

ASTHMA HOME ENVIRONMENT

C H E C K L I S T

Home visits provide an opportunity to educate and equip asthma patients with the tools to effectively manage their disease in concert with a physician's care. This checklist—designed for home care visitors—provides a list of questions and action steps to assist in the identification and mitigation of environmental asthma triggers commonly found in and around the home. The checklist is organized into three sections—building information, home interior and room interior. The room interior is further subdivided by categories (such as bedding and sleeping arrangements, flooring, window treatments, and moisture control). This will allow the home care visitor to focus on the specific activities or things in a room—in particular the asthma patient's sleeping area—that might produce or harbor environmental triggers. The activities recommended in this checklist are generally simple and low cost. Information on outdoor air pollution follows the checklist. The last page includes information on U.S. Environmental Protection Agency (EPA) resources and an area for the home care visitor to record a home visit summary.

If the patient's sensitivities to allergens (such as dust mites, pests, warm-blooded pets and mold) and irritants (such as secondhand smoke and nitrogen dioxide) are known, the home care visitor should begin by focusing on relevant areas. This checklist covers the following allergens and irritants, which are commonly found in homes. Information is also provided on chemical irritants—found in some scented and unscented consumer products—which may worsen asthma symptoms.

Dust Mites

- Triggers:* Body parts and droppings.
- Where Found:* Highest levels found in mattresses and bedding. Also found in carpeting, curtains and draperies, upholstered furniture, and stuffed toys. Dust mites are too small to be seen with the naked eye and are found in almost every home.

Pests (such as cockroaches and rodents)

- Triggers:* Cockroaches – Body parts, secretions, and droppings.
Rodents – Hair, skin flakes, urine, and saliva.
- Where Found:* Often found in areas with food and water such as kitchens, bathrooms, and basements.

Warm-Blooded Pets (such as cats and dogs)

- Triggers:* Skin flakes, urine, and saliva.
- Where Found:* Throughout entire house, if allowed inside.

Mold

- Triggers:* Mold and mold spores which may begin growing indoors when they land on damp or wet surfaces.
- Where Found:* Often found in areas with excess moisture such as kitchens, bathrooms, and basements. There are many types of mold and they can be found in any climate.

Secondhand Smoke

- Trigger:* Secondhand smoke – Mixture of smoke from the burning end of a cigarette, pipe or cigar and the smoke exhaled by a smoker.
- Where Found:* Home or car where smoking is allowed.

Nitrogen Dioxide (combustion by-product)

- Trigger:* Nitrogen dioxide – An odorless gas that can irritate your eyes, nose, and throat and may cause shortness of breath.
- Where Found:* Associated with gas cooking appliances, fireplaces, woodstoves, and unvented kerosene and gas space heaters.

BUILDING INFORMATION

(This information may be helpful to determine reasonable mitigations.)

What type of building does the patient live in? House
 Duplex
 Apartment
 Mobile home
 Other _____

Notes:

Does the patient own or rent? Own
 Rent

Notes:

Questions	Answers	Action Steps
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HOME INTERIOR

▲ **MAY REQUIRE ADDITIONAL TIME AND/OR RESOURCES.**

Secondhand Smoke

Does anyone smoke in the home or car?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Keep the home and car smoke-free. ■ Do not allow visitors to smoke in the home. ■ Take the smoke-free home pledge and post a smoke-free home decal or magnet to show that the house is a “smoke-free” zone.
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Notes:

Warm-blooded Pets (such as cats and dogs)

Is the patient’s asthma worse when around warm-blooded pets?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ If possible, remove the pet from the home or keep the pet outside. ■ If this is not possible, keep the pet out of the patient’s sleeping area and off of the furniture.
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Notes:

Consumer Products

Is the patient’s asthma worse when around chemicals or products with strong odors (such as cleaners, paints, adhesives, pesticides, air fresheners, or cosmetics)?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Limit patient’s exposure as much as possible by minimizing product use, using products only when patient is not present, or trying alternative products. ■ If products are used, carefully follow manufacturer’s instructions on the label and make sure the area is well ventilated.
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Notes:

Heating and Cooling Systems

Does the heating and cooling system use filters?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ▲ If so, replace the filters quarterly. ▲ Use filters with higher efficiency than standard furnace filters, such as upgraded pleated filters, if heating or cooling system manufacturer’s specifications allow.
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Notes:

Questions	Questions Answers	Action Steps
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H O M E I N T E R I O R (continued)

Does the heating system use a fuel-burning appliance (such as an oil or gas furnace)?

