HOME INDOOR AIR QUALITY EFFECTS ON A COHORT OF NEW SOUTH WALES PRIMARY SCHOOL CHILDREN

Wafaa Nabil Ezz, Woolcock Institute of Medical Research, Australia, University of Sydney, New South Wales, Australia
Alistair Merrifield, Environmental Health Branch, NSW Health Department, New South Wales, Australia
Nathan Aust, Environmental Health Branch, NSW Health Department, New South Wales, Australia
Brett G. Toelle, Woolcock Institute of Medical Research, Australia, University of Sydney, New South Wales, Australia
Wei Xuan, Woolcock Institute of Medical Research, Sydney, New South Wales, Australia
Elena Belousova, Woolcock Institute of Medical Research, Sydney, New South Wales, Australia
Bin Jalaludin, University of New South Wales, Sydney, New South Wales, Australia
Wayne Smith, University of New South Wales, Sydney, New South Wales, Australia, Environmental Health Branch, NSW Health Department, New South Wales, Australia, University of Newcastle, Newcastle, New South Wales, Australia
Guy B. Marks, Woolcock Institute of Medical Research, Sydney, New South Wales, Australia, University of Sydney, New South Wales, Australia, University of New South Wales, Sydney, New South Wales, Australia

Aim: To determine whether, in children aged 7 to 11 years, the presence and use of an unflued gas heater in the home and the use of gas cookers in the home result in worse respiratory health outcomes.

Methods: Primary school children from 22 schools in colder areas of New South Wales were recruited (n=418). We collected information about use of unflued gas heaters (UFGH) and/or gas for cooking. We recorded FEV$_1$, peak expiratory flow (PEF), respiratory symptoms and use of bronchodilators twice daily for six weeks at school. Atopic status was assessed by skin prick tests. Analysis was by generalised estimating equations.

Results: The prevalence of reported asthma was 15% and 44% were atopic. The presence of UFGH was associated with lower FEV$_1$ measured in the morning (-0.087 L, 95% CI -0.167 to -0.007 L) and in the afternoon (-0.072 L, 95% CI -0.142 to -0.002).

Conclusions: Exposure to gas appliances in the home has an adverse effect on symptoms and lung function with some evidence that these effects are modified by atopic status.