

# Prescribing test strips for people taking insulin: Should we focus on cost or consequences?



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People with type 1 diabetes need exogenous insulin administration to survive. From large trials such as the Diabetes Control and Complications Trial (DCCT; DCCT Research Group, 1993) and the follow-on DCCT/EDIC (Epidemiology of Diabetes Interventions and Complications) study (DCCT/EDIC Study Research Group, 2005), it is clear that better blood glucose control over time reduces both microvascular and macrovascular long-term complications. Of the approximately 221 000 adults with type 1 diabetes, increasing numbers are using insulin pumps (NHS Diabetes, 2010) and most of the rest are receiving multiple daily injections (MDIs). Prescribing data suggest that 2.5 times more people are on an MDI regimen of four or more injections a day compared with a twice-daily pre-mix regimen, and the frequency of blood glucose testing is largely dictated by the regimen used (Health and Social Care Information Centre, 2012).

In order to manage any sort of insulin regimen as well as to understand and adjust for the effect of diet and exercise, it is essential to know what the blood glucose reading is in relation to what has been injected, eaten or undertaken. This is not only to maintain good glycaemic control to avoid complications, but also to avoid and anticipate hypo- or hyperglycaemia. This necessity to test blood glucose levels several times a day is increased at times of stress, illness or insulin regimen change. It may also be necessary to increase the frequency of testing for certain groups of people, such as those on rotating shifts and women planning a pregnancy.

Probably the greatest need for regular blood glucose testing in adults with diabetes is in relation to driving. Healthcare professionals involved in the care of people with diabetes should be aware of the latest recommendations from the Driver

and Vehicle Licensing Agency (DVLA, 2013a) on the monitoring of blood glucose, which came into force in November 2011, in order to best advise individuals on their own particular requirements.

In brief, people are grouped as to the type of vehicle they are licensed to drive:

- Group 1 is cars and motorcycles.
- Group 2 is trucks and buses, including minibuses with more than nine seats.

The DVLA regulations state that, for Group 1 drivers, there “must be appropriate blood glucose monitoring” and that, for the Group 2 category, drivers *must* “regularly monitor their blood glucose at least twice daily and at times relevant to driving using a glucose meter with a memory function to measure and record blood glucose levels.”

In the letter the DVLA sends to all drivers with insulin-treated diabetes (DVLA, 2013b), the following precautions are advised:

- Drivers must *always* carry their glucose meter and blood glucose strips with them. They must check their blood glucose before driving and every 2 hours while driving.
- If blood glucose is  $\leq 5.0$  mmol/L, the driver must take a snack; if it is  $< 4.0$  mmol/L or the driver feels hypoglycaemic, he or she must not drive.
- If hypoglycaemia develops while driving, the driver should stop the vehicle as soon as possible.
- The driver must then switch off the engine, remove the keys from the ignition and move from the driver’s seat.
- The driver must not resume driving until 45 minutes after blood glucose has returned to normal; it takes up to 45 minutes for the brain to recover fully.
- The driver should always keep an emergency supply of fast-acting carbohydrate such as glucose tablets or sweets within easy reach in the vehicle.

***“If as a prescriber you feel pressured to restrict blood glucose strips in people with type 1 diabetes, remember that it is the prescriber who may be judged responsible for the consequences.”***

- The driver should carry personal identification to show that he or she has diabetes in case of injury in a road traffic accident.
- Particular care should be taken during changes of insulin regimens, changes of lifestyle, exercise, travel and pregnancy.

It is clear from this advice, in addition to the NICE (2011) guideline on type 1 diabetes, that arbitrarily restricting blood glucose testing in people with type 1 diabetes not only is unsafe but also potentially puts prescribers at risk of being liable for the consequences of a hypoglycaemic or hyperglycaemic event. That is not to say that prescribing should be unrestricted; NICE clearly states that the frequency of blood glucose testing should be discussed and agreed with each individual, and that the agreement be reviewed if circumstances change.

Therefore, if as a prescriber you feel pressured to restrict blood glucose strips in people with type

1 diabetes, remember that it is the prescriber who may be judged responsible for the consequences. ■

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