

# CREATING ASTHMA FRIENDLY ENVIRONMENTS FOR CHILDREN & YOUTH

*asthmafriendly.ca*



# Acknowledgements

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# Introduction to the Manual

The *Creating Asthma Friendly Environments for Children and Youth* manual was developed to provide recommendations and resources for creating asthma friendly and supportive environments for children and youth with asthma who participate in after-school and weekend programs, including arts, clubs and recreational and competitive sports programs. The goal of this manual is to create supportive environments for children and youth with asthma that allow them to be full participants in sports, physical activity, playing, recreation, learning, growing and developing. Creating and maintaining asthma friendly environments demonstrates a program's commitment to the safety, well-being and achievement of children and youth, as well as its commitment to assisting them in reaching their full potential.

The goals, recommendations and implementation strategies described in this manual are evidence-based responses to the needs identified by after-school and weekend programs, including arts, clubs and recreational and competitive sports programs. These recommendations and implementation strategies were evaluated for their effectiveness through formal research projects conducted in school settings. This research demonstrated that asthma friendly and supportive schools could be created, resulting in benefits for schools and students with asthma.<sup>i,ii</sup> Benefits observed included reduced school absenteeism, increased levels of participation in physical activity and overall school preparedness, such as identifying and handling worsening asthma and emergency situations.<sup>i,ii</sup> Although these strategies have not been directly evaluated in after-school and recreation and competitive sports programs, it is anticipated that the same benefits will be seen for supporting children and youth to be fully engaged participants.

The manual is divided into five sections. Section One provides an overview of asthma. Section Two focuses on creating supportive and asthma friendly recreational and competitive sports programs. Section Three focuses on creating supportive and asthma friendly arts, crafts, after-school programs and clubs. Section Four provides recommendations and implementation strategies for creating supportive asthma environments regardless of the focus of the program. Section Five contains resources, supports and tools to assist in attaining asthma friendly environments.

Recognizing that several after-school programs and recreational and competitive sport programs occur in schools, separate resources for schools exist and can be accessed at [www.ophea.net/order](http://www.ophea.net/order). Most often, after-school programs and recreational and competitive sport programs that are held in schools must comply with the policies, procedures and protocols that exist in the host schools and in school boards. Good practice for these programs is to be familiar and consistent with school and school board policies, which are often available online on the school board's website.

# Seven Goals for Asthma Friendly Environments

Creating asthma friendly and supportive environments is a shared responsibility that requires a team approach, which includes children and youth with asthma, their parents/guardians, their health care providers, coaches and program staff.

## An asthma friendly and supportive program/team will:

- know which children and youth have asthma and/or use asthma medicine;
- ensure that reliever medications are easily accessible;
- ensure that staff are prepared to identify and handle worsening asthma and asthma emergencies;
- reduce exposure to asthma triggers;
- facilitate participation of children and youth with asthma in all activities;
- provide opportunities for staff to learn about asthma; and
- partner with children and youth with asthma, their parents/guardians and community organizations to successfully manage asthma.





# Section One: Overview of Asthma

## Why You Need to Know About Asthma

Asthma is one of the most common chronic childhood diseases, affecting as many as one in five children and youth in Ontario<sup>iii</sup>. In a group of 25 children and youth, it is likely that at least five of them will have asthma.

Asthma is a leading cause of hospital admissions, emergency room visits and school absenteeism<sup>iv</sup>. Asthma can cause disruption in a child's or youth's life. Uncontrolled asthma interrupts normal daily life, such as playing, socializing and physical activity. For instance, it can interrupt sleep, which affects a child's energy level and his or her ability to concentrate<sup>v</sup>, or it can interrupt or stop physical activity due to difficulty breathing because of the temporary inability to breathe. Children and youth with asthma can lead healthy, happy, active lives by maintaining control of asthma through appropriate medications and management of their triggers.

## What Is Asthma?

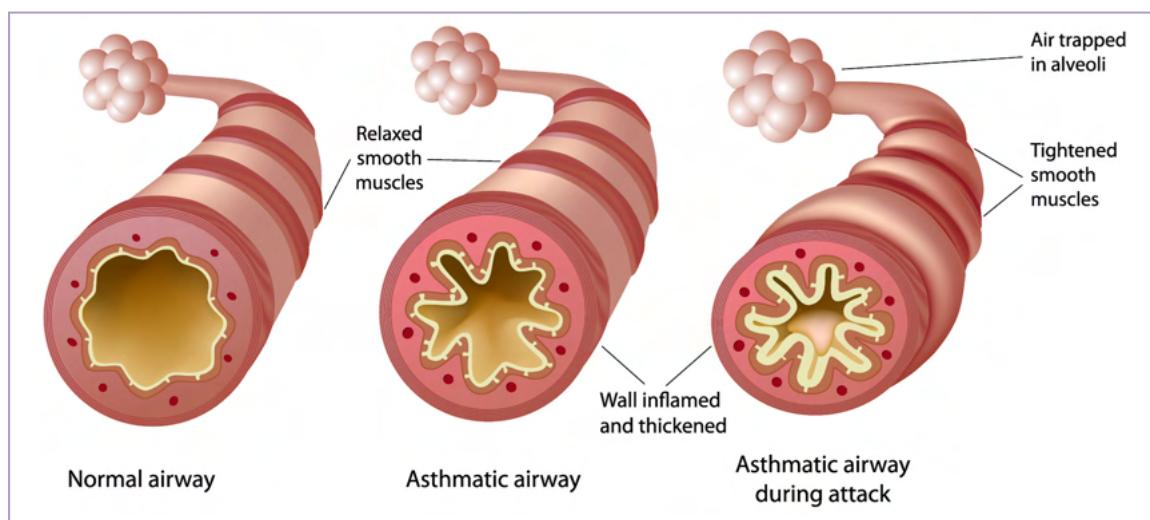
Asthma is a chronic inflammatory condition in the airways of the lungs.

Children and youth with asthma have very sensitive, twitchy airways. These sensitive airways react to things in their environment. The things in the environment that trigger or bring on asthma are called "triggers."

When children and youth with asthma come into contact with one of their triggers, three reactions may occur that cause the airways in their lungs to narrow:

1. The lining inside the airways starts to swell (becomes inflamed).
2. Excess mucus is produced and builds up in the airways.
3. The muscles that wrap around the outside of the airways contract, squeezing or constricting the airways.

*Figure 1: Illustration of a Normal Airway, Asthmatic Airway and an Asthmatic Airway during an Asthma Attack*



This narrowing of the airways can lead to symptoms of asthma such as

- coughing;
- wheezing;
- difficulty breathing; and
- chest tightness.

For some children and youth with asthma, the most common (and perhaps only) symptom is coughing.

## **What Is an Asthma Trigger?**

Triggers are things in the environment that cause, provoke or aggravate asthma symptoms (e.g., coughing, wheezing, difficulty breathing, chest tightness). Asthma triggers are typically divided into two types: irritants and allergens. Allergens invoke an immune response of the body, whereas irritants do not.

*Common triggers include*

- viral infections (e.g., colds, flu), which cause 90 percent of asthma attacks in children;
- tobacco smoke;
- air pollution;
- physical activity;
- extremes in weather;
- allergies (e.g., animals, pollen, mould, dust, dust mites); and
- strong odours (e.g., paints, permanent markers, perfumes, cleaning products, glue).

Not all people with asthma share the same triggers. Each person with asthma has his or her own set of triggers and will not always respond to them in the same way after an exposure. Sometimes not all triggers are known to the individual.

Children and youth with asthma and/or their parents/guardians should alert program staff/coaches to their asthma triggers. Because asthma triggers can change, and new ones can be identified, communication between families, coaches, and program staff is crucial. Eliminating or reducing exposures to the person's specific triggers can reduce the chances of an asthma attack as well as the need for medication.

## **What Happens When Asthma Is Triggered?**

Exposure to an asthma trigger can cause what is often called an "asthma attack" or "asthma flare-up." An asthma attack can happen quickly or can take several hours to build up. Ongoing and sustained exposure to asthma triggers can lead to more severe asthma and more frequent symptoms (e.g., coughing, shortness of breath, wheezing, chest tightness). Medication can relieve and help prevent these symptoms. Reducing or eliminating exposure to triggers can help to prevent an attack.

## Asthma Control Is Key

When asthma is well controlled, the child/youth will have infrequent symptoms and minimal to no disruption in his or her life. The level of asthma control has a lot to do with the degree of inflammation in the airways. When the airways are very inflamed, they are irritable, more twitchy and will react by narrowing to more triggers with less exposure. The poorer the asthma control, the more inflamed the airways and the more asthma symptoms are experienced.

*Asthma is well controlled when:*

- asthma symptoms are experienced fewer than four times in a week;
- the fast-acting reliever medication (usually a blue inhaler) is used less than four times in a week;
- physical activity or play is unrestricted with no asthma symptoms experienced;
- sleep is uninterrupted with no awakenings due to asthma; and
- no asthma attacks occur.

You should be concerned about the individual's level of asthma control if you observe the child/youth using the reliever medication every day, experiencing shortness of breath and/or coughing regularly (more than four times a week) or experiencing trouble breathing or coughing with physical activity. If you are concerned about a child's or youth's level of asthma control, talk to him or her (if age-appropriate) and the parents/guardians and let them know what you are observing. Asthma control can be achieved with the use of proper medications. Don't hesitate to encourage parents/guardians to follow up with their child's health care provider if you are concerned about poorly controlled asthma.

