



# Safe driving with diabetes: risks, reality and responsibilities

In an excellent publication, 'Fitness to Drive',<sup>1</sup> the Department of Transport's Chief Medical Officer describes the integration of perception, cognition and motor function as essential prerequisites for safe driving and emphasises the key role of health care professionals in mitigating health-related impairment to reduce the risk of accident. Although medical conditions actually account for a relatively small proportion of road crashes, in contrast to prevailing road conditions and to a lesser extent vehicle defects, impairment of driving as a consequence of medically-related incapacity is still clearly important and under certain specific identified circumstances falls subject to statutory regulation and restricted licensing. Although all involved in diabetes care are well aware that diabetes invokes several very serious issues in respect of driving safety that need to be continually addressed, these are surprisingly often not known in the detail required.

The consequences of hypoglycaemia on cognitive function are well known, affecting many fundamental aspects of driving (reaction time, coordination of complex manoeuvres, attention span, rapid decision making), but other long-term complications of diabetes (visual loss, serious foot problems, cardiovascular disease) are also important considerations to be taken into account.

It is evident that the implications of diabetes and its treatment in respect of safe driving should be part of regular ongoing health care advice, incorporated and recorded within the annual review process. All health care professionals should be familiar with current DVLA regulations<sup>2</sup> to ensure legal responsibilities are understood and educational responsibilities met.

## Risks and reality

Hypoglycaemia at the wheel is extremely hazardous, dangerous and a potential cause of tragedy. Fatal crashes often receive high profile media coverage: 'Protests as death crash diabetic is cleared';<sup>3</sup> 'Grandmother died after being hit by 4x4 driver by man "in automatic state" – diabetic driver was slumped at wheel'.<sup>4</sup> In the event of prosecution the courts are likely to interpret such happenings as 'recklessness', rather than with sympathy, and custodial sentences may well be imposed: 'Four years for death crash diabetic'.<sup>5</sup> Such reports have inevitably polarised recent reality with the potential to adversely influence public opinion at large and thereby risk discrimination against people driving with diabetes to a degree that might be considered unfair.

It is therefore encouraging to learn from a recently published study that insulin-treated patients as a group were not found to pose an increased risk to road safety. Lonnen *et al.* (Exeter, UK)<sup>6</sup> examined an historical cohort derived from the Devon & Cornwall Constabulary database of reported road traffic accidents, and identified that there was no significant difference in accident rate within the insulin-treated group compared to the non-diabetic population. Indeed, for the diabetes group as a whole the acci-

dent rate was lower, a difference attributed to the somewhat older age of those with diabetes – younger drivers being more prone to accident. The authors recognise that such database analysis will not include unreported episodes of hypoglycaemia whilst driving, nor take into account those who have elected to stop driving when they consider themselves at increased risk of hypoglycaemia. Nonetheless, these results are consistent with a number of other quoted studies which have shown a similarly favourable relationship between insulin treatment and accident risk.

This Exeter study provided information on insulin treatment overall but was unable to differentiate between those people with type 1 diabetes and those with type 2 diabetes where insulin was given as the preferred treatment for optimal glycaemic control. It is therefore of interest to learn from the UK Hypoglycaemia Study Group<sup>7</sup> that an observational study, commissioned and funded by the Department of Transport, had found that the frequency of hypoglycaemia with insulin usage in type 2 diabetes, for at least two years after commencement of insulin, was similar to that seen with patients on sulphonylureas and significantly less than that observed with type 1 diabetes.

## Responsibilities

Diabetes, particularly in respect of insulin but not exclusively, is associated with unequivocal implications concerning safety to drive a licensed vehicle on the roads and highways. Hypoglycaemia at the wheel may be relatively infrequent compared to other causes of road traffic accident, and people with diabetes on insulin may indeed be no more prone to accident than the non-diabetic population, but when serious hypoglycaemia does occur whilst driving the consequences can be tragic. Ensuring the principles of safe driving on insulin – recognising the importance of hypoglycaemic awareness, testing blood glucose before starting and after two hours driving, taking regular meals/snacks within rest periods and ensuring fast-acting carbohydrate available within the car – remains a crucial component of educational guidance and an essential shared responsibility between the individual with diabetes and the professional person providing that advice.

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## References

1. Carter T on behalf of the Dept of Transport. *Fitness to Drive: a guide for health professionals*. London: Royal Society of Medicine Press, 2006.
2. *Medical Standards of Fitness to Drive*. Swansea: DVLA, 2007.
3. *The Daily Telegraph*, 4 July 2002.
4. *The Portsmouth News*, 30 November 2007.
5. *The Daily Telegraph*, 8 December 2007.
6. Lonnen K, Powell R, Taylor D, *et al* Road traffic accidents and diabetes: insulin use does not determine risk. *Diabet Med* 2008; **25**: 578–584.
7. UK Hypoglycaemia Study Group. Risk of hypoglycaemia in types 1 & 2 diabetes: effects of treatment modalities and their duration. *Diabetologia* 2007; **50**: 1140–1147.