produce a tarry stool.² If there are, as it would be reasonable to expect, a fairly large number of small gastrointestinal bleeds then those who were alerted about what to look for could expect to detect a few more. Aspirin prophylaxis is only recommended to be undertaken on medical advice. Presumably most doctors giving such advice would warn the patient of possible gastrointestinal bleeding and give advice on reporting it, if it occurs. The control groups would not be expected to have had similar advice.

John Weil and colleagues could throw light on whether this confounding factor could be material to their results, by showing the breakdown of melaena and haematemesis in each of the three groups they studied.

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Author's reply

EDITOR,—We cannot check on the proportions of overt haematemesis to melaena without going back to original records. We think it unlikely that Dr Fryer's explanation will account for the trends observed. If doctors had warned patients to watch for the ill effects of aspirin on the upper gut then we would not have expected to see the steadily increasing risk with aspirin dose. Also, very low dose aspirin was believed to be safe and therefore precautions are unnecessary, so warnings by doctors about the possible hazards of low dose aspirin will have been unlikely.

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Treatment of childhood asthma

EDITOR,—The study of Fiona Bryce and colleagues is elegantly designed to test the effects of an audit facilitator on treatment and diagnosis of childhood asthma by randomising within practices.¹

It is a pity, however, given the large number of time related significant changes in treatment found for both intervention and control groups, that the study did not have a control group of children from practices where no intervention was made. This would better confirm the conclusion that intervention increased the likelihood of diagnosis of childhood asthma and planned review but did not make major changes in treatment. From the evidence presented, time related changes for both groups (decrease in use of oral bronchodilators, theophyllines, antibiotics, and cough linctus; increase in inhaled and oral steroids) suggest that practice prescribing was also influenced for children in the control group. In support of the conclusion that practices were changing habits at this time, it may be of interest that over much the same period, in the neighbouring Grampian and Highland regions, a similar decrease in use of oral bronchodilators and increase in use of inhaled steroids was found for adults.²

None the less, we all need to remember that studies which introduce management interventions for (randomly) selected patients within a practice are not as "clean" as clinical trials of procedures or drug treatment. The same doctors and nurses whose behaviour is being changed in relation to the intervention group are also managing the control group. Without a completely

independent control group it is difficult to interpret findings if few differences are found between intervention and control.

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Mineralocorticoid effects of high dose hydrocortisone

EDITOR,—In their recent Lesson of the Week B H Ramsahoye and colleagues highlight the mineralocorticoid effect of high dose hydrocortisone as the principal factor that resulted in the fall in serum potassium concentrations (2.9 to 2.0 mmol/l) in their patient.¹ The episodes of ventricular fibrillation which followed were attributed to this fall in serum potassium concentration. Whereas intravenous hydrocortisone certainly contributed to the reduction in serum concentration of potassium, we suggest that other factors responsible for this change were a combination of inadequate supplementation, inappropriate cessation of potassium supplementation (at a serum concentration of 2.9 mmol/l), and, perhaps most importantly, significant continued urinary losses of potassium in the face of magnesium depletion.

The authors suggest that a reduction in serum potassium concentration of 1 mmol/l represents depletion in total body potassium of 100-200 mmol. Other workers would put the figure at twice this, with serum potassium concentrations of 3.0 mmol/l and 2.0 mmol/l representing total body potassium deficits of 350 and 700 mmol respectively.^{2,4} Thus, potassium supplementation of 40-80 mmol per day, in the face of such a large deficit and continuing losses, was inadequate. This case illustrates clearly the need for substantial intravenous potassium supplementation in patients with potassium depletion.

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Interventions in OXCHECK study waste resources

EDITOR,—The OXCHECK study showed significant reductions in total cholesterol concentration (3.1%) and blood pressure (2.5/1.5 mm Hg) with health checks over three years.¹ The reductions in cholesterol concentration are in line with responses shown in previous controlled trials.² The authors

seem in some doubt about whether these effects are large enough to justify the cost of the health checks. This may be clearer when the projected benefits are considered in absolute rather than relative terms.

When the Framingham parametric model is used to estimate risk³ with the mean blood pressure and mean total cholesterol concentration in the OXCHECK study, assuming a mean age of 50 and with weighting for the proportion of smokers, the risk of coronary death in the control group is about 0.075% a year in non-diabetic men without electrocardiographic evidence of left ventricular hypertrophy. In the intervention group the estimated rate of coronary death is lowered to 0.066% a year. This is a reduction in risk of 12% in relative terms, but in absolute terms 11 000 men would need to have health checks for one coronary death to be prevented each year. For women the reduction in relative risk seems even more impressive, at 25%, but over 80 000 women would need health checks for one coronary death to be prevented each year. If the study population had only a single initial health check lasting one hour and no follow up visits, seven practice nurses would be employed full time for one year to prevent one coronary death in men, and an additional 41 would need to be employed to prevent one death on women.

It is important to advise opportunistic measures such as stopping smoking and increasing exercise, but whether the time and resources needed to implement these measures systematically, as tested in the OXCHECK study, can be justified is doubtful. It seems more appropriate to concentrate resources on lowering cholesterol with 3-hydroxy-3-methylglutaryl coenzyme A reductase inhibitors after myocardial infarction⁴ and in patients with other forms of coronary heart disease.⁵

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Assessing coronary risk

EDITOR,—Steven A Grover and colleagues compared estimates by doctors of gains in life expectancy as a result of a reduction in risk factors with those estimated from their computer model of prevention of coronary heart disease.¹ The model they used is based on logistic regression analyses, using data from the Framingham heart study, the Canada health survey, and Canadian life tables.² They calculated potential gains in life expectancy with intervention by applying to such a statistical model the levels of the risk factors before and after the intervention.

Three major problems are inherent in this approach. Firstly, the benefits of a reduction in risk factors may not be immediately apparent, since there is a substantial lag period before full benefits are achieved.³ Secondly, there may be irreversible damage to blood vessels or irreversible side effects of drugs. Finally, there is some