

## AIR AWARE – AIR QUALITY MONITORING GUIDELINES

This document is meant to serve as a guideline for Saskatchewan Soccer Member Organizations, team personnel, players and referees. As a guideline, it suggests what Member Organizations, team personnel and referees should consider in assessing air quality at local fields and awareness of potential health impacts.

### BASIS

The best scientific information available is used for these guidelines. It will be updated as new knowledge becomes available. This guideline document includes background information about the Air Quality Health Index (AQHI), asthma management, and exercise- induced bronchoconstriction (EIB).

### PROCEDURE

#### 1. Be aware of weather and other conditions:

- a) Current forest fires and their locations in the province.
- b) Local burning of stubble on fields or agricultural fields – these can increase particulate matter in the air without impacting the AQHI for a city.
- c) Sudden and dramatic changes in wind strength and direction.
- d) Proximity of any major road or highway.
- e) Near or downwind of any industrial areas or other significant emission sources.

#### 2. Check the AQHI Online

- a) We will be using PurpleAir as our basis point for measurement. [map.purpleair.com](http://map.purpleair.com)
- b) Please use the **closest** measurement on the map to the field location where the match is taking place. Measurement points are updated every 10 minutes.
- c) See Step 3 (Games) and Step 4 (practices) for next steps.

**a) Games**

- a. If the Member Organization has not cancelled games in advance all teams and match officials should arrive ready to play.
- b. If the AQHI is 8 or higher at game time the teams involved, and the referee should consider delaying kick-off or cancelling the game.
- c. The discretion is with the match official, in conjunction with the team personnel of the two competing teams to ensure we balance the interest of having the game played with the safety of the competing players and match officials.
- d. In the event the game is cancelled, the referee is to write on game sheet reason for abandonment with the Index calculation and time & date of the calculation
- e. If air quality changes dramatically during a game (e.g. sudden smoke event caused by wind direction change) referees and team personnel are advised to use their discretion. Record all decisions and relevant information on the game sheet.

**b) Practices**

- a. If air quality is 3 or below continue with training as normal.
- b. If air quality is an index of 4 – 7 then be prepared to adjust the practice by:
  - i. Reducing the intensity.
  - ii. Reducing the duration of the practice.
  - iii. Providing resting periods.
- c. If air quality is “8” or above reschedule.

**BACKGROUND INFORMATION**

1. The Government of Saskatchewan maintains an Air Quality Advisory website. This site is helpful for planning your outdoor event: <https://www.saskatchewan.ca/residents/environment-public-health-and-safety/public-health-advisories/air-quality>
2. The AQHI is a web-based, risk management tool which describes a local reading of air quality as it relates to human health. While the Index number for a location can rise into the triple digits (Fort McMurray in 2016 peaked at over “180”) anything “8” or higher is of primary concern.
3. Health Canada recommends through the AQHI that for strenuous activities like soccer anything above an AQHI of 7 then one should reschedule the event.
4. The AQHI treats anything above 10+ as “Very High” with health messages for the “general” and “at risk” populations to reschedule all outdoor activities – strenuous or not.
5. Elite athletes are in the “at-risk population because of the intensity and duration of exposure to outdoor air quality.” Women appear to be more affected than men due to smaller airways, lungs, and respiratory systems.



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6. Regarding air quality, soccer is considered a high exposure sport.
7. Individuals tend to rely on sensory perception to evaluate air quality when, in fact, the pollutants that present the greatest harm to human health are difficult to see or smell (e.g. ground level ozone).
8. It is neither possible nor desirable to acclimatize athletes to air pollution. The US Olympic Committee recommends that when competing in high pollution areas the best strategy for training is alternative sites. "Stay away from air pollution."
9. Exercise-Induced Bronchospasm (EIB) is a sudden narrowing of the airways in response to vigorous exercise. It may occur in some individuals who have no pre-existing diagnosis of asthma. Most obvious symptoms of EIB include wheezing, prolonged shortness of breath, tightness in chest, coughing, extreme fatigue, and chest pain.
10. Asthma sufferers should have it under control before exercise (no coughing, shortness of breath, wheezing, etc.) and no other respiratory concerns (common cold, etc.). According to studies, asthma is now twice as prevalent in elite athletes as the general population. Symptoms of severe asthma emergency include: struggling to breathe, rescue inhaler does not help, cannot speak/finish sentences, nostrils flaring out, fainting, severe fatigue, blue lips and nails, and unconsciousness.

### References and Links

Government of Saskatchewan, Air Quality <https://www.saskatchewan.ca/residents/environment-public-health-and-safety/public-health-advisories/air-quality>

Environment Canada, Air Quality Health Index (AQHI) Printed Publications. Retrieved from <http://www.ec.gc.ca/cas-aqhi/default.asp?lang=En&n=47327A59-1>

Health Canada (2012). *Elite Athletes, Air Quality and the AQHI*. Communication Solutions: Ottawa, ON.

Sport Medicine and Science Council of Manitoba (2013). *AQHI – Use in Sports*. Ironstone Digital. Retrieved from <https://itunes.apple.com/ca/book/aqhi-use-in-sports/id603363086?mt=11>