of cutaneous cancer attributable to PUVA therapy was reported.

Finally, the epidemiological study carried out in the bergamot-oil-producing area of Calabria on subjects in contact with the oil has shown no oncogenic effects of the natural substance (Mezzadra, unpublished observations). Studies currently under way (Magnus, personal communication) have shown that one of the incriminated suntan solar products is not carcinogenic after more than 26 weeks' irradiation of the hairless mouse with a solar simulator under conditions far more drastic than those encountered by the normal holidaymaker.

In view of the current state of our knowledge, we feel that these data justify rejection of the hypothesis of any risk of cancer due to PUVA therapy, although we do recommend that vigilance is maintained. As for the use of 5-methoxypsoralen in suntan preparations, we feel that, considering the current data and the very low concentration of 5-methoxypsoralen in this type of preparation, the episodic character of exposure to ultraviolet rays, and the fact that these products all contain an efficacious ultraviolet filter, the risk may be considered very low compared with the potential benefits.

CHARLES GRUPPER
BRUNO BERETTI

Service de Dermatologie,
Polyclinique d'Aubervilliers,
93300 Aubervilliers,
France

¹ Pool BL, *et al.* *Arzt Kosmetol* 1979;9:349.

² Grupper C, *et al.* *Symposium 303*. Chicago: American Academy of Dermatology, 1979.

³ Stern RS, *et al.* *N Eng J Med* 1979;300:809-31.

ECT: balancing risks and benefits

SIR,—Dr P E Bebbington and his Maudsley colleagues (15 March, p 792) may disagree with Professor D A Pond's eminently sensible letter about unmodified ECT (9 February, p 403) but they offer no arguments to rebut the reasons he gives for its possible use. Psychiatrists who work in less favoured parts of Britain will be more likely to know of situations in which it would constitute the best available practice. Professor Pond says that it might be urgently needed to "control the patient's behaviour." Would his critics have felt less hostile if he had said "to relieve a patient's intolerable depression"?

Those privileged to work in "centres of excellence" should be careful not to nudge us further down the already alarming slide into "defensive medicine."

JAMES MATHERS

Hay-on-Wye,
Hereford HR3 5DQ

Tinted visors and the hazard to motorcyclists

SIR,—The possible hazards of driving while wearing tinted lenses were the subject of correspondence in these columns in 1976 (starting on 15 May and ending 23 October). Since then the revision of British Standard 4110 has been completed and the new version, *Eye-protectors for Vehicle Users* issued. Only clear materials will satisfy the new version of this standard.

The Road Traffic Act requires that when a protective helmet is sold to a motorcyclist it shall comply with the relevant British Standard. By the end of this summer recent

amendments to the helmet standards will require that if a helmet is sold complete with a visor then that visor must also comply with the relevant standard. However, visors sold separately, or as replacements to original clear visors, do not come under the Road Traffic Act. They could possibly come within the compass of the Consumer Safety Act were a Regulation to be made under this Act.

Unless action is taken to make all new visors comply with BS 4110/1979, motorcyclists will continue to buy tinted visors whose density and colour are subject only to the whim of fashion. These are being used at night when a rider's life may well depend on his ability to see the potholes in our deteriorating roads and obstructions lying in the carriageway.

J B DAVEY

Department of Optometry and Visual Science,
City University,
London EC1 0HB

Sorrows of dying

SIR,—Your leading article (1 March, p 592) on questions of dying repeats current attitudes towards the subject which leave one wondering whether much of the agonising is not misplaced. It is taken as axiomatic that the process of dying is sacrosanct. Relief of the suffering of dying is allowed but never its complete elimination, even at the express wish of the dying person. A clean break from life to death is forbidden. Drift and the operation of force majeure is at present the only acceptable method of dying.

Must this attitude remain for ever unchallenged by a more enlightened view, which sees a voluntarily accepted rapid transition as eminently desirable both for the sufferer and for those who minister to his needs? Safeguards there must be but surely some consideration must sooner or later be given to the continuing demand of at least 5% of dying persons for legalised euthanasia.

