confirm this impression (pp 1105 and 1109).^{12,13} Information was collected on all cases of classical and late haemorrhagic disease of the newborn occurring over two years in Britain,¹² and the impact of prophylaxis with vitamin K was analysed by using a population denominator obtained from a study assessing the practice of giving prophylaxis with vitamin K in the United Kingdom.¹³

A surprising finding was the rarity of bleeding in the first week of life when no prophylaxis with vitamin K was given. This contrasts with a prevalence of biochemical deficiency of vitamin K over 50% in this population,⁷ meaning that biochemical markers are of only limited value in assessing the relevance of deficiency of vitamin K in healthy newborn babies. Preventing haemorrhage rather than correcting biochemical abnormalities is the aim of prophylaxis; oral vitamin K was found to be sufficient to prevent classical haemorrhagic disease of the newborn.¹² Late haemorrhagic disease of the newborn occurred (with five cases of intracranial haemorrhage) despite oral vitamin K whereas parenteral prophylaxis seemed to protect against late disease. These data confirm observations from Switzerland,¹⁴ Germany,¹⁵ and Sweden.¹⁶

Should prophylaxis with vitamin K be given to all newborn babies and if so in what form? Without prophylaxis some 40 cases of intracranial haemorrhage due to deficiency of vitamin K in early infancy would be expected annually in the United Kingdom. Considering the consequences of intracranial haemorrhage for the affected children, their families, and society preventive action seems justified. At present parenteral prophylaxis with vitamin K seems the only safe option and is therefore recommended for all newborn babies.¹² As McNinch and Tripp point out, the potential side effects of parenteral prophylaxis with vitamin K deserve further study,

and new vitamin K preparations and more experience with regimens of repeated oral treatment may lead to changes in this advice.¹² Evidence of the efficacy of repeated oral vitamin K administration may come from Germany, if a recommendation to give parenteral vitamin K at birth or three oral doses of 2 mg of vitamin K₁ (at birth, during days 3-10, and during weeks 4-6) is implemented.¹⁷

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Salt substitutes and potassium intake

Too much potassium may be disastrous for some

Concern about the population's salt intake (itself a subject of dispute) has led to growing use of salt substitutes. In some of these substitutes, available in supermarkets and health food shops, salt is replaced by vegetable extracts and herbs with lactose as a bulking agent, but more commonly sodium chloride is replaced by potassium chloride. One of the most widely used salt substitutes contains 9 mmol of potassium per gram.¹ Replacing an average discretionary salt intake of 2.0-2.5 g/day would therefore increase a daily potassium intake of 60 mmol by about 20 mmol. There are three possible health benefits from such a change: protection against hypokalaemia, lowering of blood pressure, and protection against stroke independently of any effects on blood pressure. But there are also risks.

Hypokalaemia most commonly results from gastrointestinal losses or diuretic treatment. Gastrointestinal losses are likely to be short term and not seriously influenced by a small daily increase in potassium intake. Hypokalaemia induced by diuretics is associated with increased ventricular extrasystoles,² but there is no strong evidence that these are clinically important except in patients taking digoxin.^{3,4} In the Medical Research Council's trial of treatment in mild hypertension supplementary potassium given to a subgroup of hypertensive patients increased their serum potassium concentrations but had no effect on 24 hour counts of extrasystoles.⁵ In any case, the lower doses of thiazides now used in

treating hypertension have only a small effect on serum potassium values.⁶ Mass treatment of the population to prevent iatrogenic hypokalaemia has little to commend it scientifically or ethically.

Arguments based on the effect of potassium in lowering blood pressure are stronger. Although carefully conducted trials have reached conflicting conclusions, a recent pooled analysis indicated that potassium supplementation reduced blood pressure in normotensive and hypertensive subjects by an average of 5.9/3.4 mm Hg.⁷ The amount of potassium added, however, was over four times that likely to be achieved by discretionary use of salt substitutes (86 mmol/day). Furthermore, the possibility of publication bias in favour of studies with positive results⁸ makes it likely that the fall in blood pressure was overestimated. Even so, quite small falls in population blood pressure may yield major returns. Interpopulation studies have shown a modest relation between the dietary sodium:potassium ratio and blood pressure. If it is assumed that this relation is causal and that the risk is reversible Rose has pointed out that an increase in dietary potassium of 20 mmol/day would lower systolic blood pressure by 4 mm Hg and that this would correspond to a 25% reduction in deaths attributable to raised blood pressure.⁹ The 33% increase in potassium overall is not exorbitant. It would still be less than differences (of up to 50%⁹) between different social classes in the United Kingdom.

