

Who should be offered self-monitoring of blood glucose:

Type 1 Diabetes – all patients will need to self-monitor

Type 2 Diabetes - Do not *routinely* offer self-monitoring of blood glucose levels for adults with type 2 diabetes unless:

- the person is on insulin **or**
- there is evidence of hypoglycaemic episodes **or**
- the person is on oral medication that may increase their risk of hypoglycaemia while driving or operating machinery **or**
- the person is pregnant, or is planning to become pregnant (NICE 2015).

Frequency of monitoring in Type 2 Diabetes

Diet and metformin	not routinely offered	
DPP4i (gliptins), GLP-1 injectables, SGLT2 (gliflozins), pioglitazone	not routinely offered	
Sulfonylureas	maintenance – 2-3 x per week; drivers regularly initiation, titration – twice per day (different times)	See DVLA guidance below.
Meglitinides	maintenance – 2-3 x per week; drivers regularly initiation, titration – 4 x per day (bb, + 2 h pp)	
Basal insulin	Maximum twice daily	
Plus non SU antidiabetic	Once or twice a day	
Plus SU	Two or three times a day	
Basal insulin (twice per day)	twice daily	
Mixed insulin	2-3 x per day	
Basal bolus insulin	4 x per day	

Note - all patients should be reviewed on an individual basis taking into account specific patient factors

Special Circumstances that may require more frequent SMBG testing (frequency to be agreed with patient):

- At diagnosis for 5-7 days to understand lifestyle interventions
- Pre-post prandial level to assist in drug choice at treatment intensification
- Co-prescribed steroids
- Intercurrent illness
- Frequent hypos
- Impaired hypo awareness
- Exercise

Meters for Patients with Type 2 Diabetes

Any meter at a cost of below £10/50 is acceptable and in line with NHSE guidance however locally the DSNs recommend the following options;

Photo			
Meter	True Metrix Air or True Metrix Go	GlucoRx Nexus or GlucoRx Nexus Mini Ultra	Accu-chek Performa Nano
Test Strips	True Metrix test strips	GlucoRx Nexus Test Strips	Performa Nano test strips
Lancets	True Plus lancets	GlucoRx lancets	Fastclix lancets
Manufacturer contact details	<p>Phone: 07810 084661</p> <p>E-mail: slllewelyn@trividiahealth.co.uk</p> <p>Customer Care freephone - 0800 689 5035</p> <p>Steve Llewellyn Healthcare Partnership Manager</p>	<p>Mobile: 07551 157424</p> <p>Email: rachel@glucorx.co.uk</p> <p>Rachel Noble Business Development Manager</p>	<p>Professional Supply Serena Warwick Mobile: 07834 312595 Email: serena.warwick@roche.com</p> <p>HCP Carline - 0800 0407221 or www.accu-chek.co.uk</p>
Cost*	£6.95/50 (strips) £2.90/100 (lancets)	£8.95/50 (strips) £4.50/200 (lancets)	£7.50/50 (strips) £5.90/204 (lancets)

*Prices correct as of May 1st 2019

Alternative meters for specific indications to be initiated by diabetes specialists:

<ul style="list-style-type: none"> Visually impaired/blind (talking meter) 	<ul style="list-style-type: none"> GlucoRx Nexus Voice
<ul style="list-style-type: none"> Basal bolus, carbohydrate counting 	<ul style="list-style-type: none"> Accu-chek Mobile with the mySugr app in preference to Accu-chek Aviva Expert Consider specialist support if needed
<ul style="list-style-type: none"> Dexterity problems 	<ul style="list-style-type: none"> Accu-chek Mobile

Please note: Freestyle Libre is not NHS funded for Patients with Type 2 Diabetes in line with NHSE policy. Exceptions include T2Ds on dialysis or with Cystic Fibrosis.