## Asthma Medications

Asthma medicines don't cure asthma. They do help prevent and relieve asthma symptoms. The two main types of asthma medications are relievers and controllers. Both are important but work in different ways to control asthma.

### Relievers (usually blue)

- work quickly (five to ten minutes) by relaxing the muscles that wrap around the airways to open up the airways and gives quick relief from asthma symptoms;
- are used when needed to relieve asthma symptoms;
- provide relief from symptoms for four to six hours; and
- must always be quickly accessible in case of asthma emergencies.

*Illustration 1: Sample of Relievers and Reliever with Spacer*



Young children (those who are younger than seven years of age) with asthma will require adult assistance to administer their medication. With proper instruction, children seven years or older have the ability to understand when their medication is needed and how to use it correctly. For asthma medications that involve a spray inhaler/puffer (i.e., metered dose inhaler), it is recommended that a spacer be attached to the inhaler to make it easier to administer the medication and ensure good delivery of medication to the lungs. For video demonstrations on how to use inhalation device visit [www.on.lung.ca/inhalationdevicevideos](http://www.on.lung.ca/inhalationdevicevideos). It is extremely important for those with asthma to have easy access to their reliever inhaler, which is usually blue. A life-threatening asthma attack can occur at any time, and it is important to have quick access to the reliever inhaler (usually blue). For any child or youth who has both asthma and anaphylaxis (a life-threatening allergy), there should be quick access to both a reliever inhaler and an epinephrine auto-injector (e.g., EpiPen, Twinject). If you are not sure if the child or youth is having a life-threatening allergic event (anaphylaxis) or an asthma attack, an epinephrine auto-injector (e.g., EpiPen, Twinject) should be given immediately, followed by a reliever inhaler.

## Controllers

- reduce and prevent inflammation (swelling) and slow the production of mucus in the airways;
- are not used in asthma emergencies because they do not open the airways quickly enough; and
- are typically taken twice each day (morning and night) and are therefore not usually needed at after-school or weekend programs but used on a daily basis at home.

*Illustration 2: Sample of Controller Medications*



## Common Asthma Situations

### Asthma and Physical Activity

Physical activity is part of a healthy lifestyle, and asthma should generally not be used as an excuse to avoid participating in physical activity. Typically, children and youth with asthma can participate in physical activity similar to those without asthma. Having asthma interrupt physical activity is a common sign that the asthma is not well controlled.

Vigorous activity can trigger asthma symptoms. This is especially the case in extremes of weather and/or when a person's asthma is not well controlled, such as when recovering from a common cold or infection. Physical activity should not be

started if the person is already experiencing asthma symptoms. Asthma symptoms can occur several minutes into the activity and/or up to 30 minutes after stopping the activity. If a reoccurring pattern of asthma symptoms with physical activity is seen, a visit to a health care provider is advised.

The following strategies can help children and youth with asthma to participate in physical activity:

- The person should not participate in physical activity if he or she is already experiencing asthma symptoms.
- Ensure a slow warm-up has occurred before activities requiring sustained exertion.
- If symptoms occur after the activity has started, the reliever inhaler can be taken.
- Sometimes a reliever inhaler is prescribed to be taken 10 to 15 minutes before the activity is started to prevent asthma symptoms from happening.
- Be aware of potential asthma triggers in the area and remove the student from triggers. Please refer to Table 1: Physical Activities and Corresponding Triggers in Appendix 1 for a list of physical activities and corresponding triggers to consider.
- Encourage the person to wear a scarf or face mask in cold weather to help warm and humidify the air.
- Move planned outdoor activities to well-ventilated indoor sites if there are extreme weather conditions (cold, hot, humid, windy), high pollen counts and/or poor air quality.
- Check pollen levels in your community at [www.theweathernetwork.ca](http://www.theweathernetwork.ca).
- Check the Air Quality Health Index (AQHI) and forecasts at [www.airhealth.ca](http://www.airhealth.ca). In general, consider modifying plans for outdoor physical activity if the AQHI is between four and ten for those with asthma or between seven and ten for the general population. Some children and youth with asthma may experience triggering of their asthma at a lower level if they have poorly controlled or severe asthma, while others with asthma may have no problems in the upper range of the AQHI if their asthma is well controlled.
- Have parents/guardians inform program or coaching staff of modifications or considerations for participating in physical activity.
- Notify parents/guardians if their child or youth is not able to fully participate in physical activity because of asthma symptoms; this can be a sign of poorly controlled asthma that needs to be followed up with their health care provider.

The risk of exercise-induced asthma symptoms can be reduced by keeping asthma well controlled. Sometimes a reliever inhaler is prescribed to be taken 10 to 15 minutes before the activity is started. If symptoms occur after the activity has started, the reliever inhaler can be taken. If the symptoms go away fully, the child/youth can start the activity again. If symptoms continue, the person should stop the activity. For children and youth identified with exercise-induced asthma, the instructor/coach should review each person's *Asthma Management Plan* form (reference Appendix 2) for specific information on managing asthma during physical activity and have a conversation with each child/youth and/or their parent/guardian to learn more about the child's/youth's asthma.

## **Identifying and Managing Worsening Asthma and an Asthma Emergency**

It is difficult to predict when an asthma attack will occur. When a child or youth experiences asthma symptoms (e.g., coughing, shortness of breath, wheezing, chest tightness), the use of the reliever medication is needed. Most children past Grade 2 can use their inhaler properly and on their own. However, some will require assistance. If a child or youth experiences asthma symptoms, follow the dosing recommendations provided to you by the parents/guardians and health care provider as outlined in the *Asthma Management Plan* form (refer to Appendix 2). In general, two puffs of the reliever are taken, with each puff separated by 30 seconds. Asthma symptoms should be relieved within 15 minutes of using the reliever inhaler. The Lung Association - Ontario's *Managing Asthma Attacks* poster is included in Appendix 3. The poster outlines how to determine the severity of the asthma attack/flare-up and the steps to take. This poster and its steps should be reviewed annually with all program or coaching staff. Individuals can request copies for staff and volunteers free of charge from the Lung Association - Ontario or copies can be ordered or downloaded from [www.on.lung.ca](http://www.on.lung.ca).

## **Asthma and Anaphylaxis**

Children and youth with both asthma and life-threatening allergies (i.e., anaphylaxis) are at a much greater risk of having a severe and fatal reaction. Understanding the signs and symptoms of asthma and anaphylaxis are necessary to manage serious reactions. Make sure that you know which children/youth have life-threatening allergies and asthma. Know what causes their anaphylaxis, the signs and symptoms of a reaction and how to manage the reaction. Materials and additional information about anaphylaxis are available through Food Allergy Canada (<http://foodallergycanada.ca/>).



## **Section Two: Recreational and Competitive Sports and Asthma**

Most recreational and competitive sport coaches and staff feel as if they could use more knowledge about how to help athletes with asthma. The purpose of this section is to help coaches better understand asthma and how to help their athletes with asthma succeed in sports. The information here is not intended to take the place of directions from an athlete's health care provider. Coaches and program staff should always follow the advice of the athlete's health care provider.

Children and youth with asthma benefit from physical activity training just as much as—and likely more so than—those without asthma. Participating in physical activity improves emotional health, maintains a healthy weight and improves running performance and aerobic fitness.

### **Why Is It Important That Coaches Understand Asthma?**

Asthma of any severity can progress to a serious, life-threatening asthma attack. Even an athlete with mild asthma can have severe, unexpected symptoms. Exercise is a common trigger for asthma flare-ups, and some children/youth with asthma only have exercise-induced symptoms. Exercise-induced bronchoconstriction or exercise-induced asthma affects some people without a history of asthma. Symptoms can be prevented if asthma is well managed by the athlete and his or her health care provider. An athlete can perform better and participate in almost any sport if his or her asthma is well controlled and breathing problems are recognized early.

### **How Does Exercise Trigger Asthma?**

At rest, most people breathe through their nose, which filters, warms and humidifies the air they breathe. With exercise, people switch from breathing through their nose to breathing through their mouth at a much faster and deeper rate. This results in cooler and drier air being inhaled into the lungs, and this type of air is thought to irritate the airways, causing the smooth muscles in the airways to tighten. Exercise-induced asthma symptoms usually occur within three to eight minutes of starting exercise and can worsen after exercise stops. Symptoms often may last for up to 60 minutes after exercise if no inhaler medication is given.

### **How Can You Prevent Exercise-Induced Asthma?**

Make sure to encourage and provide gradual warm-up and cool-down periods. Warm up for 15 to 20 minutes doing light, intermittent exercises (such as walking, jogging or short sprints). These exercises gradually increase the heart rate and prepare the respiratory and cardiovascular systems for sustained activity. The warm-up should gradually work up to the intensity of the activity to be performed. The cool-down should last a minimum of 10 minutes.

In cold weather, have athletes warm up longer (30 to 60 minutes is ideal). Athletes can protect their airways from cold air by the use of a scarf or ski mask. Breathing through the nose instead of the mouth while exercising helps keep the air warm, filtered and humidified. However, most people can only get adequate air through their nose at a lower exercise intensity.

