a mean duration of epilepsy of 19. Interpretation of these figures is also made difficult by there being a marked skew deviation to the distribution: of all the subgroups the highest median total number of seizures was 26.

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Callaghan replies:

The suggested therapeutic range of 40–80 μmol/l for phenytoin[1 2] is still widely used in clinical practice, although there is evidence that newly diagnosed patients, in particular those with a low seizure frequency prior to treatment can be controlled with serum levels less than the recommended therapeutic range.[3 4] We had hoped that our findings would help to clarify the false interpretation of the therapeutic range for phenytoin, which sometimes results in unnecessary upward dose adjustments of the drug in order to achieve a level within this range, when some patients can be adequately controlled with lower doses.

While we did not give details of the range of levels associated with excellent or good control in our paper, improved seizure control on phenytoin was associated with a wide range of serum levels, from 5–60 μmol/l for patients with generalised seizures and 6–50 μmol/l for patients with partial seizures. (In patients without improvement the serum levels ranged from 50–140 μmol/l.)

It is correct that anticonvulsant drug levels were assessed in the afternoon which enabled us to evaluate peak rather than trough levels. We found an overall range of levels associated with excellent or good control for carbamazepine, between 5–42 μmol/l for patients with generalised seizures and 10–42 μmol/l for patients with partial seizures. We feel it is unlikely that a further increase in drug levels to 50 μmol/l would have resulted in a significant further improvement. In fact, patients with poor control had a range of levels between 30–65 μmol/l. We do agree however, that some patients might have improved further if the dose of the drug had been increased to the limits of the patient's tolerance.

It is not implied in our article that a 50% reduction in seizure frequency was regarded as a good response or satisfactory outcome. A good response was regarded as a greater than 50% reduction in seizure frequency. (Thus, patients in this category had a reduction in seizure frequency within the range of greater than 50% and less than 100% seizure control.) Patients with a 50% reduction in seizure frequency or less were regarded as poor responders.

Clarification of table 7 is required. In this table the seizure frequency per unit time was not presented but rather the "total number of seizures prior to treatment" as with table 1 and table 4. The duration of seizures is presented as duration in the months prior to treatment.

The Kruskal Wallis analysis of variance is a non parametric test and does not require a normal distribution of data. We do agree that the data are considerably skewed, reflecting the variability of the seizure disorder between patients.

Finally, a mean seizure frequency per month can be calculated by dividing the total number of seizures by the mean duration of epilepsy prior to treatment. Thus, the mean seizure frequency per month for patients with excellent control was 3·1; good control 3·2 and poor control 6·7.

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Thermal discrimination thresholds in normal subjects and in patients with diabetic neuropathy

Sir: We were most interested to read the report of Bertelsmann *et al*[1] on thermal sensation. There are, however, a number of points of principle and methodology which we would wish to raise, as we feel they have a bearing on the validity of their conclusions.

The thermal discrimination threshold, as described by the authors, is compounded of both heat and cold thresholds.[1] Reports in the literature indicate the individuality of these sensations, their receptors and fibre pathways[2–4] In our own studies[5] we have found that heat and cold thresholds frequently vary independently and unpredictably (Jamal *et al*, unpublished observations), such that their combination in a single measurement is unlikely to produce an accurately quantified index of thermal sensibility.

All of the patients studied appear to have had a clinically severe neuropathy with concomitant abnormalities on conventional electrophysiology. In terms of assessing the sensitivity of their method, it would have been informative if applied to patients with minimal, perhaps only subjective, evidence of neuropathy and no abnormality on conventional electrophysiology.

In techniques of this nature standardisation is of paramount importance. We were unhappy about Bertelsmann *et al*'s technique in this context on three counts:

(1) There has been no attempt to standardise the temperature of the skin to which the thermal stimulus is applied. Ambient skin temperature at the time of application of the thermal stimulus is known to influence the value obtained for that threshold.[6–8] In our experience, diabetic patients as a group have a more variable and lower skin temperature than normal subjects.

(2) We have, in the past, investigated the method of standardisation of "pressure" adopted by Bertelsmann *et al* and found that the variation was pronounced. We, therefore, wonder whether this manual/spring assisted application of the thermode can be reproducibly quantified.

(3) It would appear from the description of their method that two stimuli are applied to the skin more or less simultaneously. There is a tactile stimulus (when the thermode is applied to the skin) and the specific thermal stimulus. It is particularly important, however, for the accurate assessment of thermosensibility that as pure a stimulus as possible is used and that the specific stimulus is applied without tactile cues.[6 9 10]

We feel that these are pertinent criticisms