



## The Air We Breathe

*The catastrophic fires this summer brought days of high air pollution to Melbourne and a heightened awareness of the effects of Climate Change. How are CBD residents to respond?*

At the time, a friend suggested I use an app called Air Visual. It now sits right next to the weather app on my phone. I had the impression that air pollution was a problem for cities such as Beijing and Mumbai but here, in Melbourne, the air was good. And anyway, what harm is there in a little mist and smoke here and there? How wrong I was. Much to my surprise Melbourne is no better than many other cities around the world and polluted air is really bad for your health.

That is why, you often see people walking around our streets wearing masks. It is not that they have a virus and that they are being socially responsible. No, it is to defend themselves from our bad air! However, we do not have bad air-days all the time. So how are we to know?

What is bad air anyway? As you are probably aware, humans breathe in oxygen and breathe out carbon dioxide. The air we breathe mainly comprises nitrogen (78%), oxygen (21%), carbon dioxide (0.04%), argon (0.93%), water vapour and fine, solid particles.

It is the "extras" in our air that are a problem for human health. They may be fine dust (less than 2.5 or up to 10 micrograms/cubic metre), pollen, smog (fog and smoke together), tobacco and industrial smoke. Among these extras are some other nasties that further injure our health. Carbon monoxide (a result of incomplete combustion), nitrous oxide, sulphur dioxide and ozone.

Carbon dioxide is a sleeper. We all know it as one of the Green House Gases along with methane, nitrous oxide, hydrofluoro carbons, perfluoro carbons and sulphur hexafluoride. These gases are added to the air we breathe due to human activity, like burning coal and running motor cars. (That is a big topic for another day!).

It only takes an increase in carbon dioxide from .04% to 0.1% concentration in the air we breathe, to cause the demise of the human being. This is why the gas is often measured in closed spaces (a conference room, for example), where many people are busy exhaling carbon dioxide without knowing that it is this gas that is starting to make them feel sleepy. It can happen in your own home if there is insufficient ventilation.

Which brings me to the point of this article. Surely, we need to be more aware of the air we breathe and what we should do to protect ourselves. The first step is measurement. Environmental Protection Agencies and other interested parties, all use the Air Quality Index or (AQI) as a scale of air pollution that indicates how clean the air is. The smart app that I acquired, taps into various sources of AQI measurement, in many different locations locally and right throughout the planet. From these sources the app reports the AQI regularly for the user. Even notifies you in the morning what the air quality is!

The AQI is calculated from data relating to the five main pollutants. For each pollutant, the AQI is the data value expressed as a percentage of the level specified by the National Environment Protection Measure for Ambient Air (NEPM) standard.

There are six AQI categories ranging from 'Very Good' to 'Hazardous'. Each category is shown in a different colour. A lower value indicates better air quality, and a higher value indicates poorer air quality.



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Very good lies in the range 0-33, very poor would be in the range 150-200 and hazardous would be anything greater than 200. Your health is affected when the AQI is more than 100. Only a few days ago Melbourne's AQI was 117!

What can a CBD resident do about this? My suggestions are to become more aware of pollution, take precautions when it is bad (like wearing a mask or staying indoors), grow lots of plants inside as they love your carbon dioxide. Consider installing an air filter inside or purchase an Air Quality Monitor.

If you can afford it, buy an electric vehicle, scooter or bike or take the less costly option to use our wonderful, electric powered trams. Not a total solution of course. But all small steps help.