of the small intestine. In vivo the result of addition of fibre was a less pronounced glucose and insulin response¹—effects that could be reproduced by using starchy foods, which for various reasons including particle size² were digested slowly in vitro. Thus slow absorption provided a rationale for including dietary fibre and carbohydrate foods of low glycaemic index in general in the diet of diabetic patients. Through the reduction of insulin secretion slow absorption provided an additional reason why these manoeuvres may lower serum lipid concentrations. For us, nibbling was a further test of the effects of slow absorption which, without changing the nature of the food, might produce benefits similar to those of fibre on carbohydrate and lipid metabolism.

We therefore wish to acknowledge a considerable debt to Professor Southgate for his extension of the fibre hypothesis. His proposal provided the basis for a mechanism of action of several potentially useful approaches to the treatment of disease, including the use of fibre and gastrointestinal enzyme inhibition. It has contributed to the delaying of absorption now being called a therapeutic principle.³

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SIR,—In his editorial Professor D A T Southgate states, "The lesson for the man in the street is that he can stay healthy if he chooses to adopt a 'grazing' pattern of eating."¹ I looked hard for a tongue in cheek but could not find one, so some comment is necessary.

The study that provoked the editorial compared isocaloric diets given as three to 17 meals a day.² Apart from the extreme comparison the experimental periods lasted only two weeks (perhaps the limit of tolerance of the seven volunteers), so adaptation to the change over a longer period could not be assessed. In this context the paper by Antonis and Bersohn³ should be required reading. They showed that change from a high fat and low carbohydrate diet to one low in fat and high in carbohydrate provoked a substantial rise in plasma triglyceride concentrations, and it took up to 32 weeks for these to return to basal levels.

As for the epidemiological association with ischaemic heart disease, to my knowledge this is confined to one study, which is over 20 years old,⁴ and the results have not been replicated. That study was confined to men aged 60-64, and the proportion with ischaemic heart disease was

highest in men who consumed three or fewer meals per day. The authors pointed out then and subsequently⁵ the potential confounding factors affecting this association.

Thus while sheep may safely graze there is little evidence to recommend grazing for the man in the street and none at all for the woman.

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Consultants' views on NHS trusts

SIR,—Ms Linda Beecham, in her report from the Central Consultants and Specialists Committee, quotes me as saying that "there had been a delegation to the chairman of the regional health authority."¹ Although this is true for another district in Northern region whose managers have expressed an interest in attaining self governing status despite the solid opposition of senior medical staff, it does not refer to my own hospital (Darlington Memorial Hospital). We have, however, made written representations to the regional chairman.

Northern Regional Consultants and Specialists Committee remains extremely concerned about the lack of relevant information on the implications of NHS trusts and the unsettling and demoralising effects of some of the ill conceived and untried proposals in the white paper *Working for Patients*. In most hospitals the management have expressed an interest without a clear commitment from and the unqualified support of consultants.

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- 1 Beecham L. Survey shows consultants oppose NHS trusts. *Br Med J* 1990;300:403-4. (10 February.)

Districts' use of thrombolytic agents

SIR,—We are concerned about the conclusion of Dr C J Burrell and colleagues that their estimated undertreatment of patients with acute myocardial infarction with thrombolytic agents might have medicolegal implications.¹ This conclusion assumes that about a half of patients admitted with this diagnosis will be eligible for treatment. Such a statement, however, must be seen in the context of uncertainty regarding treatment eligibility as well as admission rates and referral practice. A simple examination of the entry criteria of the major trials, on which the efficacy of thrombolytic treatment is based, conveys this uncertainty (table). Clearly

the decisions regarding eligibility based on age and time since onset of symptoms can have an important effect on the numbers eligible for treatment.

Examination of three years' hospital activity analysis data for 1984 to 1986 in the Northern region shows mean total annual admissions of 4563 patients aged 20 to 70 and 3179 patients aged >70, giving crude admission rates of 2.3 per 1000 and 10.1 per 1000 respectively. Thus treating patients aged over 70 can considerably increase the potential treatment pool.

