

**THE CANADIAN AIR QUALITY HEALTH SURVEY:
INFLUENCE OF HOME DAMPNES AND MOLDS ON
RESPIRATORY HEALTH**

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In 1988 we conducted a questionnaire-based study of 30 Canadian communities. The present report focuses on the association between reported home dampness and/or molds and respiratory health. 17,962 parents or guardians of school children received a questionnaire, and 14,948 (83%) questionnaires were returned. The prevalence of lower respiratory symptoms (any of cough, phlegm, wheeze, wheeze with dyspnea) was increased among those who reported dampness/molds. Among the 12,569 children between 5 and 8 years of age, the prevalences of lower respiratory symptoms were 19.5% and 13.2% in homes with and without reported dampness/molds. The corresponding adjusted odds ratio was 1.50 (95% CI 1.35, 1.67). Among the 14,799 questionnaire respondents at least 21 years of age and who had never smoked, lower respiratory symptoms were reported in 19% and 11% of those with and without reported exposure to dampness/mold. Odds ratio for adults adjusted for smoking was 1.62 (95% CI 1.48, 1.78). The reported prevalence of home dampness or molds in Canadian homes, approximately 38%, indicates that it is an important public health issue and further studies are required to clarify the nature of the observed association with respiratory complaints.

INTRODUCTION

Canadian homes, because of the cold climate, tend to be well insulated and may consequently have reduced fresh air exchange(1). Since North Americans spend little time outside, indoor air quality is understandably an important issue. Dampness, with resulting mold growth, has been associated with non-specific respiratory symptoms in several countries. In 1988 we conducted a large questionnaire-based study to investigate this problem in Canadian homes.

MATERIALS AND METHODS

Study Sites

Six Canadian regions spanning the east to west coast were selected for study. These were: The Maritimes, Quebec, Muskoka Ontario, Southwestern Ontario, Saskatchewan, and British Columbia. Within each region five agricultural service towns were selected, none of which had local industrial sources of outdoor air pollution.

Study Population

Children who attended kindergarten to grade three, between March and April 1988, were eligible to receive questionnaires to be completed by the parent or guardian most familiar with the child's health.

The questionnaire questions used in the present study were taken or modified from the American Thoracic Society - Division of Lung Disease Respiratory Symptom Questionnaire, the questionnaire used by the Harvard School of Public Health in the six city study, and the Basic Standard Environmental Inventory Questionnaire developed by Lebowitz et al(2-4).

Home dampness/mold was defined as the reported presence of wet or damp spots on inside surfaces, leaking or flooding in the basement, and mold or mildew growing inside the home. Lower respiratory symptoms were defined as the report of any of; cough, phlegm, wheeze, or wheeze with dyspnea in adults. In children, the definition was similar except that persistent phlegm was not included.

RESULTS AND DISCUSSION

17,962 parents or guardians received a questionnaire and 14,948 were returned. 12,569 children between the ages of 5 and 8 yr were available for analysis, and 14,799 adults at least 21 yr of age were available for analysis. Reported prevalence of home dampness/mold was 38%. Symptom prevalence among children was 19.5% versus 13.2% among those with and without reported home dampness/mold. Corresponding values for adults were: 38% versus 27% among current smokers, 21% versus 14% for ex-smokers, and 19% versus 11% for never smokers. The corresponding adjusted odds ratio for children was 1.50 (1.35, 1.67), and for adults combining smoking categories was 1.62 (95% CI 1.48, 1.78).

We found that home dampness and mold was associated with increased respiratory symptoms among both adults and children. The findings persisted despite adjustment for other influencing variables and were consistent with studies from other countries(5-7).

CONCLUSIONS AND RECOMMENDATIONS

Our findings suggest that exposure to indoor dampness and/or molds is an important public health issue in Canada. Further studies are required to elucidate the symptom pathogenesis.

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