S L HENDERSON SMITH

Huddersfield

Topical corticosteroids on the face

SIR,—Dr K D Crow (23 February, p 572) does not accept that 2½% hydrocortisone is any more likely to cause perioral dermatitis than the 1% concentration suggested in your leading article (19 January, p 136). An assumption of equivalent safety despite the higher concentration is entirely justified on pharmaceutical grounds since the additional 1½% hydrocortisone, being totally in suspension, would only provide a marginal increase in pharmacological activity. Clinical experience has confirmed that, in ointments, increasing the concentration of hydrocortisone above 1.0% without altering the base provides no increase in therapeutic activity.¹

In order to maximise the partition coefficient for significant bioavailability, the hydrocortisone should be present in molecular solution. This has been confirmed by the fact that a cream formulation containing only 0.1% hydrocortisone in solution (Dioderm) has been shown to be more active than 1.0% hydrocortisone cream BPC, where most of the hydrocortisone is in suspension.^{2 3}

The increased potency of synthetic corticosteroids derives mainly from the protection of the molecule against oxidative degradation of the 17-tertiary alcohol by epidermal enzymes.⁴ This

OH group may be converted into an ester (for example, betamethasone 17-valerate, hydrocortisone 17-butyrate) or an ether (for example, triamcinolone 16,17-acetonide) or removed altogether (for example, difluocortolone 21-valerate), with the result that pharmacological activity is enhanced dramatically, partly because of increased lipoidal solubility but mainly owing to resistance to local metabolism. In consequence of the latter, synthetic topical corticosteroids have to be transferred to the liver for metabolism. Since this is a slow process owing to low water solubility, they can remain in the epidermis for up to two weeks, as evidenced by the vasoconstriction which appears on reocclusion of the treated site.⁵ As the frequency of application to the skin normally exceeds the rate of transportation, a local reservoir builds up, producing the well-known side effects.

It is not justifiable only to indict the presence of fluorine in the molecule, and any criticism of fluorinated steroids that does not include all other corticosteroids which lack a free 17-OH group insidiously disguises the root of the problem. It has now been confirmed that hydrocortisone butyrate, which differs from hydrocortisone only by the presence of a 17-ester, behaves just like the fluorinated corticosteroids, especially as it can cause perioral dermatitis⁶; and the original claims of safety for use on the face⁷ have now been withdrawn.⁸ This is in complete contrast to the accumulating evidence of the mildness of naturally occurring hydrocortisone⁹—which does not, of course, form a reservoir in the epidermis.²

MARTIN WHITEFIELD

Dermal Laboratories Limited,
Hitchin, Herts SG4 7QR

¹ Kranz G, Schaefer H, Zesch A. *Acta Derm Venereol (Stockh)* 1977;57:269-73.

² Barry BW, Woodford R. *Br J Dermatol* 1976;95:423-5.

³ Whitefield M, McKenzie AW. *Br J Dermatol* 1975;92:585-8.

⁴ Greaves MS. *J Invest Dermatol* 1971;57:100-7.

⁵ Vickers CFH. *Arch Dermatol* 1963;88:72-5.

⁶ Cotterill JA. *Br J Dermatol* 1979;101:259-62.

⁷ Sneddon IB. *Br J Dermatol* 1973;89:505-8.

⁸ Sneddon IB. *Br J Dermatol* 1980;102:239-40.

⁹ Sneddon IB. *Br Med J* 1969;i:671-3.

Exercise training in chronic bronchitis

SIR,—I read with interest the article by Drs D J M Sinclair and C G Ingram (23 February, p 519). For the last three years it has been our routine practice to start patients with severe chronic bronchitis and minimal exercise tolerance on walking exercises using a Zimmer-type pick-up aid (pulpit). Immediately on recovery from the acute exacerbation of the condition exercise is continued under regular supervision in the day hospital or outpatient physiotherapy clinic for approximately three months.

We use as a baseline the maximum distance that the patient can walk without undue respiratory distress without using an aid. In our elderly severely affected "respiratory cripples" this distance is commonly only 5 or 6 m with encouragement. Using an aid with the height adjusted to the level of the styloid process of the ulnar, most patients can double their baseline distance immediately, but encouragement is essential as these patients are convinced that they are unable to walk more than a few steps. A personal diary card records approximate improvement in walking distances. By three months many patients record improved walking distances, confirmed by the trained therapist, of five to ten times the original baseline distance. Respiratory function tests are only carried out for general inpatient management or for