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TAKING CONTROL

A GUIDE TO LIVING WITH ASTHMA





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Lung Health Foundation
lunghealth.ca
info@lunghealth.ca
1-888-344-LUNG (5864)

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The content of this guide is based on current available evidence and has been reviewed by medical experts. It is provided for informational purposes only. The views set out in this guide are those of the authors and do not necessarily reflect those of the Government of Ontario or the Ministry of Health. The information is general in nature and is not intended to be a substitute for sound clinical judgment. Seek the advice and expertise of your healthcare provider with any questions you may have about your health.

The Lung Health Foundation would like to thank the following contributing authors:


Susan Tarlo, MD, MB, MS, FRCP(C)
Lisa Cicutto, PhD, RN, CAE
Harold Kim, MD, FRCPC
Suzanne Murphy, RN, CRE

How This Handbook Can Help You Take Control

This handbook will help you learn how to take control of your asthma and live your life to the fullest.

The following important questions will be answered:

- ▶ What is asthma?
- ▶ How do I tell if my asthma is under control?
- ▶ How do I manage my triggers?
- ▶ How do I get my asthma under control and keep it that way?



Over 3,000,000
Canadians have
asthma making it
the most widespread
chronic lung disease.

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RISK FACTORS FOR DEVELOPING ASTHMA

While no one knows who will develop asthma, there are a number of risk factors that can make it more likely.

Genetic (hereditary) factors:

If someone in your family has asthma or allergies, the chances of you developing asthma increase.

Allergies: If you have allergies or eczema, you have a higher chance of developing asthma.

Tobacco smoke: Exposing children to tobacco smoke while growing up or during pregnancy increases the chance of developing asthma. Therefore, it is very important not to smoke during pregnancy and not to smoke around children including in your home or car. Smoking also increases the frequency and severity of asthma flare-ups and adds to your chances of developing other health problems such as emphysema, lung cancer, heart disease and more.

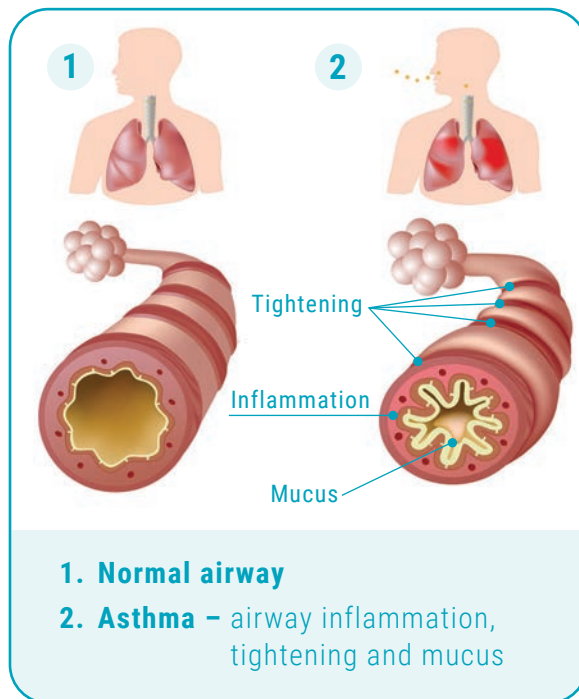
Work exposures: Some occupations have been shown to increase the chances of developing asthma. For more information on work-related asthma, visit: lunghealth.ca/work-related-asthma

Lung Health Line:
1-888-344-LUNG (5864)

What is asthma?

Asthma affects the breathing tubes (airways) of the lungs. When you breathe in, air travels from your nose or mouth, through your voice box (larynx), down your windpipe (trachea) and through your airways (bronchi). These airways branch off into smaller and smaller airways (bronchioles), like the roots of a tree, ending in tiny air sacs in your lungs called alveoli. When the air reaches these sacs, the oxygen from the air enters into your blood.

The blood carries the oxygen through your body where it is used for energy by all your organs. At the same time, carbon dioxide is removed from your blood into your lungs and then exhaled.



If you have asthma, you have very sensitive airways that become narrowed making it hard to breathe. Reasons that the airways narrow are:

- ▶ The inside of your airways become red, swollen or puffy (called inflammation)
- ▶ Extra mucus (phlegm or sputum) can build up in your airways
- ▶ The tiny bands of muscle that surround your airways tighten up (constrict) – this is also known as bronchospasm or bronchoconstriction

All of these reasons can make it harder to move air into and out of your airways, and cause the common asthma symptoms of cough, wheeze, shortness of breath and chest tightness.

How does your healthcare provider diagnose your asthma?

ASTHMA IS DIAGNOSED USING THE FOLLOWING METHODS:

- ▶ Your healthcare provider will ask you about your symptoms, when they happen, what makes them worse, and how long they last
 - Common asthma symptoms include cough, wheeze, shortness of breath and chest tightness
 - In asthma, these symptoms happen more often at night or early morning hours
 - Exercise, cold air or having a cold often bring on asthma symptoms
 - Your healthcare provider will examine your chest and listen with a stethoscope for unusual sounds while you breathe
- ▶ Breathing tests, such as spirometry, pulmonary function tests and peak flow monitoring, are the best way to be certain that you have asthma
 - They involve taking in a deep breath, then breathing out as hard as you can into a tube
 - Often these tests are done before and after the use of a reliever inhaler (bronchodilator) to see if there is an improvement in the amount and the speed at which you are able to breathe out
- ▶ Typically, people six years or older can do these tests
- ▶ If your breathing tests are normal but your healthcare provider still thinks you might have asthma, you may also be sent for a methacholine or histamine challenge test to find out whether or not you do
- ▶ Your healthcare provider may prescribe asthma inhalers for you to try – if you get better when using them, there is a good chance you have asthma



Your healthcare provider may also arrange for allergy testing to see if you have allergies and if so, what they are. Your allergies can trigger asthma symptoms.

Allergy skin tests are usually performed by placing drops of allergens on the forearm or back and making small scratches in the skin where the drops are located. Allergens (e.g. pollens, pets/animals, dust mites) are substances that can cause an allergic reaction. The amount of redness and swelling from these allergens will help determine if you have any allergies and what they include.

There are other health problems that can cause asthma-like symptoms, so it is important to see your healthcare provider to find out if you have asthma and/or other conditions that make asthma worse or seem like asthma.

SIGNS OF A SEVERE ASTHMA ATTACK

If any of the following signs occur, this is an emergency:

- ▶ Breathing is difficult and fast
- ▶ Lips or nail beds are blue or gray
- ▶ Skin on neck or chest sucks in with each breath
- ▶ Cannot speak more than five words between breaths
- ▶ May also be anxious, confused, very tired

FOLLOW THESE STEPS

STEP 1

- Call 911 for an ambulance.
- Wait for ambulance.
- Do not drive to the hospital.

