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### Tobacco's toll

"... smoking is a factor, and an important factor, in the production of carcinoma of the lung." In those words, cautiously and with no talk of calculating the global burden of tobacco, Doll and Hill put the case for causation before a largely unsuspecting world.<sup>1</sup> That was over forty years ago, preceding the study in British doctors with which the lung cancer and smoking connection is usually associated. We now know that cancer of the lung is not the whole story: for every tobacco-associated death from that cause there are two or three from other diseases. That has made a bad situation worse. So, predictably, has the increase of lung cancer in women, who came to the smoking habit later than men. Not all is gloom, however. Smoking is on the decrease in the United States and Canada and, more tentatively, in parts of Europe, and the benefits in terms of certain health indices are already discernible. Stopping smoking helps: unless a tumour or other severe cardiorespiratory lesion has already developed, it is not too late. Furthermore, there is now sufficient confidence in the associations for estimations to be made, for public health and health education purposes, of the mortality burden of smoking; and organisations such as the US Surgeon-General's office and the UK's Health Education Authority have already done this. In October, 1989, the World Health Organisation convened a consultative group on tobacco-related mortality. The calculations presented in detail this week (p 1268) are the outcome of a process that began then and continued with presentations at the 7th World Conference on Tobacco and Health and in WHO's *Tobacco Alert* in January, 1991.<sup>2</sup>

"Obviously crude" is not a label normally stuck on a set of calculations by Peto and colleagues, but the information for totally confident arithmetic is not available. They have had to make assumptions but have exercised them conservatively, and the few estimates that have been reached by other routes do seem to fit in with the figures presented this week. As Peto and co-workers note, these are approximations despite their apparent precision—but one could lop a zero off some of them and still be impressed. Peto et al

make use of 1984-88 deaths in an American Cancer Society study of the smoking habits of a million people in 1982 and mortality in the ensuing years. Total mortality in that study was less than expected, confirming that this huge cohort is not a random sample of the US population. That is one of the reasons for caution. The appendix to Peto and colleagues' paper (p 1278) contains the first published data from the American Cancer Society inquiry. Readers may by now be sated by press coverage of the crunching numbers developed from this appendix and national demographic data, so we will not repeat them. "Better than than Alzheimer's disease" is the response to such information that one sometimes gets from fatalists, but the wasted lives enumerated here are often in middle age. That fact and the predictions for females are the major public-health messages of this paper.

National governments in the developed world now have estimates of the burden of mortality that smoking imposes on their citizens, male and female. What should they do with them? On May 15 European Community health ministers met to discuss a ban on the advertising of tobacco. They postponed a decision. Opponents of a ban have fallen by one (Denmark); by November, Germany will have had another look at the evidence; and that may be long enough after a general election victory (during which advertising hoardings were provided by cigarette manufacturers) for the UK government no longer to wish to stand alone. If children could be persuaded not to start<sup>3</sup> there would be no need to talk of banning smoking—a ban which would be unenforceable anyway. In the United States cigarettes are fast becoming "socially incorrect", and figures in last week's *Economist*<sup>4</sup> point to a 30% reduction in cigarette consumption between 1982 and 1990—which brings us on to developing countries. Peto and colleagues are now repeating their calculations for other parts of the world, though this exercise may prove more difficult. One estimate is for 1 million deaths a year in the 1990s out of a world total of 3 million (with a range of uncertainty of  $\pm 50\%$ ).<sup>2</sup> Faced with falling demand, manufacturers are not cutting supply but seeking and creating new markets. The developed countries, in which much of the cigarette manufacturing business is based, will not be forgiven if they recoup their lost incomes from the increased exploitation of the emerging nations—which include South America and, these days, eastern Europe. In China there is now official recognition, so long denied, of the dangers of tobacco. The Chinese will remember how another product, opium, was forced on their country 200 years ago to finance the export trade.

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