Staying well hydrated can help athletes manage asthma symptoms. Because exercise-induced asthma is related to the cooling and drying of the airways, dehydration can make symptoms worse. Encourage drinking fluids prior to exercise and often throughout activity.

## What Are Some Training Tips for Children and Youth with Asthma?

The recommended mode of training involves the large muscles and any mode of aerobic exercise. Examples include walking, running, swimming, yoga, gymnastics and cycling. All of these examples involve large muscle groups but vary in aerobic intensity. Of course, some sports are less likely to pose problems than others for children and youth with asthma. Swimming, leisurely biking and walking are less likely to trigger asthma flare-ups, as are sports that require short bursts of activity such as baseball, football, gymnastics and shorter track and field events. Endurance sports, such as long-distance running and cycling, and sports such as soccer, lacrosse and basketball, which require extended energy output, may be more challenging. This is especially true for cold-weather sports such as cross-country skiing or ice hockey. But that doesn't mean kids with asthma can't participate in these sports. In fact, many athletes with asthma have found that, with proper training and medication, they can participate in any sport they choose.

For those working with athletes at competitive levels, experts advise training at 65 to 75 percent of maximum work rate (predicted maximum heart rate), ideally for 20 to 30 minutes, two to five days a week<sup>vi</sup>. If athletes can't tolerate continuous or sustained aerobic activity, an alternative is to do two to three minutes of high intensity intervals. The key is to gradually increase the intensity of physical activity while minimizing asthma symptoms. Routine exercise appears to be more protective than brief, high-intensity exercise.

## How Does Air Quality Affect Asthma?

Be aware of outdoor air quality and pollution. People with asthma are more sensitive to air quality, and it can be a trigger for an asthma attack. Check the Air Quality Health Index (AQHI) and forecasts at [www.airhealth.ca](http://www.airhealth.ca). In general, consider modifying plans for outdoor physical activity if the AQHI is between four and ten for those with asthma or between seven and ten for the general population. Some children and youth with asthma may experience triggering of their asthma at a lower level if they have poorly controlled or severe asthma, while others with asthma may have no problems in the upper range of the AQHI if their asthma is well controlled.



## A Common Scenario

One of your players is into the first 15 minutes of the first half of the game and is not playing like he usually does. You notice this athlete is having a hard time breathing on the field. He is bent over and breathing fast, with a high-pitched noise (a wheeze) as he exhales. You pull him out of the game, and when he is on the sideline, he explains that it is hard to get air in and his chest hurts. He is coughing occasionally.

You know he has had occasional problems with asthma in the past, and today his parents are not at the game.

## What do you do as a coach?

- Have the athlete stop whatever activity he is doing.
- Do not leave the athlete alone. This also provides reassurance to the athlete.
- Get his *Asthma Management Plan*, if available, and begin following it immediately.
- Have the athlete take the reliever inhaler (usually a blue inhaler), if available.
- If a metered dose (spray) inhaler is used, it is best to take the medication with a spacer. Repeat puffs as directed on the *Asthma Management Plan*.
- Make sure that you understand how to use the different types of asthma inhaler devices. Please refer to Appendices 8-11 for more information.
- Have the athlete sit up and breathe in slowly through the nose and out through pursed lips.
- Provide sips of room-temperature water to moisten the throat.
- If the symptoms are completely gone after using the reliever inhaler (usually blue in colour), the athlete can return to playing.
- If symptoms continue or return again that day while playing, repeat the use of the reliever inhaler. If the athlete requires greater than two rounds of the reliever inhaler during a session/practice/game, the athlete may not return to play. This is likely a sign that the athlete's asthma is not well controlled.

Section Four provides useful information and strategies for creating asthma friendly and supportive environments for children and youth participating in sports and recreation activities and programs.



## **Section Three: Arts, Crafts and Clubs and Asthma**

Many children and youth with asthma are also involved with arts, crafts and clubs both as after-school activities and on weekends. For the purpose of this section, we are referring to non-physical activity programs and clubs. The staff leading these programs need to know which participants have asthma and how to manage and prevent asthma flare-ups or worsenings, as there might be triggers in the environment that might set off or trigger asthma symptoms.

There are several substances or sources of exposures that may occur during arts-related activities that can trigger asthma symptoms. These include both allergens and irritants such as strong fumes or odours emitted from paints, ink, markers, adhesives, glues, etc. Woodworking often presents challenges for those with asthma as they may be allergic to a variety of trees, and inhalation of tree shavings and dust is extremely problematic. In this case, a fit-tested appropriate respirator is recommended, but the best approach is not to perform this type of activity. Science clubs that use chemicals also present potential exposures to asthma triggers. It is especially important in these types of programs to know which participants have asthma and their specific asthma triggers. Keep in mind that for people with asthma, new asthma triggers are often identified, and exposures previously tolerated may produce a new trigger for asthma.

In general, the best way to manage asthma and its triggers is to know the asthma triggers of your participants and to avoid exposing them to their triggers. If the planned activity will expose a participant to his or her trigger, it is important that the child/youth and parents/guardians know ahead of time so that a substitute activity can be identified or that the activity is missed. A transient exposure to a trigger can cause a significant worsening of asthma, with lasting effects that can require increased use of medication for weeks to months. If a participant thinks that there is something in the environment triggering asthma, this should be taken seriously and the participant should be removed from the exposure. Good ventilation is key to maintaining good indoor air quality for these types of programs.

The US Environmental Protection Agency has produced a downloadable book, *Environmental Health and Safety in the Arts: A Guide for K-12 Schools, Colleges and Artisans*, that provides in-depth discussion of potential exposures and how to prevent and manage exposures.

## A Common Scenario

During one of the first sessions, you ask participants to decorate a name tag to help introduce themselves to one another. Markers are passed out to decorate the name tags. You notice that one of the participants starts to clear her throat and cough during this activity. You ask her how she is feeling, and she explains that she is having some trouble breathing and that she has asthma.

## What do you do as an instructor?

- Have the participant stop the activity she is doing.
- Remove the trigger so that the person is no longer exposed. (In this case, put away the markers, increase ventilation by opening windows and using fans and have the participant go to another room or hallway with an adult staying with her.)
- Do not leave the participant alone. This also provides reassurance to the participant.
- Get her *Asthma Management Plan*, if available, and begin following it immediately.
- If the participant is still having symptoms, have her take the reliever inhaler (usually a blue inhaler), if available.
  - If using a metered dose (spray) inhaler, it is best to take the medication with a spacer. Repeat puffs as directed on the *Asthma Management Plan*.
  - Make sure that you understand how to use the different types of asthma inhaler devices. Please refer to Appendices 8-11 for more information.
- Have the participant sit up and breathe in slowly through the nose and breathe out through pursed lips.
- If the symptoms are completely gone after using the reliever inhaler (usually blue in colour) and the trigger is no longer present, the participant can return to the program.
- If symptoms continue or return or the trigger remains in the environment, then the participant's parent/guardian needs to be contacted and requested to pick the child/youth up.

The next section provides useful information and strategies for creating asthma friendly and supportive environments for children and youth participating in arts, crafts, clubs, activities and programs.



## Section Four: Creating Asthma Friendly Environments

Asthma is one of the most common chronic diseases in children and youth and is recognized as a health factor that contributes to health and educational disparities. Children and youth with asthma are more likely to experience social and emotional issues and be overweight than are those who do not have asthma. Managing asthma successfully can be difficult as it involves daily decisions regarding interpreting symptoms, determining the risk of exposure to triggers, deciding when to use and adjust medications and negotiating complex social situations. To help children and youth succeed in managing their asthma and enjoy participating in sports, clubs and leisure activities, it is important that these settings and programs provide supports to make this happen.

Creating asthma friendly environments allows children and youth with asthma to:

- maximize their potential for growth, development and achievement;
- experience positive educational, social, physical and health benefits; and
- develop lifelong skills for managing their asthma.

## How to Create Asthma Friendly Environments

In order to create asthma friendly environments for children and youth participating in arts, crafts and clubs as well as recreational and competitive sports programs, all personnel (i.e., program supervisors, program leaders, instructors, coaches, volunteers) need to be involved. Throughout the remainder of this section, the term “staff” will be used to indicate program supervisors, program leaders, instructors, coaches and volunteers. If your program is based out of a school, it is likely that they have a comprehensive asthma policy or protocol, which will serve as a good reference document.

## Strategies for Successful Implementation

### *At the Beginning of the Program or Season*

#### **1. Know which children and youth have asthma and/or use asthma medicines.**

Staff need to know which children and youth have asthma. Require all parents/guardians to complete or update a registration form that explicitly asks two questions:

- Has your child ever been told by a health care provider that he or she has asthma?
- Does your child use asthma medicines to help him or her breathe?

Provide program participants who have asthma and/or who use asthma medicines with a “*Managing Asthma Packet*” which includes the following elements:

- **Asthma Management Plan form** (sample included in Appendix 2) This form explains how to manage the child’s/youth’s asthma. The form contains the child’s/youth’s asthma photograph, emergency contacts, information about the asthma triggers and reliever medication (including where it’s located) and how to recognize and respond to worsening and emergency asthma situations. This form should be given to staff in contact with the child/youth with asthma, as well as taken to any off-site activities, excursions or games.
- **Responsibility Checklists: Child or Youth with Asthma and Their Parents/Guardians** (samples included in Appendices 4 and 5) Ask parents/guardians (and children and youth, if age/developmentally appropriate) to review and complete these checklists to confirm understanding of their roles and responsibilities related to the management of asthma.

