by Ted Villaire

Something in the AIR:

Air pollution in schools

Each school day, one in five Americans occupies an elementary or secondary school building. Lurking within some of these buildings are potentially dangerous airborne contaminants such as pesticides, diesel exhaust, mold spores, and radon gas.

Childhood exposure to environmental contaminants has become a growing concern in recent years partly due to an understanding that children's bodies are more vulnerable to pollution than adults'. Ruth Etzel, editor of the American Academy of Pediatrics' *Handbook of Pediatric Environmental Health* and professor at the School of Public Health and Health Services at George Washington University, explained that children are more vulnerable because they have rapidly developing bodies that take in more air, water, and food per pound of body weight compared to adults. "Children are most susceptible during the first 10 years of their lives," said Etzel. Also at greater risk from indoor air pollution are children with allergies and children with respiratory troubles, especially asthma.

While certain student populations are more at risk, indoor air pollution can affect people of any age with any health background. According to the U.S. Environmental Protection Agency (EPA), reactions to indoor air pollution may include respiratory problems such as nasal congestion, coughing, wheezing, and even lung disease. Other symptoms may include lethargy, headaches, dizziness, nausea, rashes, fever, sore throats, and itchy eyes.

Fortunately, the majority of environmental problems in schools are fairly easy to prevent or eliminate. By identifying potential indoor air pollutants and using basic pollution control strategies outlined by the EPA, schools can tackle air quality problems before they become extensive, costly, and possibly dangerous. Here are brief descriptions of common air problems in schools and tips on how parents and schools can respond.

The growing problem of mold—In recent years, hundreds of schools around the country have closed temporarily because of mold. Since mold usually needs a steady source of water, mold problems in schools are often traced to leaky roofs and walls. For many people, common mold can cause nasal stuffiness, eye irritation, wheezing, and more serious health problems for people with respiratory troubles, according to the EPA. Less common—but not altogether rare—are a few types of mold that produce toxins which can cause headaches and skin rashes. In the very worst cases, these types of mold can cause problems with the immune system. Preventing mold growth is just one of the topics addressed in the "Indoor Air Quality Tools for Schools Action Kit." If schools are not already using this resource, parents may want to ask school administrators to do so. (See "Indoor Air Quality Resources" for more information.)

The perils of pesticides—While pesticides are designed to control or eliminate unwanted visitors such as insects, rodents, weeds, and bacteria, they can also be toxic for people. Exposure to pesticides can cause irritation to the nose, eyes, and throat, and, in severe cases, damage the central nervous system and the kidneys. The ingredients in some types of pesticides used in schools are suspected by the EPA to be carcinogens.

Promoting Indoor Air Quality in Your School

Although it's ultimately the responsibility of the school to maintain healthy indoor air, parents can still play an important role by informing school leaders about issues and resources (see "Indoor Air Quality Resources," page 11). In some cases, parents can help school leaders become more aware of environmental health concerns just by asking a few questions, such as the following:

- What are the procedures for regularly fixing leaky pipes, roofs, broken windows, and broken ventilation equipment?
- Are pesticides used? If so, can the need for pesticides be lessened by, for example, using Integrated Pest Management? Are parents and employees alerted when pesticides are used?
- Are there regular inspections for lead, radon, mold, and dust?
- When was the air last tested?

Between 1993 and 1996, the General Accounting Office documented more than 2,300 reported pesticide poisonings in schools—primarily indoors. "Most pesticides were developed for the outdoors, but you put them inside and they sometimes stick around much longer," explained Daniel Swartz, executive director of the Children's Environmental Health Network. Pesticides can travel indoors via floating dust particles and soil on shoes. In some cases, pesticides are improperly applied inside buildings.

To reduce pesticide exposure to children, at least 30 states have moved to curb pesticide use at schools. Many of these schools follow a set of guidelines known as Integrated Pest Management (IPM), which calls for monitoring pest problems, addressing the cause, using nonchemical suppression techniques, and, if other methods fail, using the least-toxic type of pesticide. (To find out if your state restricts pesticide use in schools and to learn more about IPM at schools, call (202) 543-5450 or visit www.beyondpesticides.org and click on "Programs.")

