effects of intervention were lost in the background statistical noise. This study should not preclude a full integrated approach to the management of risk factors, including health education, dietary intervention, and drug treatment as it is necessary for the long term health of patients.

A S WIERZBICKI
Lecturer in chemical pathology

Charing Cross and Westminster Medical School,
Chelsea and Westminster Hospital,
London SW10 9NH

T M REYNOLDS
Consultant chemical pathologist

Burton Hospitals,
Burton on Trent DE13 0RB

- 1 Cupples ME, McKnight A. Randomised controlled trial of health promotion in general practice for patients at high cardiovascular risk. *BMJ* 1994;309:993-6. (15 October.)
- 2 Betteridge DJ, Dodson PM, Durrington PN, Hughes EA, Laker MF, Nicholls DP, et al. Management of hyperlipidaemia: guidelines of the British Hyperlipidaemia Association. *Postgrad Med J* 1993;69:359-69.
- 3 Neaton JD, Wentworth D, MRFIT trialists. Serum cholesterol, blood pressure, cigarette smoking and death from coronary heart disease. *Arch Intern Med* 1992;152:56-64.
- 4 Haskell WL, Alderman EL, Fair JM, Maron DJ, Mackey SF, Superko HR, et al. Effects of intensive multiple risk factor reduction on coronary atherosclerosis and clinical cardiac events in men and women with coronary artery disease: the Stanford coronary risk intervention project (SCRIP). *Circulation* 1994;89:975-90.

Focus on modification of risk factors and patients' perception of lifestyle

EDITOR,—M E Cupples and A McKnight conclude that personal health education of patients with ischaemic heart disease had no significant effect on objective cardiovascular risk factors, although some beneficial effects on exercise and diet were seen.¹ In a preliminary survey of hospital inpatients recovering from an acute myocardial infarction we have come to broadly similar conclusions.

Using a structured questionnaire, we surveyed 23 patients (19 men, four women; mean age 63.5 years (range 37-81) within five years of admission with an acute myocardial infarction and three months later, after a cardiac rehabilitation programme. We assessed their overall awareness of their condition and their self reported profile of

Risk factors and intended changes in lifestyle among 23 patients surveyed within five days of acute myocardial infarction and three months later

	Baseline interview	Interview at 3 months	χ^2 Test and P value
<i>Risk factors</i>			
Smoking:			
Yes	8	2	$\chi^2 = 4.60$; P = 0.03
No	15	21	
Stressful lifestyle:			
Yes	13	5	$\chi^2 = 5.84$; P = 0.02
No	10	18	
Healthy diet:			
Yes	19	21	NS
No	4	2	
Exercise habit:			
Never	4	2	NS
Occasionally	6	5	
Moderately often	6	7	
Frequently	7	9	
<i>Intended changes in lifestyle</i>			
Eating a healthy diet:			
No change	12	5	$\chi^2 = 4.57$; P = 0.03
Considerable change	11	18	
More exercise:			
No change	10	9	NS
Considerable change	13	14	
Career change:			
No change	15	12	NS
Considerable change	8	11	
Driving ability:			
No change	19	16	NS
Considerable change	4	7	
Family life:			
No change	18	15	NS
Considerable change	5	8	
Social life:			
No change	17	17	NS
Considerable change	6	6	

risk factors and intended modifications to their lifestyle immediately after the infarct and at three months' follow up. Sixteen patients considered that they were more aware of their condition at follow up; six, however, reported that they were neither more nor less aware of their condition, and 10 considered that too little had been explained to them about their treatment, despite the rehabilitation programme.

There was a significant reduction in the prevalence of smoking and in stressful lifestyles after the infarction. Diet and the amount of regular exercise, however, were not significantly different (table). Intended changes in lifestyle also differed when patients were interviewed immediately after infarction and at three months' follow up. In particular, attitudes towards eating a healthy diet changed significantly ($P < 0.05$). There was, however, no significant change in intended exercise routine and the patients' perception of their career or employment, family life, driving ability, or social life (table).

Our patients, who were educated about cardiovascular risk factors and underwent a risk factor modification programme after an acute myocardial infarction, reported an increased awareness of their condition. Changes in risk factors remained limited, although the prevalence of smoking and a stressful lifestyle fell, and the rehabilitation programme seemed to have only a limited effect on the patients' perception of their career, family life, driving ability, and social life. To become more effective the current programmed approach to cardiac rehabilitation after myocardial infarction may need to place more emphasis on modification of risk factors and on the patients' perception of lifestyle.

