suspcion, particularly with cholesterol lowering interventions, that adverse effects may be seen on non-cardiovascular mortality.1

I have used a different method to calculate potential gains in life expectancy with a reduction in risk factors, using observations from meta-analyses of intervention rather than "modelling out" the effect of the risk factor. The table shows the benefits calculated by Grover and colleagues using the coronary heart disease prevention model for a 40 year old man and compares these with figures I calculated using the data from meta-analyses of intervention for a 45 year old man. While the estimated benefits of stopping smoking and reducing blood pressure are of similar magnitude, the effect of cholesterol lowering treatment is much greater when the model of prevention of coronary heart disease is used, largely because of the risk groups I have outlined.

Prevention of coronary heart disease needs a concerted attack on risk factors, with smoking way out in front as the most important. Possibly the newer drugs to treat hypercholesterolaemia will be shown to reduce cardiovascular mortality in our relatively low risk subjects. In the meantime, it is important both for patients and for doctors not to overestimate likely benefits from treating 40 year old men free of coronary heart disease and with a serum cholesterol concentration of 6.2 mmol/l.

JOHN S YUDKIN
Professor of medicine
Academic Division of Medicine, Whittington Hospital, London N19 3UA

1 Grover SA, Lowenthal I, Birey KL, Steinitz Y, Joseph L, Abrahamowicz M. Do doctors accurately assess coronary risk in their patients? Preliminary results of the coronary heart association risk assessment study. BMJ 1995;310:45-8. 19 April.
2 Grover SA, Abrahamowicz M, Joseph L, Brewer C, Coupal L, Suisa S. The benefits of treating hyperlipidaemia to prevent coronary heart disease. JAMA 1993;269:1910-22.
3 Law MR, Wald NJ, Thompson SG. By how much and how quickly does reduction in serum cholesterol concentration lower risk of ischaemic heart disease? BMJ 1994;309:363-72.
4 Davey Smith G, Petkkan J. Should there be a moratorium on the use of cholesterol lowering drugs? BMJ 1992;305:813-4.
5 Yudkin JS. How can we beat prolong life? The benefits of coronary risk factor reduction in diabetic and non-diabetic subjects. BMJ 1993;306:1133-8.

Authors' reply

Editor,—We agree with John S Yudkin that there are many problems inherent in a statistical modelling approach to estimate the benefits of a reduction in risk factors. We disagree with him, however, about whether there are only three problems and whether those he identifies are major.

Yudkin suggests that the first major problem is that the benefits of a reduction in risk factors may be apparent only after a substantial lag period. We agree that there may be a lag before the benefits of treatment are seen in primary prevention trials, and we have built a variable lag period into our model.1 What is not clear is whether this is due to a biological delayed association with the benefits of treatment or simply a statistical artefact resulting from few fatal events among either treatment or control groups in one of the hospital mortality studies in our model.2 Evaluation is necessary to appreciate the cumulative difference over the short term. Consistent with the second possibility is a recently published Scandinavian Simvastatin survival study in which Kaplan-Meier curves for major coronary events among treatment and control groups diverged in less than one year while all cause mortality diverged at approximately 1-5 years. In addition, even if there is a two year lag for the benefits of treatment to manifest themselves, the net effect on long term life expectancy for a 40 year old man may be relatively small. For instance, when we use our model the difference in life expectancy is 1-23 years at a two year lag and 1-16 years at a lag.

We also agree with Yudkin that the risk of coronary disease may not be totally reversible, particularly in the context of a reduction in blood pressure.1 None the less, we note that our estimates of the benefits of reducing blood pressure are nearly identical with his results based on a meta-analysis of outcomes of clinical trials.

Finally, we agree with the important concern regarding the potential adverse effects that may be associated with cholesterol lowering treatments. We have always emphasised that our model simulations have not been adjusted for a potential increased risk in non-coronary death associated with lipid lowering treatment.2 To assume, however, that the results of the Scandinavian Simvastatin trial can be used to identify this relation without any a priori hypothesis or clear cut biological explanation is somewhat simplistic. For instance, there is no explanation of why the increase in traumatic death seen in some primary prevention trials is generally not seen in secondary prevention trials. The Scandinavian Simvastatin survival, a large clinical trial, did not show any evidence of increased non-coronary death associated with lipid modification.

