In the *Lancet* paper compliance was monitored in a subgroup of patients by looking at platelet aggregation and this proved to differ between the aspirin and non-aspirin groups. Once more the reporting of these results provides little information on compliance. No indication is given of the proportion of aspirin-treated patients whose platelet aggregation did not show significant inhibition. Where aggregation was inhibited this merely means that an adequate proportion of the prescribed treatment has been taken to produce this pharmacological effect, not that the prescribed regimen has been adhered to. If this pharmacological effect is known to correlate directly with the reduced morbidity and mortality produced by aspirin then this may be the more significant measurement, provided that the number of patients who do not show this pharmacological effect is recorded. Inhibition of platelet aggregation cannot be equated with adherence to treatment.

The importance of proper measurement of compliance and handling of the data is illustrated by Pledger,[6] who has calculated that, for a study with a power of 95% to show a difference between two groups at the 5% level, half the number of patients again might have to be studied if the mean percentage compliance were 80% rather than 100%.

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Endothelial dysfunction in vascular disease

SIR,—Dr Chester and colleagues (Oct 13, p 897), while reporting impaired release of nitric oxide (NO) in human atherosclerotic epicardial coronary arteries raise the possibility of such impairment in other types of vascular bed in human disease. We have also shown impairment of endothelium-dependent relaxation mediated by endothelium-derived relaxing factors (EDRF) in isolated pulmonary arteries obtained from patients undergoing heart-lung transplantation for end-stage chronic lung disease, including cystic fibrosis[1] and the Eisenmenger's syndrome.[2] Subsequent histopathological analysis has shown such impairment not only in atherosclerotic pulmonary arterial rings, but also in rings where only mild to moderate intimal thickening took place.[3] This suggests that factors other than the presence in situ of atheromatous plaques account for the reduced EDRF-mediated relaxation. Our studies with the L-arginine analogue N^G-monomethyl-L-arginine (L-NMMA) demonstrated that inhibition of NO synthesis reduced endothelium-dependent relaxation in both normal[4] and diseased pulmonary arteries.[5] This provides strong evidence that NO indeed mediates pulmonary endothelium-dependent relaxation in man, and that reduction of NO release may cause pulmonary hypertension in end-stage chronic lung disease. However, impairment of other non-prostanoid vasorelaxing factors distinct from NO (or NO-containing molecules) could also account for the reduced endothelium-dependent relaxation in vascular disease. One such factor might be the endothelium-derived hyperpolarising factor.[6] The existence of these factors is suggested by the inability of L-NMMA[7,8] and other more potent inhibitors of NO synthesis[9,10] fully to inhibit endothelium-dependent relaxation in response to a wide range of pharmacological stimuli, including acetylcholine, ADP, histamine, and substance P. Furthermore, we have shown that activities of factors other than NO, although present in normal human pulmonary arteries, have disappeared in diseased pulmonary arteries.[5]

Thus there is growing evidence that NO release is indeed reduced in various vascular diseases in man. However, there might also be impairment of activity of other relaxing factors released by endothelial cells and distinct from NO. The primary events which lead to these endothelial dysfunctions remain to be established.

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Testicular cancer, dimethylformamide, and leather tanneries

SIR,—To investigate a report of a cluster of 3 men with testicular cancer who worked in the finishing department of a tannery on the same shift and during the same time period,[1] the National Institute for Occupational Safety and Health (NIOSH) conducted a standardised incidence ratio study (SIR) of finishing department workers at the tannery.[2] 80 men who had worked in the department at any time between 1975 and 1987 were identified in the company's personnel records. Data on age and first year of employment were used to calculate person-years. The expected number of cases of testicular cancer was calculated by multiplying the age and calendar year specific incidence rates for New York State, excluding New York City (compiled from New York State Cancer Registry data for 1976–85) by the person-years at risk. The cluster of 3 represented an SIR of 40·5 (95% confidence interval 8·15–118·45).

To investigate this increased risk for testicular cancer further, in June, 1989, a testicular cancer screening programme was offered to all known former and current male finishing-department workers employed at the tannery from 1975 to 1989. Testicular cancer was not found in any of the 51 workers screened (participation rate 51/83 [61%]).

An industrial hygiene evaluation of the finishing department was done in April, 1989, and included measurement of current (glycol ethers, trace metals, aldehydes, ketones) and historical (dimethylformamide [DMF], nitrosamines, benzidine) chemical exposures. The results of area air samples revealed that there were no detectable levels of DMF, trace metals, nitrosamines, benzidine, or aldehydes. Personal air samples found a mean concentration of 0·65 mg/m^3 for 2-ethoxyethanol (range 0·3–1·78), 0·23 mg/m^3 for 2-ethoxyethylacetate (range 0·05–0·8), 4·2 mg/m^3 for 2-butoxyethanol (range 1·9–17·6), and 4·0 mg/m^3 for diisobutyl ketone (range 0·8–28). All levels were well below the Occupational

Safety and Health Administration's (OSHA) permissible exposure limits; however, NIOSH recommends that glycol ether exposures be reduced to "the lowest feasible level".

