



## **Driving & the Dangers of a Hypoglycemic Episode**

*Hypoglycaemia happens when a person's blood sugar is abnormally low and it's a potentially dangerous condition. Symptoms of low blood sugar include: headache, dizziness, sweating, hunger, tremors and trembling, pale skin anxiety, confusion and loss of consciousness. If you know someone who has diabetes, you may have heard them talk about "insulin shock" which is a common name for a severe hypoglycaemic reaction. Driving instructors should be particularly careful due to their sedentary occupation and if they develop diabetes, this can lead to hypoglycaemia which could lead to driving mishaps. The diabetic driver on insulin has a duty to inform the authorities about his diabetes.*

*Although the onus is on the driver to inform the licensing authority, his doctor may on grounds of public interest inform the authorities if he concludes that there is a risk and if the driver cannot be persuaded to notify the authorities and stop driving. Even though experiencing an episode of hypoglycaemia can be put forward as a defence to careless or dangerous driving, there is no guarantee of success as case law in the this article shows.*

**Tom Harrington LL B F Inst. MTD**

**1/15/2018**

# **Driving & the Dangers of a Hypoglycaemic Episode!**

**Tom Harrington LL B F Inst. MTD (January 2018)**

## **Introduction**

It is a privilege to drive a motor vehicle and the freedom it entails, but with it comes responsibilities and liabilities. Driving is a complex skill both physically and mentally, especially for drivers with diabetes. Extra precautions need to be taken to help maximise road safety. The main hazard for those who take insulin or glucose lowering medications is the unexpected occurrence of a hypoglycaemic episode, but most episodes can be prevented. It is advisable to drive with a glucose friendly snack to hand – not in the glove compartment. Driving mishaps related to diabetes are relatively infrequent and occur at a lower rate than mishaps of many other drivers with conditions that affect driving performance and that are tolerated by society. Experiencing a hypoglycaemic attack can lead to disastrous consequences as can be seen in *McLeod and Baxter (1993)* below. The effect of the loss of a driving license should not be underestimated in terms of the quality of life – it can affect self-esteem, your job, income and pleasure and ergo the quality of life for the whole family. This article is written as a result of the writer experiencing Type 2 diabetes and the necessary medical precautions taken to avoid a hypoglycaemic episode. With proper care and medication, drivers should be able to continue driving safely and not present themselves as a danger to other road users or themselves.

## **Sedentary Occupation**

Driving or teaching driving is a sedentary occupation and the associated risks are becoming overweight and eventually obese. Obesity has several potential health consequences including: diabetes which can cause hypoglycaemic episodes, heart disease, asthma, cancer and sleep apnoea. Healthy balanced eating and exercise is vitally important for the instructor for many reasons. It can lower your risk of disease e.g. heart disease, stroke, high cholesterol, high blood pressure and osteoporosis. Treat your body like a Ferrari or a Porsche; you're not going to put the cheapest petrol into either vehicle.<sup>1</sup> However, if you develop Type 1 or Type 2 diabetes you will be put on either insulin injections or oral medication to control it. Therefore, driver trainers who experience any of the symptoms of diabetes (see below) should consult their doctor immediately. They will then understand what it is and take whatever medical steps necessary to control what could affect their driving with potentially disastrous consequences.

---

<sup>1</sup> 'Heavy Drivers' – Gearing up to a Healthier Lifestyle. Tom Harrington July 2012.

### **What is Hypoglycaemia**

Hypoglycaemia happens when a person's blood sugar is abnormally low and it's a potentially dangerous condition. Symptoms of low blood sugar include: headache, dizziness, sweating, hunger, tremors and trembling, pale skin anxiety, confusion and loss of consciousness. If you know someone who has diabetes, you may have heard them talk about "insulin shock" which is a common name for a severe hypoglycaemic reaction. The body's most important fuel is glucose - a type of sugar. When you digest most foods, sugar is released and that sugar ends up in your bloodstream as glucose. Your body, particularly your brain and nervous system, needs a certain level of glucose to function – not too much and not too little. If your blood glucose isn't right, your body will react by showing certain symptoms. People with diabetes may experience hypoglycaemia if they don't eat enough or if they take too much insulin – the medicine most commonly used to treat diabetes. Some symptoms of hypoglycaemia are caused when the body releases extra adrenalin, a hormone that raises blood sugar levels into the bloodstream to protect against hypoglycaemia. High blood levels of adrenalin can make skin become pale and sweaty, and a person can also have symptoms such as shakiness, anxiety and heart palpitations – a fast pounding heartbeat.<sup>2</sup>

