

# Children with Asthma

## What Parents Need to Know About Air Pollution

You already know many of the triggers of your child's asthma, such as second-hand smoke, pets, respiratory infections and cold air. What you may not know is that air pollution can also contribute to asthmatic episodes in your child.

### What is air pollution?

**Air pollution** is the term that describes any harmful gases or particles in the air. Both indoor and outdoor air contain chemical and biological gases, droplets and particles, some of which are harmful to people and animals, and damaging to plants.

### How does air pollution affect asthma?

Most people are aware that outdoor air pollution can damage their health, but fewer realize that indoor air pollution can also contribute to conditions such as asthma. Studies by Health Canada, the U.S. Environmental Protection Agency (EPA) and other agencies show that levels of indoor pollutants may be even higher than outdoor levels. Since most people including children spend as much as 90% of their time indoors, indoor air pollution is a real concern for parents of asthmatic children.

Problems with indoor air quality are caused by a range of factors including pets, carpets, second-hand smoke, building materials, furniture, cleaning products, pesticides, printing and copying machines, gas appliances, allergens, moulds, bacteria, and viruses. Reduced natural ventilation, too much humidity and the use of chemicals can lead to unhealthy air and affect the health and well-being of children at home and school.

### How are children with asthma affected by air pollution?

According to the 1988/99 results of the National Longitudinal Survey of Children and Youth, 15.2% of Canadian children between the ages of 4 and 11 have been diagnosed with asthma. Studies show that air pollution makes asthma symptoms worse, including coughing, wheezing, chest tightness and shortness of breath. There is no known safe level of air pollution.

Children (under 16 years of age) inhale more air per kilogram of body weight than adults. As a result, they breathe a higher proportion of pollutants. Children also breathe more quickly than adults and tend to do so through their mouths. This breathing pattern bypasses the natural filters in the nose and allows large amounts of polluted air to go directly into their lungs.

Children are especially vulnerable to the negative effects of air pollution because:

- their lungs are not fully developed, and new tissue growing during childhood is more sensitive to any irritants including air pollutants;
- they are likely to be active outdoors, which increases their exposure to pollutants; and
- the places where many children play (in city parks and schoolyards near high traffic areas), and the distance from ground level at which they breathe, put them at greater risk of inhaling pollutants.

For children with asthma, air pollution can trigger an asthma attack or make symptoms worse. When the air passage becomes irritated, inflamed and filled with mucus, breathing becomes more difficult.

### What are the symptoms of asthma in children?

Up to 80% of children with asthma develop symptoms before the age of five. Asthma can be difficult to diagnose and is often mistaken for other respiratory problems, such as bronchitis or pneumonia.

Children are less likely than adults to be aware of symptoms (such as tightness in the chest), which may be a warning of asthma. A child may not complain of other common symptoms such as coughing, shortness of breath and wheezing.

Asthma symptoms may worsen when a sensitive child is exposed to indoor or outdoor air pollutants, as well as respiratory infections and changes in weather. Worry and other negative emotions can also trigger symptoms in some children. Allergens such as animal secretions, dust mites, cockroach droppings, pollens and moulds can also trigger asthma symptoms.

### Managing a child's asthma

A child's asthma condition may need to be managed differently if air pollutants are a concern. Managing environmental exposures is one part of overall asthma control. Consult your local health care provider on how to do this effectively.

Other things you can do:

- **Take notice:** Refer to the local news and forecasts, your public health clinic, medical officer of health or ministry of health, for information about outdoor air quality and weather. Plan your day based on this information. High air pollution often happens on hot, humid summer days. This combination can be dangerous because it may cause dehydration. On these days, make sure that children drink

plenty of water. Be aware of the quality of indoor air. Eliminate tobacco smoke, only use cleaning product chemicals in well-ventilated areas and clean up moulds in your home. Reduce exposure to animal dander and dust for sensitive children.

