

Reducing air pollution from unflued gas heaters

Purchasing an unflued gas heater

Make sure the heater:

- is a suitable size for the room
- has an electric ignition system
- has a safety system to shut down the appliance when fresh air flow is restricted.

Have the appliance installed by a qualified tradesperson.

Consider buying an externally flued gas heater instead.

Consider the potential impacts on air quality in your home.

If you already have an unflued gas heater

While the heater is in operation:

- keep the room well ventilated, i.e., leave a window partially open
- minimise the time the heater is in operation
- follow the manufacturer's instructions for correct operation.

Never leave an unflued gas heater in operation while you sleep.

Be aware of cumulative emissions from other gas appliances, such as stoves.

Have your heater professionally serviced annually.



Government of **Western Australia**
Department of **Environment Regulation**



For more information

on wood heaters and air pollution,
visit the Department of Environment
Regulation's website:

www.der.wa.gov.au/burnwise

or email

burnwise@der.wa.gov.au

Phone: 6467 5000

More information
on domestic wood smoke is also
available from your local government's
environmental health section.

Your local contact is:



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Home heating

options and air quality



This brochure provides information on the air quality and health impacts of unflued gas heaters and compares the cost, efficiency and air quality impacts of some home heating options.

Unflued gas heaters do not have a chimney or a flue to vent combustion products outside. Combustion products are emitted inside and impact indoor air quality.

In homes where an unflued gas heater is being used, levels of nitrogen dioxide (NO₂), carbon dioxide (CO₂), carbon monoxide (CO) and formaldehyde in indoor air are significantly increased. In some cases, levels of NO₂ have been found to exceed international health guidelines for indoor air. The emission of water vapour can also contribute to the increased formation of mould and dust mites.

Pollution from unflued gas heaters can contribute to numerous health problems (e.g. asthma, lung disease, cancer) particularly in vulnerable people with respiratory and cardiovascular illness, pregnant women, children and the elderly.



Reverse cycle air conditioner



Unflued gas heater



Flued gas heater

- NO_x can contribute to increased occurrence of asthma attacks and place children at risk of developing respiratory infections. It also contributes to changes in lung function, increased respiratory symptoms and increased respiratory disease.
- Elevated levels of CO can lead to increased dizziness, difficulty breathing, chest pain, tiredness and headaches. High CO concentrations deprive the body of oxygen and in extreme situations can lead to death.
- Formaldehyde is an irritant of the eyes, nose, throat and respiratory tract. It is also a carcinogenic air toxic.

Comparison of some heating options

Type of heater	\$ Operation	\$ Installation	Efficiency	Impact on Air Quality	Notes
 Wood heater	Low – high	Medium – high	High (dependent on operation)	High (dependent on operation)	Wood smoke is a significant contributor to air pollution and has known health impacts. Using an AS/NZ 4013:2014 standard compliant wood heater and operating it correctly will minimise the impact on air quality and health. Operation costs are dependent on whether you collect your own wood or if you purchase your wood from a firewood supplier (this can be costly).
Flued gas heater	Low – medium	Medium	Medium	Low	A flued gas heater is preferable to an unflued gas heater. Flued gas heaters emit the products of combustion, which are toxic, into the air outside of your home, protecting your indoor air environment.
Unflued gas heater	Low – medium	Low (dependent on bayonet fitting being available)	Medium	High	Unflued gas heaters emit the toxic products of combustion into your indoor air environment, reducing the quality of the air you breathe and compromising your health. Gas heaters are convenient, with high heat output and rapid start-up. If reticulated gas is not available, a bottled gas supply will be needed.
Electric heater – Portable	High	Low	Low	Low	Portable electric heaters generally have a low efficiency and heat output. Reverse cycle air conditioners and heat pumps have high efficiency and produce rapid high heat output.
Electric heater Reverse cycle air conditioner	Low	High	High	Low	Electric heating has minimal impact on air quality at the site of the heating. However, electricity generation does impact on air quality due to the coal-fired power stations used to generate electricity.