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Health Board

Recommended Meters for Patient Blood Glucose Monitoring

November 2021 Update

Home Blood Glucose Monitoring in Adults.

1. To ensure the benefit of self-monitoring of blood glucose, it should only be offered as an integral part of self-management education, discussing its purpose and agreeing how it should be interpreted and acted upon.
2. Self monitoring of blood glucose in type 2 diabetes should be available to: those on insulin, those on oral glucose lowering medications to provide information on hypoglycaemia, assess changes in glucose control resulting from medications and lifestyle changes, monitor changes during inter-current illness, ensure safety during activities, including driving.
3. If self-monitoring is appropriate but glucose monitoring is unacceptable to the individual, discuss the use of urine glucose monitoring.
4. There should be no blanket ban on Home Blood Glucose Monitoring. Some people may need to test more frequently than others. Some people are currently testing more than they need to. The recommendations on frequency and timing of testing are intended for **medically stable** patients. Patients are not regarded as stable if the following apply and people need to test more frequently if: **-In times of acute illness, attending for outpatient procedures (e.g. dialysis, chemotherapy), if symptomatic, following medication (e.g. steroid started)/dose changes/insulin started, if pregnant, planning a family or breast feeding, if specifically advised to do so by medical staff, pre and post exercise, before and during a car journey if driving over 2 hours, suspected or confirmed unawareness of hypoglycaemia, regular and/or disabling hypoglycaemia and those living alone who may be at increased risk of falls.**
5. Those self-monitoring blood glucose should be assessed at least annually with continuing education in a structured way to ensure: self-monitoring skills, the quality and appropriate frequency of testing, acting on results, interpreting signs and symptoms, the impact on quality of life, continued benefit of testing, the equipment used (coding, quality assurance, cost effectiveness), HbA1c.
6. Meter choice should be based on individual patient needs and ongoing cost of HBGM. Changing existing meters may cause confusion to some patients and this should be considered when determining the most appropriate meter for that individual. Where appropriate patients existing supply of strips should be utilised before changing meter. Currently, Accu-Chek Instant Meter, Contour Plus and WaveSense JAZZ strips are available at a considerably lower NHS price than alternative products.
7. Patients should be encouraged not to buy their own meters as they will be provided free of charge by the Diabetes Clinic or practice nurses - **this will allow appropriate training on use.**
8. DVLA guidelines for all patients on insulin recommend testing before driving and at 2-hour intervals during long journeys. In many cases this will increase the number of testing strips needed. Group 2 drivers also have more frequent testing requirements. Sulphonylurea/nateglinide/repaglinide patients are advised to monitor blood glucose regularly at times relevant to driving.
(<http://www.dft.gov.uk/dvla/medical/ataglance.aspx>)

The importance of 3-6monthly Hb1Ac levels as an excellent indicator of long-term control should be emphasised to provide clinicians with information on the management of the condition.

Urine and Blood glucose test strips and lancets should not be issued on a repeat prescription without 6-monthly review.

Recommended Meters for Initiation in Primary Care

The meters in the following section should be considered as 'suggested' meters for patient monitoring in adults with non-complex type 2 diabetes. These meters have been recommended following the NWSSP procurement process. Patient clinical needs, choice and preferences should be respected in order to establish compliance with their suggested monitoring programme.

Upgrading existing meters may be undertaken if there is a need, however no changes should be made unless a comprehensive review of the patients monitoring requirements, compliance with monitoring parameters and monitoring technique with their existing meter has been completed.

Patients must be trained on how to use their meter and made aware of the purpose of monitoring (why, how, when and action). For cost effective monitoring to be achieved, patients must be able to interpret and analyse their results and decide what action to take – or – to provide the Health Professional with appropriate information to assess and maintain their glycaemic control.

The suggested meters will be subjected to constant review, to accommodate any improvement in meter technology.

These recommended meters hopefully encompass most patient requirements such as:

- Simplicity / ease of use / easy to carry around
- Features that will accommodate patient problems with visual impairment, dexterity, sore fingers, needle phobias etc.
- Elimination of interfering factors / substances / operator errors
- Wide haematocrit range
- Good IT, meal markers, computer download facility
- Greater strip stability to prevent wastage
- Improved accuracy and precision. ($\pm 15\%$ working towards $\pm 5\%$)
- Patient preference
- Manufacturers support with education, literature, supplies etc
- Ketone testing

The selected meters have all shown good accuracy and precision when compared with corresponding YSI 2300 results obtained in our Health Board's and neighbouring Health Boards' laboratories. Unfortunately the MHRA have stopped their independent evaluation service, but where possible other evaluation data has been sourced and the selected meters show compliance with the new ISO 15197 June 2013 standards, and have a CE quality mark.









