CORRESPONDENCE

Smoking, Pregnancy and Publicity

SIR,—Having perused so many methodologically unsound papers concerning associations between smoking and various disorders, I found your leader refreshing and welcome reading. I am relieved to discover that the voice of scientific reason has not been entirely silenced by the well-meaning, if largely misguided, anti-smoking campaign. Nevertheless, I feel your remark ". . . we cannot, from statistics, infer how or even that smoking is the key to it" needs some qualification.

It is true that we cannot discriminate between, say, causal and constitutional hypotheses by relying exclusively on the usual statistical associations. However, through some ingenious studies, Professor J. Yerushalmy has demonstrated weaknesses and inconsistencies in the causal hypothesis. He found that the perinatal mortality rate and the risk of congenital anomalies were both considerably lower for the low-birth-weight infants of smoking than of non-smoking mothers (*Am. J. Epidem.*, **93**, 443; 1971). Furthermore, the best-surviving low-birth-weight infants were born of couples in which the wife smoked and the husband did not: the most vulnerable were produced by couples in which the wife did not smoke and the husband did. These observations show that the connexion between smoking, low birth weight, congenital anomalies and neonatal mortality is complex.

More definite conclusions can be drawn from another of Yerushalmy's studies (*Am. J. Obstet. Gynec.*, **112**, 277; 1972) in which he explored the question: Are low-birth-weight babies due to the smoking or to the smoker? He found that young mothers who start smoking after the birth of a child have a higher incidence of low-birth-weight infants than those who do not take up the habit. In other words, low-birth-weight infants appear to be attributable to the smoker (or potential smoker), rather than the smoking.

In connexion with the more notorious association between cigarette smoking and lung cancer, Sir Ronald Fisher (*Br. med. J.*, **2**, 297; 1957) feared that the widely popular causal interpretation would prove to be " . . . a catastrophic and conspicuous howler". My unanswered letter in the *Lancet* (ii, 102; 1973) provides some further justification for the late Sir Ronald's misgivings.

Yours faithfully,

P. R. J. BURCH

Department of Medical Physics,
University of Leeds,
The General Infirmary,
Leeds LS1 3EX

Smoking and Pregnancy

SIR,—I hope I may be allowed a few comments on your editorial[1] which criticises me for claiming 'certainty' for what is only the 'possibility' that maternal smoking causes an increase in perinatal mortality.

You refer to two papers, one in the *British Medical Journal* written with Professor Butler and Dr Ross[2] and one I wrote for the National Children's Bureau journal *Concern*[3]. In the former paper we were careful to make the obvious point that the observed statistical association between maternal smoking and perinatal mortality did not of itself imply 'causation' and we suggested that one way of testing the causal hypothesis would be by means of a scientifically controlled health education campaign. The paper in *Concern* was less cautious because it was more concerned with health education, and was written against a background of knowledge that extends beyond the mere statistical associations.

The first piece of knowledge comes from experiments on animals which show that exposure to cigarette smoke during pregnancy does cause a reduction in birth weight and an increase in mortality[4,5], and there are good physiological explanations for the mechanisms involved. Second, the medical profession has for a long time been concerned with advising pregnant women (among others) to give up smoking, and this concern was expressed in a recent editorial in the *British Medical Journal*[6], which also concluded that the available evidence from human and animal studies suggests that it really is the smoking which causes the association and not, for example, the personality of the women.

Taking up one of your own statements, you say that 'those who can stop smoking during pregnancy should be given every encouragement'. It puzzles me why you should make this statement if you do not really believe that smoking is likely to be harmful. Also, is a health education campaign an 'encouragement' or, as you seem to imply, an undesirable 'social pressure'? I would agree with you that too great a pressure can be counter-productive, and this is a problem that health educators are well aware of. There is undoubtedly much to be learnt about how to warn people of possible dangers, without creating unnecessary alarm or guilt. This does not mean, however, that health education should not be attempted.

When you say that the scientific evidence for a causal relationship may not yet be very conclusive, you are of course correct, and this raises the interesting and important problem of whether and how to use available scientific evidence for purposes of health education. Some research into this might be very useful. In the present instance, however, I retain the opinion that the scientific evidence is strong enough to act upon, and that it would now be unethical not to give advice and encouragement to pregnant women, especially 'high risk' ones, to stop smoking.

Yours faithfuly,

HARVEY GOLDSTEIN

National Children's Bureau,
Adam House,
1 Fitzroy Square,
London W1P 5AH

1 *Nature*, **245**, 61 (1973).
2 Butler, N. R., Goldstein, H., and Ross, E. M., *Br. med. J.*, **2**, 127 (1972).
3 Goldstein, H., *Concern*, **12**, 26 (1973).
4 Younoszai, M. K., Peloso, J., and Haworth, J. C., *Am. J. Obstet. Gynec.*, **104**, 1207 (1969).
5 Schoeneck, W. J., *N.Y. J. Med.*, **41**, 1945 (1941).
6 *Br. med. J.*, **1**, 369 (1973).