It is perhaps worth noting that of these 64 patients aged under 65 one aged 55 had a meningioma and 11 patients had infarcts, and in five these infarcts were multiple.

With regard to their comments concerning the value of computed tomography in a routine dementia service, we can only repeat our observations in the original article—namely, that it appears impracticable to scan all patients with dementia but those with any of the defined diagnostic pointers appear to have a clear indication for scanning. For the others, each case has to be judged on its merits and the local resources.

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Sun beds and melanoma

SIR,—The leading article by Dr J L M Hawk on sunbeds (29 January, p 329) prompts me to report an observation which has emerged in recent years and relates to patients with malignant melanoma seen in the medical oncology unit at Westminster Hospital. Among 304 patients with cutaneous melanoma nine individuals gave a history of using ultraviolet light emitting equipment for indoor suntan.

Patients were questioned about this habit after an attractive 20 year old girl who wished to become a fashion model disclosed at the initial consultation that for a period of six weeks she used a Philips sunlamp at home for indoor suntan. She apparently followed the instructions of the manufacturer carefully, but at the end of the six week period a mole on her back present for many years changed in appearance and enlarged. When the lesion was excised a few months later it was found to be a malignant melanoma which fatally metastasised to the brain one year later.

A second patient, a 22 year old man, developed a melanoma on his back in the region of the left scapula. For two years before the excision of the tumour he had used a Philips sunlamp at home for an indoor suntan at regular intervals.

Seven other patients said that they had been exposed to artificial ultraviolet light for indoor suntans in solarium or at home for periods ranging from 12 years of frequent exposure before the diagnosis of the tumour to only one or two sessions a few months before excision of a malignant melanoma. Two patients who apparently used ultraviolet light on their face only developed a primary tumour on unrelated anatomical sites.

One woman with an unknown cutaneous primary melanoma could not be certain about the exact timing of exposure to artificial ultraviolet light in relation to the appearance of metastases which were the first manifestation of the tumour. All patients declared themselves "sun worshippers," and enjoyed holidays in sunny climates.

Sunlight has been incriminated as a cause of malignant melanoma, but the exact mechanism of solar carcinogenesis is not completely understood, and there are considerable gaps in the link between sunbathing habits and the development of this tumour.¹ There is a disturbing time relation between exposure to indoor ultraviolet light and the development of malignant melanoma in the first two patients of this report, but this is less convincing in the remaining seven. Obviously any aetiological link between ultraviolet light and the development of malignant melanoma in these patients is entirely speculative. Their sunbed habits may be a mere reflection of their general attitude to sunbathing, and it is uncertain how far, if at all, their exposure to artificial ultraviolet-A light may have contributed in the pathogenesis of their tumours. As Dr Hawk points out, however, some contamination from ultraviolet-B light may occur from sunbeds, and

the ultraviolet-A spectrum itself is not without some deleterious effects on human skin.

It is conceivable that keen youngsters like the first two patients who are anxious about their appearance may use the equipment inappropriately in an attempt to achieve a "fast tan" and may not recall or may be reluctant to disclose this information during a medical interview.

It is also possible that proper use of the equipment may adversely affect the course of a pre-existing borderline melanoma² and induce it into a frank neoplastic proliferation.

The nine patients in this report represent less than 3% of the total series, but it is estimated that some 70 patients may not have been directly questioned about sunbeds before the first case was recorded. Even so the incidence of habitual sunbed users is unlikely to be significantly higher in this series. It is, however, necessary to identify more precisely sunbed users who may have developed this tumour through a proper epidemiological study. Such a study should be undertaken on the broadest possible basis, and in Europe it could be conducted under the auspices of the European Organisation for Research and Treatment of Cancer. Until more is known about the aetiology of malignant melanoma I advise relatives of patients who may share their enthusiasm for a suntan to avoid sunbeds.

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¹ McGovern VJ. Aetiology of melanoma. In: Milton GW, ed. *Malignant melanoma of the skin and mucous membrane*. Edinburgh, London, and New York: Churchill Livingstone, 1977:3-6.

² Reed RJ, Ichinose H, Clark WH Jr, Mihm MC Jr. Common and uncommon melanocytic nevi and borderline melanomas. *Semin Oncol* 1975;2:119-47.