#### **2. Provide easy access to asthma medications.**

Quick access to reliever inhalers is needed at all times because a life-threatening asthma attack can occur at any time. Allow and encourage children and youth with asthma to carry their reliever asthma medication with parental/guardian permission. Most children with asthma at the age of seven or older are capable of deciding when medication is required and have the skills to administer the medication properly. Asthma medication should not be kept in a locked storage unit. The ability to self-carry allows children and youth to take their medication when symptoms develop and supports them in developing lifelong skills for managing their asthma.

Require parents/guardians of children and youth with asthma that use a reliever inhaler to complete the *Asthma Management Plan* form. For younger children with asthma who need assistance using their medication, parents/guardians should meet with staff at least at the beginning of the program or season to provide the necessary medication and equipment and to review the steps for administering medication.

#### **3. Know how to recognize and respond to worsening asthma.**

Program staff should ensure that they understand how to recognize and respond to worsening asthma or asthma

attacks. An easy way to do this is to have a policy or guideline for managing worsening asthma for all staff that outlines how to respond appropriately and the steps to take in an asthma emergency.

Staff trainings should occur annually or before the start of a season or session to review what asthma is, medications, signs of controlled asthma, signs of worsening asthma/flare-ups and how to respond. Resources exist to support this training activity. Ophea's *Managing Asthma in Our Schools* video is directed specifically at the school setting but is applicable to settings and programs involving children and youth with asthma and can be shown during staff trainings (for more information and how to order this free resource, refer to Appendix 12). The Lung Association - Ontario's poster, *Managing Asthma Attacks*, is an excellent resource to teach staff and support them in identifying and responding accurately to worsening asthma. Free copies can be ordered from the Lung Association - Ontario's (for sample poster and information on how to order, refer to Appendix 3).

Ensure that each staff member has an up-to-date copy of an individual child's/youth's *Asthma Management Plan* form so that they will know how to recognize and respond appropriately for that person and potentially reduce triggers that can worsen asthma.

#### *Throughout the Program or Season*

##### **4. Identify and reduce exposure to common asthma triggers.**

An asthma trigger is anything in the environment (indoors, outdoors, within the body) that causes asthma symptoms (e.g., coughing, wheezing, difficulty breathing, chest tightness). Implementing strategies to reduce exposure to asthma triggers reduces the risk of having an asthma attack. Refer to Table 2 (in Appendix 1) for more information on asthma triggers. Being aware of potential asthma triggers allows program leaders to make decisions about:

- the types of art supplies that reduce scents and irritants
- the types of cleaning supplies and scented products to use (environmentally friendly and low-scent/odour products are recommended)
- the development of air quality policies related to scent and building maintenance, such as mould and pest control and pesticide use
- the timing of outdoor activities and potential triggers on external excursions

For more information on how to reduce exposures to triggers that can aggravate or provoke asthma, refer to Health Canada's *Indoor Air Quality: Tools for Schools Action Kit for Canadian Schools* ([www.hc-sc.gc.ca/ewh-semt/pubs/air/tools\\_school-outils\\_ecoles/index-eng.php](http://www.hc-sc.gc.ca/ewh-semt/pubs/air/tools_school-outils_ecoles/index-eng.php)). It is directed specifically for school settings but is applicable to settings and programs involving children and youth with asthma.

Review each child's/youth's *Asthma Management Plan* form to know his or her asthma triggers.

##### **5. Encourage children and youth with asthma to participate in physical activity, sports, clubs and the arts.**

All children and youth with asthma should be encouraged to participate in physical activity. According to the Canadian 24-Hour Movement Guidelines<sup>vii</sup>, all children between the ages of 5 and 17 years should participate in activity of moderate to vigorous intensity for 60 minutes a day to achieve health benefits.<sup>vii</sup>

Completed *Asthma Management Plan* forms are central to having children and youth with asthma being full

participants as it outlines steps to take if symptoms occur. For some children and youth it may also outline that they need to use their reliever inhaler prior to physical activity. In addition, it identifies potential asthma triggers that could interfere with the ability to participate. Ophea provides several resources to effectively support children and youth with asthma in being physically active. (For more information on these free resources and how to order them, refer to Appendix 12.)

When leaving the program's home base for competitions or excursions, take the *Asthma Management Plan* forms and ensure that the children and youth with asthma have their reliever inhaler with them in case of a flare-up or worsening asthma (asthma attack). It is important that parents/guardians of children/youth with asthma know the details of off-site trips or events several days in advance, in case special arrangements need to be made or additional medicines used (e.g. antihistamines). If overnight events are planned, students with asthma may need to bring additional asthma medicines that are normally kept at home but that will need to be used on the trip.

## **6. Provide asthma education opportunities to staff.**

Providing asthma education to staff enables them to identify common asthma triggers, understand asthma signs and symptoms and increase their confidence with managing asthma attacks and supporting children and youth with asthma to be full participants. Order Ophea's *Managing Asthma in Our Schools* video (for more information, refer to Appendix 12), and view annually during staff training.

## **7. Collaborate with children and youth with asthma, their parents/guardians, community partners and public health to create asthma friendly environments.**

Program administrators/leaders/coaches, at least annually, need to distribute the roles and responsibilities checklists to clearly identify and communicate the expectations of staff, children and youth with asthma (if seven years or older or developmentally appropriate) and their parents/guardians.

It is essential to communicate with children and youth with asthma and their parents/ guardians about their roles and expectations, such as

- completing the *Asthma Management Plan* form;
- supplying asthma medicines and necessary equipment;
- meeting with staff if staff assistance with medication is needed in terms of when and how medicines are to be used;
- being responsible for the use of medications, such as not sharing with peers; and
- working with the child's or youth's health care professional to support good asthma control.

There are a variety of organizations and community partners who have created resources and are available for consultation to support sports, recreation, arts and crafts and clubs to promote full participation of children and youth with asthma. Refer to Appendix 12 for additional asthma resources available to meet your needs.

To support coaches of competitive sport programs please refer to Appendix 6: Management of Asthma - Coaches' Checklist for Athletes with Asthma. An implementation support tool is also available for program instructors and coaches of recreational sports and activities in Appendix 7: Management of Asthma - Instructors'/Coaches' Checklist for Participants with Asthma.

# Creating Asthma Friendly Environment Flow Chart



## **Step One: Establish a process to identify children and youth with asthma.**

Include questions about asthma on registration forms (e.g., Does your child have asthma? Does your child use asthma medicines?).



## **Step Two: Allow children and youth with asthma easy access to asthma medication.**

Asthma medications should never be locked up. Children seven years or older are usually capable of deciding when and how to use their asthma inhalers. If children require help administering medication, ensure it is easy to access.



## **Step Three: Establish a process for handling worsening asthma.**

Display the *Managing Asthma Attacks* poster in various locations (e.g., gym, classroom/activity room).



## **Step Four: Identify and reduce common asthma triggers.**

Take action to reduce exposure to asthma triggers (e.g., dust, moulds, pests, fumes, fragrances).



## **Step Five: Encourage children and youth with asthma to participate in physical activity and play.**

Support children and youth with asthma to participate in physical activity, the arts, recreation and play.



## **Step Six: Provide opportunities for asthma education.**

Provide learning opportunities for staff on

- asthma signs and symptoms;
- triggers;
- medication and use; and
- asthma emergencies.



## **Step Seven: Collaborate with families and community partners to create asthma friendly environments.**

Work with families to learn how to help support their children/youth with asthma. If necessary, consult with asthma experts in the community on the review and update of asthma-related policies and procedures.



## Section Five: Supports and Resources for Implementation

This final section of the manual provides implementation supports and resources to assist in creating asthma friendly environments for children and youth with asthma so that they are able to reach their full potential.

### Appendix 1: Asthma Triggers

**Table 1: Physical Activities and Corresponding Triggers**

Activities	Triggers to Consider
<b>Outdoor Sports and Recreation</b> Walking/cycling/running/hiking Soccer Football Baseball/softball Lacrosse Ultimate Frisbee Rock climbing Golf Skiing/snowboarding Tennis	<ul style="list-style-type: none"><li>• Outdoor allergies: pollen (trees, grasses, flowers, weeds) and moulds</li><li>• Air pollution</li><li>• Humidity</li><li>• Hot or cold or windy weather</li></ul>
Swimming	<ul style="list-style-type: none"><li>• Humidity</li><li>• Mould</li><li>• Pool chemicals</li></ul>
<b>Indoor Sports and Recreation</b> Martial arts Basketball Volleyball Gymnastics Wrestling Box lacrosse Climbing Dance Racquet sports Fitness activities <ul style="list-style-type: none"><li>• Cardio machines</li><li>• Weight machines</li><li>• Group classes</li></ul>	<ul style="list-style-type: none"><li>• Moulds present in some gyms</li><li>• Cleaning chemicals</li><li>• Gym mats (these can become very dusty)</li><li>• Scents (perfume, cologne)</li></ul>
Indoor ice hockey and skating	<ul style="list-style-type: none"><li>• Cold air</li><li>• Arena chemical fumes</li><li>• Fumes from ice surfacing vehicle</li><li>• Moulds</li></ul>

Adapted with permission from the Asthma Society of Canada's *Breathe Easy: A Guide for Being Active and Healthy with Asthma*, <http://asthma.ca/pdfs/ExerciseGuideEN.pdf>.

