

# Weather Policy & Guidelines

## 1) Purpose

- a) Ontario Cycling (OC) considers the health and safety of all cyclists an absolute priority. We must always be mindful that we do not potentially cause harm to a venue site when cycling during bad weather conditions (e.g., Heavy rain on BMX tracks, parks, or trails, etc.) or move forward with an event in weather conditions, which may increase the risk of the participants safety.
- b) The purpose of this policy is to provide guidelines to assist Commissaires, event organizers, clubs, and teams in making informed decisions when encountering different types of weather to minimize participant risk. Decisions may range from modifications in the time schedule and the route, alteration of the start time, finish venue, course adjustments, neutralization or cancellation of a stage or cancelation of the whole event.

## 2) Scope

- a) This policy applies to all OC sanctioned cycling events, club, and team activities. Extreme weather conditions may include, but are not limited to, lightening, thunder, strong winds, air pollution (AQ), extreme temperatures, poor visibility, freezing rain, hail, snow, etc.
- b) OC strongly recommends that local weather forecasts be monitored closely by the event organizer, club, and team activity organizer and/or Commissaires. Alerts should be activated through a weather app (WeatherCan is recommended) via cell phone, for the latest updates on local weather.

## 3) Possible Weather Conditions

- a) Lightning / Thunder
- b) Possible Tornado / Funnel Clouds
- c) Air Pollution (AQ)
- d) Extreme heat and/or Humidity
- e) Extreme cold
- f) Strong winds
- g) Poor visibility
- h) Other Weather Conditions (Fog, mist, rain, haze, freezing rain/sleet, hail, and snow)

#### **4) Actions**

- a) Depending on the severity of the weather conditions that may occur, the following actions may be taken:
  - i. No action
  - ii. Modification of the schedule
  - iii. Time delay in the schedule
  - iv. Modification of the start venue
  - v. Modification of the start time
  - vi. Modification of the finish venue
  - vii. Modification of finish time
  - viii. Use of an alternative course / route
  - ix. Neutralization of a section of the stage / race
  - x. Cancellation of the stage / race

#### **5) Cancellation or Event Postponement**

- a) At any point where a decision is to be made regarding stopping, delaying, postponing, shortening, or cancelling a race or cycling recreational event due to the severity of weather conditions, the decision will be made by the Event PCP in consultation with his / her partners, the Event Organizer. If this is a cycling recreational event, the decision would be made by the Event Organizer.
- b) If the decision is to start an event, either on time or through postponement, the event may still be cancelled at any time if the conditions become dangerous.

#### **6) Lightning / Thunder Policy**

- a) Local weather should be monitored by the event organizer/club/team representative and events will not be held during conditions of thunder and lightning, excessively high winds or in the unlikely event of a possible tornado.
- b) OC highly recommends that each event have a daily weather update posted in strategic positions throughout the registration and entrance area. In the case that there is no option to do this (i.e. club/team activity), there should be a directive to all members to check their website, socials and/or ride app for updated information on upcoming activities.
- c) Organizers, participants, and commissaries will be informed of these policies, and the following policy is posted in multiple areas.
- d) In the event of thunder or lightning the course will be evacuated, and shelter found. Thirty minutes must pass from the last clap of thunder or flash of lightning before riders may resume their event/activity. The next occurrence begins a new 30-minute cycle. No outdoor activities will be initiated when thunder and/or lightning is present. If thunder and lightning occur once activities have started, utilize the "flash-to-bang" method for determining the

distance of lightning. Count the number of seconds between seeing the lightning and hearing the clap of thunder. If the time between “flash to bang” is 30 seconds or less, it is time to stop the event and seek shelter. A rough rule of thumb is lightning that is closer than 10km poses a risk to participants. The formula is roughly the time between “flash to bang” divided by 3 equals the distance away in KM. For example, if the time from flash to bang is 30 seconds, then the storm is 10 km away. For example,  $30 \text{ seconds} / 3 = 10\text{km}$ .

- e) The storm’s distance and your location will determine when there is a need for evacuation to a safe shelter. A safe shelter is defined as a sturdy building that has metal plumbing or wiring, or both, to electrically ground the structure. A shed or a shack is not a safe shelter.
- f) Stay away from tall or individual trees, lone objects (flagpoles), metal objects, standing pools of water, and open fields. Avoid close contact with others by maintaining a distance of 15-20 feet.
- g) Allow 30 minutes to pass after the last sound of thunder or sight of lightning before resuming any outdoor activities, **INCLUDING WALKING OUTSIDE OF YOUR SHELTER.**
- h) The Lead Commissaire or Ride Leader for Club/Team Activities, in consultation with their partners will be responsible for making decisions regarding stoppage/delay/evacuation due to thunder, lightning, or other extreme weather patterns.

