

**Certification Program** 

# Guide for Reducing Allergens and Irritants in the Home

Indoor environmental control tips from the asthma & allergy friendly™ Certification Program



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## **Understanding Asthma and Allergies**







Asthma is a disease of the lungs that causes airways to become blocked or narrowed making it difficult for you to breathe. Certain types of airborne particles called "allergens" and "irritants" can trigger asthma symptoms such as coughing, wheezing, tightness in the chest and difficulty breathing. These effects are usually temporary, but if an asthma episode is severe, a person may need emergency treatment to restore normal breathing. Despite the far-reaching effects of asthma, much remains to be learned about what causes it and how to prevent it. Although asthma can cause severe health problems, in most cases prevention and treatment can control it and allow a person to live a normal and active life.

Allergy is characterized by an overreaction of the human immune system to a foreign protein substance ("allergen") that is eaten, breathed into the lungs, injected or touched. This immune overreaction can results in symptoms such as coughing, sneezing, itchy eyes, runny nose and scratchy throat. In severe cases it can also result in rashes, hives, lower blood pressure, difficulty breathing, asthma attacks, and even death.



### **Common Asthma and Allergy Triggers**











Floors, walls, window sills, toys, pets, bedding, carpets, curtains, furniture, basements, attics, air ducts and garages can all be sources of asthma triggers.

Allergens – More than 80 percent of people with asthma also have allergies, and their asthma symptoms can be caused by exposure to certain triggers called "allergens." Many household allergens can be found in mattresses, pillows, rugs, furniture, plush toys, bathrooms, basements, attics, air ducts, and more. Some common allergens in the home include:

Dust mites Cockroaches

Mould Rodents

Pet dander Pollen

Irritants - For people with asthma, symptoms can be caused by exposure to some triggers called "irritants," a variety of particles that can pollute indoor air and disturb or irritate the airways in the lungs. Many household irritants can be found in certain types of paints, varnishes, waxes, solvents, cleaning products, pesticides, cosmetics, fuels, and more. Some common irritants that can be found in the home include:

Tobacco smoke Carbon monoxide

Fireplace smoke Asbestos

Strong fumes and odors Volatile organic compounds (VOCs)\*

Wood dust

\* VOCs are gases from certain solids or liquids that can be found all around the house, many of which can triggers asthma symptoms if their levels are too high. VOCs include a variety of chemicals, some of which may have short- and long-term negative health effects. Since the level of many VOCs can be higher indoors than outdoors – up to ten times higher – people with asthma need to be informed.

There are many potential volatile organic compounds (VOCs) around your house, and in many of the materials, finishes and furnishings you put in your house. Common types of volatile organic compounds are:

Aldehyde (found in cleaning products and manufactured wood, for example)

Benzene (found in lubricants and detergents, for example)

**Chlorobenzenes (found in pesticides, for example)** 

Polychlorinated biphenyl (found in paint and sealants, for example)

Toluene (found in lacquers and disinfectants, for example)

Trichloroethane (found in aerosols for example)

**Xylene** (found in fuels and varnishes, for example)

When possible, check the VOCs included in the materials or substances used in home building and choose products with the lowest levels of VOCs. You should also talk with your remodeler or supplier about newer products which may release fewer VOCs.



#### **Introduction to the Home Guidelines**



People who have asthma can have reactions to "triggers" at home, work or outdoors, and may experience wheezing, coughing, shortness of breath, and chest tightness. Asthma can begin at any age but with proper management and education, people with asthma can lead normal, active lives.

Asthma care is best when patients work with their doctors to develop a comprehensive asthma action plan that includes proper instructions for daily treatment, emergency care and prevention. But since asthma triggers can exist all over your home, learning how to reduce household asthma triggers can play an important role in your asthma action plan.

Many household triggers are right out in the open, and others can hide in unexpected places. They can easily become airborne, polluting your indoor air and causing asthma symptoms. Your floors, walls, window sills, toys, pets, bedding, carpets, curtains, furniture, basements, attics, air ducts, garages, yards and more, can all be sources of asthma triggers called "allergens" and "irritants."

