

Ten simple ways to reduce your patients' home pollutant exposure

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Patients often present with respiratory or dermatological complaints, and while clinical management focuses on symptoms, the underlying environmental triggers in their homes are frequently overlooked. Indoor air quality, a complex relationship between chemicals, particulates, and biological agents, significantly impacts health.

Addressing these exposures can be a powerful, non-pharmacological intervention.

GPs and specialists have an opportunity to guide patients toward simple, proven strategies that mitigate household pollution, thereby supporting better long-term health outcomes. These are not esoteric interventions, but practical adjustments to daily living.

KEY TAKEAWAYS

- **The Pivot:** Everyday household items and practices contribute significantly to indoor air pollution, but simple changes can reduce exposure.
- **The Data:** Improving ventilation, selecting low-VOC products, and managing humidity are foundational strategies.
- **The Action:** Advise patients on specific, actionable steps to reduce chemical, particulate, and biological pollutant loads in their homes.

Indoor air quality is a persistent, often invisible, challenge for many patients. Homes, once considered sanctuaries, can become reservoirs for a range of pollutants, from volatile organic compounds (VOCs) off-gassing from furniture and cleaning products to particulate matter from cooking and combustion. Understanding these sources is the first step toward effective mitigation.

Clinicians should consider discussing these environmental factors with patients, particularly those with chronic respiratory conditions, allergies, or unexplained symptoms. The goal is to empower patients with practical, evidence-based methods to improve their immediate living environment, complementing traditional medical interventions.

Ventilation is not optional

The most fundamental strategy for reducing indoor pollutant concentrations is adequate ventilation. Simply opening windows for 5-10 minutes a few times a day can significantly dilute indoor air contaminants. This is particularly important during and after activities that generate pollutants, such as cooking, cleaning, or showering.

Mechanical ventilation systems, like exhaust fans in kitchens and bathrooms, are also critical. Patients should be

encouraged to use these consistently. Ensuring these systems are clean and functioning correctly prevents recirculation of stale, contaminated air. A well-ventilated home is a healthier home.

Mind the materials: low-VOC products

Many common household products, including paints, adhesives, cleaning supplies, and even new furniture, release VOCs into the air. These chemicals can irritate the eyes, nose, and throat, and some are known carcinogens. Patients should be advised to choose products labelled as low-VOC or zero-VOC whenever possible.

When undertaking renovations or purchasing new items, allowing them to off-gas in a well-ventilated area (like a garage or outdoors) before bringing them into the main living space can reduce initial exposure. This simple precaution can make a substantial difference in indoor air quality, particularly in newly decorated or furnished rooms.

Dust control: more than just aesthetics

Household dust is not merely inert particles; it is a complex matrix containing skin cells, pet dander, dust mites, mould spores, and chemical residues from various sources. Regular cleaning, specifically wet dusting and vacuuming with a HEPA-filtered vacuum cleaner, can dramatically reduce exposure to these particulates and allergens.

Patients should be advised to clean surfaces frequently and to wash bedding in hot water weekly to control dust mites. For those with severe allergies or asthma, these measures are not just recommendations, but essential components of their disease management strategy. This is a basic, yet often overlooked, aspect of environmental control.

Humidity management: mould's worst enemy

High indoor humidity creates an ideal breeding ground for mould and dust mites, both significant allergens and irritants. Maintaining indoor humidity levels between 30% and 50% is essential for preventing mould and dust mite proliferation. This can be achieved through proper ventilation, using exhaust fans, and fixing leaks promptly.

Dehumidifiers can be useful in damp climates or basements, but patients must clean them regularly to prevent them from becoming mould sources themselves. Addressing visible mould immediately, with appropriate protective gear, is also paramount. For a deeper dive into preventive health strategies, clinicians might find value in resources like the Four Lifestyle Factors Add a Year to Life Expectancy article.

Footwear and entry mats: stopping pollutants at the door

Outdoor pollutants, including pesticides, heavy metals, and allergens, are easily tracked into the home on shoes.

