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Dementia and Air Pollution

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Introduction

The purpose of this article is to illuminate the issue of chronic smoke pollution in residential villages in Queensland, and to recommend a simple and effective solution.

Units tend to be located close to each other in residential villages, and typically there are no restrictions on the creation of smoke. The prevention of smoke pollution is usually given a low priority because few people are aware of the true scale of the health hazards associated with it.

All of the many health hazards associated with air pollution are relevant to any discussion of public health and safety. This article shines a spotlight on dementia, a particular hazard of air pollution that has so far managed to fly under the radar of public awareness. It has been known to medical researchers for years that air pollution can cause dementia.

The link between air pollution and dementia should be of concern to governments and healthcare providers, and to all residents and administrators of residential villages.

Causes of Dementia

[The Lancet](#) is one of the most prestigious medical journals in the world. The work of The Lancet's standing commission on dementia includes analysing the main risk factors for dementia. Details of a recent update about dementia from the commission can be found in an [article in the "BBC News" website](#) published on 1 August 2024.

The main risk factors for dementia are:-

55%	Inherited genes	(there is not much that can be done about this)
7%	Hearing loss	(mid-life risk)
7%	High cholesterol	(mid-life risk)
5%	Less education	(early-life risk)
5%	Social isolation	(mid-life risk)
3%	Depression	(mid-life risk)
3%	Brain injury	(mid-life risk)
3%	Air pollution	(late-life risk)
2%	Physical inactivity	(mid-life risk)
2%	Diabetes	(mid-life risk)
2%	Smoking	(mid-life risk)
2%	Hypertension	(mid-life risk)
2%	Visual loss	(late-life risk)
1%	Obesity	(mid-life risk)
1%	Excessive alcohol	(mid-life risk)
	total	100%

Scientific research has concluded that air pollution causes more cases of dementia

than many other risk factors that are better known.

Maintaining an active brain is probably the most wellknown strategy for preventing the onset of dementia and for slowing its progress. Many of the risk factors for dementia, such as social isolation or loss of hearing or loss of vision, can lead to a reduction in brain activity.

Some risk factors however, such as air pollution or high cholesterol or obesity, do not seem to be associated with reduced brain activity. The only way to minimise the number of cases of dementia caused by these risk factors is to minimise the factors themselves. This means that air pollution needs to be reduced.

Air Pollution and Smoking Cause 11% of Preventable Dementia Cases

Based on the above figures published by The Lancet about the causes of dementia, simple calculations show that more than 11% of preventable dementia cases are caused by air pollution and tobacco smoking.

(The following calculations are shown here to prove to disbelievers that the 11% figure is correct. People who have little time for arithmetic can skip this section.)

45% of all dementia cases are preventable. Unpreventable genetic factors account for the other 55% of cases.

3% of all dementia cases are caused by air pollution.

3 out of 100 of all dementia cases is 3 out of every 45 preventable cases.

Therefore $3 \times 100 / 45 = 6.66\%$ of preventable dementia cases are caused by air pollution.

2% of all dementia cases are caused by tobacco smoking.

2 out of 100 of all dementia cases is 2 out of every 45 preventable cases.

Therefore $2 \times 100 / 45 = 4.44\%$ of preventable dementia cases are caused by tobacco smoking.

$6.66\% + 4.44\% = 11.10\%$

Therefore, whereas $2\% + 3\% = 5\%$ of all dementia cases (preventable and non-preventable) are caused either by air pollution or by tobacco smoking, this equates to more than 11% of preventable dementia cases being caused either by air pollution or by tobacco smoking.

Air Pollution in Queensland

Air pollution is endemic in parts of Queensland, caused by the unrestricted use of wood-burning heaters, mosquito coils, incinerators and firepits, plus the usual vehicle exhaust emissions that occur everywhere, as well as extensive bushfires and so-called "hazard reduction" burns that disseminate smoke far and wide.

Air pollution can also be caused by the use of agricultural and domestic pesticides and herbicides.

Most town-dwellers just accept this state of affairs, while visitors to towns such as Hervey Bay are surprised to find that, depending on the direction of the wind, they sometimes experience air pollution instead of the fresh sea air that they had expected.

Residential Villages - Dementia and Mosquito Coils

Many residents in retirement and lifestyle villages have dementia. Empirical observations suggest that more than half of the residents in some retirement villages suffer from various forms of dementia.

