SMOKE AND HEAT

To the Editor: The article by Hinds and First on tobacco smoke in public places and the editorial by Huber appearing in the April 17 issue of the *Journal* both provided interesting reading on this controversial subject. Unfortunately, their conclusions were disappointing if not unjustified.

Hinds and First thought that the average level of tobacco smoke in public places does not account for the public outcry regarding this problem even though they demonstrated levels exceeding the minimum air-quality standards that are not to be exceeded more than once per year. Does this attitude mean that one should accept indoor air-pollution standards lower than the outdoor standards? After all, an estimated 80 to 90 per cent of one's time is spent indoors.[1]

In the accompanying editorial by Huber, one gets the impression that since there is no overwhelming evidence that smoking is harmful to nonsmokers, one can be passive in one's efforts to discourage smoking in public places. I remind Dr. Huber that the majority of the population does not smoke and should be given the benefit of the doubt regarding its health. The burden of proof that passive smoking is safe for the nonsmoker resides with those who choose to smoke.

Dr. Huber mentioned studies implicating possible dangers to infants of smoking mothers.[2,3] Colley et al. have reported that infants exposed to cigarette smoke have twice the risk of an attack of pneumonia or bronchitis.[4] Colley, in another publication, reported an increased prevalence of cough in children six to 14 years of age whose parents smoked.[5] A third study by Colley et al. showed an increased prevalence in respiratory symptoms in 20-year-old subjects who smoked and had a history of a lower-respiratory-tract infection under the age of two years, both factors being related to parental smoking habits.[6] Others have reported similar findings, as well as the adverse effects on the fetus and an increased neonatal mortality in offspring of smoking mothers.[7-9] Yet another victim of passive smoking is the asthmatic patient, recently shown by O'Connell and Logan to be subject to exacerbations when exposed to tobacco smoke.[10]

Other, less publicized consequences of smoking on the nonsmoker include the shared burden of smoking-related health costs, estimated at 5.3 billion dollars in 1966, and the high job absenteeism associated with smoking.[11,12]

Smoke concentrations in public places probably have an adverse effect on infants and asthmatic persons, and by Dr. Huber's own admission may have an adverse health response on the nonsmoker on a psychogenic basis. It is nearly inconceivable that when enough studies have been done, there will be no long-term ill-effects from passive smoking. While we await the results of these studies, we should spend our efforts in preventive medicine—namely, reiterate the stand against smoking. Hospitals should ban cigarette sales and prohibit smoking on their premises, and health-care personnel should continue their lead in giving up smoking. Reports of such efforts are encouraging.[13]

The answer to Dr. Huber's question about the issue of smoke in public places becomes clear. Since cigarettes cost the nonuser money, may harm his health and are at least obnoxious, the basic issue for the nonsmoker is self-preservation.

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12. Wilson RW: Cigarette smoking, disability days and respiratory conditions. J Occup Med 15:236-240, 1973
13. Pang A: A no smoking War is possible. Postgrad Med J 49:682-683, 1973

To the Editor: Through the singular smokiness of the editorial entitled "Smoking and Nonsmokers — What Is the Issue?"[1] I see that its writer missed the point: smoke stinks! Nothing escapes the flatulent ambience of smoke: skin, hair, clothing, car, lecture hall, office, restaurant, school, library, museum, elevator, sauna, conjugal bed and all else within puffing radius of those with a proclivity for pollution. The writer of the editorial sees a "perplexing and unsolved dilemma" or even "an adverse health response on a psychogenic basis" because he has confused the health implications of smoke pollution with its aesthetic and legal implications.

The 23 samples from the inconspicuous pump of Hinds and First[2] do not demonstrate "in public places nonsmokers could potentially consume 1/1000 to 1/100 of one filter cigarette per hour." The "equivalent filter cigarettes smoked per hour" is not a bit of measured data; it is an arithmetical gimmick using several statistical assumptions. Consider that 1/1000 of a 100-mm filter cigarette would mean the smoke from less than 1/10 mm of tobacco. I would invite the authors to place that much tobacco on their desks and then to believe that this would be the entire source of the smoke inhaled per hour by nonsmokers in a smoke-filled room. Zeal for numbers seems to have obscured common sense.