- Y
- N

▲ **MAY REQUIRE ADDITIONAL TIME AND/OR RESOURCES.**

- ▲ Have the heating system - including furnaces, flues and chimneys - professionally inspected annually.
- ▲ Promptly repair cracks or damaged parts.

Notes:

Are supplemental heating sources used? (Check all that apply)

- Fireplace
- Wood-burning stove
- Unvented kerosene or gas space heater
- Other _____

- Properly ventilate the room where a fuel-burning appliance is used. Consider using appliances that vent to the outside whenever possible.
- Never use a gas-cooking appliance as a heating source.
- If using a fireplace, make sure it is properly vented to help ensure smoke escapes through the chimney.
- If using a wood-burning stove, make sure that doors are tight-fitting. Use aged or cured wood only and follow the manufacturer's instructions for starting, stoking, and putting out the fire.
- If using an unvented kerosene or gas space heater, follow the manufacturer's instructions for proper fuel to use and keep the heater properly adjusted.

Notes:

Are there air conditioning window units?

- Y
- N

- Run window air conditioner with the vent control open to increase the outdoor ventilation rate during the cooling season.

Notes:

R O O M I N T E R I O R

Bedding and Sleeping Arrangements

What does the patient sleep on? (Check all that apply)

- Mattress with box springs
- Sofa
- Other _____

- ▲ Cover patient's mattress in a dust-proof (allergen impermeable) zippered cover. Clean cover according to manufacturer's instructions.
- If it is necessary for the patient to sleep on upholstered furniture such as a sofa, then cover furniture with washable slipcovers or sheets and vacuum furniture regularly (including removing cushions and vacuuming in cracks and crevices).

Notes:

What types of bedding does the patient use? (Check all that apply)

- Bedspread (e.g., comforter, quilt)
- Blankets
- Pillows
- Sheets
- Other (e.g., sleeping bag)

- Choose washable bedding.
- Wash bedding regularly in hot water and dry completely.
- ▲ Cover patient's pillow in a dust-proof (allergen impermeable) zippered cover. Clean cover according to manufacturer's instructions.

Notes:

Questions	Answers	Action Steps
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R O O M I N T E R I O R (continued)		▲ MAY REQUIRE ADDITIONAL TIME AND/OR RESOURCES.
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Flooring		
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What type of floor covering is present? (Check all that apply)	<input type="checkbox"/> Carpeting <input type="checkbox"/> Hardwood floor, tile, or vinyl flooring <input type="checkbox"/> Throw rugs <input type="checkbox"/> Other _____	<ul style="list-style-type: none"> ■ If carpeting is present, vacuum carpets, area rugs, and floors regularly. ■ If possible, use a vacuum cleaner with a high efficiency filter. ■ Mop hard surface floors regularly. ■ Wash throw rugs regularly in hot water. Dry completely. ■ Clean baseboards regularly using a damp cloth with warm, soapy water. ■ Someone besides the patient should vacuum, sweep, empty the dust canister and change the vacuum bag. ■ If possible, the patient should stay out of rooms when they are being vacuumed or swept. ■ If the patient vacuums, sweeps, empties the dust canister, or changes the vacuum bag, he or she should wear a dust mask.
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Notes:

Upholstered Furniture and Stuffed Toys		
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Is there upholstered furniture present?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Cover upholstered furniture with washable slipcovers or sheets. ■ Vacuum upholstered furniture regularly, including removing cushions and vacuuming in cracks and crevices. ▲ If replacing furniture, consider purchasing a non-upholstered furniture - such as vinyl, wood, or leather - that can be easily wiped down.
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Notes:

Are stuffed toys present?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Choose washable stuffed toys, and wash frequently in hot water. Dry completely. ■ Limit the number of stuffed toys in patient's bed and sleeping area.
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Notes:

Window Treatments		
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What window coverings are present? (Check all that apply)	<input type="checkbox"/> Curtains or drapes <input type="checkbox"/> Blinds <input type="checkbox"/> Shades <input type="checkbox"/> Other _____	<ul style="list-style-type: none"> ■ Vacuum drapes regularly. ■ Wash and dry curtains regularly. ■ Dust window sills, blinds, and shades regularly using a damp cloth with warm, soapy water. Dry completely. ▲ If possible, replace curtains or drapes with plastic, vinyl, wood, or aluminum blinds.
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Notes:

Cooking Appliances		
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Are gas cooking appliances used?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ When cooking with a gas appliance, turn on an exhaust fan or open a window. ■ Avoid misuse of the appliance by following the manufacturer's instructions for operation.
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Notes:

