

Mold in Schools: a health alert

By Arnold Mann

Last December, USA WEEKEND reported on a Texas family driven from their new home by mold. The story drew an unusually large response from readers, government officials and other media. The federal government requested reprints for flood victims, and CBS' "48 Hours" reported on the same family after our story. This week, we look at the emerging problem of mold in schools.

It seemed like a harmless enough idea, and a good project for Mrs. Roueche's environmental science class in Greenville, S.C.: scrape mold samples from the ceiling tiles at Eastside High and send them off to be analyzed.

Roueche knew about molds and how they can make kids sick. Her own children, who attended Buena Vista Elementary just down the road, had been sick for years. First came the nosebleeds, then the headaches, chronic sinus infections and coughing. Nobody suspected the cause might be mold growing in the school building until *The Greenville News* reported that the highly toxic mold *Stachybotrys* had been found at Buena Vista. Angry parents started pulling their kids out of school. By the time it was over, the county had spent \$1.9 million removing mold from the school, with kids herded into temporary classrooms while men in protective clothing suitable for contact with toxic materials cut out every bit of mold-infested ceiling tile, wallboard and timber and hauled it off for burial as toxic waste (the only safe way to get rid of *Stachybotrys*).

The lab results came back on the samples from Eastside High in January 1999: *Stachybotrys*, just like Buena Vista. "We really didn't expect to find what we did," Roueche says.

Now, after months of cleanup, many Eastside students are as sick as -- or sicker than -- the kids at Buena Vista. Three Eastside students

Telltale signs of mold at home or school

Moist carpeting or stained ceiling tiles, indicating unattended leaks.

Musty odors. These often signal mold growth.

Obvious cosmetic fixes. Replacing ceiling tiles or painting stained wallboards can disguise an underlying moisture problem, such as a leaky roof.

High humidity. Keep a temperature-humidity gauge in the classroom or your living room. Relative humidity should be consistently below 60%.

Heat or air conditioning being shut down for long periods (summer vacation, for example), especially in hot or humid areas.

Cabinets, blackboards or large furniture positioned against outside walls in hot, humid climates. This can impede air flow and drying, and promote condensation between these objects and the cool outside wall.

Lots of plants. Indoor plants are just another source of moisture that can raise humidity and contribute to mold growth.

-- A.M.

have been placed on home study by their doctors for health reasons in the past year. David Vass, 15, has had headaches, congestion, ear infections and shortness of breath since he came to Eastside last August. Ashley Reece, 18, says she coughs for weeks and loses her voice. "Just when I'm starting to get it back," she says, "it starts again." Jon Buchanan, 18, has spontaneous nosebleeds. Alicia Moose, 16, has been hospitalized twice for headaches, partly because of mold, and had to be home-schooled for two months last fall. Memory problems also are common. Missy Minock, 18, says she can recall every class and teacher she's had from kindergarten on, "but I can't remember the classes I had last semester."

old in schools is on the rise and making children sick. According to a Government Accounting Office report, 20% of the USA's 80,000 public schools have indoor air quality problems. "I'm inundated with schools," says Richard Shaughnessy, program manager of Indoor Air Research at the University of Tulsa and an instructor in the U.S. Environmental Protection Agency's Tools for Schools indoor air quality training program. Shaughnessy travels around the country teaching districts how to keep their schools free of indoor contaminants. (EPA chief Carol Browner says the agency "has been committed to providing school administrators with simple, low-cost methods that improve air quality and have a significant impact on children's health.")

Microbiological contaminants -- particularly molds -- account for half of indoor air health complaints, says Marilyn Black, chief scientist at Atlanta-based Air Quality Sciences, a leading indoor air quality testing firm. That means as many as 7,500 public schools have indoor air problems related to mold. Mold can start growing any time water leaks, Black says, and schools, many of which have flat roofs that collect water, are "notorious" for leaks.

Chronic leaks can turn ceiling tiles, wallboard or wood into ready-to-eat mold food. Common molds like *Cladosporium* and *Penicillium* can grow to toxic levels, triggering allergic reactions, including asthma, as well as sinus infections, headaches, coughing, and eye and throat irritation. Others, like *Stachybotrys*, *Memmoniella* and *Aspergillus versicolor*, produce airborne toxins, called mycotoxins, which can cause even more serious problems, including chronic fatigue, loss of balance and memory, irritability, and difficulty speaking.

Children are more susceptible to mold-related illness than adults, because their lungs and other organs are still developing, says Ruth Etzel, M.D., former chairwoman of the Committee on Environmental Health of the American Academy of Pediatrics. "Pediatricians used to consider molds a nuisance," Etzel says, "but in the last five years we've come to consider them an actual health hazard." Mold-related respiratory problems often go undiagnosed among kids, she says, because "most pediatricians don't think about molds when they see a child with respiratory problems."

