

Gas heater link to child illness

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Gas heaters used for home heating have been found to increase the risk of respiratory illnesses in young children, according to the latest research from the University of Auckland.

Paediatrician, Associate Professor Cameron Grant from the University's Centre for Longitudinal Research, says the results of the research project point to a worrying finding that the risk of hospitalisations for acute respiratory infections in under-five year olds was increased in households where gas heaters were used to [heat](#) the room the child slept in during their first year of life.

"The quality of housing, particularly for [young children](#), is an issue of major concern in contemporary New Zealand and has most recently focused on known problem areas of cold, dampness and [cigarette smoke](#)," he says.

Acute respiratory infections are common in early childhood, accounting for many doctor visits and hospital admissions.

Specific aspects of children's home environments have been shown to increase the risk of these infections before age five. These include the presence of dampness and mould, household crowding and exposure to air pollutants produced by heating, cooking and cigarette smoke.

The relationship between internal living environments and respiratory disease was investigated by a research team from the Centre for Longitudinal Research as part of the longitudinal study of child

development, Growing Up in New Zealand.

The study was published recently in the journal *Environmental Health*.

"In this study one in five mothers reported frequent presence of dampness and condensation in the room where the child slept," says Associate Professor Grant. "Although these factors were positively linked to the incidence of acute respiratory infections, the association was no longer statistically significant after we adjusted for the use of gas heating."

"The independent relationship with gas heating identifies this as an area which, if addressed, could reduce the number of children admitted to hospital with these respiratory infections," he says.

The most common forms of heating are solid fuel burners and portable electric heaters. Among the 7000 Growing Up in New Zealand participant families, one in seven mothers reported using a flued gas heater, and one in eight an unflued gas heater, for household heating.

"Unlike electric and solid-fuel burning heaters, gas heaters (particularly if unflued) emit moisture and a number of pollutants including nitrogen dioxide, carbon monoxide, carbon dioxide and formaldehyde, which affect children's respiratory health," says Dr Grant.

"This is a type of household heating that has been banned in a number of other countries, but there are no such restrictions in New Zealand.

"The burden of hospital admissions for acute respiratory infections among children in this nationally representative study is considerable," he says. "Our study demonstrates a significant association between the risk of [acute respiratory infection](#) hospitalisation before five years of age and the use of gas heaters in the child's room during infancy.

"Reducing our reliance on gas heaters in New Zealand households, alongside other measures to improve housing conditions, would be a major step forward in improving our children's indoor living environments and thereby health," says Associate Professor Grant.

More information: Sandar Tin Tin et al. Internal living environment and respiratory disease in children: findings from the Growing Up in New Zealand longitudinal child cohort study, *Environmental Health* (2016). [DOI: 10.1186/s12940-016-0207-z](https://doi.org/10.1186/s12940-016-0207-z)

Provided by University of Auckland

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