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1. Huber GR: Smoking and nonsmokers: what is the issue? N Engl J Med 292:858-859, 1975
2. Hinds WC, First MW: Concentrations of nicotine and tobacco smoke in public places. N Engl J Med 292:844-845, 1975

To the Editor: The recent report by Hinds and First, of the School of Public Health of Harvard University, purports to show evidence that there may be insufficient reasons to protect nonsmokers from exposure to tobacco smoke generated by smokers.

Although their measurements may in fact be correct, and although I am inclined to believe that the danger in terms of increasing the incidence of malignant tumors and of pulmonary emphysema in nonsmokers under these circumstances is rather slight, my own experience suggests that some of the other products of smoking tend to be highly irritating and unpleasant to me personally (when there were no segregated nonsmoking sections in airplanes, my eyes watered regularly after all the smokers lit up after dinner) and to others. My observations at this medical college and others during committee meetings in poorly ventilated rooms indicate a great number of my faculty brethren to be rubbing their eyes and showing other distress as a result of the exposure to irritating components of the smoke.

It appears that Hinds and First have done a disservice to the cause of a healthy environment. Even if the danger of cancer and emphysema to the nonsmoker is minimal, there is no justification for exposure of the nonsmoking population to the irritating effects of smoke. The establishment of a nonsmoking section in vehicles of public transportation has been a most helpful step.

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To the Editor: The editorial, "Smoking and Nonsmokers — What Is the Issue?" (N Engl J Med 292:858, 1975), considers only possible adverse medical effects of inadvertently inhaled tobacco fumes on the nonsmoker. These possible effects may or may not prove to be important, but I should like to suggest two additional aspects of the smoking issue.

The first is that smoking has a well known adverse effect on the health of the smoker himself, and also on anyone who begins smoking because of his example. Segregation of smokers in public places may help to exert social pressure against the advertised glamour of smoking. The second aspect concerns the right of society to restrict from public places behavior that it considers obnoxious or inappropriate. For example, it is considered inappropriate to urinate on city streets, even though this behavior may have few medical implications. Is it more appropriate to smoke on a crowded elevator, or in a crowded conference room? Since many smokers refuse to show consideration for the nonsmokers around them, I believe that the nonsmokers have the right to attempt to legislate courtesy in smoking into law. This right exists whether or not inadvertent inhalation of smokers' fumes proves hazardous medically to the nonsmoker. If these laws reduce the enjoyment of smoking and the number of cigarettes consumed, so much the better for everybody.

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The above letters were referred to the authors of the paper and editorial in question, who offer the following reply:

To the Editor: We think it most unfortunate that the subject of tobacco smoking generates such an overwrought emotional response from correspondents that it prevents them from reading our paper with complete comprehension. Let us set the record straight. Nowhere in our paper did we say or imply: "that there will be no long-term ill-effects from passive smoking" (Iverson), "that 1/1000 of a 100-mm filter cigarette would...be the entire source of the smoke inhaled per hour by nonsmokers in a smoke-filled room" (Williams) or "that there may be insufficient reasons to protect nonsmokers from tobacco smoke" (Freimanis). On the contrary, we did say that "Considerable annoyance from tobacco smoking may also result from gaseous components" and that a number of factors, "taken together, may be a more important cause of the public's adverse reaction to tobacco smoke than the quantity measured in the present study, the average smoke concentration."

The purpose of our study was not to determine if tobacco smoke is annoying, but to ascertain the particulate concentration of tobacco smoke in a variety of public places and to assess the health implications of these concentrations. Our study is in contrast to previous studies[1] conducted under artificial conditions of greater crowding, higher smoking rate and lower ventilation rate than was found in the public places we surveyed.

It is important to keep in mind the distinction between health effects and annoyance. Unpleasant odors may be very annoying, but have little effect on health except on a psychogenic basis. It seems likely that irritating gases, unpleasant odors, peak concentrations, and high visibility play a part in the annoyance reaction to tobacco smoke.