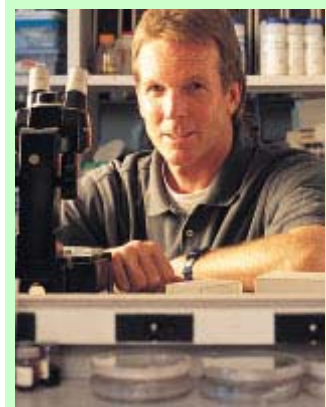
The mere presence of mold, even *Stachybotrys*, does not necessarily mean symptoms of respiratory illness are caused by that mold, cautions Claudia Miller, M.D., an environmental health expert at the University of Texas Health Science Center at San Antonio. Other factors, including volatile organic compounds and a lack of fresh air, can cause similar symptoms. But she says no amount of visible mold is appropriate at school.

When mold is cleaned up, the sick usually get better, but these cleanups are budget breakers. In 1998, California's Sacramento School District borrowed \$5 million to put new roofs on its high schools, where garbage cans had doubled as water collectors. In February, Hill Elementary School in Austin, Texas, evacuated all 777 pupils when large amounts of *Stachybotrys* and *Penicillium* due to roof leaks were found. Several teachers and kids needed medical care. This school year, pupils and staff will remain at an alternate site while Hill is gutted and renovated. El Paso has spent \$4.2 million for mold-related renovations of 14 schools, says Ed Sevcik, former director of facilities for the school district. "We're moving as fast as we can," he says. "I don't think El Paso is any different from any other district facing this problem. The funds just aren't there."

eth Roueche's environmental science class had a clear plan. The kids mapped out all visible mold in the building and selected five test sites, then Roueche scraped mold samples from water-stained ceiling tiles into plastic bags and sent them off to Mycological Testing Service, an independent mold-testing company in New Jersey. What came back shocked everyone: Two of the five samples -- from the library and the hallway -- contained *Stachybotrys*. *Penicillium*, *Cladosporium* and *Aspergillus* also were present in some samples.

The school district took its own air samples and assured everyone that the *Stachybotrys* was not airborne and therefore not a threat. Roueche counters that "Stachy" spores are sticky and rarely show up in air samples. "They said we only found mold in five ceiling tiles, but I explained we only tested five."

Roueche says kids and teachers started getting sicker during cleanup, when workers without protective clothing started tearing out mold-infested ceiling tiles and throwing them on classroom floors, with students present. Oby Lyles, executive communications director for the Greenville County school district, confirms that workers collected and removed hundreds of ceiling tiles but says all the work was done after school hours.



"I'm inundated with schools," says Richard Shaughnessy, a Tulsa air quality expert who travels the country teaching school districts how to avoid contaminants such as mold. He's among the experts participating in Sunday's chat at hgtv.com co-hosted by HGTV and USA WEEKEND.

Using the EPA's Indoor Air Quality Tools for Schools Kit, Roueche's class began conducting teacher surveys and monitoring rooms for temperature and humidity. Today, her classroom is full of charts documenting "hot spots."

"I won't sit back and watch this stuff cook me and my kids," teacher Sammie Liberatore said before leaving Eastside for another job. "Something's got to be done. A learning environment is one thing; a dangerous one is quite another."

Roof repairs are "ongoing" at Eastside, says communications director Lyles, with moldy ceiling tiles being replaced as needed. The roof is now being replaced, he says, and the district's custodial staff, servicing nearly 100 schools and 60,000 students, has had mold training. "Once we encountered the problems with Buena Vista," Lyles says, "it raised everyone's awareness about the danger of mold."

Teachers filed no mold-related workman's compensation claims last school year, he says, though there have been health complaints from 27 students in the past two years.

Roueche's health surveys show higher numbers. In January, 160 out of 236 students surveyed said they were having health problems, along with 37 out of 69 teachers, 10 of whom were having nosebleeds.

"It would have been easier and cheaper to tear down the school and build a new one," says state Rep. Bob Leach, of South Carolina's 21st District. He says construction of an entirely new school has been pushed up from 2008 to 2003.

But in the meantime, Roueche wonders, what will become of the Eastside kids -- especially her own daughter, Kimberly, now a sophomore there? Kimberly's old symptoms from Buena Vista came back during her freshman year. "She's had a lot of problems," Roueche says. "She's had chest pains they think are related to her pulmonary system."

One night, not too long ago, student Billy Siverling stood before the county school board and spoke for all the Eastside students. "We have a great student body and faculty," he said. "We love Eastside High. But what price can you put on good health? And how can you raise scores if the very building is making us sick?"

Arnold Mann, a contributing writer for Time magazine, also wrote USA WEEKEND's original cover story on mold.

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