

International Golf Federation Air Quality Guidelines for Golf



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Maison du Sport International (MSI)

Avenue de Rhodanie 54, 1007 Lausanne, Switzerland

www.igfgolf.org



Table of Contents

1. Background.....	3
2. Introduction	3
3. Measurement of Air Quality.....	4
4. Common symptoms associated with poor air quality	4
5. Strategies for reducing risk of adverse consequences of poor air quality	5
6. Disclaimer	6
7. References	6
8. Appendix – Golf Specific Air Quality Index.	7



1. BACKGROUND

The IGF Air Quality Guidelines have been developed following consultation with the IGF Medical Committee, Fairhurst Health and Safety, senior medical staff and tournament officials of the PGA European Tour, the PGA Australasian Tour, the PGA TOUR, The R&A, members of the IOC Medical and Scientific Commission, and golfers. Consultation and alignment have been sought with other sports that have experience hosting events where air quality required monitoring and/or mitigation.

These Guidelines are not mandatory. It is up to each organizing committee or tournament organiser to determine specific courses of action, based on the local circumstances of the event, historic air quality data measured as well as local applicable laws and regulations.

These guidelines will be subject to review every two years (next due 2025).

2. INTRODUCTION

Organizing committees and golf event organisers have a responsibility to support the health and wellbeing of those participating in, or otherwise working or attending, events in poor weather conditions which include but are not limited to:

- i) poor air quality
- ii) extreme heat temperatures and humidity
- iii) lightning strike
- iv) Extreme wind conditions
- v) Sand and dust storms

Air pollution can harm the health of individuals or groups, when exposed to poor air quality. The Air Quality Index (AQI) is **used for reporting air quality**. It is a measure of how clean or how polluted the air is and gives an indication of what the associated health effects might be to an individual. The higher the AQI readings, the more likely those exposed may get negative health effects in shorter exposure times. In general, events in big cities with high level of burning carbon have the highest likelihood of being affected, but forest fires, sand and dust storms and other causes can affect air quality even in rural areas. Air quality can vary significantly even within a few kilometres, for example, a central train station or a major highway may (or may not) have poorer air quality than a large park or golf course.

Poor air quality can cause additional problems for sports participants if exercising vigorously, with increased volume and rapidity of breathing. Golf typically provides light to moderate exercise for tour professionals, although this may be vigorous for some caddies, officials, media, spectators.

This document outlines guidance for persons exposed to poor air quality, and mitigation measures for those responsible for the planning and hosting of golf tournaments that can be expected to be subject to challenging environmental conditions.

The role of the Tournament Director, is to work with the Championship Director, player liaison, health and safety experts, and first aid and medical leads to have the authority to plan and take actions to mitigate poor air quality, and if necessary to even stop the tournament, if it is dangerous or unreasonable for the different stakeholders to continue, according to the measured and confirmed levels of the The Air Quality Index (AQI).

The guidance that follows is intended for tournament directors, championship directors, promoters, and medical and safety consultants as a reference only. Final and solely responsibility remains with each organizing committee or tournament organiser.

3. MEASUREMENT OF AIR QUALITY

There are multiple pollutants that can be measured. Of these, PM 2.5 (Particulate Matter with a diameter of <2.5 microns) is most frequently measured. Should poor air quality be anticipated, or be suspected (due to smog, forest fires, sand etc.) then the tournament director should appoint someone suitably competent to monitor, measure and regularly report the acquired data.

A website utilised by some international sporting federations is: <https://aqicn.org>

Readings (PM 2.5 plus or minus others) can also be measured on site or sourced through other local thirds party's services.

This information should be, regularly and promptly, provided to the tournament and championship directors and can inform any potential actions that are described in the rest of this document, guiding a risk minimisation and responsible approach.

4. COMMON SYMPTOMS ASSOCIATED WITH POOR AIR QUALITY

In an unhealthy or hazardous air quality environment, affected persons may complain of:

- irritation of the throat, eyes, nose
- shortness of breath or wheeze / worsening of asthma symptoms
- coughing
- nausea
- headache
- fatigue

5. STRATEGIES FOR REDUCING RISK OF ADVERSE CONSEQUENCES OF POOR AIR QUALITY

5.1 Event scheduling

- (a) Where possible, events should be scheduled to avoid locations and conditions leading to a high likelihood of unhealthy, very unhealthy, or hazardous air pollution, based on historical data.
- (b) Subject to event type and scheduling, if high air pollution conditions are anticipated, consideration of local geography (for example golf courses located away from the city centre) and event timings to avoid exposure to the most polluted part of the day/week should be considered.

