

Sir: We feel it inappropriate to comment on the initial points raised by Dr K. de Pauw about the ECT machines marketed by SLE of Croydon but we are sure that the company will address them in due course.

In his last paragraph Dr de Pauw draws attention to the fact that the output currents of various machines are different; this is a very important point and worth examining. Richard Abrams (Abrams, 1992) in his book (p. 113) comments... "the mean threshold dosage obtained of 64 mC (Weaver *et al*, 1978), 102 mC (Weiner, 1980), and 154 mC (Sackeim *et al*, 1987*a,b*), simply reflects the differences in peak current employed, the sex ratio of the samples"... Sackeim in his recent paper (Sackeim *et al*, 1994), quotes Offner (p. 97) . . . "It is, of course, the passage of the electric current which is responsible for the convulsive shocks, rather than the applied voltage... so that dosage standardisation must be on the basis of the former"... This point is scientifically correct and indisputable. Memory impairment, as a result of giving ECT, is related to the peak current administered during a treatment, Sackeim (Sackeim *et al*, 1994) cites the various researchers who have made these observations (p. 114). For this reason it is desirable, if not essential, to be able to control the current administered to the patient and adjust it accordingly.

The authors agree that there may be some merit in manipulating the stimulation parameters to optimise the treatment. This point has been raised many times over the last 60 years in the literature (too numerous to cite), but the only firm conclusion which is apparent and universally agreed is that pulses lasting between 0.5 milliseconds and 2.0 milliseconds with fast rise times are efficient at inducing fits in the patient. Evidence concerning other parameters is at best anecdotal.

ABRAMS, R. (1992) *Electroconvulsive Therapy* (2nd Edn). New York: Oxford University Press.

SACKEIM, H. A., LONG, J., LUBER, B., *et al* (1994) Physical properties and quantification of the ECT stimulus. *Convulsive Therapy*, **10**, 93-123.

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Sir: We are aware that stimulus dosing and stimulus titration have aroused much discussion among the psychiatrists who have attended the Training Days in electroconvulsive therapy (ECT), topics discussed by Byrne *et al* (*Psychiatric Bulletin*, 1995, **19**, 207-208). We were concerned that their critique of the physics of electrical stimulation and the units used to quantify the electrical dose were given the title 'Pitfalls of dose titration', perhaps suggesting to some readers that the principles underlying these techniques ought not to be taken up until the 'ideal' ECT machine is manufactured.

The principles underlying stimulus dosing and stimulus titration are now well researched and the forthcoming new guidelines from the Special Committee on ECT (Freeman, 1995) will give practical examples of how these techniques can be put into practice with several ECT machines.

The authors also correctly point out that there is a wide variation among ECT machines in the nature of the electrical stimulus produced and that these variations are not adequately described by a unit that measures only the amount of electrical charge passed (the Coulomb). This does complicate the comparison of research findings among treatment centres. The new guidelines will stress that each treatment centre develops its own treatment protocol based on their experience with a particular ECT machine, and modified by relevant audit and research findings.

FREEMAN, C. P. (1995) *The ECT Handbook. The Second Report of the Royal College of Psychiatrists' Special Committee on ECT (CR 39)*. London: Royal College of Psychiatrists.

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Sir: Byrne *et al* (*Psychiatric Bulletin*, 1995, **19**, 207-208) offered suggestions for an optimal ECT device and for treatment methods that might avoid the need for empirical titration of ECT stimulus dosage. We found the theoretical presentation to be flawed and their recommendations for practice to be clinically inadvisable.

The desirability of dosage titration is illustrated by the limitations of the optimal stimulus parameters offered by Byrne and colleagues. Their suggestion that the pulse