

Commentary

Childhood asthma and school

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Children with asthma, like most children, spend much of their time in school and school-related activities. Parents may feel anxious when their asthmatic child starts daycare, kindergarten, preschool, or grade school. Relinquishing, even for a brief period, the ability to observe and supervise their child can be stressful for some parents but more so for parents of children with medical problems such as asthma. This commentary is intended to guide the physician when counselling parents of asthmatic children starting school. More detailed information can be found in the US National Asthma Education and Prevention Program (1).

Most schools require information in writing and the parents should meet with the child's teacher prior to the school year to provide details of the child's asthma, triggers, allergies, and a list of medications. An action plan for dealing with emergencies as well as contact information should be included. This information may require the physician's signature. The school should be notified of any changes during the year.

The most common triggers of asthma are viral respiratory infections and children can have as many as six to eight infections per year (2). Schools are constant sources of viruses, in large part due to the close contact environment. Parents soon recognize the association between viral colds and their child's asthma flare-ups leading in some cases to significant absenteeism. The autumn spike in doctors' visits and hospitalizations for asthma coincides with children returning to school. Teaching the child about correct hand washing techniques may help reduce exposures. It would be ideal if schools could encourage proper hand washing practices as well as coughing and sneezing techniques and tissue disposal.

Apart from viruses, other potential triggers for some may be dust (chalkboards), strong scents (on other students or the

teacher), animals (furry pets), and cleaning agents (used by the janitorial staff). School renovations create dust and paint or varnish fumes. Exhaust from waiting vehicles or school buses occasionally enters the school. Poorly functioning ventilation or heating systems can be a problem. It can be challenging trying to determine which of these may be triggering the child's symptoms. Suspicion should be raised when the child seems to have more symptoms on school days than on weekends.

Older asthmatic children may be exposed to second hand smoke when entering and leaving the school when their smoking classmates are huddled around an entrance particularly during cold weather. The exposure may be brief but the symptoms distressing for some. Parents should raise this issue with the school administration.

Asthmatic children need to have their medications available during school hours and be able to self-administer. The options usually are: (1) kept with the older responsible student, (2) kept with the homeroom teacher, or (3) in the school office. If option 1 is not feasible, the homeroom teacher may be best able to store, provide, and supervise medications because of their proximity and familiarity with the child. Keeping the medications in the school office may create a problem if the office door is locked or located some distance from the child's classroom or the gymnasium. It would be ideal if spare quick-reliever medications could be left at school rather than transported back and forth from home.

Routine daily or twice daily medications such as inhaled corticosteroids rarely are required at school and should be administered at home. The most common medication that must be available in school and on field trips is a short acting beta-agonist (SABA) in a metered dose (puffer) or dry powder inhaler. Metered dose inhalers are mostly used with a valved

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holding chamber (VHC), e.g., Aerochamber. Unless special arrangements and permissions are provided, school staff will not be allowed to administer the child's SABA and the child must be taught to self-administer, usually with supervision. Children with a history of anaphylaxis will also need injectable adrenaline available and selected staff instructed in its administration. Some asthmatic children who self-administer SABAs without supervision are not comfortable taking their medication in view of their classmates. The school lavatory is the usual default location but rarely will a child volunteer this and should be asked specifically. With time and confidence this usually improves. The author has met some asthmatic children who refuse to take a SABA with a VHC because of the attention that it attracts but will agree to take the SABA by itself. While the author agrees this is not ideal, the author teaches the child to properly administer the SABA without a VHC. This is usually acceptable to the child, not being as visible and is preferable to the child not taking any medication. An alternative is to switch to a dry powder inhaler.

Children having significant asthma flare-ups are usually initially managed at home. At some point the parent must decide when the child is well enough to return to school. There are no firm rules and judgement is required. Ideally, the child should be well enough to not need the SABA until lunch time with the next dose after school. Asking the teacher to interrupt the class for the administration of a SABA is not ideal.

For many asthmatic children, increased activity and exercise are important triggers. Known as exercise-induced asthma, symptoms of cough and dyspnea and occasionally wheeze occur following prolonged rapid breathing such as after running (3). Gym classes and recess are times when symptoms of exercise-induced asthma can occur. It is best to inquire from the child themselves whether they have symptoms at these times since the parent is not in the school and rarely aware. During parent/teacher meetings, it is wise to speak to the gym teacher since asthma symptoms at school are more likely to occur in the gym than the classroom. Self-administering a SABA 10 to 15 minutes prior to vigorous gym activity can help reduce asthma symptoms but rarely eliminates them completely. Some children prefer to wait until they are symptomatic before administering the SABA. In this case, the medication must be readily available. Physically active children may also be symptomatic during

recess, particularly in cold air. Administering the SABA prior to recess can be helpful. An occasional asthmatic child may be distressed when exposed to cold air and the physician may have to provide a written excuse to allow the child to remain indoors during recess and lunch periods.

There are some scheduled strenuous activities in gym classes, known as fitness tests or the 'beep' test, that frequently cause distress in the asthmatic child (4). This requires of the student prolonged rapid breathing during which they have to beat the clock. For some asthmatic children, failure ensues and the test is not completed, not because of the fitness level but due to the associated coughing and severe dyspnea. The author instructs parents to bring this situation to the gym teacher's attention and occasionally provides a written excuse from the activity.

Many children travel to and from school by bus. School bus drivers should be informed that one of their passengers has asthma and if necessary come to their aid and assist in the administration of a SABA. The author is aware of several instances where a particular noxious perfume was sprayed in a school bus precipitating a severe asthma attack.

Winters can be troublesome for an asthmatic child living in a rural area with a lengthy walk from home to school bus pick up and drop off. Children particularly sensitive to cold air can benefit if changes are made to the bus stop location so that cold air exposure is limited. The author has noted significant improvements when a change has been made.

In spite of their parents' apprehensions, asthmatic children look forward to school and school-related activities. The physician's task is to anticipate and help parents deal with the issues which frequently arise.

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