"Index Medicus" and the "Science Citation Index"

SIR,—I was interested in Dr Stephen Pope's letter (30 October, p 1277) in which he states that in certain instances the *Science Citation Index* is more useful than *Index Medicus*.

The topic that Dr Pope presents as an example of the difficulty in using *Index Medicus*—namely, interscalene brachial plexus block, is actually rather an easy one for *Index Medicus*. After finding the heading "nerve block" by looking up the permuterm "block" in permuted medical subject headings, one need search only that heading back through the 1974 edition of *Index Medicus*. Seeing that "nerve block" is absent from the 1973 volume, one would then look up "nerve block" in the new headings list in the introduction to medical subject headings in the 1974 volume and find that "anesthesia, conduction" is the heading under which previously indexed material on this subject would be found.

I proceeded to search *Index Medicus* from 1970 to January 1983 and found a total of 30 references which referred to interscalene brachial plexus block in the title (apart from the reference to the original 1970 paper by Winnie¹ in the 1971 volume under "anesthesia, conduction"). There were 26 under "nerve block" in the indexes from 1974 to January 1983, and four more were found in the indexes from 1970 to 1973 under "anesthesia, conduction." No monthly issue, covering from January 1982 to January 1983, necessitated looking through more than 11 titles. In any given annual volume, covering from 1970 to 1981, all the titles to be scanned never exceeded a single three column *Index Medicus* page (about 25-30 titles per column).

In performing the search described by Dr Pope of the *Science Citation Index* citation index using the 1970 Winnie reference as the source, I found a total of 41 references in two five year cumulations

(1970-4, 1975-9), two annual volumes (1980, 1981), and five bimonthly issues from (January to October 1982) of the *Science Citation Index*. Bear in mind that these references do not include titles, which may be ascertained from the *Science Citation Index* only by looking up each reference in the *Science Citation Index* source index under the author.

Sixteen references were common to both searches. The *Index Medicus* search produced 14 references not found by the citation index search. The absence of these references from the citation index retrieval is important because of their almost certain relevance given the stipulation in the *Index Medicus* search that interscalene brachial plexus block be explicit in the title.

Of the references missed by the citation index search, 11 were from journals not indexed in the *Science Citation Index* at the time. As for the remaining missed references, one was a letter that did not cite the Winnie paper, and two seemed to be omitted from the citation index erroneously since they are in the *Science Citation Index* source index and the papers do in fact cite the Winnie paper in their bibliographies. These last three were eventually found by searching the *Science Citation Index* permuterm subject index in conjunction with the source index based on the permuterm "interscalene." Other than these, there were no references under this term in the permuterm subject index that were not already found by the citation index search.

The *Science Citation Index* search produced 25 references not found in the *Index Medicus* search. Of these 16 were among the titles scanned under "nerve block" (after 1973) and "anesthesia, conduction" (before 1974) but which did not qualify for the *Index Medicus* retrieval because interscalene brachial plexus block was not in the title; although these all presumably cited Winnie's paper, nine referred in the title to specific blocks other than interscalene brachial plexus—for example, supraclavicular brachial plexus block—while seven titles were non-specific with reference to type of brachial block—for example, continuous brachial plexus block—or type of block—for example, regional anaesthesia for surgery on the shoulder. As mentioned previously, assessment of these 25, plus the other 16, references from the citation index according to title would necessitate looking up each one in the source index under the author.

Eight *Science Citation Index* references missed in the *Index Medicus* search were under other headings in *Index Medicus*, with two referring to other blocks in the title and six having non-specific titles; the indexing for two of the latter was "anesthesia, conduction" even though "nerve block" was also available at the time, which illustrates the principle that in searching a topic it may prove fruitful to search not only the specific corresponding heading but the next broader one as well. The remaining *Science Citation Index* reference was missed by the *Index Medicus* search because the journal is no longer indexed by the National Library of Medicine for *Index Medicus*.

Had I used a less stringent approach to the *Index Medicus* title scan of the retrieval under the appropriate headings some of the seven references with non-specific titles, as described above, could reasonably have been judged as relevant in the *Index Medicus* search. Furthermore, in addition to the exactly relevant titles found in *Index Medicus* and not the *Science Citation Index*, there were a number of other non-specific titles under the appropriate headings in *Index Medicus* and not found in the *Science Citation Index* search that may have been relevant.

