patients may also be taking an antidepressant with anticholinergic properties and, almost routinely, receive an anticholinergic drug such as procyclidine to prevent or alleviate rigidity.

Though some patients with anticholinergic intoxication will be "hot as a hare, blind as a bat, red as beetroot, and mad as a hatter," in psychiatric practice they will more probably be noticed to have a fever and will be diagnosed as having the neuroleptic malignant syndrome. Patients considered to have this syndrome should always be examined for the physical hallmarks of anticholinergic intoxication, particularly pupillary dilatation and dry skin and mucous membranes. The investigation and treatment of this condition are considerably less enigmatic than those of the neuroleptic malignant syndrome and have been well described by Lipowski.³

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Injection immunotherapy

EDITOR,—In A J Frew's article on injection immunotherapy one of the display panels states that insect venom immunotherapy is not recommended in patients with a history of chronic perennial asthma.¹ Such advice would be widely accepted when applied to allergen immunotherapy for rhinoconjunctivitis, but I believe it is unnecessary to extrapolate this advice to people allergic to insect venom.

Since 1977 I have been associated with the insect venom allergy clinic at Guy's Hospital, where we have successfully and safely treated many asthmatic patients as well as those with hypertension and even ischaemic heart disease. When anaphylaxis follows either injections or stings asthma is an important risk factor. Most of the deaths reported in young patients receiving injection immunotherapy for inhaled allergens before 1986 were due to acute severe asthma.² This makes it imperative for asthmatic patients to be desensitised to venom if they have had generalised reactions to stings. The benefit:risk ratio for immunotherapy is higher in patients who have risk factors such as cardiovascular disease or asthma because of the risk of a sting or of unsupervised adrenaline administration in such patients.

Obviously, it is important to take careful account of the asthmatic status of patients undergoing this treatment. In our clinic all patients have their peak expiratory flow rates measured before the injections and before they are allowed to leave after their mandatory period of medical supervision. Patients who come to the clinic with an exacerbation of their asthma are not given their next injection until the exacerbation has responded to treatment. In the case of children I consider that venom immunotherapy should be recommended only for those who are asthmatic. The only child dying from an anaphylactic reaction to a bee sting of whom I have personal knowledge was known to be asthmatic.

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Ultrasound dating subject to bias

EDITOR,—Mark Wilcox and colleagues used ultrasonography to determine fetal age and reported a stronger correlation between birth weight and gestational age at term than has been observed previously.¹ We believe that their approach is subject to bias.

Dating methods based on ultrasonography do not take into account the natural variability of fetal size early in pregnancy. Thus a relatively large fetus at any given time will be assessed as being older and a relatively small fetus of identical gestational age will be assessed as being younger.² If we assume that fetuses tend to keep their relative size throughout pregnancy then among newborn infants of exactly the same true gestational age but different sizes there would be a correlation of weight with ultrasonographically determined gestational age: the largest would have the longest gestation and the smallest would have the shortest. This could account for the authors' finding that, among term births, the curve showing birth weight by gestational age was steeper than that derived from datasets based on the last menstrual period. Using the last menstrual period has its own limitations, but this particular bias is not among them. For all its merits, ultrasonography is still not the gold standard.

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Avoidable factors in stroke

Smoking, drinking, and hypertension

EDITOR,—J N Payne and colleagues identify shortcomings in the care of patients dying of diseases related to hypertension.¹ I carried out a survey of modifiable risk factors in 70 consecutive young patients with stroke (aged under 55) admitted to hospital over five years.

The main modifiable risk factors identified (table) were hypertension, current cigarette smoking, and excessive alcohol intake (confirmed by macrocytosis and raised γ glutamyl transferase activity). Ten patients had had hypertension diagnosed previously but were not taking antihypertensive drugs at the time of the stroke. Seven patients in whom hypertension had not been diagnosed had raised blood pressure and electrocardiographic evidence of longstanding hypertension (left ventricular hypertrophy). Of the 37

Modified risk factors in 70 young people with stroke

	No
No risk factor	10
Hypertension	33
Current treatment	16
No current treatment	10
? Undiagnosed	7
Cigarette smoking	45
Excessive alcohol intake	19
Diabetes mellitus	5
Atrial fibrillation	3

normotensive patients, 27 were current smokers or had an excessive alcohol intake, or both.

In up to 44 of the 70 patients in this series modifiable risk factors may have been managed inadequately. The reasons for this were not addressed by the study, but there are obvious lessons regarding the reduction of stroke in this age group.