Potassium may also have other beneficial actions. In a prospective study of elderly Californians Khaw and Barret-Connor found that a high potassium intake was associated with a lower incidence of stroke quite independently of blood pressure.¹⁰ This is consistent with the finding of Tobian *et al* that potassium supplementation of hypertensive rats protects against fatal cerebral haemorrhage even when blood pressure is not lowered.¹¹ It would be premature to extrapolate such data into dietary guidelines for humans without the benefit of controlled trials. It is, however, worth recalling that bendrofluazide lowered potassium concentrations in the Medical Research Council's trial and that the one significant difference between the group treated with bendrofluazide and that treated with propranolol was that there were fewer strokes in the former.¹²

Clearly there are possible advantages of an increase in population potassium intake. But where there are winners there are also losers. A healthy person has no difficulty in excreting an extra load of 20 mmol of potassium a day. But others may be at high risk of potassium toxicity as a result of disease or drug treatment. When used medically potassium supplements carry surprisingly high risks.³ In the Boston collaborative drug surveillance programme life threatening or fatal complications occurred in 28 of 4921 patients, an incidence of one in less than 200.¹³ Particularly susceptible are elderly patients; patients with renal impairment; and patients taking potassium sparing diuretics, angiotensin converting enzyme inhibitors, and, most important of all, non-steroidal anti-inflammatory drugs.¹⁴⁻¹⁶ Near fatal hyperkalaemia as a result of salt substitutes has been reported in these susceptible groups.¹⁷⁻¹⁹ The risks are probably greater than these few reports suggest. Ingestion of salt substitutes is likely to pass unrecognised by doctors unless a history is specifically sought, and information is unlikely to be available in cases of sudden death.

Excessive use of salt substitutes that contain potassium may therefore lower blood pressure slightly and may conceivably lower the incidence of stroke; but it will almost certainly cause some deaths among vulnerable groups. Where the balance of advantage lies is impossible to establish, and this information is unlikely to become available as vulnerability depends on a

combination of circumstances. The conditions of clinical trials provide little guidance about what will happen to the eccentric, the misguided, or the confused outside the constraints of medical supervision. The best policy is probably to ensure that those who are vulnerable by reasons of disease, age, or treatment are warned both by their doctors and by the manufacturers. Salt substitutes that contain potassium should be used only for adding to food to taste, and not for cooking. They should not feature in public health education, and a more enlightened approach to increasing potassium intake would be to achieve it through a diet enriched in fruit and vegetables.

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More radiotherapists, please

British consultants see so many patients they don't have time to think

The Royal College of Radiologists wants more consultants in clinical oncology to be appointed.¹ This is hardly surprising—virtually every specialty in Britain believes itself to be overworked, undermanned, and getting a raw deal compared with its opposite numbers abroad. (For example, British consultants in clinical oncology see on average more than twice as many new patients each year as their colleagues in Europe and the United States.) So why should we heed the college's report?

The main reason is that manpower has not kept pace with workload. In the United Kingdom there are currently 240 consultants in clinical oncology—exactly the same number as in 1980. Yet over the past decade new patient referrals have increased by one fifth and cancer registrations will have increased by a similar rate if past trends continue. Not only is cancer becoming more common but radiotherapy is being used successfully against more cancers and earlier in their development.

Consider breast cancer. Referral rates to radiotherapists rose rapidly once doctors accepted that mastectomy could usually be avoided if local surgical excision was followed by radical radiotherapy. Data from one region suggest that referral rates for early breast cancer increased by one fifth in the past four years alone.¹ Knowledge that early treatment of such common cancers as those of the rectum and prostate may be life saving has also substantially increased radiotherapists' workload.

Consultants have an average of 2000 patients under their care—about as many as the average size of a general practitioner's list—but all of these patients will be suffering from cancer. British clinical oncologists frequently control most aspects of their patients' care, including the administration of increasingly complicated regimens of chemotherapy.² This differs markedly from what has become standard practice elsewhere.

In addition to this technical role they have to devote much