



AIR AWARE – AIR QUALITY MONITORING GUIDELINES

This document is meant to serve as a guideline for Affiliated Members, Team Officials, Players and Match Officials affiliated with Alberta Soccer. As a guideline, it suggests what Affiliated Members, match officials and team officials 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).

POLICY

1. Go to https://weather.gc.ca/airquality/pages/provincial_summary/ab_e.html
 - a. APP also available, see resources
 - b. The Government of Alberta app provides one reading per city / region which will work for most regions but for some cities the Government of Canada site provides more specific regional coverage (Edmonton, Calgary, Red Deer, Grande Prairie, etc.)
2. Click on the AQHI station name
 - a. This brings up a pop-up box with the AQHI for that station. See the example on next page.
 - i. For some cities (Edmonton, Calgary, Red Deer, Grande Prairie, etc) there are multiple stations by area of the City.
3. Note the station, time, and date, and Index calculation.
 - a. Updates usually occur hourly (at the top of the hour).
 - b. Use the index calculation that is within one hour of scheduled kick-off or practice time.
 - c. **If the AQHI is “7” or higher then go to steps 4 or 5 as appropriate**
4. **Games**
 - a. If the Affiliated Member has not cancelled games in advance all teams and match officials should arrive ready to play.
 - b. If the AQHI is still above “7” at the next calculation the teams involved and the match official should consider delaying kick-off or cancelling the game.
 - i. The match official reserves the final right to cancel the game if the conditions are considered dangerous, in the match official’s opinion.

- ii. Referee to write on game sheet reason for abandonment with the Index calculation, time & date number calculated and AQHI station used.
- c. If air quality changes dramatically during a game (e.g. sudden smoke event caused by wind direction change) referees and team officials are advised to use their discretion. Record all decisions and relevant information on the game sheet.

5. For Practices

- a. Team officials should consider a rescheduled practice or postponing practice until a later time.

INCORPORATING

1. Incorporating AQHI into your training practices
 - a) Access the latest AQHI calculations
 - i) If air quality is “3” or below continue with training as normal.
 - ii) If air quality is an index of 4 – 6 then be prepared to adjust the practice by:
 - Reducing the intensity.
 - Reducing the duration of the practice.
 - Providing resting periods.
 - iii) If air quality is “7” or above reschedule.
2. 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.
3. Alberta Health Services maintains an Air Quality Advisory website. This site is helpful for planning your outdoor event. <http://www.albertahealthservices.ca/news/air.aspx>

BACKGROUND INFORMATION

1. 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 over “7” is of primary concern.
2. The AQHI is calculated differently for Alberta in two significant ways. First, in the rest of Canada, the AQHI only measures ground-level ozone, fine particulate matter (PM_{2.5}) and nitrogen dioxide. In addition to these three pollutants, Alberta is more comprehensive

by also including sulphur dioxide, hydrogen sulphide, total reduced sulphur and carbon monoxide in its AQHI reporting. Second, for the rest of Canada the AQHI is calculated on a 3-hour rolling average and so is less responsive to dramatic changes in air quality.

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.
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

- Air quality APP - [Search AQHI Canada on Apple or Android Devices](#)
- Environment Canada, Air Quality Health Index (AQHI) Printed Publications. Retrieved from https://weather.gc.ca/airquality/pages/provincial_summary/ab_e.html
- Government of Alberta, Air Quality Health Index, Retrieved from <http://airquality.alberta.ca/map/>
- 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>
- University of British Columbia, Faculty of Medicine. *Outdoor Air Quality and Health and the Air Quality Health Index (AQHI)*, Retrieved from <http://spph.ubc.ca/continuing-education/current-courses/outdoor-air-quality/>