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While winter brings a welcome reduction in outdoor allergens [1], it also leads to more time in our indoor environments. For our patients with asthma and allergies, this presents a challenge. Pest allergens are common in all households [2] and nearly ubiquitous in urban homes [2,3]. These allergens worsen asthma symptoms [1] and can even drive forward the atopic march from allergen sensitization to the development of allergic asthma [1,4]. Mouse and cockroach sensitization and exposure are associated with increased rates of hospitalization and urgent medical care usage, as well as increased rescue inhaler use and a reduction in lung function in children with asthma [2,5]. Unfortunately, the pesticides and cleaning products we use to handle pests can also be harmful [6].

What can we do? - A significant reduction in pest allergens can improve asthma indicators [3]. With a 90% reduction in mouse allergen in the bedroom, children had less symptom days, rescue inhaler use, exercise-related symptoms, and acute care visits [5]. Reductions of 50-90% in cockroach allergens have been shown to reduce asthma symptoms [2,5,7] decrease unscheduled health care visits, and decrease the proportion of children with FEV1 below 80% of predicted [7]. Although children with roach sensitization experience the greatest benefit, there is evidence that all children with asthma benefit from a reduction in pest allergens [3].

How do we do it? - Ask your patients about the presence of pests in their home and provide resources on the benefits of integrated pest management (IPM). Starting with pesticide and rodenticide does not address the underlying cause and risks repeated exposure to harmful chemicals. Children are more affected by these exposures due to their hand-to-mouth behaviors, higher metabolic rates, larger body surface to volume ratio, and proximity to the ground [8]. Integrated pest management (IPM), on the other hand, emphasizes sealing pest's entry ways, removing food and water sources, and eliminating their allergens around the home. Pesticide and rodenticide are used sparingly, if at all.

SEALING PEST ENTRY POINTS:

- Seal holes and cracks in walls with caulk or steel wool. Check behind appliances, around plumbing of sinks and radiators, inside closets, and other hard to reach areas.

REDUCE PEST FOOD & WATER SOURCES:

- Store food in airtight glass, tin, or plastic containers. Pests can chew through cardboard and plastic bags.
- Clean up food crumbs and water spills on counters and in cabinets.
- Use a garbage and recycling can with a tight-fitting lid and take it out often.
- Do not leave dirty dishes or leftover food (including pet food) in the sink or around the house overnight.

REMOVE ALLERGEN RESERVOIRS:

- Remove carpet, rugs, and unnecessary fabric around the house, when possible. Reduce clutter where pests may hide.
- Regular vacuums can stir allergens into the air. If possible, use a vacuum with a HEPA filter.
- For hard surfaces, wet dusting and mopping removes dust and allergens.
- To clean up after pests, use cleaning products and disinfectants with the EPA's "safer choice" or "design for the environment" label. To disinfect, use hydrogen peroxide or correctly diluted bleach (⅓ cup per gallon of water or 1 teaspoon per cup of water). Open windows when using bleach and other cleaners.

If all else fails, REMOVE THE PESTS:

- Do not use dangerous products like sprays, foggers, mothballs, insecticide chalk, and tres pasitos. Stay away from pesticides that use the words "WARNING," "DANGER," or "POISON" on the label.
- Place bait stations and other products in areas inaccessible to children and pets. Store them safely away from children and in their original containers.
- For more information on safer pesticide use, visit the National Pesticide Information Center (NPIC).

While integrated pest management interventions can be very effective, families may be limited by cost, the condition of their building, and the presence of other allergens and irritants (furry pets, mold, dust mites, and tobacco smoke). Referral to community organizations that provide in-home environmental services, or relocation assistance may be necessary.

References:

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