Reducing exposure to asthma triggers is a very important part of daily life for people with asthma. Eliminating or reducing the sources of triggers, and avoiding exposure to triggers is called "environmental control," and it's a cornerstone of modern asthma management. In fact, the newly revised Canadian Asthma Consensus Guidelines and the Global Initiative for Asthma (GINA) Guidelines, emphasize the importance of controlling the many environmental factors which cause asthma symptoms.

Learning how to find, remove and prevent exposure to allergens and irritants in your home is a great way to take more control or your asthma management. The Asthma Society of Canada (ASC) and Allergy Standards Limited (ASL) are the joint partners behind the **asthma & allergy friendly<sup>TM</sup>** Certification Program, and they have prepared this guide to provide environmental control tips you can use all year long.

The tips included in this guide are not intended to replace the advice of a physician. But whether you are building a new home, remodeling, redecorating or simply cleaning, there are things you can do to help keep your exposure to asthma triggers at a minimum.



## **Building or Remodeling a Home**









When building or remodeling a home, the dust, debris and fumes can wreak havoc on your eyes, nose and skin, especially if you have asthma. But the raw materials used to build your new home can also have an effect on people with asthma.

If possible, plan the work step-by-step ahead of time. Use an experienced contractor who is knowledgeable about construction, and if possible, someone who uses products that provide the highest level of protection. Ask your contractor or local building & hardware supply store for certified asthma & allergy friendly $^{\text{TM}}$  products which have been laboratory tested and determined to be more suitable types of products for people with asthma.

Sub-Floors & Wall Frames – Be aware of plywood or pressed wood wall paneling, particleboard, frames, fiberboard and insulation. Certain chemicals, such as urea, phenyls and formaldehyde emitted from these materials can irritate the skin and airways.

Windows & Doors – Most of the moisture in your home makes its way in through windows and doors. Condensation on windowpanes, poor weather-stripping along windowsills and doors, and infrequent cleaning of these areas can allow water to pool and collect, making it easy for mould and mildew to grow.

Wallboard – Use types of backer boards and wall coverings that are moisture- and mould- resistant, especially for bathroom and kitchen walls and ceilings. Whenever possible, avoid products, such as glass mesh cement backer boards, which generate unnecessary debris during handling and installation. Be cautious of using gypsum wallboard in wet areas. Gypsum disintegrates with continuous moisture and even treated gypsum is subject to moisture penetration and system failure. In fact, the International Residential Code (IRC) no longer recognizes the use of gypsum backing board as a wall panel in wet areas, such as bathrooms.

Flooring – Choose hard-surface flooring and avoid wall-to-wall carpeting. Carpet is a common home for dust mites, which can trigger an allergic reaction in many people. Carpet is also difficult to keep dry and persistent hidden moisture is a breeding ground for mould. Instead, opt for bare floors with small, washable area rugs, which are much easier to keep trigger-free. If you do already have wall-to-wall carpeting make sure you vacuum frequently and immediately clean up spills and other moisture.

For hard surfaces, certain kinds of wood, tile, slate or synthetic surfaces are better than others, so make sure to read the labels of all materials to ensure that none of the chemicals listed previously in this guide are present in large quantities. Talk with your contractor or salesperson about the type of finish that can be used if your allergy or asthma symptoms are triggered when you inhale fumes or vapors. Floor finishing products can cause a temporary reaction to the chemicals used in the process. Choose floor varnishes and waxes with low volatile organic compound off-gassing potential to lessen effects on asthma.

Cabinetry & Furniture – Furniture and cabinets made from pressed wood, particleboard or composite boards are common in homes, but many of these items release high levels of VOCs, like formaldehyde. Talk to manufacturers and installers about low-VOC options for your home.

Whole-House Air Filtration – A good central heating, ventilation and air conditioning (HVAC) system with a replaceable or washable HEPA (high efficiency particulate air) filter is a great way to control indoor air quality. When installing or replacing these systems make sure air ducts throughout the house are unobstructed and large enough to circulate air throughout the house.



## **Building or Remodeling a Home**







Ventilation – In addition to air conditioning and air filtration, house ventilation is important to ensure that moisture from certain spaces – such as bathrooms, laundry room, kitchen – is minimized. In addition, ventilating basements, garages and attics, where solvents, chemicals and fuels are often stored, is an important step in keeping those types of fumes from getting into your living spaces. Make sure that all ventilation carries the air completely outside, not just to the attic, basement or garage.

