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Asthma & the School Environment

by James M. Less, CIH

Asthma is one of the most serious health problems for school-age children. In the U.S., on average, one child in 13 has asthma. The estimate is higher in Michigan, where it's nearly one child in nine. With all of the challenges facing schools in Michigan, maintaining a healthy school environment is a very important part of disease management for students and staff with asthma. A healthy school environment also offers other benefits, such as lowering student and staff absenteeism, reducing costs for substitute teachers and workers compensation claims, and preventing lawsuits.



Asthma triggers can be found inside and outside the school building so a broad approach is needed to promote a healthy environment. Indoor air quality (IAQ) problems can arise from moisture and mold growth; pests and pesticides; diesel exhaust from idling buses, delayed structural repairs or improvements; fumes from cleaning and maintenance activities; perfumed personal care products; and poorly designed or managed ventilation systems.

Many schools are using cost-effective tools to fight asthma and provide healthy environments. The free [Healthy School Action Tool](#), is an excellent resource for assessing the overall school environment and also for focusing on specific areas of concern, like asthma. Another great resource is the Environmental Protection Agency's (EPA) [IAQ Tools for Schools](#), which can help schools identify, prevent and resolve IAQ-related problems, often at little or no cost.

Outdoor air pollution can trigger asthma attacks - especially on the playground and sports fields where students are more active. Schools can subscribe to the free ["Enviroflash"](#) service to automatically receive up-to-date information about the outdoor air quality, including health hazard alerts, "Ozone Action" days, and the Air Quality Index forecasts. The forecasts and alerts can help schools plan activities to reduce exposures for students and staff with asthma.

Diesel exhaust emissions from buses are a common source of air pollutants at schools that can trigger asthma attacks. Schools are encouraged to use anti-idling programs, which not only reduce air pollutants but also save money through fuel conservation. Information on anti-idling programs is available from the EPA's [Clean School Bus USA](#) program. In addition to anti-idling programs, the Clean School Bus USA program can help schools retrofit their buses with improved emission-controls, switch to cleaner biodiesel fuels, and replace their oldest buses with new, less-polluting buses. The [Michigan Clean Diesel Initiative](#) helps schools find funding and resources

to apply some of these strategies.

With an estimated 55 million people - 20% of the U.S. population - spending time in schools, it's important for everyone to have a healthful environment. There are many resources to help schools achieve this goal.

[Jim Less](#) is a Certified Industrial Hygienist with SME, Inc., headquartered in Plymouth, Michigan. He helps schools, and other clients, address environmental, health and safety concerns.

Michigan Asthma Statistics ~ School Environment

- 6.6% of children in grades K-12 with current asthma (or their parent) report that there are pets in their classroom, such as dogs, cats, hamsters, birds or other feathered or furry pets.
- 3.5% of children in grades K-12 with current asthma (or their parent) report that they are aware of mold problems in their school.

Source: [Michigan Asthma Call-Back Survey, 2005-2007 Combined, Michigan Department of Community Health](#)

More Environmental Resources for Schools

- [EPA info on mold and moisture](#)
- [EPA info on asthma in schools](#)
- [EPA- General discussions on school performance and IAQ](#)
- [Free EPA Tools for Schools Kit](#)
- [Many more EPA online publications](#)
- [Michigan EnviroFlash: free e-mail/text notifications for Michigan's air quality](#)
click on the EnviroFlash logo
- [Mlair: air quality forecasts, real-time monitor data, animated pollutant maps and tips](#)
click on Mlair icon



Quick Links

[AIM GetAsthmaHelp Website](#)

[AIM School Webpages](#)

[AIM Indoor Air Quality Webpages](#)

[AIM Outdoor Air Quality Webpages](#)

[AIM Work-Related Asthma Webpages](#)

[AIM Event Calendar](#)

