



Contact Us © Walter Cronkite School of Journalism and Mass Communication 2006 About Us

<< Prev

Next >>

## Toxic indoor mold is on the rise, and you may not even know you're living in a sick house

By Anya Britzius

**M**y happiest childhood memories took place at my home in Big Lake, Minn. On sub-zero winter afternoons, my younger brother Deven and I retreated to this warm sanctuary after riding snowmobiles with our dad. Once our fingers turned into icicles and our cheeks stung with winter's bite, we trudged through several feet of powder toward the house. Scampering over to the fireplace, we let the fiery blaze thaw our frosty fingers and rosy cheeks. Next we raced upstairs to find mom preparing steaming mugs of hot chocolate with floating marshmallows. As the icy wind swirled tiny snowflakes outside, I thought that my home would always keep me safe and warm.

“It wasn't a fire or tornado that destroyed our home. A hidden intruder had been making us ill for years.”

Little did I realize that my home would not always be there. Several years later, we stood on an empty site where our three-story house used to stand. It wasn't a fire or tornado that destroyed our home. A hidden intruder had been making us ill for years. We found toxic mold in our walls, and it took away our dream home and nearly all the possessions inside. All we had left of our dream home was our memories.

Mold is everywhere. It grows outdoors and indoors, and these fungal spores can cause serious health problems for those who are allergic to mold or have a weak immune system. According to Dr. Vincent Marinkovich, an allergist and immunologist who tests patients for mold allergies, symptoms range from headaches, rashes and breathing difficulties. “Probably the worst thing that happens in the long term is that people can actually get brain damage from it,” Marinkovich says.

By understanding how mold grows and the health problems it can cause, you can take precautions to keep it from destroying your home and health. The scary part is you might not even realize this hidden intruder is growing in your house.

### Mold attacks

Set on several acres of a family compound in Big Lake, Minnesota, our house was the only one my younger brother Deven and I had ever known. As newlyweds, our parents Dale and Paulette built our home and moved in during the spring of 1980. After living in it for 23 years, we had made it in to our dream home by redecorating every room and creating an addition that doubled the square footage. We topped it off with a brand new deck and hot tub. While improving the house, we didn't realize what was lurking inside our walls.



Photo courtesy of Anya Britzius

**The Britzius family enjoys the holidays in their “dream” home.**

One evening while listening to the news, we heard a report that customers of Select Comfort beds found mold in the foam layers. My parents and brother had Select Comfort beds, and when my mom unzipped the mattress, she found traces of mold on the foam. In Deven's bed, she discovered layers of foam covered with high concentrations of blackish green mold spots.

My mom called her sister, Sheila, who had found mold in her newly built home in

Wisconsin. She had someone come out to test for mold throughout the house. We called Air Tamarack, Inc. in St. Paul. Their company has been inspecting building and mold related air-quality problems for the past 18 years.

One of the employees, Steve Hendrickson, came to our house in August 2004 and took samples of the mold discovered in the beds. He also cut a hole in one of the basement walls and found that the plastic vapor lining inside the wall was covered with black mold. Hendrickson also collected samples from carpeting and furniture throughout the house.

Several weeks later, the results arrived. *Cladosporium*, *Alternaria* and *Penicillium* molds had infiltrated the beds. The house tested positive for *Penicillium* and *Aspergillus* fungi, even in the new addition built only four years earlier. Like many people, we were ignorant about how mold grows inside a house.

### How mold grows

According to the [Environmental Protection Agency](#) Web site, mold spores continually circulate indoors as well as outside. Outdoors, they break down dead organic material. Landing on damp spots indoors, they start to thrive. Molds gradually destroy the things they grow on, and moisture and oxygen fuel their growth. "We see a lot of growth in the summer, like in Minnesota. When there is humid air in the outside, it comes into the walls above grade," says Hendrickson of Air Tamarack, Inc.

Even though there are thousands of types of molds, some pose a larger threat than others. "We think about 25 molds are problematic" Hendrickson says. One of the most dangerous kinds, *Stachybotrys*, can cause bleeding in the lungs in young children and infants. Dr. Vincent Marinkovich, an allergist and immunologist, says that people have died from this mold. "If you get some sort of water leak or water damage and you have sheet rock or gypsum board, you're eventually going to get into real problems with *Stachybotrys*, which is a pretty potent mold," Marinkovich says.

*Aspergillus* and *Penicillium* molds, which we found in our home, can also lead to serious health consequences. The toxins produced by these molds can cause cancer. "Those are called aflatoxins." Marinkovich says. "That is the most powerful cancer-producing chemical known to man." Not every *Aspergillus* and *Penicillium* mold contains aflatoxin, but if it does, your health might be at risk.

### WARNING SIGNS OF MOLD

According to [Mold Technologies](#), molds fall into these three categories: allergens, pathogens and toxins. Your reactions will differ, depending on the type of mold.

