There was a 51% greater risk of lower respiratory illnesses if wet cough, wheeze, or asthma was present. Secondhand-smoke exposure was determined by parent/guardian written responses on self-administered questionnaires and categorized as none, 1 to 29, or ≥30 cigarettes smoked per day inside the home. Asthma status was determined by parental response to the question, “Has a doctor ever diagnosed this child as having asthma?” Buccal cell samples were collected, and the genomic DNA was analyzed for the G-to-A transition polymorphism at position 308 in TNF by polymerase chain reaction and allelic discrimination assays.

RESULTS. There was a 51% greater risk of lower respiratory illness–related school absences among children with secondhand-smoke exposure compared with those who were unexposed. Children with the TNF GG genotype exhibited similar absence rates regardless of whether they were exposed or unexposed to secondhand smoke. Unexposed children with at least 1 copy of the TNF G→308A allele had similar absence rates for lower respiratory illnesses compared with children with the TNF G→308GG genotype. However, absence rates in children with the variant A allele and secondhand-smoke exposure were markedly increased. Children with the variant A allele and secondhand-smoke exposure had a 75% increase in risk for illness-related absences compared with unexposed children with the GG genotype. In children with the variant A allele, illness-related absence risk increased as the number of smokers in the home increased. In addition, children with 1 variant A allele who were exposed to ≥30 cigarettes per day had a relative risk of 2.75 for respiratory illness–related school absence compared with unexposed children with the GG genotype. Restricting analysis to children without asthma did not substantially alter the findings.

CONCLUSIONS. Secondhand-smoke–exposed children who carried a TNF G→308A variant allele were at highest risk for respiratory illness–related school absences. A strong dose-response relationship in this group of patients was found for respiratory illness–related absence risk in relation to the number of household smokers and number of cigarettes smoked. The genetic susceptibility associated with the TNF G→308A allele is likely mediated by variation in inflammatory responses to secondhand smoke.

Patterns of Global Tobacco Use in Young People and Implications for Future Chronic Disease Burden in Adults


PURPOSE OF THE STUDY. The Global Youth Tobacco Survey assessed current tobacco use and exposure among young teenagers and evaluated susceptibility to starting smoking among nonsmokers.

STUDY POPULATION. Students aged 13 to 15 years (N = 747 603) at 395 sites in 131 countries and the Gaza Strip and West Bank.

METHODS. Students completed questionnaires to assess current tobacco use, cigarette smoking, susceptibility to smoking among nonsmokers, and exposure to secondhand smoke in homes and public places. Susceptibility to smoking was defined as an answer other than “definitely not” when asked if they would smoke a cigarette offered by a best friend or if they thought they would smoke at any time in the next 12 months.

RESULTS. Among all students, 17.3% currently used tobacco products and 8.9% currently smoked cigarettes. Current tobacco-product use was highest in the region of the Americas (22.2%), and current cigarette smoking was highest in the European region (17.9%) and region of the Americas (17.5%). Among students who had never smoked cigarettes, 18.3% reported susceptibility to smoking during the coming year. Susceptibility was highest in the European region (30.5%) and the region of the Americas (24.8%). Measures of use, susceptibility, and exposure were similar for boys and girls. Worldwide, never-smokers were less likely than current smokers to report exposure to secondhand smoke at home (prevalence: 39.1% [95% confidence interval (CI): 36.6–41.6] vs 72.8% [95% CI: 64.0–81.6]) and in public places (prevalence: 49.5% [95% CI: 46.7–52.3] vs 81.2% [95% CI: 74.2–88.2]).
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Elinor Simons
Pediatrics 2007;120;S112
DOI: 10.1542/peds.2007-0846R

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