

AIR QUALITY POLICY

Approving authority	Baseball Queensland Board of Management
Approval date	20 Jan 2022
Next scheduled review	2024
Description	This policy will guide decisions regarding training and playing during conditions in which air quality may be affected.
Related documents	Australian Institute of Sport: Air Quality and Exercise Baseball Australia Air Quality Policy Queensland Department of Environment and Science: Live Air Data

1. BACKGROUND

Air pollution can pose a health risk to members of baseball, whether they be players, coaches, officials, spectators and volunteers. The health impact of bushfire smoke can differ based on an individual's current health status and previous medical conditions.

Current public health advice is aimed at high-risk groups, including people over 65, children 14 years and younger, pregnant women and those with existing heart or lung conditions. However, players involved in sport can also be at higher risk while performing high intensity prolonged exercise outdoors and additional caution should be taken.

When pollution exposure is at low levels, the respiratory tract usual defence mechanisms trap, transports and clear pollutants effectively. With elevated exposure, short-term accumulation can occur resulting in inflammation and this can exacerbate a number of health conditions with asthma being the most common.

During exercise, respiratory rate and volume increases, this in turn increases the total airway exposure to pollutants. During performance, moderate exercise can increase the total amount of air passing through the airway by more than 10 times and vigorous exercise by more the 20 times, compared to resting values. Even at moderately reduced air quality, this can represent a significant increase in pollutant exposure during a one-hour, high intensity training session.

2. AIR QUALITY INDEX

The AQI is an accepted means of quantifying air quality by public health authorities encompassing:

- Air pollution levels at your nearest monitoring site or region
- The common contributing pollutants
- The overall health risk associated with a given rating

Local Air Quality Index for Queensland regions is available at <https://apps.des.qld.gov.au/air-quality/> and these data are updated hourly. Air quality is also available via the Air Rater app (for more information regarding this app see <https://airrater.org/air-quality-explainer/>). The AQI evaluates the current level of air quality with general advice on implications for individuals. When performing extended higher intensity exercise, the risk of airway irritation is higher at lower levels of pollution. The table below is a suggested modification of the current NSW public health guidelines for those training outdoors at higher exercise intensities and longer durations.

3. EXERCISE-SPECIFIC CATEGORIES FOR SMOKE AFFECTED ENVIRONMENTS

The Australian Institute of Sport reviewed and compiled information from State and Territory websites which is contained here: [Australian Institute of Sport: Air Quality and Exercise](#). Modified information specifically for application to decisions around physical exercise in smoke affected environments is provided below. There are many factors that contribute to the reliability and validity of air quality readings. The numbers in the table below are a guide and should not be taken as absolutes. Common sense should be applied when assessing the environment and utilising other factors such as visibility in making a decision about whether or not exercise is appropriate.

Table 1: Guidelines for exercise in smoke affected environments

Exercise Category	General Recommendations	Exercise-specific Recommendations	PM2.5 $\mu\text{g}/\text{m}^3$
Good to exercise	<ul style="list-style-type: none"> It is a good day to be outside. 	<ul style="list-style-type: none"> All forms of exercise are encouraged. 	<25
Moderate Caution for those who are sensitive to air pollution	<ul style="list-style-type: none"> The air is probably smoky. Sensitive groups may experience symptoms like coughing or shortness of breath. If you are sensitive to air pollution, spend less time outside and follow your treatment plan. If you are worried about your symptoms, seek medical advice. 	<ul style="list-style-type: none"> If you are sensitive to air pollution, you may need to reduce prolonged high intensity endurance exercise (e.g. rowing, cycling, long-distance running). Most individuals will tolerate exercise as normal, without symptoms. 	25-50
Poor conditions for exercise	<ul style="list-style-type: none"> The air is probably very smoky. Sensitive groups and/or others may experience symptoms like coughing or shortness of breath. If you are sensitive to air pollution, spend less time outside in the smoke or dust and follow your treatment plan. If you are worried about your symptoms, seek medical advice. Seek urgent medical help if anyone has trouble breathing or tightness in the chest. Call 000 for an ambulance. 	<ul style="list-style-type: none"> Consider reducing prolonged high intensity endurance activities (e.g. rowing, cycling, long-distance running). If you are sensitive to air pollution, avoid prolonged high intensity endurance exercise (e.g. rowing, cycling, long-distance running) or move it indoors. Intermittent exercise (e.g. tennis, netball, beach volleyball, cricket) and power activities (e.g. sprint training, javelin training, jump training, rugby skills training) may still be well-tolerated but athletes should be alert to symptoms. Increase rest-to-activity ratio for intermittent exercise. 	51-100