The only two references listed as book chapters in the *Science Citation Index* retrieval were indexed in *Index Medicus* as well since the books in which they appeared, namely *Clinical Anesthesia* and *Progress in Surgery*, were processed by the National Library of Medicine as serials for inclusion in *Index Medicus*. Looking for monographs in the subject section of the National Library of Medicine's *Current Catalog*, which also uses medical subject headings, under "nerve block," I discovered in the 1981 volume a reference to a book published in 1980 which was found to have a

relevant chapter that cited the Winnie paper but was not in the *Science Citation Index*.

Given this reference question, which is well suited for both the *Index Medicus* and the *Science Citation Index*, and the above results, I conclude that these indexes serve a complementary function.

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¹ Winnie AP. Interscalene brachial plexus block. *Anesth Analg (Cleve)* 1970;**49**:455-66.

Renal artery thrombosis caused by antihypertensive treatment

SIR,—The letter by Dr Lawrence E Ramsay (1 January, p 62) contained a somewhat misleading speculation based on a presentation of mine. The letter suggested that thrombosis of the renal artery during medical therapy of renovascular hypertension with captopril might be more common than information available suggests. In the 269 patients with renovascular hypertension I reviewed, as cited by Dr Ramsay, in fact none developed thrombosis of the renal artery. The follow up interval was up to two years. As pointed out by Oelkers,¹ such a calamity can occur, but it must be uncommon.

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¹ Oelkers W. Panel discussion: Selection of patients for treatment. *Br J Clin Pharmacol* 1982;**14**, suppl 2: 114S.

Loss to follow up in a diabetic clinic

SIR,—Dr I N Scobie and others (15 January, p 189) offer an unduly reassuring picture on the loss of patients from an urban diabetic clinic, in part because of the way in which they interpret their data and because it is likely that a central London diabetic clinic population will be unrepresentative of other clinics. For example, the prevalence of patients with complications may be higher and their motivation to attend greater. The period they studied is short, and, although it may reflect the present and future performance of the clinic, it provides no indication about the prevalence of diabetics who may have been clinic attenders in, say, the past 10 years but whose follow up has lapsed. In a recent survey of 3000 insulin treated patients in Nottinghamshire we estimated that at least 10% are not now attending any clinic.¹

We do not think that patients who were found to have died or moved or who returned as emergencies should be excluded from the true loss to follow up. It is not reasonable to assume that patients who move automatically re-establish new and appropriate arrangements for their medical care. In several studies we have done in other clinical subjects it is clear that migration can account for a high proportion of losses to follow up and that lost patients often have a higher morbidity.^{2,3} The true loss to follow up in St Thomas's is likely to be 3% or more, rather than the 1.4% they quote. Even using their preferred figure the cumulative 10 year loss rate will be 10% or

95 patients from their present clinic—many of whom will be at high risk and require competent monitoring for diabetes control and detection of complications.

Finally, their study clearly shows several examples of misunderstandings about the objectives of continuing care at the clinic by both patients and their GPs and important gaps in communication between doctors and their patients. We think this problem is likely to be even greater in some other centres. The St Thomas's study raises several questions about the objectives for follow up and the costs and methods of achieving them. It also shows that if we think that clinic follow up of selected patients is really important there is no room for complacency.

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¹ Hedley AJ, Jones RB, Gale EAM, Tattersall RB. Prevalence of insulin treated diabetics. *Br Med J* 1982;**285**:509.

² Jones SJ, Hedley AJ, Young RE, Dinwoodie DL, Bewsher PD. "Lost to follow-up": reasons for discontinued surveillance in a follow-up register. *Community Med* 1981;**2**:25-30.

³ Jones SJ, Hedley AJ, Curtis B, et al. Do we need thyroid follow-up registers? *Lancet* 1982;*i*:1229-33.

