teristics.⁴ Absorption of the already meagre amount of zinc in their mainly vegetable diet was being hindered by phytates. Roughness and hyperpigmentation of the skin were only a minor part of the whole picture, but volunteers made zinc deficient also tended to develop a dry, scaly skin⁵—though nothing as dramatic as that seen in porcine parakeratosis, the skin manifestation of zinc deficiency in pigs, which looks rather like human psoriasis.⁶ Nevertheless, these findings led to a search for a role for zinc in psoriasis and other skin diseases.

Nothing startling has come from this search.⁷ It is safe to say that psoriasis is not due to a lack of zinc,⁸ though the skin changes of zinc deficiency may mimic stasis eczema⁹ or seborrhoeic eczema of the face. But the dermatology world was soon to be galvanised by the discovery that acrodermatitis enteropathica was due to a failure to absorb zinc.¹⁰ Acrodermatitis enteropathica is a rare disease, probably inherited as an autosomal recessive, and its skin lesions are striking and diagnostic—vesicopustular at first and later crusted and psoriasiform, they affect the skin around the body orifices and on the hands and feet. Once the penny had dropped, babies with acrodermatitis enteropathica might be seen to fit neatly into the expected pattern of zinc deficiency with their failure to thrive and lack of hair. Those who survived into adult life showed retardation of growth and of sexual maturity—and responded quickly to treatment with oral zinc sulphate.¹¹

A similarity was soon detected between the skin lesions of patients with acrodermatitis enteropathica and those of some patients having total parenteral nutrition.¹² Many must already have been short of zinc as a result of chronic bowel disease and had been given too little parenterally. They did well with extra zinc, and this is now added routinely, especially in premature infants. But the skin lesions of zinc deficiency have also been seen in other conditions—for example, after jejunoileal bypass surgery¹³ and in cystic fibrosis.¹⁴ Chronic alcoholics may also become zinc depleted and may show, in addition to an acrodermatitis enteropathica like picture, a strange and widespread asteatotic eczema.¹⁵ The skin lesions of kwashiorkor may even be due to lack of zinc.¹⁶

Repletion with zinc is logical and successful in such cases, but the arguments become more tortuous when zinc is tried in diseases not known to be due to a lack of it. Acne vulgaris is a case in point. Michaëlsson, treating a youth with acrodermatitis enteropathica, who also had severe acne, found that both types of lesion did well with zinc.^{11 17} The acne of people taking a low zinc diet may become worse⁵; and an acne like eruption was described in patients having total parenteral nutrition before any association with zinc had been recognised.¹⁸ Why not, dermatologists asked, try zinc in ordinary acne even though it may cause troublesome nausea?

The results have been conflicting, the more so as zinc seems to work better in Scandinavia than elsewhere—and trials of acne are easy to criticise. Tiresomely, after the evidence has been sifted, it seems that “most authors have found either small or no significant changes in acne patients treated with zinc sulphate when compared to control groups.”¹⁹

The state of play is much the same with leg ulcers, whose improvement is just as difficult to evaluate. Certainly zinc deficiency leads to slow healing, but it does not automatically follow that giving zinc to those not short of it will speed things up.²⁰ My policy is to follow Weisman's advice: “Zinc therapy for leg ulceration can be recommended only in the

case of pre-existing zinc deficiency” and a single estimation of the plasma zinc concentration may not be an adequate guide to this.²¹

Shuster, pondering the role of treatment with zinc in acne, offered as a general rule the idea that all new treatments seem to work at first.²² Disillusion sets in later. Will others be able to confirm the value of zinc in alopecia totalis,²³ in erythema multiforme,²⁴ in chronic furunculosis,²⁵ in pustular dermatosis of the scalp,²⁶ or even in anorexia nervosa? Let us hope so. Say not the struggle naught availeth.

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Consensus on cabbage

“When short of money, think” should be the motto on the desk of all NHS decision makers (clinicians and administrators alike). Following that maxim, the first consensus development conference in Britain (see p 1527) spent three days last week thinking about coronary artery bypass grafting (in jargon CABG or cabbage).

The format of the conference was based on the model established in the United States six years ago; the Americans have now held 45 such meetings, and more recently Sweden, Denmark, and the Netherlands have organised similar events. A topic is chosen, often but not invariably a new, expensive medical technique, and specific detailed questions are drafted highlighting uncertainties and issues of clinical and administrative importance. A panel drawn from several disciplines, medical and non-medical, listens to evidence from experts and interrogates them—in the presence of and

with participation from an audience made up of anyone who buys a ticket. Finally the panel goes into closed session to draw up the consensus statement, which should represent answers to the questions based on an objective review of the data available.

