

Indoor Air Quality in Schools

A Fact Sheet for Parents



Written by
Doug Brugge Ph.D. M.S.

For
The Environmental Health Policy Information Project
Tufts School of Medicine
136 Harrison Ave.
Boston, MA 02111

Funded by
U.S. Environmental Protection Agency, Region One

What is indoor air quality?

Many people are aware of air pollution. What we usually mean by this is chemicals and dusts found in the outdoor air. However, the air inside buildings may also be polluted. To begin with many of the outdoor pollutants get in. But there are also reasons why additional pollutants build up inside and why indoor air quality has become more of a problem in recent years.

Indoor air quality (IAQ for short) can be poor for either one or a combination of reasons. More often than not there are multiple problems that when added together, are more serious than any one would be by itself. Some of these problems include:

- * Tightly sealed buildings,
- * Reduced ventilation to save energy or because of poor design or maintenance,
- * The use of building materials and furnishings that give off vapors,
- * Damage to building materials and furnishings from water or other sources,
- * Use of chemicals in the building,
- * Renovation or construction activities.

It is usually a combination of poor ventilation and release of small quantities of chemicals and dusts into the air that results in people experiencing symptoms from poor IAQ. Consider, for example, a situation in which a copy machine is giving off ozone gas.

If the machine were outdoors the gas would dissipate in the wind and you probably would breath in very little even if you were standing right next to it. Now put that same machine in a room that has no ventilation, say an old closet space, and you will smell the ozone right away.

This same thing could happen with vapors from cleaning chemicals, off-gassing from new carpet or construction materials or mold and other biological debris growing in dark, damp, water damaged parts of the building.

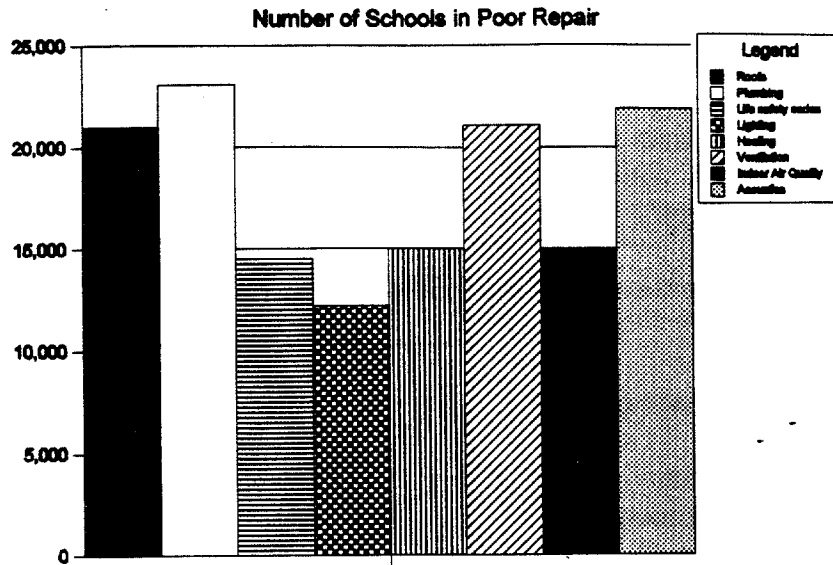
The efforts to conserve on energy costs, beginning in the 1970's are often said to have increased these problems since buildings were constructed to be air tight and fresh air volumes were reduced to save on heating and cooling costs.

Is indoor air quality a problem in schools?

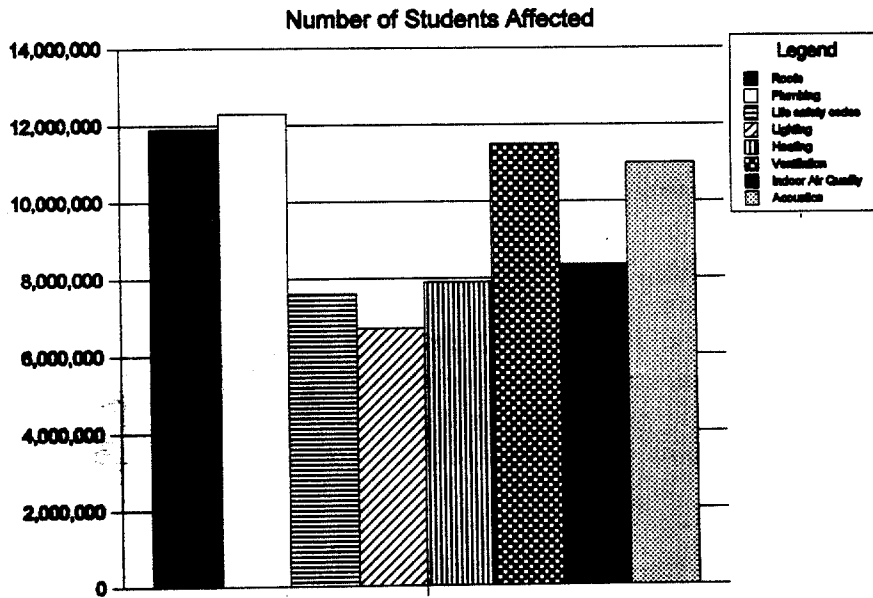
Reports, including one from the U.S. Government Accounting Office (GAO) released in February of 1994, have shown that many school buildings are in poor repair. The consequences of these building conditions include poor air quality. The GAO found the results in the charts on the next page.