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- 1 Payne JN, Milner PC, Saul C, Bowns IR, Hannay DR, Ramsay LE. Local confidential inquiry into avoidable factors in deaths from stroke and hypertensive disease. *BMJ* 1993;307:1027-30. (23 October.)

Consider carotid endarterectomy

EDITOR,—It was depressing to note that avoidable factors may have contributed to the death of 44% of those patients with hypertension who died in J N Payne and colleagues' survey of avoidable factors in deaths from stroke and hypertension disease.¹ In a study of 168 general practitioners in Leicestershire only 21% were aware of the results of the European and North American carotid surgery trials.²

Over 2900 patients have been recruited to the European carotid surgery trial, of whom about half were hypertensive, with a diastolic blood pressure ≥ 90 mm Hg, at the time of randomisation. The trial has shown a reduction over five years of over 20% in ischaemic stroke in the ipsilateral hemisphere in patients who had carotid endarterectomy compared with patients who had no surgical treatment as prophylaxis against stroke; it also showed nearly 10% benefit for surgery when all strokes, including deaths during surgery, were considered after five years. In other words, carotid endarterectomy confers a clear benefit over best medical treatment alone in a patient who has a tight carotid stenosis ($> 82\%$), provided it is symptomatic. At present, in Britain fewer than half of the people who would benefit from carotid endarterectomy undergo it.

Thus it seems that at primary care level an alarming number of patients are dying of stroke or disease related to hypertension that might have been prevented; only a small number of general practitioners are aware of the benefits of surgery for patients with a symptomatic tight carotid stenosis; hypertension may well be associated with carotid stenosis in a patient with stroke; and most eligible patients are denied a valuable method of preventing stroke—that is, carotid endarterectomy.

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Screening for breast cancer

Randomised trials testify to benefit

EDITOR,—Recent letters have criticised screening for breast cancer by mammography,^{1,2} which is the only method of screening for malignancy that has been shown to be of value in rigorous randomised trials. Harold Hewitt incorrectly states that there is no evidence that detection of breast cancers by screening eliminates dissemination.¹ There is clear evidence that screening detects less aggressive cancers, which are less likely to have disseminated.³

Although Bruno Barmus presents data on

incidence of breast cancer in the United States,² it is impossible to draw any conclusions about the effectiveness of screening from studying simple incidence and mortality data. Only analysis of randomised controlled trials can assess whether mammography is an effective method of reducing mortality from this disease. Recently published overview data from the combined Swedish trials show a 29% reduction in mortality from breast cancer in screened women aged between 50 and 69.⁴ Barmus also criticises screening for the large number of patients having unnecessary investigations and surgery. While this may be true for the United States, in Scotland 126 867 women were screened during April 1991 to March 1992 and 794 underwent biopsy after breast screening. Of these, 570 were subsequently shown to have breast cancer, a ratio of malignant to benign biopsies of 2.5:1.⁵ The number of patients undergoing unnecessary surgery is therefore small.

Hewitt states the commonly held view that women who have breast cancer detected by screening have a decreased quality of life, but a recent study of long term survivors with breast cancer detected by screening found that psychological morbidity was less than in aged matched women without breast cancer.³ A recent consensus statement by the European Society of Mastology, which has considered all available data on breast screening, concludes that breast screening should be available for all women aged 50 or over throughout Europe.³ All efforts should be directed to achieving this rather than expounding viewpoints that do not have a sound scientific basis.

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- 1 Hewitt H. Screening for breast cancer. *BMJ* 1993;307:1281. (13 November.)
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Screening programme not cost effective

EDITOR,—Examination of the data from the United Kingdom's breast screening programme from March 1991 to April 1992¹ reported by J Chamberlain and colleagues allows some tentative conclusions to be drawn about the costs and potential benefits. Altogether 1 028 984 women accepted an invitation for mammographic screening. With a recall rate of 6.2% there would have been an extra 63 797 tests, making a total of 1 092 781 tests. It is reported that 6605 cancers were detected. Of these, 1465 (22%) were palpable. It follows that 78% of cancers could in principle have been detected by clinical examination and at a much lower cost, especially if the examinations were performed by the women's general practitioner. MacEwan estimated the cost of a mammogram at \$C59,² so the cost of this screening round would be about \$C64m.

