promoting psychosocial well-being among adolescents with inaccurate perception.

REVIEWER COMMENTS. Asthma perception can be one of the most significant barriers to compliance with controller medication and response to acute episodes. In particular, adolescents have multiple barriers to adequate treatment of chronic diseases such as asthma. Physicians need to be sensitive to this issue in this group. Understanding and building interventions to improve symptom perception in this population are key to improving control and avoiding adverse events.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2009-1870KK

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Effects of Improved Home Heating on Asthma in Community Dwelling Children: Randomised Controlled Trial

PURPOSE OF THE STUDY. To assess whether nonpolluting, more-effective home heating (heat pump, wood pellet burner, or flued gas) has a positive effect on the health of children with asthma.

STUDY POPULATION. A randomized, controlled trial of 409 children, 6 to 12 years of age, with doctor-diagnosed asthma was performed in the household setting in 5 areas in New Zealand.

METHODS. Nonpolluting, more-effective home heaters were randomly installed in the intervention houses. Outcome measurements were made during the winter months of 2005 (baseline) and were repeated after the intervention in the winter of 2006. The primary outcome was change in lung function (peak expiratory flow rate and forced expiratory volume in 1 second [FEV1]). The secondary outcomes were reported asthma symptoms, scores for lower respiratory tract symptoms from diaries, daily asthma drug use, health care utilization, and days of missed school. Nitrogen dioxide levels and temperatures were measured in the living room and the child’s bedroom.

RESULTS. Of 409 households, 349 (85%) remained in the study and were randomly assigned, with 175 assigned to the intervention group and 174 to the control group. After the intervention, lung function tests showed nonsignificant improvement in daily FEV1 (difference in mean FEV1: 130.7 mL [95% confidence interval [CI]: −20.3 to 281.7 mL]; P = .09) and peak expiratory flow rate (difference in mean peak expiratory flow rate: 12.29 l/min [95% CI: −4.57 to 29.15 mL]; P = .15). However, on the basis of parental reports and diaries, children in the intervention group had significant reductions in asthma symptoms and improved well-being, compared with the control group. They had fewer reports of poor health (adjusted odds ratio [OR]: 0.48 [95% CI: 0.31–0.74]; P < .001), less sleep disturbed by wheezing (OR: 0.55 [95% CI: 0.35–0.85]; P < .001), less dry cough at night (OR: 0.52 [95% CI: 0.32–0.83]; P = .01), and reduced scores for lower respiratory tract symptoms (OR: 0.77 [95% CI: 0.73–0.81]; P = .013). The intervention group also had 1.8 fewer days (95% CI: 0.11–3.13 days; P < .04) off school, 0.4 fewer visits (95% CI: 0.11–0.62 visits; P = .01) to a doctor for asthma, and 0.25 fewer visits (95% CI: 0.09–0.32 visits; P = .01) to a pharmacist for asthma than did the control group. Exposure to low temperatures was 50% less in the intervention group (95% CI: 0.49–1.93; P = .001). The mean temperature of the control households was lower than that of the intervention households by 1.10°C (95% CI: 0.54–1.67°C; P < .001) in the living room and 0.57°C (95% CI: 0.05–1.08°C; P = .001) in the child’s bedroom. Indoor nitrogen dioxide levels were significantly reduced in the intervention group, compared with the control group, in the living room (geometric mean: 8.5 vs 15.7 μg/m3; P < .001) and the child’s bedroom (7.3 vs 10.9 μg/m3; P < .001).

CONCLUSIONS. Installing nonpolluting, more-effective heating in the households of children with asthma did not significantly improve lung function but did significantly reduce symptoms of asthma, days off school, health care utilization, and exposure to nitrogen dioxide.

REVIEWERS COMMENTS. Asthma is aggravated by the outdoor and indoor environments. Indoor temperatures, damp, mold, and pollutants have been implicated as important factors. This study shows the impact of nonpolluting, home-heating systems on symptoms in children with asthma. In this randomized, controlled trial, significant improvements in frequency and severity of symptoms were noted and there were trends toward improved lung function. These trends toward improved health effects should increase public awareness of this intervention while additional studies are undertaken.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2009-1870LL

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Association of Early Life Wheeze and Lung Function

PURPOSE OF THE STUDY. To calculate the age-specific incidence of wheeze and to determine whether wheezing at part-
Effects of Improved Home Heating on Asthma in Community Dwelling Children: Randomised Controlled Trial
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Pediatrics 2009;124;S145
DOI: 10.1542/peds.2009-1870LLL

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DEDICATED TO THE HEALTH OF ALL CHILDREN™
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