#### Allergen exposure (irritants)

- Constant or out-of-season allergies
- Recurring sinus problems
- Headaches
- Progressively worsening asthma

#### Pathogen exposure (causes disease)

- Chronic sinus infections
- Constant or out-of-season allergies
- Headaches
- Chronic bronchitis
- Diarrhea
- Lethargy

#### Toxin exposure (poison)

- Severe allergies
- Chronic sinus infections
- Headaches
- Extreme respiratory problems
- Diarrhea
- Lethargy
- Memory or cognitive problems

—By Sarah Handfield

### Unexplained illness

The Air Tamarack specialists met with us and described the health symptoms of problematic mold. For 18 years, my brother Deven had struggled with health problems. When he was a baby, doctors put tubes in his ears to relieve constant ear infections. He also had sinus surgery. He suffered from asthma and horrible allergies to pollen, dust and many outdoor allergens. Excruciating headaches lasted weeks at a time, forcing him to miss months of school.

For years my parents had taken Deven to countless doctors, who kept giving him antibiotics for the sinus problems and ear infections. This treated the symptoms, but it never got at the root of the problem. After years of antibiotics, his immune system weakened.

Several months before we found the mold in our home, Deven had serious difficulty concentrating. He couldn't perform in school and spiraled him into a depressed state. All he wanted to do was lie in his room in the basement. We later learned he was sleeping in a bedroom infested with mold. We soon found out there was a deeper problem.

Searching for more answers, my parents took Deven to Dr. Vincent Marinkovich, an allergist and immunologist in Redwood City, Calif. Tests revealed that my parents and brother had high levels of mold in their bodies, and allergy tests showed that Deven was allergic to mold. Marinkovich gave them an antifungal nasal spray designed to kill the mold growing inside their bodies.

### Health hazards

People like Deven who are allergic to molds react to a heavy exposure by making a protective antibody called IgG. "That's our most prevalent protective antibody in our body," Marinkovich says.

Even more susceptible are people with weak immune systems, with AIDS or heart transplants. "People with cancer who have had chemotherapy and have had their immune systems wiped out, they would be particularly susceptible to the effects of mold. Molds will actually kill them," Marinkovich says. People with strong immune systems make antibodies that protect them from the symptoms. Each person reacts differently to mold.

According to the EPA website, mold triggers hay fever symptoms, runny nose, itchy eyes, rashes and breathing difficulties. Hendrickson, from Air Tamarack, says the sources of these symptoms can easily go undetected. "We'll go into a house and there are not visible signs or smells of mold, but the people have the symptoms.

After our inspection, we'll find high levels of a certain species or fungi that we often find that cause allergy problems," Hendrickson says.

Other symptoms of mold allergies include chronic fatigue, hypersensitivity, heartburn, abdominal pain, diarrhea and constipation. The most serious symptom is brain damage. "We don't actually know how that works, but we have some ideas," Marinkovich says. "One of them is that there is an immunological reaction in the brain that can actually destroy brain tissue and can cause some loss of intelligence and memory. Some of that may be irreversible."

Sinus problems, like those Deven has struggled with his whole life, also result from mold. "The Mayo Clinic, about six or seven years ago, reported in a study that they did that 96 percent of the people who have chronic sinusitis were actually colonized by mold in the sinuses," Marinkovich says.

Antibiotics relieve sinus symptoms but don't kill the fungus. "It [an antibiotic] doesn't do anything for the fungal growth that is still there, so they [patients] come down with another infection next month," Marinkovich says.

Marinkovich gives his patients antifungal nasal sprays to kill the mold in their bodies. The nasal spray would help eliminate the mold in Deven's body, but how would we eliminate it from the house?

### Demolition devastation

With our house contaminated by mold, my family moved next door to live with my grandparents. The next question was what to do with our house? My aunt and uncle had this exact problem a few years earlier. They renovated their house to get rid of the mold, but it wasn't successful. Their illnesses persisted. They decided to sell the house and build a new one.

"We later learned from Dr. Marinkovich that this is typical," my dad, Dale, says. "Highly contaminated people can never move back into their homes even after remediation. The physical location of our home made our remediation decisions difficult." Living next to my grandparents, our house is just one small piece of the family compound. Renovating and selling our house to outsiders was not an option. Demolition was our only option, and we rebuilt a new house on the same site.

I couldn't believe that our home of 22 years was about to be crushed to rubble. We also we lost most of our possessions. Mold clings to soft surfaces, such as fabric, carpet and furniture. We couldn't keep anything exposed to the mold from our old house and bring it

### HOW TO PREVENT MOLD IN YOUR HOUSE

It's not easy to detect toxic mold inside your house. This hidden intruder could be growing, but you might not even see or smell it. That's why it's vital to understand how to control moisture and promote air circulation in your home.

"Ideally, you would be involved with the building and oversee that it's done properly. Inspect it during that building process," says Steve Hendrickson of Air Tamarack in St. Paul, Minnesota.

#### Visual inspection

Hendrickson advises people to inspect their homes for mold. Musty smells or black splotches indicate developing mold. If you don't see mold, you can test to see if you have problematic levels.

