### Appendix F: Diabetes-Related Standards and Guidelines – International Comparison

<table>
<thead>
<tr>
<th>Country</th>
<th>United States (2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDARD</strong></td>
<td>§ 391.41 Physical qualifications for drivers.</td>
</tr>
<tr>
<td></td>
<td>(b)(8) A person is physically qualified to drive a commercial motor vehicle if that person:</td>
</tr>
<tr>
<td></td>
<td>(b)(3) Has no established medical history or clinical diagnosis of diabetes mellitus currently requiring insulin for control;</td>
</tr>
<tr>
<td>Medical advisory</td>
<td>Diabetes mellitus is a disease which, on occasion, can result in a loss of consciousness or disorientation in time and space. Individuals who require insulin for control have conditions which can get out of control by the use of too much or too little insulin, or food intake not consistent with the insulin dosage. Incapacitation may occur from symptoms of hyperglycemic or hypoglycemic reactions (drowsiness, semi-consciousness, diabetic coma, or insulin shock). The administration of insulin is within itself, a complicated process requiring insulin, syringe, needle, alcohol sponge and a sterile technique. Factors related to long-haul commercial motor vehicle operations such as fatigue, lack of sleep, poor diet, emotional conditions, stress, and concomitant illness, compound the diabetic problem. Because of these inherent dangers, the FMCSA has consistently held that a diabetic who uses insulin for control does not meet the minimum physical requirements of the FMCSR. Hypoglycemic drugs, taken orally, are sometimes prescribed for diabetic individuals to help stimulate natural body production of insulin. If the condition can be controlled by the use of oral medication and diet, then an individual may be qualified under the present rule. See Conference Report on Diabetic Disorders and Commercial Drivers and Insulin-Using Commercial Motor Vehicle Drivers at: <a href="http://www.fmcsa.dot.gov/rulesregs/medreports.htm">http://www.fmcsa.dot.gov/rulesregs/medreports.htm</a> Diabetes Exemption Program Criteria available at: <a href="http://www.fmcsa.dot.gov/documents/safetyprograms/Diabetes/diabetes-exemption-package0706.pdf">http://www.fmcsa.dot.gov/documents/safetyprograms/Diabetes/diabetes-exemption-package0706.pdf</a></td>
</tr>
<tr>
<td>criteria</td>
<td></td>
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<table>
<thead>
<tr>
<th>Country</th>
<th>Australia, <em>Accessing Fitness to Drive; Austroads Inc.</em> 2003 (reprinted 2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STANDARD</strong></td>
<td>5.3 MEDICAL STANDARDS FOR COMMERCIAL LICENSING</td>
</tr>
<tr>
<td></td>
<td>(Drivers of heavy vehicles, public passenger vehicles or bulk dangerous goods vehicles – refer to definition, page 6 of the standards document).</td>
</tr>
<tr>
<td></td>
<td>5.3.1 Medical criteria for unconditional and conditional licenses are outlined below.</td>
</tr>
<tr>
<td></td>
<td>5.3.2 For diabetes-related end organ damage, for example diabetic retinopathy, see the appropriate chapter.</td>
</tr>
</tbody>
</table>

> In the case of commercial vehicle drivers, the opinion of a medical specialist is required for recommendation of a conditional license. This requirement reflects the higher safety risk for commercial vehicle drivers and the consequent importance of expert opinion. In rural or remote areas, however, where access to specialists may be difficult, the Driver Licensing Authority may agree to a process in which:

- Initial assessment and recommendation for the conditional license is provided by a specialist;
- Ongoing periodic review for the conditional license is provided by the treating GP, with the approval of the specialist.

**Diabetes controlled by diet alone**

A person with diabetes controlled by diet alone may drive without license restriction and without notification to the Driver Licensing Authority. They should be reviewed by their treating doctor periodically regarding progression of the illness.
**Non-Insulin Requiring Type 2 Diabetes Mellitus**

The criteria for an unconditional license are **NOT** met:
- If the person has non-insulin requiring diabetes mellitus on oral hypoglycemic agents.

