On average, every classroom in the UK contains several asthma sufferers — and only about half have been diagnosed

Penny Carruthers is the Schools Project Organiser for the Asthma Training Centre, Stratford-upon-Avon

Penny Carruthers

4 or 5 children in a class . . .

In view of the large numbers of schoolchildren who have asthma, it is amazing how little information has been given to those who have to deal with the condition on a day-to-day basis. Asthma is noted for its variability and sudden emergencies, and it is important for those who are in charge of children at school to be well-informed and knowledgeable.

It is an accepted medical fact that in any large sample of schoolchildren, 10–15% will have suffered asthma symptoms in the last year. There is also evidence that asthma is becoming more common and more severe, although nobody is certain why. About 2000 people a year die from asthma in Britain — about as many as from cervical cancer.

There is evidence that asthma is becoming more common and more severe.

Out of the average 4–5 children per class, only about half will have been diagnosed by their family doctor as having asthma. Diagnosis is not difficult, but it takes time — something that hard-pressed GPs don't often have.

There is no permanent cure for asthma, but with modern drugs the vast majority of asthmatics can remain free of symptoms and lead completely normal lives. However, many people with asthma, even those who have been correctly diagnosed, are not getting the most effective treatment and continue to suffer symptoms — cough, wheeze, shortness of breath, disturbed sleep and restricted physical activity.

Symptoms

Asthma symptoms are very variable, and tend to be worse at night and in the early hours of the morning. A child who seems to be in good health at lunchtime may have had his sleep disturbed by coughing, wheezing, or breathlessness, or any combination of these symptoms. A child who seems tired or lacking in concentration may be an undiagnosed or under-treated asthmatic.

Children with asthma may cough, wheeze and get abnormally breathless during exercise. Breathlessness *after* exercise is very characteristic of asthma.

How does a teacher working in a school spot children who may be asthmatic? There are several clues . . .

Repeated absence because of 'chest infections', 'chestiness', 'cold going on to his chest', 'wheezy bronchitis'. The other term for chest infection is acute bronchitis, and this is treated with antibiotics, which have no effect on asthma. Children do get acute bronchitis, but not normally more than once or twice a year. If there are repeated episodes of cough, wheeze or breathlessness the most likely cause is asthma. If the diagnosis is wrong, the treatment will be wrong too.

Cough, wheeze and breathlessness are the main symptoms. Cough, even without wheeze, is common in asthmatic children. Asthma is the commonest cause of childhood cough.

Response to trigger factors

In asthmatics, cough, wheeze or breathlessness are brought on by specific stimuli which do not affect other people. These are common trigger factors that might be found in school:

Colds and flu

One of the most common triggers. A cold often sets off a child's asthma symptoms, so that even after the cold has gone the symptoms remain, unless they are treated. Asthma triggered by a cold is, unfortunately, often confused with a secondary bacteria infection, and antibiotics, which have no effect, are prescribed.

Animals

These can include cats, dogs, gerbils, rats, guinea pigs, birds, and even insects.

Emotional upset can trigger asthma, but usually it is only a contributory factor.

Pollens and spores

These are difficult to avoid except by staying inside, but asthmatic children should be given the opportunity to use their medications before activities such as nature walks.

Exercise

The effects are frequently worse in cold weather. Cross-country running can be a particular problem, and known asthmatics should be allowed to use their medication before any vigorous exercise.

Cold air

Going outside on a cold day can set off some asthmatics.

Emotional upset

The importance of this can be exaggerated. Emotional upset can trigger asthma, but usually it is only a contributory factor. There is no reason to feel inhibited about reprimanding an asthmatic child — asthmatics are no more or less neurotic than other people.

The child who has an attack for the first time in two years on the very day his mother starts work outside the home is not likely to be attention-seeking, but is more likely to be worrying about the problems an attack might cause now that his mother has begun to work.

Having to come to the office or find a teacher to get the inhaler may be a considerable disincentive to a young child.

A child who has emotional problems and also has asthma may use it in an attempt to manipulate teachers and parents, but would be most unlikely to fake an acute attack.

Allergy

There is a link between asthma, hay fever and eczema, and all these diseases can be triggered by allergic reactions to substances such as grass pollen, house dust mites, pet hair and even some foodstuffs such as nuts, fish and Coca-Cola.

