TABLE 1: Number, age, sex and period of hospitalisation

	Number	Sex	Mean (sd) age (years)
Group A	3*	1 MN 2 F	3·7 (0·5)
Group B	6*	2 F 4 MN	5 (1·4)
Group C	8	5 F 3 MN	4·4 (1·9)

* Includes one relapse
MN Male neutered, F Female

TABLE 2: Length of hospitalisation and daily weight loss/gain, feed intake and energy intake during the first five and last five days of hospitalisation

		First five days			Last five days		
Group	Average stay (days)	Daily weight loss/gain (kg) (sd)	Daily feed intake % of normal (sd)	Daily energy intake % of normal (sd)	Daily weight loss/gain (kg) (sd)	Daily feed intake % of normal (sd)	Daily energy intake % of normal (sd)
A	8·3	0	42·8 (31·6)	48·5 (32)	−3·8 (1·4)	51·1 (30·9)	59·7 (36·1)
B	21·0	−2·5 (2·4)	26·2 (14·7)	32·1 (16·8)	0·4 (2·4)	83·1 (14·7)	103·5 (24·5)
C	45·3	−1·55 (2·3)	45·0 (36·3)	54·3 (43·4)	1·3 (1·2)	123 (69·8)	152·5 (93·5)

TABLE 3: Progress of patients once discharged

	Number	Recovery progress after final return home	Time for body-weight to return to normal (months) (sd)	Mean number of problems (range)	Time to start work (months) (sd)	Quality of life
Group A	3	Steady 3	4·5 (2·7)	2·3 (0-5)	7·3 (6)*	All good
Group B	6	Steady 5 Erratic 1	5·7 (3·7)	2·7 (2-3)	5·6 (4·0)*	All good
Group C	8	Steady 8	6·9 (2·9)	2·6 (0-5)	7 (4·1)†	Good Moderate

* One case did not 'work'
† Two cases did not 'work'

shown in Table 2. Comparisons with the normal reference range were made for hard feed only in relation to light work (Lewis 1995, 1996). Light work was chosen as a comparator rather than maintenance not because the patients were actually working but because of the heat loss they suffered due to excessive sweating and muscle tremors. The progress of the patients after arrival at home is given in Table 3.

One of the major problems associated with the chronic form of grass sickness is the unpredictability of the clinical picture by the time the veterinary surgeon examines the animal. The speed of initial detection of the clinical signs of grass sickness varies widely depending on the owner and the method of management they use. Horses grazing outside all the time, which are given a cursory inspection every day or every other day over the field gate are usually presented for the initial veterinary inspection with very obvious clinical signs.

If the owner keeps a very close eye on their horses, especially if they provide them with hard feed and have experience of grass sickness, the initial veterinary inspection reveals very little and the horse enters hospital with an almost normal appetite and only vague signs suggestive of grass sickness. In a majority of such cases a deterioration in appetite and increasingly obvious clinical signs develop over the next few days and the animal may have to be euthanased eventually. An animal which is bright on first presentation may just as easily die as recover. While chronic cases which are initially presented as inappetent, depressed and clearly uncomfortable may, with proper nursing, recover fully given sufficient time (Milne and others 1994). All but the very mildest cases take months to recover fully. Recently the authors have observed more chronic cases which remained bright and alert when in the presence of the nursing staff but refused to eat adequately despite the fact that they could swallow. Virtually all these cases had long periods of hospitalisation and eventually, despite great efforts by the nurses, had to be euthanased.

There is no way of predicting accurately from the clinical signs on initial presentation of chronic cases of grass sickness what the outcome will be, and, if the patient survives, how long its return to normality will take. This is illustrated in the weight loss and gain figures shown in Table 2.

From the results presented here there is a relationship between length of hospitalisation and the patients' return to their normal weight. There does not, however, appear to be a connection with the time when work starts and this is probably due to both the owner and the veterinary treatment. Owners' expectations and a degree of impatience to get the animal back to work vary considerably and many of the patients are fed heavily on hard feed and respond by getting so frisky that starting work is an easy option. From a veterinary viewpoint patients may be kept in hospital longer than necessary for fear of yet another period of ill health. In cases which have been sent home too early and then relapse and have to return for further treatment, the owners understandably kept the animals off work for longer than is necessary.

Table 3 shows, especially for group C, that appetite just before discharge is often very good. The authors feed large amounts of wet or moist hard feed and often relatively little roughage because of dysphagia but despite this no case has developed laminitis. To the authors' knowledge none of the patients has developed laminitis at home which is unexpected considering the inappropriate diet many eat for months. High energy and protein feeding is essential to the recovery of grass sickness cases and laminitis should, but does not appear to be, a risk factor.

The length of hospitalisation does not appear to be connected to the final quality of life of the patient. Several of the authors' very long stay patients (40 to 80 days) are now working very well.

ACKNOWLEDGEMENTS

The work described has been made possible by the financial support of the Equine Grass Sickness Fund which covers consumable costs and the International League for the Protection of Horses which pays the nurses. The authors' sincere thanks are extended to both organisations.

References

DOXEY, D. L., MILNE, E. M., ELLISON, J. & CURRY, P. I. S. (1998) Long-term prospects for horses with grass sickness (dysautonomia). *Veterinary Record* **142**, 207-209

LEWIS, L. D. (1995) Equine Clinical Nutrition Feeding and Care. 1st edn. London, Williams and Wilkins

LEWIS, L. D. (1996) Feeding and Care of the Horse. 2nd edn. London, Williams and Wilkins

MILNE, E. M., WOODMAN, M. P. & DOXEY, D. L. (1994) Use of clinical measurements to predict the outcome in chronic cases of grass sickness (equine dysautonomia). *Veterinary Record* **134**, 438

Correction

Analysis of scintigraphical lung images before and after treatment of horses suffering from chronic pulmonary disease by D. Votion, Y. Ghafir, S. Vandenput, D. H. Duvivier, T. Art, P. Lekeux (*VR*, February 27, pp 232-236). The authors regret an error in the reference given for Table 1. The scoring system was attributed to Whitwell and Greet (1984) when the correct reference should have been as follows: Mills, P. C., Roberts, C. A. & Smith, N. C. (1996) *American Journal of Veterinary Research* **57**, 1359-1363