### **The Law**

The law draws a distinction between acts, using the term in its extended sense, and other events which are experienced and confines liability to the former.<sup>3</sup> This reflects an intuition that there is a distinct category of biographical events which are acts.<sup>4</sup> So where A pushes B resulting in injury to C, B is not guilty as he has not acted; his bodily movements are produced by A, who in this case is the actor. Likewise a person is not guilty where his bodily movements are the result of a spasm, a reflex action, a blow to the head, an attack by a swarm of stinging insects or where they occur during a state of unconsciousness, or perhaps more accurately altered consciousness, such as somnambulism,<sup>5</sup> an epileptic seizure or a hypoglycaemic episode. These examples are uncontroversial and, indeed no rational body of penal law would attach liability in such cases. A victim of a road accident can claim compensation for injury and damage only if the can prove another driver was negligent. If for example, a car drives into the back of you, or fails to stop at a junction and crashes into you, the driver's legal responsibility would seem clear.

---

<sup>2</sup> kidshealth.org

<sup>3</sup> See Gorr, "The *Actus Reus* Requirement: a *Qualified Defence*" (1991) 10 Criminal Justice Ethics 11.

<sup>4</sup> See McAuley, "The *Action Component of Actus Reus*" (1988) 23 Ir. Jur. (n.s.) 218

<sup>5</sup> An abnormal condition of sleep in which acts such as sleepwalking are performed

But what if the driver lost control due to a sudden severe illness, a blackout, a heart attack or hypoglycaemic episode? Can he be held legally responsible?

### Case Law

In the English case of *Davies v CPS Bradford [2009]*,<sup>6</sup> a driver drove at 37mph in a 30mph zone. He consciously did so as he started to suffer a hypoglycaemic attack and wanted to reach a safe stopping place to take glucose. On appeal, it was held that as he had consciously speeded as opposed to doing so inadvertently in his anxiety, 'Special Reasons'<sup>7</sup> did not apply and the appeal was allowed. In the case of *R v Whoolley (Unreported)*,<sup>8</sup> the defendant lorry driver was travelling on the M62 in a queue of slow moving traffic. He suffered a sneezing fit; losing control of his vehicle and hit the car in front. This car in turn hit the car in front causing a domino effect involving seven cars. The magistrate allowed the defence of automatism. The appeal court held that the Magistrates were right to do so and that an attack of sneezing could amount to an involuntary action for the purposes of the defence of non-insane automatism. The defence of non-insane automatism if successfully pleaded acts as a complete defence absolving the defendant of all criminal liability. It exists where a person commits a crime in circumstances where the actions can be said to be involuntary. This could be where for example and involuntary natural reaction occurs such as sneezing or being chased by a swarm of insects. The lack of awareness of the effects of hypoglycaemia on safe driving is a real issue for diabetic patients and a challenge for health care providers. Whilst there is little evidence showing higher accident rates among diabetic drivers, there is research indicating that hypoglycaemia comprises driving performance, resulting in lower response times and reduced cognitive functions. The driver with Type 1 diabetes is required to check their blood glucose level before driving. The doctor's duty is to familiarize the patient with the risk of hypoglycaemia, and if unawareness is present, the physician should advise the patient to stop driving until the condition is reversed or controlled by medication. The doctor should consider informing the authorities if he concludes there is a risk and the driver cannot be persuaded to stop driving.

In *MacLeod (Procurator) Fiscal, Perth v. Mathieson, (1993)*, the accused was charged with careless driving.

---

<sup>6</sup> EWAC 1172

<sup>7</sup> In the English case of *Davies v CPS Bradford [2009]*,<sup>7</sup> a driver drove at 37mph in a 30mph zone. He consciously did so as he started to suffer a hypoglycaemic attack and wanted to reach a safe stopping place to take glucose. On appeal, it was held that as he had consciously speeded as opposed to doing so inadvertently in his anxiety, 'Special Reasons' did not apply.

