for a reduced final height attainment will be determined and assessed early. Treatment with human GH should be started as soon as possible to obtain satisfactory results. In our patient there was a delay in the institution of investigations. If bone age is advanced at the time of treatment the chance of great benefit is slight.

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¹ Shalet, S M, *et al*, *Clinical Endocrinology*, 1976, 5, 287.

² Shalet, S M, *et al*, *Lancet*, 1975, 2, 104.

³ Harrop, J S, *et al*, *Clinical Endocrinology*, 1976, 5, 313.

⁴ Tanner, J M, *et al*, *Archives of Disease in Childhood*, 1966, 41, 454.

Lithium and thyrotoxicosis

SIR,—In my letter (17 September, p 765) commenting on the statement in your leading article (6 August, p 346) that "there is at least one report of lithium-induced thyrotoxicosis"¹ I omitted to state that there had been other reports of thyrotoxicosis in patients on long-term lithium therapy for manic-depressive illness.²⁻⁵

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¹ Franklin, L M, *New Zealand Medical Journal*, 1974, 79, 782.

² Cubitt, T, *Lancet*, 1976, 1, 1247.

³ Bujaque, H H, and Myers, D H, *New Zealand Medical Journal*, 1974, 79, 1409.

⁴ Rosser, R, *British Journal of Psychiatry*, 1976, 128, 61.

⁵ Brownlie, B E W, *et al*, *Australian and New Zealand Journal of Medicine*, 1976, 6, 223.

Increased incidence of poliomyelitis

SIR,—In a previous letter (Drs J Nagington and D Rubenstein, 26 February, p 573) attention was drawn to the increased incidence of paralytic poliomyelitis in Britain at the end of 1976. A clearer picture of the change has now emerged.

Up to the end of July this year there have been 13 cases of confirmed paralytic poliomyelitis compared with four in the same period the previous year. It is noteworthy that all 13 were in children aged 7 years or under—that is, a return to "infantile paralysis." Ten of the 13 were caused by type 1 virus, two by type 2, and one by type 3, and not a single patient had received any polio vaccine at any time. Since all but two were over 6 months of age vaccine, if given, should have protected 11 of them.

It is evident that there is need to intensify efforts to achieve the maximum possible vaccination of children under 5 years of age.

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Dextrostix/Eyetone in the insulin hypoglycaemia test

SIR,—An acceptable method of monitoring insulin tolerance tests would enhance both

their efficiency and their safety by ensuring adequate but not dangerous hypoglycaemia. The Dextrostix/Eyetone system as proposed by Dr M A Preece and Mr R G Newall (16 July, p 152) is "tantalisingly close" to an adequate monitor, as Dr A M Bold and others point out (13 August, p 459). We feel that this system has a place in monitoring hypoglycaemia provided its limitations are recognised and certain practical procedures observed.

Even though venous blood gives more reliable results than capillary blood, we found that Dextrostix/Eyetone systematically overestimated venous plasma glucose concentrations less than 3.3 mmol/l (60 mg/100 ml). The discrepancy was greatest with the lowest plasma glucose concentrations. Clinical features of hypoglycaemia should not be ignored because of reassuring Dextrostix readings both because of this bias and also because of occasional incorrect high Dextrostix values. Although venous Dextrostix/Eyetone and conventional determinations correlate reasonably, the correlation for capillary blood is not as good. Moreover, if the finger is pricked when still wet from the alcohol preparation dangerously misleading results can occur (for example, 12.2 mmol/l (220 mg/100 ml) instead of 2.3 mmol/l (41.5 mg/100 ml)).^{1 2}

The Dextrostix/Eyetone system should be set up correctly. The two-point calibration system described by Dr Preece and Mr Newall is inadequate, as is their method of detecting deteriorated Dextrostix. The following simple operating procedure is accepted by nursing staff and gives reasonable precision (coefficient of variation 5.4% at 2.5 mmol/l (45 mg/100 ml)).