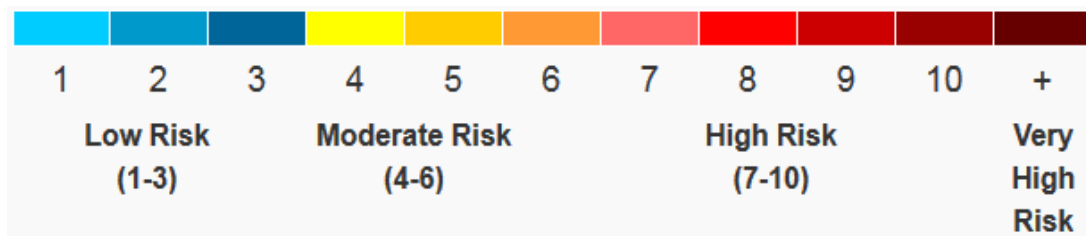
## 7) Air Quality Policy

- a) Air quality in Ontario is generally good, but due to various reasons, that might not be the case on the day you have a cycling event or activity planned. As a coach, event organizer, commissaire or club/team administrator or Ride Leader, it is important to monitor your local air quality to ensure participants in any outdoor cycling activities are protected from exposure to poor air quality.
- b) The AQHI communicates the following four items:
  - i. It measures the air quality in relation to your health on a scale from 1 to 10. The higher the number, the greater the health risk associated with the air quality. When the amount of air pollution is very high, the number will be reported as 10+.
  - ii. A category that describes the level of health risk associated with the index reading (e.g., Low, Moderate, High, or Very High Health Risk).
  - iii. Health messages customized to each category for both the general population and the ‘at risk’ population.
  - iv. Current hourly AQHI readings and maximum forecast values for today, tonight, and tomorrow.

The AQHI is designed to give you this information along with some suggestions on how you might adjust your activity levels depending on your individual health risk from air pollution. Follow this guide on how to use the AQHI.

**c) How is the AQHI calculated?**

- i) The AQHI is calculated based on the relative risks of a combination of common air pollutants that is known to harm human health. These pollutants are:
  - (1)Ozone (O3) at ground level,
  - (2)Particulate Matter (PM2.5/PM10) and
  - (3)Nitrogen Dioxide (NO2).
  
- ii) The Air Quality Health Index (AQHI) presents the relative health risk for short-term exposure to common air pollutants on a scale of 1 to 10+. There are four health categories:



- iii) If the AQHI value is low (1 to 3), plan outdoor activities.
- iv) If the AQHI value is moderate (4 to 6), reduce the intensity of the outdoor activity (or reschedule).
- v) If the AQHI value is high (over 7), move the session indoors, cancel or reschedule it to another time.
  
- vi) The following procedures are to be followed depending on the Air Quality Index:

Air Quality Category	Message	Action for Events
<b>Good</b> Visibility: 15 km and Up <b>AQHI 1-3</b>	Ideal air quality for outdoor activities	Ideal conditions for an event
<b>Moderate/ Unhealthy for Sensitive Groups</b> Visibility: 5-14 km	Be aware of health effects of smoke and related symptoms	Be aware of health effects of smoke and related symptoms

<b>AQHI 4-6</b>		
<b>Unhealthy</b> Visibility: 2.5-4 km <b>AQHI 7</b>	Reduce or re-schedule strenuous activities, especially if you experience symptoms	Consider reduction of length of events and/or cancellation junior and younger events  Consider delaying the start of the event for up to 2-hours.  Cancel event based on the forecast Provide warning to competitors with respiratory issues
<b>Unhealthy</b> Visibility: 2.5-4 km <b>AQHI 8</b>	Re-schedule strenuous activities	Cancel event. Cancel Junior Events
<b>Very Unhealthy</b> Visibility 1.5-2 km <b>AQHI 9-10</b>	Avoid prolonged strenuous activities and stay indoors if possible	Cancel all events and training
<b>HAZARDOUS</b> Visibility: < 1.0 km <b>AQHI 10+</b>	Avoid all strenuous activities and stay indoors	Cancel all events and training