**Table 2: Common Indoor Triggers of Asthma and Steps to Reduce Exposure**

Triggers	Steps to Reduce Exposure
<b>Strong Fumes and Chemicals</b> <ul style="list-style-type: none"> <li>Art supplies, cleaning supplies and perfumes often act as triggers for asthma</li> </ul>	<ul style="list-style-type: none"> <li>Art supplies that can trigger asthma include tempera paints, Magic Markers, indelible markers, whiteboard markers, rubber cement, epoxies and resins.</li> <li>Therefore, no- to low-scent products should be used.</li> <li>All around, it is best to use no- to low-scent products. For cleaning supplies, these typically include green products.</li> <li>Consider creating low-scent policies, which should include perfume and cologne.</li> </ul>
<b>House Dust Mites</b> <ul style="list-style-type: none"> <li>Tiny insects that feed on dead skin cells</li> <li>Found in the fibres of stuffed chairs, pillows and carpets</li> </ul>	<ul style="list-style-type: none"> <li>Remove carpets, stuffed chairs, upholstered furniture and pillows.</li> <li>Frequently damp-dust and vacuum daily (use a vacuum with a High Efficiency Particulate Air [HEPA] filter).</li> <li>Cleaning should occur after participants have left for the day.</li> </ul>
<b>Mould</b> <ul style="list-style-type: none"> <li>Spores from mould can become airborne and trigger asthma</li> <li>Black spots or white crumbles around windows or on the ceiling are common signs of mould.</li> <li>High indoor humidity promotes the growth of mould and dust mites</li> </ul>	<ul style="list-style-type: none"> <li>Keep indoor humidity less than 50 percent. Humidity can be measured by a hygrometer, available at hardware stores. Dehumidifiers and air conditioners help to reduce humidity levels.</li> <li>Report leaks and water damaged material to environmental services.</li> <li>Remove water damaged materials (carpet, underpad, ceiling tile, etc.). Repair leaks and promote air circulation.</li> <li>Aquariums and humidifiers require regular cleaning and are not encouraged because of the possibility of mould growing in and around them.</li> <li>For additional strategies related to indoor air quality, consult Health Canada's <i>Indoor Air Quality: Tools for Schools Action Kit for Canadian Schools</i> at <a href="http://www.hc-sc.gc.ca/ewh-semt/pubs/air/tools_school-outils_ecoles/index-eng.php">www.hc-sc.gc.ca/ewh-semt/pubs/air/tools_school-outils_ecoles/index-eng.php</a>.</li> </ul>
<b>Pests (mice, rats, cockroaches)</b>	<ul style="list-style-type: none"> <li>Clean up all food particles.</li> <li>Follow integrated pest management system guidelines</li> </ul>
<b>Pets/Animals</b>	<ul style="list-style-type: none"> <li>Animals should not live in the classroom or be brought to school.</li> </ul>

**Table 3: Common Outdoor Triggers of Asthma and Steps to Reduce Exposure**

Triggers	Steps to Reduce Exposure
<b>Pollen</b> <ul style="list-style-type: none"> <li>Pollen is in the air from spring to fall. Pollen counts are highest on sunny, dry, windy days.</li> </ul>	<ul style="list-style-type: none"> <li>Keep windows closed on high pollen days.</li> <li>Monitor pollen counts on your local weather station or go to <a href="http://www.theweathernetwork.ca">www.theweathernetwork.ca</a>.</li> </ul>
<b>Mould</b>	<ul style="list-style-type: none"> <li>Spores from mould can become airborne and trigger asthma.</li> <li>Outdoor mould levels are higher from spring to fall, especially in damp weather, in freshly cut grass and in decaying leaves. However, outdoor mould is commonly found throughout the year.</li> </ul>
<b>Air Pollution</b> <ul style="list-style-type: none"> <li>Air pollution is a common trigger in children and youth with asthma.</li> </ul>	<ul style="list-style-type: none"> <li>Check the Air Quality Health Index (AQHI) and forecasts at <a href="http://www.airhealth.ca">www.airhealth.ca</a>. In general, consider modifying plans for outdoor physical activity if the AQHI is between four and ten for those with asthma or between seven and ten for the general population. Some children and youth with asthma may experience triggering of their asthma at a lower level if they have poorly controlled or severe asthma, while others with asthma may have no problems in the upper range of the AQHI if their asthma is well controlled. Exercise inside instead of outside on poor air quality days.</li> <li>Keep windows closed.</li> </ul>
<b>Extremes in Weather (humidity, hot, cold, wind)</b>	<ul style="list-style-type: none"> <li>Weather extremes, including extremes in temperatures, humidity and wind, can trigger asthma.</li> </ul>

## Appendix 2: Asthma Management Plan Form

Visit [www.on.lung.ca](http://www.on.lung.ca) to access an AODA-compliant version or to order free copies of The Lung Association - Ontario's *Asthma Management Plan* form.

<p>Place Child/Youth Photo Here</p>	<b>ASTHMA MANAGEMENT PLAN</b> (To be completed by parent/guardian)		
CHILD/YOUTH NAME _____		AGE _____	
PROGRAM _____			
<b>EMERGENCY CONTACT</b> (List in priority of contact)			
Name _____		Relationship _____	Daytime Phone _____
1. _____		Alternate Phone _____	
2. _____			
3. _____			
<b>KNOWN ASTHMA TRIGGERS</b>			
<input type="checkbox"/> Colds/flu <input type="checkbox"/> Physical activity <input type="checkbox"/> Cold weather <input type="checkbox"/> Odours <input type="checkbox"/> Smoke <input type="checkbox"/> Pets <input type="checkbox"/> Pollen <input type="checkbox"/> Mould <input type="checkbox"/> Dust <input type="checkbox"/> Allergies (specify): _____			
<input type="checkbox"/> Anaphylaxis (specify allergy): _____ <input type="checkbox"/> Other (specify): _____			
<b>RELIEVER INHALER (FAST-ACTING, USUALLY BLUE)</b>			
	Use reliever inhaler _____ name of medicine _____ in the dose of _____ number of puffs   Spacer provided? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Reliever inhaler is used to:			
<input type="checkbox"/> Relieve symptoms being experienced (see MANAGING ASTHMA ATTACKS below)			
<input type="checkbox"/> Other (please explain) _____			
<input type="checkbox"/> Requires assistance to access and use reliever inhaler. Make sure it is readily accessible by instructor/coach.			
I agree _____ is responsible for carrying his/her fast-acting reliever inhaler at all times including off-site activities, or will provide the coach/instructor with the inhaler (if he/she is not able to use independently), and that the inhaler is to be used as outlined in this plan.			
Parent/Guardian signature _____		Child/Youth signature _____	
Date _____			
<b>MANAGING ASTHMA ATTACKS</b>			
<p style="text-align: center;"><b>TAKE ACTION</b></p> <p>If any of the following symptoms occur:</p> <ul style="list-style-type: none"><li>• Continuous coughing</li><li>• Trouble breathing</li><li>• Chest tightness</li><li>• Wheezing (whistling sound in chest)</li></ul> <p>Person may also be restless, irritable and/or very tired.</p> <p style="text-align: right;">Step 1: Immediately use fast-acting reliever inhaler (usually a blue inhaler). Use a spacer if provided.</p> <p style="text-align: right;">Step 2: Check symptoms. Only return to normal activity when all symptoms are gone. If symptoms get worse or do not improve within 10 minutes, this is an emergency – follow steps below.</p>			
<p style="text-align: center;"><b>EMERGENCY</b></p> <p>If any of the following symptoms occur:</p> <ul style="list-style-type: none"><li>• Breathing is difficult and fast</li><li>• Cannot speak in full sentences</li><li>• Lips or nail beds are blue or gray</li><li>• Skin on neck or chest sucked in with each breath</li></ul> <p>Person may also be anxious, restless and/or very tired.</p> <p style="text-align: right;">Step 1: Immediately use fast-acting reliever inhaler (usually a blue inhaler). Use a spacer if provided. Call 911 for an ambulance. If possible, stay with person.</p> <p style="text-align: right;">Step 2: If symptoms continue, use reliever inhaler every 5-15 minutes until medical help arrives.</p>			
<p style="text-align: center;"><b>While waiting for medical help to arrive:</b></p> <p>✓ Have person sit up with arms resting on a table (do not have person lie down unless it is an anaphylactic reaction) ✓ Do not have person breathe into a bag   ✓ Stay calm, reassure the person, and stay by his/her side ✓ Notify parent/guardian or emergency contact</p>			

## Appendix 3: Managing Asthma Attacks Poster

Visit [www.on.lung.ca](http://www.on.lung.ca) to access an AODA-compliant version or to order free copies of The Lung Association - Ontario's *Managing Asthma Attacks* poster.

