The following viewpoint is excerpted from the congressional testimony of Randolph D. Smoak Jr. Smoak gave testimony in support of a bill to ban environmental tobacco smoke (secondhand smoke) in public buildings. Smoak contends that environmental tobacco smoke (ETS) has significant adverse effects on the health of those who are forced to breathe it. It is especially hazardous to young children, he maintains, and the public must be educated to reduce children’s exposure to secondhand smoke. Furthermore, Smoak asserts, ETS should be classified as a human carcinogen and eliminated from workplaces and public buildings. Smoak is a surgeon from South Carolina and a member of the board of trustees of the American Medical Association.

As you read, consider the following questions:

1. According to Smoak, how many Americans are killed annually by exposure to ETS?
2. Why is secondhand smoke even more toxic than mainstream smoke, in the author’s opinion?
3. What are some of the illnesses that are aggravated by exposure to ETS, according to Smoak?

On behalf of the AMA [American Medical Association], I am pleased to have this opportunity to express our views about H.R. 3434 and the significant adverse health effects of environmental tobacco smoke (ETS), commonly known as "passive smoking." The AMA represents the physicians of this country who care for the patients at risk for disease and premature death from the effects of tobacco use. Too many of our patients are ill due to ETS. In speaking for physicians and their patients, the public health aspects of protection from ETS cannot be emphasized too strongly. The American people stand to benefit immeasurably by reducing the pervasiveness of this hazard....

**Passive Smoking Kills**

The need to take action to limit exposure to ETS is overwhelming. Exposure to ETS, brought about when nonsmokers inhale thousands of chemicals during "passive smoking," may kill as many as 50,000 Americans annually. It is estimated that about 35,000 of these deaths are from heart disease, 3,000 from lung cancer, and about 12,000 from other cancers. This means that "passive smoking" is the third leading cause of premature death in the United States, exceeded only by direct smoking and alcohol. For example, the ETS cancer mortality alone is higher than the total cancer mortality figures from all the other environmental hazards regulated by the EPA [Environmental Protection Agency] and other government agencies combined! These include substances such as all regulated outdoor air pollutants, asbestos, benzene, arsenic, radiation, pesticides, active and inactive hazardous wastes, all workplace chemicals, and all other consumer products. In addition, ETS imposed upon children causes 150,000 to 300,000
cases of bronchitis and pneumonia each year, and worsens asthma in up to 1 million children annually.

The EPA document, “Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders,” released in January of 1993, addressed some of the major health effects of ETS. This report concluded that ETS: 1) is causally associated with lung cancer in nonsmoking adults and should be classified as a Group A carcinogen, with approximately 3,000 excess deaths yearly, and 2) produces an increased risk of development of acute lower-respiratory infections, middle ear effusions, asthma, and respiratory irritation in children exposed in the home. The AMA strongly concurs with the EPA findings. We believe that ETS should be classified as a human carcinogen, and strongly support the findings of the EPA.

At least three major reviews have been published regarding the health effects of ETS. These reports identified and analyzed many of the studies under review which served as the basis for the EPA document. The 1986 Surgeon General's report, a 1986 review by the National Academy of Sciences, and a review paper published in Britain in the same year all linked ETS to respiratory illnesses in children and to lung cancer in nonsmokers. Since those studies were published, other reports have been published that continue to affirm the carcinogenicity of ETS. The National Institute of Occupational Safety and Health (NIOSH) recently reviewed the data concerning ETS in its Current Intelligence Bulletin #54 (June 1991) and concluded that ETS is potentially carcinogenic and that "simply eliminating tobacco use from the workplace" is the best method of dealing with this hazard (emphasis added). We concur with these findings as well, and believe that the data is clear and overwhelmingly convincing.

The presence of carcinogens in ETS should not be in question, nor should it be surprising that such chemicals are abundant in ETS. Indeed, there is evidence that ETS is even more toxic than mainstream tobacco smoke. Mainstream tobacco smoke contains over 4,000 identified substances, nearly four dozen of which are carcinogenic. ETS, composed of sidestream smoke from the smoldering cigarette, exhaled mainstream smoke, and other components which escape from the cigarette during smoking, also contains many of these toxic and carcinogenic substances. Still other components in ETS are known to be either co-carcinogenic tumor initiators or tumor accelerants. For example, ETS contains a higher concentration of some carcinogens than mainstream smoke, including the volatile amines and the nitrosamines. In addition, ETS contains benzene, tobacco-specific nitrosamines, and radioactive decay products such as Polonium-210.