GREGORY Y H LIP
Research fellow

RICHARD BALASUBRAMANIAM
Medical student

ANDREW MAURICE
Medical student

GARETH BEEVERS
Professor of medicine

University of Birmingham,
City Hospital,
Birmingham B15 2QJ

- 1 Cupples ME, McKnight A. Randomised controlled trial of health promotion in general practice at high cardiovascular risk. *BMJ* 1994;309:993-6. (15 October.)

Travel prophylaxis

EDITOR,—Pierre van Damme and colleagues and E Walker support the findings of our study that high risk travellers should be selectively immunised, but they disagree about other issues. The aim of our study was to provide a framework in which policy related to travel prophylaxis could be explored in the context of the NHS.¹

While acknowledging that underreporting occurs, we used a correction factor of 50%. This factor includes adjustment for diseases with short incubation periods, such as malaria and typhoid, which may well present abroad. In the case of hepatitis A, the incidence in British residents is similar to that used in other studies,^{2,3} and we believe that it is realistic. Had we used a lower estimate of the prevalence of hepatitis A antibody, this would have implied a larger body of susceptible travellers for the same number of cases, as defined by laboratory and clinical reports (a higher proportion were children),² which lowers the incidence of disease. A lower incidence (0.032%) would represent 91 fewer cases avoided, reducing the costs of avoided illness by 31%, and with the same costs of prophylaxis the cost-benefit ratio increases to 8.3. Use of the Swiss incidence in travellers (0.3%) would imply a cost-benefit ratio for hepatitis A vaccine as large as 2.7 and a ratio for human normal immunoglobulin of 1. Allowances were

made for unrecorded and multiple doses. Doses and not phials were used.

Use of incidences specific for destinations would undoubtedly enhance the model and help target prophylaxis. We are finalising such data for publication, using rates specific for destinations by risk groups.

We share the desire to improve the quality of published economic evaluations. The economic evaluation used in this study was couched in the framework of cost-benefit analysis and included a nested cost-effectiveness study of alternative regimens. The evaluation of benefits in monetary terms is a problem that haunts all cost-benefit analyses. In this study, apart from the willingness to pay (taken as an approximation of value of life), we measured benefits as costs avoided.⁴ The measurement of willingness to pay suggested by Martin E Backhouse—aspects of which we intend to explore—may not provide robust estimates in this area of infection control. Unfortunately, the individualistic basis of willingness to pay is found wanting in situations that have complex collective implications.^{5,6}

We did not imply, as Walker suggested, that travellers should not receive immunoprophylaxis; we critically examined NHS policies that subsidise certain prophylaxis for travellers, which may be an inefficient way to spend resources in a cash strapped health service.

R H BEHRENS

Consultant physician in tropical and travel medicine

Hospital for Tropical Diseases Travel Clinic,
London NW1 0PE

J A ROBERTS
Senior lecturer

Health Services Research Unit,
London School of Hygiene and Tropical Medicine,
London WC1T 7HT

- 1 Travel prophylaxis [letters]. *BMJ* 1995;310:401-2. (11 February.)
- 2 Jefferson T, Behrens RH, Demicheli V. Should British soldiers be vaccinated against hepatitis A? An economic analysis. *Vaccine* 1994;12:1379-84.
- 3 Braddick MR. Travel-associated hepatitis A. *J Public Health Med* 1992;14:342-3.
- 4 Rice DP. Cost of illness studies: fact or fiction? *Lancet* 1994; 344:1519-20. (3 December.)
- 5 Mishan EJ, ed. *Cost benefit analysis*. London: Unwin University Books, 1992:24.
- 6 Layard R, Glaister S. *Cost benefit analysis*. Cambridge: Cambridge University Press, 1994:21.

Aircraft cabin pressure and parkinsonian symptoms

EDITOR,—Jeremy Brown's observation that we should question why decreased air pressure may improve parkinsonian symptoms is appropriate,¹ but his statement that oxygen concentration in aircraft cabins ranges from 15.2% to 17.6% is incorrect. The cabin atmosphere obeys the physical gas laws, and Dalton's law of partial pressures ensures that the oxygen concentration is a constant 21%. At 2440 m altitude the partial pressure of oxygen is 21% of 76 kPa—that is, 16 kPa—compared with 21 kPa at sea level.²

MICHAEL BAGSHAW
Senior aviation physician

British Airways Health Services,
PO Box 10, Heathrow Airport,
Hounslow,
Middlesex TW6 9JA

- 1 Brown J. Aircraft cabin pressure and parkinsonian symptoms. *BMJ* 1994;309:1516. (3 December.)
- 2 Campbell RD, Bagshaw M. *Human performance and limitations in aviation*. Oxford: Blackwell Scientific, 1991.

Out of hours visits

EDITOR,—In his editorial on home visits out of hours Brian Hurwitz points out that "no studies have documented a difference in medical outcome between night visits performed by general practitioners and those performed by deputies, though