Smoke/Air Quality – Sport and Outdoor Activities

Bushfire smoke can worsen chronic medical conditions, resulting in serious health effects including breathing difficulties and heart attacks. Some people are at higher risk of harm from smoke than others. These include:

- people with asthma or other lung problems;
- people with other chronic illnesses like heart disease, diabetes or a previous stroke;
- older people (>65 years);
- babies and young children (<5 years); and
- pregnant women.

Public health advice is currently aimed at these high risk groups; however, people undertaking high intensity prolonged outdoor exercise can also be at higher risk and should take additional precautions.

Total airway exposure to pollutants rises during exercise as a result of the increase in respiratory rate and volume. Exercise can increase the amount of air passing through the airway by more than ten to twenty times, depending on exercise intensity. Over an hour, this can significantly increase an individual's exposure to pollutants.

Elevated exposure to pollutants can cause a short-term accumulation of pollutants that results in inflammation of the respiratory tract. This can exacerbate existing health conditions, asthma being the most common.

Be aware that exposure to increased smoke for successive days can have a cumulative effect and lower an individual's threshold for symptoms. Additionally, a recent respiratory infection increases the risk of developing smoke-related symptoms, even in non-asthmatics.

Participants in higher risk groups must review their activity levels in the context of their own health and the air quality on the day.

All individuals who suffer from asthma should have an updated asthma management plan and consult their doctor prior to exercising in smoke-affected environments.

Air Quality Index (AQI)

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

The AQI evaluates the current level of air quality with general advice on implications for individuals.

Current as at January 2020

Table 1 (below) is Sport Australia's suggested modification of the current NSW public health guidelines for those individuals who train outdoors at higher exercise intensities and longer durations such as cycling, rowing and running.

Table 1. AQI and suggested risk stratification, adapted from NSW Public Health Unit.

General population and low intensity exercise		**Endurance based and high intensity exercise**	
AQI	**Action**	**AQI**	**Action**
Very good (0-33)	Enjoy activities	**Very good (0-33)**	Enjoy activities
Good (34-66)	Enjoy activities	**Good (34-66)**	Enjoy activities
Fair (67-99)	**People unusually sensitive to air pollution**: Plan strenuous outdoor activities when air quality is better	**Fair (67-99)**	**Asthmatic athletes:** Should have medical review prior to performing high intensity extended training outdoors
Poor (100-149)	***AIR POLLUTION HEALTH ALERT*** **Sensitive groups:** Avoid strenuous outdoor activities **Everyone:** Cut back or reschedule strenuous outdoor activities	**Very poor (100-149)**	***AIR POLLUTION HEALTH ALERT*** Asthmatics or symptomatic non-asthmatics should not compete or train outdoors. Minimise asymptomatic athlete exposure
Very poor (150-200)	***AIR POLLUTION HEALTH ALERT*** **Sensitive groups:** Avoid strenuous outdoor activities **Everyone:** Cut back or reschedule strenuous outdoor activities	**Hazardous (150-200)**	***AIR POLLUTION HEALTH ALERT*** Outdoor training should be rescheduled indoors, and exposure should be minimised for everyone
Hazardous (>200)	***AIR POLLUTION HEALTH ALERT*** **Sensitive groups:** Avoid outdoor activities **Everyone:** Significantly cut back on outdoor physical activities		

Information on real-time air quality information for specific locations in Tasmania is available on the EPA website:
https://epa.tas.gov.au/epa/air/monitoring-air-pollution/real-time-air-quality-data-for-tasmania

Air quality information is generally updated hourly. 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.

Need more information?

Information on Tasmanian air quality and how to interpret the data is available from the Environmental Protection Authority website:
https://epa.tas.gov.au/epa/air/monitoring-air-pollution/real-time-air-quality-data-for-tasmania

Further information about protecting your health when it is smoky can be found on the Department of Health website:
https://www.dhhs.tas.gov.au/publichealth/alerts/air/bushfire_smoke

The Australian Institute of Sport statement on Smoke Pollution & Exercise, which has been used as the basis of this information sheet, is continually being updated as new medical information becomes available:
https://ais.gov.au/position_statements#smoke_pollution_and_exercise