of left shoulder abduction.

My third concern with the study is that the authors' results differ from those I have obtained and reported elsewhere.[4] Although the authors' work is, in many more ways, more comprehensive than my own, the two issues addressed above (correction for gravity and prevention of substitution) were controlled in my paper. The result of my study of knee extension was that relative endurance, which the authors seem also to be testing, was better in patients than in normal subjects. As the patients were weaker than the normal subjects, I suggested that force production in the patients decreased to some threshold level in less time or in fewer contractions. This, I proposed, was because the patients were closer to the threshold level to start with, not because their rate of decline in force production (Fatigue index) was any greater.

Whether the issues I have addressed are truly critical, when using hand-held dynamometers, to test fatigue, awaits verification. In the mean time the authors and other readers of their work may wish to exercise caution in inferring too much from the authors' findings.

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References

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Nicklin et al reply

We are grateful to Dr Bohannon for his helpful comments. We have in fact previously used the method which he illustrates to estimate the force required to maintain a limb part against gravity as a fraction of maximum voluntary force against gravity plus the effect of gravity: in seven muscle groups measured in each of two subjects the fraction varied from about 0·03 (for example, in elbow flexion) to in excess of 0·3 (for neck flexion) (unpublished data). We agree that it would be more accurate to estimate the effect of gravity particularly when different muscle groups are to be compared or when large changes in strength over time are in prospect. The results in the cases illustrated in our paper would scarcely be influenced by these considerations however.

It is true that shoulder abduction is more difficult to test with a hand held dynamometer than several other groups. The supine position with gravity eliminated seems particularly unsatisfactory in strong subjects compared with the sitting position using this technique. Shoulder abduction was chosen for our test because it is an action commonly examined clinically for fatiguability. In addition we have an impression, notably in the myasthenias, of a selective response of certain muscle groups to treatment; hence it should not be assumed that similar results would necessarily be obtained with other (more "easily testable") groups. Further work comparing fatiguability of different muscle groups in the same patient responding to treatment may be illuminating. We do not think that a minor truncal tilt would have significantly influenced our results particularly since we found no real difference in fatigue index between 90° and 60° abduction but particular attention needs to be paid by the tester to careful fixation proximal to the shoulder joint.

We have not found improved endurance in patients except in the notable case of hypothyroidism[1] provided that the initial contractions are not tentative due to lack of practice or discomfort. On the contrary we found no simple correlation between fatigue and muscle weakness in this test. Of course fatigue index depends critically on the forces of the first two contractions in the series and as may be seen from our fig 2 the pattern of these differs slightly (but significantly) for males and females. We have not as yet studied whether a similar trend occurs in patients.

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Reference

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Book reviews

Neurological Skills: A Guide to Examination and Management in Neurology. By MJG Harrison. (Pp 132; £15·00.) Guildford: Butterworth Scientific Ltd, 1986.

The student or young postgraduate in training has today an abundant choice of textbooks and sections in textbooks devoted to history taking, examination and the appraisal of common presenting symptoms of nervous disease.

That such texts are even more important than they were a generation ago is evident in the obvious decline in their clinical skills and diagnostic discernment, not only in neurology but in internal medicine. This reflects on their mentors and the low priority accorded to neurological teaching by certain professors of medicine who determine curricula. And yet, how often we see patients with grave, acute neurological illness in whom there is no diagnostic abnormality of EEG, CSF, evoked potentials and scanning who perforce are managed by the application of clinical techniques. How often do we see NHS funds squandered on useless "routine" tests in uncritical, ill-directed investigations of blackouts, spastic paraparesis or polyneuropathy? The failure to apply clinical skills to narrow the investigation of organic nervous disease into the correct channel, with correspondingly richer dividends is sadly commonplace, justifying further attempts—such as Dr Michael Harrison's book—to rectify it.

This text in paperback covers is remarkably succinct (125 pages), yet is more than adequate for the undergraduate. It is divided into three sections: first, history and examination; second, common problems—which include headache, attacks of unconsciousness, memory loss, visual symptoms, vertigo, deafness, pain, muscle weakness; and third, "conditions". This section includes concise, possibly too concise