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

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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). The effect of UFGH on daytime cough differed between atopic and non-atopic subjects (P=0.038), with a trend towards a more adverse effect in atopic subjects. However, the effect of UFGH on cough during the day was not significant in either atopic subjects (odds ratio 1.53, 95% CI 0.78 to 3.02) or non-atopic subjects (OR 0.66, 95% CI 0.35 to 1.24). Use of gas for cooking was associated with increased reliever use during the night (OR 3.61, 95% CI 1.34 to 9.77) but the effect on use of reliever during the day differed between atopic and non-atopic subjects (P=0.019) and was more adverse in non-atopic subjects. No significant adverse effects were noted for wheeze or cough during the night.
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.