Theories of carcinogenesis generally involve repeated exposure over time to an irritant, chemical toxin, or radioactive particle leading to abnormal tissue growth that we identify as cancer. It is not surprising that ETS has been given a "Class A" carcinogenicity label, based upon what is known about the dose and time factors involved in smoke-induced carcinogenesis. Absorption of tobacco-specific smoke constituents such as nicotine and other biological markers has been measured sufficiently in ETS-exposed persons to conclude that such exposure is ubiquitous, and that the effects of the toxins in smoke do occur in nonsmokers. In a study reported in the New England Journal of Medicine, metabolic elements known to be carcinogens were found in healthy, nonsmoking men exposed to ETS under controlled conditions, proving that nonsmokers absorb and metabolize the cancer-causing toxins in ETS.

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Respiratory Disease in Ets-Exposed Children

Physicians who care for children have long been aware of the clinical evidence linking parental smoking
with a variety of respiratory diseases in children. We now teach medical students and resident physicians to inquire about exposure to cigarette smoke in cases of recurrent ear effusions, bronchitis, pneumonia, and asthma. Many studies have confirmed the relationship between ETS and these illnesses in children. Exposure to ETS has been linked with increased emergency room utilization by children for respiratory complaints, increased hospitalizations due to these illnesses, more school absences, and increased health care costs for smoke-exposed children. These problems are especially troublesome in very young children and those born prematurely or with low birthweight, many of whom may have been exposed to the toxins in tobacco in utero. Further confirmation of this was published in the February 23, 1994, issue of the *Journal of the American Medical Association*. A Canadian researcher found that cotinine is transmitted to unborn children exposed through their mothers to passive smoke.

The EPA document addresses these issues and the literature concerning childhood illness due to ETS exposure. As is the case with the lung cancer section of the EPA document, there is biologic plausibility in the assumptions made and in the conclusions reached. There are demonstrable measures of allergy (increased IgE levels among smoke-exposed children) and decreased pulmonary function in the at-risk group. Middle ear disease may be mediated by decreased mucociliary function in the Eustachian tubes similar to the effect of smoke on the lungs, or perhaps the inflammatory effect of smoke constituents.

Studies that implicate cigarette smoke exposure as a causal factor in asthma are clinically compelling. There is an increased utilization of medical care among smoke-exposed children and, as with the other illnesses studied, there exists a dose-response relationship. Airway hyper-reactivity, inflammatory changes in the airways, and the heightened allergic response by exposed children may all be implicated in this problem. Again, up to a million cases of asthma each year may be exacerbated by exposure to tobacco smoke, and as many as 20,000 new cases of the disease may be initiated annually by ETS exposure.

**Public Policy Implications**

Finally, as advocates for patients, we must comment briefly upon what we believe are important public policy issues at stake. The public perceives risk differently when it recognizes the difference between an assumed risk and one which is imposed upon it, without the control or consent of those who may be affected. We believe that it is imperative that the public, physicians, employers, and public policymakers become educated about the problems posed by ETS. The costs to the nation in terms of human suffering and death are simply too great to be ignored. President Bill Clinton could help this process greatly by signing an executive order making all federal buildings and facilities smoke free. General public education to reduce direct smoking prevalence must also be pursued. Families with children and their physicians must clearly understand the risks of childhood exposure to ETS and act accordingly. The EPA document and the subsequent campaign developed by the Centers for Disease Control and Prevention on passive smoke exposure should have some effect in addressing this national problem by making it more personally meaningful.

**Tobacco Industry Fears**

Legislators and other public policymakers will undoubtedly continue to hear from groups who profess a "scientific" interest in the validity of this issue and who will attack it on the basis of the EPA's methodology
and conclusions. The tobacco industry continues to deny a relationship between smoking and ill health of any kind. We disagree. Our experience in treating the deadly results of tobacco smoke cannot be denied. We believe that the tobacco industry fears that public awareness of the risks imposed by ETS exposure will make smoking less socially acceptable, lead to an increase in smoke-free workplaces and other public venues, and will reduce its revenues as a consequence.

We believe that the tobacco industry fears the continued erosion of its market in this country and as well, the impact of the EPA report on advertising, marketing, and litigation. Sentiment against the use of cartoon figures in cigarette advertisements ... have damaged the industry. Tobacco use kills up to 470,000 Americans each year (direct and passive smoking combined); tobacco is the only consumer product that kills when used as intended by the manufacturer! Tobacco is lethal, not only to individuals who use it directly, but also to those who have not assumed its risks. Because the EPA report strengthens the data on the adverse health consequences of smoking and broadens the hazard to include the nonsmoking majority of the population, the tobacco industry and its allies will continue to oppose it. The AMA strongly supports the EPA, as well as the protection of the public from ETS by regulatory and legislative means.

The AMA strongly supported the adoption of the EPA report in 1993. The AMA believes that the public will be well served by continued education about ETS and action to protect it from this health hazard. Removing tobacco smoke from the environment will save lives and reduce health care costs—goals that the AMA and its member physicians strongly support. In this regard, the AMA has developed model state legislation to prohibit smoking in hospitals, nursing homes, and public elementary or secondary schools, as well as other public places.

Further Readings

Books

Periodicals


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