“While test strips dispensed in primary care may appear to have a premium cost, the wider cost to the patient's quality of life, their safety, ability to work, drive and to the NHS of complications of uncontrolled diabetes and hospital admissions, far outweigh these costs.” Diabetes UK.

The information presented regarding the specific meters has been obtained from the manufacturer's respective websites. (Prices quoted as per Drug Tariff October 2021).














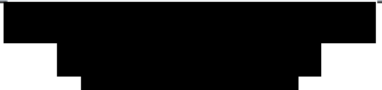
Recommended Meters for Patient Blood Glucose Monitoring in Type 2 Diabetics

(For patients new to monitoring and upgrading meters as required)

Roche Diabetes Care	Ascensia Diabetes Care	AgaMatrix Europe
Accu-Chek® Instant Meter	Contour® Plus Blue Meter	WaveSense JAZZ® Meter
		
Name of Strips		
Instant blood glucose testing strips	Contour Plus testing strips	WaveSense JAZZ testing strips
		
Cost of 50 Strips* Drug Tariff October 2021		
£7.50	£5.95	£8.74
Opened strip pot stable until expiry	24 month shelf life once the strip pot is opened	180 day shelf life once the strip vial is opened
Features of Meter		
<ul style="list-style-type: none"> • No coding or set up required • Large display for results • Compact • Bluetooth connection to 'mySugr' application 	<ul style="list-style-type: none"> • Ready to use from the box • SmartCOLOUR™ target range indicator • Data can be downloaded • Memory will store 800 results 	<ul style="list-style-type: none"> • No coding required • Pre/Post mealtime tagging • Large, backlit display • Downloadable results • 1,865 test memory
Ideally suited for		
Suitable for most Type 2 diabetic patients and type 1 patients requiring an uncomplicated meter. Also suitable for use in gestational diabetes.	Suitable for most Type 2 diabetic patients and Type 1 patients requiring an uncomplicated meter.	Suitable for most type 2 diabetic patients and Type 1 patients requiring an uncomplicated meter. Suitable for alternative site testing.
Name of Lancets		
FastClix Lancets £5.90/204	Microlet Lancets £7.44/200	AgaMatrix Ultra-Thin Lancets £5.43/200
Lancing Device		
		
Customer Care Contact Details		
0800 701 000 (Accu-Chek Careline)	0345 600 6030 (Diabetes Care Support Line)	0800 093 1812 (Customer Care Team)
Company Representative Details		
[Redacted]	[Redacted]	[Redacted]

Recommended meters for patients with type 2 diabetes who have additional requirements (and type 1 diabetes)




The meters in the following section can be considered for patients with specialist requirements. They may be started in primary care but only by nurses who have specialist knowledge of diabetes and of the meters which they are recommending.

GlucoRX® HCT Meter	Nipro® Diagnostics 4Sure Smart Duo Meter	Spirit Healthcare® CareSens Dual Meter
		
Name of Strips		
GlucoRx HCT Glucose Test Strips	4SURE Blood Glucose Test Strips	CareSens PRO Blood Glucose Strips
		
Cost of 50 Strips* Drug Tariff October 2021		
£8.95 (£9.95 for 10 ketone strips)	£8.99 (£9.92 for 10 ketone strips)	£9.95 (£9.95 for 10 ketone strips)
6 months shelf life per pot of 25 strips once opened	Opened strip vial stable until expiry	12 month shelf life once pot opened
Features of Meter		
<ul style="list-style-type: none"> • Ability to test for β-ketones • 1000 reading memory • PC download facility • Backlit screen • Temperature warning 	<ul style="list-style-type: none"> • Ability to test for β-ketones • Pre and post meal markers • Large, backlit display • Bluetooth connectivity 	<ul style="list-style-type: none"> • Ability to test for β-ketones • 1000 reading memory • Pre/post meal markers • Large, backlit display • Bluetooth enabled
Ideally suited for		
Suitable for most patients with type 1 diabetes and patients with type 2 diabetes who have additional requirements.	Suitable for most patients with type 1 diabetes and patients with type 2 diabetes who have additional requirements.	Suitable for most patients with type 1 diabetes and patients with type 2 diabetes who have additional requirements.
Name of Lancets		
GlucoRx Lancets £4.50/200	4SURE Lancets £2.90/100	CareSens Lancets £2.95/100
Lancing Device		
		
