

ASTHMA AND PHYSICAL ACTIVITY: WHAT PHYSICAL EDUCATORS AND COACHES NEED TO KNOW





IN ONTARIO, ASTHMA AFFECTS ALMOST ONE IN FIVE CHILDREN (20%) AGED 0 TO 9 YEARS OF AGE.¹

Physical activity is important for the healthy growth and development of children and youth. According to the *Canadian Physical Activity Guidelines* (2011), children and youth should accumulate at least 60 minutes of moderate – to vigorous – intensity physical activity daily in order to receive health benefits.^{2,3}

Not only is physical activity part of a healthy lifestyle, but daily physical activity (DPA) is also a mandatory component of the daily instruction for students as part of a comprehensive health and physical education program in Ontario elementary schools. DPA is included as a curriculum expectation for every grade within the physical fitness component of Strand A—Active Living in the Ontario Curriculum, Grades 1-8: Health and Physical Education, Interim Edition (2010). Asthma should not be used as an excuse to avoid participating in DPA or other forms of physical activity. Unless children are experiencing asthma symptoms and/or have a cold that is making their asthma worse, they should be able to participate in physical activity.

Asthma: Definition, Symptoms, and Triggers

Asthma is a chronic inflammatory disease of the airways in the lungs. Inflammation in the airways makes the lungs more sensitive to substances in our environment called “asthma triggers.” When people with asthma are exposed to their triggers, they may experience a narrowing of the airways (resulting from the contraction [squeezing] of the airway muscles), increased airway inflammation, and extra mucus production, making breathing more difficult. Narrowing of the airways causes people to experience asthma symptoms.

Asthma symptoms include:

- ↳ difficulty breathing;
- ↳ coughing;
- ↳ wheezing (whistle sound);
- ↳ chest tightness; and
- ↳ shortness of breath.

Not all people with asthma have the same triggers. Triggers can bring on an asthma attack, which can be life-threatening if left untreated. Physical activity is a common asthma trigger in children. Exposure to other common asthma triggers can occur during physical activity and steps should be taken to reduce exposure to extremes in weather (cold and hot), poor air quality, dusty gym mats, pollen (trees, grasses, flowers, weeds), mould (found in decaying leaves, water-damaged areas, areas around swimming pools and skating rinks), and cleaning products.



1 ICES Report, Burden of Childhood Asthma, May 2004.

2 Canadian Society for Exercise Physiology, Canadian Physical Activity Guidelines for children 5–11 years, 2011.

3 Canadian Society for Exercise Physiology, Canadian Physical Activity Guidelines for youth 12–17 years, 2011.

Access to Reliever Medication

All children with asthma should have easy access to their reliever inhaler. Easy access to this medication is crucial to relieve symptoms and prevent life-threatening asthma. Relievers may also be called “rescue” medication and tend to be blue in colour. Relievers work by opening up the airways quickly (within 5 to 10 minutes) and are used on an as-needed basis to reverse/relieve asthma symptoms.

Many children with asthma also need to use controller medications, which are typically taken in the morning and before bed and are therefore kept at home. They work by controlling the inflammation in the airways and are important for keeping asthma under good control.



Exercise-Induced Asthma (EIA)

Vigorous activity is a common asthma trigger, resulting from the cooling and drying of the airways caused by breathing through the mouth (versus the nose) at a rapid rate. For children with asthma, this fast-paced breathing triggers airway narrowing and the experience of asthma symptoms. EIA symptoms can occur several minutes into the activity and up to 30 minutes after completion of the activity. Asthma symptoms from exercise are often due to poorly managed asthma, and a visit to a health care provider may be required. EIA is more commonly experienced when activity is performed:

- 👉 in cold environments;
- 👉 in conjunction with an upper respiratory infection (cold);
- 👉 with sustained running;
- 👉 during high pollen count days; or
- 👉 during poor air quality days.

Preventive Strategies for Exercise-Induced Asthma

Physical activity is part of a healthy lifestyle, and asthma should not be used as an excuse to avoid participating in physical activity. With rare exceptions, children with asthma can participate in physical activity similar to children without asthma. The following strategies can be used to support children with asthma participate in physical activity.

- 👉 Ensure a slow warm-up has occurred before activities requiring sustained running.
- 👉 Be aware of potential asthma triggers in the area and remove the child from triggers.
- 👉 Encourage the child to wear a scarf or facemask in cold weather to help warm and humidify air.
- 👉 Move planned outdoor activities to well-ventilated indoor sites if there are extreme weather conditions, high pollen counts, or poor air quality.
- 👉 Check pollen levels in your community at theweathernetwork.ca and air quality forecasts and smog alerts at airqualityontario.com.
- 👉 Have parents/guardians inform staff if any modifications or considerations are required for participation in physical activity.
- 👉 Notify parents/guardians if the child is not able to fully participate in physical activity because of asthma symptoms; this is a sign of poorly controlled asthma.