(1) Turn on the Eyetone 30 min before use.

(2) At the beginning of each week set the reflectance strips with the adjustment screws, making sure the white line on the thumbwheel is in the middle of the visible region.

(3) Set up calibration standard to 7.2 mmol/l (130 mg/100 ml) with the thumbwheel, following the instructions supplied by Ames for use of Dextrostix.

(4) Check the machine calibration by testing one of the three Tek-Chek controls. These should read 2.5, 5.0, and 13.9 mmol/l (45, 90, and 250 mg/100 ml) $\pm$ 10% respectively.

This procedure is repeated weekly. In between the machine is left on continuously and steps 3 and 4 carried out whenever the Eyetone has not been used for two or more hours or if there is a change of operator.

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¹ Phillips, P J, *et al*, *Medical Journal of Australia*, 1977, 1, 790.

² Ball, S G, and Hughes, A S B, *British Medical Journal*, 1976, 1, 1279.

A tennis elbow support

SIR,—Tennis elbow is a painful condition and stops an otherwise active and healthy adult from taking part in sports or even from pursuing his work. In most cases a local steroid injection will effect a "cure," but any return to strenuous activity like tennis or gardening can cause a relapse of the tennis elbow.

I suffer from tennis elbow myself. I am also rather interested in tennis. Last summer,

after two local steroid injections with only temporary relief, I found that a handkerchief tied around the forearm just below the elbow enabled me to play tennis and yet did not restrict the movements of my elbow. I followed this idea up and got a surgical appliance firm to make a tennis elbow support which would grip the upper part of the forearm without interfering either with the elbow joint or with the blood circulation of the limb. The material used was a special type of rubber with surface cross-striations and was fairly rigid when stretched. This was held together by Velcro fastening. The exact specifications were: white calendered rubber gauge 40/1000, width 2½ in (5.25 cm), length 13 in (33 cm), with twin Velcro fastening 4 in (10 cm) long giving a 3-in (7.5 cm) adjustment.

The tennis elbow support is placed around the upper part of the forearm just below the head of the radius. This anatomical landmark is easily identified by palpation. The forearm muscles are relaxed and the support applied without stretching on to the bare forearm. The special texture of the rubber ensures that it does not slip. Sweat holds it more firmly in place. When the patient grips anything, as during the act of holding a tennis racket, the forearm muscles contract and are supported near the attachment to the epicondyles of the humerus. This support is sufficient to ease the symptoms of tennis elbow. It can be worn the whole day or during any strenuous activity. It has been used on occasions in cases of golfer's elbow.

As the preliminary results are encouraging I thought it would be useful to publish this. Fifty of these prototype tennis elbow supports were initially supplied by M Masters and Sons Ltd, of London. Within three months another 100 supports were made available for trial use. Seventy-five of these supports have been used by patients in the Enfield district who have had recurrence of their symptoms. Fifty of these patients were personally reviewed by me; 46 (92%) have been helped by the tennis elbow support, having had less pain and being able to carry out most of their activities without any symptoms. They are able to play sports like tennis and squash.

I feel the preliminary results are encouraging enough for any surgeon interested in the condition of tennis elbow to try these supports in patients with recurrent symptoms. Their use might well reduce the number of patients having surgery for resistant tennis elbow.

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Neonatal electrocardiogram and cot deaths

SIR,—With reference to the articles by Dr B R Keeton and others (3 September, p 600), I would like to report a case of actual cot death which, in retrospect, may have been caused by cardiac arrhythmia.

A female infant was delivered by emergency lower-segment caesarean section because of fulminant pre-eclampsia. The Apgar score at 1 min was one and the baby required intubation and positive pressure respiration for 10 min. On examination the gestational age was 36 weeks by the Dubowitz criteria and she was small for dates, weighing 1.28 kg. In spite of these problems her initial progress was satisfactory apart from excessive crying which required sedation with chloral.