The London panel included a lawyer, a statistician, a nurse, an economist, an administrator, and a journalist as well as six doctors. It heard evidence from 16 experts and then went into a prolonged meeting (from 2 pm until 5.30 am) to agree on the statement. Having watched the public proceedings from beginning to end, I have no doubt that the final report is a clear synthesis of the evidence presented to the meeting. But doubts remain—and were evident among the audience of patients, non-cardiologist doctors, and health service workers.

Firstly, almost all the evidence came from physicians and surgeons who wanted a bigger investment by the National Health Service in coronary artery bypass grafting. Inevitably they presented their evidence in the light most favourable to the procedure. Possibly as a result, the panel's conclusions give an impression of certainty that seems to me to go further than is justified by the published data.

For—secondly—one of the recurrent themes of the conference (but not its report) was the almost total absence of good quality research on many aspects of coronary artery bypass grafting. In particular, Dr Niall Cartlidge shocked the audience by reporting preliminary results of a prospective study of 312 consecutive patients undergoing bypass grafting; 92% had evidence of neurological or neuropsychiatric deficits postoperatively, and 82% of these were still present three months later. Apparently no comparable prospective study has been published in the past 20 years—while over one million patients have been operated on in the knowledge that deficits of this kind are recognised to occur in at least some patients undergoing open heart surgery.¹² Nor has enough research been done to explain the disappointing rate of return to work recorded in research studies.¹⁴ Against that background of “too little, too long ago” research it was dismaying to hear surgeons telling the audience that “those of us who treat these patients know the operation relieves pain and its value is proved by the demand for it from patients.”

Professor Bryan Jennett, the chairman of the panel, wrote recently that once a procedure becomes standard “there will be an impressive array of observational uncontrolled reports but nothing substantial beyond the pilot studies on safety and on the immediate effects on selected patients in special centres. Controlled trials usually begin at this stage although there is often little enthusiasm on the part of those who have already invested time, energy, and finance in a particular development. Their fears are often justified because the early results of controlled trials often signal the first warning note that the product is not the panacea that its promoters hoped (or even claimed). These doubts may evoke ridicule or hostility and there may be a demand for rigorous proof before adverse reports will be accepted. This contrasts with the soft evidence that was considered good enough to justify introducing the technique when its innovators first produced it.”¹⁵

Professor Jennett went on to warn of efforts to frustrate large randomised trials—and the consensus audience was repeatedly told by advocates of more coronary artery bypass grafting that these would be either unethical or impossibly expensive. Surely, however, we need to know (for example) the relative merits of angioplasty and coronary artery bypass

grafting for single vessel disease—in terms of the effects on the heart, the brain, and the psyche. And the latest results from the Veterans Administration trial (published during the conference) show that after 11 years no difference was seen in survival in the medical and surgical groups—but surgery did seem to save lives in certain subgroups.⁶ As Professor John Hampton told the conference, when differences are identified in subgroups the researcher's obligation is to conduct a further prospective trial of that subgroup against fresh controls. Finally, if—as seems likely—most grafts become narrow or occluded within 10 years then the reoperation rates currently being discussed may be far too low.⁷ The lack of data frustrates rational analysis; indeed, Dr Arnold Relman is on record that “what was unknown before the review remains unknown afterwards. . . . The best way to assess clinical practices is to generate new information.”¹⁸ Moreover, we should never forget that one of the main British contributions to medicine since the war has been an insistence that rigorous trials are needed to establish the place of proposed new techniques and treatments. Never can this approach have been more valid than in the present climate of cuts in expenditure (and the present Chief Medical Officer is a former epidemiologist).

So the report will be criticised, but no one would expect a first attempt at a consensus conference to be beyond criticism. Perhaps the crucial error lay in giving too much time to the spokesmen for coronary artery bypass grafting and too little to questions. The organisers should have stuck more closely to the North American pattern, where three quarters of the total time is spent in an interchange between the panel and the experts, and much more of the evidence has been given by academics and research workers rather than by top clinicians. This makes for a judicial sifting of the evidence in a way that was not apparent in London. Nevertheless, this first conference succeeded in many ways and represents a real advance in decision making in the NHS. Sadly, however, as several speakers said, the discussion was given an air of unreality by the starvation of resources experienced by all specialties in the NHS. Professor Alan Williams wanted to know what panel members would tell an old lady, confined to a chair while waiting for a hip arthroplasty, who would have to wait even longer to allow operations on men with coronary artery disease who were unwilling to accept the limitations of medical treatment. We should not forget that some of the decisions clinicians and administrators are being asked to make are as impossible as *Sophie's Choice*—which of her two children a Jewess should save at the gates of Auschwitz.⁹

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