Customer Care Contact Details		
0800 007 5892 (Customer Care)	0800 08 588 08 (Customer Service Team)	0800 881 5423 (Head Office)
Company Representative Details		
		

Recommended Meter for Type 2 Diabetics with specific requirements

Accu-Chek® Mobile Meter is recommended for patients:

- With visual impairment
- With dexterity issues
- Who 'carb count'
- Who require a small-size meter for sports/active lifestyle

Roche Diabetes Care
Accu-Chek® Mobile Meter

Name of Strips
Mobile cassette

Cost of 50 Strips *Drug Tariff October 2021
£9.99
Cassette stable for 3 months after opening.
Features of Meter
Accu-Chek Mobile is an all-in-one strip free meter with an integrated lancing device.
Ideally suited for
<p>Suitable for patients with visual impairment, dexterity issues, for patients who 'carbcoun't, those with gestational diabetes and is a small-size meter for sports/active lifestyle</p> <p>All in one design encourages adherence to suggested monitoring regime.</p> <ul style="list-style-type: none"> • Favoured by patients 'on the go' as 'hassle free' testing anywhere
Name of Lancets
FastClix Lancets £5.90/204
Lancing Device

Customer Care Contact Details
0800 701 000 (Accu-Chek Careline)
Company Representative Details
Liz Grace 07525 766455 liz.grace@roche.com

RECOMMENDED HOME BLOOD GLUCOSE MONITORING FREQUENCY IN MEDICALLY STABLE ADULT TYPE 2 DIABETES PATIENT

Diabetes managed via: -Diet & Exercise.

If clinically appropriate home blood glucose monitoring (HBGM) once or twice weekly, at varied times, pre or post prandial.

Diabetes managed via: -Diet & Exercise and Metformin and/or a glitazone and/or exenatide/liraglutide

6 monthly Hba1c if stable/2-3 monthly HbA1c if unstable and/or

HBGM 2- 3 times a week at varied times to include pre or post prandial and including a fasting result.

Diabetes managed via: - Diet & Exercise + insulin secretagogue e.g. gliclazide, or, post-prandial regulator e.g. repaglinide, nateglinide with or without other oral agents and/or exenatide/liraglutide

HBGM 3 times a week at varied times, including pre and 2 hours post prandial, and fasting result.

Diabetes managed via: - Once daily insulin such as glargine, insulin detemir or insulatard, with/without combined oral agent e.g. metformin.

Once daily HBGM, initially fasting during basal dose titration, then varied times – pre meal/2 hours post prandial to identify trends.

DVLA guidelines for all patients on insulin: recommend testing before driving and at 2 hour intervals during long journeys. Meter memory should be sufficient to store 3 months data or data should be recorded using computer download facility.

Diabetes managed via: - insulin pumps with or without oral agents.

Minimum of 6 times daily, pre and post prandial including a fasting result.

Diabetes managed via: Basal/Bolus insulin regime e.g. Glargine or detemir or insulatard, combined with novorapid or glulisine or actrapid. (+/- oral agents).

3-4 times daily HBGM at varying times to include a fasting and pre or 2 hours post prandial.

Diabetes managed via: -Twice daily insulin mixtures with or without oral agents.

Once/ Twice daily HBGM varying the time between fasting, pre-meals and 2 hours post prandial to identify trends

Gestational Diabetes: Diet & Exercise.

3-4 times daily HBGM, varying times to ensure target levels are maintained.

Insulin therapy- 4-6 times daily, pre and 1 hours post prandial, including a fasting result ensuring target levels are maintained. Target levels at least 3 months prior to conception to be maintained.



Swansea Bay University Health Board

Authorisation Form for Publication onto COIN

PLEASE ENSURE THAT ALL QUESTIONS ARE ANSWERED – IF NOT APPLICABLE PLEASE PUT N/A

COIN ID.	CID1676
Title.	Recommended Meters for Patient Blood Glucose Monitoring
Name and Signature of Author/Chair of Group or Committee.	Pharmacy & Medicines Management
Name and Signature of Lead Pharmacist.	[REDACTED]
Please specify whether the document is New, Revised or Supersedes a previous version.	Reviewed no changes
Please specify the section on COIN where you wish the document to be published.	Diabetes and ThinkGlucose
Please sign to confirm that the document has been authorised by an approved governance process in a specialty or delivery unit.	Pharmacy & Medicines Management
Has NICE guidance been considered/referenced when producing this guidance? If yes, please state the title or reference number.	N/A
Is the document relevant to the GP Portal?	Yes
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