

Diabetes at the wheel – the need for safety and fairness under the law

João Manuel Valente Nabais

Hypoglycaemia at the wheel is the most common acute risk for drivers with diabetes, and a concern for public road safety. Drivers with diabetes worldwide are subject to special legislation, although the restrictions and requirements vary considerably from one country to another. But are drivers with diabetes really a danger? Are they more likely to provoke an accident than people without the condition? João Manuel Valente Nabais steers us through the related research and reports from Europe on the EU's latest laws on driving with diabetes.

Since the 1960s, a number of studies have looked at the issues around driving and diabetes. In terms of the possible safety risks from driving with diabetes, the findings are far from consensual. Overall, however, there appears to be no clear evidence that a driver with diabetes is more likely to be involved in an accident than a driver without diabetes. Any increased safety risk has been found to be modest, and not sufficient to warrant major legal restrictions on drivers with diabetes.^{1,2,3}

The available scientific evidence does not support a blanket restriction on all drivers with insulin-treated diabetes. Another interesting finding is that there is no significant difference in the rate of citations and law violations (such as speeding, careless driving, alcohol and drug violation) for driv-

ers with diabetes when compared with drivers without a medical condition.

Although the immediate effects of mild hypoglycaemia are unpleasant, it is unlikely to create a danger when driving a motor vehicle if treated quickly. This is because the signs of cognitive dysfunction, and thus a negative impact on driving capacity, generally start to occur at a glucose concentration of 2.75 mmol/l (50 mg/dl) – below the level of glucose where warning signs appear. Nonetheless, studies have revealed a direct relationship between hypoglycaemia and vehicle accidents, which highlights the need for drivers with diabetes to take preventive measures before and while driving.

Impaired hypoglycaemia awareness is a serious concern. While the symptoms



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of mild hypoglycaemia do not impair a person's ability to drive, those who are unable to detect mild low blood glucose clearly are at risk of developing a severe hypo, and thus represent a potential threat to public safety. The detection and treatment of hypoglycaemia prior to or during driving is clearly a critical concern for drivers with insulin-treated diabetes.

There is no evidence that drivers with diabetes are more likely to have road accident.

In people on insulin, the tighter their blood glucose control, the greater the risk of hypoglycaemia. Paradoxically then, due to their reduced risk from severe hypoglycaemia, drivers on insulin with uncontrolled diabetes may be at lower immediate risk (from a hypo while driving) than those with

well-controlled diabetes. The health-care provider has an important role here in ensuring that the drivers with diabetes in their care have access to the diabetes management education they need to prevent their condition from negatively impacting on their personal and professional life (through insulin-induced hypoglycaemia at the wheel), while protecting their long-term health (from disabling and life-threatening chronic complications brought on by uncontrolled blood glucose) by maintaining good blood glucose control. Healthcare providers and people with diabetes should discuss openly the impact of diabetes and all aspects of diabetes management on driving.

Driving, diabetes and the law

Worldwide, the regulations governing the rights of people with diabetes to drive a motor vehicle are numerous and varied. People with diabetes who

want to drive a car or ride a motorcycle need to look into the legal requirements and restrictions in their country of residence.

People who are unable to detect mild hypoglycaemia represent a potential threat to public safety.

In general terms, countries tend to apply separate sets of guidelines according to the types of diabetes. People with type 2 diabetes who manage their condition with diet and/or oral blood glucose-lowering medications usually do not face restrictions. However, people with type 1 diabetes are subject to a wide range of guidelines – which can differ considerably according to the country in which a person applies for a driving licence. Chronic diabetes complications, such as cardiovascular disease,

neuropathy and retinopathy, are usually dealt with under separate headings.

If drivers behave responsibly and take preventive measures, the difficulties of driving with diabetes can be overcome relatively easily.

A further distinction is made in many countries between people wishing to drive a private vehicle and those applying for a commercial licence. Where this distinction exists, the rules for driving a commercial vehicle are more stringent – for a number of understandable reasons: drivers of commercial vehicles spend long hours at the wheel and most have to adhere to a strict working hours; they may also be involved in loading and unloading cargo. All of these factors can increase the risk of hypoglycaemia. Drivers of public-transport vehicles, who are responsible for the safety of their passengers, are likely not to be able to stop regularly to check blood glucose or eat when necessary to prevent hypoglycaemia. Nevertheless, if the driver behaves responsibly and makes use of the available preventive measures, the difficulties of driving with diabetes can be overcome safely and relatively easily (see Box).