The GAO estimates that, "the nation's schools need about \$112 billion to repair or upgrade...to good overall condition." In all, one-third of U.S. schools need extensive repairs or new buildings and 60% have at least one major problem.

Condition of US Schools



Condition of US Schools



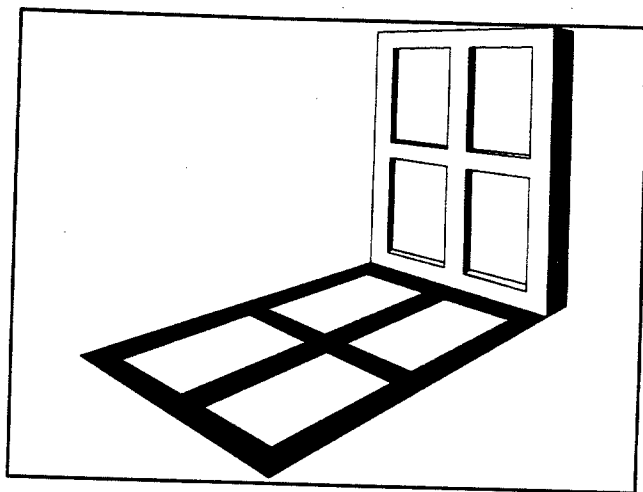
How would parents know that there was a problem in their child's school?

To begin with you should ask your child about the school. Some things you might ask your child are:

- * Do they feel cold or hot or uncomfortable in class?
- * Do they experience any symptoms at school that they do not have at home?
- * Do they use any chemicals in class?
- * Are their classrooms in good shape?
- * Are the classrooms dirty?

You should also pay attention to the state of the buildings when you visit the school. Some things that you might look for include:

- * Is there any water damage or signs of leaks?
- * Are there air vents or unit ventilators in the classrooms?
- * Are the school and classrooms clean?
- * Is the temperature comfortable?
- * Are there unexplained odors, such as mold or chemical smells?
- * Are there art or science supplies that include chemicals?



Do not hesitate to speak to teachers and administrators, including the principal, about any concerns that you have. They are there to serve your child and should be able to answer your questions. Ask them some of the following:

- * Have there been complaints of IAQ problems?
- * Who maintains the ventilation system?
- * How is entry of and use of chemicals regulated in the school?
- * Is there an environmental committee at the school?
- * Are there renovations planned for the building?
- * Can they provide you with documentation of how they maintain the indoor environment of the school?

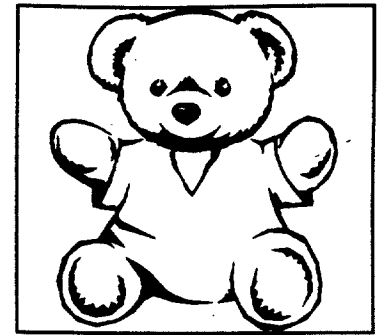
A parent check list is attached to help you keep track of the things that you should be looking for.

What can parents do to help prevent or solve indoor air problems in the school?

As a parent you put the safety and welfare of your children above everything else. When you send your children to school you expect them to be protected and taken care of in the same way that you would. When you decide that there could be IAQ problems in schools you will be

understandably upset and concerned.

As is true in so many things, prevention is the best medicine for IAQ. Ensuring a safe and healthy environment in a school building can usually be achieved by a small input of resources. After problems exist the solutions may be much more complex and costly. Some of the things that can preserve good conditions in the school include:



- * Thorough and regular cleaning of the school.
- * An effective program to restrict entry of hazardous materials into the school.
- * Regular and appropriate maintenance and cleaning of the heating, ventilation and air conditioning systems.
- * Consideration of IAQ during design and construction of new school buildings.
- * Doing renovations when the school is unoccupied.
- * Clarity about who is responsible and accountable for IAQ.
- * A constructive and cooperative attitude between parents, teachers and administration.
- * Use of furnishings that do not give off vapors or grow mold and fungus.

If you think that there is a possibility that IAQ problems already exist at your school, you will want to investigate further. IAQ problems can range from comfort issues to more serious problems. It may not be easy to distinguish the nature of the problem right away. None-the-less, all IAQ problems are likely to have an impact on learning and are worth correcting.

Find out whether there is a committee at the school which is already addressing IAQ and consider joining it. Alternatively, if you can not join yourself, help find other parents to serve on it. Parent involvement on such a committee can make a big difference since the parents are usually the best advocates for their children.

One thing that parents may be particularly helpful with is assisting with any survey of the children in the school for symptoms that might be related to indoor air problems. A health survey is available from the Environmental Health Policy Information Project at Tufts School of Medicine. Interpretation of such surveys can be difficult so you should seek technical assistance from someone skilled in the use and analysis of research surveys.