Humidity Control – Keep household relative humidity (RH) between 35 and 50%. Higher humidity levels make dust mite proliferation much easier and high humidity creates a welcome environment for mould and mildew. Room de-humidifiers and whole-house humidity control system are available.

Waterproofing – Keep moisture from getting into the home. Wet or leaky pipes, windows, doors, basements, walls, etc. can allow water to collect making it easy for mould and mildew to grow.

Storage – Do not keep solvents, chemicals, paints, fuels and other such compounds in your garage, attic or basement. If possible, keep these types of items in sheds or other buildings that are exterior to your house. If you don't have off-site storage options, reconsider or at least reduce your need to store such items and make sure they are kept in well-insulated, temperature-controlled spaces.

Landscaping – Since some of the most common indoor allergens are pollens from the outdoors, the plantings near your house do matter. You can't change Mother Nature, but you can work with her to manage your immediate landscaping.

- Many species of wind-pollinated trees and grass are highly allergenic, so make informed choices about shrubbery and plantings.
- Avoid planting oak, birch and maple trees, and make sure that you plant the female (i.e. the non-pollinating) forms of plant species to keep pollen from easily getting into your home.

Other special considerations can be taken when remodeling or refinishing parts of your home to protect your family from potential asthma triggers.

If you are doing the work yourself, always remember to wear a facemask approved by the Canadian Standards Association (CSA).

Hang plastic sheeting over doorways leading to the area where work is being done. When you remove the sheeting, don't carry it through the house. Rather, make a chute in an open window to push out debris into a trash can so fine particles will not re-enter the room.

Cover yourself with protective clothing, including a mask, goggles, and hairnet or cap. Put these things on as soon as you enter the work area and take them off before you leave the room being remodeled.

Leave windows in the work area open after the project is finished. Air-out the area for at least three weeks after the work has been completed. Set fans in windows and exhaust indoor air to the outside. In northern climates, this technique is best implemented during warmer months, rather than in the winter.

Stay out of your home during days of maximal dust/fume exposure and, if possible, until fumes have diminished or disappeared completely.



## **Outfitting a Home**











When outfitting or decorating your home, there are sensitive choices you can make if you have asthma. Make sure to look for certified asthma & allergy friendly™ products at local hardware, houseware and/or department stores. These Certified products have been laboratory tested and determined to be more suitable types of products for people with asthma. Selecting the right kinds of items to put into your house to help reduce your exposure to asthma triggers can help improve the quality of your indoor air, and your overall quality of life. Below are things to consider when outfitting your home.

Appliances – Make sure to avoid unvented stoves of any kind (kerosene, wood or coal-burning) and gas space heaters. When installing large appliances, make surer proper ventilation minimizes back drafting.

Finishes & Coatings – Paints, stains, waxes, floor coatings, adhesives for certain flooring, wallpaper or carpeting, floor sealants, and other substances can bring VOCs and gases into your home environment that may trigger asthma symptoms. Look for low-VOC and low-off-gassing products to keep irritants low.

Window Treatments – Blinds and shades are generally more preferable for asthma patients, than heavy drapes and curtains. Large fabric window treatments easily trap dust, dirt and allergens and they are not easily – or frequently – cleaned. Wood blinds and simple shades do not promote as much allergen accumulation and can be more easily wiped and managed from week to week.

Room Air Filters – In addition to whole-house HVAC systems, portable room air filters can be helpful in some cases to remove allergens and irritants from the air. Not all devices are created equal, however, so first be sure to find portable air cleaners that have HEPA filters. Remember to clean or replace the HEPA filters according to the manufacturer's instructions to keep it in working condition.

Mattress & Pillow Encasements – Millions of dust mites live in your mattresses and pillows, so use dust-mite-resistant mattress encasements to keep new mites from getting into the mattress/pillows, and others from crawling up into your sleeping space. Also, replace mattresses every ten years and replace pillows every five years.

Pillows – Since some old or poorly constructed pillows can harbour dust mites, look for high-quality pillows that have mite barrier properties. Also make sure pillows can stand up to frequent washing so you can continue to keep dust mites at bay.





## **Outfitting a Home**







Plush Toys – Stuffed animals and other plush products are very similar to pillows. But more importantly, stuffed animals are carried around the house and taken to bed by children so keeping them allergen and irritant free is very important. Look for plush that contains no allergenic materials or irritating chemicals, dyes or preservatives. Also, make sure to buy toys that can withstand frequent washing.