On the evening of her 29th day she was found

grey and breathless in her cot. A tachycardia of 240/min was noted which settled over the following four hours. Examination showed no evidence of cardiac failure. A chest x-ray was normal. An ECG the next morning revealed a sinus tachycardia of 180/min. Her subsequent progress was uneventful and she was discharged home on her 65th day weighing 2.42 kg.

She failed to keep her follow-up appointment and we later learnt that she had been found dead in her cot unexpectedly at home at the age of 10 weeks. Post-mortem examination revealed no abnormalities.

One feels after reading the article by Dr Keeton and his colleagues, that a more detailed investigation by means of a 24-h ECG tape would have been helpful and perhaps life-saving.

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ECT in underdeveloped countries

SIR,—The guidelines by the Royal College of Psychiatrists on the use of electric convulsion therapy (ECT)¹ (10 September, p 713) have implications for psychiatric practice not only in the UK but also in those underdeveloped countries which depend upon Britain for expatriate staff and for training local students. Since the use of a double standard in the administration of such a controversial treatment is clearly unacceptable, attention needs to be drawn to the problems of applying the recommended standards of administration of ECT in underdeveloped countries and the possible consequences of not applying them.

The memorandum states without qualification that "every patient having ECT should be anaesthetised and given a muscle relaxant by an anaesthetist." This has become standard practice in the UK following recognition that it reduces the risk of bone injury and lessens the patient's distress. In underdeveloped countries, however, shortage of anaesthetists and resuscitative equipment means that ECT is usually given "straight"—that is without anaesthetic and muscle relaxant. A study² of complications associated with straight ECT administered to 1105 patients at Butabika Hospital, Kampala, during 1972 and 1973 recorded two cases of serious bone fracture. A related study³ in 1972 confirmed that observers of straight ECT find it an unpleasant and frightening spectacle. Recognition of the disturbing effect of even modified ECT upon a patient who happens to see or hear another being treated⁴ presumably underlies the recommendation that patients should be treated singly and if possible in a single room. This need for privacy is not always observed in the crowded psychiatric institutions of underdeveloped countries.

When anaesthetists and resuscitative equipment are not available it becomes especially important to "weigh any possible disadvantages of ECT against the probable benefits." The problems facing doctors in underdeveloped countries who have to make such decisions have been discussed by Orley⁵: "Doctors in a hospital admitting over 60 patients a week and who usually do not speak the patients' language find it almost impossible to do more than give rough symptomatic treatment with medication and ECT, and sometimes do not bother with the niceties of diagnosis."

The evidence which is available^{6, 7} suggests that the incidence of severe depressive illness at Butabika Hospital at the time of the above

investigations was relatively low. One might therefore expect, in view of the evidence presented in the memorandum, that ECT would have been prescribed relatively infrequently. However, comparison of the number of patients receiving ECT (1105 for 1972 and 1973 combined)² with the annual admission rate (2900²) suggests that this was not the case. Hays⁸ has cautioned against "a tendency, in overcrowded and under-doctored institutions, to use it [ECT] too frequently on incompletely assessed patients." It is also recognised that under such conditions there is an increased risk of ECT being used as a method of control rather than as a therapeutic intervention. The RCPsych guidelines, if followed, should help to safeguard against such abuse. However, given the problems which Orley refers to and the high rate of illiteracy in the Third World, it is hard to see how the important recommendations concerning written informed consent could be implemented in underdeveloped countries. In the UK some protection against the misuse of ECT is provided by pressures such as the court hearing in the 1950s (*Bolam v Friern Hospital Management Committee*), which stimulated a series of inquiries into the risks associated with straight ECT, and the recent public pressures which precipitated the publication of the RCPsych guidelines. Such pressures will normally be absent in underdeveloped countries, where the social distance between patients and doctors is far greater than in the UK and where patients are less likely to be aware of their limited legal rights. This is another factor indicating a need for a critical appraisal of the use of ECT in the Third World.

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¹ Royal College of Psychiatrists, *British Journal of Psychiatry*, 1977, **131**, 261.