- **Time it right:** Reschedule children's outdoor play and activities on high pollution days. Keep children away from streets with heavy traffic, especially during rush hour.
- **Take action:** To reduce air pollution levels, change your lifestyle. Drive less, use energy more efficiently at home and make wise choices as a consumer. Consider using clean, low-impact renewable sources of energy in your home and cleaner fuels for your vehicles. Contact your local politicians at all levels of government to voice your concerns about air pollution.

### How can I help my child manage his/her asthma?

Although there is no cure, your child's asthma can be controlled, and symptoms can be minimized.

- Manage your child's condition as soon as it is diagnosed to prevent it from getting worse.
- Educate yourself about asthma and its control. An allergist, immunologist, or certified asthma educator can teach you and your child about the disease and how to deal with it.
- Reduce exposure to known asthma triggers.
- Make sure school staff know about your child's asthma, including the medication that controls it and possible side effects. Have a written plan listing the child's triggers, how to avoid them, permission to have the inhaler with the child at all times and to use it when needed, how to know if the medication is not working, and when to call an ambulance if needed.

### How can I reduce my child's exposure to air pollution and help clean the air?

Other actions for you to consider:

#### In transit

- Walk, cycle, car pool or use public transit instead of driving.
- If you do drive, keep your car properly tuned and reduce idling. Ten seconds of idling uses more fuel than restarting.
- Avoid rapid acceleration and maintain lower speed.
- If buying, renting or leasing a vehicle, choose one that is fuel-efficient.

#### At home

- Buy or make non-toxic alternatives for common household cleaners.
- Make sure no one smokes in your home.
- Look for alternatives to pesticides on lawns, gardens and indoor plants.
- Hang clothes to dry and lower thermostats on hot water heaters and furnaces.
- Reduce your use of air conditioning.
- Avoid using gas-powered equipment, such as lawn mowers, on high pollution days.
- Work with your landlord or condominium association to conserve energy in your building.

### Celebrate Clean Air Day: June 2, 2004; June 8, 2005; June 7, 2006!

Clean Air Day (CAD) occurs the first Wednesday every June and is a celebration of environmentally friendly activities that promote clean air and good health. The Government of Canada proclaimed CAD as part of Canadian Environment Week to increase public awareness about air quality and climate change. CAD is a grassroots event built on community activities. It is a great time to join other Canadians in making choices that will create a cleaner, safer world now and for the future. Visit [www.cleanairday.com](http://www.cleanairday.com).



For more information on air pollution, its health effects and what you can do to reduce air pollution, contact the following agencies:

**Asthma Society of Canada**  
800-787-3880 [www.asthma.ca](http://www.asthma.ca)

**Canada Mortgage and Housing Corporation**  
800-668-2642 [www.cmhc.ca](http://www.cmhc.ca)

**Canadian Health Network**  
[www.canadian-health-network.ca](http://www.canadian-health-network.ca)

**Canadian Lung Association**  
888-566-LUNG [www.lung.ca/cando](http://www.lung.ca/cando)

**Canadian Public Health Association**  
[www.cpha.ca/cleanair](http://www.cpha.ca/cleanair)

**Canadian Institute for Child Health**  
613-230-8838 [www.cich.ca](http://www.cich.ca)

**Clean Air Day**  
819-994-5404 [www.cleanairday.com](http://www.cleanairday.com)

**Environment Canada**  
800-668-6767 [www.ec.gc.ca/air](http://www.ec.gc.ca/air)

**Health Canada**  
613-957-1876 [www.healthcanada.ca/air](http://www.healthcanada.ca/air)

**Office of Energy Efficiency,  
Natural Resources Canada**  
[www.oe.nrcan.gc.ca](http://www.oe.nrcan.gc.ca)

**Help make every day a Clean Air Day!**  
You can view/download this brochure and other resources at [www.cpha.ca/cleanair](http://www.cpha.ca/cleanair)



Canadian Public Health Association

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