Obtaining data on time of admission since onset of symptoms is more difficult. Examination of the Anglo-Scandinavian study of early thrombosis (ASSET) trial data suggests that about 53% of patients were admitted within five hours.² Results of a survey in one district general hospital in this region were consistent with this, showing that 48% were admitted within five hours and 58% within six hours. Extension of eligibility to 24 hours, as suggested by the second international study of infarct survival (ISIS-2), would again increase the potential treatment pool.³

An assessment of rates of treatment across our region within the first quarter of 1989 made by utilising purchasing data for streptokinase implied that 2074 patients were treated each year, which is equivalent to 27% of all admissions or 48% of those of patients aged less than 70 years (based on the hospital activity analysis data).

Thus decisions on criteria for eligibility can considerably alter the potential treatment pool. Though trials such as the third international study of infarct survival (ISIS-3) may clarify these points, we agree with the authors that local treatment policy should inform the clinical decision but argue that in the face of clinical uncertainty statements regarding medicolegal implications are unhelpful.

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SIR,—In their article Dr C J Burrell and colleagues estimate that an appreciable number of eligible patients do not receive thrombolysis after acute myocardial infarction. In addition, it seems that the institution of policies to reduce the delay in giving thrombolysis in hospitals is not associated with any increased rate of treatment. Could part of this shortfall be explained by factors outside hospital? We conducted a survey of local general practitioners with a view to developing an admission strategy for patients with an infarct and to assess the impact of increased numbers referrals on our hospital resources.

Eighty nine general practitioners in 28 practices were circulated a short questionnaire in February

Entry criteria for patients with myocardial infarction into major trials of thrombolytic agents

Trial	Drug	Time since onset of symptoms (hours)	Age (years)	Electrocardiographic evidence	Percentage of patients included
ASSET ²	Tissue plasminogen activator	<5	18-75	No	37.6
GISSI ³	Streptokinase	<12	Any	Yes	37.1
ISIS-2 ⁴	Streptokinase with or without aspirin	<24	Any	No	Not known

1989, asking whether they were likely to refer more patients with myocardial infarction or suspected myocardial infarction after thrombolytic treatment became available in hospital. Sixty practitioners (67%) replied, of which 31 stated an intention to refer more patients, but 29 thought that their referral habits would be unchanged. The important role required of general practitioners in the co-ordinated management of acute myocardial infarction with the advent of thrombolysis treatment has been emphasised.² Our survey, however, suggests that there is a considerable dichotomy of opinion on this subject and that an appreciable proportion of general practitioners are still uncertain about advising hospital treatment in patients with acute myocardial infarction.

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- 1 Burrell CJ, Skehan JD, Cowley ML, Barrett CW, Mills PG. Districts' use of thrombolytic agents. *Br Med J* 1990;300:237-8. (27 January.)
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Node negative breast cancer

SIR,—The review by Drs S M O'Reilly and M A Richards is based on node negative breast cancer as a clinical entity defined by using histological examination of axillary lymph nodes. These nodes constitute only one of the groups of nodes that drain the breast, and the size in error in using them alone should be kept in mind. The best evidence on this point comes from a review of one thousand cases of modified radical mastectomy at the Middlesex Hospital (R Handley, unpublished data). This material provides a complete pathological examination of the axillary lymph nodes, and in addition Dr Handley performed biopsy on the internal mammary lymph nodes in every case (see tables).

Table I shows the extent of internal mammary lymph node invasion in relation to the site of the tumour within the breast. As expected the internal mammary nodes are more commonly affected in inner quadrant tumours, being positive in more than a quarter of the patients. Table II shows the incidence of internal mammary invasion in the subgroup of patients from table I in whom the axillary nodes were not affected. Table II shows that 22 patients (12%) with tumours in the inner quadrants of the breast had a positive result on internal mammary lymph node biopsy. As the complete axillary contents are delivered to the

TABLE I—Presence of internal mammary node invasion in women who had had modified radical mastectomy in relation to site of tumour

Site of tumour	No of patients	No (%) with internal mammary invasion
Inner quadrants	309	87 (28)
Outer quadrants	475	66 (14)

TABLE II—Presence of internal mammary node invasion in women who had had modified radical mastectomy and had no axillary node invasion

Site of tumour	No of patients	No (%) with internal mammary invasion
Inner quadrants	179	22 (12)
Outer quadrants	210	9 (4)

laboratory because of the nature of the operation there is no sampling error likely from that source, and if there is a sampling error from the medial half of the breast the true figure could only increase the percentage upwards from 12%.

