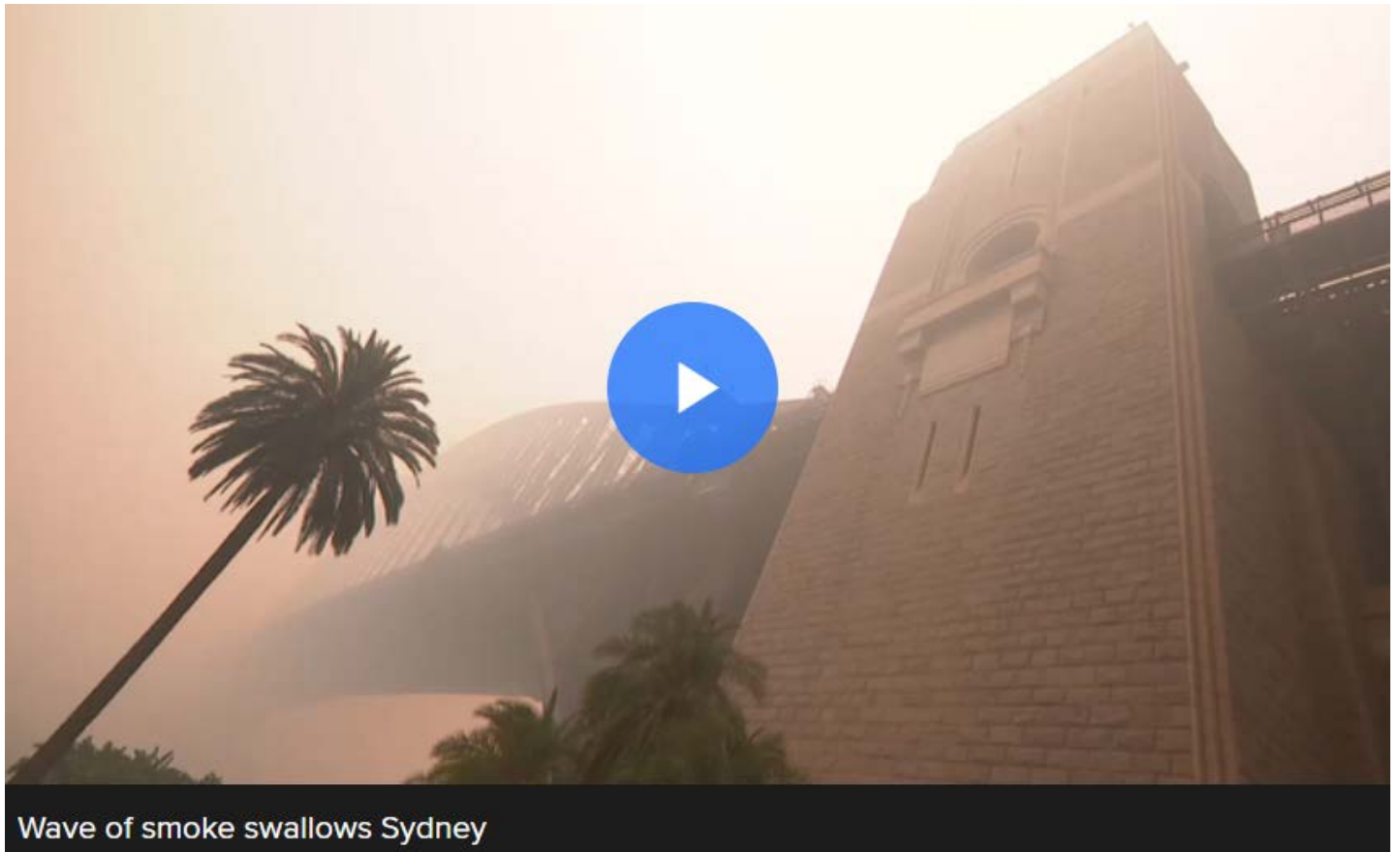


# Air quality inside homes could be almost as bad as outside, expert says

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Face masks and air quality readings worse than Bangkok are now the new norm with a toxic smoke haze engulfing Sydney yet again today.

This morning, air pollution levels in parts of NSW and Canberra were ten times higher than what is deemed "hazardous".