#### **Furniture**

- Avoid if possible furniture and shelving made from chipboard or manufactured wood as these may contain formaldehyde and other VOCs, which may give off a colourless gas that can irritate the airways.
- Keep soft surfaces dry and clean, and keep pets off furniture.



Washing Machines – Dust mites and pet dander from cats and dogs are among the most common allergens at home, and all of these can be found in your bed. Millions of mites and their eggs live in your pillows and linens and they can only be killed at high water temperatures. Washing machines must be able to reach a 54-degree hot water temperature to kill mites and eggs, and machines must also be able to remove most of the dead mites after they are killed. Make sure to ask manufacturers if their appliances can do this.

Pets - Cat and dog dander can cause serious asthma symptoms for many people, but so can bird

down and other types of pets. Pets also carry many outdoor allergens inside on their coats. Make sure to keep pets in well-ventilated rooms. Never let your pet sleep on the beds or furniture: dog and cat dander is a primary food source for dust mites. Make sure to wipe down pets after long walks and wash pet bedding weekly.

Indoor Plants – The most allergenic pollen comes from wind-pollinating plants, and some indoor plant pollen can be problematic. Speak with garden experts at the local plant story to find the best plants for indoors. But planters, soil, tree trunks and old leaves can be hiding places for indoor mould. Keep potting soil moist, but not soaked, wipe down plant leaves inside regularly with a dry cloth, and check for mould growth on the trunks of decorative indoor trees and wipe it off as soon as you find it.





## **Cleaning & Maintaining a Home**











After new construction, remodeling or renovations, it's a good idea to have your home professionally cleaned to remove any remaining dust, debris, fumes or other triggers before you move in. But when cleaning and maintaining your home on your own, consider the tips below to help you keep triggers at bay.

Make sure to look for certified asthma & allergy friendly™ products at local hardware, houseware and/ or department stores. These Certified products have been laboratory tested and determined to be more suitable types of products for people with asthma.

#### Dusting

- Use slightly moist cloths or special dry cloths to trap and lock dirt on hard surfaces.
- Avoid a feather duster as it will simply spread dust and allergens, rather than remove them.

Vacuum Cleaners – Vacuum cleaners can be useful tools in managing indoor asthma triggers, but make sure you are not using a machine that leaks more allergens and irritants than it picks up. Make sure the vacuum has a HEPA filter and that it has tight seams and seals so particles don't leak out while vacuuming. Also, make sure the vacuum requires minimal exposure during canister emptying whether it's a bag or bagless model.

Cleaning Products – Cleaning sprays can be helpful or harmful depending on their ingredients and uses. Make sure to find products with little to no chemical smells, scents or odours, no VOC's or gases and other potential irritants.

Pesticides – Although rodents and insects are common household asthma triggers, using some pesticides to kill them isn't good either. Talk to an exterminator about traps and solvents that are more suitable for people with asthma.

Air Duct Cleaning – It is not clear whether cleaning air ducts in your home can improve the air quality. However, if you choose to contract a company to provide this service, one of several methods may be used. One method uses a powerful vacuum to sweep out debris from the vents; a small metal ball moves around inside the vents, helping to push debris toward the vacuum. Other methods use chemical sealants, but these can cause serious health problems when the sealants break down in the air ducts over time.





#### **Room-by-Room Tips**





Bedroom – Pet dander settles on bed linens and becomes a food for dust mites. And even if you don't have an animal, pillows and blankets in the bedroom are frequently homes for mould and dust mites. In particular, mould is frequently found in mattresses and pillows and releases spores that can trigger asthma symptoms. You can minimize this by:

- Using special mite-proof bedding including pillows and mattress/pillow encasings
- Wash sheets once a week in 54-degree hot water to kill dust mites and their eggs, and use bleach when washing to kill mould
- · Never allow pets on the bed
- Never allow wet or moist clothing pile up
- · Don't eat in the bed
- Keep pet sleeping areas and/or bird cages out of bedrooms
- · Replace mattresses every 10 years
- · Vacuum floors and mattresses weekly