STEP 2

Immediately use reliever inhaler (usually blue).

Continue to use reliever inhaler as needed until medical help arrives.



Lung Health Line:
1-888-344-LUNG (5864)

How to tell if your asthma is under control

To find out if your asthma is well controlled, ask yourself the following questions:

Do I have to use my reliever inhaler (usually blue) more than twice a week?	Yes No
Do I have asthma symptoms more than twice a week?	Yes No
Do I ever have difficulty exercising or playing sports because of my asthma?	Yes No
Do I wake up even one night a week because of my asthma?	Yes No
Have I missed any school or work days in the last month because of my asthma?	Yes No
Do I ever have asthma flare-ups?	Yes No
If I use a peak flow meter, are my readings less than 90% of my personal best?	Yes No

If you answer “yes” to any of these questions, your asthma is not under control and you should see your healthcare provider to discuss what you can do.

During an asthma flare-up, the airways can get so blocked that your lungs may not be able to provide enough oxygen to your body or remove enough carbon dioxide. This can be dangerous if left untreated.



Whether your asthma is mild, moderate or severe, it needs to be taken seriously and managed properly. Death from asthma can occur even with mild asthma, but is uncommon if asthma is under control.

Managing asthma

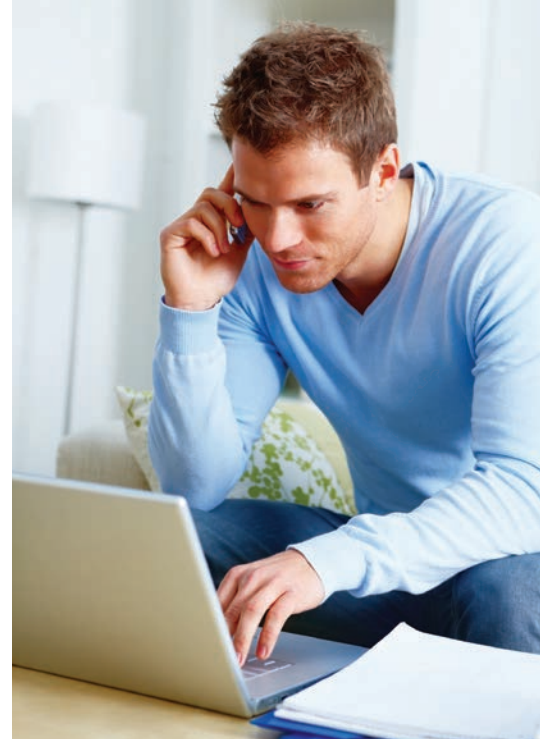
In order to manage asthma well, it is important to learn as much as you can.

There are several ways to learn about asthma:

- ▶ Talk to your healthcare providers about your asthma. Ask for a written asthma action plan (see page 24) and make sure you know how to use it
- ▶ Talk to a certified respiratory educator or certified asthma educator (they are often at asthma education centres)
- ▶ Get resources or materials from reliable organizations, such as the Lung Health Foundation's lunghealth.ca
- ▶ Call the Lung Health Line at 1-888-344-LUNG (5864) to speak with a certified respiratory educator

Your asthma goals are to:

- Experience no asthma symptoms or to have only minor symptoms on three days a week or less
- Exercise and participate in regular activities – some Olympians and other top athletes have asthma and compete at the highest level – so can you!
- Have little need for your reliever inhaler, although always keep it with you for emergencies/unexpected flare-ups
- Require no emergency department visits for asthma – use your asthma action plan (see page 24) to keep it under control
- Work with your healthcare provider to find the lowest dose of medicine that keeps your asthma under control

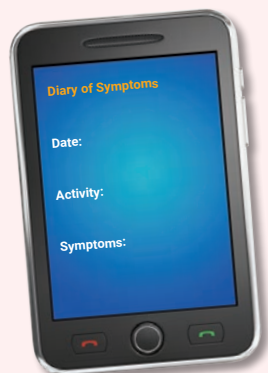


To help you reach these goals, the two most important ways to manage your asthma are:

- 1 Avoid your triggers**
– remove or reduce contact with the things that set off your asthma symptoms
- 2 Take your medicines properly**
– since asthma is a chronic (long-term) condition, it often requires long-term daily medicines (controllers)

FIGURE OUT WHAT YOU MAY BE ALLERGIC TO

You and your healthcare provider should work together to figure out your allergies. This is often done by keeping a diary of symptoms and what you were doing around the time you had these symptoms, and by having allergy skin testing. The best way to protect yourself is to avoid your allergens.



Asthma triggers



Triggers can cause airway swelling, increased amounts of mucus, and tightening of the muscles around your airways, leading to asthma symptoms.

What triggers asthma symptoms is different for each person. Asthma triggers fall into two groups: **allergens** and **irritants**. Irritants can bother anyone but allergens only affect people who are allergic to them. The effects of allergens can last longer and can be more severe than the effects of irritants.

ALLERGENS



If you are allergic to a certain allergen (a substance that can cause an allergic reaction), your body's immune (defence) system has become ready to react to that particular allergen by causing inflammation (swelling) and airway narrowing. Dust mites, animal dander (dandruff) and secretions, pollens, and moulds are common allergens. Food is not a common trigger of asthma. Additives such as monosodium glutamate (MSG) and sulphites may trigger asthma symptoms.

Dust Mites

Dust mites are microscopic insects that feed on dead skin cells. They love warm, moist places such as mattresses, pillows and bedding. They are also found in carpeting, plush furniture and stuffed animals.

If you are allergic to dust mites:

- ▶ Keep the humidity (moisture) level below 50%
- ▶ Wash bed linens weekly in hot water
- ▶ Use synthetic, washable blankets instead of duvets
- ▶ Encase your mattress and pillows in zip up covers
- ▶ Keep stuffed animals or anything that collects dust to a minimum
- ▶ Vacuum regularly – use vacuum cleaner equipped with a H.E.P.A. (High Efficiency Particulate Air) filter or central vacuum system – if possible by someone who doesn't have asthma
- ▶ If possible, replace carpeting with hard flooring



How to reduce pet allergens:

- ▶ Keep your pet out of the main living areas and especially out of the bedroom at all times – remember to close your bedroom door
- ▶ Keep your pet off the furniture
- ▶ Use HEPA (High Efficiency Particulate Air) filter air cleaners
- ▶ Have someone else brush your pet regularly
- ▶ If possible, replace carpeting with hard flooring
- ▶ Vacuum regularly – use a vacuum cleaner that has a HEPA filter, or central vacuum system

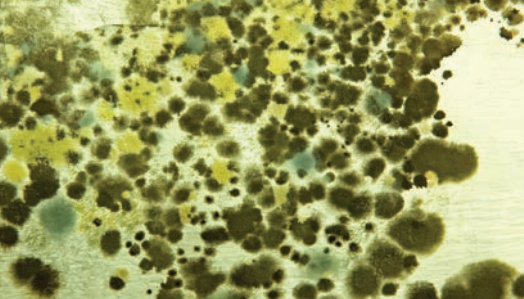
If you plan to visit someone who has a pet that you are allergic to, you can take medicines before you go that may prevent or reduce your symptoms. A better plan is to meet somewhere else.

