

Self-Monitoring of Blood Glucose in Diabetes Guideline

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	See DVLA guidance below.
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)	
Repaglinide	maintenance – 2-3 x per week; drivers regularly	
	initiation, titration – 4 x per day	
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

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Meters for Patients with Type 2 Diabetes

Any meter using test strips at a cost of below £10 for 50 that meets minimum criteria is within guidance. True Metrix Air is the DSN preferred option for new initiations and meters requiring replacement

Photo		Meter criteria Other than when requested by specialist services, there is no requirement to change meters that use cost effective test strips, defined as below £10 for 50 strips. It is recommended that people new to testing or who require a new meter are started on the True Metrix Air .
Meter	True Metrix Air	<p>Supporting remote consultation COVID-19 has meant it's increasingly important for people to have meters that allow easy remote upload of blood glucose readings to Diasend, a software package used by specialist diabetes teams. Using Diasend specialist services can remotely review readings and provide effective and tailored support to patients</p> <p>Meters require either Bluetooth or Near Field enabled to allow people to link their meter to their Smart Phone</p> <p>True Metrix Air should be appropriate for most people as it includes these features</p>
Test Strips	True Metrix test strips	
Lancets	True Plus lancets	
Manufacturer contact details	Professional Supply Steve Llewelyn Healthcare Partnership Manager Mobile: 07810 084661 E-mail: slllewelyn@trividiahealth.co.uk Customer Care freephone - 0800 689 5035	
Cost*	£6.95/50 (strips) £2.90/100 (lancets)	

*Prices correct as of Drug Tariff November 1st 2020 [NHS Electronic Drug Tariff](#)

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

<ul style="list-style-type: none"> Basal bolus, carbohydrate counting 	<p>Specialist choice appropriate to the person's individual requirements and circumstances. Includes options for cost effective meters (i.e. strips costing less than £10/50) used with an app.</p> <p>Freestyle Libre handset with Freestyle Optium test strips (£16.30/50 strips) Reserved only for those eligible under the National criteria for Freestyle Libre or in exceptional circumstances, where other carb counting options cannot be used.</p>
<ul style="list-style-type: none"> Dexterity problems 	<ul style="list-style-type: none"> Accu-chek Mobile (£9.99/50 strips)

Please note: Freestyle Libre is not NHS funded for people with Type 2 Diabetes (T2D) in line with [NHSE policy](#). Exceptions include people with T2D on dialysis or with Cystic Fibrosis and people with insulin treated T2D living with a learning disability which is recorded on the GPs learning disability register.

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Initiating SMBG – Provide Appropriate Information to Support Person with Diabetes to SMBG

1. Agree individualized targets - take into account age, co-morbidities, and clinical factors
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 T1DM, T2DM and GestationalDM – 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.
- Swindon meter for new to SMBG patients in pregnancy (GDM, T2DM) is Wavesense Jazz, RUH use Contour Plus and Salisbury use Performa Nano and Accu Chek Mobile
- Women with T1DM are eligible for Freestyle Libre and CGM is also funded [NHSE FSL Criteria](#)

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** (£8.25/50 strips) and **4Sure Smart Duo** (£8.99/50 strips) as the ability to test both blood glucose and blood ketones is advantageous with Type 1 Diabetes.
- **Accu-Check Aviva Expert** (£16.21/50 strips) no longer manufactured, existing people only. *At review* people not using the carbohydrate counting and insulin adjustment feature of the meter should be provided with a cost effective meter with features to support their requirements. Meters used with carbohydrate counting apps are an alternative.
- **Freestyle Libre** (sensors £70 per month) (flash glucose 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.

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. See BSW CCG CGM policy <https://bswccg.nhs.uk/docs-reports/exceptional-funding-requests/1163-bsw-diabetes-cgm-adults>

Links to relevant NICE guidance <https://pathways.nice.org.uk/pathways/diabetes>

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/publications/assessing-fitness-to-drive-a-guide-for-medical-professionals>

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