Implementing a 'no-shoes in the house' policy can significantly reduce the introduction of these contaminants. Placing robust doormats both inside and outside entryways also helps trap dirt and debris before it spreads.

Regular cleaning of these mats is essential, as they can become saturated with pollutants themselves. This simple behavioural change requires minimal effort but yields tangible benefits in reducing the overall pollutant load within the living space.

Cooking practices: beyond the aroma

Cooking, especially frying or grilling, releases particulate matter, VOCs, and nitrogen dioxide into the air. Using a range hood vented to the outside is highly effective in removing these pollutants. If an external vent is not available, opening windows and using portable air purifiers during cooking can help.

Patients should also consider using back burners more frequently, as range hoods are often more effective at capturing

emissions from these positions. Electric kettles and induction cooktops produce fewer combustion byproducts than gas stoves, offering another avenue for reduction.

Air purifiers: a targeted approach

While not a substitute for source control and ventilation, portable air purifiers with HEPA filters and activated carbon can effectively remove airborne particulates, allergens, and some gaseous pollutants. Patients should select purifiers appropriate for the room size and ensure filters are changed according to manufacturer recommendations.

These devices are particularly beneficial in bedrooms for individuals with allergies or asthma, providing a cleaner breathing environment during sleep. They offer a supplementary layer of protection against persistent airborne contaminants.

Plants: more than just decor (but not a panacea)

While some houseplants can absorb small amounts of certain VOCs, their overall impact on indoor air quality in a typical home setting is often overstated. They are not a primary solution for significant pollution issues. But, they do contribute to a sense of well-being and can help manage humidity slightly.

Patients should be aware that overwatering plants can lead to mould growth in the soil, counteracting any potential benefits. The primary focus should remain on source control and ventilation, rather than relying on plants for air purification. For clinicians seeking a comprehensive reference for general practice, the Oxford Handbook of General Practice, 5th Edition offers practical guidance across a wide range of patient presentations.

Chemical-free cleaning: a healthier shine

Many conventional cleaning products contain harsh chemicals that contribute to indoor air pollution. Patients can significantly reduce their exposure by opting for natural cleaning alternatives, such as vinegar, baking soda, and lemon juice, or by choosing commercially available 'green' cleaning products.

Even when using less toxic products, ensuring good ventilation during cleaning is still advisable. This shift not only protects the patient but also reduces the environmental impact of their household. This is a straightforward change with immediate benefits.

Testing and monitoring: when to call in the experts

For persistent symptoms or concerns about specific pollutants (e.g., radon, lead, asbestos), professional testing may be warranted. Home test kits for radon are widely available and relatively inexpensive. For other contaminants, patients may need to consult environmental health specialists.

While these ten steps cover the most common household pollutants, some situations require expert assessment. Clinicians can guide patients on when to seek professional help, ensuring a comprehensive approach to indoor air quality management. Further insights into public health initiatives can be found in our coverage of WHO outlines seven strategies to prevent drowning deaths.

CLINICAL IMPLICATIONS

GPs and specialists are uniquely positioned to integrate environmental health advice into routine patient consultations. The prevalence of chronic respiratory conditions and allergies means that asking about the

home environment should become as standard as inquiring about medication adherence. These simple, actionable steps can empower patients to take control of a significant, yet often overlooked, aspect of their health.

The emphasis should be on practical, low-cost interventions that do not require significant lifestyle upheaval. Advising patients to open windows, use exhaust fans, and choose low-VOC products are not radical suggestions, but rather foundational elements of preventive health. These conversations can shift the focus from merely treating symptoms to addressing root causes.

Industry has a role to play by making low-VOC and chemical-free products more accessible and affordable. Clearer labelling and transparent ingredient lists would also assist patients in making informed choices. The market for healthier home products is growing, and clinician endorsement can accelerate this trend.

Better indoor air quality translates to fewer exacerbations for patients with chronic conditions, reduced allergic reactions, and a general improvement in well-being. This is a low-hanging fruit in preventive medicine, offering tangible benefits without the complexities or costs associated with pharmaceutical interventions.

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