Exercise Category	General Recommendations	Exercise-specific Recommendations	PM2.5 $\mu\text{g}/\text{m}^3$
Very poor conditions for exercise	<ul style="list-style-type: none"> • The air is probably very smoky. • Sensitive groups and/or others may experience symptoms like coughing or shortness of breath. • If you are sensitive to air pollution, spend less time outside in the smoke or dust and follow your treatment plan. • If you are worried about your symptoms, seek medical advice. • Seek urgent medical help if anyone has trouble breathing or tightness in the chest. Call 000 for an ambulance. 	<ul style="list-style-type: none"> • High intensity endurance activities (e.g. rowing, cycling, long-distance running) should be avoided or moved indoors. • Intermittent exercise (e.g. tennis, netball, beach volleyball, cricket) and power activities (e.g. sprint training, javelin training, jump training, rugby skills training) may still be well-tolerated but athletes should be alert to symptoms. • Increase rest-to-activity ratio for intermittent exercise. • Any individual may be affected by exercising in smoky air at these levels. If symptoms develop, cease exercise and move indoors. 	101-150
Likely to be hazardous to exercise outdoors	<ul style="list-style-type: none"> • The air is probably extremely smoky. Everyone will be at risk of experiencing symptoms like coughing or shortness of breath. • Listen to your local emergency radio station or visit your State Emergency Agency for advice. • Stay indoors away from smoke and dust. • If you are sensitive to air pollution, follow your treatment plan. Close doors and windows to keep smoke and dust out of your home. • If the air in your home is uncomfortable, consider going to an air-conditioned building like a library or shopping centre for a break if it's safe to do so. • If you are worried about your symptoms, seek medical advice. • Seek urgent medical help if anyone has trouble breathing or tightness in the chest. Call 000 for an ambulance. 	<ul style="list-style-type: none"> • Most individuals should avoid physical activity outdoors. • Where there is an intention to play organised high level sport and there are medical staff on site to advise, these levels of pollution should trigger a discussion between medical staff and officials about the advisability or otherwise of proceeding with the event. 	>150

4. GAMES SANCTIONED BY BASEBALL QUEENSLAND

In addition to the recommendations above the following restrictions are in place for all games sanctioned by Baseball Queensland.

Table 2: Air quality guides for games sanctioned by Baseball Queensland

AQI	Action
Very good (0-33)	Enjoy your game
Good (34-66)	Enjoy your game
Fair (67-99)	People unusually sensitive to air pollution: Refer to the individual guidelines in the table above.
Poor (100-149)	AIR POLLUTION HEALTH ALERT Sensitive group: Refer to the individual guidelines in the table above. Everyone: Refer to the individual guidelines in the table above.
Very Poor (150-200)	AIR POLLUTION HEALTH ALERT Sensitive group: Refer to the individual guidelines in the table above. Everyone: No games are to commence or continue. All games are to be rescheduled.
Hazardous (201-300)	AIR POLLUTION HEALTH ALERT Sensitive group: Refer to the individual guidelines in the table above. Everyone: No games are to commence or continue. All games are to be rescheduled.
Very hazardous (>300)	AIR POLLUTION HEALTH ALERT Everyone: No games are to commence or continue. All games are to be rescheduled.

5. ADDITIONAL CONSIDERATIONS

- 5.1 Air quality information is generally updated hourly; therefore, there can be a lag between official measurements and what is occurring in real time. This can cause limitations when it comes to determining the air quality in your local environment. If smoke is affecting usual visibility within your area, it is likely that the air quality will fall into a higher risk category.
- 5.2 Consecutive days of exposure to polluted air can have a cumulative effect, lowering individual's threshold for symptoms. This should be considered if your region has been exposed to increased smoke for several days in succession
- 5.3 Increases in exercise intensity and duration result in increased airway exposure to polluted air. The Australian Institute of Sport recommends modifying training, or training locations based on table 1.
- 5.4 All participants who suffer from asthma should have an updated asthma management plan and consult their doctor prior to exercising in pollution-affected environments.
- 5.5 Recent respiratory infection increases the risk for development of smoke-related symptoms, even in non-asthmatics.

6. DEVELOPMENT, REVIEW AND APPROVAL HISTORY

Version No	Developed/ Modified by	Content authorised by	Approving Officer	Date of Effect	Last Reviewed
1	Andrea Marshall	David Badke	Board of Management	20/01/2022	20/01/2022