



*"When you can't breathe...
nothing else matters"*TM

Health Impacts of Wood Smoke

THIS RESOURCE IS CURRENTLY UNDER REVISION

"Clearing the Air"

Air Quality Seminar, Tamar Region Natural Resource Management Strategy, 25th May 2004, Launceston

Dr James Markos

Respiratory Physician

Chairman, Tas Branch, The Lung Foundation Australia (Lung Foundation)

Chairman, Air Quality Group, Tamar Region Natural Resource Management Strategy

Wood smoke contains fine particles which are breathed into the lungs. They irritate the bronchial tubes and affect those with pre-existing lung disease, especially asthma, chronic bronchitis & emphysema.

The health effects of wood smoke have been shown consistently by several studies. The levels in summer are usually 1 - 20 micrograms per cubic metre of air per day (ug/m³). The studies have shown that for every rise of 10 ug/m³ of daily particle concentrations, there is an increase of:

- 1% of daily deaths from all causes,
- 3% of daily deaths from lung causes,
- 3% of daily admissions to hospital for lung disease, and
- 3% of daily lung symptoms in the general population.

There are also increasing concerns about the long term effects of inhaling wood smoke which are relevant to all persons exposed to environmental wood smoke. A large study of 500,000 people from the USA investigated the causes of death over a 16 year period and concluded in 2002 that long-term exposure to wood smoke is an important environmental risk factor for dying from heart or lung disease and from lung cancer.

The study corrected for the known risk factors for these diseases including tobacco smoking. There have also been many reports from under-developed nations about lung cancers developing in people cooking with wood stoves, often in poorly ventilated kitchens. The mechanism for causing lung cancer may be by inhalation of polycyclic aromatic hydrocarbons which are produced when wood is burned and which are inhaled with the particles.

The harmful effects of wood smoke appear similar to those of environmental tobacco smoke (ETS). We know there is no safe level of exposure to this. Individuals can choose not to smoke and can usually avoid ETS. However, a resident of a valley filled with wood smoke cannot easily avoid breathing in the polluted air.

The regions most affected by wood smoke are populated inland valleys in the winter, where residents often heat their homes by burning wood in slow-combustion heaters. The smoke is trapped by temperature inversions in the valleys so that it lingers close to the ground overnight.

There are areas of wood smoke pollution reported in many cities in Australia . High particle levels (over 50 ug/m³) are consistently recorded on many winter days in Launceston, Canberra & Armidale. The pollution levels have improved as residents have switched to alternative home heating sources, especially electrical. This has been helped by Government funded programs which provide a rebate to offset some of the costs of buying alternative heaters. Tasmania has the luxury of an environmentally friendly electricity supply from hydro- and wind-generated sources.

Wood smoke also arises in our communities from industrial wood-fired boilers, back-yard burn-offs, rural vegetation burn-offs, planned forestry burn-offs and unplanned forest fires. Diesel fumes also give rise to particle pollution. These sources will become more important to tackle as home usage of wood heating continues to decline and if particle levels remain unacceptably high in our cities.

Particle pollution from all sources, and especially from wood smoke, is harmful to our lungs. Residents should be encouraged and assisted to switch to safer alternative home heating. This should help all residents to breathe more safely in winter, particularly those who have asthma or other chronic lung illness. The slogan of the Lung Foundation has an important message in relation to air pollution: "When you can't breathe . . . nothing else matters" TM

A printed brochure of this fact sheet is available free of charge for members of the community. To order a copy contact 1800 654 301 or emailenquiries@lungfoundation.com.au

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Please consult your family doctor or specialist respiratory physician if you have further questions relating to the information contained in this leaflet. For details of patient support groups in Australia please call 1800 654 301.



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