

Blood Glucose Meter Guideline

Blood glucose monitoring in patients with type 2 diabetes

NICE (NG28) recommends not to routinely offer self-monitoring of blood glucose levels for adults with type 2 diabetes unless:

- The person is on insulin
- There is evidence of hypoglycaemic episodes
- The person is on oral medication that may increase their risk of hypoglycaemia while driving or operating machinery
- The person is pregnant or planning pregnancy
- Short term, consider:
 - Whilst on steroid medication – oral or intravenous steroids
 - To confirm suspected hypoglycaemia
 - Beware that type 2 patients who have intercurrent illness are at risk of worsening hyperglycaemia

If adults with type 2 diabetes are self-monitoring their blood glucose levels, carry out a structured assessment **at least annually**. The assessment should include:

- The person's self-monitoring skills
- The quality and frequency of testing
- Checking that the person knows how to interpret the blood glucose results and what action to take
- The impact on the person's quality of life
- The continued benefit to the person
- The equipment used

Oral medications taken in type 2 diabetes that can increase the risk of hypoglycaemia include:

- Sulfonylureas e.g., gliclazide, glimepiride, glipizide, tolbutamide, glibenclamide
- Meglitinides e.g. nateglinide, repaglinide

Take the Driver and Vehicle Licensing Agency (DVLA) [At a glance guide to the current medical standards of fitness to drive](#) into account when offering self-monitoring of blood glucose levels for adults with type 2 diabetes. [new 2015]

Blood glucose monitoring in patients with type 1 diabetes:

Patients should test their blood glucose at least 4 times per day, including before each meal and before bed. Monitoring between 4 and 10 times a day may be required:

- If there is a legal requirement to do so e.g. in line with the DVLA.
- Before, during and after exercise
- During periods of illness
- During pregnancy or breastfeeding or when planning pregnancy (<https://pathways.nice.org.uk/pathways/diabetes-in-pregnancy>)
- If the patient is having regular hypos
- If the target HbA1c is not being met

Testing may be required more regularly (>10 times/day):

- If required for driving e.g. long distances
- If taking part in high-risk activities
- The person has an impaired awareness of hypoglycaemia

Blood glucose testing for other types of diabetes

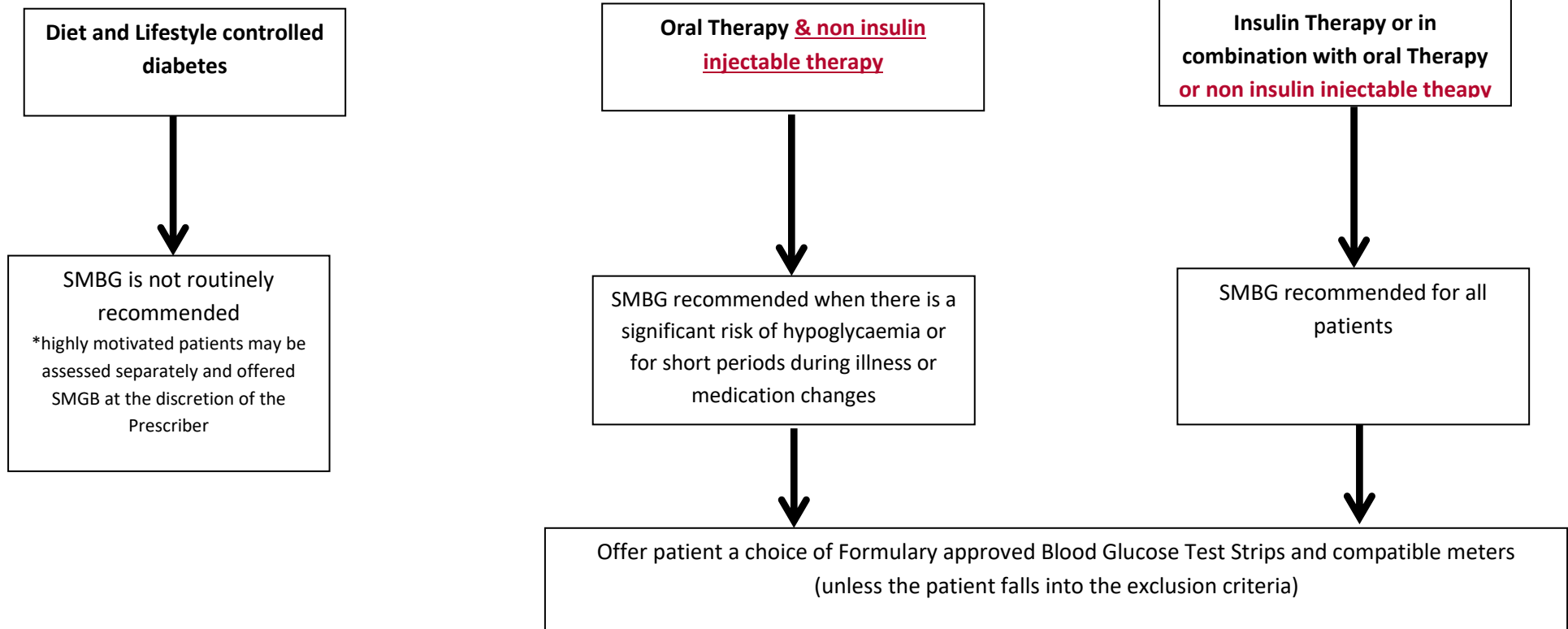
How often people with other types of diabetes should test their blood glucose will vary depending on what medication is taken and personal circumstances:

- People on multiple insulin injections per day or on an insulin pump should test as often as people with type 1 diabetes.
- People on medication that can cause hypos should, at least, be able to test their blood glucose whenever they notice any possible signs of hypoglycaemia.
- Blood glucose testing is useful for testing how different meals and activities affect blood glucose levels. This tends to be of particular use for people with type 2 diabetes.