### 8) Extreme Heat Policy

- a) Once the temperature reaches **40° C**, all activities must be cancelled.
- b) Once the temperature reaches between 35° - 39° C, the cancellation of races should be seriously considered.
- c) With high heat temperatures across Ontario, all clubs must take precautions to ensure all members are safe. It is the responsibility of the club executive, coaches, and ride leaders to monitor local temperatures and decide exactly which precautions must be taken- including the cancelling of any race or ride.

d) Extreme Heat Activity Chart:

<b>HUMIDEX VALUE</b>	<b>DISCOMFORT AT REST</b>	<b>RISK OF OVERHEATING DURING EXERCISE</b>	<b>ACTIVITY MODIFICATION</b>
Below 24° C	None	Low	N/A
25° C - 29° C	None	Low to Moderate	Consider shorter rides, especially for young riders
30° C - 34° C	Some	<b>Moderate</b> - Athletes should be monitored	Shorter rides, longer breaks between motos, water breaks
<b>35° C - 39° C</b>	<b>High</b>	<b>High - Athletes should be monitored closely</b>	<b>Consider cancelling racing. Practices, or easy rides only. Make sure there are shaded areas for breaks. Have plenty of water on hand</b>
<b>40+° C</b>	<b>EXTREME</b>	<b>EXTREME</b>	<b>Activity Cancelled</b>

e) Preventative Measures

- i. Where possible activities should be scheduled for cooler times of the day.
- ii. Ensure that everyone participating has enough water / hydration. Recognize that even well-hydrated athletes can be affected by heat illness. Plan for plenty of breaks and keep rides shorter.
- iii. Other factors to consider in determining risk include, but are not limited to:
 

Not being acclimatized	Fitness Level
Hypo hydration	Hyper hydration
Use of medications/supplements	Pre-existing medical conditions
- iv. Early warning signs to consider include but are not limited to:
 

Flushed face	Hyperventilation or shortness of breath
Headache	Dizziness
Tingling arms	Goose Bumps
Chilliness	Poor coordination
Confusion, agitation, uncooperativeness	

f) **Potential Risks of Extreme Heat Exposure**

**i. Heat Cramps:**

1. These are the mildest form of heat trauma and are commonly related to low body sodium and chloride levels.
  2. Symptoms include:
    - (a) Weakness
    - (b) Muscle cramps
    - (c) Collapse with low blood pressure
  3. Treatment:
    - (a) Rest briefly and cool down.
    - (b) Drink clear juice or an electrolyte-containing sports drink
    - (c) Practice gentle, range-of-motion stretching and gentle massage of the affected muscle group.
    - (d) Don't resume strenuous activity for several hours or longer after heat cramps go away.
    - (e) See a doctor if cramps don't go away within one hour or so.
- ii. **Heat Exhaustion** - A more severe form of heat trauma.
1. Symptoms include:
    - (a) Cool, moist skin with goose bumps when in the heat
    - (b) Heavy sweating
    - (c) Faintness
    - (d) Dizziness
    - (e) Fatigue
    - (f) Weak, rapid pulse
    - (g) Low blood pressure upon standing.
    - (h) Muscle cramps
    - (i) Nausea
    - (j) Headache
  2. Treatment includes:
    - (a) Stop all activity and rest.
    - (b) Move to a cooler place.
    - (c) Drink cool water or sports drinks
  3. Contact your doctor if your signs or symptoms worsen or if they don't improve within one hour. If you are with someone showing signs of heat exhaustion, seek immediate medical attention if they become confused or agitated, loses consciousness, or is unable to drink. You will need immediate cooling and urgent medical attention if your core body temperature (measured by a rectal thermometer) reaches 40° C or higher.
- iii. **Heat Stroke** - is a medical emergency! Call 911 or your local emergency number immediately if you are caring for someone, such as a cycling teammate or club member, who has a high body temperature and is either unconscious or confused.

1. While waiting for help - cool the person right away by:
  - (a) Moving them to a cool place if you can.
  - (b) Applying cold water to large areas of the skin or clothing; and
  - (c) Fanning the person as much as possible

## 9) High Heat and Humidity Combined (Humidex)

### a) Heat and Humidity Policy

- i. Once the humidex range reaches **40**, all activities must be cancelled.
- ii. Once the range reaches between 30 - 39, the cancellation of races should be seriously considered.