Pet Allergens

Animals shed hair, feathers, and dander (dandruff) regularly. The dander, urine and saliva of animals can be allergens. Since all furry animals have dander and all birds have feathers, there is no such thing as a non-allergenic furry or feathered pet.

If you have a pet that you are allergic to, the best thing to do is to find it a new home. If this is not possible, following the actions on how to reduce pet allergens may help but are not as effective as finding your pet a new loving home.





You can find pollen
and mould forecasts at:
WEATHER.CA

Pollen and Mould Allergens

POLLENS AND MOULDS ARE COMMON ALLERGENS THAT CAN TRIGGER ASTHMA:

- ▶ Moulds grow indoors in damp places, such as bathrooms, basements, humidifiers, air conditioners and around windows
- ▶ Outdoor moulds are common in the spring, summer and particularly in the fall, until after the first frost
- ▶ Tree pollen is common in the spring
- ▶ Grass pollens are high in early summer
- ▶ Ragweed is common from late summer until the first frost

If you are allergic to pollens and moulds

- ▶ Keep your home and car windows closed during high pollen seasons
- ▶ Stay indoors when pollen or mould levels are high
 - Pollen counts are highest on sunny, dry, windy days
 - Mould spores are highest during high humidity and damp weather
- ▶ Use an air conditioner to filter out pollens and moulds and to reduce dampness indoors; replace the filter regularly
- ▶ Keep the indoor humidity level less than 50 per cent. Humidity can be measured by a hygrometer (an instrument that measures humidity) available at hardware stores. Dehumidifiers help to reduce humidity levels
- ▶ Avoid or reduce activities such as cutting grass, raking leaves, camping and working with compost

Cockroach Allergens

Cockroaches thrive in damp areas where food waste has not been removed, such as in kitchens.

TO REDUCE COCKROACH ALLERGENS, FOLLOW THESE STEPS:

- ▶ Wash dishes and clean up all food and drinks right after every meal
- ▶ Store garbage in sealed containers and remove it regularly from all areas of the house
- ▶ Seal openings around cabinets where they can enter
- ▶ Employ professional pest control services if needed

IRRITANTS

There are many possible irritants where people live and work that can trigger asthma symptoms. You may notice that you get asthma symptoms from some of the following irritants.

Indoor Irritants

Most people are aware of the problems linked to outdoor air pollution, but many don't realize that indoor air pollution can be just as bad if not worse. After all, indoors is where people spend most of their time.

THE FOLLOWING CAN TRIGGER ASTHMA SYMPTOMS:

- ▶ Tobacco smoke
- ▶ Scented products
- ▶ Cleaning products with strong smells
- ▶ Paints (buy low odour paints)
- ▶ Non-erasable markers
- ▶ Some glues
- ▶ Wood smoke (fireplaces, wood stoves)

Tobacco smoke exposure can be a big part of indoor air pollution. Asthma symptoms can become worse and there may be a need to take more asthma medicine and more trips to the healthcare provider's office, emergency department or hospital. Do not allow smoking in your home or vehicle.

The smoke from even one cigarette anywhere indoors will eventually reach all areas and can linger for a very long time.



A cold or the flu often leads to asthma symptoms, which can last up to six weeks.

Here's how you can help protect yourself:

- ▶ Fight germs by washing your hands often or using a hand sanitizer if soap and water are not available
- ▶ Get the flu shot every fall (unless there is a medical reason you shouldn't) – ask your healthcare provider if it is an option for you
- ▶ Ask your healthcare provider about getting a pneumonia vaccination

When you have a cold, your asthma will typically get worse and you will have more symptoms

- ▶ Be sure to follow your asthma action plan
- ▶ Treatment usually involves using more anti-inflammatory or controller medicine, especially corticosteroids (oral and/or inhaled)
- ▶ Antibiotics are not helpful for viral infections – they are used to treat bacterial infections, which are usually accompanied by a fever and green or yellow sputum



Outdoor Irritants

- ▶ Air pollution (e.g. from vehicles, industry, power generation)
- ▶ Cold, dry air
- ▶ Hot, humid weather
- ▶ Smoke from forest fires, wood burning or backyard burning

Monitor air quality reports at airhealth.ca and weather.ca, and adjust your outdoor activity accordingly. Depending on how cold it is and how sensitive you are to the cold, you may need to exercise indoors on some days.

Should I move to a different climate?

Some people with asthma do improve when they move to a different location where their triggers are reduced. For example, if the asthma symptoms of an outdoor worker are triggered by high pollution levels, he or she might do better in an area with less pollution.

However, most people with asthma are usually sensitive to many triggers, and a new climate may bring new triggers. If you are thinking of moving, try to spend at least several weeks in the new location before you move there for good.



Exercise- induced Asthma



Everyone needs exercise.

It is good for the heart, body and muscles; it can also relieve stress and improve feelings of well being. If asthma is well controlled, you should be able to exercise.

WHAT YOU CAN DO:

- ▶ Be sure you are not experiencing asthma symptoms before starting
- ▶ Warm up before vigorous exercise by stretching and starting at a slower pace
- ▶ Most people with well controlled asthma should not need to take a reliever inhaler (see page 18) before exercising:
 - If you need to take a reliever inhaler more than three times a week, including for exercise, see your healthcare provider to get your asthma under control
 - If you need to take a reliever inhaler before exercising, it should be taken about 10-15 minutes before the activity
- ▶ If you develop asthma symptoms while exercising, stop immediately. Use a reliever inhaler and do not start again until your symptoms are completely gone
- ▶ When outdoor conditions trigger your asthma (e.g. high air pollution or pollen levels, cold air, hot humid air), consider exercising indoors
- ▶ When exercising in cold weather, cover your nose and mouth with a scarf
- ▶ If symptoms continue, your asthma may not be controlled; work with your healthcare provider to improve it





IF YOU KNOW THAT YOU REACT TO A CERTAIN MEDICINE, HERE ARE SOME WAYS TO PROTECT YOURSELF:

- ▶ If you take medicine and develop asthma symptoms, tell your healthcare provider and pharmacist right away
- ▶ Absolutely avoid that medicine
- ▶ Check with your healthcare provider or pharmacist to find out if another medicine will affect you in the same way
- ▶ Always check medicine labels

Some medicines that can cause asthma symptoms



Make sure that your healthcare providers know all of the medicines you take, even over-the-counter and herbal remedies.

Check with your healthcare provider or pharmacist before you take any new medicine.