<sup>8</sup> R v Whoolley (Unreported) Divisional Court of Queen's Bench Division e-lawresources.co.uk

It was accepted that he was a diabetic and that the incident occurred in the course of a hypoglycaemic attack; and there was evidence that the hypoglycaemic episodes he suffered were very difficult to predict and that he was poor in recognising the symptoms of their onset. His defence was that as he was in the throes of a hypoglycaemic attack at the time of the incident he was not driving in the sense that he did not have conscious control of his bodily movements at the material time.

Rejecting the defence of automatism, Sheriff McInnes said: <sup>9</sup>

***“In my opinion it is no defence to a charge such as careless driving for the driver to say that he had become disabled from driving to the extent that he could not be said to be “driving” a motor vehicle by reason of some condition, where that driver knew that he was liable to become so disabled without warning to enable him to control or to stop his vehicle without danger to others. The acquisition of that knowledge, whether the result of advice or as a result of experience, prevents the accused from relying on the defence which may be open to a driver who has not previously been made aware that he or she suffered from the condition in question. In these circumstances, while I am of the opinion that the accused was at the time of the collision in a state in which he was incapable of controlling the car which he was driving by reason of a hypoglycaemic attack which had overcome him ... I find him guilty of this charge”.***

### **actio libera in causa**

It is not clear in the McLeod case that the Court needed to go to these lengths in order to secure a conviction. Since careless driving is a crime of negligence, it should have been enough that it was established that the defendant was driving the vehicle just before he lost consciousness and that a reasonable person would not have driven with a disabling condition whose onset he knew he could neither predict or control. Perhaps the Sheriff felt it was necessary to confront the fact that there was clear evidence of automatism at the material time, and recourse to the doctrine of *actio libera in causa* <sup>10</sup> was the only reliable way of proofing his decision against appeal on this point?

---

<sup>9</sup> 1993 S.C.C.R. 488 (McAuley F & J McCutcheon J. Paul) 2000 *Criminal Liability* Round Hall, Dublin 2

<sup>10</sup> The *actio libera in causa* doctrine as originally formulated by various Enlightenment philosophers, concerns the imputation of responsibility to actors unfree in themselves, but free on their causes. Like our Enlightenment counterparts, contemporary philosophers of criminal law, as well as most Western legal systems (both common law and civil) allow that persons can be responsible for acts that are not free when performed, provided they were free in their causes.

In cases where the accused was unconscious throughout the entire episode and there was no basis on which voluntary conduct could be ascribed him. In other cases, such as those involving “unconscious driving”, the issue is more ambiguous and has presented problems. The offences charged in cases of this kind include both the common law offence of manslaughter and a variety of offences contained in road traffic legislation, such as causing death by dangerous or reckless driving, driving without due care and attention and the like. Common to these offences is the act of driving, an act which involves the exercise of some degree of control over the vehicle by the supposed driver. Where the vehicle moves by self-propulsion or by accident, such as by sudden uncontrolled release of the handbrake, there is no act of driving.<sup>11</sup> The real dilemma is faced when an accused goes through the motions of driving and appears to be in control but states he was unconscious at the time.

The facts of *Hill V Baxter (1958)*<sup>12</sup> typify the difficulties which can arise in this regard. The respondent’s car was observed as it moved through a road crossing in apparent disregard of a stop sign and collided with another vehicle. He was charged with the statutory offences of dangerous driving and failure to conform with a traffic sign. He testified that he remembered nothing from some point before the scene of the accident until after it occurred. If true, these facts would have provided a perfect opportunity to consider the issue of voluntariness. The case presented by the defendant was that he was unconscious at the material time during the episode and accordingly could not be said to have engaged in voluntary conduct – he did not drive and he did not ignore the halt sign. However, there was little evidence to support that contention, a feature that was seized upon by the Divisional Court.<sup>13</sup> Moreover, the fact that he had navigated a complex route, which involved a number of junctions and turns, was taken to cast doubt on the defendant’s version of events.<sup>14</sup> The evidence, the court concluded, was insufficient to justify a finding that the respondent was unconscious and not fully responsible for his conduct

In very special circumstances, a medical condition may amount to a good defence. Thus, in *Finnegan v Heywood (2000)*,<sup>15</sup> a person who drove in a state of self-induced parasomnia was found to have a good defence and was acquitted.

---

<sup>11</sup> *State v Taft* (1985) 43 W. Va. 365 ( McAuley & McCutcheon – Criminal Liability) 2002

<sup>12</sup> *Hill V Baxter* [1958] 1 QB. 277.

