

# Cigarette use may explain asthma epidemic in children

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The rise in cigarette use by adults over the past century may explain the asthma epidemic in children according to a study by researchers at the Mailman School of Public Health. The study is published this month in *Annals of Allergy, Asthma & Immunology*, the scientific journal of the American College of Allergy, Asthma and Immunology (ACAAI).

The prevalence of asthma has increased at least threefold during the past several decades, but the cause for this remains unknown, according to author Renee D. Goodwin, PhD, MPH, assistant professor in the Department of Epidemiology at the Mailman School of Public Health. The increase is occurring most prominently in industrialized countries, but now developing countries are beginning to experience similar increases.

“We have identified parallel increases in childhood asthma and cigarette use among adults during the past century in the United States. These parallel trends suggest that the increase in cigarette use may be a contributing factor to the rise in asthma among children during the same period through increased exposure to environmental tobacco smoke,” said Dr. Goodwin.

Approximately 4.8 million children under age 18 have asthma in the United States. Although treatment and asthma management strategies can help control symptoms, asthma is a chronic condition with no known cure. Asthma most frequently begins in childhood. The cause is unknown, but allergies are a factor in the majority of children with

asthma.

Environmental tobacco smoke (ETS) inhaled unintentionally by nonsmokers has a higher concentration of some toxic substances than the smoke inhaled by smokers, such as carbon monoxide and carbon dioxide. Children breathe more air than adults and have narrower airways, so ETS is a greater causal risk factor of asthma in children. It can also increase the severity of their asthma symptoms.

Both genetic and environmental risk factors for asthma have been identified, noted Dr. Goodwin. Globally, six studies have shown environment tobacco smoke to be a risk factor of incident asthma. The risk for the development of childhood asthma was 2.5 times greater in young children with mothers who smoke more than 10 cigarettes per day indoors compared with mothers who smoke fewer cigarettes or not at all. Exposure to environmental tobacco smoke, especially in the home, increases a child's likelihood of developing asthma by 63 percent according to the Department of Health and Human Services.

Cigarette use, currently considered one of the most pressing public health problems worldwide, has become increasingly concentrated among economically and socially disadvantaged segments of the population, as well as among younger persons.

“Previous data that show more recent higher rates of cigarette smoking among lower socioeconomic status segments of the population within the United States are consistent with our theory, since these are the most vulnerable segments of the population among whom rates of childhood asthma are currently the most concentrated,” she said.

“Although cigarette consumption has declined in some segments of the United States population since its peak around 1981, the consequences and health effects of the drastic increase in the mid-1980s are still

affecting adults and children,” Dr. Goodwin said.

Source: Columbia University's Mailman School of Public Health

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