brought to hospital having been found unconscious at home after sniffing Evostik glue. Almost immediately on arrival at hospital he had a typical grand mal convulsion, which was controlled by 5 mg of diazepam given intravenously. He regained consciousness after 20 minutes and was detained in hospital for four days. Investigations revealed no evidence of hepatic or renal dysfunction and he was subsequently discharged home. It is not known whether this patient had indulged in glue sniffing in the past.

Toluene, the chief constituent of Evostik glue, is the agent most likely to be responsible for these seizures, although its mode of action is not clearly known. A rise in cerebrospinal fluid pressure and even cerebral oedema may occur following glue sniffing^{1,2} and toluene in particular has been implicated in causing cardiac arrhythmias.³ Whatever the cause, glue sniffing is a popular practice among the young and is worth bearing in mind in previously non-epileptic adolescents who present at hospital as a result of an epileptiform seizure.

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- ¹ Barman, M L, *et al*, *California Medicine*, 1964, **100**, 19.
² Winek, C L, Collom, W D, and Wetch, C H, *Lancet*, 1967, **1**, 683.
³ Taylor, G N, and Harris, W S, *Science*, 1970, **170**, 866.

Accidental hypothermia and low-reading thermometers

SIR,—Professor G L Mills suggests (21 April, p 1082) one reason for diagnosing hypothermia is failure to use a low-reading thermometer. In the accident and emergency department of Edinburgh Royal Infirmary if temperatures fail to register on a normal clinical thermometer the nurses routinely use an electronic thermometer (range 15–45°C) with a rectal probe. This avoids any errors due to failure to shake down the mercury and the thermometer can accompany the patient to the ward with the probe left in situ for repeated measurements, thus avoiding the hazard of unnecessary movement of the patient. Glass and mercury thermometers have the additional danger that they can break during use.

In the treatment of hypothermia "space blankets" have been replaced by polyethylene sheeting, which is equally effective,¹ is cheaper, and is less liable to tear. It also has the advantage that there is none of the continual crackling noise produced by the metallised "space blanket," which is very distressing to the confused patient.

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- ¹ Marcus, P, Robertson, D, and Langford, R, *Aviation, Space and Environmental Medicine*, 1977, **48**, 50.

SIR,—While agreeing with Professor Gordon L Mills (21 April, p 1082) that a low-reading thermometer is useful in detecting and indeed essential for diagnosis of hypothermia I would suggest that those most sensitive of diagnostic tools the hands are just as useful in detecting variations from normal body temperature. While a patient with a normal core temperature may have cool extremities owing to poor peripheral perfusion, palpation of the trunk will in nearly all cases alert the clinician to the

presence of abnormal body temperature. If the hand is inserted between the patient and the bed on which he lies the impression is more accurate than that gained by feeling exposed parts. The suspicion of either fever or hypothermia should then be checked with a suitable thermometer.

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The use and abuse of Distalgesic

SIR,—Following the comments by Dr J M Gumpel (24 February, p 551) and the recent controversy regarding the use and abuse of Distalgesic which has featured in your columns, we have undertaken a preliminary survey at the rheumatology clinic at St Stephen's Hospital in order to determine the prescribing pattern for Distalgesic and explore the possibility of its abuse among the rheumatic patients.

One hundred and four consecutive patients attending the rheumatology outpatients department were interviewed by one of us (JF) and a detailed record was made of current drug therapy, use of dextropropoxyphene-containing medications, side effects, and source of prescription. Each patient was closely questioned regarding the possibility of habituation and of exceeding the prescribed dosage. A record was also made of the patients' understanding of why they were taking the drug.

Thirty-seven patients (35.6%) were currently taking Distalgesic—no other preparations containing dextropropoxyphene were being prescribed. The dose range varied from two to eight tablets per day but 22 patients were taking it only on an occasional basis. There were no instances of habituation or of excessive consumption and only one patient complained of a side effect (constipation) which could be attributed to Distalgesic. Three patients did not know why they were taking Distalgesic, but all the others used it for pain relief.

The Washington-based Health Research Group has asserted that dextropropoxyphene's relative ineffectiveness as an analgesic has caused patients to increase dosages beyond the prescribed regimens.¹ This is certainly not our experience; and although we recognise the hazards of overdosage of dextropropoxyphene, particularly in combination with alcohol, we would endorse the views of Dr Gumpel that Distalgesic is a relatively safe and effective analgesic in the management of chronic painful conditions.

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- ¹ Dickinson, J, *Pharmaceutical Journal*, 1979, **222**, 221.

Nebulised salbutamol in life-threatening asthma

SIR,—The study by Dr P Bloomfield and others (31 March, p 848) sets out to compare the efficacy of salbutamol given by an intermittent positive breathing (IPPB) device and intravenously in acute asthma. We are very conscious of the problems in setting up such a comparison; nevertheless, we feel that there are several controversial points in the study and its conclusions that merit discussion.

They used a change in pulsus paradoxus as their most "sensitive index of improvement"

in severe acute asthma. In our experience pulsus paradoxus has often proved to be an unreliable sign in the assessment of asthma. Shim and Williams¹ showed that the respiratory pattern can alter this sign. Increasing the inspiratory flow rate while maintaining a constant tidal volume immediately before the reading of the systolic fluctuation can increase the degree of pulsus paradoxus; while slowing the inspiratory flow rate can cause the sign of pulsus paradoxus to disappear in many patients. Therefore our most serious criticism of the study by Bloomfield *et al* is that pulsus paradoxus may be absent in the presence of severe airways obstruction; hence reliance on the sign of pulsus paradoxus as an index of severity or response to therapy may be misleading.

Secondly, we are surprised that the authors merely refer in passing to the use of aminophylline. The evidence that salbutamol given by IPPB or intravenously is better than intravenous aminophylline in acute asthma is tenuous, and modern treatment regimens, including if possible measurement of plasma levels, have reduced the incidence of side effects from aminophylline.² We feel that we are not alone in still regarding aminophylline as the bronchodilator of first choice in severe acute asthma.

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- ¹ Shim, S, and Williams, M H, *jun*, *Lancet*, 1978, **1**, 530.
² Mitenko, P A, and Ogilvie, R I, *New England Journal of Medicine*, 1973, **289**, 600.

SIR,—I was interested to read the article on the comparison of salbutamol given intravenously and by intravenous positive-pressure breathing (IPPB) by Dr P Bloomfield and others (31 March, p 848). However, the dose of salbutamol used was not stated except in terms of 0.5% solution being given for three minutes. There was no statement of the volume of solution nebulised during the three-minute period, and therefore no way of assessing the dose given to the patient (only about 25%¹ of the dose nebulised in fact being retained by the patient). This makes it difficult to assess their findings and impossible to compare their paper with other work in the field, and is most unhelpful for those of us who may wish to use this technique clinically.

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- ¹ Shenfield, G M, *et al*, *American Review of Respiratory Disease*, 1973, **108**, 501.

* * * We sent a copy of these letters to the authors, whose reply is printed below.—Ed, *BMJ*.

SIR,—Drs Costello and Honeybourne misquote our paper, which actually said, "Our results suggest that relief of pulsus paradoxus may be a more sensitive index of improvement than simple measurements of ventilatory function." Their suggestion that pulsus paradoxus may be absent in patients with severe airways obstruction is not questioned, but it must be an uncommon occurrence since our clinical experience supports that of Knowles and Clark,¹ who found it in 80% of their patients and showed it to correlate well with severity of disease. Reliance on pulsus paradoxus as an index of severity of disease or