Health officials are warning those affected by the smoke to stay indoors, but just how safe is the air quality inside our homes and buildings?

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Today has seen a spate of alarms being triggered by smoke inside offices and apartment buildings across Sydney - including the Rural Fire Service headquarters at Olympic Park and even the prime minister's residence at Kirribilli house.

More than 100 smoke alarms have gone off today, fire bosses say, with hundreds being affected since yesterday.

## **How much cleaner is the air we're breathing inside?**

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Lidia Morawska, the director of the International Laboratory for Air Quality and Health at Queensland University of Technology, said Australian homes offered only a very slight level of protection from bushfire smoke outside.

"In a typical residential house, which is naturally ventilated by opening windows or doors, of course the conditions will be a little bit better than outside, but only a little bit better," she told nine.com.au.

"If the concentration of particles is extremely high outside, it will be still high inside because air simply penetrates into the building through cracks and openings."

While the amount of smoke particles entering homes tended to be highly variable - older houses are usually worse - the air inside houses would generally only be from zero to 40 percent better quality than outside, she said.

Just because the air inside didn't smell of smoke didn't mean it was clean, Professor Morawska said.

"We get accustomed to smells. We are accustomed to the smell outside, so inside we just don't recognise it," she said.

Air conditioners could help improve air quality in some cases, but it depended on the brand and how the air conditioner worked, for example if it was drawing air from outside or not, Professor Morawska said.

The effectiveness of [air purifiers](#) was also variable, she said.

"Air purifiers have been extensively used in some Asian countries which have regular events of severe air pollution. In some cases they were shown to help but in other cases not so much because it really depends on the setting of the building," she said.

Professor Morawska said for those needing to escape the smoke for a few hours, heading to a shopping centre may be a good option.

"Building like shopping centres have filtration and ventilation systems and these systems would be reasonably effective in filtering these particles, so the air quality inside these buildings would be much better," she said.

There was also an argument for the government to establish emergency shelters for sensitive people during extreme pollution events, Professor Morawska said.

## **Should you use a mask and what type works?**

As the smoke pollution continues, Sydneysiders have struggled with sore eyes, dry throats and irritated noses. People with serious conditions like asthma, emphysema and angina have faced more serious risks.

Hospital visits have jumped more than 25 percent from the weekly average and ambulance call-outs were up 30 percent, the NSW Health Department has confirmed.

Many Sydney residents have taken to wearing face masks to try to protect themselves from the smoke.



People wear face masks to protect from smoke haze as they cross a busy city street in Sydney, Australia. Smoke haze continues to hang over the city as bushfires burn across New South Wales. (Getty)

But the NSW Health Director of Environmental Health, Dr Richard Broome, said only one type of face mask has any chance of stopping tiny toxic particles entering the lungs.

Very fine PM2.5 particles are so small they pass through most types of mask, Dr Broome said. The ultra-fine particles can cause respiratory and cardiological complications.

"A P2 mask does filter out these particles but is only effective if there is a good fit and an air-tight seal around the mouth and nose," he said.

Dr Broome said it was challenging for most people to achieve a safe and effective fit.

Health experts widely agree that the cheap and lightweight face masks typically worn for DIY jobs fixed to the face with a single piece of elastic are useless to stop PM2.5 particles.

### **Is breathing in bushfire smoke really as bad as smoking cigarettes?**

National Asthma Council chief executive Siobhan Brophy said that while bushfire smoke can be damaging, comparisons to inhalation cigarette smoke is a step too far.

"When you smoke a cigarette, you're not breathing in burnt leaf, which is basically what you're doing when you inhale bushfire smoke," she said.

"Cigarettes have all kinds of other chemicals that make them particularly bad for your health - but either way, neither is good for you."

Mr Brooke said the impacts of smoke inhalation would be different for different people depending on factors including age and respiratory health.

But inhaling any type of toxic is a risk.

"We would rely on the premise that breathing in anything other than clean air is bad for you and you should be doing everything to reduce your exposure," said Mr Brooke.

"The evidence suggests that any prolonged exposure to polluted or toxic air is if harmful over time but if your taking necessary preventions the vast majority of Australians with healthy lungs will get through this type of event," he said.

"It's those that have compromised lungs that we are most concerned about, particularly the elderly," he said.

- [Smoke](#)
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