A **conditional license** may be granted by the Driver Licensing Authority, taking into account the opinion of a specialist in Diabetes or Endocrinology, and the nature of the driving task, and **subject to at least annual review**:
- If the condition is well controlled and the patient compliant with treatment; **and**
- There is an absence of defined hypoglycemic episodes as assessed by the specialist, the patient has awareness (sensation) of hypoglycemia, and the patient is taking agents that provide the minimum risk of hypoglycemia; **and**
- There is an absence of end organ effects which may affect driving as per this publication.

**Insulin-Requiring Diabetes Mellitus (both Types 1 and 2)**

The criteria for an unconditional license are **NOT** met:
- If the person has Insulin Requiring Diabetes Mellitus.

A conditional license may be granted by the Driver Licensing Authority, taking into account the opinion of a specialist in Diabetes or Endocrinology, and the nature of the driving task, and **subject to at least annual review**:
- If the condition is well controlled and the patient compliant with treatment; **and**
- There is an absence of defined hypoglycemic episodes as assessed by the specialist, the patient has awareness (sensation) of hypoglycemia, and the patient is taking agents that provide the minimum risk of hypoglycemia; **and**
- There is an absence of end organ effects which may affect driving as per this publication.

In the event of a **defined hypoglycemic episode** occurring in a previously well-controlled person they should not drive for a period determined by a specialist. In the event of a defined hypoglycemic episode being associated with a motor vehicle crash the Driver Licensing Authority must be notified.

**Additional guidance**

<table>
<thead>
<tr>
<th>5.1 RELEVANCE TO DRIVING TASK</th>
</tr>
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<tbody>
<tr>
<td>5.1.1 Diabetes may affect a person's ability to drive, either through loss of consciousness in a hypoglycemic episode or from end organ effects on relevant functions, including effects on vision, the heart, the peripheral nerves and vasculature of the extremities, particularly the feet. The main hazard in people with insulin-requiring diabetes is the unexpected occurrence of hypoglycemia.</td>
</tr>
</tbody>
</table>

**5.2 HYPOGLYCEMIA**

5.2.1 A "defined" hypoglycemic event relevant to driving is one of sufficient severity to cause impairment of perception or motor skills, abnormal behavior or impairment of consciousness. It is to be distinguished from mild hypoglycemic symptoms such as sweating, tremulousness, hunger, tingling around the mouth, etc., which are common occurrences in the life of a person with diabetes treated with insulin and some hypoglycemic agents.

5.2.2 Hypoglycemia may be caused by many factors, including non-compliance or alteration to medication, unexpected exertion or irregular meals. Irregular meals may be an important consideration with long-distance commercial driving or those operating on shifts. Impairment of consciousness and judgment may develop rapidly and result in the loss of control of a vehicle.

5.2.3 The driver should be advised not to drive after a defined hypoglycemic episode or after a hypoglycemic episode experienced while driving until they have been cleared by the primary care physician or specialist.

5.2.4 The driver should also be advised to take appropriate precautionary steps to avoid hypoglycemic episodes, for example:
- Self-monitoring of blood glucose levels;
- Carrying of glucose in the vehicle;
- Compliance with specified review periods (GP or specialist); and
- Cessation of driving should a hypoglycemic episode occur.
The medical guidelines outline two sets of medical standards – private vehicle driver standards and commercial vehicle driver standards.

### Private standards
- Drivers applying for or holding a license class C (Car), R (Motorcycle) or LR (Light Rigid) UNLESS the driver is also applying for an authority or is already authorized to use the vehicle for carrying public passengers for hire or reward or for the carriage of bulk dangerous goods or in some jurisdictions for a driver instructor’s license.

### Commercial standards
- Drivers of “heavy vehicles,” i.e., those holding or applying for a license of class MR (Medium Rigid), HR (Heavy Rigid), HC (Heavy Combination) or MC (Multiple Combination, refer Table 1).
- Drivers applying for an authority/already authorized to carry public passengers for hire or reward (bus drivers, taxi drivers, chauffeurs, drivers of hire cars and small buses, etc.).
- Drivers applying for an authority/already authorized to carry bulk dangerous goods.

