

# Diabetes and driving

What you need to know  
when driving vehicles



# How does diabetes affect my ability to drive?

Studies show that people with diabetes mellitus do not cause more accidents than any other road users. Limitations which occur suddenly in diabetes, or which already exist can, however, cause the authorities to refuse or withdraw a driving licence:

- There must be no **long-term consequences of diabetes present** that affect your ability to drive. These include damage to the nerves, kidneys, eyes, or cardiovascular system. These long-term consequences are caused by excess insulin levels over several years and can affect your ability to drive.
- There must be no significant **hyperglycaemia (elevated blood sugar)** which affects your ability to drive.
- The main causes of traffic accidents in diabetes sufferers is **hypoglycaemia (low blood sugar, known as hypos)**, which impair your ability to concentrate and react during the journey.

## Why is low blood sugar so dangerous when driving?

Hypoglycaemia can occur during insulin therapy, or if you take certain medicines which lower blood sugar (sulphonylureas, glinides). This occurs particularly when your carbohydrate-containing meal is delayed, or you don't eat it at all. Physical exercise can also cause a prolonged reduction in blood sugar when using insulin, sulphonylureas and glinides and make it impossible to drive safely.

When driving, it is desirable to have **blood sugar values above 5 mmol/l**, to have a certain safety margin. If blood sugar falls below 3.9 mmol/l, this may impede your ability to drive. It is also more difficult to recognise that you are having a hypo when you are at the wheel because you are concentrating on driving.

As alcohol restricts the liver's production of glucose, you are more likely to become hypoglycaemic and your alertness is reduced too. This is why it is obvious that diabetics who drive should not drink at all (0 grams of alcohol per 100 ml blood).

# Risk of hypoglycaemia when driving a private car

Drivers who suffer from diabetes are placed in a certain risk category depending on the form of treatment and the concomitant risk of hypoglycaemia.

The cantonal road traffic departments have different requirements of drivers on the basis of this risk category. These requirements must be met in order for a licence to be issued. Ability to drive must subsequently be regularly certified by a doctor.



## Group 1: No risk

If you are not taking insulin, sulphonylureas or glinides you don't have to take any special measures when driving.



## Group 2: Low risk

If you are being treated with analog basal insulin, such as Lantus®, Levemir®, Tresiba®, Toujeo® or with glicazide alone (e.g. Diamicon®) or glinides (e.g. NovoNorm®, Starlix®)<sup>1</sup> just once per day, your risk of hypoglycaemia is low. This group merely has to keep the hypo preventatives described in the table and a blood sugar monitor in the car and know how to use them correctly, as necessary.

<sup>1</sup> N.B.: No combination of these treatments!



## Group 3: Increased risk

There is an increased risk of hypoglycaemia in the case of a combination of the above forms of treatment (e.g. base bolus system with shorter and longer-acting insulins or mixed insulins<sup>2</sup>), in the case of use of long-acting sulphonyl ureas and in the case of all other forms of treatment. If you want to hold a driving licence you must be able to prove that your blood sugar level has been stable for the last two years.

<sup>2</sup> Mix of short and long-acting insulin

You must not experience severe hypoglycaemia or impaired hypoglycaemia perception. You must also be able to identify and treat hypoglycaemia reliably at any time when driving a vehicle. Observe the following rules:

### Test first, then drive!

Although blood sugar levels of 4 to 6 mmol/l are regarded as ideal, additional caution is required when driving. Measure your blood sugar before you embark on every journey! If you enter the value in your diabetes diary, or save it in the blood sugar monitor or your app, it can help you in the event of an accident.

### Never drive with a blood sugar level below 5 mmol/l!

If your blood sugar is below 5 mmol/l, eat 10 g of carbohydrates if you injected a short-acting or mixed insulin more than three hours previously. Otherwise eat 15 to 20 g of carbohydrates. Check the value again after 30 minutes. If the value is between 5 and 7 mmol/l and you have not injected insulin in the last three hours, you can set off. Otherwise eat another 10 g of carbohydrates.

### Eat regularly!

On long car journeys stop and check your blood sugar every one to one-and-a-half hours. If the value is 5 to 6 mmol/l (90 to 110 mg/dl), eat around 10 g of carbohydrates.

### Stop immediately at the first sign of a hypo!

Stop immediately, including on the hard shoulder or in a no stopping zone! Eat 20 g of carbohydrates. Switch on your hazard warning lights and switch off the engine. Caution: you cannot rely on your usual awareness of a hypo when driving a car. It is generally more difficult to recognise a low blood sugar level when you are at the wheel because you are concentrating hard on driving.

### Wait at least 30 minutes after a hypo!

Only continue on your journey when all the symptoms have completely subsided and your blood sugar is above 6 mmol/l (110 mg/dl), otherwise there is a risk of a repeat hypo. If possible, let your passenger drive.



## Group 4: High risk

If there are aggravating factors apart from an increased risk (severe hypoglycaemia with loss of consciousness or the need for assistance from a third party, or an absence of awareness of hypoglycaemia) the risk of hypoglycaemia is high. In this case a special assessment by a specialist in endocrinology or diabetes is required. Depending on the specialist's findings, the road traffic department may only issue a driving licence subject to special additional requirements.

Guidelines for drivers of private cars for Categories A, A1, B, B1, F, G and M (reference: [www.sgedssed.ch](http://www.sgedssed.ch)).