Medicines that could cause asthma symptoms include:

- ▶ Aspirin (ASA- acetylsalicylic acid) containing medicines such as some cold remedies, pain killers (often used for arthritis, headaches and muscle pains)
 - ▶ Besides ASA, other non-steroidal anti-inflammatory drugs (NSAIDs) can cause the same effect on asthma
 - ▶ If you react to one of these medicines, it is likely that all will trigger your asthma
- ▶ Beta blockers used to treat blood pressure, angina, glaucoma, and sometimes tremor
- ▶ ACE inhibitors, used to treat blood pressure and heart disease, can cause a dry cough

Other conditions related to asthma

- ▶ Rhinitis (stuffy, runny nose)
- ▶ Nasal polyps (areas of swelling in the nose)
- ▶ Sinusitis (swelling of the sinuses)
- ▶ Gastroesophageal Reflux Disease (acid reflux or heartburn)
- ▶ Obesity
- ▶ Anaphylaxis

Addressing these conditions with your healthcare provider is important, especially if you have difficult-to-control asthma.

RHINITIS, NASAL POLYPS, SINUSITIS

Nasal symptoms such as a runny, stuffy nose, sneezing and itching of the nose (rhinitis) commonly occur in people with asthma. They may be triggered by allergens (allergic rhinitis) or occur because of non-allergic reasons (non-allergic rhinitis). Allergic rhinitis is more commonly associated with sneezing and itching of the nose, and with allergic eye symptoms (itchy, red, watery eyes). Non-allergic rhinitis usually causes a stuffy, runny nose without a lot of itching or eye symptoms.

Nasal polyps can worsen asthma. Nasal polyps (areas of swollen tissue in the nose) can occur both in allergic and non-allergic rhinitis but are most common in people with aspirin sensitivity (see page 12). Rhinitis and especially nasal polyps can get in the way of good drainage of the sinuses and can lead to sinus pain/pressure and sinus infections (sinusitis). Uncontrolled rhinitis can also trigger asthma.



Treatment of rhinitis consists of:

- ▶ Reducing exposure to the things that cause your symptoms (e.g. pollen, pet allergens, smoke)
- ▶ Medicines:
 - Daily symptoms are often treated with a nasal corticosteroid (anti-inflammatory) spray on a regular basis to reduce the swelling in the nose
 - Antihistamines (medicines that help control allergies) are useful for a runny nose, itching and sneezing, and for allergic eye symptoms
 - Decongestants (medicines that reduce swelling in the nose) can be useful for a stuffy nose, but should not be used if you have high blood pressure, glaucoma or problems with your prostate
 - Combination pills are available with both an antihistamine and decongestant
- ▶ Allergy shots may help (see page 23)

HOW TO PROTECT YOURSELF

- ▶ Once you have had an allergic reaction to a food product or drink, you absolutely must avoid it. Even a tiny amount of that item could cause a life-threatening allergic reaction
- ▶ Always carry an emergency kit containing your epinephrine auto-injector (e.g. EpiPen®), your asthma reliever medicine (usually blue), and an antihistamine
- ▶ Ask your doctor, pharmacist or other healthcare provider to teach you how to use your epinephrine auto-injector
- ▶ Wear a medical identification bracelet/necklace (e.g. MedicAlert®) stating:

**“Anaphylaxis: carries EpiPen”
and “Asthma”**

so that others can help you
in an emergency

Lung Health Line:
1-888-344-LUNG (5864)

ANAPHYLAXIS

Anaphylaxis (pronounced a-na-fil-ax-is) is an extreme and serious allergic reaction that can be life threatening. Food is the most common cause of anaphylaxis, but insect stings, medicine, latex or exercise can also trigger a reaction. The most common food allergens (allergies) are peanuts, tree nuts, seafood and fish, milk, eggs, soy, wheat and sesame seeds. Sulphites, a food additive can cause anaphylaxis in some people. Sulphites are commonly found in foods such as dried fruits, wine, bottled lime or lemon juice, prepared potatoes and shrimp.

Most often, anaphylaxis is diagnosed in childhood, but it can also happen later in life. If you have asthma, you have a higher chance of having allergies and anaphylaxis. And if you have both asthma and anaphylaxis, you have a much higher chance of having a severe asthma flare-up during an anaphylactic reaction.

Anaphylaxis can affect multiple body systems: skin, upper airway (nose and throat) and lower airway (windpipe, lungs), stomach and intestines (digestive), and heart and circulation (cardiovascular). Anaphylactic shock is an extreme overreaction of the body's immune system to an allergen. Swelling, difficulty breathing, abdominal cramps, vomiting, diarrhea, coma, and even death can happen.

If you are uncertain as to whether or not you have food allergies or are at risk for life-threatening allergies, you should be followed by an allergy specialist. To help identify possible allergens, you may want to keep a record of anything you eat or drink so you can discuss this with your healthcare provider to try to find the cause.

For more information about anaphylaxis, visit Food Allergy Canada at foodallergycanada.ca.



Work-related asthma

Work-related asthma (WRA) is the most common chronic work-related respiratory disease in Canada.

There are two types of WRA:

WORK-AGGRAVATED ASTHMA

This happens when a person already has asthma but he or she gets symptoms, or symptoms are worsened due to an exposure in the workplace.

OCCUPATIONAL ASTHMA (OA)

This happens when a person has never had asthma until he or she was exposed to something in the workplace.

Occupations that can cause asthma:

- › Electronic workers (flux)
- › Polyurethane foam workers (isocyanates)
- › Janitors (cleaning products)
- › Bakers (flour dust)
- › Textile workers (dyes)
- › Hairdressers, nail salon workers (chemicals)
- › Metal workers, refiners (metals)
- › Detergent users (enzymes)
- › Healthcare professionals (latex, drugs, formaldehyde, glutaraldehyde)
- › Seafood processors (seafood)
- › Automobile painters (isocyanates)
- › Veterinarians, animal researchers (animal allergens)
- › Farmers and agriculture workers (animal allergens, mites, moulds)
- › Sawmill workers (wood dusts)

For more information on work-related asthma, visit:
lunghealth.ca/work-related-asthma



Other substances such as dust, smoke, fumes and sprays can be irritants and can trigger asthma symptoms at work. If your asthma is better when you are away from work, you should tell your healthcare provider and look into seeing if your work is the cause or trigger for your asthma.

If so, you may need to make some changes in your work exposures and may need some support from your provincial workers' compensation system.