DMF was of special concern because it was suspected by Levin et al[1] to have been responsible for the cluster of testicular cancer at this tannery and is also suspected of being responsible for clusters of testicular cancer at two Navy F-4 aircraft maintenance sites.[3] DMF had been used at the tannery for about twelve years but was discontinued in late 1987. Because the airborne concentration of DMF was never measured during the time it was in use, two other possible indicators of high DMF exposure were measured. The cumulative incidence of alcohol tolerance was determined and liver enzymes were measured during the testicular cancer screening programme. Alcohol intolerance was defined as repeated episodes of nausea, vomiting, or flushing of the face and upper body after drinking three or fewer alcoholic beverages. Individuals with high exposure to DMF may develop alcohol intolerance and toxic liver injury.[4,5]

1 participant reported a history of alcohol intolerance. This worker frequently had to reach into drums of DMF-containing dyes and denied ever using personal protective equipment such as gloves or a respirator. 2 individuals had liver injury (as defined by an increase in more than one liver enzyme or in one liver enzyme to more than twice normal). Both men had conditions apart from DMF exposure (one had a history of excessive alcohol ingestion and the other had been given antineoplastic agents for his testicular cancer) that could have been responsible for the liver injury. Although 18 months had elapsed since cessation of DMF exposure, the effect of this delay on the liver enzyme results is not known since the persistence of toxic liver injury after cessation of DMF exposure is not clear.

This investigation confirms an excess of testicular cancer at a tannery. This adds to concerns about the carcinogenicity of DMF but conclusions should be tempered by a lack of detailed information about exposure to DMF and because of coexistent exposures to other chemicals at the tannery. Attention should be paid to chemical exposures in future epidemiological investigations of testicular cancer. Additional information on preventing adverse health effects from DMF exposure is available.[6]

We thank the American Clothing and Textile Workers Union, Local 1712 for their efforts in enhancing participation in the testicular cancer screening programme, and the Fulton County Public Health Nursing Service for the use of their facilities.

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Chinese herbs for eczema

SIR,—Dr Harper and colleagues (March 31, p 795) record their experience of traditional Chinese plant decoctions (TCPD) in the treatment of atopic dermatitis. We have also observed striking clinical improvement in over 100 children and adults with atopic dermatitis recalcitrant to conventional therapy who received TCPD from a Chinese doctor trained in the use of traditional herbal remedies. In the patients known to us who have taken this treatment we have seen a response rate of 80–90%, and this exceeds the capability of conventional therapy in our hands. Furthermore many patients enjoy a persistent benefit after discontinuation of treatment.

Our interest in TCPD was tempered by concerns about its toxicity and by Dr Davies and colleagues' report (July 21, p 177) documenting hepatic toxicity but in which no pretreatment liver function tests were available. We have investigated 70 children before and after long-term treatment and can report that full blood counts, urea and electrolytes, liver function tests, and creatinine clearances remained normal throughout treatment. Furthermore, after Dr Allen and colleagues' suggestion (July 21, p 177) that a topical Chinese therapy might produce its effects through a corticosteroid activity, we have measured plasma cortisol concentrations at 0900 h and have used gas-liquid chromatography (GLC) to assess urinary steroid profiles in patients treated with TCPD. Plasma cortisol remained within normal ranges and GLC profiles did not reveal any extra peaks or any suppression of adrenal metabolites. We believe that this excludes the presence of compounds with substantial glucocorticoid activity in the materials used in TCPD.

These findings encouraged us to attempt more formal clinical and toxicological assessments of TCPD in a "western" setting. This has been complicated by the fact that in Chinese medical practice every patient is prescribed an individual mixture of herbs with which to prepare their daily decoction. This type of approach is alien to western therapeutics. However, after long discussion with a Chinese practitioner we have been able to formulate standardised herbal mixtures that might have a reasonably wide applicability to a cross-section of patients. One of these is being assessed in placebo-controlled, double-blind clinical trials in children and adults with recalcitrant atopic dermatitis, with quality controlled materials.

We have results on open pilot studies which included 10 children and 6 adults. The children were prescribed treatment for 4 weeks and the adults for 8 weeks. No haematological or biochemical results were abnormal. 9 of the 10 children and 5 of the 6 adults showed a striking improvement in their atopic dermatitis. In the adults an objective assessment of the degree of erythema, lichenification, and excoriation was measured with the modified Hanifin scoring system.[1] This showed a reduction in mean erythema score from 110 to 30, in lichenification from 95 to 27, and in excoriation from 45 to 16.

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Colonic fermentation, luminal substrate, and intoxication

SIR,—I agree with your Sept 8 editorial in which you point out the importance of prompt recognition and treatment of D-lactic acidosis complicating short-bowel syndrome. There is, however, a potentially useful form of treatment, which avoids the risk that administration of broad-spectrum oral antibiotics may alter the colonic flora and impair valuable colonic salvage of non-absorbed nutrients.

We have reported a 10-year-old girl with 14 cm of remaining jejunum who had recurrent, severe D-lactic acidosis.[1] These episodes initially followed sucrose binges, but then arose while she was receiving an enteral feed in which the carbohydrate was provided as glucose oligosaccharides. Two species of lactobacilli isolated from her stool proved to ferment many monosaccharides and disaccharides, but there was no acid production from starch.