Less common triggers

There are a number of substances that are known to trigger asthma and are officially recognised for the purposes of compensation for industrial injury. The following ones may be encountered in schools:

Epoxy resins (in adhesives, paints and plastics)

Colophony fumes (from soldering)

Flour or wood dust

Asthmatic children may have to monitor and treat their asthma themselves, during school time, and teachers are in a better position to help them if they understand what they are doing, and why.

Preventive treatment

Some types of asthma medication prevent the symptoms occurring, but do not relieve them when they do occur. The most common are inhaled sodium cromoglycate (Intal) and inhaled steroids (Becotide, Pulmicort). These inhalers come in several different colours, but are never blue.

The treatments work only if they are taken regularly — at least twice daily. They are fully effective only after a few days' treatment. Twice-daily treatment need not involve a day school at all, but higher frequency may.

The problem with preventive medication is that after a few days the child will feel well and may forget to take his medication, or consider that he has better things to do. This is how controllable asthma begins to get out of control again.

Any obstacles to the child taking the medication should be removed or overcome. Having to come to the office or find a teacher to get the inhaler may be a considerable disincentive in the mind of a child. If the preventive medication can be built into the routine of the school day (for example, afternoon registration) to help remind the child, so much the better.

Teachers may be unhappy about letting children keep prescribed medicines with them, but it is difficult to imagine how these particular medicines could be abused in any harmful way. For someone else to absorb the drugs from an inhaler the correct technique has to be used, and even then no harm would be done.

Relief medicines

These give almost immediate relief of mild asthma symptoms. They are usually blue inhalers, and the most common names are Ventolin, Bricanyl and salbutamol.

There are some syrups and tablets which belong to the theophylline family. These are usually prescribed in order to control severe asthma. They may cause behaviour and learning problems and nightmares, and in some cases can cause children to wet themselves.

It is theoretically possible that a child could give himself a harmful overdose using a blue inhaler, but he would have to be fairly determined. On the other hand, the effect of an asthmatic not using a blue inhaler is sure and

definite — continuing and possibly worsening cough, wheeze and breathlessness.

In the case of a few children with severe asthma, it may be sensible for the school to hold an emergency supply of steroid tablets such as prednisolone or prednesol separate from the supply at the child's home, but this is a matter for liaison between the school nurse and the GP. These tablets should be taken at the first signs of a serious asthma attack — they are a vital part of treatment and can save lives.

Asthma treatment can be complex, even more so if adults in school have to rely on second-hand information, sometimes garbled, from parents and children. To aid communication between school, home and surgery, the National Asthma Campaign has produced a School Asthma Card which doctors or nurses can fill in to provide an authoritative record of what treatment is needed when, for each child.

What to do in the case of an asthma attack

If an asthmatic child becomes breathless and wheezy, or coughs continually . . .

Mild attack

1. Keep calm. It's treatable.
2. Let the child sit down: don't make him lie down.
3. Let the child take his usual treatment — normally a blue inhaler.

(If the child has forgotten his inhaler, and you do not have permission to use another one . . .

1. Summon the parents.

2. Failing that, call the family doctor.

3. Check that the attack is not severe — see below.)

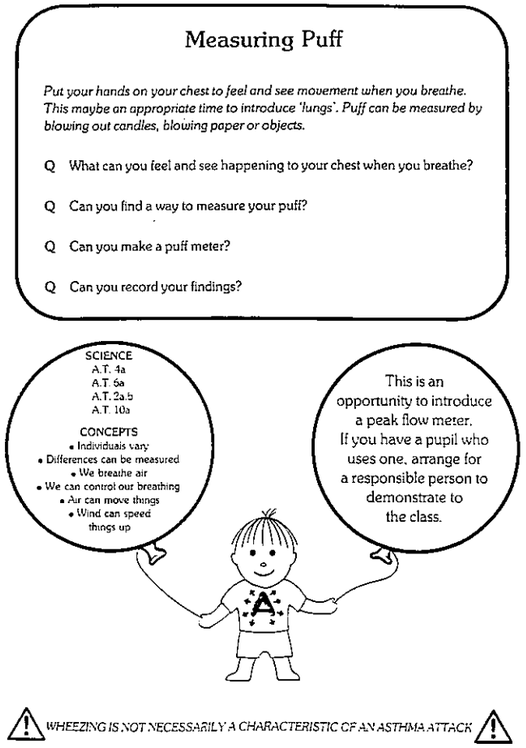
4. Wait 5–10 minutes.
5. If the symptoms disappear, the child can go back to what he was doing.
6. If the symptoms have improved, but not completely disappeared, summon the parents and give another dose of inhaler while waiting for them.
7. If the normal medication has had no effect, then treat it as a severe asthma attack.