HLA antigens in penicillamine induced myasthenia gravis

SIR,—In their interesting paper on penicillamine induced myasthenia gravis and HLA antigens in rheumatoid arthritis Mr Michael J Garlepp and others (29 January, p 338) maintain that antibodies to the acetylcholine receptor in these patients have a more limited interspecies cross reactivity and higher avidity than in idiopathic myasthenia gravis, and that their results differ from ours.¹ In fact, in our study of 11 samples of sera from patients with penicillamine induced myasthenia gravis we also found significantly less cross reactivity with xenogeneic antiacetylcholine receptors, although we were able to detect some in all the sera from patients with penicillamine induced myasthenia gravis. Moreover, we also found that antiacetylcholine receptors in patients with penicillamine induced myasthenia gravis differed in several other ways from the antiacetylcholine receptors of patients with longstanding idiopathic myasthenia gravis, particularly in being of lower avidity.

The main difference between our results and those of Mr Garlepp and others therefore relates to antiacetylcholine receptor avidity. What could be its basis? They state that the use of Scatchard plots is suspect because "inherent limitations . . . usually result in curved Scatchard plots when antibody affinity is measured in this way." We do not agree. Both Bray and Drachman,² whom they quote, and we ourselves^{1,3} have illustrated linear Scatchard plots for sera from patients with myasthenia gravis and these give a similar range of avidity values to those of Mr Garlepp and others. Moreover, Scatchard analysis has the advantage of showing problems with the data which might otherwise be overlooked. This indeed appears to be the case with the data in fig 1 of Mr Garlepp and others, which shows results from two patients with idiopathic myasthenia gravis sera (that do not appear to correspond to the data given in the table). By Scatchard analysis, results for serum 1 are not linear, suggesting either that saturation

had not taken place within the range of antiacetylcholine receptor concentrations used or that, at low antiacetylcholine receptor concentrations, the excess antibodies had displaced ¹²⁵I-a-BuTx from the antiacetylcholine receptor.^{4,5} Whereas the former would lead to an overestimate of the avidity based on the "free antigen concentration at half saturation," the latter would lead to an underestimate.

It is at least reassuring that three laboratories have now obtained a similar range of values for the avidity of antiacetylcholine receptor in myasthenia gravis. Whether antibody avidity in penicillamine induced myasthenia gravis is higher or lower than that in idiopathic myasthenia gravis will have to be resolved. Nevertheless, we found that neither avidity, polyclonality,¹ nor cross reactivity (Vincent, unpublished observations) of antiacetylcholine receptor from patients with penicillamine induced myasthenia gravis (who typically have a short history of myasthenia gravis) differed from that in patients with idiopathic myasthenia gravis of short duration.¹ Since the duration of symptoms was not stated by Mr Garlepp and others, we cannot accept that their evidence establishes an intrinsic difference in antiacetylcholine receptors between idiopathic myasthenia gravis and penicillamine induced myasthenia gravis.

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¹ Vincent A, Newsom-Davis J. Acetylcholine receptor antibody characteristics in myasthenia gravis. II. Patients with penicillamine-induced myasthenia or idiopathic myasthenia of recent onset. *Clin Exp Immunol* 1982;**49**:266-72.

² Bray JJ, Drachman DB. Binding affinities of anti-acetylcholine receptor autoantibodies in myasthenia gravis. *J Immunol* 1982;**128**:105-10.

³ Vincent A, Newsom-Davis J. Acetylcholine receptor antibody characteristics in myasthenia gravis. I. Patients with generalised myasthenia or disease restricted to ocular muscles. *Clin Exp Immunol* 1982;**49**:257-65.

⁴ Lang B, Vincent A, Newsom-Davis J. Purification of anti-acetylcholine receptor antibody from patients with myasthenia gravis. *J Immunol Methods* 1982;**51**:371-81.

⁵ Barkas T, Simpson JA. a-bungarotoxin displacing antibody in myasthenia gravis. *J Clin Lab Immunol* 1982;**9**:113-7.

Dead children from problem families

SIR,—Dr D J Blomley (5 February, p 477) makes an interesting suggestion relating to coordination of medical information in cases of death among children from problem families and also indicates that the statutory responsibility for supervising problem families and keeping observation registers might be taken over by community health departments. He gives as a supporting reason for this that "health visitors have a statutory right of entry," but this statement is incorrect. Health visitors are employed by health authorities to provide a service but they have no right of entry to any family, nor is there any statutory visit. The aim of a health visiting service is the promotion of health and prevention of ill health, which includes the early detection of abnormalities. Health visitors visit "problem" families among others in the course of their work and will endeavour to educate them regarding good standards of child and health care. However, overconcentration on this group may detract from the time available