### Country
- Canada, Canadian Council of Motor Transport Administrators (CCMTA) Medical Standards for Drivers (June 2009)

### Source

### STANDARD 8.2 Diabetes Mellitus

#### Diet control
- Eligible for any class of license if there are no other disqualifying complications.

#### Oral medication
- Eligible for any class of license if there are no other disqualifying complications and not subject to hypoglycemia.
- **Class 1,2,3,4:** annual medical review

#### Insulin-treated
- Eligible for class 5 license if there are no other disqualifying complications and not subject to hypoglycemia.
- May be considered for class 1,2,3,4 only if the following conditions are met:
  1. No episode of hypoglycemia requiring the need for intervention by an outsider for correction within the previous 2 years;
  2. No evidence of hypoglycemia unawareness;
  3. The diabetes is well controlled:
     - The glycosylated hemoglobin is <2.0 times the upper limit of normal,
     - Less than 10% of blood glucose levels are < 4 mmol/l;
  4. Self-monitoring is adequate – a verifiable glycemic log is maintained;
  5. Knowledge of the disease and the causes, symptoms and treatment of hypoglycemia is adequate;
  6. No other disqualifying complications;
  7. Observes the guidelines for driving recommended by the Canadian Diabetes Association dated June 1991;
  8. Annual medical review including a complete eye examination including a dilated retinal examination. In the presence of retinopathy, an examination by an ophthalmologist is required.

### 8.3 Hypoglycemia
- Individuals subject to spontaneous attacks may not operate any type of motor vehicle until the condition is treated and the cause eliminated.

### 8.5 Pituitary Diseases
- Diabetes Insipidus – individual is eligible to operate a Class 5 or 6 motor vehicle based on conditions listed above.

### Additional
- METABOLIC DISEASES
8.1 Metabolic Diseases and Driving
Disturbances in the endocrine system can cause many symptoms, ranging in severity from muscle weakness and spasm to sudden episodes of dizziness or loss of consciousness. In general, patients with endocrine disorders should not be allowed to drive any type of motor vehicle until the symptoms have been controlled by treatment. (CMA 7)

8.2 Diabetes Mellitus
Individuals with diabetes mellitus are at risk for the development of neurological, cardiovascular and ophthalmologic complications, which may interfere with driving ability. In these areas, diabetic individuals must meet the same standards as all other drivers. The major concern in diabetes and driving is hypoglycemia, particularly if there is a lack of awareness of warning symptoms. Type I diabetics treated with insulin are less prone to hypoglycemia because they are relatively resistant to insulin. Hypoglycemia unawareness occurs in individuals with autonomic neuropathy which tends to occur after 10 years in Type I diabetics and after a somewhat longer time in Type II diabetics. Diabetics treated with injectable insulin, who also are on Beta adrenergic blocking agents, may also be at risk for hypoglycemia unawareness because they may not have a sympathetic nervous system response to mild hypoglycemia.

In recent years there have been many advances in the treatment of diabetes resulting in tighter control in many individuals. An unavoidable byproduct of tight control is an increased incidence of hypoglycemia, the complication which presents the greatest risk to road users. This risk is reduced if the diabetic driver is well educated, understands the relationship between insulin dose, diet and exercise, and is compliant with treatment. Furthermore, knowledge of the symptoms and treatment of hypoglycemia is essential.

Individuals with diabetes treated with diet alone can be considered for any class of license. The same applies to those treated with oral medication provided they are not subject to hypoglycemia and meet the other conditions described above. Diabetic individuals treated with injectable insulin are eligible for a Class 5 license if they are not subject to hypoglycemia and do not have disqualifying cardiovascular, neurologic or ophthalmologic disease.

Diabetic individuals treated with injectable insulin are prohibited from holding Class 1 to 4 licenses unless the specific standards which have been recommended by the Canadian Diabetes Association and published in the June 1991 issue of the Canadian Diabetes Association journal are satisfied.