Severe attack

Either follow your school protocol or . . .

1. Call the family doctor and ask him to come immediately.
2. If he is reluctant, take the child to the nearest hospital casualty department straight away and get someone to warn them you are coming. Alternatively, call an ambulance.
3. Get someone to inform the parents.
4. If the child has an emergency supply of oral steroids (prednisolone, prednesol) give the stated dose to the child *now*.
5. Keep trying with the usual reliever inhaler, and don't worry about possible overdosing.

A sample worksheet from 'The School's Asthma Pack'



The School's Asthma Pack

The Asthma Training Centre has produced a pack containing the following items . . .

1. A poster giving information on what to do in an asthmatic emergency. This is for general display on school notice boards.
2. A larger plasticised version of the poster for classrooms or staffrooms which has individual card inserts for completion by the parents of asthmatic children.
3. A 'trivial pursuits' style board game for 7–11 year olds. The game includes many general-knowledge subjects as well

as topics to educate children on the function of the lungs and management of asthma, and also blank cards for teachers to insert questions on any special topic.

4. A set of worksheets for teachers to use in preparing work for 5–7 year olds. Each card suggests starting-points for activities, and presents useful information on topics to be covered in the National Curriculum. At the same time, where applicable, they present useful information about asthma. There are many opportunities for extension, cross-curricular links and inclusion in planned topics.

Investigating the frequency of asthma.

John Balding writes . . .

A question in the Health Related Behaviour Questionnaire has been devoted to investigating young people's medical complaints such as diabetes, hay fever and skin problems.

Recently we were prompted to investigate the frequency of asthma, whether recognised or undiagnosed, in teenagers. To do this we asked if they had used any asthma medication during the previous week, and also added the further question *When you run, do you 'wheeze' and have trouble breathing?*

Examining the results for the 'asthma medicators' in 1991, it is discovered that about 10% of boys and girls in years 8–11 say that they took pills or used an inhaler during the previous week:

Year	8	9	10	11
Boys (%)	11.9	10.5	10.1	8.8
Girls (%)	10.0	8.5	9.8	9.4

A greater proportion of girls than boys may be going undiagnosed.

A sensitive screening question

Turning now to the respiratory questions, the number reporting 'very often' or 'quite often' wheezing or having difficulty breathing when running were as follows (again, the data is for 1991):

Year	8	9	10	11
Boys (%)	18.3	17.3	12.3	12.6
Girls (%)	23.2	21.5	19.1	20.1

Taking Penny Carruthers' estimate of between four and five children in a class with an asthmatic condition, and assuming an average of 30 in a class, about 15% of all pupils should fall into this category. The unweighted average of all the year groups in the table above is:

Boys	15%
Girls	21%

It is therefore tempting to infer that this question (*a*) is collecting in the great majority of asthmatics and (*b*) that perhaps a greater proportion of girls are going undiagnosed. The article points out that only about half of all asthmatics have been correctly diagnosed, which is in line with the percentages presented here.

An example from a small 1992 survey of 12–14 year old boys shows how most diagnosed asthmatics are in fact being identified by this question as having trouble breathing when running, along with many others not using medication:

Wheeze when running?	*Take asthma medication?(%)*		*No. of boys*
	No	Yes	
Never	98	2	210
Occasionally	94	6	190
Quite often	81	19	50
Very often	53	47	30
Total			480

Of the approximately 40 boys on asthma medication (in the 'Yes' column), about 25 or 60% have trouble 'quite often' or 'very often'. Of the other 440, about 56 or 13% come into the 'quite often' or 'very often' category. In this particular group of boys, then, the 'wheezing' question is identifying over half the diagnosed asthmatics and also revealing at least as many other pupils who might benefit from treatment. This is in line with Penny Carruthers' claim that only about half of school-age asthmatics have been correctly diagnosed.

The following observations should be made:

1. Asthma may manifest itself in different ways: for example, difficulty in breathing commonly occurs *after* exertion, but the question refers to *during* exercise.

2. Some pupils may interpret 'having trouble breathing' as meaning 'out of breath', which characterises lack of fitness rather than the presence of asthma.

3. If asthmatics take the appropriate medication before any energetic activity, the symptoms should not manifest themselves.

Note

Copies of the book *Asthma: Who Cares?* and *The School's Asthma Pack* may be obtained from the Asthma Training Centre, Winton House, Church Street, Stratford-upon-Avon CV37 6HB (0789 296974).