Questions	Answers	Action Steps
R O O M I N T E R I O R (continued)		▲ MAY REQUIRE ADDITIONAL TIME AND/OR RESOURCES.
Moisture Control		
Is there evidence of water damage, moisture, or leaks (such as damp carpet or leaky plumbing)?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Dry damp or wet items within 24-48 hours to avoid mold growth. ▲ Fix water leaks (such as leaky plumbing) as soon as possible. ▲ Replace absorbent materials, such as ceiling tiles and carpet, if mold is present. ▲ Use air conditioner or dehumidifier to maintain low indoor humidity. If possible, keep indoor humidity below 60% (ideally between 30-50%) relative humidity.
<i>Notes:</i>		
Do you see or smell mold or mildew (such as in the bathroom on tub, shower, walls, or windows)?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Open a window or turn on an exhaust fan when there is excessive moisture in the room, such as when showering or cooking. ■ Scrub mold off hard surfaces with detergent and water. Dry completely. ■ Clean up mold and dry surfaces completely before painting or caulking. ▲ Replace absorbent materials, such as ceiling tiles and carpet, if mold is present.
<i>Notes:</i>		
Is standing water present (such as in refrigerator drip pans, air conditioner drip pans, or house plants)?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Empty and clean refrigerator and air conditioner drip pans regularly. ■ Avoid standing water in plant containers.
<i>Notes:</i>		
Are humidifiers used in the patient's house?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Use humidifier only when conditions require it, use the correct setting to maintain indoor relative humidity between 30-50 percent, and clean humidifier reservoirs regularly. ■ Use low mineral content water to prevent the build-up of scale and dispersal of minerals into the air. ■ Follow manufacturer's instructions for use, maintenance, and replacement of any materials supplied with the humidifier.
<i>Notes:</i>		
Are rooms and moisture-producing appliances—such as stoves, clothes dryers, or dishwashers—properly vented (including venting to the outside if specified by the manufacturer)?	<input type="checkbox"/> Y <input type="checkbox"/> N	<ul style="list-style-type: none"> ■ Increase ventilation or air movement by opening doors and/or windows when practical. Use fans as needed. ■ Run the bathroom exhaust fan or open the window when showering. ■ Use exhaust fans or open windows whenever cooking or washing dishes. ■ Vent appliances properly according to manufacturer's specifications.
<i>Notes:</i>		

Questions	Answers	Action Steps
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R O O M I N T E R I O R (continued)

▲ **MAY REQUIRE ADDITIONAL TIME AND/OR RESOURCES.**

Pest Control

Is there evidence of cockroaches and/or rodents (such as droppings or dead specimens in traps)? Y N

- Clean all surfaces where you have seen pests.
- Use poison baits, boric acid, or traps to kill pests. Minimize use of sprays. If sprays are used: limit the spray to the infested area, carefully follow the instructions on the label, make sure there is plenty of fresh air where the spray is being used and, if possible, keep patient out of the room.

Notes:

Are there food crumbs or open or unsealed food? Y N

- Clean all food crumbs or spilled liquids right away.
- Store food in sealed containers.
- Remove food, bags, newspapers, and empty boxes, cans, and bottles from the sleeping area.
- Put all garbage in plastic trash bags. Seal trash bags and put them into garbage cans with fitted lids every day.

Notes:

Are there holes or gaps between construction materials and pipes that could allow pests to enter the house? Y N

- Seal holes or gaps between construction materials and pipes, or ask the owner to do so.

Notes:

Is there evidence of standing water or leaks? Y N

- Dry damp or wet items within 24-48 hours to avoid mold growth.
- Avoid standing water in house plant containers and drip pans.
- ▲ Fix water leaks (such as leaky plumbing) as soon as possible.

Notes:

O U T D O O R A I R P O L L U T I O N

Exposure to air pollution (mainly ozone and particle pollution) can trigger asthma attacks. The Air Quality Index (AQI) is a tool to provide the public with clear and timely information on local air quality and whether air pollution levels pose a possible health concern. The AQI is reported and forecasted every day in many areas throughout the U.S. on local weather reports and through national media. Asthma attacks are most likely to occur the day **after** outdoor pollution levels are high.

People can take simple steps to reduce their exposure to outdoor air pollution. When the AQI reports unhealthy levels:

- ▶ Limit physical exertion outdoors.
- ▶ Consider changing the time of day of strenuous outdoor activity to avoid the period when air pollution levels are high or consider postponing sports activities to another time.
- ▶ Reduce the intensity of the activity, or spend less time engaged in strenuous activities. For example, coaches can rotate players more frequently in strenuous sports, like soccer. Resting players reduces their exposure to air pollution.

To learn more about and access the AQI, visit www.epa.gov/airnow.



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