# Managing Asthma Attacks

TAKE ACTION	
If any of the following occur: <ul style="list-style-type: none"><li>• Continuous coughing</li><li>• Trouble breathing</li><li>• Chest tightness</li><li>• Wheezing (whistling sound in chest)</li></ul> <p>Student may also be restless, irritable and/or very tired.</p>	<p><b>Step 1:</b> Immediately use fast-acting reliever inhaler (usually a blue inhaler). Use a spacer if provided.</p> 
	<p><b>Step 2:</b> Check symptoms. Only return to normal activity when all symptoms are gone. If symptoms get worse or do not improve within 10 minutes, this is an <b>emergency</b> – follow steps below.</p>
EMERGENCY	
If any of the following occur: <ul style="list-style-type: none"><li>• Breathing is difficult and fast</li><li>• Cannot speak in full sentences</li><li>• Lips or nail beds are blue or gray</li><li>• Skin on neck or chest sucked in with each breath</li></ul> <p>Student may also be anxious, restless and/or very tired.</p>	<p><b>Step 1:</b> Immediately use fast-acting reliever inhaler (usually a blue inhaler). Use a spacer if provided.</p>  <p><b>Call 911</b> for an ambulance. Follow 911 communication protocol with emergency responders.</p> 
	<p><b>Step 2:</b> If symptoms continue, use reliever inhaler every 5-15 minutes until medical help arrives.</p>
<p><b>While waiting for medical help to arrive:</b></p> <ul style="list-style-type: none"><li>✓ Have student sit up with arms resting on a table (<b>do not</b> have student lie down unless it is an anaphylactic reaction).</li><li>✓ <b>Do not</b> have student breathe into a bag.</li><li>✓ Stay calm, reassure the student, and stay by his/her side.</li><li>✓ Notify parent/guardian or emergency contact.</li></ul>	

This publication is available in Accessibility for Ontarians with Disabilities Act (AODA) electronic format at [www.on.lung.ca/resources](http://www.on.lung.ca/resources).

To learn about asthma call The Lung Association Lung Health Information Line at  
**1-888-344-LUNG (5864)** or visit [www.on.lung.ca](http://www.on.lung.ca)

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## **Appendix 4: Management of Asthma — Parents/Guardians of Children/Youth with Asthma Responsibility Checklist**

Parents/guardians are responsible for providing the program with up-to-date information about their child's/youth's asthma. Information should be provided at the start of each session/season and when the child's or youth's asthma information changes. Educate your child so that they understand:

- common asthma triggers;
- signs of worsening asthma and when to ask for help;
- the importance of being physically active;
- the importance of carrying medication with them at all times; and
- how to self-administer medication.

The responsibility checklist includes things you can do to assist in the management of your child's asthma while participating in the program/sport.

### **Step 1: Establish a process to identify that your child has asthma.**

- Tell the program and staff that your child has asthma. When the registration form asks about health information, inform them about your child's asthma and use of asthma medicines.
- Consider having your child wear medical identification (e.g., a MedicAlert™ bracelet or similar item) to identify that he or she has asthma.

### **Step 2: Ensure your child has easy access to asthma medication.**

- Complete and return any required medication administration forms.
- If your child is capable of using his or her own inhaler, ensure that he or she
  - has his or her reliever inhaler (usually blue) accessible at all times (the inhaler needs to be with him or her at all times); and
  - knows when and how to use the inhaler correctly.
- Make sure that the inhaler is kept in an accessible location so that it is within reach at all times.
- If your child needs help to use the inhaler, provide information on how to give the inhaler medications correctly and review the technique with staff caring for your child.
- Prepare your child/youth for off-site games, events and excursions and discuss any issues with the supervising staff. Remember to send the reliever medication (usually blue) and other medications your child may need to take during the trip. If the trip is overnight, remember to send the controller medication as well, if prescribed.
- Ensure that your child knows how and when to use asthma medication safely. Make sure he or she;
  - has his or her name on the medication;
  - does not share medication with others;
  - knows when the medication is empty and a new one is needed;
  - tells you (parent/guardian) every time he or she takes his or her medication; and
  - tells a staff member if he or she needs help taking the medication independently and/or needs help.

### **Step 3: Establish a process for handling worsening asthma.**

- Complete and return the *Asthma Management Plan* form to the program. This form contains your child's photograph, emergency contacts, information about your child's asthma triggers and reliever medication (including where it's located) and how to recognize and respond to asthma symptoms and emergency situations. Pictures should be recent photographs of the head and shoulders, approx. 2.0" x 2.5". This form will be posted in the staff room/health room and/or where appropriate (given parent/guardian permission).
- Review with your child the *Asthma Management Plan* form and how to prevent and handle asthma symptoms.

### **Step 4: Identify and reduce exposure to common asthma triggers for your child.**

- Talk to the instructor/coach/staff about the triggers that affect your child/youth.

### **Step 5: Encourage your child to participate in physical and recreational activities and competitive sports.**

- Talk to your child about the benefits of participating in physical and recreational activities. Do not let your child's/youth's asthma be a barrier to being active.

### **Step 6: Provide opportunities for asthma education (e.g., for staff, coaches, other parents/guardians and volunteers).**

- Be an asthma champion and talk to the staff about how to support your child and create asthma friendly experiences.

## **Appendix 5: Management of Asthma — Children/Youth with Asthma Responsibility Checklist**

### **Step 1: Complete the process to identify yourself as a child or youth with asthma.**

- Have your parent/guardian complete an *Asthma Management Plan* form that explains how to manage your asthma.
- Give your instructor/coach a copy of the *Asthma Management Plan* form so he or she will know about your triggers, your medications and what to do if your asthma gets worse.

### **Step 2: Ensure you have easy access to asthma medication.**

- Have your reliever inhaler (usually blue) with you at all times or know where it is stored and how to get it quickly.
- Know how and when to use your asthma medication safely by using the following guidelines:
  - Make sure your medication has your name on it.
  - Do not share your medication with friends.
  - Know when your medication is empty and you need a new one.
  - Tell your parent/guardian and instructor/coach every time you take your medication.
  - Tell your instructor/coach if you are uncomfortable with taking your own medication and need help.

### **Step 3: Establish a process for handling worsening asthma.**

- Tell your instructor/coach when your asthma is bothering you.
- Know how to;
  - recognize when your asthma is worsening;
  - use your asthma medications; and
  - tell your instructor/coach that you are having problems breathing and whether or not you have used your asthma medication. If you don't have your asthma medication, make sure that you let the instructor/coach know.

### **Step 4: Identify and reduce common asthma triggers.**

- Know what triggers your asthma (what makes your asthma worse) and have a plan (know the steps to take) for handling your asthma triggers.
- If you think something is triggering your asthma and causing you troubled breathing or coughing, let your instructor/coach know.

### **Step 5: Participate in physical and recreational activities and competitive sports.**

- Do not let your asthma get in your way of being physically active or enjoying recreational activities. If asthma symptoms start, stop the activity and take your reliever inhaler. Only return to your activity if your symptoms are completely gone.

### **Step 6: Engage in asthma education.**

- Learn about asthma by;
  - attending asthma education programs;
  - seeing your doctor or asthma care provider on a regular basis; and
  - checking out [www.asthmakids.ca](http://www.asthmakids.ca).
- If you feel comfortable talking about asthma, let your friends know that you have asthma, what it means and how they can help you.

## **Appendix 6: Management of Asthma — Coaches' Checklist for Athletes with Asthma**

### **Step 1: Establish a process to identify children and youth with asthma.**

- Know which athletes have asthma and/or use asthma medicine.
  - Have parents/guardians complete a registration form that asks explicitly whether or not their child has asthma or uses asthma medicines.

### **Step 2: Allow children and youth with asthma easy access to asthma medication.**

- Make sure athletes have the right inhaler with them at all times and that it is full and not expired. Help athletes get the most out of their medication — encourage athletes to use a spacer with their spray inhalers!
  - Medications should not be shared. If athletes are having problems or are out of medication, they need to be seen by their health care provider.
- Know which athletes require assistance to use their inhaler.
- Be prepared to assist an athlete with asthma with his or her inhaler when needed.

### **Step 3: Establish a process for handling worsening asthma.**

- Have a completed *Asthma Management Plan* form for each child/youth with asthma with you, and provide easy access to it for other staff and volunteers. Also, have older athletes keep a copy with them in their sports bag. This form outlines the steps for handling worsening asthma and when to seek urgent medical attention.
- Never encourage an athlete to “tough it out” and don’t allow others to tease the athlete.
- Know how to handle worsening asthma or an asthma flare-up. (Review the Lung Association - Ontario’s *Managing Asthma Attacks* poster, in Appendix 3.)
  - Do not leave an athlete having an asthma attack alone.
  - Never encourage an athlete who has any asthma symptoms (e.g., coughing, shortness of breath, wheezing, chest tightness) to continue the activity.

### **Step 4: Identify and reduce exposure to common asthma triggers.**

- Know the athletes’ triggers and be aware of potential triggers that could affect the athletes’ performance (poor air quality, freshly mowed grass, extremes in weather).
- Assess whether or not indoor/outdoor environment triggers (poor air quality, freshly painted gym, varnished floors) exist prior to starting physical activity.
- Notify children and youth and their parents/guardians well in advance of off-site trips and identify activities involved. Ensure that reliever inhalers (usually blue) are easily accessible and that you know how to handle worsening asthma. Bring copies of your athletes’ *Asthma Management Plan* forms.