<sup>13</sup> *Hill V Baxter* [1958] 1 QB. 277.

<sup>14</sup> *Hill V Baxter* [1958] 1 QB. 277.

<sup>15</sup> SCCR 460

In the English case of *Davies v CPS Bradford [2009]*,<sup>16</sup> a driver drove at 37mph in a 30mph zone. He consciously did so as he started to suffer a hypoglycaemic attack and wanted to reach a safe stopping place to take glucose. On appeal, it was held that as he had consciously speeded as opposed to doing so inadvertently in his anxiety, his appeal was disallowed.

### **Duty to Notify/Inform**

Sometimes people with a strong interest in road safety - including motor vehicle administrators, pedestrians, drivers, employers and other road users associate all diabetics with unsafe driving, when in fact most people with diabetes safely operate motor vehicles without creating any meaningful risk of injury to themselves or others. When legitimate questions arise about the medical fitness of a person with diabetes to drive, an individual assessment of that person's diabetic management is necessary in order to determine any appropriate restrictions. The diagnosis of diabetes is not sufficient to make any judgements about individual driver capacity.<sup>17</sup> The diabetic driver on insulin has a duty to inform the authorities about his diabetes. If he is on a diet and/or hypoglycaemia medication and is free of complications such as hypoglycaemia unawareness, there is no need to inform the authorities. Generally, insulin-treated people are not allowed to drive HGVs or certain passenger vehicles like busses.<sup>18</sup>

### **Grounds of Public Interest**

Although the onus is on the driver to inform, the doctor may on grounds of public interest inform the authorities if he concludes that there is a risk and if the driver cannot be persuaded to notify the authorities and stop driving. The Driver Vehicle and Licensing Agency (DVLA) also recommend discussing the issue with the next of kin, but the patient is unlikely to agree. A second opinion may be sought, but until this is resolved, the patient should also refrain from driving. The onus seems to rest largely on the individual patient, after due advice has been availed of and discussion has taken place. The legal position of the doctor who fails to notify the authorities about a recalcitrant driver in the event of an accident has to date been still uncontested.<sup>19</sup> There is insufficient evidence to prove that diabetic drivers have higher accident rates.

---

<sup>16</sup> EWAC 1172

<sup>17</sup> <https://ncbi.nlm.nih.gov> (last accessed 5/2/2018)

<sup>18</sup> DVLA, editor. Swansea, Group DVLA. For medical practitioners. *At a glance: Guide to the Current medical standards of Fitness to Drive.*

<sup>19</sup> DVLA, editor. Swansea, Group DVLA. For medical practitioners. *At a glance: Guide to the Current medical standards of Fitness to Drive.*

However, some research supports that idea the hypoglycaemia significantly compromises driving performance resulting in longer response times and lower scores in cognitive tests which may lead to traffic violations and accidents.<sup>20</sup> The risk of hypoglycaemia is the main danger to safe driving and the risk increases the longer you are on medications that increase your risk of hypoglycaemia. This may endanger your own life as well as that of other road users. Accidents caused by hypoglycaemia are because drivers carry on driving even though they get warning symptoms of hypoglycaemia occurring. If you get warning symptoms of hypoglycaemia whilst driving, you must always stop as soon as safely possible – do not ignore the warning symptoms.<sup>21</sup>

### **Eye Disease**

It is important to note that the mere fact that a person's diabetes has come to the attention of the licensing authorities – whether by report or because of an accident – should not itself predetermine a licensing decision. Doctors or other health care professionals who treat people with diabetes should regularly discuss the risk of driving with low blood glucose with their patients. Doctors, patients and authorities should be aware of all the potential risks and should contribute in establishing effective injury prevention strategies. Eye disease associated with diabetes including the various forms of retinopathy and cataract is, of course, a potential cause of impaired driving ability and there is general consensus that ascertainment of visual acuity of commercial motor vehicle drivers is a reasonable measure for measuring such risk.<sup>22</sup> Diabetic retinopathy is a common complication of diabetes that affects the small blood vessels in the lining at the back of the eye. The lining is called the retina. The retina helps to change what you see into messages that travel along the sight nerve to the brain. Diabetic retinopathy can cause the blood vessels to leak or become blocked and damage your sight. It is advisable to have a diabetic retinopathy eye screening test regularly, normally on an annual basis.<sup>23</sup>

### **Studies**

Much is made of Health and Safety in the workplace for workers but ADIs primary responsibility is to do with having a safe car and not putting students and other road users at risk. The problem is that many ADIs are not fully aware of the potential health risks of being an ADI.