WHAT TO DO DURING YOUR PREGNANCY TO PROTECT YOURSELF AND YOUR UNBORN BABY:

- ▶ Avoid contact with your asthma triggers. Always avoid smoking or exposure to any tobacco smoke.
- ▶ Work with your healthcare provider to find the lowest dose of asthma medicines that keeps your asthma controlled. It is important to continue to use your asthma medicines during pregnancy as prescribed. Discuss all of your concerns about your medicines with your healthcare provider.
- ▶ Ask your healthcare provider for a written asthma action plan (see page 24) and learn how to use it.
- ▶ When you do have asthma symptoms or a flare-up, follow the steps in your asthma action plan.
 - If your symptoms don't get better, contact your healthcare provider, call 911, or have someone take you to the hospital.
- ▶ It is very important to get control of a flare-up as soon as possible.

Pregnancy and asthma



Many women have concerns about asthma and pregnancy. Studies show that when asthma is under control, there is no greater chance of complications during pregnancy and birth.

One-third of women find that their asthma actually improves during pregnancy. Another third find that their symptoms get worse and the remaining one-third see no change in their asthma symptoms.

During pregnancy, you are breathing for two — your baby and you. If asthma is not controlled, the baby's supply of oxygen can be reduced. A good supply of oxygen is necessary for the healthy growth and development of your baby. If your asthma is not under control during pregnancy, the following unhealthy conditions may occur:

- ▶ Your baby's birth weight may be lower
- ▶ Your baby may be born prematurely

Most asthma medicines are considered safe for the baby. Poorly controlled asthma is generally a much greater risk to the baby than any possible side effects from asthma medicines.

WHAT YOU CAN DO DURING LABOUR:

- ▶ Speak to your healthcare provider about the use of anaesthetics during labour and delivery
- ▶ Make sure that the hospital knows about your asthma and has the asthma medicines you use on your record
- ▶ Ask your healthcare provider about what will happen if your symptoms flare up during labour

WHAT YOU CAN DO TO PROTECT YOUR NEWBORN BABY:

- ▶ Don't put the health of your baby at risk by exposing him or her to tobacco smoke at any time (including before birth)
- ▶ Breast-feed your baby when possible and delay starting milk and other solid foods until directed by your healthcare provider



Travelling with asthma



Travel can expose you to new asthma triggers.

Here are some tips to help you enjoy a worry-free, healthy holiday:

- ▶ Find out if there are adequate medical services in the place you want to visit
- ▶ Ensure your vaccinations, including flu and pneumonia, are up-to-date
- ▶ Bring enough medicine to last longer than the length of time you will be away in case of unforeseen problems
 - Leave medicines in their original containers that list dose and strength
 - Carry medicines with you along with a note from your healthcare provider to show the border authorities in case there are any questions
 - Do not pack medicines in your luggage!
- ▶ Find out what kind of triggers you may encounter at your destination:
 - Seasonal levels of air pollution or pollens
 - Temperature extremes
 - Accommodations (use of air conditioning and pet-friendly policies)
 - Whether smoking is allowed indoors
- ▶ Before your holiday, talk with your healthcare provider even if your asthma is under control. If you don't have one already, ask for a written asthma action plan (see page 25) for instructions on what to do if you develop problems
- ▶ Even if your symptoms improve while you're on holiday, do not decrease or stop your medicines
- ▶ If you are travelling outside the province or country, make sure that you have enough medical insurance to cover you in case of an emergency



POSSIBLE SIDE EFFECTS OF RELIEVER INHALERS INCLUDE:

- ▶ Muscle tremors (usually in the hand)
- ▶ Nervousness
- ▶ Increased heart rate
- ▶ Headache

If you have questions or concerns regarding the use of your inhaler, speak to your healthcare provider.

Asthma medicines

There are two kinds of asthma medicines: relievers and controllers. Relievers are bronchodilators that are taken when needed to relieve symptoms quickly. Controllers are used on a daily basis to control and prevent asthma symptoms.

Inhalers are the preferred route to deliver medicine to the lungs because most of the medicine goes to your lungs and not to other parts of your body as is the case with pills. There aren't as many side effects when using inhalers compared to using pills.

Ask your healthcare provider to show you how to use your inhaler and to see if you are using it properly. It is very important that you use your inhalers properly so that the medicines actually reach your lungs. If you have any questions about your medicines, talk with your healthcare provider, pharmacist or asthma care provider.

RELIEVERS

Watch videos on how to use your inhalers at lunghealth.ca/how-to-use-an-inhaler.

SHORT-ACTING BETA2-AGONISTS (SABAS)

Examples: Bricanyl®, Salbutamol (e.g. Airomir®, Ventolin®)

Short-acting bronchodilators known as relievers can also be referred to as “rescue inhalers”. They start working within minutes by relaxing the muscles that surround your airways, allowing your airways to widen or open up. This makes it easier for you to breathe. These medicines also make the muscles around your airways less likely to tighten if you come into contact with your triggers.

Although the reliever inhaler works quickly to relax the muscles around the airways, it does nothing to get to the root of the problem – the swelling and mucus in the airways. The controller medicines described in the next section [see page 19] generally need to be taken daily to “control” and protect the airways from inflammation.

Relievers can be used:

- ▶ To provide immediate relief of symptoms such as coughing, chest tightness, wheezing, and difficulty breathing
- ▶ Although most people with controlled asthma should only need to use a reliever occasionally, it can be used 10-15 minutes before being exposed to a trigger such as cold air or exercise

HOW TO USE YOUR RELIEVERS

Reliever medicines are usually taken on an as needed basis when you have symptoms. If you need to use your reliever more than three times per week, including before exercise, this is a sign that your asthma may not be under control and that you should see your healthcare provider. If you have recently been to the emergency department or the hospital, the healthcare provider may tell you to use your reliever every four hours for a few days or longer until your symptoms lessen.

If you have to use your reliever medicine more often due to an asthma flare-up, reduce the number of times you use it when you start to feel better by referring to your asthma action plan (see page 24) or by following up with your healthcare provider.

OTHER TYPE OF BRONCHODILATOR

Atrovent® is not as fast or effective as the bronchodilators discussed above, but is occasionally used as a reliever by people who shouldn't use them due to unwanted side effects when using the short-acting bronchodilators.

CONTROLLERS

Controller medicines include:

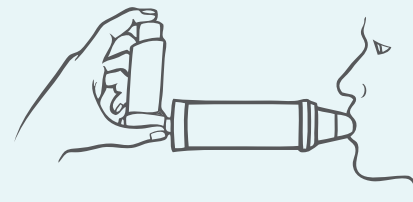
- ▶ Corticosteroids (inhalers, pills)
- ▶ Long-acting bronchodilators
- ▶ Combination inhalers
- ▶ Antileukotriene pills
- ▶ Theophylline
- ▶ Biologics



CORTICOSTEROID INHALERS

Examples: Alvesco®, Arnuity™, Asmanex®, Flovent®, Pulmicort®, Qvar™

Corticosteroid inhalers are known as controllers because they control asthma symptoms by reducing inflammation, swelling and mucus in the airways. Corticosteroid inhalers do not relieve asthma symptoms quickly the way bronchodilators do, but taken daily (even when you don't have symptoms), they help prevent asthma symptoms.