### b) What is Humidex?

- i. Humidex is a term to measure how hot we feel; to describe when heat and humidity combine at uncomfortable or dangerous levels.
- ii. High heat and humidity lead to two problems in the exercising body:
  1. Increased core body temperature
  2. Dehydration
  3. Increased body temperature (hyperthermia) leads to decreased muscle endurance, which means the muscle's ability to contract repeatedly or in a sustained manner over long periods of time. High core temperatures also cause a shift in energy production from aerobic to anaerobic mechanisms, which means the body must use up its muscle energy stores more rapidly. Unfortunately, during a longer athletic event, the rate of adding energy (sports drinks, energy bars, gels, etc.) can't keep up with the rate of losing energy when heat and humidity are high. Finally, high body temperature causes a decrease in blood flow to the heart as blood pools in the limbs. If the heart doesn't get as much blood, it can't pump as much oxygenated blood back to the muscles.
  4. Dehydration often occurs long before some athletes realize it or before cramps set in. Athletes can lose as much as 2 to 8 % of their body weight during high intensity exercise, and the rate of fluid absorption from the gut just can't keep up with that rate of loss. Dehydration causes a decrease in VO<sub>2</sub>max, which means the body can't utilize oxygen as efficiently to provide energy. Dehydration also contributes to the decrease of heart blood pumping mentioned above.

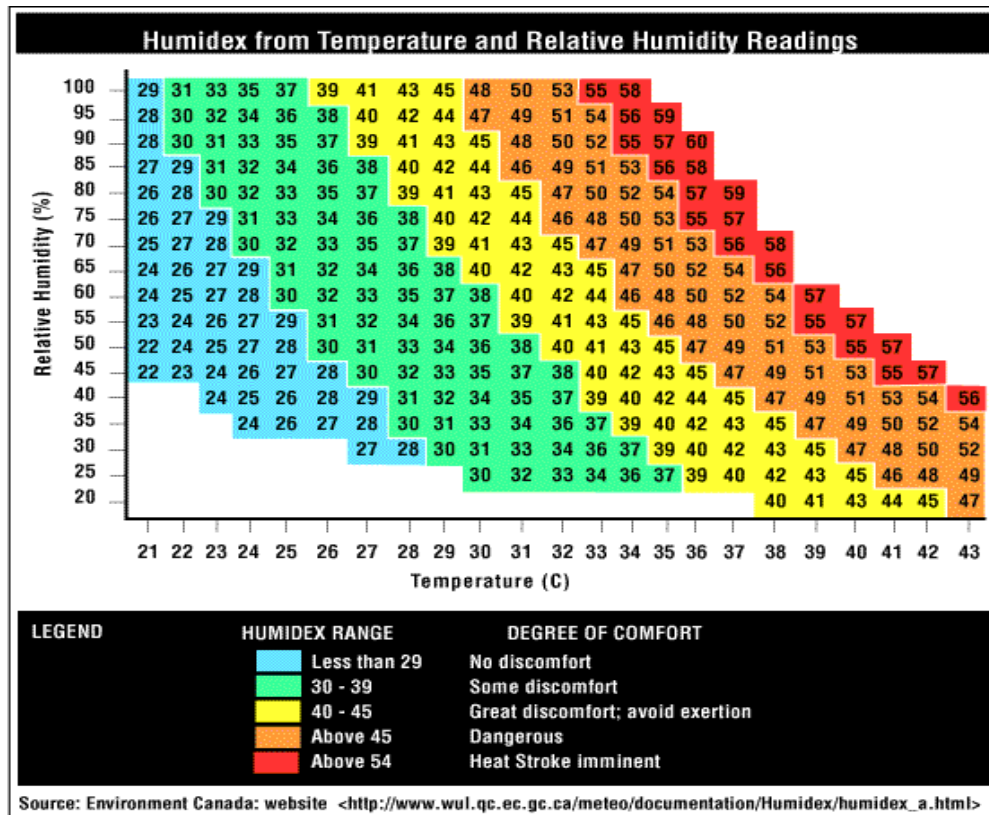
### iii. Symptoms of high Heat and Humidity

1. Heat rash, or prickly heat
2. Heat cramps
3. Heat exhaustion
4. Heat stroke



**c) Why is humidex important?**

- i. When it is hot and humid, it is more difficult for you to cool down by sweating. When the relative humidity reaches around 90%, your sweat does not evaporate. In these situations, your body temperature may rise and lead to heat rash, cramps, heat exhaustion and heat stroke.