Uncontrolled Asthma

Physical activity is a common asthma trigger, placing physical educators and coaches in a good position to identify uncontrolled asthma in children. With controlled asthma, children with asthma are able to participate in physical activities similar to children without asthma. Uncontrolled asthma can lead to a child withdrawing from physical activity and sport. If you suspect a child's asthma is not well controlled, inform the parents/guardians as a visit to a health care provider may be required.

The following situations suggest that asthma is not well controlled and that parents/guardians should be informed.

- 👉 The child has regular asthma symptoms.
- 👉 The reliever medication is used more than four times per week, including times prior to physical activity.
- 👉 The child develops asthma symptoms during or after physical activity.
- 👉 The reliever medication is used more than every four hours on a given day.

Identifying and Treating an Asthma Emergency

When a person with asthma experiences distressful asthma symptoms, it is called an asthma "flare-up," "episode," or "attack." If an asthma attack is severe and left untreated, it can lead to death. Therefore, it is crucial to know how to recognize and respond to an asthma emergency.



Recognizing an Emergency Situation

It is an asthma emergency if **any** of the following symptoms occur:

- 👉 Breathing is difficult and fast.
- 👉 Speaking is difficult.
- 👉 Lips or nail beds are blue or grey.
- 👉 Skin on neck or chest is sucked in with each breath.
- 👉 You have **any** doubt about the child's condition.
- ★ **The child may also be anxious, confused, or tired.**

Emergency Action Steps

- 👉 Call 911 and wait for the ambulance. **DO NOT** drive the child to the hospital.
- 👉 Immediately use the fast-acting reliever inhaler (usually blue).
- 👉 Continue to use reliever inhaler every 5 to 15 minutes if symptoms continue until medical help arrives.
- 👉 Have the child sit up, with arms resting on a table. (Do not have the student lie down unless it is a life-threatening allergic event.)
- 👉 Stay calm, and reassure and stay with the child.
- 👉 Notify parents/guardians or emergency contacts.

Did you know that many school boards/schools, clubs, and provincial sport organizations already have Emergency Action Plans to help you prepare and respond to an asthma emergency? Contact your organization for more information!



Strategies for Managing Exercise-Induced Asthma

- ✚ The child should NOT participate in physical activity if already experiencing asthma symptoms.
- ✚ If the child starts having asthma symptoms after starting physical activity, have the child stop the activity and take the reliever inhaler (two puffs given one puff at a time, with 30 seconds between puffs). When the child is fully recovered, he/she may resume the activity.
- ✚ If the symptoms are not relieved within 10 to 15 minutes after using the reliever inhaler, repeat the two puffs of the reliever medication, monitor the child's status, and do not allow him/her to return to the activity.
- ✚ If the child's asthma symptoms do not improve, or worsen, this is an emergency situation and 911 should be called. Follow the steps for **Identifying and Treating an Asthma Emergency**.

For more information on exercise-induced asthma, visit lung.ca/asthma.

What You Can Do: Create Asthma Friendly Settings

Children with asthma need extra support to ensure they are full participants in all aspects of physical activity. Strategies to achieve this include:

- ✚ knowing your school board/ school/club/ organization's policies related to asthma;
- ✚ knowing which children have asthma and how their asthma is managed;
 - Meet with parents/guardians to learn about the student's asthma triggers and to obtain a completed Asthma Action Plan (available at on.lung.ca) for managing and preventing asthma symptoms, triggers, and medications.
- ✚ ensuring asthma medications are easily accessible;
- ✚ being prepared to identify and handle worsening asthma and asthma emergencies (order "Managing Asthma Attacks" posters and reference sheets from The Lung Association at on.lung.ca);
- ✚ being prepared to assist with administering asthma medication;
- ✚ being aware of the possible need to adapt an activity for children with asthma;
- ✚ encouraging children to communicate when their asthma is bothering them and removing them from potential triggers;
- ✚ not overprotecting or isolating the children with asthma;
- ✚ discussing asthma with your group;
 - Let them know how to identify worsening asthma and the steps to help their peers. Children aged 7 to 11 can visit: asthmaKids.ca; and
- ✚ ensuring there is a way to contact Emergency Medical Services (911) should an emergency arise.



Resources and Supports

Ophea
ophea.net

Ontario Physical Education Safety Guidelines
safety.ophea.net

Public Health School Asthma Program
asthmainschools.com

The Asthma Society of Canada's toll-free number: 1-866-787-4050
or websites asthma.ca and asthmaKids.ca

The Lung Association's Asthma Action Helpline:
1-888-344-LUNG (5864) or visit on.lung.ca




Asthma.ca
Asthma Society of Canada

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Public Health School Asthma Program

 Ontario