The Canadian Diabetes Association has recommended that diabetics treated with injectable insulin who hold commercial licenses observe the following guidelines for driving:

1) The driver must at all times while driving carry self-monitoring equipment, a source of rapidly absorbable glucose on his person, and insulin and syringes/pump/injector;
2) The blood glucose concentration must be tested within an hour before driving and every 4 hours while driving. Driving must be stopped if the blood glucose value is less than 6 mmol/l, until the glucose value has risen by food ingestion;
3) Driving should be limited to a maximum period of 12 hours in a day, with a maximum of 6 consecutive hours between meals. The schedule of work to be adopted should be approved by the treating physician as compatible with the insulin regimen.

8.3 Hypoglycemia
Individuals who become faint or unconscious from spontaneous attacks of hypoglycemia cannot drive any type of motor vehicle safely.

8.5 Pituitary Diseases
(a) Posterior Deficiency: Individuals with diabetes insipidus may operate Class 5 or 6 motor vehicles, provided the underlying pathology is recognized and treated and visual disturbances or other disabling central nervous symptoms are not present.

License classification
- **Class 1**: Permits the operation of a motor vehicle of any type or size, with or without passengers, and a trailer of any size.
- **Class 2**: Permits the operation of a motor vehicle of any type or size, with or without passengers. A Class 2 license does not permit the holder to pull a semi-trailer.
- **Class 3**: Permits the operation of a motor vehicle of any size. A Class 3 license does not permit the holder to carry passengers or to pull a semi-trailer.
- **Class 4**: Permits the operation of a taxicab, a bus carrying no more than 24 passengers and emergency response vehicles, such as ambulances, fire trucks and police cars.
- **Class 5**: Permits the operation of any motor vehicle or small truck (a towed vehicle cannot exceed 4,600 kg). A Class 5 license does not permit the holder to drive an ambulance, a taxicab or a bus or to pull a semi-trailer.
- **Class 6**: Permits the operation of a motorcycle, motor scooter or mini-bike only. All other classes must be endorsed to include Class 6 before the holder may operate a motorcycle, motor scooter or mini-bike.
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<tbody>
<tr>
<td>Source</td>
<td><a href="http://www.nzta.govt.nz/resources/medical-aspects/">http://www.nzta.govt.nz/resources/medical-aspects/</a></td>
</tr>
</tbody>
</table>

### STANDARD

#### 4. DIABETES

**4.1 Type 1 diabetes**

When driving should cease

People with type 1 diabetes are generally considered unfit to drive.

When driving may resume or may occur

The Agency may, in exceptional circumstances, grant a license, after consultation with the individual’s general practitioner and diabetes specialist. Strict conditions are likely to be imposed, which would include the requirements listed below in Section 4.4.

#### 4.2 Type 2 diabetes controlled by diet alone

Considered fit for all types of driver’s license.

#### 4.3 Type 2 diabetes controlled by oral hypoglycemic Agents

These drivers may be considered fit to drive in most circumstances on a license with conditions, provided there is no history of hypoglycemia. An initial review from a diabetes specialist may be required to ensure that the treatment regimen is satisfactory, adequate glycemic control is being achieved and there are no complications of diabetes that may impair driving performance. The granting of a license in these categories is likely to require the following conditions:

1. An annual medical certificate from a GP documenting:
   - Adherence to treatment
     - That the medical practitioner has proof of regular self-testing of blood glucose with satisfactory blood glucose levels
     - The absence of hypoglycemic episodes or unawareness
     - The absence of significant diabetic complications
   - A regular pattern of shifts with adequate meal breaks
   - A satisfactory two-yearly specialist assessment.

If the addition of insulin is required to achieve better glycemic control, then the individual should be considered under section 4.4.

#### 4.4 Type 2 diabetes partly or solely controlled by insulin

In cases where insulin has been added to the treatment, additional conditions are likely to be imposed, and not all individuals will necessarily be considered fit to drive. Nocturnal insulin therapy, when clinically appropriate, carries a lower risk of daytime hypoglycemia than twice daily or morning insulin regimens, especially those with short-acting components. A review from a diabetes specialist is necessary to ensure that the treatment regimen is satisfactory, adequate glycaemic control is being achieved and that there are no complications of diabetes that may impair driving performance. The granting of a license in these categories is likely to require the following conditions:

1. A six monthly medical certificate from a GP documenting:
   - Adherence to treatment
     - That the medical practitioner has proof of regular self-testing of blood glucose with satisfactory blood glucose levels
     - The absence of hypoglycemic episodes or unawareness, and
     - The absence of significant diabetic complications.
   - A regular pattern of shifts with adequate meal breaks
   - A satisfactory annual specialist review.