Diesel exhaust is not an idle concern—Along with being a possible asthma trigger, federal agencies have identified diesel exhaust as a probable carcinogen. A recent report from the Union of Concerned Scientists states that children may be exposed to diesel exhaust when playing or standing near an idling school bus, when school buses are left idling near an open school window or near an air intake vent, and, sometimes, while riding in a bus. To ensure that children do not breathe diesel exhaust, some schools are pursuing long-term solutions. Making bus engine improvements that reduce diesel emissions is one strategy; another is using buses fueled by cleaner alternatives, such as natural gas.

Getting rid of radon—Occurring naturally in soil, rocks, and underground water, radon is a colorless, odorless, radioactive gas. Because radon comes from the ground, the basement or the first floor is more likely to have higher levels. According to the EPA, people who breathe high levels of radon gas increase their likelihood of developing lung cancer in future years (in the United States, 15,000–20,000 deaths occur every year from radon exposure).

Even though most schools now test for radon, Etzel recommends that parents become familiar with their school's radon testing policies and how the school will respond if high levels of radon are found.

Researchers maintain that student overcrowding, poor construction, and airtight buildings all can contribute to poor indoor air quality in schools. But the most common reason for indoor air problems in schools is lack of building maintenance. Because few state and federal guidelines address the upkeep of school buildings, maintenance is often one of the first services scaled back when schools are required to trim their budgets. Reducing school maintenance not only poses potential threats to student health and performance, but also can instill negative attitudes toward the school, explained Claire Barnett, director of the Healthy Schools Network. "When a school is poorly maintained, it can send a message that a good learning environment is not important," she said.

Daniel Swartz of the Children's Environmental Health Network agrees that providing funding for proper school maintenance is an important step in preventing most environmental health problems. "This is where parents can play a vital role in improving environmental health conditions for children," said Swartz. Parents can help a great deal, he explained, by urging legislative bodies to establish standards for school maintenance and pollution prevention. "Children spend more time indoors than they did 50 years ago, yet outdoor air is regulated and indoor air is not," he said. "Kids simply can't learn if the school is making them sick." **OC**

Indoor Air Quality Resources

- **"Indoor Air Quality Tools for Schools Action Kit"** is available free from the Environmental Protection Agency (EPA). The kit, co-sponsored by National PTA, includes a checklist, a problem-solving wheel, fact sheets, a video, and sample memos and policies. Most of the kit can be downloaded from EPA's website at www.epa.gov/iaq/schools/tools4s2.html. The problem-solving wheel, the video, and a CD-ROM version of the kit are available by calling (800) 438-4318.
- The **National Clearinghouse for Educational Facilities,** created by the U.S. Department of Education, disseminates information regarding K–12 school buildings. The clearinghouse offers an extensive list of resources on topics such as mold, pesticides, and indoor air quality. Call (888) 552-0624 or visit www.edfacilities.org/.

Is the School Making Your Child *Sick?*

If a child is suffering from health problems that may be caused at school, parents should consult a health care professional right away. Parents may also want to look into possible triggers for the illness. Sue Will, former board member of the National Association of School Nurses, said identifying an environmental cause for a child's illness is often a major challenge. Because of varying sensitivity, Will said it's common for one child to respond strongly to an indoor air problem while others seem unaffected.

When parents suspect that contaminants at school may be responsible for their child's illness, they might be able to identify a possible environmental cause by taking the following actions:

- Determine when the problem occurs and what room or what part of the building the child is in at the time.
- Listen to what the child says about safety and hazards at school. Does it sound like safety precautions are properly observed in the science lab, art classes, and vocational education classes?
- Ask if the child knows of other children experiencing the same symptoms.
- Visit the room or part of the school that seems to trigger the child's illness.