Kid's Room – Allergens can hide in the most unlikely places: on stuffed animals, in drawers, on and under rugs. All of these things, of course, can be found in your kids' rooms. Dust mites, mould, and pet dander accumulate in and on children's toys, especially when pets play with them, and can trigger allergic asthma symptoms. Damp clothes, carelessly tossed aside after play, become a home for mould and mites in drawers and other dark places. The space underneath wall-to-wall carpeting is another refuge for mould. Create a "healthy-room" for your child by:

- Using special mite-proof mattress and pillow covers
- Washing sheets once a week in 54-degree hot water to kill dust mites and their eggs, and use bleach when washing to kill mould
- Washing stuffed toys every week in 54-degree hot water to kill mites and their eggs, and use bleach when washing to kill mould
- Placing unwashable stuffed toys in the freezer once a week for 24-hours to kill mites, then rinsing them in cold water to remove dead mites
- · Keeping kids' toys away from pets, and storing them in a covered, dry place where pets can't get them
- Not allowing your kids to sleep with stuffed toys (mites from the bed will get onto the toys, and vice versa)
- Making sure all clothes are fully dry before putting them in drawers and closets
- Telling kids to wipe their feet and shake out their coats before coming inside, to keep any outside pollen from coming in on their clothes
- Telling kids to put their clothes right in the laundry after coming in from the outdoors, rather than on the floor or back in drawers, to minimize pollen exposure





#### **Room-by-Room Tips**



Kitchen – Cockroaches are one of the main allergens in the kitchen. Their droppings and even their microscopic sheddings are among the most common allergens. Mould also finds its way into the kitchen, frequently, turning up under the sink, refrigerator, dishwasher and other damp spaces where it can thrive. In the kitchen:

- · Never leave food or garbage out to attract roaches
- · Store food in airtight containers in or out of the refrigerator
- · Wipe the stovetop right after cooking to remove food particles that attract insects, and moisture that can lead to mould
- Remove crumbs and/or spilled items on countertops right away
- Use poison baits, boric acid and insect traps to kill cockroaches. People with asthma should avoid using liquid or spray pesticides
- Wash dishes immediately after eating; don't pile in the sink
- Use a covered/sealed trash can in the kitchen
- Keep stovetop items covered, and use the kitchen fan when cooking to keep steam and moisture from condensing on kitchen surfaces
- · Use easy-to-clean kitchen flooring, and wash floor mats weekly to remove small food particles

Bathroom – Warm damp environments are the breeding ground for mould. As in the kitchen, you can often find it under the bathroom sink, as well as in the shower and on shower doors, towels, floor mats and tiles. Tips for removing allergens in the bathroom:

- Remove mould as soon as you see it anywhere in the bathroom
- Fix leaky pipes under the sink, in the shower/tub, and behind the toilet
- Use the fan/vent when showering to keep air circulating and reduce moisture
- Use washable floor mats, and wash them weekly
- Use a mould/mildew spray to clean mouldy areas, including shower curtains, tiles, etc.
- Wash the "show towels" and bath towels weekly to remove any mould spores
- Wipe the sink and counter every day to remove puddles of water and moisture

Living Room – The family room should be a place for quality time, but allergens found in this room of the house can turn an enjoyable family evening into a night of worry. Dust mites find their way into furniture as easily as they do into beds: they lay eggs in upholstery and the carpet, and leave droppings and sheddings. Mould, too, can grow on upholstered furniture, as well as on curtains, drapes and carpeting. Cockroaches, no snobs to food wherever they can find it, will be drawn to crumbs around the floor of the den just as quickly as they go for it in the kitchen. Tips for removing triggers in the living room:

- · Vacuum furniture and curtains/drapes once a week
- Use washable slip covers and cushions, and wash in 54-degree hot water once a week
- · Keep pets off of the furniture
- · Use easy-to-clean flooring, and avoid carpeting where moisture can get trapped and help mould to grow
- Use blinds and other easy-to-clean window treatments, or wash and dry curtains once a month
- Never eat on the floor or on furniture where crumbs can attract roaches



## **Special Issues With Older Homes**



Asbestos – Before their health hazards were known, asbestos and lead were often used in building and painting older homes. Asbestos was used before 1970 to insulate pipes and as a component of ceiling and floor tiles. If you suspect that asbestos is present in your home, stay away from the area where you believe it is located. Contact a professional to remove it.