Possible side effects of corticosteroid inhalers:

- ▶ hoarse voice
- ▶ sore throat
- ▶ yeast infection in the mouth

To help prevent or treat these side effects:

- ▶ After using an inhaled corticosteroid, gargle, rinse out your mouth and spit it out
- ▶ Use a spacer device (valved holding chamber) if you are using a metered dose inhaler. You will still need to rinse out your mouth afterwards. Follow the manufacturer's instructions.
- ▶ If you do get a yeast infection in your mouth, you will have white spots in your mouth and throat. See your healthcare provider for treatment.

HELPFUL TIP:

Keep your controller inhaler beside your toothbrush as a handy reminder.





CONTROLLERS (CONTINUED)

CORTICOSTEROID INHALERS (CONTINUED)

Side effects of long-term higher doses of inhaled corticosteroids are uncommon, but can include:

- ▶ A higher risk of cataracts and glaucoma – it is important to have regular eye examinations
- ▶ Higher risk of decreased bone density. Ways to reduce the risk:
 - ▶ Ensure you get an adequate supply of calcium and vitamin D – talk to your healthcare providers about ways to do this
 - ▶ Exercise regularly and include weight-bearing exercises (e.g. walking/running, golfing, tennis, badminton, soccer, hockey, basketball, etc)
 - ▶ Have a bone density test to detect osteoporosis (thinning of the bones) at an early stage
 - ▶ You may need to take an additional medicine to treat osteoporosis
- ▶ Bruising, mainly in older adults using higher doses of inhaled corticosteroids

CORTICOSTEROID PILLS

Examples: Prednisone®, Medrol®

Corticosteroid pills have two possible roles for people with asthma

- ▶ They are sometimes taken to treat a moderate to severe asthma flare up
- ▶ When high doses of inhaled corticosteroids as well as additional controller medicines are not enough to keep asthma under control, corticosteroid pills may be used every day or every other day

Corticosteroid pills are the strongest medicine to treat inflammation in the airways and work much faster than inhaled corticosteroids. They reduce inflammation, swelling and mucus. Your healthcare provider will consider the benefits of taking corticosteroid pills versus the risk of many possible side effects. Corticosteroid pills start to work in a few hours, but it may take several days to clear up your asthma symptoms.

How to use corticosteroid pills:

Tell your healthcare provider if you have taken corticosteroid pills in the last 12 months. If that is the case, the dosing may need to be different

- ▶ Take your corticosteroid pills exactly as your healthcare provider has told you

POSSIBLE SIDE EFFECTS OF CORTICOSTEROID PILLS INCLUDE:

SHORT TERM USE:

- ▶ Increased appetite
- ▶ Weight gain
- ▶ Stomach pain or upset
- ▶ Increase in blood pressure
- ▶ Mood swings

LONGER TERM USE:

Same as short term side effects, plus:

- ▶ Diabetes
- ▶ Cataracts
- ▶ Osteoporosis
- ▶ Avascular necrosis (a very rare condition that damages the bone in a joint such as a hip)

- ▶ If your symptoms ever get worse or do not start clearing up, call your healthcare provider immediately
- ▶ Keep taking your other asthma medicines in addition to the corticosteroid pills
- ▶ Taking aspirin (ASA) or other non-steroidal anti-inflammatory drugs (NSAIDs), along with corticosteroid pills, may increase the risk of stomach upset and bleeding
- ▶ If you are scheduled for surgery or have a major infection, tell your healthcare provider about how many corticosteroid pills you have used in the past two years, as you may need an extra corticosteroid treatment

Long-Acting Bronchodilators

LONG-ACTING BETA2-AGONISTS (LABAS)

Examples: Foradil®, Oxeze®, Serevent®

LABAs work for about 12 hours and are usually used twice a day. If a corticosteroid inhaler alone is not keeping your asthma under control, a LABA may also be prescribed. You should only use a LABA to treat asthma if you are **also using a corticosteroid inhaler** usually as a combination medicine described below. Foradil® and Serevent® cannot be used as quick relievers.

LONG-ACTING MUSCARINIC ANTAGONIST (LAMA)

Examples: Spiriva®

Spiriva® is taken once a day and it works for about 24 hours. Spiriva is sometimes prescribed for asthma that is not under control despite using high doses of inhaled corticosteroids plus a LABA.

The side effects of Spiriva® may include:

- ▶ Dry mouth
- ▶ Hoarse voice
- ▶ Fungal infection in the mouth or throat
- ▶ Cough
- ▶ Heartburn
- ▶ Skin rash

COMBINATION INHALERS

Examples: Advair®, Breo®, Symbicort®, Zenhale®

These medicines combine a long-acting bronchodilator and a corticosteroid in one inhaler and are taken once or twice daily.

For a discussion on the side effects, please refer to the sections on corticosteroid inhalers (see page 19) and long-acting beta2-agonist inhalers (see above).



LABA side effects are similar to those of SABAs that are used as reliever inhalers. They include:

- ▶ Muscle tremors (usually in the hand)
- ▶ Nervousness
- ▶ Increased heart rate
- ▶ Headache



CONTROLLERS (CONTINUED)

ANTILEUKOTRIENE PILLS

Examples: Accolate®, Singulair®

These medicines help control inflammation. They work by blocking a substance released from cells that can cause inflammation. These medicines don't work for everyone with asthma. They are taken as a pill on a daily basis. They are typically used for people who are taking an inhaled corticosteroid but still have uncontrolled asthma. If you use them, your healthcare provider will want to check your response over the first four to eight weeks of treatment to make sure they are benefiting you.

These pills can also prevent asthma symptoms triggered by exercise and help treat allergic rhinitis.

If you are using Accolate® on a long term basis:

- ▶ Make sure that your healthcare provider and pharmacist know all of your medicines since Accolate® may interact with some of them (e.g. a blood thinner)
- ▶ Your healthcare provider may recommend liver tests

THEOPHYLLINE

Examples: Uniphyl®, Choledyl™, Theolair™

Theophylline medicines work to relax the airway when other controller medicines still do not control asthma. They are not often used because they have many side effects. If you are on a type of theophylline, you may need to be seen by your healthcare provider often to make sure the amount in your blood is not too high.