² Revill, M G, and Cox, J L. Unpublished observations.

³ Farrant, W, Cox, J L, and Farrhounumund, N. Unpublished observations.

⁴ Slater, E, and Roth, M, *Clinical Psychiatry*, p 234. London, Balliere, Tindall, and Cassell, 1969.

⁵ Orley, J, *East African Medical Journal*, 1972, **49**, 18.

⁶ Wood, J F, in *Uganda Atlas of Disease Distribution*. Kampala, Makerere University, 1968.

⁷ German, G A, *British Journal of Psychiatry*, 1972, **121**, 461.

⁸ Hays, P, *New Horizons in Psychiatry*, p 100. Harmondsworth, Penguin Books, 1964.

Thrombophlebitis with intravenous naftidrofuryl oxalate

SIR,—We wish to add our comments to the several letters regarding the paper by Mr C R J Woodhouse and Mr D G A Eadie (21 May, p 1320) concerning thrombophlebitis associated with naftidrofuryl (Praxilene) infusion as we feel that neither the pH nor the drug itself is responsible for the observed complication.

In hospitals where a pharmacy cannot provide a comprehensive additive service it is well known that drugs added to an infusion at ward level can result in particulate and bacterial contamination of the delivery system. The contamination has been associated with a number of complications, which include infusion phlebitis.^{1, 2} Where five ampoules of Praxilene must be opened to prepare an infusion the risk of contamination at ward level must be assumed to be high.

The pharmacy at this hospital has overcome the problem in the following manner. Naftidrofuryl 200 mg is dissolved in 225 ml 0.8%

sodium chloride, and the solution is filtered through a 1.2- μ m membrane filter which has a diameter of 47 mm. The filtrate is autoclaved at 121°C for 35 min. The content of naftidrofuryl is assayed using the technique of Cawood and Marshall³ and the solution was found to be stable for one year at room temperature. Over a one-year period starting in July 1976 over 500 doses of the drug prepared in this manner have been infused intravenously and no instances of infusion phlebitis or complications from contamination have been recorded by vigilant observers.

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¹ De Luca, P P, et al, *American Journal of Hospital Pharmacy*, 1975, **32**, 1001.

² Phillips, I, et al, *Proceedings of International Symposium, University of Sussex, March 1976*. Lancaster, MTP, 1976.

³ Cawood, A, and Marshall, I W, *Journal of Hospital Pharmacy*, 1975, **33**, 149.

Cerebral vascular disease and cortical function

SIR,—With reference to the article by Dr J C Murdoch and others (23 July, p 226) and the letter from Dr W Hughes (10 September, p 702) it might be of interest to your readers to hear of the surprising results of the neuro-pathological investigations carried out on the brains of two individuals who were of great significance to twentieth century history, President von Hindenburg and V I Lenin. The former died in old age after a period of progressive dementia with a few episodes of sudden loss of consciousness towards the end. His brain showed no trace of vascular disease. Lenin died at 54 after recurrent attacks of cerebral vascular accident, in between which he invariably regained his usual extreme intellectual ability and efficiency. His brain was riddled with necrotic areas in all stages and the little amount of apparently unaffected parenchyma aroused great amazement as to the patient's mental performance immediately before his death. Unfortunately I have not been able to trace the reference to the publication in which these two post-mortems are compared—a not entirely anecdotal contribution to the discrepancy between clinical assessment of cortical function and morphological evidence occasionally encountered.

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Complications of high translumbar aortography

SIR,—Mr C W Imrie and his colleagues, in their short report on cases of pancreatitis following translumbar aortography (10 September, p 681), assume that this was induced by direct damage to the pancreas although puncture was at the appropriate level in only two of the cases. I suspect that this complication is more likely to be due to direct toxicity of the contrast medium. Iothalamate and diatrizoate compounds are less toxic than acetrizoate, diodone, or sodium iodide. They are, however, more toxic than normal saline and it seems likely that the toxic effects are