How can parents work with other people in the school system?

You should try to work with other people in the school to form a constructive coalition that will focus its attention on problem solving. The teachers and administrators work in the same building that your children attend and they should want a comfortable and safe environment as well. In general people who work for the schools also have a deep caring for the students. Approach them expecting them to want to help.

The U.S. Environmental Protection Agency has produced an "action kit" for schools called *Indoor Air Quality Tools for Schools*. The kit includes an introduction to IAQ, check lists, sample memos and other helpful information. The centerpiece to the EPA approach is the formation of an

IAQ committee at the school and the designation of an IAQ coordinator. The EPA approach is endorsed by:

- * The National PTA
- * The National Education Association
- * The American Federation of Teachers
- * The American Lung Association
- * The Association of School Business Officials

Communication is vital when dealing with IAQ. Poor communication can undermine trust between parties, including the parents and the school system. It also leads to unfounded rumors and limits how much energy is spent working on the real issues. As a parent you do not control the lines of communication, but you should make it clear how important they are to you.

Where will the money come from to fix IAQ problems?



It is likely that most of the resistance that you will encounter will arise from concerns about a tight budget. In an ideal case, routine maintenance can prevent problems from developing in the first place and such maintenance is relatively inexpensive. But, as the GAO report says, there are many schools that need costly repairs that stretch school budgets

You should consider advocating for greater funding for schools. You may want to take this up with members of your local school board, or elected representatives at the city, state or federal level. Obviously changes in this area will take time. Until then, you may need to compete for the scarce dollars available in your community.

Keep in mind that there are many problems facing the schools. You may not want to divert money from books or violence prevention. And school officials may be as frustrated as you by their lack of funding. Ultimately, it will probably be parents who are the most convincing to taxpayers and elected officials about the need to keep our schools in good shape.

If there are indoor air problems in the school should my child see a doctor?

You should certainly report the problems at the school to your doctor during routine visits so that she/he knows about them. In severe cases, such as asthma, you should seek immediate and on-going care irrespective of the cause. It is important to be aware that many doctors are unfamiliar with the symptoms associated with indoor air quality. You may wish to seek out a doctor with environmental health training.





Resources

The Environmental Protection Agency, Region One has a hot line that you can call, contact Dr. Mary beth Smuts by fax at (617) 565-4940. If you send the fax on school letterhead you may order a copy of the EPA's action kit, *Tools for Schools* for your school.

The National Safety Council has *Tools for Schools* available on the world wide web at www.envirocenter.com.

The Asthma and Allergy Foundation of America publishes a regular newsletter and may be able to offer advice. Call (617) 965-7771 for the New England Chapter or write to them at 220 Boylston Street, Chestnut Hill, MA 02167.

The American Lung Association has information and can offer advice, contact them in Massachusetts at (617) 272-2866, in Maine at (207) 622-6394, in Vermont at (802) 863-6817.

The Asthma Zero Mortality Coalition has information on causes, care and treatment of asthma, they can be contacted at (800) 777-4350.

The American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) publishes non-binding "standards" for fresh air supply to rooms. They are in the process of revising their IAQ standards. ASHRAE standards must be purchased by calling (404) 636-8400.

State environmental and public health contacts for indoor air quality in New England are:

Connecticut Department of Public Health, Environmental Epidemiology and Occupational Health, 410 Capital Avenue, Hartford, CT 06134-0308, ask for Brian Toal (860) 509-7742 or Marian Heyman (860) 509-7744.

Maine Bureau of General Services, 77 State House Station, Augusta, ME 04333, call gene Kaler (207) 267-4000.

Massachusetts Department of Public Health, Division of Community Sanitation, 305 South Street, Jamaica Plain, MA 02130, call Howard Wensley, (617) 983-6761 and Bureau of Environmental Health Assessment, 250 Washington Street, 7th Floor, Boston, MA 02108, call Al Comroni or Elaine Krueger at (617) 624-5757.

New Hampshire Department of Health and Human Services, Division of Public Health Services, 6 Hazen Drive, Concord, NH 03301-6527, call Teresa Ferrara or Brenda Clark (603) 271-4676 or Matthew Cahillane at (603) 271-3911.

Rhode Island Department of Health, Office of Environmental Health Risk Assessment, Three Capitol Hill, Room 208, Providence, RI 02908-5097, call Bob Vanderslice at (401) 277-4948 x2103.

Vermont Department of Health, Division of Environmental Health, 108 Cherry Street, P.O. Box 70, Burlington, VT 05402, call Dr. William Bress at (802) 863-7220.

Coalitions for Occupational Safety and Health, or COSH groups work on indoor air quality issues, providing training, technical assistance and advocacy mostly to teachers and workers, but also to parents.

New Hampshire COSH, (603) 226-0516

Connecticut COSH, (203) 728-0287

Massachusetts COSH, (617) 524-6686

Western Massachusetts COSH, (413) 731-0760

Rhode Island COSH, (401) 751-2015