Possible side effects of Theophylline include:

- ▶ Diarrhea
- ▶ Heartburn
- ▶ Upset stomach
- ▶ Headaches
- ▶ Nausea
- ▶ Nervousness
- ▶ Increased heart rate
- ▶ Loss of appetite

POSSIBLE SIDE EFFECTS OF ANTILEUKOTRIENE PILLS INCLUDE:

- ▶ Stomach upset
- ▶ Headache
- ▶ Skin rash

POSSIBLE SIDE EFFECTS OF THEOPHYLLINE PILLS INCLUDE:

- ▶ Diarrhea
- ▶ Heartburn
- ▶ Upset stomach
- ▶ Headaches
- ▶ Nausea
- ▶ Nervousness
- ▶ Increased heart rate
- ▶ Loss of appetite

Lung Health Line:
1-888-344-LUNG (5864)

Biologics

ANTI-IMMUNOGLOBULIN E (ANTI-IgE) THERAPY

Examples: Xolair®

Immunoglobulin E (IgE) is a type of protein that our bodies naturally make in small amounts. In allergic asthma, this amount increases abnormally, which can cause swelling and tightening of the airways. Anti-IgE therapy (Xolair®) reduces the ability of IgE to cause symptoms.

If you are following all the correct steps in managing your asthma but are still having a hard time getting your asthma under control, then your healthcare provider may decide to send you for Xolair® shots. It may help reduce the symptoms of asthma due to allergic triggers.

If you are sent for Xolair® shots, you will receive them every two to four weeks. If you are sent for these shots, you need to continue using all of your asthma medicine as prescribed by your healthcare provider.

Possible side effects from Xolair® should be explained to you by your healthcare provider.

INTERLEUKIN-5 (IL-5) INHIBITOR

Examples: Cinqair™, Fasentra®, Nucala™

Cinqair™ is given by intravenous infusion every 4 weeks.

Fasentra® is given by subcutaneous injection every 4 weeks for the first 3 injections and then every 8 weeks thereafter.

Nucala™ is given by subcutaneous injection every 4 weeks.

IL-5 Inhibitors are sometimes prescribed for the maintenance treatment of severe asthma in patients aged 18 years or older. It may be added when someone's asthma is not under control despite using medium to high doses of inhaled corticosteroids plus another controller medicine, such as a long-acting bronchodilator.

IL-5 Inhibitors are only effective for people who have a certain level of eosinophil (e-o-sin-o-phil), a type of white blood cell in your blood. Therefore your healthcare provider will check your blood eosinophil level before prescribing the medicine. These drugs work by reducing the number of eosinophils in the blood and lungs and helps to reduce the number of asthma attacks that you have.

Possible side effects from IL-5 Inhibitors should be explained to you by your healthcare provider.



Learning about your asthma prescription medication

If you have any questions about your medicines, talk with your healthcare provider, pharmacist or asthma care provider.

You can also call the Lung Health Line to learn more at [1-888-344-LUNG \(5864\)](tel:1-888-344-LUNG) or visit lunghealth.ca to start a live chat session with a certified respiratory educator.



ALLERGY SHOTS ARE NOT USEFUL FOR FOOD ALLERGIES.

If you have had anaphylaxis from a stinging insect, then allergy shots are very helpful. If you have seasonal allergic rhinitis (stuffy, runny nose) that is not controlled and makes your asthma worse, allergy shots may be effective.

Immunotherapy (allergy shots) in asthma

Allergy shots can be used in some people to lessen the reaction to certain allergens for allergies that can't be avoided or removed from your environment. Allergy shots don't work for everyone with asthma and should not be started unless your asthma is well controlled while taking asthma medicines (controllers).

It is important that you work with your healthcare provider to see if they may be right for you.

You should be referred to an allergist who will take a detailed history and do tests to decide if allergy shots would be helpful for you. Your healthcare provider should explain the benefits, risks and costs of allergy shots. Some people can experience very dangerous reactions after getting an allergy shot. You should understand how long you will need to continue getting allergy shots and how frequently. If allergy shots are started, it is very important that you continue to stick to the schedule.



An asthma diary can help you to keep track of the following:

- ▶ Your asthma symptoms
- ▶ Your use of asthma medicine
- ▶ Your peak flow readings
- ▶ Your triggers

By tracking this information, you and your healthcare provider will get a good picture of the level of control of your asthma over time. When you are first diagnosed with asthma or when changes are made to your asthma medicines, the diary can help you find out if your treatment plan is working. Tracking possible asthma triggers will help you figure out which ones may be causing symptoms.

You can print your Asthma Diary out from our resource library at: lunghealth.ca/resource-library

Asthma Action Plan

An asthma action plan is a set of instructions written out by your healthcare provider that can help you better manage your asthma. It can help you decide what to do if you have asthma symptoms so that you get them under control as soon as possible.

An asthma action plan should include:

- ▶ Instructions on what medicines you normally take when you are feeling well
- ▶ How to know when your asthma is starting to get out of control and when it is an emergency
- ▶ What changes you should make to your medicines when you have asthma symptoms

Adult Asthma Action Plan (16yrs+)

NAME: _____ DATE: _____ PERSONAL BEST PEAK FLOW: _____ litres per minute.

EMERGENCY CONTACT: _____ PHONE: _____ The goal of asthma treatment is to live a healthy, active life. It is very important to remain on your maintenance medications, even if you are not having any asthma symptoms.

PROFESSIONAL NAME: _____ PHONE: _____

Go: Maintain Therapy	Caution: Step Up Therapy	Stop: Get Help Now
<p>DESCRIPTION:</p> <p>You have ALL of the following:</p> <ul style="list-style-type: none"> • Use your reliever no more than 2 times per week • Cough, wheezing, shortness of breath or chest tightness no more than 2 days per week • Can do physical activities and sports without difficulty • Night asthma symptoms less than 1 night per week • No missed regular activities or school/work. <p>Peak flow: $\geq 80\%$ personal best, or _____ to _____</p> <p>Other: _____</p> <p>INSTRUCTIONS:</p> <p>CONTROLLER: _____</p> <p>RELIEVER: _____</p> <p>Other: _____</p>	<p>DESCRIPTION:</p> <p>You have ANY of the following:</p> <ul style="list-style-type: none"> • Use your reliever more than 2 times per week • Have daytime cough, wheezing, shortness of breath or chest tightness more than 2 days per week • Physical activity is limited due to symptoms • Asthma symptoms at night or in early AM 1 or more nights per week <p>Peak flow: 60-80% personal best, or _____ to _____</p> <p>Other: _____</p> <p>INSTRUCTIONS:</p> <p>CONTROLLER: _____</p> <p>RELIEVER: _____</p> <p>Other: _____</p>	<p>DESCRIPTION:</p> <p>You have ANY of the following:</p> <ul style="list-style-type: none"> • Reliever used for 20 hours or less • Continuous asthma symptoms • Continuous cough • Wheezing all the time • Severe shortness of breath • Sudden severe attack of asthma <p>Peak flow: $<60\%$ personal best, or _____ to _____</p> <p>Other: _____</p> <p>INSTRUCTIONS:</p> <p>RELIEVER: _____</p> <p>Other: _____</p>

Caution: Use a breathing effect, hoarse inflammation, persistent asthma attacks, may take time to act. Reliever rapidly relieves symptoms of cough, wheeze, tight & force.