### INTRODUCTION OF STANDARDS

Diabetes is a common condition in New Zealand. Current estimates suggest that at least 100,000 people are being treated for the condition and many more are as yet undiagnosed (Ministry of Health 2008). The number of road traffic crashes attributable to diabetes or its treatment is not known, but it is likely to be relatively small. Monitoring by the Agency suggests that diabetes accounts for about 5–10 percent of those motor vehicle crashes attributable to medical factors.

The potential risks of diabetes derive from the metabolic disturbances associated with control of blood glucose on the one hand, and the later complications of the disease on the...
other. The later complications, giving rise to end organ damage, should be assessed separately using advice from the appropriate sections of this guide. Specifically, these include:

- Visual acuity problems arising from cataract formation and/or diabetic retinopathy and its treatment (Section 6). (Note that subjects who have had extensive laser photoacoagulation of the retinae often have very poor vision at night, despite adequate daytime acuity, and may also have visual field limitation.)
- Ischemic heart disease and cerebrovascular disease, both of which are more prevalent in people with diabetes (Sections 3 and 2, respectively).
- Locomotor conditions, particularly of the lower limbs, arising from peripheral neuropathy and/or peripheral vascular disease (Section 5).

Note: Obstructive sleep apnea is not uncommon in obese subjects with type 2 diabetes (Section 10).

**Hyperglycemia** and associated diabetic coma (whether ketotic or nonketotic) are generally of little significance to driver safety, as the onset is slow. Hyperglycemia induced by treatment of diabetes is undoubtedly the most important potential problem from the point of view of driving safety. Its onset may rapidly impair the ability of an otherwise competent and safe driver. It may result in poor motor coordination, impaired judgment and reaction times, inappropriate and aggressive behavior, and even loss of consciousness. These all pose a potential risk on the roads. The risk of hyperglycemia is not the same in all patients with diabetes, and the forms of treatment associated with different types of the disease are given different weightings in the guidelines that follow.

The risks of hyperglycemia are greater with increased driving hours, and the consequences of an accident are potentially greater with larger vehicles and those carrying passengers. Higher safety standards are therefore required for these classes and endorsements.

**Hypoglycemia — causes**

Hypoglycemia is a side effect of treatment of diabetes with insulin or sulphonylurea drugs and also with some newer drugs not currently available in New Zealand. The risk of hypoglycemia with sulphonylurea drugs is greatest in the elderly, and in subjects with weight loss and poor renal function. It is most likely to occur with long-acting agents, such as glibenclamide. In insulin users hypoglycemia usually arises through missed meals, inaccurate or inappropriate insulin dosing, and during or following exercise. It is common in those attempting or achieving tight glycaemic control. With either sulphonylurea drugs or insulin, hypoglycemia can also occur with alcohol consumption.

**Hypoglycemia unawareness**

An inability to detect developing hypoglycemia and to respond to it appropriately in good time is the single greatest hazard for diabetic drivers. The risk of crashing may be increased twenty-fold in this group (Lave et al, 1993). As with alcohol intoxication, individuals with this problem may significantly underestimate the degree to which their driving is impaired. The major risk factors for hypoglycemia unawareness are:

- A prior history of severe hypoglycemia
- Intensive hypoglycemic therapy
- Type 1 diabetes of long duration

In this context severe hypoglycemia is defined as that requiring the help of another party to manage it. Important questions for practitioners to ask in the detection of hypoglycemia unawareness are:

1. **Have you recently experienced severe hypoglycemia?** and **How many episodes have there been in the last 12 months?** Daytime and night time (waking from sleep) episodes should be documented separately.