In a hypothetical village that has one hundred residents who have dementia acquired exactly in accordance with the risk factors shown above, three residents would have dementia as a result of air pollution and two residents would have dementia as a result of smoking.

The Lancet states that air pollution is a late-life risk factor for dementia. This seems to mean that elderly people are particularly at risk of developing dementia as a result of air pollution.

Some elderly people insist that they have to burn mosquito coils during the warmer months of the year. This is partly because there was little awareness of the health hazards of smoke when today's elderly people were young, and partly because some elderly people are more comfortable burning old-fashioned mosquito coils rather than adopting modern methods of mosquito control such as ultrasonic mosquito repellents that do not cause health hazards and are more effective than mosquito coils.

Taking the relatively small subset of village residents who insist on burning mosquito coils frequently, how many now have dementia or will develop dementia? In the light of The Lancet's findings, it seems likely that the answer to this question is far from zero.

Also, how many village residents now have dementia, or will develop dementia, as a consequence of inconsiderate neighbours continuously burning mosquito coils? Again, in the light of The Lancet's findings, it seems likely that the answer to this question is far from zero.

Also, village residents who are constantly afflicted by smoke pollution are likely to develop other health issues, apart from dementia, that will decrease their quality of life and shorten their lives.

Residential units in retirement and lifestyle villages are usually located close to each other. Many units in retirement villages are actually joined together, which further hinders the dispersal of smoke. Some residents are unable to avoid breathing mosquito coil smoke continuously for several hours every day during the mosquito season because some stubbornly inconsiderate residents believe that they have an absolute right to continuously burn mosquito coils. After all, in Queensland this is what they had always done before they moved into the close confines of a residential village. The problem persists because some stubbornly negligent village managements pretend that they can't see any problem.

See the article in this website titled [Mosquito Coil Smoke in Residential Villages in Queensland](#) for further information about the health hazards of mosquito coils and an analysis of why mosquito coils are an inappropriate method of preventing mosquito bites in residential villages.

Residential Villages - Air Pollution - Health Hazard Reduction

The Lancet's dementia report shows that it is possible to reduce the prevalence of dementia. Cases of dementia that are preventable include cases that are caused by

air pollution and cases that are caused by smoking. Apart from reducing dementia, it is possible to also reduce the prevalence of other illnesses that are caused by smoke, including asthma, bronchitis and cancer.

Air pollution can be a significant health hazard. There are strong associations between air pollution and illness. In a report titled [The Air that we Breathe](#) published by The Lancet in 2022, it is stated that *"there is some evidence that even very low levels of air pollution can have negative health consequences."*

In Queensland, it is impossible to convince some elderly people, and also the managements of some residential villages, that the smoke that is created by the burning of mosquito coils is unnecessary and causes substantial health hazards.

In the interests of public health and safety, legislative reform is required. The creation of smoke, including smoke from mosquito coils, ought to be prohibited in residential villages.

Residential Villages - Air Pollution - Recommended Legislative Changes

The Retirement Villages Act (Queensland 1999) states that *"residents must not unreasonably interfere, or unreasonably cause or permit interference, with the peace, comfort or privacy of other residents"*. Repeatedly creating smoke that causes a nuisance including serious health hazards clearly breaches the intention of this clause.

The literal meaning of this clause is imprecise because there are many different interpretations of the word *"unreasonably"*, including interpretations that demonstrate a profound ignorance of health and safety issues. In relation to smoke pollution, many people interpret the word *"unreasonably"* as having whatever unreasonable meaning that they choose it to have. It is a similar story for the Manufactured Homes Act.

To minimise the health hazards caused by preventable air pollution in residential villages, it is recommended that relevant legislation should be amended to explicitly state that village residents are prohibited from deliberately creating any smoke.

For pragmatic reasons, one exception would be necessary. A blanket ban on the creation of smoke in residential villages would soon hit a stumbling block because most tobacco smokers would be unable to comply due to nicotine addiction. To accommodate this inescapable fact, and also to help reduce the health hazards of smoking without actually forcing any smokers to quit against their will, it is suggested that the proposed prohibition on smoke creation could include an exemption that allows smokers in residential villages to continue to smoke for as long as they wish to do so, provided that:

- (a) they smoke only in places where other residents cannot breathe the smoke.
- (b) they participate in programs that are designed to help smokers to manage and reduce their smoking (e.g. by attending support meetings once per month).

It is suggested that suitable programs would require approval from village management, and villages could have the option of running their own programs.

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