H	comprehensive in an industrial town in NW England (St Helens)	7 girls, 3 boys (2 groups)	9
I	comprehensive in small town in south-east England (Bucks)	9 girls, 2 boys (2 groups)	8
J	comprehensive in the Birmingham conurbation	3 girls, 2 boys	8

6 The special school questionnaire

Questionnaires were sent to 100 special schools known to have pupils of secondary school age. After one reminder letter, responses had been received from 55 special schools, covering pupils with a range of types of special need (see Table 5.1).

Table A7: The roles of respondents to the special school questionnaire

	Percentage of schools
Head	60%
Deputy head	13%
Health co-ordinator	2%
Administrative staff	2%
Nurse/matron/first-aider	20%
Other	4%

Based on responses from 55 schools.

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Something in the Air

One in seven children of school age in the UK are now diagnosed as having asthma. Public perception links the increase in asthma with rising levels of air pollution, although this is not always supported by scientific evidence.

The study reported here concerns young people with asthma aged from 11 to 16, and has three main aims:

- to investigate how these young people obtain information on air quality and how they respond to such information;
- to assess the role of parents and schools in providing this information, supporting pupils with asthma and helping them to make more informed choices; and
- to consider how information could be better targeted for this group of young people.

It also explores the impact of asthma on the lives of young people and their attitudes to the condition, as well as presenting information on how schools identify, support and help pupils with asthma.

The results are based on:

- a questionnaire survey of over 1800 pupils with asthma, in Years 7 to 11 of schools in England;
- group discussions with over 80 pupils exploring some of the issues in more depth; and
- questionnaire survey of the representatives of 157 secondary schools and 55 special schools.

The views and concerns of the adolescents involved in this study deserve the consideration of schools, doctors, nurses, health educators and all those involved with helping and supporting young people with asthma.

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