## How do I recognise hypoglycaemia?

The symptoms of low blood sugar vary greatly. Pay attention to the following signs (individually or in combination) in particular:

- Problems concentrating/ double vision (seeing double)
- Rapid pulse, palpitations, trembling/ shaking
- Sweating
- Exhaustion, feeling weak or dizzy
- Ravenous appetite
- Headaches
- Numb tongue/lips
- More irritable than usual
- Other symptoms you may be aware of

## What should I take with me in the car?

It is compulsory for a driver with even a low risk of hypos to take their blood sugar monitor **and what is known as a hypoglycaemia prophylactic with them.** Don't leave monitors in your car permanently as they may be damaged in hot weather. Also bear in mind traffic jams, diversions, breakdowns and other unforeseeable events and take high carbohydrate snacks with you to prevent hypoglycaemia. You will find a detailed list of carbohydrates which adjust blood sugar levels and prevent hypoglycaemia on the detachable card. It is sensible for all drivers to keep a small stock of energy-boosting snacks in the car regardless of whether they have diabetes or not.

→ **Always keep carbohydrates which are easily digested and which boost blood sugar handy in your car in case of a hypo and also tell your passenger(s) where you keep them.**

## What should you bear in mind after physical exertion ?

If you drive after a strenuous hike or other exercise, please bear in mind the following:

- If your blood sugar is below 5 mmol/l (90 mg/dl), eat 10 g of carbohydrates if you injected a short-acting or mixed insulin more than three hours previously. Otherwise eat 15 to 20 g of carbohydrates. Check your blood sugar again after 30 minutes.
- If the value is between 5 and 7 mmol/l and you have not injected insulin in the last three hours, you can set off. Otherwise eat another 10 g of carbohydrates.

## Professional goods and passenger transport vehicle drivers

In addition to the guidelines we have explained for drivers of private cars with diabetes mellitus, stricter requirements apply to professional drivers of goods and passenger transport vehicles (lorries, buses, taxis, etc.). These also apply to young people with diabetes when choosing their profession.

A licence to drive categories D and D1 (motor vehicle to convey people **with more than eight seats**) is only issued to people in Group 1, who do not have hypoglycaemia.

**Goods transport** is also subject to strict requirements, which can be found in the Swiss Society for Endocrinology and Diabetology (SGED) specific guidance. Many categories require regular, very frequent blood sugar monitoring or use of continuous blood sugar measurement (CGMS/FGM).

More information about the individual risk groups and the associated requirements, as well as recommendations for professional goods and passenger transport vehicle drivers can be found at: [www.sgedssed.ch/diabetologie/sged-empfehlungen-diabetologie](http://www.sgedssed.ch/diabetologie/sged-empfehlungen-diabetologie) (reference).



## Where can I find additional information?

From your doctor or from a certified diabetes society consultant in your area. All our consultants are recognised by the Swiss health insurance schemes.

[www.diabetesschweiz.ch](http://www.diabetesschweiz.ch)

### diabetesaargau

Tel. 062 824 72 01  
info@diabetesaargau.ch

### diabetesregionbasel

Tel. 061 261 03 87  
info@diabetesbasel.ch

### diabetesbiel – bienne

Tel. 032 365 00 80  
info@diabetesbiel-bienne.ch

### diabetesfreiburg – diabètefribourg

Tel. 026 426 02 80  
info@diabetesfreiburg.ch

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Tel. 022 329 17 77  
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Tel. 081 253 50 40  
info@diabetesgl-gr-fl.ch

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Tel. 027 946 24 52  
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



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# Risk of hypoglycaemia and precautionary measures for drivers of private cars

	Treatment forms	Measures
<b>No risk</b> 	No treatment with insulin, sulphonylureas or glinides.	<ul style="list-style-type: none"><li>• Blood sugar monitoring not required before or during the journey.</li></ul>
<b>Low risk</b> 	Treatment with analog basal insulin just 1 x daily or with glicazide or glinides. N.B.: Do not combine treatments, e.g. insulin with glicazide or glinide.	<ul style="list-style-type: none"><li>• Blood sugar monitoring not required before every journey.</li><li>• Carry hypoglycaemia preventative (carbohydrates) and blood sugar monitoring device with you in the car.</li></ul>
<b>Increased risk</b> 	Treatment with insulin (NPH insulin like Insulatard or Inshuman, or mixed insulin or analog basal insulin daily, combined with short-acting insulin or sulphonylureas/glinides) and/or use of long-acting sulphonylureas (e.g. glibenclamide, glimepiride, gliburamide).	<ul style="list-style-type: none"><li>• Measure your blood sugar level before the journey and during longer journeys.</li><li>• Do not drive if blood sugar level is below 5 mmol/l.</li><li>• Carry hypoglycaemia preventative (carbohydrates) and blood sugar monitoring device with you in the car.</li></ul>
<b>High risk</b> 	As for "Increased risk" group, plus additional aggravating factors, such as: Occurrence of severe hypoglycaemia in the last two years or lack of awareness of hypoglycaemia.	<ul style="list-style-type: none"><li>• Assessment by a endocrinology/diabetology specialist.</li><li>• Special requirements in terms of frequency of blood sugar monitoring. Following a severe hypoglycaemic episode, you must continuously monitor blood sugar (6-8 times/day) for two years in order to be able to drive.</li></ul>

# What should you take with you in your car to prevent hypoglycaemia?

10 g of rapidly digested and 10 g of slowly digested carbohydrates can be combined for hypoglycaemia.

## Rapidly digested, corrective carbohydrates for hypos



6 glucose tablets  
Quantity depends on product



200 ml sweetened drink (with sugar)



200 ml fruit juice

Each contains approx. 20 g carbohydrate

## Slowly digested, preventative carbohydrates for a snack



Cereal bar (e.g. Farmer nature)



Small portion of fruit



3 wholegrain biscuits or crackers (e.g. Darvida)

Each contains approx. 10 g carbohydrate