#### Water damage

"People absolutely must not ignore water damage," says Dr. Vincent Marinkovich, an allergist and immunologist. First, identify the source of the water, such as an overflowed toilet. With little spills, use towels to wipe everything off the floor.

"If it's a big spill and the carpets are soaked, then you're in trouble because carpets that are soaked get moldy," Marinkovich says. If your carpet gets flooded, it's a good idea to change it.

"If you have a leak in the wall, you need to take out the sheet rock that's been chronically wet for a while and replace it with new sheet rock," Marinkovich says.

#### Spray insulation

Insulating your house with spray insulation instead of a plastic vapor barrier will help control moisture in the wall cavity.

#### Air circulation

HEPA (High Efficiency Particle Arresting) air purifiers help control airborne bacteria and fungi. Air exchangers and dehumidifiers circulate fresh air throughout the home and will help reduce mold growth.

—By Anya Britzius

“All we had left of our dream home was our memories.”

into our new house. My brother got rid of all his clothes, and everybody else had each piece of clothing dry-cleaned to destroy the mold spores.

"As a mother, my first responsibility is to my family," my mom, Paulette, says. "The decision to take down the house was necessary to make my family healthy again. The material possessions could be replaced, but my family's well-being could not."

We took almost all our furniture to an estate sale. One Saturday morning I sat in my room packing up my belongings for the sale. The only possessions I refused to part with were my scrapbooks I'd been making for years. Dolls and keepsakes I loved were hard to get rid of, but I knew we couldn't take the chance of contaminating our new home.

From the estate sale we made around \$10,000, which was a fraction of what the items were worth. Insurance doesn't cover mold, so we didn't receive any money for demolishing our house or building a new one. We knew money wasn't important. We felt fortunate to have discovered the cause of my brother's health problems.

### **Beware of building practices**

It doesn't matter if you live in a million dollar home or a tiny shack. Mold doesn't discriminate. Certain building techniques trap moisture, which promotes mold growth. "A majority of the time, they [home owners] won't know that it's there," says Hendrickson of Air Tamarack, Inc.

Problems result when moisture migrates into the exterior wall from either exterior leakage or interior humidity. The moisture migration and subsequent accumulation occurs during both the summer and winter due to temperature differentials. The fiberglass insulation becomes wet and it turns into a growth chamber for mold. When we chopped a hole in our basement wall, we saw black mold on the plastic vapor barrier. Moisture from the outside had collected on that barrier, and we couldn't even see it because it was hidden behind the dry wall.

Dr. Marinkovich indicated that sheet rock can also be a breeding ground for mold when it becomes damp. The problem is that building codes require a plastic vapor barrier be placed over all fiberglass wall and ceiling insulation throughout the interior of the house. When the humidity in a home becomes excessive, the sheet rock becomes moist because the air cannot penetrate through the plastic. It's like putting a plastic bag over your head and then going out into the cold air. You'll be protected from the exterior elements, but you head will still be wet and uncomfortable.

"The commercial buildings are being built very well, but the residential areas are having a problem," Hendrickson says. "It's only the tip of the iceberg as far as what the public has seen as far as the problems that are out there." The energy efficient, air tight construction of newer homes results in a lack of airflow and moisture retention. "Since the 90s there has been a change in building practices that have created faster growth (of mold)" Hendrickson says. "There are a lot of problems in newer homes." Once we learned why our old house trapped mold, we took special precautions the second time around.

### **A new beginning**

In summer 2005, our new house began to rise on the same site of our old one. Air Tamarack worked with our builder to reduce the chances of mold returning. First, we designed the house without a basement. Basements tend to be moist due to the exterior soil backfill, which can breed mold. Second, we didn't use fiberglass insulation or plastic vapor barriers, which trap moisture in the walls. Instead, we used a spray-applied, high- density foam that eliminates the need for a vapor barrier.

Third, we made sure the exterior of our house was water tight, especially near windows and doors. The builder caulked cracks to make sure rainwater couldn't seep inside. Fourth, a "house wrap" was installed on the outside of the walls. It prevents water from coming in but allows for moisture to migrate out. Fifth, we installed an air-circulation system equipped with HEPA filters and dehumidifiers.

As the mold exits Deven's body, his health continues to improve. "Being out of the house was the best treatment for me," he says. As we watch our hour new house go up, we're flooded with feelings of both sadness and thankfulness. I'll never be able to walk into the old house where I grew up, but I am grateful we found out why my brother was so sick. Watching my new home being built marks the start of a new beginning and new memories.



Photo courtesy of Anya Britzius

**The new Britzius home is being rebuilt to prevent mold growth.**

### **WHERE YOU CAN TURN FOR HELP**

Jeffrey and Connie May, authors of *The Mold Survival Guide For Your Home And For Your Health*, provide some resources if you need help with mold problems.

[Indoor Air Quality Association](#) for remediators and investigators and lists Internet resources.

[May Indoor Air Investigator LLC](#) offers air quality, moisture, mold, and odor investigations.

[MyHouseIsKillingMe](#) lists indoor air quality consultants.  
—By Anya Britzius

[Back to top](#)