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Polemic and public health

Lewis Lapham, editor of *Harper's Magazine*, recently paused in his monthly diatribe against US foreign policy to lampoon a more local target: the use of public-smoking prohibitions in New York City to root out the evils of second-hand smoke. In Lapham's view, these attempts at "social hygiene," which threaten to extend as far as a ban on smoking in public parks, are an irrational assault on personal liberty, fuelled by exaggerated fears of risk. "Statistics," writes this smoker of 50 years, "can be made to fit any season's fashions."[1]

A skeptical view of the risks of second-hand smoke also arose recently from a less polemical source: in May, *BMJ* published a study based on observations obtained over 39 years on 35 561 adults who had never smoked and whose spouses' smoking habits were known. The authors found "no significant associations" between tobacco-related mortality and exposure to second-hand smoke.[2] The journal's editors offered a blunt provocation to political correctness by stating on the front cover: "Passive smoking may not kill." Predictably, the study and its declared tobacco-industry sponsorship caused a furor.

In trying to understand the risks posed to human health by environmental contaminants, we have a limited range of research methodologies at our disposal. We cannot do randomized trials to test the effects of smoking, lead poisoning or the use of cell phones in cars. We're stuck with observational studies: always messy, confounded, susceptible to passion and open to dispute.

The problem with the data on passive smoking (and many other potential environmental hazards) is that the estimated risks are so close to zero. The study published in *BMJ* showed that the risks of heart disease, lung cancer and chronic obstructive pulmonary disease among never-smokers living with a smoker compared to never-smokers living with a nonsmoker were 0.94 (95% confidence interval [CI] 0.85–1.05), 0.75 (95% CI 0.42–1.35) and 1.27 (95% CI 0.78–2.08) respectively — all statistically insignificant and none very large.

Fifty-three years ago *BMJ* published research by Doll and Hill on 649 men who had lung cancer and compared their smoking habits with a group of 649 comparable men who did not have lung cancer.[3] The risk (odds ratio) of lung cancer among smokers compared to nonsmokers was 14.0, meaning that smokers were 14 times more likely to develop lung cancer than nonsmokers.

This result is interesting for 3 reasons. First, it is instructive that this huge increase in risk was not apparent from casual observation: because most men smoked, the effects of this behaviour were inapparent. Second, although even these astonishingly high risks were disputed, this study (and others that followed) marked the start of a long but steady decline in smoking among men, followed decades later by a decline in deaths from lung cancer. Third, from the perspective of almost all current research on environmental hazards, in which odds ratios of 1.2 (or an increase of risk of 20%) are considered sufficient to prompt action by public health advocates (or social hygienists?), perhaps we should ask if we are sometimes overzealous in our attempts to publicize and regulate small hazards.

It is impossible to control completely for confounding variables in observational studies. The smaller the risk estimate, the greater the chance that confounding factors will distort it and invalidate it. This is not to say that observational studies should be abandoned. Faced with the results of the recent study we can, as individuals, elect to change our behaviours and possibly our risk exposures. But, when interpreting the results and then championing public policy and legislation to regulate exposure, we must be doubly wary of tailoring statistics to fit the current fashion. We must be open with our doubts, honest in our interpretations and cautious in our recommendations. Exaggerated claims of risk will only erode the credibility and effectiveness of public health. — *CMAJ*

References

1. Lapham LH. Social hygiene. *Harper's Magazine* 2003;307(1838):7-9.
2. Enstrom JE, Kabat GC. Environmental tobacco smoke and tobacco related mortality in a prospective study of Californians, 1960-98. *BMJ* 2003;326 (7398):1057-66.
3. Doll R, Hill AB. Smoking and carcinoma of the lung: preliminary report. *BMJ* 1950;2:739-48.