

## Breathe easy -- no 'nasty surprises' in Australian air study

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A member of the air quality study team, CSIRO's Sarah Lawson, with sampling equipment used to monitor the air quality in Melbourne homes. Image credit - CSIRO

A CSIRO study of the quality of air inside the typical Australian home has not revealed any nasty surprises.

Commissioned by the Department of the Environment, Water, Heritage and the Arts, the study is the most comprehensive examination to date of <u>air pollutants</u> in Australian houses.

Project leaders Dr Melita Keywood and Ian Galbally from CSIRO's



Marine and Atmospheric Research say the results are very much a reflection of the way Australians live - how we cook and warm the home, the <u>cleaning agents</u> we use, building materials and finishes in the home, and the proximity to roadways and parklands.

"There are currently no guidelines for <u>indoor air quality</u> in Australia so we set out to establish a benchmark against which future changes in the mix of chemicals and pollutants can be measured," Dr Keywood said.

"Against this baseline we can check the changes that are occurring in households and communities in, for example, the installation of kitchen range hoods or shifts in lifestyle and traffic patterns."

The study was based on winter/spring and summer/autumn measurements taken for seven days in 40 south-east Melbourne households. A number of the homes were located close to busy roads and others in quieter suburban locations. Sixteen pollutant types were measured both inside and outside homes. These included fine particles, carbon monoxide, carbon dioxide, formaldehyde, benzene, <u>nitrogen</u> <u>dioxide</u>, ozone, fungi and mould.

Mr Galbally said there were no surprise results in the study but findings could be useful in improving house design and air flow-through.

"Back in the 1970's if we had carried out this study we would have seen a very different mix of indoor pollutants resulting from different heating and cooking sources, differing compositions in vehicle fuels, a greater presence of tobacco and wood smoke, and a different range of glues, paints, chemical products and building materials.

"This study will be such a benchmark against which future change can be identified and this will be relevant to changes in lifestyle and be a health consideration," Mr Galbally said.



Some study findings were:

- The concentrations of most pollutants measured were lower than measured previously in Australian dwellings
- Houses located close to busy roads were more likely to have higher concentrations of nitrogen dioxide than houses located far from busy roads. Nitrogen dioxide results from vehicle exhaust
- Older houses tended to have higher ventilation rates when closed up (i.e. were 'leakier') than newer houses
- Houses with attached garages had higher indoor levels of fine particles and benzene than houses without attached garages. Fine particles and benzene result from vehicle emissions.
- The main source of carbon dioxide indoors is from people breathing.

Dr Keywood said some pollutants were correlated with any form of burning activity in the home. For example higher concentrations of some gaseous pollutants and fine particles resulted from cooking with a gas stove compared with an all electric stove.

More information: <a href="http://www.environment.gov.au/atmosph...oor-air-project.html">www.environment.gov.au/atmosph...oor-air-project.html</a>

## Provided by CSIRO

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