Much research is available relating health effects from smoking to the number of cigarettes smoked per day or throughout a lifetime. We sought to determine exposure of nonsmokers to tobacco smoke so that comparison of the health risk to smokers and nonsmokers could be made on a similar basis. Neglecting the possibility of a threshold in response, the "equivalent filter cigarette smoked per hour" provides a measure of a nonsmoker's exposure in one hour in terms of a customary health-related quantity: the number of cigarettes smoked. This quantity is not an "arithmetical gimmick," but a legitimate measure of exposure used by other investigators in the field.[2,3]

Our study was not intended to answer all the questions surrounding the passive smoking problem, but to provide an estimate of what is defined in the editorial by Dr. Huber as a primary issue — namely, how much tobacco smoke does the nonsmoker passively inhale in public places?

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1. Rylander R: Review of studies on environmental tobacco smoke. Scand J Respir Dis [Suppl] 91:10-16, 1974
2. *Idem:* Perspectives on environmental tobacco smoke effects. Scand J Respir Dis [Suppl] 91:79-87, 1974
3. Hoegg UR: Cigarette smoke in closed spaces. Environ Health Perspect 2:117-128, 1972

To the Editor: Controversy continues to surround many issues related to smoking. When scientific data on the effects of an agent on health are incomplete, as they are on the tobacco question, reactions in many people are derived far too often from an emotional rather than an objective basis. I should like to make a plea as a partisan for objective science. Emotional arguments with a moral flavor, presented without scientifically acceptable data, have, in my judgment, no place in solving problems as serious as this one. In other words, results or conclusions should not be presented or interpreted with a preconceived bias of the investigator or, for that matter, of the reader. Unfortunately, for reasons that I cannot fully understand, this course has far too often been followed in questions of tobacco and health. Rather, definitive answers should be obtained by careful scientific endeavors designed to test in an objective and honest manner a clearly delineated hypothesis. The contribution by Hinds and First in the April 17 issue of the *Journal* provided a careful and accurate answer to one such important hypothesis: How much tobacco smoke does the nonsmoker passively inhale in public places? Under the most severe concentrations of exposure in their study, the nonsmoker could consume an amount of tobacco so small that the risk of development of any adverse health effect would be nonexistent, on the basis of any available data in the literature today. My accompanying editorial attempted to provide an objective presentation of relevant scientific literature placing these results in a balanced perspective.

The comments of Dr. Iverson on passive smoke inhalation and the health of infants deserve a clarifying answer. A careful analysis of the studies that he mentions reveals that the authors themselves state that their studies suffer from inadequate appraisals of such respiratory disease-inducing variables as air pollution, genetic and constitutional differences of the host and nutrition of families. It is also of merit to question epidemiologic methods that analyze too small a sample size with too diverse a population stratification. Cederlof and Colley (Cederlof R, Colley J: Epidemiologic investigations on environmental tobacco smoke. Scand J Respir Dis [Suppl] 91:47, 1974) state specifically that, "When parents' respiratory symptoms were taken into account, exposure of the child to cigarette smoke generated, by the parents smoking, had little if any effect upon the child's respiratory symptoms. Thus associations between parental smoking and children's respiratory symptoms reported by other authors and interpreted as indicating the effects of environmental tobacco smoke, may in fact be wholly an effect of parents' respiratory disease." Hence, I reiterate my initial recommendation for more thorough and objective studies to answer important questions on tobacco and health.

Regarding other comments in the accompanying letters, the reference to air-quality standards is in error. These standards represent average levels of continuous exposure required to prevent long-term health effects and do not apply directly to a few hours of transient exposure in public places. Odors produced by pyrolyzing tobacco are another matter. Some components of tobacco smoke, such as certain amines, sulfur-containing compounds and products of alkaloid decomposition, even when present in infinitesimally small amounts of one part per trillion or less, are the source of persisting odors that may be offensive to many.

That puts the issue, however, primarily in the framework of "annoyance" rather than that of potential direct health effects of tobacco smoking. If that is the question being considered, the problem goes far beyond tobacco. In a free society, we accept the right to dissent and there are established mechanisms to protect the rights of all individuals. Crucial health issues can be resolved only by impeccable science, not by overwrought emotional biases generated by a small minority who appear to be psychogenically affected by tobacco smoke. Tobacco smoking is too prevalent not to demand such scientific analyses to ascertain realistically and to clarify precisely the health effects on both the smoker and the nonsmoker.

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