Key points

- Consider the need for regular self-monitoring in all type 2 diabetes patients currently prescribed BGTS.
- Complete a structured assessment on an annual basis.
- Use SMBG appropriately to help the patient manage their diabetes effectively.
- Consider using the download options of some of the glucometers to save time for the diabetes practice nurses and also to have a proper record of the glucose readings.

Self-Monitoring of Blood Glucose (SMBG): Selecting an appropriate test strip for people with type 1 and type 2 diabetes



Preferred Blood Glucose Testing Meters and Strips

ISO 15197 -**All strips in the table below comply with the current ISO standards**

These recommendations support the use of lower-acquisition cost meters and test strips for “first line” use unless there are important individual patient considerations to warrant a more specific meter and test strip system

The choice of meters in this document all comply with several requirements which include:

- Compliance with the new ISO standards (01.05.2016).
- All approved meters have a wide haematocrit range 30-60% (or more)
- The user is unable to delete readings from memory
- Expiry date of BGTS – minimum 6 months from opening
- Acquisition costs of BGTS (per pack of 50) and availability of BGTS and meters
- Allows electronic download to personal computers and clinical systems (e.g. DIASEND)
- Compatibility with DVLA requirements
- Suitable for patients with gestational diabetes
- Test results that are unaffected by drugs that contain or metabolise to maltose: important in the following situations: peritoneal dialysis fluids, immunoglobulins, paediatric patients.

Exclusion criteria –these patients may need meters different to those listed below.

- Patients that are managed by the secondary care diabetes team
- Patients who are currently pregnant or planning pregnancy
- Patients with renal impairment (CKD4)
- Children
- Patients with ketosis prone to type 2 diabetes
- Patient registered as visually impaired
- Patients who use a meter to adjust a bolus insulin dose
- Patients with irregular HBA1C patterns

Northern Lincolnshire Area Prescribing Committee

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	Accu-Chek® Mobile	Accu-Chek® Performa Nano	Contour® Next/Contour® Plus	Element™	mylife Pura® X	Omnitest® 5	Glucomen® Areo/Areo 2K	True Metrix® Air	Glucorx® Nexus Voice/Nexus Mini	WaveSense JAZZ™*/JAZZ™ Wireless
Test Strip	Mobile Cassette	Performa Nano	Contour	Element test strips	Mylife Pura	Omnitest® 5 test strips	Glucomen Areo test strips and Glucomen® Areo Ketone strips (for 2k meter)	True Metrix®	Glucorx Nexus	WaveSense JAZZ™
Contact Details	Roche Diabetes Care 0800 0407221		Ascensia 0345 600 6030	Neon Diagnostics 0800 131 3378	Ypsomed 0344 856 7820	B Braun 07528 968 208	A. Menarini Diagnostics 0118 944 4100	Trividia Health UK 0800 689 503035	Glucorx 0800 007 5892	AgaMatrix 0800 093 1812
Memory Readings			800	500	500	500	730	1000	450/1000	1865
Smart phone compatible	Y	N	N	N	N	Y	Y	Y	Y	Y
	www.accu-chek.co.uk		www.diabetes.ascensia.co.uk	www.neon-diagnostics.co.uk	www.mylife-diabetescare.co.uk	www.bbraun.co.uk	www.glucomen.co.uk	www.trividiahealth.co.uk	www.glucorx.co.uk	www.agamatrix.co.uk

*First line for use in gestational diabetes

Meters for specific groups of patients

Specialist meters for T1DM patients who are adjusting insulin doses and have attended DAFNE courses

These require individual patient set up /instruction by the Diabetes Clinic Team **On the advice of Diabetes Specialist Only**

Meter	Accu-Chek® Aviva Expert	Contour Next Link	KEYA® Smart	Freestyle Optimum Neo	4SURE Smart	Freestyle
Test Strip	Aviva	Contour Next	2-in-1 KEYA® Smart test strips	Freestyle Optimum	Sure and Simple	Freestyle Lite
		Can sync with Medtronic pump	Measures ketones and blood glucose	Could be used in T2DM on specialist recommendation	Measures ketones	
Manufacturer	Roche Diabetes Care	Ascensia	Inside Biometrics International Ltd.	Abbott	NIPRO	Abbott
Customer Care contact details	0800 0407221	0345 600 6030	0845 8740573	General enquiries : 0800 170 1177	0800 08 588 08 diagnostics- uk@nipro- group.com	0800 170 1177

Other Important features to consider when selecting a meter:

1. Screen Visibility
2. Talking meters
3. Meter Handling
4. Alarms
5. Meters which allow easy visualisation of data on a PC
6. On meter data management
7. Bolus Advisor
8. Convenience related monitoring
9. Simple preference (Style related)
10. For the insulin pump users

Flash Glucose Monitoring	
Sensors	Freestyle Libre sensors
Available on GP prescription	<p>These are available on prescription, following initiation and initial monitoring by specialist. Provided the criteria listed in the prescribing guideline are met:</p> <p>https://www.northernlincolnshireapc.nhs.uk/wp-content/uploads/2019/08/Prescribing-Arrangements-for-Flash-Glucose-Monitoring-Final-2.pdf</p>
Customer contact details	<p>0800 612 3000</p> <p>ADChelplink@abbott.com</p>