

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



# 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 frequent asthma symptoms (more than three times a week).
- The reliever medication is used more than three times per week.
- The child often 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 asthma symptoms, it is called an asthma “flare-up,” “episode,” or “attack.” If an asthma flare-up 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/laboured and fast
- Unable to speak in full sentences (can only speak a few words without needing to take another breath)
- Lips or nail beds are blue or grey
- Skin on neck or chest is sucked in with each breath
- The child may also be anxious, restless and/or very tired

### Emergency Action Steps

1. Immediately use the fast-acting reliever inhaler (usually a blue inhaler). Use a spacer if provided.
2. Call 911 for an ambulance. Follow 911 communication protocols with emergency responders.
3. If symptoms continue, use reliever inhaler every 5 to 15 minutes until medical help arrives.
4. While waiting for medical help to arrive:
  - Have the child sit up, with arms resting on a table (do not have the child lie down unless it is an anaphylactic reaction).
  - Remain with the child. Stay calm and reassure the child.
  - Notify the parents/guardians or emergency contacts.

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

## **IN ONTARIO, ASTHMA AFFECTS ALMOST ONE IN FIVE CHILDREN (20 PER CENT) AGED ZERO TO NINE YEARS OF AGE.<sup>1</sup>**

Physical activity is important for the healthy growth and development of children and youth. According to the *Canadian 24-Hour Movement Guidelines for Children and Youth (2016)*, children and youth should accumulate at least 60 minutes of moderate – to vigorous – intensity physical activity daily in order to receive health benefits.

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. 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:

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

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, hot and humidity), 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.

### **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 attacks. 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.

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<sup>1</sup>'SickKids'. Asthma Prevalence Crude Rates. 2018. Retrieved from [http://lab.research.sickkids.ca/oasis/wp-content/uploads/sites/6/2018/07/prevrt\\_upto2016.pdf](http://lab.research.sickkids.ca/oasis/wp-content/uploads/sites/6/2018/07/prevrt_upto2016.pdf)

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 at a rapid rate. For children with asthma, an increase in breathing rate associated with physical activity can trigger the narrowing of airways 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 is recommended. 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](http://theweathernetwork.ca) and air quality forecasts and smog alerts at [airqualityontario.com](http://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.

## 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 with 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). Continue to monitor the child's status. When the child is fully recovered, they 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, continue to monitor the child's status, and do not allow them to return to the activity.
- If the child's symptoms do not improve, or worsen, this is an emergency situation and 911 should be called.

## 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 (to access a sample asthma protocol, visit The Ontario Physical Education Safety Guidelines, available at [safety.ophea.net](http://safety.ophea.net));
  - As per the Ontario Ministry of Education's Policy/Program Memorandum (PPM) No. 161: Supporting Children and Students with Prevalent Medical Conditions (Anaphylaxis, Asthma, Diabetes, and/or Epilepsy) in Schools, 2018 all school boards in Ontario are required to have a policy or policies in place to support students in schools who have asthma, anaphylaxis, diabetes, and/or epilepsy.
- Knowing which children have asthma and how their asthma is managed;
  - Meet with parents/guardians and the child (if age appropriate) to learn about the child's asthma triggers and to obtain a completed Plan of Care for managing and preventing asthma symptoms, triggers, and medications.
- Ensuring asthma inhalers are easily accessible;
  - PPM No. 161 requires principals to meet with parents/guardians, school staff (as appropriate) and student (as appropriate) to complete the Plan of Care. The Plan of Care includes information on the student's medication and where it is kept, daily management, and triggers.
- Being prepared to identify and handle worsening asthma and asthma emergencies (order "Managing Asthma Attacks" posters and reference sheets from The Lung Association at [lungontario.ca](http://lungontario.ca));
- Being prepared to assist with administering asthma medication. If a school employee believes that a student is experiencing an asthma emergency, they are permitted to administer medication without risk of prosecution (Ryan's Law, 2005);
- Being aware of the possible need to adapt an activity for children with asthma;
- Encouraging children to communicate when their asthma is bothering them;
- Removing children 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](http://asthmakids.ca).
- Ensuring there is a way to contact 911 should an emergency arise.



# Resources and Supports

## **Ophea**

[ophea.net](http://ophea.net)

[safety.ophea.net](http://safety.ophea.net)

[asthmafriendly.ca](http://asthmafriendly.ca)

## **Asthma Canada**

1-866-787-4050

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

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

## **Lung Association - Ontario**

1-888-344-LUNG (5864)

[info@lungontario.ca](mailto:info@lungontario.ca)