Ask an Asthma Educator

Guest Educator: Susan Blonshine RRT, RPFT, FAARC, AE-C

My nine year old granddaughter, Christine, has had asthma for a while and the doctor just

ordered a breathing test called spirometry. She already uses a peak flow meter sometimes, how will this test be different? ~Grand Rapids Grandma

Dear GR Grandma,

A peak flow meter is a useful tool that measures how fast Christine can blow air out from her large airways just like a blast of air to blow out her birthday candles. The peak flow meter is considered only a monitoring tool because it measures just these changes in her large airways. Any other changes in her breathing will not be measured. She may be having problems in the rest of her airways that are very important, but the peak flow meter cannot measure these changes. Using a peak flow meter can be an important part of the asthma action plan you and your doctor have made for when her asthma is worse, especially if her asthma is moderate or severe. Asthma sometimes changes a little at a time. The peak flow may show changes even before she feels them and allow treatment to get started earlier so that her breathing doesn't get worse. It can help you find out how bad the attack is, decide when to use rescue medication, and decide when to get emergency care. It does not give enough information, and is not accurate enough, for doctors to use it to diagnose asthma, make certain changes in treatment or to see how her disease is changing over time.

Spirometry is a very specific and accurate test, usually done at a hospital or clinic, which can give the doctor a lot of information about Christine's asthma. Spirometry measures how much air she can blow out after breathing in as much air as possible and how fast the air moves out of all of her breathing tubes. It gives a much more complete picture of how she is breathing and responding to triggers or medications. The national asthma guidelines say that everyone with asthma should have spirometry done in the beginning of care, again as treatments are started, and at least every year for ongoing care. For this test, Christine will be asked to breathe in very deep and blow out hard and fast for about 6 seconds. The test is always repeated at least three times and often more, to be sure that it is reliable. The doctor may order a bronchodilator to be given as part of spirometry. A bronchodilator is an inhaled medication that may open up her airways. Spirometry is often done before and after the bronchodilator to show any response to the medicine. Her response may help the doctor find out how severe her asthma is.

You may get specific instructions on how Christine should get ready for the tests, such as wearing loose clothing, not having a large meal before the test, and not using her inhaler on the day of the test, if possible.

A doctor will look over the results of the spirometry and see how she is doing by comparing them to predicted values normal for a person her age, height, sex and ethnicity. The doctor can use these results to make changes to Christine's treatment plan if needed.

Michigan Asthma Calendar

October

6 Going Green: Using Asthma Action Plans to Control Asthma, Prince Conference Center, Calvin College, Grand Rapids, 5:30-8:30 p.m. For more info: 616-685-1430

13 Asthma 1-2-3 Facilitator Training, One Jackson Square, Jackson, 9 a.m.-12 noon. For more info: Alison Nix, 517-484-7266 or anix@alam.org

27 The Differential Diagnosis of Sports/Exercise Induced Asthma, HagertyCenter Great Lakes Maritime Academy, Traverse City, 5:30-8 p.m. For more info: 231-935-6930

November

11 Asthma 1-2-3 Facilitator Training, American Lung Assoc. of Michigan Oak Park office, 1-4 p.m. For more info: Patty Inman, 810-953-3951 or pinman@alam.org

18-19 Freedom from Smoking (FFS) Facilitator Training, American Lung Assoc. of Michigan

Lansing office, For more info: Alison Nix, 517-484-7266, anix@alam.org

December

3 Asthma 1-2-3 Facilitator Training, Metro Hospital, Grand Rapids, 1-4 p.m. For more info: Alison Nix, 517-484-7266, anix@alam.org

15 Open Airways for Schools Facilitator Training, American Lung Assoc. of Michigan Lansing office, 8:30-4 p.m. For more info: Alison Nix, 517-484-7266, anix@alam.org



Please direct questions and comments about this newsletter to the Michigan Asthma Communication Network, American Lung Association of Michigan, 403 Seymour Avenue, Lansing, Michigan 48933
Phone: 517.335.9463

Please note: the 1-866-EZ LUNGS phone number will be discontinued on Oct. 1, 2009

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