## **Step 5: Encourage children and youth with asthma to participate in physical and recreational activities and competitive sports.**

- Start open communication with athletes and parents about asthma and their needs for support to manage asthma early. Make sure that you understand when it is time for the athlete to take a break so that flare-ups can be managed before they become emergencies.
- Incorporate a warm-up period and a cool-down period with all strenuous physical activity.
- Permit use of reliever inhaler (usually blue) 10 to 15 minutes prior to activity, if directed by the athlete's health care provider.

## **Step 6: Provide opportunities for asthma education (e.g., for staff, coaches, parents/guardians and volunteers).**

- Continue to learn about asthma to help athletes train to meet their highest potential.
  - Use asthma resources created by leading community and professional organizations to learn more about asthma.

## **Step 7: Collaborate with others (e.g., health care providers, parents/guardians, coaches and program leaders) to create an asthma friendly environment (setting/program).**

- Inform parents/guardians when their athlete show signs of poorly controlled and/or worsening asthma.
- Consult parents/guardians and, depending on the age, the athlete, if you have questions about an athlete's asthma.

## **Appendix 7: Management of Asthma — Instructors'/Coaches' Checklist for Participants with Asthma**

### **Step 1: Establish a process to identify children and youth with asthma.**

- Know which children and youth have asthma and/or use asthma medicine.
  - Have parents/guardians complete a registration form that asks explicitly whether or not their child has asthma or uses asthma medicines.

### **Step 2: Allow children and youth with asthma easy access to asthma medication.**

- Make sure children and youth have the right inhaler with them at all times and that it is full and not expired. Help participants get the most out of their medication — encourage using a spacer with their spray inhalers!
  - Medications should not be shared! If participants are having problems or are out of medication, they need to be seen by their health care provider.
- Know which participants require assistance to use their inhaler.
- Be prepared to assist a participant with asthma with his or her inhaler when needed.

### **Step 3: Establish a process for handling worsening asthma.**

- Have a completed *Asthma Management Plan* form for each child/youth with asthma with you, and provide easy access to it for other staff and volunteers. Also, have older participants keep a copy with them in their bag. This form outlines the steps for handling worsening asthma and when to seek urgent medical attention.
- Know how to handle worsening asthma or an asthma flare-up. (Review the Lung Association - Ontario's *Managing Asthma Attacks* poster, in Appendix 3.)
  - Do not leave a participant having an asthma attack alone.
  - Never encourage a child who has any asthma symptoms (e.g., coughing, shortness of breath, wheezing, chest tightness) to continue the activity.

### **Step 4: Identify and reduce exposure to common asthma triggers.**

- Know the participants' asthma triggers and be aware of potential triggers that could affect their performance (poor air quality, strong scents/fumes/vapours, dust, freshly mowed grass, extremes in weather).
- Notify children and youth and their parents/guardians well in advance of activities and off-site trips so that they can be prepared to manage potential triggers. Ensure that reliever inhalers (usually blue) are easily accessible and that you know how to handle worsening asthma. Bring copies of your participants' *Asthma Management Plan* forms on off-site excursions.

### **Step 5: Encourage children and youth with asthma to participate in physical and recreational activities and competitive sports.**

- Start open communication with participants and their parents about asthma and their needs for support to manage asthma early. Make sure that you understand when it is time for the participant to take a break so that asthma flare-ups/attacks can be managed before they become emergencies.
- Assess whether or not indoor/outdoor environmental triggers exist to support participants' involvement in the activity.
- Permit use of reliever inhaler (usually blue) 10 to 15 minutes prior to activity, if directed by the participant's health care provider.

**Step 6: Provide opportunities for asthma education (e.g., for staff, coaches, parents/guardians and volunteers).**

- Continue to learn about asthma.
  - Use asthma resources created by leading community and professional organizations to learn more about asthma.

**Step 7: Collaborate with others (e.g., health care providers, parents/guardians, coaches and program leaders) to create an asthma friendly environment (setting/program).**

- Inform parents/guardians when their child show signs of poorly controlled and/or worsening asthma.
- Consult parents/guardians if you have questions about a participant's asthma and, if age appropriate, speak directly to the participant about his or her asthma.

## Appendix 8: Using A Diskus Inhaler

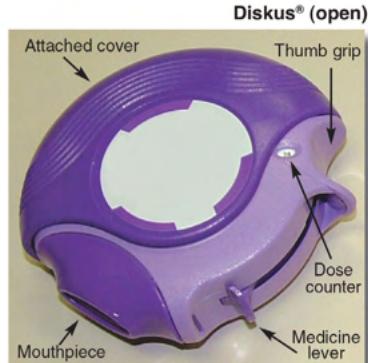
Visit [www.on.lung.ca](http://www.on.lung.ca) for an AODA-compliant version of the Using a Diskus Inhaler Fact Sheet.

B R E A T H E  
the lung association

### Using A Diskus® Inhaler

The Diskus® is a round plastic device containing powdered medicine. The medicine is inside foil strips that protect the powder from moisture. The device has a dose counter which counts down after each dose.

1. To open the Diskus®, hold it in one hand.
2. Put the thumb of the other hand into the thumb grip and slide it back until a click is heard. You will now be able to see the mouthpiece and medicine lever.
3. With the mouthpiece facing you, slide the medicine lever back all the way until a click is heard.



**To make sure you don't lose the medicine after the device is loaded:**

*Do not shake the Diskus®  
Do not tilt the mouthpiece down  
Do not drop it  
Do not breathe into the Diskus®*

4. Breathe out.
5. Seal your lips around the mouthpiece and breathe in quickly and deeply through your mouth.
6. Hold your breath for 5-10 seconds.
7. Close the Diskus® by sliding the thumb grip back towards you as far as it goes, to its original position. The mouthpiece and medicine lever will now be hidden.
8. If you need another dose, repeat steps 1-7.

#### Any questions?

Call The Lung Association Lung Health Information Line at **1-888-344-LUNG (5864)** to speak to a Certified Respiratory Educator, email [info@on.lung.ca](mailto:info@on.lung.ca) or visit [www.on.lung.ca/inhalationdevicevideos](http://www.on.lung.ca/inhalationdevicevideos)

This publication is available in Accessibility for Ontarians with Disabilities Act (AODA) electronic format at [www.on.lung.ca/resources](http://www.on.lung.ca/resources).

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When you can't breathe, nothing else matters.™

### FACT Sheet

#### Important Points to Remember

The Diskus® must be closed fully in between each dose to reload the device.

After taking an inhaled steroid medicine, it is important to rinse with water, gargle and spit out.

#### Care & Maintenance

Keep the Diskus® dry. Store at room temperature.

Do not store it in damp places such as a bathroom.

Keep the device closed when not in use.

The mouthpiece can be cleaned with a tissue or a dry cloth.

Saliva (spit) on the mouthpiece should be removed with a tissue after each use.

#### Diskus® (closed)



## Appendix 9: Using A Turbuhaler

Visit [www.on.lung.ca](http://www.on.lung.ca) for an AODA-compliant version of the Using a Turbuhaler Fact Sheet.

**B R E A T H E**  
the lung association

# Using A Turbuhaler®

## FACT Sheet

Unlike a Metered Dose Inhaler (puffer) that sprays out a puff of medicine, the medicine in a Turbuhaler® is a dry powder.

**Note:** If you are using the inhaler for the first time, check the instructions given with your device to see if you need to prime (prepare) it before use.

1. Holding it upright with the grip at the bottom, unscrew and remove the cover.
2. Turn the grip all the way in one direction then back all the way in the other direction. You will hear a click during this step, which means the medicine is loaded.

**To make sure you don't lose the medicine after the device is loaded:**

*Do not shake the Turbuhaler®  
Do not tilt the mouthpiece down  
Do not drop it  
Do not breathe into the Turbuhaler®*

3. Breathe out away from the Turbuhaler®.
4. Place the mouthpiece between your teeth and seal your lips around it.
5. Breathe in quickly and deeply.
6. Hold your breath for 5-10 seconds.
7. If a second dose is required, repeat steps 2-6.
8. When finished, replace the Turbuhaler® cover and twist until it is tightly closed.

After taking an inhaled steroid medication, it is important to rinse with water, gargle and spit out.

To view a video on how to use the Turbuhaler®, visit [www.on.lung.ca/inhalationdevicevideos](http://www.on.lung.ca/inhalationdevicevideos)

**Any questions?**

Call The Lung Association Lung Health Information Line at **1-888-344-LUNG (5864)** to speak to a Certified Respiratory Educator, or email [info@on.lung.ca](mailto:info@on.lung.ca).

This publication is available in Accessibility for Ontarians with Disabilities Act (AODA) electronic format at [www.on.lung.ca/resources](http://www.on.lung.ca/resources).

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**Mouthpiece**  
**Cover**  
**Dose Counter (on some inhalers)**  
**Grip (different colour for different inhalers)**

### Frequently Asked Questions

**What is the noise I hear when I shake my Turbuhaler®?**

What you hear when you shake a Turbuhaler® is not medicine. It is a drying agent that keeps the medicine dry.

**How do I know when my Turbuhaler® is empty?**

Some have a dose counter that shows you how many doses are left. For others, a red mark appears in a little window when there are 20 doses left and it's time to order a new inhaler. When this red mark fills the counter window, the Turbuhaler® is empty.

