



# CLEAN AIR SOCIETY OF AUSTRALIA & NEW ZEALAND

(Incorporated in New South Wales, Australia.)

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Ms Anny Friis  
Editorial Director  
CHOICE  
Australian Consumers' Association  
57 Carrington Rd  
MARRICKVILLE NSW 2204

20<sup>th</sup> October 2008

Re: May 2008 Test on Unflued Gas Heaters

Dear Ms Friis,

The Clean Air Society of Australia and New Zealand, which has over 800 professional members, has as its major concern the maintenance of healthy air quality for all Australians and New Zealanders. Your May 2008 article on unflued gas heaters was very good in outlining some of the potential dangers of using such appliances, particularly in poorly ventilated small rooms.

Sadly, the need to warn users at every opportunity is highlighted by a recent death (Melbourne Sun Herald, 14 July 2008: "Police are warning of the dangers of using outdoor heaters in confined spaces after a man died in his flat from a suspected lack of oxygen.").

Since you indicate that you will be reporting further on these, we would like to take the opportunity to suggest some further safety and environmental health issues that would be very worthwhile stressing.

- Australian public health agency advice is to "be very careful about using unflued gas heaters, especially if the people likely to be exposed to it have heart disease or asthma, are pregnant or elderly, or are children." ([enhealth.nphp.gov.au/council/pubs/pdf/unflued\\_gas\\_heaterbrochure.pdf](http://enhealth.nphp.gov.au/council/pubs/pdf/unflued_gas_heaterbrochure.pdf))
- The States regulates the installation and use of unflued gas heaters in Australia and conditions for use vary considerably. In Melbourne they are effectively banned in residential situations (only permitted if operated 2.5 m above the floor) when using natural gas, while in NSW there are few restrictions.
- The necessary room ventilation for unflued heaters will reduce their heating efficiency from the quoted 90% to something substantially lower. However, the article's calculator for sizing a heater does not account for this.

- It should again be emphasised that adequate ventilation is essential in operating an unflued gas heater. These heaters release copious quantities of water vapour, which encourage the growth of moulds and fungi, which in turn are related to asthma attacks and other 'sick building' symptoms. Poor ventilation can often be judged by condensation on the windows and walls of the heated room.
- The article does not warn against the tendency on very cold days for the user to make the room more comfortable by closing windows and doors and by blocking vents or gaps under doors to stop drafts. This practice is a major safety issue as it reduces the ventilation in the room and increases the build up of pollutants indoors.
- Studies conducted in schools in South Australia have shown that the respiratory health of children markedly improved when unflued gas heaters were removed from the schools. Exposure to elevated levels of nitrogen dioxide was identified as a contributing factor. ("Randomized controlled trial of unflued gas heater replacement on respiratory health of asthmatic schoolchildren" L.S. Pilotto et al., Int. J. Epidemiol. 2004 Feb; 33(1):215-6.)
- A major study of over 100 homes in 3 capital cities in Australia in 2003 found that the levels of nitrogen dioxide in 66% of homes exceeded the World Health Organisation health guidelines when using an unflued gas heater ("Unflued Gas Appliances and Air Quality in Australian Homes", Natural Heritage Trust, 2004). [www.environment.gov.au/atmosphere/airquality/publications/report9](http://www.environment.gov.au/atmosphere/airquality/publications/report9)
- Some heaters emit the air toxic formaldehyde, which is now recognised as a significant indoor air pollutant and adversely affects the respiratory system. It is classified by the World Health Organisation as a known human carcinogen. To quote from research by Brown et al (2004) "One type of heater was lower emitting for nitrogen dioxide, but emitted greater amounts of carbon monoxide and formaldehyde (the latter becoming significant to indoor air quality). When operated with low line pressure or slight misalignment of the gas burner, this heater became a hazardous source of these pollutants. Emissions from the heaters changed little after continuous operation for up to 2 months." ("Room chamber assessment of the pollutant emission properties of (nominally) low-emission unflued gas heaters" S.K. Brown, Indoor Air 2004; 14 (Suppl 8): 84-91; See also [www.fast.org/images/occasional-papers/clean\\_air\\_full.pdf](http://www.fast.org/images/occasional-papers/clean_air_full.pdf).)
- Incredibly, consumers can go into disposals stores, camping stores and recreational vehicle accessory shops and buy unflued gas heaters, which can be operated using butane or propane bottles, and use them to heat recreational vehicles, caravans and tents with no warnings about the dangers and the need for good ventilation. In fact unflued gas heaters are prohibited outright in caravans (see Australian Standard AS 5601-2002 (AG 601-2002)) and no reputable licensed gas installer would dare set one up. Even worse, fan-forced unflued gas heaters, which can be even more harmful, are also available for purchase.

Given the Australian Consumers' Association's focus on consumer product safety, CHOICE tests of unflued gas heaters should be done in a well ventilated room and should stress the health warnings on their use. When compared with a flued gas heater it is likely that both the efficiency and improved indoor air quality using the latter would outweigh the additional cost of the fluing.

If you would like to discuss this further please contact Dr Mark Hibberd on 03 9239 4400.

Yours sincerely



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Clean Air Society of Australia & New Zealand  
President Victoria/Tasmania Branch