**d) Humidex Calculator**

[http://www.ohcow.on.ca/edit/files/general\\_handouts/heat-stress-calculator.html](http://www.ohcow.on.ca/edit/files/general_handouts/heat-stress-calculator.html)

**e) What can you do to combat or prevent the effects of high heat and humidity?**

- i. Exercise in the heat is usually associated with reduced performance; both dehydration and hyperthermia adversely affect mental and physical performance. To combat or prevent the effects of high heat and humidity:
  - a. Where possible activities should be scheduled for cooler times of the day
  - b. Ensure that everyone participating has enough water / hydration. Recognize that even well-hydrated athletes can be affected by heat illness.
  - c. Plan for plenty of breaks and keep riders shorter.
  - d. Fluid replacement is critical for events in high heat and humidity. Fluid replacement starts before an event, continues

- during it, and doesn't stop until long afterwards.
- e. Wearing lightweight, light-colored clothes of open-weave natural fibers (cotton, wool) or fluid-wicking fibers help increase evaporation and cool the body.
- f. Acclimatization to higher temps and humidity during training

## 10) Extreme Cold Policy

- a) All cycling events and races must be cancelled when the temperature is **-20° C or below, including the wind chill factor.**
- b) **Common Cold-weather conditions:**
  - i. Numbness
  - ii. Frostbite
  - iii. Frostnip
  - iv. Hypothermia
- c) **How can I reduce cold-induced issues?**
  - i. Pay attention to the weather forecast – temperature, weather conditions and wind chill.
  - ii. Get the right gear and coverage – coverage and layers.
  - iii. Cover your head, hands, feet, and ears – more susceptible to cold.
  - iv. Warm up first.
  - v. Don't get too sweaty.
  - vi. Hydrate well.
  - vii. Do not ride alone.
- d) **What are the warning signs of health issues related to cold exposure?**
  - i. Tightness in the lungs
  - ii. Coughing
  - iii. Loss of breath
  - iv. Wheezing
- e) **What are the signs of frostbite and hypothermia?**
  - i. Frostbite is an injury to the body that is caused by freezing. Frostbite is most common on exposed skin, such as your cheeks, nose, and ears. It can also occur on hands and feet. Early warning signs include numbness, loss of feeling or a stinging sensation.
  - ii. Immediately get out of the cold if you suspect frostbite. Slowly warm the affected area — but don't rub it because that can damage your skin. Seek emergency care if numbness doesn't go away.
  - iii. Hypothermia is abnormally low body temperature. When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Exercising in cold, rainy weather increases the risk of hypothermia. Older adults and young children are at greater risk.
  - iv. Hypothermia signs and symptoms include:
    - a. Intense shivering

- b. Slurred speech
  - c. Loss of coordination
  - d. Fatigue
- v. Seek emergency help right away for possible hypothermia.

## 11) Wind Policy

- a) All cycling events and races must be cancelled when the wind speed reaches **40 km/h**.
- b) Once the wind speed reaches between 30 – 39 km/h, the cancellation of races should be seriously considered.
- c) **Wind Speed Guidelines:**

< 1 km/h	Still, calm air, smoke will rise vertically.	Calm
1 – 5 km/h	Rising smoke drifts, wind vane is inactive.	Light Air
6 – 11 km/h	Leaves rustle, can feel wind on your face, wind vanes begin to move.	Light Breeze
12 - 19 km/h	Weather vanes will move, leaves and small twigs will rustle and move, and you'll feel a breeze on your face. Light weight flags extend.	Gentle Breeze
20 - 29 km/h	Strong enough to straighten flying flags and shake small tree branches. Expect dust and loose paper garbage to fly around in the air.	Moderate Breeze
<b>30 - 39 km/h</b>	<b>Small trees start to sway.</b>	<b>Fresh Breeze Consider canceling activity</b>
<b>40 - 50 km/h</b>	<b>Strong enough to break umbrellas and move large tree branches.</b>	<b>Strong Breeze Cancellation of activities</b>
<b>51 - 62 km/h</b>	<b>Walking will be tough or incredibly easy if you're going in the same direction as the wind. Large trees sway.</b>	<b>Gale Force Cancellation of event</b>
<b>63 - 74 km/h</b>	<b>Strong enough to send large, loose objects (garbage cans, patio furniture) flying. Tree limbs can break and driving gets white-knuckle—cars can veer off the road.</b>	<b>Gale Force Cancellation of activities</b>
<b>75 – 89 km/h</b>	<b>Wind is strong enough to damage structures. Shingles are blown off roofs.</b>	<b>Strong Gale Cancellation of activities</b>