Though not wishing to introduce further uncertainties into the management of breast cancer, I feel that it seems important to bear in mind that more than one in eight of patients with a tumour in the inner half of the breast will be wrongly staged by present techniques. The rest of Dr Handley's data are available by return from me.

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- 1 O'Reilly SM, Richards MA. Node negative breast cancer. *Br Med J* 1990;300:346-8. (10 February.)

Crisis in our hospital kitchens

SIR,—The appraisal by Drs Allyson M Pollock and Paula M Whitty of an outbreak of diarrhoea in a long stay hospital¹ highlights the problems that are emerging in ancillary services that have been contracted but omits to mention the importance of an effective infection control team in departments such as psychiatric and geriatric continuing care units.

The Cooke report emphasised the crucial role of the infection control nurse as the only full time member of the infection control team, with her primary duty being that of preventing infection by surveillance, research, teaching, and liaison with all departments.² Most infection control nurses would visit all food handling areas routinely.

The financial costs of outbreaks of enteric food poisoning are often underestimated—an average of £2500 per patient was quoted at 1986 prices. This does not take any account of possible litigation costs.

Moves to disperse patients and services from large hospitals to the community, including private nursing homes, have made surveillance of infection much harder. We suggest that if ancillary services or beds are contracted to the private sector infection control measures and surveillance should be written into agreements and costed. In the long term, consideration of this aspect would be cost effective.

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- 1 Pollock AM, Whitty PM. Crisis in our hospital kitchens: ancillary staffing levels during an outbreak of food poisoning in a long stay hospital. *Br Med J* 1990;300:383-5. (10 February.)
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Geographic variations in blood pressure

SIR,—Dr Jonathan Elford and colleagues showed with data from the British regional heart study that the geographic differences in cardiovascular mortality are accompanied by regional differences in levels of arterial blood pressure: mean systolic and diastolic blood pressures in middle aged men followed a trend, with higher values in those examined in Scotland and the north of Britain than in those seen in the midlands or the south.¹ The place of examination was a more important determinant of blood pressure than the place of birth.

Seasonal variation in blood pressure was first

described in Britain by Rose² and was subsequently confirmed by Heller *et al*³ and Brennan *et al*.⁴ By using blood pressure readings that were recorded in the Medical Research Council mild hypertension trial and meteorological measurements provided by the Meteorological Office Brennan *et al* showed that the seasonal variation in blood pressure was greater in old than in young subjects, was present in both sexes, and was highly significantly inversely related to environmental temperature.

Dr Elford and colleagues suggest that regional variations in alcohol intake, physical activity, and socioeconomic state all contribute to their findings. It would probably be worth examining the role of ambient temperature also.

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Lymphomatoid granulomatosis

SIR,—Minerva's column¹ included a photograph of a man with non-pulmonary lymphomatoid granulomatosis, together with a comment and a supporting reference.² In the 18 years since the publication of this reference no fewer than six studies have shown that lymphomatoid granulomatosis (also known as polymorphic reticulosis and lethal midline granuloma) is a form of malignant lymphoma of peripheral T cell type; the most recent of these studies was that of Troussard *et al*.³ This form of lymphoma may masquerade as a chronic inflammatory condition, but it is important to be aware of its true nature and to treat it accordingly. Suboptimal treatment can lead to distressing local consequences.

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Detection of intravenous drug use

SIR,—In the follow up study of Dr C A Skidmore and colleagues on HIV seroprevalence among intravenous drug users and changing patterns of drug use recent drug users were significantly more likely to use buprenorphine, dihydrocodeine, and temazepam.¹ Other recent reports have drawn attention to the increased intravenous use of temazepam.^{2,4} They suggest that the particular formulation of temazepam may lend it to intravenous use. Before the recent change in the formulation of this drug (to tablet and hard capsule forms) we surveyed, by using a questionnaire, 38 intravenous drug users on their preference of drugs. Of the 38, 19 had taken temazepam and 14 had used it intravenously. When asked to rate intravenous use of temazepam three of the 14 liked injecting temazepam, two did not mind injecting it, while nine said that they did not like injecting despite having injected it more than once. Thus only three rated taking temazepam intravenously as an