---

<sup>20</sup> Cox, D.J. *et al* Progressive Hypoglycaemia's Impact on Driving Simulation Performance. Occurrence, Awareness and Correction. *Diabetes Care*. 2000; 23:163-170. [PubMed]

<sup>21</sup> [www.diabetes.ie](http://www.diabetes.ie) Diabetes Ireland.

<sup>22</sup> American Association of Clinical Endocrinologists Inc. [US] aace/ace Guidelines, *Endocr Pract*. 2015; 21 (Suppl1) 3 <http://www.aace.com> (last accessed 5/2/2018)

<sup>23</sup> Diabetic Retina Screen. *About diabetic retinopathy screening*. [www.diabeticretinascreen.ie](http://www.diabeticretinascreen.ie)

For many years there has been studies on taxi drivers and truck drivers who spend long hours in their vehicles. ADIs can be exposed to similar situations with back-long working days and to-back pupils. Surveys of professional drivers (mostly truck and taxi) often show the following symptoms e.g. diabetes, hypoglycaemia, bladder infections, weight issues, back and neck problems, impotence and gastric issues etc. However, it appears that no surveys or studies of ADIs have been conducted. Driving mishaps for most drivers are relatively infrequent and occur at a lower rate than mishaps of many other drivers with conditions that affect driving performance and that are tolerated by society. In a recent Scottish survey, only 62pc of health care professionals suggested that insulin-treated drivers should test their blood glucose levels before driving; 13pc thought it safe to drive with certain levels of blood of glucose while 8pc did not know that impaired awareness of hypoglycaemia might be a contraindication to driving.<sup>24 25</sup> And in a large international study, nearly half of drivers with Type 1 diabetes and three quarters of those with Type 2 had never discussed driving guidelines with their doctor.<sup>26</sup>

### **Conclusion**

Most people know that driving under the influence of alcohol or drugs is dangerous, but driving with low blood sugar, also called hypoglycaemia, is also very dangerous. People with diabetes who drive at the wrong time can black out behind the wheel and injure or kill another person or themselves. Most people are aware of having low blood sugar and report that it is not a pleasant experience. But some people with diabetes have “hypoglycaemic unawareness” and don’t feel any symptoms until it’s too late. That’s why it’s important to check your blood sugar level before you drive. Even on short journeys “hypo” can be dangerous, so test before each journey. If you notice signs that your blood sugar is low or you are otherwise concerned that you may be low during the journey, find a safe place to stop and park. Remove the ignition key and move into the passenger seat. This is how to avoid any suggestion that you may be “under the influence” whilst in charge of a vehicle. If you are low, treat the hypo with fast acting glucose and sufficient slower acting carbohydrates to ensure your blood glucose levels are at a safe level for the rest of the journey. Diabetes is common among people who lead sedentary lifestyles especially among those involved in the driver training industry however, if left unchecked a hypoglaecemic episode could be disastrous.

---

<sup>24</sup> *Diabetes and Driving* – American Diabetes Association. Diabetes care Vol 37, Supplement 1, January 2014. [main.diabetes.org](http://main.diabetes.org)

<sup>25</sup> Watson W.A. Currie T. Lemon J.S. Gold A.E. *Driving and Insulin Treated Diabetes – Who Knows the Rules and Recommendations?* Pract Diabetes Int 2004; 24: 201-206. <https://www.ncbi.nlm.nih.gov>

<sup>26</sup> Harsch I. A. Stokes S. Radespiel – Troger M.*et al Traffic Hypoglycemia and Accidents in Patients with Diabetes Mellitus Treated with Different Regims.* J. Intern Med. 2002; 252 – 360 [PubMed]

If you experience any of the above symptoms, consult your physician and together you can develop a strategy to combat the possibility of suffering a hypoglycaemic episode so you can continue driving safely. Finally, a history of hypoglycaemia does not mean an individual cannot be a safe driver. Rather, when there is evidence of severe hypo, an appropriate evaluation should be undertaken to determine the cause of the low blood glucose, the circumstances of the episode and whether adjustment to medication may mitigate the risk and the likelihood of a hypoglycaemic episode recurring.