Finally, the main purpose of this paper was the accuracy of doctors' predictions of the reduction in coronary risk. Comparing their estimates with our computer model, we concluded that doctors may systematically overestimate the benefits of modification of coronary risk factors. If Yudkin is correct in stating that our computer model overestimates the benefits of modification of risk factors for some groups of people, then these conclusions are even more valid.

STEVEN A GROVER
Director
ILKA LOWENTHAL
Research fellow
LAWRENCE JOSEPH
Biostatistician
MICHAEL ABRAHAMOWICZ
Biostatistician
Division of Clinical Epidemiology, Centre for the Analysis of Cost-Effective Care, Montréal General Hospital, Montréal, Québec, Canada H3G 1A4

YVONNE STEINERT
Psychologist
Department of Family Medicine, Sir Mortimer B Davis Jewish General Hospital, Montréal, Québec, Canada H3T 1E2

1 Grover SA, Gray-Donald K, Joseph L, Abrahamowicz M, Coupal L. Life expectancy following dietary modification or smoking cessation: estimating the benefits of a prudent lifestyle. Arch Intern Med 1994;154:1697-704.
2 Scandinavian Simvastatin Survival Study Group. Randomised trial of cholesterol lowering in 4444 patients with coronary heart disease: the Scandinavian simvastatin survival study (4S). Lancet 1994;344:1383-90.
3 Callis B, Peterson R, Mahaffo S, Herbert P, Fleisch NH, Eberlein KA, et al. Blood pressure, stroke, and coronary heart disease. 2. Blood pressure reduction from randomised drug trials in their epidemiological context. Lancet 1990;335:827-38.
4 Grover SA, Abrahamowicz M, Joseph L, Brewer C, Coupal L, Suisa S. The benefits of treating hyperlipidaemia to prevent coronary heart disease among smokers in life expectancy and morbidity. JAMA 1992;268:816-22.

Hospital security

Editor,—We wish to draw attention to an important incident that occurred in Princess Alexandra Hospital Trust, Harlow, partly because of the need for increased hospital security. The cardiac team was called to the paediatric ward when an asthmatic child had been admitted. The anaesthetics registrar ran towards the ward but found that the corridor was blocked by a door operated by a number code, which had been installed earlier that week. Not knowing the code and being unable to attract attention, the registrar took a circuitous route through another security door, for which he knew the code. The ward door, which was usually operated by a buzzed linked to a video camera, was being held open by a member of staff, who did not know that there were any other doors between the main hospital and the paediatric ward. Overall there was an estimated four minute delay before the child was attended by the cardiac team.

While recognising the importance of security for staff and patients, we urge those responsible for installing new systems to consider the implications for emergencies. Our hospital resolved this problem by using the same code on all doors. The code number is printed on stickers, which are attached to bleeps. Other possible solutions include a central override facility, an override button on each door that sounds an alarm indicating that security has been breached, and a system that uses swipe cards. The hospital resuscitation officer should be involved in the planning and running of such systems to prevent similar incidents occurring.

JEFFREY PHILLIPS
Registrar
Department of Anaesthesia, Princess Alexandra Hospital Trust, Harlow
Essex CM20 1QX

Handling scientific fraud

Pearce's editors were not to blame

Editor,—In his editorial on the Pearce affair Stephen Lock states that the review of the clinical trial was clearly inadequate.1 He is amazed at the credulity that the British Journal of Obstetrics and Gynaecology showed in accepting the study, on the basis of his observation that over three years Pearce purported to have collected 191 women with a syndrome so uncommon that a major referral centre (unnamed) saw only one or two new cases a year. I imagine that the editors of the BJOG sometimes have problems with superficial and uncritical referees' reports.

After receiving a clinical referee's report recommending publication of the paper Professor Chamberlain delegated editorial responsibility to me. At an editorial meeting in November 1993, attended by Professor Chamberlain and all four editors, I gave a detailed account of the paper, noting the relatively large number of cases (although the time span of their recruitment was not stated in the manuscript) and suggesting that the source must be a tertiary referral centre. Pearce confirmed that it was, and his assertion was accepted. His acknowledged skill in ultrasound examination could be expected to attract large numbers of women with recurrent miscarriages to his pregnancy loss clinic. The paper was then sent to a statistical referee, and among 11 enumerated problems in his report was one asking the authors whether "all [his] emphasis with women with RSM [recurrent spontaneous miscarriage] associated with PCOS [polycystic ovaries] in a particular time interval were invited to take part in the trial." The revised manuscript responded to the question and gave the time interval.

BMJ VOLUME 311 22 JULY 1995 261