

A S T H M A A N D A L L E R G Y
Answers
ASTHMA AND ALLERGY FOUNDATION OF AMERICA

How Tobacco Smoke Affects Children and Adolescents

By William E. Pierson, M.D.

There are many important health reasons for not smoking, and the impact of decisions to smoke or not smoke on heart and lung diseases has been well-reported and taken to heart by millions of Americans. The adverse health consequences of exposure to the smoking of others has been somewhat less well understood by the public. However, there is strong evidence that smoking by parents threatens the health of their children, especially children with asthma and allergies.

What's in Tobacco Smoke?

When tobacco is combusted in the process of cigarette smoking, it releases a mixture containing thousands of microscopic particles, and gaseous and semi-volatile components into the air. So-called sidestream smoke, tobacco smoke released by the burning cigarette that is then inhaled by others, is a major indoor air contaminant. In one study, passive smoking--inhaling the smoke from others' smoking--was shown to cause as much as one-third to one-half the adverse effects of direct smoking--inhaling directly from the lighted cigarette.

Is There Tobacco Smoke Allergy?

Scientifically, we are not sure. There are so many components of tobacco smoke that some may be allergenic while others are irritants. The chief allergy antibody, IgE, has been recorded at higher levels in smokers than in non-smokers. Other classes of antibodies important in the human immune system defense against bacteria and viruses have appeared suppressed in smokers.

Clinically, whether or not exposure to tobacco smoke is or is not a true allergy in children and adolescents prone to asthma and allergies may be simply splitting hairs. It seems quite convincing today that their exposure to tobacco smoke is a health hazard. Studies have shown a significant increase in wheezing among children with asthma, and runny noses (rhinorrhea) in those with allergic rhinitis when they are exposed to tobacco smoke from others.

Symptoms and Circumstances

Researchers have reported a range of health impacts due to exposure to tobacco smoke. Prevalence of bronchitis and

tracheitis (inflammation of the trachea) occurs significantly more often in infants exposed to tobacco smoke at home. Moreover, the occurrence of these diseases increased in proportion to the number of cigarettes smoked within the home. A very important study by Canadian researchers showed quite clearly that a mother's smoking substantially increased the aggravation of childhood asthma, especially during winter months when windows and doors are closed more of the time and indoor ventilation is less than in warmer seasons. This and other studies that confirmed its findings are the cornerstones for recommending a halt in tobacco smoking by the parents of children with asthma and allergies.

A family history of respiratory illness increases the risk for infants and children to suffer adverse effects from tobacco smoke. When urban families with asthma were studied, researchers found that prevalence of the disease was one and one-half times higher among children whose mothers smoked at home compared with children whose mothers were non-smokers. In fact, the health impact on children from a mother who smokes are much greater from a father who smokes.

The reduction in lung function due to asthma has been shown to be twice as high in children with parents who smoke than in their counterparts with non-smoking parents. Children with allergies and nasal congestion who are also exposed to tobacco smoke are up to six times more likely than others to have persistent middle ear effusion requiring the surgical insertion

of tubes. There also appears to be a very strong relationship in adults exposed passively to tobacco smoke and decreased small airways function as compared with patients not exposed to tobacco smoke.

There seems today to be little question but that tobacco smoke and the health of children and adolescents with asthma and allergies are not compatible. Advertising and marketing now being aimed at teenagers and pre-teenagers, efforts to invoke smoking habits in these vulnerable ages, is troubling. With adverse effects especially acute in allergic and asthmatic patients, public approaches for sparing them exposure to tobacco smoke are needed.

It is important that professional and voluntary health organizations work with government to formulate policies and regulations that will guarantee protection for children and adolescents with asthma and allergies. Individually, it is always valuable for you to express your views to your elected representatives, as well as to the numerous voluntary health agencies, including AAFA, whose constituents have vital health-related stakes in seeing a tobacco smokeless environment.

Dr. Pierson is co-director of the allergy division at Children's Hospital in Seattle and clinical professor of pediatrics and environmental health at the University of Washington.

This information should not substitute for seeking responsible, professional medical care.