Lead Paint – Remove lead paint and lead dust from your home, especially if you have children. Prolonged exposure to lead, which can be inhaled and/or absorbed through the skin, can lead to brain damage. As with asbestos, it is best to stay away from lead paint. Have a professional remove it.

New Construction – After new construction, remodeling or renovations, it's good idea to have your home professionally cleaned to remove any remaining dust, debris, fumes or other triggers before you move in.



#### **About Certification...**







#### About the **asthma & allergy friendly™** Certification Program

When you see the **asthma & allergy friendly™** Certification Mark you know that the product has been scientifically tested and proven to be more suitable for people with asthma and related allergic sensitivities. The asthma & allergy friendly™ Certification Program was developed and launched in Canada. by Allergy Standards Limited (ASL) in partnership with the Asthma Society of Canada (ASC). The Certification Standards are applied to products to ensure that they fulfill suitability criteria for individuals with asthma and allergic sensitivities. Visit www.ashmaandallergyfriendly.ca to learn more.



The **asthma & allergy friendly™** Certification Program applies to a wide range of products including:

- Toys
- Vacuum Cleaners
- Pillows, Comforters and Mattress Protectors
- HVAC Filters
- Bedding Protectors and Encasings
- Mattress Pads
- Flooring
- Washing Machines
- Air Cleaners

#### **Benefits for Consumers & Patients**

- Able to identify more suitable products
- Encourages trigger reduction strategies
- Improves ability to follow Doctor's advice
- Promotes the message of allergen avoidance
- Encourages a healthier home with improved indoor air quality
- Manufacturers encouraged to produce better products
- Access to educational material with products

#### **About the About the Asthma Society of Canada**

The Asthma Society of Canada, www.asthma.ca, is a nationally registered, voluntary health organization with over 30 years strong reputation of providing accredited asthma management services to Canadians. The Society provides evidence-based, market-tested and age-appropriate asthma counseling, information and self-management education programs and is the only agency focused exclusively on defending the best interests of Canadians living with asthma. ASC is a joint partner with ASL in the asthma & allergy friendly™ Certification Program.

#### **About Allergy Standards Limited, Inc.**

Allergy Standards Limited (ASL) is a physician-led global certification company that prepares independent standards for testing a wide range of products to determine their suitability for asthmatics and individuals with associated allergies. ASL is a joint partner with ASC in the asthma & allergy friendly™ Certification Program.



#### Resources









#### **Certified Products**

To find certified **asthma & allergy friendly™** products www.asthmaandallergyfriendly.ca

#### **Asthma Society of Canada (ASC)**

Asthma InfoLine: 1-866-787-4050 Email: info@asthma.ca www.asthma.ca

#### **Allergy Standards Limited, Inc.**

www.allergystandards.com

#### **Four Seasons of Asthma**

www.4seasonsofasthma.ca

Health Canada
Indoor Air Quality and Asthma

www.hc-sc.gc.ca

# **Public Works and Government Services Indoor Air Quality**

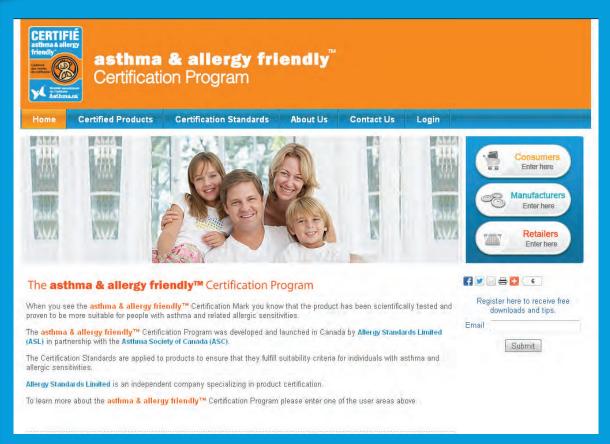
www.tpsgc-pwgsc.gc.ca/biens-property/qcnsl-qtps/qcnsl-qtps-eng.html

The information provided in this fact sheet should not be a substitute for seeking responsible, professional medical care. These tips have been developed by the Asthma Society of Canada under the guidance of experts in the field. People with asthma should always talk first to their doctor before making any changes.





**Certification Program** 



For more information, please visit: www.asthmaandallergyfriendly.ca

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