

# Bushfires in Victoria: How to protect yourself if the air is smoky where you live

February 14 2024, by Ryan Mead-Hunter

---



Credit: Pixabay/CC0 Public Domain

Bushfires broke out yesterday in [western Victoria](#) during a day of extreme weather conditions across the state. Although authorities have reported the situation is easing, emergency services continue to fight

blazes in the Grampians National Park around the towns of Bellfield and Pomonal.

While the [air quality in Australia](#) is generally good, events such as bushfires can have a significant effect. Smoke can travel long distances and reduce air quality throughout a city or region.

The combustion of vegetation produces a range of gases, including [carbon monoxide](#), as well as [fine particles](#), often described as PM2.5 (particles of 2.5 micrometers in diameter or less). These particles can remain suspended in the air for extended periods and, owing to their tiny size, can penetrate [deep into the lungs](#) when inhaled.

Exposure to PM2.5 in bushfire smoke can result in a range of symptoms including coughing, throat irritation, as well as irritation to the eyes and nose. It can make [existing conditions](#) such as asthma worse and increase [hospital presentations](#).

The longer-term health effects of PM2.5 exposure are well established, with [research](#) by the [World Health Organization](#) and the [US Environmental Protection Agency](#) linking PM2.5 exposure to respiratory and heart disease.

Ultimately, poor air quality can affect all of us, with even healthy people experiencing symptoms when exposed to high concentrations of bushfire smoke. There are, however, things we can do to protect ourselves.

## **Monitor the air quality**

Air quality indexes are based on measurements of PM2.5 and other pollutants. On air quality indexes lower numbers indicate higher air quality, and vice versa. A number of websites provide air quality index information, for example [IQAir](#) for locations around Australia, or

[World's Air Pollution](#) for locations globally.

There are also apps such as [AirRater](#) which can provide useful information in addition to air quality values, such as pollen levels.

Although a number is much more informative from a research point of view, these sorts of services also provide air quality ratings such as "poor", "fair" or "good", which can be helpful for people who may be unfamiliar with what the numbers mean.

Notably, these sources indicate the air quality around Victoria remains good at present.

When looking at air quality index values or PM2.5 concentrations, it's important to note these do not identify the sources of the particles, so not everything counted as PM2.5 on even a smoky day is necessarily bushfire smoke. But PM2.5 values are a good indicator of overall air quality.

A growing number of air quality monitors are available to buy for home use, which measure single pollutants or a number of pollutants.

However, these instruments are not the same as those used in statutory air quality monitoring stations (which provide data for websites like those mentioned above). Statutory stations are set up by regulators or [government agencies](#) and use instruments that must meet national or international standards.

In many cases the accuracy of [low-cost devices](#) may not be well established. And effective calibration—where the measurements are verified using an alternative method, as would happen in a statutory monitoring station—might not be possible, particularly by end users.

## Stay inside

When the air is noticeably smoky, or the air quality index is high, it's best to remain indoors with doors and windows closed if you can.

The threshold at which you make this decision may depend on your personal circumstances. For example, healthy people can generally continue outdoor activities when the air quality is "fair". However, someone with a respiratory condition might need to decrease or stop outdoor activities at this point. If the air quality is "very poor", everyone should [stay indoors](#).

If you have a particularly leaky home—say if you notice a draft, or odors from outside when the doors and windows are shut—then smoke ingress may be an issue. In this case, you may like to go elsewhere (for example, a friend's house, or a public building with filtered air), provided it's safe to do so.

A high-powered air cleaner or purifier with a HEPA (high efficiency particulate air) filter may also offer some benefit, especially for people with respiratory conditions.

If you get one of these, remember placement is important. Portable units may work for a single room, but not a whole house. Consider the best location for these devices (probably the room where you spend the most time).

Ultimately only the air which passes through the filter will be treated, so the size of the unit must be appropriate for the space. The [Victorian government](#) offers some advice on how to ascertain what sort of unit will be suitable for your space.

When staying indoors it's safe to use air conditioners, provided they

recirculate the air already in the house (and the windows and doors are closed). Reverse-cycle air conditioners are a good option if you have them. Any system which draws in outside air without treatment should be avoided.

## **Wear a mask if going outside**

If you need to go out when the [air quality](#) is poor, a P2 (or N95) mask provides protection from smoke particles in the air (but [not gases](#) such as carbon monoxide). For effective protection, the mask should be fitted properly and worn for the duration of your time outdoors.

Respirator masks may not be a good option for those with existing health conditions such as [chronic obstructive pulmonary disease](#), so in these cases people should seek medical advice.

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

Provided by The Conversation

Citation: Bushfires in Victoria: How to protect yourself if the air is smoky where you live (2024, February 14) retrieved 28 April 2024 from <https://medicalxpress.com/news/2024-02-bushfires-victoria-air-smoky.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--