Initiating SMBG – give SMBG pack

1. Agree targets - take into account age, co-morbidities, and clinical factors
e.g. - 5-7 mmol/L pre-meal; 2 h pp <8.5 mmol/L
2. Agree purpose of testing, interpretation, and action
3. Provide patient information leaflets on SMBG, hypos, driving:
http://www.swindondiabetes.co.uk/guidance/publications-reports-resources/http://trend-uk.org/wp-content/uploads/2018/03/A5_6pp_Hypo_TREND_CONNECT.pdf
https://trend-uk.org/wp-content/uploads/2019/05/A5_Driving_TREND.pdf

Carry out a structured assessment at least annually!!!

Pregnancy T1/T2 gestational – test 6-7 times a day:

- BG targets for pregnant women with diabetes (NICE, 2015) as follow:
 - fasting – below 5.3 mmol/l,
 - 1h after meals – below 7.8 mmol/l, or 2h after meals: below 6.4 mmol/l.
- Local glucometer for new to SMBG patients in pregnancy (GDM, T2DM) is currently Contour Next but this is under review by maternity with a view to switching to a meter <£10/50

Type 1 Diabetes

Joint decision making should be used to agree the most appropriate meter for each individual.

All meters that meet current ISO standards may be considered for patients with Type 1 diabetes.

Suggestions are:

- **Glucomen Areo 2K, GlucoRx HCT** – as the ability to test both blood glucose and blood ketones is advantageous with Type 1 Diabetes.
- **Accu-Check Aviva Expert** can support carbohydrate counting and insulin adjustment if the Roche ‘My Sugar’ app not suitable
- **Freestyle Libre** (continuous blood monitoring) may be a suitable option for those patients meeting [NHSE criteria](#). For Specialist DSN initiation only at routine review appointments, then GP prescribing until 6 monthly specialist review. Local guidance is at <http://www.swindonccg.nhs.uk/your-health/long-term-conditions/diabetes>

Frequency of SMBG monitoring – As per NICE guidance

Advise routine self-monitoring of blood glucose levels for all adults with Type 1 diabetes, and recommend testing at least 4 times a day, including before each meal and before bed.

Support adults with Type 1 Diabetes to test at least 4 times a day, and up to 10 times a day if any of the following apply.

- The desired target for blood glucose control, measured by HbA1c level (individualised) is not achieved
- The frequency of hypoglycaemia episodes increases.
- There is a legal requirement to do so for example driving.
- During periods of illness.
- Before, during and after sport.
- When planning pregnancy, during pregnancy and whilst breastfeeding.
- Pump therapy.

Enable additional blood glucose testing (more than 10 times a day) for adults with Type 1 diabetes if this is necessary for the person's lifestyle for example long periods of driving, undertaking high risk activity or occupation, travel, impaired awareness of hypoglycaemia.

If severe or frequent episodes of hypoglycaemia requiring third party assistance refer to specialist care for consideration for Continuous glucose monitoring.

DVLA Guidance

	Group 1 drivers – cars and motorbikes	Group 2 drivers – bus or lorry
Insulin treated	At times relevant to driving (not more than 2 hours before the start of the first journey and every 2 hours while driving) More frequent monitoring may be required with any greater risk of hypoglycaemia	At least twice daily including on days when not driving (and no more than 2 hours before the start of the first journey and every 2 hours while driving) (memory function required to ensure 3 months of readings are available for assessment) More frequent monitoring may be required with any greater risk of hypoglycaemia
Sulfonylurea or meglitinides	Regularly at times relevant to driving and clinical factors	At least twice per day and at times relevant to driving
GLP-1 , DPP4i (gliptins), SGLT2, pioglitazone	No requirement	No requirement
Diet alone	No requirement	No requirement

See - 'Assessing fitness to drive– a guide for medical professionals for more details'

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/517268/Fitness_to_drive.pdf

DVLA precautions – if treated with insulin:

- ❖ 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 ≤ 5.0 mmol/L, the driver must take a snack; if it is < 4 mmol/l or feel hypoglycaemic the driver should 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