2. **What symptoms tell you that your blood glucose is getting low?** Individuals who report sweating, shaking, tremor and palpitations as their early warning symptoms are likely to have adequate awareness. Those who report confusion, slurred speech, unsteadiness, difficulty concentrating and sleepiness are likely to have impaired awareness.

3. **Are you usually able to detect hypoglycemia before your partner (or friends, family or colleagues)? Or are they usually the first to realize that you are“hypo” and draw your attention to it?** (The latter suggests unawareness.)

Corroboration by a partner, family member, friend or colleague strengthens the conclusions that can be drawn from the individual’s answer. Inspection of the individual’s home blood glucose recordings is important. Individuals with hypoglycemia unawareness often have levels of 3mmol/l or less without symptoms. Those with more than 5-10 percent of readings below 4mmol/l are also likely to be at risk. HbA1c measurements are often close to, or in, the normal range in such individuals.

Hypoglycemia unawareness is an indication for specialist referral. It can be difficult to manage successfully. The basis of management involves some relaxation of glycaemic targets, intensive self blood glucose monitoring to detect periods of unrecognized hypoglycemia (particularly at night) and the modification of meals and the insulin regimen. Individuals with very marked hypoglycemia unawareness, usually those with type 1 diabetes, should not drive until their condition can be successfully managed, if this is
possible. If hypoglycemia unawareness has been successfully managed, an appropriate observation period free of episodes should be required before allowing a return to driving. A specialist assessment should be undertaken before a return to driving.

Management of hypoglycemia
People taking either insulin or sulphonylurea drugs should be made aware of the precautions they should take to avoid hypoglycemia whilst driving, and to manage it should it occur. Adequate education, by an experienced diabetes nurse educator, is strongly recommended for these individuals. These precautions, which apply to all such individuals whatever their class of license/endorsement, include:

- Regular testing and recording of blood glucose, especially before driving
- Testing blood glucose every couple of hours on long journeys
- Always carrying a form of rapidly absorbed glucose within easy reach in the vehicle
- Always having a meal or snack before undertaking long journeys
- Telling co-travelers that the individual has diabetes

The action to be taken if hypoglycemia does occur whilst driving includes:

- Stop the car and eat fast-acting sugary food
- Eat a meal of longer lasting carbohydrate as soon as possible
- Wait until recovery is complete before resuming the journey

Alcohol
Alcohol use is particularly hazardous for drivers with diabetes. As well as impairing driving performance in its own right, alcohol can precipitate hypoglycemia (if food intake is inadequate) and it increases hypoglycemia unawareness.

Temporary unfitness to drive
Following mild hypoglycemia, individuals should not drive for at least an hour, as full cognition can take this long to recover. Following an episode of severe hypoglycemia, patients should not drive for 24 hours. An individual who experiences a severe hypoglycemic episode whilst driving, irrespective of whether a crash occurred or not, should be advised to stop driving. A minimum period of a month is recommended, during which time remedial action needs to be undertaken. Specialist review will almost certainly be required.

Hypoglycemia in sulphonylurea users can be prolonged, and driving should be stopped for at least 48 hours. Individuals having major changes in therapy (particularly starting insulin treatment) can be temporarily unfit to drive, and may need to stop driving for a few days until it is clear that hypoglycemia is not a difficulty. Individuals who have had their pupils dilated for the purpose of retinal examination are also advised not to drive for two hours.

FACTORS FOR MEDICAL PRACTITIONERS TO CONSIDER
The aim of determining fitness to drive is to minimize the risk to the individual, and other road users, while maintaining appropriate independence and employment. Medical practitioners should consider the following factors, in addition to the guidance outlined in this chapter, when assessing an individual for fitness to drive:

- Type of license held and type of driving undertaken – professional drivers spend up to an entire working week in their vehicle, and that vehicle can weigh greater than 25,000kg or carry many passengers. A crash involving such a vehicle could put many people at risk. Some forms of commercial driving could exacerbate risks of hypoglycemic attacks more than others.
- Timing, shifts and total driving hours – hypoglycemia on sulphonylurea drugs and insulin is most common before meals, especially prelaunch, and is also common overnight. Shift work is more of a risk than regular hours, and total driving hours should not be excessive.
- Medication – consider the effects of medications, and likely compliance with medications, on the individual's ability to drive safely.
- Presence of any complications of the disease – particularly any possible visual impairments.
- Individual’s motor vehicle crash history (if known) – medical practitioners may need to recommend a longer period of refraining from driving if an individual has a history or pattern of crashes that may be associated with their condition. Where a medical practitioner is aware of a medically related crash, they must inform the Agency if the individual’s medical condition remains unresolved and the individual is likely to continue to drive (refer to section 1.4).
• Presence of multiple medical conditions – where an individual has multiple medical conditions, consider any possible combined effects on their ability to drive safely
• Alcohol abuse – a possible alcohol-abuse problem may increase the likelihood of hypoglycemic attacks.

**DEALING WITH INDIVIDUALS UNFIT TO DRIVE**

Medical practitioners can usually successfully negotiate short-term cessation of driving. A person deemed unfit to drive because of severe or recurrent hypoglycemia or with hypoglycemia unawareness should be informed of this by their medical practitioner. Written notification should also be given. The individual should be told how soon they might expect to have this situation reviewed. If a practitioner suspects that the individual is continuing to drive against medical advice, they are legally obliged to inform the Agency under section 18 of the Land Transport Act 1998 (see section 1.4 of this booklet).

**4.1 Type 1 diabetes**

Individuals in this group are most likely to suffer hypoglycemia, and are also those whose diabetes is most difficult to control. Individuals with unstable diabetes should be reviewed thoroughly before being given permission to drive, and adequate education should be given. Practitioners should be aware of the particular dangers of hypoglycemia in the period after starting insulin therapy, or following major treatment readjustments. Individuals may be temporarily unfit to drive at such times.

**4.2 Type 2 diabetes controlled by diet alone**

The risks of hypoglycemia may effectively be discounted in this group, and these individuals may be considered fit for all types of driver license. However, a change in the requirements for effective glycemic control (e.g. the introduction of sulphonylurea drugs or insulin) may necessitate the imposition of restrictions. Late complications of diabetes do occur in such individuals.

**4.3 Type 2 diabetes controlled by oral hypoglycemic agents**

The risk of hypoglycemia is relatively low, but it can occur with the sulphonylurea drugs (tolbutamide, gliclazide, glipizide, glibenclamide) and with meglitinide drugs. It is important that food is not omitted when these tablets are being taken. Individuals should be aware of the risks of hypoglycemia and the danger of drinking alcohol. Metformin when taken without insulin or sulphonylurea drugs does not cause hypoglycemia. The same applies to drugs of the thiazolidinedione group and acarbose. It is important that these individuals are regularly monitored for the emergence of diabetic complications that can affect fitness to drive.

<table>
<thead>
<tr>
<th>License classification</th>
<th>Motor Vehicles Covered by the License Class</th>
<th>Normal Requirement for Medical Examinations</th>
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</table>
| **Class 1**            | • A vehicle that has a GLW or GCW of 4500kg or less (this includes tractors or combinations of vehicles, but does not include motorcycles)  
• A moped or all-terrain vehicle  
• Any campervan or tradeperson’s vehicle with a GLW of 6000kg or less and an on-road weight not exceeding 4500kgA tractor with a GLW of more than 4500kg but less than 18,001kg if driven at a speed not exceeding 30km/h  
• A tractor/trailer combination of more than 4500kg but not more than 25,000kg if being used in agricultural or land management operations and driven at a speed not exceeding 30km/h | None |
| **Class 2**            | • Any rigid vehicle with a GLW of more than 4500kg but less than 18,001kg  
• Any combination vehicle (that is not a tractor/trailer combination) with a GCW of 12,000kg or less  
• Any combination vehicle consisting of a rigid vehicle (that is not a tractor) with a GLW of 18,000kg or less towing a light trailer (GLW of 3500kg or less)  
• Any rigid vehicle with a GLW of more than 18,000kg that has no more than two axles  
• A tractor with a GLW of more than 4500kg but less than 18,001kg if driven at a speed exceeding 30km/h  
• Any vehicle covered in class 1 | 10-yearly |