Driving with diabetes in the EU

A large number of EU Directives are passed each year affecting different policy areas, including transport and road safety. While a Directive is binding to all Member States in terms its adoption and the achievement of its objectives, Member States can choose the

Guidelines for drivers with diabetes

- Keep carbohydrates – glucose tablets or a sugary drink – in the vehicle.
- Travel with a blood glucose meter.
- Always test blood glucose before driving.
- Pull over and test blood glucose during medium and long voyages.
- Do not drive for more than 2 hours without making a stop to check blood glucose. Eat a snack.
- If you feel hypoglycaemia coming on, stop as soon as it is safe to do so, check and act accordingly.
- When blood glucose before driving is at about or below 5.5 mmol/l, eat a snack before starting the journey.

method they adopt within the framework of their internal legal system to reach those objectives. This means that the way a Directive is implemented can differ from one country to another. In

some cases, a country will not even apply a Directive, despite its obligation to do so – which can lead to a legal action by the European Court.

One of the aims of the 2006 EU Directive on driving licences was to regulate the requirements for drivers with diabetes in all EU countries. It states that non-commercial driving licences can be issued to people with diabetes as long as they have the permission of a recognized healthcare provider and undergo regular medical check-ups. Under this Directive, ‘only in very exceptional cases’ could commercial driving licences be issued to people with diabetes requiring insulin treatment, and, as above, only where duly justified by authorized medical opinion and subject to regular medical check-ups.

The Directive was never implemented in some countries. In others, the law was amended, making it even more severe than the EU intended.

Figure 1: Impact of the 2009 EU Directive according to IDF's 2010 survey



A new Directive was published in August 2009, in order to revise and improve the 2006 law. It was more specific about the requirements for drivers with diabetes, including the obligation to undergo a driving-related medical check-up at least every 5 years. A demonstrable understanding of the risk of hypoglycaemia and 'adequate control of the condition' also became compulsory under the new Directive. There were stricter yet more transparent rules for drivers of commercial vehicles, including:

- no severe hypoglycaemic events in the 12 months prior to application for a commercial licence
- full hypoglycaemic awareness
- blood glucose monitoring at least twice daily
- no other diabetes complications that would impede safe driving
- regular medical review at least every 3 years.

European survey

In February 2010, IDF Europe conducted a survey on driving and diabetes among its member associations in all EU countries. An initial analysis of the answers from 19 of these countries reveals significant diversity in terms of legal requirements from one country to another.

In nine countries, it is compulsory for people with diabetes to declare their condition when applying for a licence; in the other 10 countries it is not. Moreover, where this declaration is a legal pre-requisite, a driving licence is issued to people with diabetes for a maximum of only 5 years – as opposed to a minimum of 10 years for people without the condition.

There is, however, more consistency regarding the question a driving li-

cence obtained prior to diagnosis. Only Belgium requires licence holders to declare their diabetes upon diagnosis. (Nevertheless, it is always advisable to report a diagnosis to an insurer in order to avoid refusal to pay out in the case of an accident.)

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As to whether the 2009 Directive benefits people with diabetes, we have seen a range of opinions, with a fairly even split between 'yes it does', 'no, it hinders drivers with diabetes', and 'it makes no difference' (figure 1). Clearly, despite EU efforts to standardize driving laws, conditions on the road continue to vary across the continent.

Conclusion

A person with diabetes who effectively self-manages his or her condition and can recognize and treat hypoglycaemia does not represent a risk to road safety. The regulations governing legal permission to drive have public safety as their ultimate goal, and must be respected by all people with or without diabetes. At the same time, individual mobility rights should not be violated if no risk exists – from diabetes or otherwise. Policy makers should be aware that rules which are seen to be unreasonably restrictive are likely to face resistance, possibly leading to higher rates of non-compliance, and even creating a threat to public road safety.

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The 2009 EU Directive on driving licences (Commission Directive 2009/113/EC) is available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:223:0031:0035:EN:PDF>