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# Excessive daytime sleepiness and driving: regulations for road safety

Editor - Perfectly normal people who are tired or bored may fall asleep at the wheel: some 20% of road accidents are probably caused this way.1 Carter and colleagues (Clin Med September/October 2004, pp 454-6) draw attention to the possibility that the risk of causing road accidents may be enhanced by pathological sleep disorders, including narcolepsy, Parkinson's disease and sleep apnoea syndromes. The authors make the important point that individuals with excessive daytime sleepiness may lose their perception or judgement of sleepiness. Furthermore, they suggest that individuals with sleep apnoea do not appreciate that sleepiness could have been the cause of their particular accident. The essence of their paper is that in the case of a diagnosed sleep apnoea syndrome, it is the responsibility of the driver to notify the regulatory authority. But what is the position of other 'at risk' drivers in this pathological group who do not realise that they are susceptible to daytime sleepiness?

This is an excellent opportunity to test 'at risk' subjects using portable ocular monitoring techniques which, by giving an objective measure of sedation and prolonged eye closure while actually at the wheel, have the potential not only to diagnose daytime sleepiness but to prevent sleep-related road accidents.<sup>2</sup> Eye and eyelid movements can now be measured easily, accurately and non-invasively in a manner that is unusual among neurological tests.<sup>2,3</sup> While it is a step too far to

advocate ocular monitoring of every driver, the high risk group described by Carter *et al* is ideal to test the hypothesis that such monitoring may benefit sleepy drivers and may actually reduce the numbers of road accidents.

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Editor – The working group brought together by the Department of Transport (*Clin Med* September/October 2004, pp 454–6) should be congratulated on bringing this important issue to light. However, I have several concerns about their statement that vocational drivers require a continuous positive airway pressure (CPAP) machine that records 'mask on' time.

These machines are expensive and, outside of specialist centres, we are struggling with our funders to maintain or start even a basic CPAP service. Purchasing only one to two specialist machines for short-term assessments may be obvious for drivers who may alter their short-term behaviour once they know their machines have been changed. Most specialists accept that machine clock-timers only slightly overestimate mask or effective time by 5–10%<sup>1</sup> and this will be a cheaper and more practical way of measuring drivers' CPAP usage.

More importantly, we all need different amounts of sleep and it is difficult to remove someone's livelihood if they are using their machine for 3.5 hours per night for very mild disease and have no current daytime symptoms.

Ethically, I have a dilemma between paternalism versus autonomy. I agree that

it is the responsibility of drivers to inform regulatory authorities but responsibility must also be firmly placed on them to *manage* their own treatment. Regular assessment of use may not 'create the supportive environment' for drivers the authors call for – but it could lead to poor users not attending at all. We do need to rely on patient-reporting but then we should consider objective measures of day-time sleepiness or performance on driving simulators for difficult patients. These are likely to be more useful surrogates of driving ability than machine use – but these are not mentioned.

Finally, I agree that patient and public safety can override doctor-patient confidentiality, but in terms of justice we should not only target sleepy drivers. It is only fair that we no longer rely on self-reporting for 'well controlled' epilepsy or 'previous' arrhythmias. Should we monitor tablet compliance and physiology in these other dangerous driving conditions?

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### In response

Editor - The recommendations of the workshop on Excessive Daytime Sleepiness and Driving for use of smart CPAP, as presented in our paper, represent an ideal position in relation to Group Two (bus/lorry) drivers. Such drivers generally have much greater driving exposure than ordinary drivers, work unsocial hours or shiftwork and the consequences of an accident involving a Group Two vehicle are likely to be severe. In practice, we recognise that smart CPAP machines (recording mask-on time) may be restricted in their availability but in high risk cases, where patient compliance is an issue, the availability of objective evidence is seen as a safeguard for both the attending physician and drivers. We acknowledge too that the number of hours of CPAP use to achieve effective daytime symptom relief will vary between patients, and that no prescribed level can be demanded. It is for this reason that the licensing authority evaluates each patient individually, based on their own consultant's assessment of treatment needs and its continuing effectiveness.

We agree with Dr Lewis that the responsibility for disease management lies with the patients just as every driver is responsible for ensuring that he or she is in a fit state to be behind the wheel. At the time of the workshop, however, we were not aware of any robust evidence that the use of driving simulators nor the use of other tests of wakefulness could predict poor driving performance or accident involvement in individual cases. The necessity to recreate the sort of driving environment conducive to sleepiness, for example, monotonous motorways, would require a prolonged period of simulated driving. Experience shows this likely to induce vestibular disturbance in many subjects and, in addition, knowledge of being 'under test' necessarily increases alertness compared with normal driving conditions. The availability of simulators that supply any sensory input other than visual and auditory is also extremely limited. We will, however, view any additional available evidence with interest and will be considering carefully the recent paper by Jones and Carpenter on ocularmonitoring techniques.

The authors would also make clear that responsibility, extending to a legal obligation, rests with all drivers to report to the licensing authority any medical condition likely to affect their fitness as a driver. This applies equally to drivers diagnosed with narcolepsy or with Parkinson's disease as to those diagnosed with symptomatic obstructive sleep apnoea syndrome. In all cases, patients are generally reliant on their physicians to advise that they have a condition potentially relevant to safe driving and that they, the patient, must notify the licensing authority (and their insurance company). The licensing authority will then evaluate each case individually.

In respect of the other medical conditions mentioned by Dr Lewis, we would point out that drivers are unable to hold vocational entitlement unless the vocational epilepsy regulations can be met. By definition, patients with a history of epilepsy are required to be off treatment

for more than 10 years (as well as symptom-free) before licensing can be considered, so the issue of compliance with treatment is not relevant. In patients with cardiac arrhythmias, some objective evidence in support of patients' self-reporting is available through appropriate electrophysiological and other investigation; this is normally demanded before vocational licensing can be issued. Those patients with an implantable cardioverter defibrillator can be objectively evaluated through interrogation of the device but the latter is, in any event, currently a complete bar to Group Two entitlement.

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## Flesh in the age of reason

Editor – In his fascinating review of *Flesh in the age of reason* by Roy Porter (*Clin Med July*/August 2004 pp 379–80), Sir John Grimley Evans begins by asserting that 'Philosophers such as Grayling and Tallis look back to the 18th century as a Golden Age of Reason'. I cannot speak for Grayling but this is definitely a simplification of my viewpoint.

I suspect that he is referring to my defence of Enlightenment values against the contemporary counter-enlightenment

in 'Enemies of Hope'. However, in that book I advocate not a rerun of Enlightenment with its scientistic (*sic*) ideals but a chastened version of the Enlightenment. I characterise my book as a 'yes – but' to Sir Isaiah Berlin's 'yes – but' to the Enlightenment.

My distance from the materialistic and scientistic thought that characterised some of the less attractive aspects of the work of the *philosophes* is evident in the large number of books I have written criticising attempts to reduce the mind to a function of the brain.

What we need is not a wholesale rejection of Enlightenment values or an uncritical embrace of their aspirations. Reason, yes but 'rationalismus' no; a meliorative approach to social ills but not Utopian holistic social engineering.

Those who criticise the Enlightenment often forget how much of the good things we take for granted were actually the fruit of those brave and generous thinkers who saw themselves as belonging to the 'Party of Humanity'. Society's recourse to superstitions both benign and malign, dotty and all powerful, are a reminder of how hardwon was humankind's liberation from what Kant in 'Was ist Aufklarung' described as man's 'self-imposed minority'.

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