

Open air burning and smoke

Open air burning results from natural or deliberate fires. Examples include the burning of crop stubble, forests and vegetation burnt from land clearing ("burning off"), (this includes back-yard burning. Most local councils have banned the use of backyard incinerators.

"Prescribed burning" is the term used to describe the deliberate use of fire for fire management purposes. Fire is used as a tool to reduce the risk of wild fires by clearing out highly flammable leaves and branches dropped by native vegetation in parks, reserves, on farms and on bush blocks.

Information from smoke from the burning of wood in wood heaters is available from the Better Health Channel fact sheet "Woodfires and Breathing Problems" (www.betterhealth.vic.gov.au/).

Smoke

Fires produce smoke, which is a complex mixture of gases and particles. When a fire is first lit, the moisture is removed. As it gets hotter, gases are produced. Smoke contains unburnt parts of these gases. Smoke contains carbon dioxide, carbon monoxide, water vapour, hydrocarbons, and nitrogen oxides. The actual composition of the smoke depends on the type of vegetation and wood being burnt and the temperature of the fire and wind conditions.

Particles from smoke tend to be very small – about 1/30th the thickness of a human hair.

Fires also produce carbon monoxide. The levels of carbon monoxide are at their highest when the fire is smouldering. Benzene and formaldehyde are also present in smoke but at much lower levels than particles and carbon monoxide.

Health effects from smoke

Smoke does not necessarily cause health problems for everyone exposed to it. Most healthy people recover quickly from exposure to smoke and do not suffer long-term effects. There are a number of factors that determine whether exposure to smoke results in health problems: the concentrations of the air pollutants, the length of exposure, age, individual susceptibility and the presence of existing lung or heart disease.

Smoke may have a range of health effects ranging from eye and respiratory tract irritation such as breathing problems, bronchitis, increased severity of asthma and increased risk of cancer and premature death. The very small particles in smoke can go deep into the lungs. Fine particles, alone or in combination with other air pollutants, can make pre-existing diseases of the heart and lungs worse. Where there is short-term exposure to smoke, the particles are the most significant threat to public health.

More information on health effects of smoke can be obtained from our fact sheet: Bushfire Smoke and Your Health link:

http://www.health.vic.gov.au/environment/downloads/bushfire_smoke_and_health.pdf. Also see the Better Health Channel fact sheet: "Woodfires and Breathing Problems"

Who are most susceptible to the health effects of smoke?

Most healthy people, including children, recover quickly and do not suffer long-term consequences. Certain sensitive populations can experience more severe short-term and chronic effects. These are people with asthma, and other respiratory disease, people with cardiovascular disease, children and the elderly. Pregnant women and unborn children are potentially susceptible also.

Who to contact to discuss your concerns about the smoke that is in your area

- Your medical professional for more specific health advice (eg GP)
- Your local council Environmental Health unit or Local Laws unit can provide health information of a more general nature and information on back yard burning or land clearing.
- For further information on woodheaters and smoke access the EPA website www.epa.vic.gov.au/air/woodheaters/
- For further information on fires on private property access the CFA website www.cfa.vic.gov
- For further information on fires on public land access the DSE website; www.dse.vic.gov.au
- For further information on coping with fires call the Victorian Bushfire Information line: 1800 240 667 (*TTY 1800 555 677 and request 1800 240 667)

For further information on the health effects of smoke

Department of Human Services Environmental Health Unit 1800 761 874

Acknowledgments: this information was adapted from the Commonwealth Department of Health & Environment (DEH) Air quality fact sheet