Always use a spacer with your asthma inhaler. Always use the spacer that you are allergic to. Do not use spacer with Ventolin if you are allergic.

My Asthma Diary

Peak of day Month: _____

Day: _____

Time: _____

Peak flow: _____

Other: _____

Printed from lunghealth.ca



Peak Flow Meter

A peak flow meter is a hand-held device that you blow into to get a reading of how fast you can exhale the air from your lungs. This is called your “peak flow rate”.

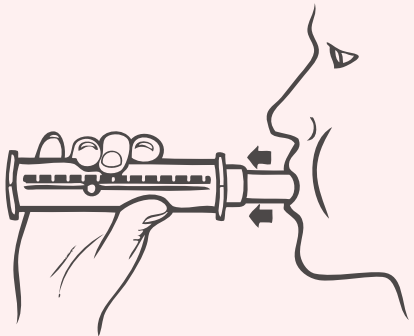
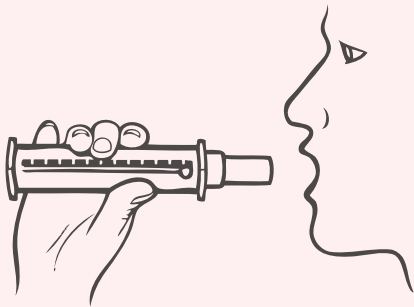
An asthma action plan will often include monitoring your peak flow readings.

Your healthcare provider may ask you to use a peak flow meter to track changes in your asthma. Some people do not notice when their asthma is getting out of control and this can sometimes be dangerous. The peak flow meter can help warn you if your asthma is getting out of control before you actually notice symptoms. If your peak flow rate is lower than usual, this may be a sign that you need to take action. Check your asthma action plan for what steps you should take.

How to use a peak flow meter:

- 1** Set the sliding peak flow indicator to zero
- 2** Sit up straight or stand for best results
- 3** Take a full deep breath
- 4** Put the mouthpiece in your mouth and close your lips around the mouthpiece
- 5** Blow as hard and as quickly as you can into the mouthpiece for a brief moment
- 6** Record the number on the indicator
- 7** Repeat steps 1-6 two more times for a total of 3 times
- 8** Record the highest of three numbers in your asthma diary card
- 9** You can also record your peak flow readings in a graph or table format to see if any patterns develop over time

TRACKING SYMPTOMS USING A PEAK FLOW METER



Working with your healthcare team

Your healthcare team can help you learn how to properly manage your asthma.

Your asthma healthcare team may include:

- ▶ Healthcare provider - family doctor, nurse practitioner, respirologist (lung specialist) or allergist
- ▶ Nurse
- ▶ Respiratory therapist
- ▶ Pharmacist
- ▶ Certified asthma educator (CAE) or certified respiratory educator (CRE) (e.g. at an asthma education centre)

CAEs and CREs are healthcare professionals such as respiratory therapists, nurses, pharmacists, physiotherapists or dietitians who have special training in teaching people about lung conditions such as asthma. They are experts at explaining how asthma affects you and what you can do about it. To find an asthma education centre and a CAE or CRE, contact the Lung Health Foundation at **1-888-344-LUNG (5864)** or your healthcare provider.



Questions about asthma?

If you have any questions:

- ▶ Call the Lung Health Line at **1-888-344-LUNG (5864)** or visit lunghealth.ca to start a live chat session. This service is staffed by healthcare professionals who are certified respiratory educators.
- ▶ or email info@lunghealth.ca



WHAT IS A CERTIFIED RESPIRATORY EDUCATOR?

The Certified Respiratory Educator (CRE) credential recognizes healthcare professionals who provide respiratory education to their clients, including education in both asthma and COPD (Chronic Obstructive Pulmonary Disease). The Lung Health Foundation's CREs can support you:

- ▶ on how to discuss lung health issues with your healthcare provider
- ▶ with help to understand how inhalers work with current best practices, as well as education around asthma medications
- ▶ by discussing how to control your asthma
- ▶ on your journey to quit smoking

What to discuss with your healthcare team:

- ▶ **Symptoms:** What symptoms you have been experiencing and how often they occur
- ▶ **Triggers:** How to reduce contact with your asthma triggers
- ▶ **Medicines:** Which medicines to take to keep your asthma under control
 - ▶ Make sure you know the difference between “controller” and “reliever” medicines
 - ▶ Work with your healthcare provider to find the lowest dose of medicine that controls your asthma well
 - ▶ Point out any concerns about side effects from the medicines
 - ▶ Discuss how often you need your reliever inhaler (usually a blue inhaler) – more than three times a week means your asthma is not under control
- ▶ **Asthma Action Plan:** Learn how to take control of your asthma using this important tool. It can also help you decide what to do when you are having an asthma flare-up
- ▶ **Inhaler Technique:** At every visit, review how to properly use your inhalers so that you get the most of the medicines
 - ▶ lunghealth.ca/how-to-use-an-inhaler

Working with your healthcare provider

Ideally, the relationship you have with your healthcare provider is a collaborative one. Sharing information with the rest of your healthcare team is also important – they can be a big help. The best way to view your healthcare provider is as a partner – both of you are working together to improve your asthma control. To reach that goal, it is important for each of you to fulfill your responsibilities to each other and communicate fully.

- ▶ Ask questions
- ▶ Tell your healthcare provider what's bothering you
- ▶ Make sure you understand the answers
- ▶ Keep your healthcare provider fully informed about all aspects of your asthma including your level of asthma control

After you experience an asthma flare-up, review your asthma action plan with your healthcare provider to determine why it happened and what preventive measures might be taken in the future.

Where to learn more

If you have any questions, call the Lung Health Line at **1-888-344-LUNG (5864)** or email **info@lunghealth.ca**, staffed by healthcare professionals that are certified respiratory educators.

LUNG HEALTH FOUNDATION

LUNGHEALTH.CA

ASTHMA FRIENDLY SCHOOLS

ASTHMAFRIENDLY.CA

FOOD ALLERGY CANADA

FOODALLERGYCANADA.CA

PUBLIC HEALTH AGENCY OF CANADA
(general health information)

PHAC-ASPC.GC.CA

REPORTS ON WEATHER, AIR QUALITY, POLLEN & MOULD

WEATHER.CA

MEDICALERT®

(medical alert identification)

MEDICALERT.CA

TRILLIUM DRUG PROGRAM

[ONTARIO.CA/PAGE/
GET-HELP-HIGH-PRESCRIPTION-
DRUG-COSTS](http://ONTARIO.CA/PAGE/GET-HELP-HIGH-PRESCRIPTION-DRUG-COSTS)

(may assist Ontario residents who have high medicine costs in relation to their income)

OR **1-800-575-5386**



Questions about your breathing?

Call the Lung Health Line

1-888-344-LUNG (5864)

or email info@lunghealth.ca