**Why do I not feel that I am inhaling any medicine when I use the device?**

The amount of powder you inhale is very small, so you may not feel or taste it. As long as you follow the instructions and the inhaler is not empty, you will be getting the medicine.

### Care and Maintenance

Since the Turbuhaler® contains dry medicine, keep moisture and water away from it.

Saliva (spit) on the mouthpiece should be removed with a dry tissue after each use.

**When you can't breathe, nothing else matters.™**

 Ontario

## Appendix 10: Using An MDI

Visit [www.on.lung.ca](http://www.on.lung.ca) for an AODA-compliant version of the Using an MDI Fact Sheet.



### Using An MDI

A Metered Dose Inhaler (MDI), also known as a puffer, sprays out a puff of medicine from a pressurized canister.



**Note:** If you are using the inhaler for the first time, or if it has not been used for a few days, check the instructions given with your device to see if you need to prime (prepare) it before use.

Watch videos on how to use your inhalers at [www.on.lung.ca/inhalationdevicevideos](http://www.on.lung.ca/inhalationdevicevideos)

1. Remove the cap from the inhaler.
2. Shake the inhaler well 5-6 times before each puff.
3. Breathe out all the way.
4. Hold the inhaler upright. There are two ways to use the inhaler:
  - a. Closed mouth- place the mouthpiece between your teeth and form a good seal with your lips or;
  - b. Open mouth- hold the mouthpiece 2-3 finger widths in front of your open mouth.
5. As you start to inhale slowly, press the inhaler canister down to release a puff of medicine. Continue to breathe in slowly all the way.
6. Hold your breath for 5-10 seconds.
7. If you need another puff, wait 30-60 seconds, then repeat steps 2-6.
- Note:** Check manufacturer's instructions as they may vary slightly for each device.
8. When finished, put the cap back on the inhaler.

#### Have any questions?

Call The Lung Association Lung Health Information Line at **1-888-344-LUNG (5864)** to speak to a Certified Respiratory Educator, email us at [info@on.lung.ca](mailto:info@on.lung.ca) or visit [www.on.lung.ca](http://www.on.lung.ca).

### FACT Sheet

#### Important Points to Remember

Take only one puff at a time and shake the inhaler well before each use.

When using this type of inhaler, it is often better to use it with a spacer (a valved holding chamber that helps the medicine reach the lungs).

After taking an inhaled steroid medicine, it is to rinse with water and gargle.

If you have a school aged child, make sure the school has information about your child's asthma and your permission to allow them to carry their reliever inhaler.

#### Care & Maintenance

Always keep the cap on the inhaler when it is not being used.

Follow the cleaning instructions provided with your inhaler.

Make sure the hole where the medicine comes out of the inhaler is clean - use a dry cloth or tissue to wipe off any powder in the hole.

Store the inhaler at room temperature and make sure it doesn't get too hot or too cold.

Know when the inhaler is empty - follow instructions provided with your device.

This publication is available in Accessibility for Ontarians with Disabilities Act (AODA) electronic format at [www.on.lung.ca/resources](http://www.on.lung.ca/resources).

## Appendix 11a: Using An MDI and Spacer with Mask

Visit [www.on.lung.ca](http://www.on.lung.ca) for an AODA-compliant version of the MDI and Spacer with Mask Fact Sheet.



## FACTSheet

### MDI and Spacer with Mask

**Note:** If you are using the inhaler for the first time, or if it has not been used for a few days, check the instructions given with your device to see if you need to prime (prepare) it before use.

1. Remove the cap from the inhaler.
2. Shake the inhaler well 5-6 times before each puff.
3. Keep the inhaler upright and insert the mouthpiece into the back of the spacer.
4. Hold the spacer with one hand and put the mask firmly over the nose and mouth, making sure there is a good seal.
5. As you start to inhale slowly, press the inhaler canister down with your other hand to release a puff of medicine into the spacer. Continue to breathe in slowly all the way.
6. Keep the mask on the face for 6 breaths.
7. If you need another puff, wait 30-60 seconds, then repeat steps 2-6.

Watch videos on how to use your inhalers at [www.on.lung.ca/inhalationdevicevideos](http://www.on.lung.ca/inhalationdevicevideos)



**Note:** Check manufacturer's instructions as they may vary slightly for each device.

After taking an inhaled steroid medicine, it is important to rinse with water and gargle. For young children who are not able to do this, give them a drink of water.



#### Important Points to Remember

Some spacers make a whistling sound to let you know you are breathing in too fast. Breathing in slowly will help the medicine better reach the lungs.

The narrow part of the mask should be over the nose.

At around the age of 5, or as soon as they're able to inhale the medicine properly through a mouthpiece, children should be switched to a spacer with a mouthpiece.



#### Have any questions?

Call The Lung Association Lung Health Information Line at **1-888-344-LUNG (5864)** to speak to a Certified Respiratory Educator, email us at [info@on.lung.ca](mailto:info@on.lung.ca) or visit [www.on.lung.ca](http://www.on.lung.ca).

This publication is available in Accessibility for Ontarians with Disabilities Act (AODA) electronic format at [www.on.lung.ca/resources](http://www.on.lung.ca/resources).

## Appendix 11b: Using An MDI and Spacer with Mouthpiece

Visit [www.on.lung.ca](http://www.on.lung.ca) for an AODA-compliant version of the MDI and Spacer with Mouthpiece Fact Sheet.



### MDI and Spacer with Mouthpiece

**Note:** If you are using the inhaler for the first time, or if it has not been used for a few days, check the instructions given with your device to see if you need to prime (prepare) it before use.

1. Remove the cap from the inhaler and the spacer.
2. Shake the inhaler well 5-6 times before each puff.
3. Keep the inhaler upright and insert the mouthpiece into the back of the spacer.
4. Breathe out all the way.
5. Holding the spacer with one hand, place the spacer mouthpiece between the teeth and seal with the lips.
6. As you start to inhale slowly, press the inhaler canister down with your other hand to release a puff of medicine into the spacer. Continue to breathe in slowly all the way.
7. Take spacer out of your mouth and hold your breath for 5-10 seconds.

*[If you cannot take a slow deep breath in, breathe in 2-3 times as deeply as possible while keeping a good seal on the spacer mouthpiece.]*

8. If you need another puff, wait 30-60 seconds, then repeat steps 2-7.

**Note:** Check manufacturer's instructions as they may vary slightly for each device.



When finished, put the cap back on the inhaler and spacer.

Watch videos on how to use your inhalers at [www.on.lung.ca/inhalationdevicevideos](http://www.on.lung.ca/inhalationdevicevideos)

If you have a school aged child, make sure the school has information about your child's asthma and your permission to allow them to carry their reliever inhaler.

#### Have any questions?

Call The Lung Association Lung Health Information Line at **1-888-344-LUNG (5864)** to speak to a Certified Respiratory Educator, email us at [info@on.lung.ca](mailto:info@on.lung.ca) or visit [www.on.lung.ca](http://www.on.lung.ca).

### FACT Sheet

A spacer (e.g. AeroChamber®), also called a "valved holding chamber", helps the medicine reach the lungs. At one end is the opening where the Metered Dose Inhaler (MDI), also known as a puffer, attaches to deliver a puff of medicine. The other end has a mouthpiece or mask.

#### Spacer



#### Care & Maintenance

Inhalers and spacers need to be cleaned regularly - check the instructions given with your devices.

Always keep the cap(s) on the inhaler(s) and spacer when they are not being used.

Make sure the hole where the medicine comes out of the inhaler is clean - use a dry cloth or tissue to wipe off any powder in the hole.

Store the inhaler at room temperature.

Know when the inhaler is empty - follow instructions provided with your device.

This publication is available in Accessibility for Ontarians with Disabilities Act (AODA) electronic format at [www.on.lung.ca/resources](http://www.on.lung.ca/resources).

## **Appendix 12: Additional Asthma Resources**

### **Ophea Asthma Education Resources**

Note: Ophea asthma resources can be accessed at <http://teachingtools.ophea.net/supplements/asthma-education-initiative>

Managing Asthma In Our Schools video

After-School, Sport and Recreation Settings Asthma Kit

Asthma and Physical Activity: What Physical Educators and Coaches Need to Know

The Basics of Asthma, Allergies, and Anaphylaxis Fact Sheet

### **Community Resources**

Food Allergy Canada

[www.foodallergycanada.ca](http://www.foodallergycanada.ca)

Asthma Society of Canada

[www.asthma.ca](http://www.asthma.ca)

[www.asthmakids.ca](http://www.asthmakids.ca)

MedicAlert Foundation of Canada

[www.medicalert.ca](http://www.medicalert.ca)

Health Canada

[www.hc-sc.gc.ca/index-eng.php](http://www.hc-sc.gc.ca/index-eng.php)

The Lung Association - Ontario

[www.on.lung.ca](http://www.on.lung.ca)

[www.kidsasthma.ca](http://www.kidsasthma.ca)

Ontario Ministry of Education

[www.edu.gov.on.ca/eng/](http://www.edu.gov.on.ca/eng/)

Ontario Ministry of the Environment and Climate Change

[www.airqualityOntario.com](http://www.airqualityOntario.com)

The Weather Network

[www.theweathernetwork.ca](http://www.theweathernetwork.ca)

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