<b>90 – 117 km/h</b>	<b>Wind can uproot entire trees.</b>	<b>Storm / Violent Storm Cancellation of activities</b>
<b>118 km/h</b>	<b>Wind is considered hurricane force...but happily it doesn't get that windy every day.</b>	<b>Hurricane Cancellation of activities</b>

## 12) Visibility Policy

- a) Visibility is defined as the state of being able to see or be seen. In cycling events, this is described as the distance one can see as determined by light and weather conditions.
- b) Once visibility reaches **< 100 meters**, all activities must be cancelled.
- c) Once visibility reaches < 1 km, the cancellation of races should be seriously considered.
- d) Cyclists should not be riding after dark unless they have equipment to make themselves visible to others, such as reflective clothes, handlebar white light, and red taillight.

### e) Visibility Guidelines

Clear visibility	Visibility of 30 km	
Good Visibility	Visibility of 5 – 29 km	
Moderate Visibility	Visibility of 1 – 4 km	
Poor Visibility	Visibility of < 1 km	Monitor very closely.
Zero or Very Low Visibility	Visibility of less than 100 meters (330 ft.)  Roads may be closed, or automatic warning lights activated.	Dense fog or smoke, blowing sand, dust, and debris in high winds, heavy rain, snowstorm, heavy sleet, heavy hail, darkness.  <b>Cancellation of activities</b>

### 13) OTHER WEATHER CONDITIONS TO MONITOR

- a) There are several other weather conditions that could put participants' health and safety at risk and cause potential damage to a venue site (e.g., Fog, mist, haze, air pollution, rain, freezing rain, sleet, hail, snow).
- b) Monitoring of the impact, visibility and course conditions are the responsibility of the races' PCP, in consultation with their partners, the Race Organizer, and the OC Lead Commissaire and / or the Technical Delegate (if available). If this is a cycling recreational event, club or team training/group riding activity, the impact, visibility, and course conditions monitoring are the responsibility of the Event Organizer or Ride Leader/Club Administrator.

Fog	Monitor impact, visibility, and course conditions. Visibility of < 1 km	Hazardous due to ice formation as occasional freezing drizzle and snow can occur.
Mist	Monitor impact, visibility, and course conditions. Visibility from 1 – 2 km	
Haze	Monitor impact, visibility, and course conditions. Visibility from 2 – 5 km	
Rain	Monitor impact, visibility, and course conditions.	Hazardous due to slippery surfaces.
Freezing Rain / Sleet	Monitor impact, visibility, and course conditions.	Hazardous due to ice formation.
Hail	Monitor impact, visibility, and course conditions.	Hazardous due to body impact and ice formation.
Snow / Snow accumulation on the course	Monitor impact, visibility, and course conditions.	Hazardous due to slippery surfaces and cooling temperatures.

### 14) Compliance

- a) Failure to follow the '*OC Weather Policy & Guidelines*' could affect the health and safety of riders which may lead to disciplinary action being taken.

**Further Resources:**

Environment Canada: *Weather, climate and hazards:*  
<https://www.canada.ca/en/services/environment/weather.html>

WeatherCan App: <https://www.canada.ca/en/environment-climate-change/services/weather-general-tools-resources/weathercan.html>

Environment Canada: *Criteria for Public Weather Alerts*  
<https://www.canada.ca/en/environment-climate-change/services/types-weather-forecasts-use/public/criteria-alerts.html>

SIRC Canada *Air Pollution & Sport Safety* <https://sirc.ca/air-quality-and-sport/>

SIRC with Health Canada *Let's talk about air pollution: Keeping outdoor sport participants safe.* <https://sirc.ca/blog/air-pollution-and-sport/>

SIRC with Health Canada *Understanding Air Quality: A Guiding Document for Sport Organizations.* <https://sirc.ca/wp-content/uploads/2023/02/Air-Quality-Guiding-Document-FINAL-EN.pdf>