Chamberlain and colleagues attach great importance to the number of palpable lesions, stating, "A more important indication of screening performance is the rate at which small invasive cancers were detected, shown as 1.4/1000 screened in the first round." Thus mammography was used primarily to detect the 1465 palpable cancers at a cost of \$C44 010 per cancer. But not all these women will benefit. Skrabanek pointed out that when a tumour reaches 10 mm it has been growing for an average of 8-12 years and will probably have metastasised.³ He also pointed out that there are

many small lesions whose natural course is not well established. Other authors agree that more research is needed to evaluate the natural course of minimal lesions, some of which may never become life threatening. If all minimal lesions are treated there will be overtreatment; if not, the purpose of screening will be defeated. Skrabanek has questioned the benefits accruing from the Swedish screening trial, whose results were adduced to show the feasibility of obtaining a 30% reduction in mortality from breast cancer.⁴

Mammography has been criticised as an unsuitable screening test. The wisdom of compressing malignant tumours, as is now customary with this imaging process, has been questioned.⁵ There have been reports of cysts rupturing during mammographic compression. This gives credence to the view that mechanical squeezing of a breast containing a neoplasm may disseminate cancer cells and cancer cell emboli. Certainly, manipulation of tumours can increase the number of metastases in experimental animals. The lack of a clinical examination before mammographic investigation in the screening service in the United Kingdom means that tumours of all sizes are subjected to compression, whether essential or not.

In view of the high cost of screening and the small reported reductions in mortality, we believe it might be wiser to redirect these funds to target research into the biology of cancer and into new strategies for its treatment.

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Management of trauma

EDITOR,—The impression gained by Jon Nicholl and colleagues—"that the trauma centre is showing promising results is founded on the results put out by the trauma centre itself"—is correct.¹ We work in the north west midlands trauma system and believe that we have a duty to audit our work and that the results of our internal audit should not be secret. We are obviously pleased that "early results are promising," and we emphasise that these are our early results. At the North Staffordshire Hospital there has been a decrease in mortality with a corresponding decrease in hospital stay for severely injured patients, and analysis of outcome with the combined trauma and injury severity score has shown a continuing improvement as the number of unexpected deaths has fallen. The study being undertaken by the Medical Care Research Unit at the University of Sheffield is separate from our audit. We must emphasise, however, that the study, though commissioned by the Department of Health and clearly important to the department, cannot be the sole arbiter on this important matter.

We are looking forward to the results of the study by the University of Sheffield, which, unfortunately, will not be published until a year after the project has finished. It is because we believe that new forms of health care should not be offered within the NHS until their effects have been assessed that we have had to look to our own data to help us plan for the immediate future.

The trauma centre evaluation project started in July 1991, and it may be several more years before

all that we have planned over the past two years finally bears fruit. In the meantime we and others must collect and publish as much information as possible to continue to inform the debate to ensure that we develop the best system of trauma care for severely injured patients in Britain.

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Clinical ecology

EDITOR,—Keith Mumby claims to be "at the leading edge," but I cannot find his "pioneer clinical observations" in any journal.¹ The references in his article are highly selective, in contrast to those in the reports on clinical ecology by committees of the Royal College of Physicians and the American College of Physicians.² Those committees concluded—as have many others—that the claims of clinical ecologists are not supported by valid objective evidence.

The emphasis on allergy rather than conventional diagnoses often leads to failure to offer proved treatment. I have seen a wide range of serious physical conditions left untreated for months to years. Clinical ecology particularly blames allergy as the cause of psychiatric symptoms. This is often grasped gratefully by patients terrified of the perceived stigma of psychological illness. These patients commonly get worse rather than better while receiving ecology treatment.^{3,4} In avoiding putative environmental triggers they often adopt more and more restricted, bizarre lifestyles.⁴

Even in psychologically normal subjects the provocation-neutralisation technique, which is commonly coupled with strong suggestion from a highly personable operator, can lead to conditioned phobic responses. Physical symptoms are then often mediated by hyperventilation. I often see patients in whom progressive food avoidance has produced malnutrition.

Orthodox medicine has already looked fairly at the claims of clinical ecology and considers them unproved. Surely it cannot therefore be appropriate to continue to use them, except possibly as part of a controlled clinical trial to assess their validity, and to which each subject gives informed consent.

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Designing a questionnaire

Send a personal covering letter

EDITOR,—In writing about designing a questionnaire D H Stone only briefly mentions a covering letter for postal questionnaires.¹ The importance of such letters has been debated: one experiment found no significant difference in response rate between a sample of people sent a relatively impersonal letter and a sample sent a relatively