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Corinne Purtill
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Think you can step inside to get a break from dirty air?

Think again.

The air inside your home can be two to five times as polluted as the air outside, according to the U.S. Environmental Protection Agency.

And since people spend as much as 90 percent of their time indoors, the quality of the air can make a big difference in quality of life.

Chemicals leached off painted walls and furniture, fumes from cleaning products, mold and noxious gases seeping in from the outdoors are some of the air contaminants that can find their way into your home.

Pollutants don't disperse and dilute in a sealed home as they would outdoors. Air pollutants that can accumulate indoors have been linked to worsened allergies, asthma, lung cancer and death, in the worst cases.

That's not to say your home is endangering your family. Every house is different, as are the sensitivities of the people living inside.

But taking a moment to consider what you breathe could put you on the path to better health.

"If you're going to be indoors 90 percent of the time, then you should pay attention to what's going on indoors," said Barbara Spark, indoor air program coordinator for EPA's Western region. "Indoor air is a lot more complicated than we first realized."

Finding contaminants

The EPA first knew that indoor air quality was an issue in the early 1980s, Spark said.

Air sampling at homes around the country revealed that levels of many contaminants were two to five times higher inside houses than outdoors. That was true of homes in both polluted cities and pristine rural areas.

Because people spend so much time indoors, and because there's less space for pollutants to dilute, the risk of inhaling some contaminants can be up to 1,000 times higher indoors than outside, according to a 2005 report from the California Air Resources Board on indoor air quality.

"You think of a house as being a safe haven. But there are things in your house that can hurt you at some concentrations," said Derrick Denis, who is director of the Phoenix chapter of the Indoor Air Quality Association and vice president of indoor environmental quality for environmental consulting firm Clark Seif Clark.

Indoor air can be a mix of contaminants from both man-made and natural sources.

Indoor pollutants in Valley homes can include:

• Mold, which can grow even in dry desert air if there is some type of moisture or leak indoors.

• Household products and cleaners, which can be irritating depending on residents' sensitivity. For example, furniture or cabinetry made from pressed wood can contain formaldehyde, which leaches, or "off-gasses," from the surface of the product over time.

• Radon, a colorless, odorless gas linked to lung cancer that can leak into homes from the soil or rock below.

• Carbon monoxide, a colorless, odorless byproduct of combustion that can be fatal if undetected.

The Occupational Safety and Health Administration has standards for indoor air quality in workplaces. The state Department of Health Services works with EPA to improve indoor air quality in schools. But regulating household air quality is the responsibility of the homeowner.

"We can't regulate or inspect someone's private home," said Don Herrington, bureau chief for epidemiology and former head of the indoor air program at the health services department.

'An investment in health'

When Pam and David Mulligan bought a new home in Scottsdale three years ago, their first act before moving in was to open all the doors and windows and let the desert air circulate for two weeks.

Since then, they have remodeled the home piece by piece to replace potentially toxic surfaces with ones designed to improve indoor air quality.

They refinished the walls with pastel paint free of volatile organic compounds, the ingredients of ozone pollution. They tore out the synthetic living room carpet and replaced it with a slate floor installed with non-toxic sealant.

They sleep on organic cotton sheets, use natural cleaning products and hire an organic pest-control service to deal with the scorpions native to the hilly area.

The couple chose a health-conscious lifestyle based in part on David's job as chairman of the transplant division at the Mayo Clinic in Phoenix.

As a surgeon, he says, he sees more liver and pancreatic cancer now than at any point in his 12-year career. Though there's no way to conclusively link exposure to environmental chemicals to tumors, he said he wants to limit his family's contact with toxic substances.

"We have to be conscious of what we're exposing ourselves to," he said. "I look at it as an investment in health."

Poor indoor air quality can have a variety of health effects. Asthma, allergies, respiratory problems and heart conditions can be aggravated. Chemicals can irritate eyes and throats. Extreme cases of radon or carbon monoxide contamination can lead to lung cancers and premature death.

Indoor air pollution affects the same people affected by outdoor pollution: children, the elderly and people with existing respiratory problems. Severe cases can trouble even healthy adults.

However, indoor air experts caution against alarmism.

Though there are a variety of threats to indoor air quality, that doesn't mean they are all present in life-threatening quantities in your house. Indoor air just shouldn't be dirtier than the brown cloud outside, Denis said.

"The air in your house should be as good as outside," he said. "If you can't handle what's outside, you should move."