

IS YOUR HOME HEALTHY?

Your home may look perfectly fine but a range of factors can contribute to making it a toxic environment. In some cases, your house could literally be killing you.

BY LUISA VOLPATO



Alert! The paints you use can emit volatile organic compounds which pollute your indoor air.

For a culture that is known for its love of the great outdoors, the reality is that we spend much of our time indoors. Blame it on those TV home renovation shows, but we are also a little obsessed with building and decorating our retreat from the outside world.

But have you ever stopped to ask yourself: is your house killing you? As drastic as that might sound, it is the question posed by the SBS TV show of the same name, which aired last year. This makeover show with a difference takes a scientific approach to getting rid of common indoor air toxins and their health risks.

The show's host Peter Dingle, a university professor in environmental science and expert in indoor air and health, says the main culprits are right under our noses. "Mould, pesticides, solvents, deodorisers, cleansers, dusty carpets, paints, treated timber, adhesives, fumes from gas heating ... the list goes on," says Dingle. →



KILLING YOU SOFTLY

Dingle and his expert team took their *CSI*-style investigation to the house of Bronwyn and Brian Edler, in the outskirts of Sydney. Surrounded by gum trees in a quiet neighbourhood, it seemed the ideal place to raise their young family.

“Little did they know the extent of the mould in their house and the insidious effect it was having on their ill health,” says Dingle. “The fact that they said they felt better whenever they left the house was a pretty big clue.

“Each morning they woke up sneezing and they suffered from constant fatigue and inexplicable mood swings. Rarely did a week go by without at least one of them suffering a cold, flu or stomach bug.

“I was particularly concerned about their nine-month-old son, Sebastian. His skin was orange, he was lethargic and not eating and growing – he had your classic ‘failure to thrive’ symptoms.

The problem was found to be a leak in the roof, which became much worse after heavy rain, and bad sub-floor drainage and ventilation. There was a heavy musty smell and mould growing on the surfaces and on their clothes.

“Symptoms of mould infestation can result in breathing problems, nasal and sinus congestion, eye irritation, sore throat and headaches. Three toxic species of mould were found in the Edler house which are also linked with conditions from pneumonia to serious neurological disorders,” says Dingle.

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No more air fresheners!

INSTANT TIP

Indoor air expert Peter Dingle says: “Throwing away air fresheners, along with a lot of the typical household cleaning products, is one of the easiest ways you can instantly remove toxic chemicals from your home.”

It seems going back to basics, like using good old-fashioned vinegar to clean mould, makes the air in your home much safer to breathe.

Decontaminating the house took months to complete, starting with rebuilding the roof and removing the concrete flooring that was blocking the sub-floor air vents.

“Needless to say when the family moved back in their health improved. The mould was seriously affecting that baby’s health. I seriously believe that if we hadn’t overhauled the house and treated them personally, that child would have died,” says Dingle.

THERE’S SOMETHING IN THE AIR

Ever wondered why you sometimes sneeze incessantly, even when you don’t have a cold? Many people blame it on hayfever or pollen in the air. But the answer could be a lot closer to home.

Dingle also investigated the Adelaide home of Trena and Steve Moore whose son suffered from asthma attacks. Although their gas heater kept their family room cosy, the rest of the house was cold, resulting in condensation. The moisture created the perfect environment for mould and dust mites – common asthma triggers.

Bacteria, mould and mildew can form part of the household “dust” that we breathe in.

Another lesser-known cause of poor indoor air quality comes from artificial sources such as synthetic building materials, finishes, paints and varnishes, even new furniture, which releases pollutants.



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Even the paint you choose can contribute to the quality of your indoor air. Most paints, paint strippers, sealants and wood varnishes are made up of volatile organic compounds (VOCs). According to the US Environment Protection Agency, health effects of some VOCs include eye, nose and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, kidneys, and the central nervous system.

“Volatile organic compounds are a class of chemical substances that are carbon-based and become airborne, or volatile, at room temperature,” explains Dingle.

“Avoid using oil-based paints and solvent-based lacquers indoors. All typical paints if used indoors in a poorly ventilated area can cause serious health issues, though in recent years zero-VOC paints have been introduced to counter health impacts.”

One such paint was created by Rockcote, a Queensland paint company. “According to studies by CSIRO, indoor air pollution can be three times worse than outdoor air,” says Bob Cameron, founder of Rockcote.

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This fact prompted Cameron and his team to apply their environmentally friendly thinking to create VOC-free paints, even when the other paint companies said it couldn't be done.

THE TROUBLE WITH TIMBER

Just like paint, the building materials used in a home can also pose a health issue, says Dingle. A mixture of copper, chromium and arsenic, CCA for short, is injected into soft woods to prevent fungal decay and termites. Until recently, wood treated with arsenic was commonly used for decking, fencing, poles and most outdoor uses of timber.

“Wood dust from any timber including CCA-treated timber may cause skin irritation and breathing difficulties,” says Dingle.

“It may aggravate asthma, eye infections or affect wearing of contact lenses. CCA leaches from timber due to weather and rain, and if the timber is used for domestic purposes it can contaminate the skin,” says Dingle.

In response to the Australian Pesticides & Veterinary Medicines Association recommendation, CCA-treated timber is no longer permitted for use in garden furniture, picnic tables, domestic decking/patio, handrails, exterior seating and children's play equipment. Alternative wood preservatives are available that don't contain CCA.

If you have CCA timber already in place, Dingle suggests using a sealant or paint to prevent picking up the components from skin contact with CCA timber, but this coating then needs to be maintained regularly like other coated timbers around the house.

BUILDING HEALTHY HOMES

One of the best ways to improve indoor air quality is to ensure your house is well ventilated. This is more than just opening the windows and doors. Reducing built-up moisture and ensuring good air circulation needs to be built into the walls and structure of your home and can be largely dependent on the building materials you use.

Building systems that can provide ventilation and moisture clearing properties include fibre cement and Scyon™.

US architect Peter Pfeiffer has spent 20 years developing methods to mainstream sustainable or green building practices. He is a fan of the water-shedding properties of James Hardie fibre cement products.

“If a house flexes a bit and the house is clad in masonry, stone or brick, you'll get cracks,” he says. “Here [with weatherboard] you'll still have good water shedding, you won't have cracks to let moisture in.

“If water gets a stone or stucco or brick product wet and then the sun comes out, it drives a strong amount of vapour into the house creating humidity problems. With Hardie siding [weatherboard] products there's no such problems, it sheds water,” he says, referring to when it's installed and maintained correctly.

Pfeiffer was so impressed with the James Hardie weatherboard products that he built his own house using it, which may have resulted in more than just good building design.

“Our second son had asthma, and the doctor suspected it was environmentally caused. Four months after moving into the new house, his symptoms are all gone. And that's great,” says Pfeiffer. ■

MAINTAINING YOUR APPLIANCES

Bad indoor air quality can be due to bacterial and fungal contamination of air filters within airconditioning systems. Since the building air is being circulated through this system, mould spores, bacteria and odorous VOCs could be released through the airconditioner and contaminate the air. To avoid this, maintain your airconditioning systems regularly.

If you have an unflued gas heater you will be breathing in the nitrogen dioxide and carbon monoxide emitted from combustion of gas. Replace your unflued gas heater with a flued gas heater and ensure there is good ventilation to reduce health risks.