5.2 Pre-event strategies for reducing air pollution for players, caddies, staff, media, and spectators.

- (a) Information provided to players, caddies, staff, media, and spectators regarding.
 - i) Expected conditions.
 - ii) Having appropriate masks and bringing own medications if asthma and / or sensitivity to poor air quality.
- (b) Planning and provision of:
 - i) Surgical masks (or other filtering factors FFP1, FFP2 et FFP3, if required)
 - ii) Indoor space with clean air or equipped with air purifiers.
 - iii) Medical facilities, personnel and medication stock that can rapidly assess and treat persons exhibiting any related symptoms.

5.3 Strategies during event for reducing symptoms of poor air quality for players, caddies, staff, media, and spectators.

- (a) Persons advised to take their personal medication that reduces their symptoms for any pre-existing condition.
- (b) Surgical masks (or other filtering factor FFP1, FFP2 et FFP3) available at key locations worn if desired/demanded.
- (c) Provide first aid and medical areas and practitioners with clean indoor areas, or equipped with air purifiers, and appropriate medication including Beta2 agonists, inhalers, to treat individuals presenting with respiratory distress symptoms. Please consider that B2agonists are on the WADA Prohibited List.
- (d) Choose times of the day to practice when air pollution is lower.
- (e) Persons should seek medical attention should they experience any respiratory distress symptoms consistent with poor air quality.

5.4 Medical provision

- (a) Persons (health and safety/ medical) experienced in managing poor air quality and other expected medical consideration should be involved in pre-event planning to provide their recommendations.
- (b) Senior medical personnel should be consulted to mitigate risk where the risk of respiratory illness due to poor air quality is considered high, or very high.
- (c) Senior medical personnel should be available, properly located and provided with appropriate facilities, to cope comfortably with the expected number of casualties.
- (d) If cases are accumulating, this should trigger a conversation between the tournament doctor, or the IGF Medical Delegate when applicable, and the tournament director to define necessary measures including the possible temporary interruption of the tournament.

6. DISCLAIMER

This document should be used for reference only.

These guidelines are not intended to:

- be a legal document.
- replace any existing council/local/national/international legislation or regulations but should be considered as guidance for the recommended minimum standard.
- It is also recognised that these guidelines are not intended to provide rules on how to plan and respond to any medical incidents, as this is more appropriately handled by trained professionals in medical and emergency services.

This document should be used as a guide only. Authors and their respective organisations are not liable for acts or omissions at specific golf tournaments out of their jurisdiction.

7. REFERENCES

- 1) Murray AD, Daines L, Archibald D, Hawkes RA, Schiphorst C, Kelly P, Grant L, Mutrie N. The relationships between golf and health: a scoping review. *Br J Sports Med.* 2017 Jan 1;51(1):12-9.
- 2) Ainsworth BE, Haskell WL, Herrmann SD, Meckes N, Bassett Jr DR, Tudor-Locke C, Greer JL, Vezina J, Whitt-Glover MC, Leon AS. 2011 Compendium of Physical Activities: a second update of codes and MET values. *Medicine & science in sports & exercise.* 2011 Aug 1;43(8):1575-81



8. APPENDIX – GOLF SPECIFIC AIR QUALITY INDEX.

(Adapted from The International Cricket Council guidance)

The table below defines the Air Quality Index scale as defined by the US-EPA 2016 standard:

AQI (PM2.5)	Air Pollution Level	Guidelines for Managing Golf Event (for PM2.5)
0 - 50	Good	No action required a part for Monitoring
51 -100	Moderate	No action required. Monitoring
101-150	Unhealthy for Sensitive Groups	Monitoring and planning Persons with asthma/ airway disease may need necessary precaution. Adequate medical support
151-200	Unhealthy	Monitoring and planning and considering communication with those on site. Persons suffering from asthma/ respiratory disease should take necessary precautions. Adequate medical support.
201-300	Very Unhealthy	Tournament Director and Championship and Safety/ Medical Officer to meet and discuss mitigations. Appropriate communication to those on site. MO to closely monitor PM2.5 readings and if it continues to remain on the higher sale (closer to 300), TDs may consider the need to delay start in play or call for an extended break in play or suspend play for the day, giving consideration to each of the following: <ul style="list-style-type: none"> - Local regulations - the air quality reading in the hours just gone by and the expected air quality in the coming hours. - player reaction to conditions especially those players with higher levels of exertion (where applicable). - no penalty for player withdrawal - in case of suspension of play the remaining available playing time for the day.
300+	Hazardous	Tournament Director and Championship and Safety/ Medical Officer to meet and discuss mitigations. Appropriate communication to those on site. MO to be extremely vigilant and monitor progress as exposure to such conditions can cause discomfort to participants, in particular those with higher levels of exertion. Players withdrawing should not be penalized. MO to closely monitor PM2.5 readings and if it continues to remain over 300, MO should consider the need to delay start in play, call for an extended break in play or suspend play for the day, giving due consideration to each of the following: <ul style="list-style-type: none"> - the air quality reading in the hours just gone by and the expected air quality in the coming hours. - player reaction to conditions. - in case of suspension of play the remaining available playing time for the day.