NHS
Southampton City
Clinical Commissioning Group

RECOMMENDATIONS FOR THE CHOICE OF BLOOD GLUCOSE METERS, TESTING STRIPS, LANCETS and NEEDLES in ADULTS LIVING WITH DIABETES

These guidelines have been developed by Southampton City Clinical Commissioning Group Medicines Management Team in collaboration with University Hospital Southampton (UHS), Portsmouth Hospitals NHS trust and Local Diabetes Specialist Nurses. Recommendations in the guidelines apply to all new adult patients who need to self-monitor their blood glucose levels and patients who are existing users who have been assessed as suitable and willing at their annual diabetes review to change to a new meter.

Self-monitoring of blood glucose for patients with diabetes: NICE guidance states

Type 2 diabetes: Blood glucose monitoring should not be offered routinely to people with Type 2 diabetes who have acceptable long term control and are on therapies not expected to cause hypoglycaemia.
Self- monitoring should be offered if:

- there is evidence of hypoglycaemic episodes
- the person is on oral medication that could cause hypoglycaemia and that person drives or operates machinery
- the person is on insulin or about to start insulin or
- the person is pregnant or planning a pregnancy (women in pregnancy with type 1 and 2 are entitled to use of FreeStyle Libre throughout)

Many patients may require a meter for self-monitoring during periods of illness. All patients treated with corticosteroids (oral or injectable) and patients for whom the use of HbA1c is considered inaccurate e.g. eGFR <30ml/min should also have a meter. NICE guidance recommends a structured annual assessment for all patients self-monitoring. 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 and the equipment used.

Type 1 diabetes: All people with Type 1 diabetes need a meter for self-monitoring of blood glucose and may be provided with a meter with additional features to help with carbohydrate counting etc. NICE recommend routine testing at least 4 times a day and some patients may be required to monitor up to 10 times a day or more in certain circumstances (see NICE guidance NG17 section 1.6.11) . Patients with type 1 diabetes may also need access to a meter that is capable of testing for capillary blood ketones to be used as per sick day rules guidance to help with diabetes management.

General Use Self-Monitoring Blood Glucose Meters

Meter	Nipro 4Sure Duo	Glucomen Areo 2K	Accu-Chek Performa	WaveSense Jazz and WaveSense Jazz Wireless	Ascensia Contour Plus Blue	Palmdoc 2	Accu-Chek Mobile
Image							
Diasend compatibility	Yes USB	Yes	Yes USB	WaveSense Jazz Yes	Yes	Yes	Yes USB
Notes for specific indications /patient needs	Glucose and Ketone testing with one meter. Coding for the ketone test strips is needed for new packs. Suitable for pregnant and renal impairment patients due to wide haematocrit range.	Glucose and Ketone testing with one meter. Pre-coded for ketone testing.	Suitable for type 2 patients. Fastclix® lancets included in the pack.	Wave Sense Jazz meter has multiple functionalities incorporated within the meter. WaveSense Jazz Wireless has Bluetooth functionality.	Colour indicator shows if BG is within/above/below target range. Long test strip expiry for infrequent testing. Second chance sampling with same strip. Suitable for pregnant and renal impairment patients due to wide haematocrit range.	Suitable for frail or Impaired vision patients. Large screen, easy to use Multiple languages Speaking options.	Compact device suitable for professional drivers. Fastclix® lancets included in pack. Multiple languages on screen.
Smartphone compatible	Yes	yes	No	Wavesense Jazz Wireless -Yes	Yes	No	Yes – with Bluetooth connector (separate)
Strip expiry once opened	Glucose strips 24 months Ketone strips 18 months	12 months	18 Months	6 months	24 months	6 months	3 Months
Strip	4SURE Glucose 4SURE Ketone	Areo sensor Ketone Areo sensor	Performa	WaveSense Jazz	Contour Plus	Palmdoc	Accu-Chek Mobile
Company	Nipro Diagnostics UK	Glucomen	Roche Diabetes Care	AgaMatrix Europe Ltd	Ascensia Diabetes Care	Palmdoc	Roche Diabetes Care

Meter	Nipro 4Sure Duo	Glucomen Areo 2K	Accu-Chek Performa	WaveSense Jazz and WaveSense Jazz Wireless	Ascensia Contour Plus Blue	Palmdoc 2	Accu-Chek Mobile
Memory readings	1000	730	500	1865	800	900	2000
Suitable for carb counting	Yes	yes	No	Yes	No	No	Yes
Haematocrit range	0-70% for glucose 10-70% for ketone	10-70% for glucose 20-60% for ketone	10-65%	20 - 60%	0-70%	20-60%	25-55%
Customer Care contacts (for pts to use)	diagnostics-uk@nipro-group.com 0800 08588 08	myglucomen@menarinidiag.co.uk 0800 243667	www.accu-chek.co.uk 0800 701000 .	customercare@agamatrix.com 0800 093 1812	www.diabetes.ascensia.co.uk 0345 6006030	hello@palmdoc.co.uk 0800 9949995	www.accu-chek.co.uk 0800 701000
HCP contacts (for HCP-ordering/training/queries)	sales.support@nipro-group.com 0800 0858808	myglucomen@menarinidiag.co.uk 0800 243667	burgesshill.telesales@roche.com 0800 0407221	customercare@agamatrix.com 0800 093 1812	matthew.hayden@ascensia.com 07341 075135	hello@palmdoc.co.uk 0800 9949995	burgesshill.telesales@roche.com 0800 0407221

TYPE 1 or PATIENTS with more complex requirements:

Some patients may be seen in Specialists care and be given blood glucose meters which have additional features for specific indications and/or patients' needs.
GPs may be required to prescribe the appropriate blood glucose testing strips (BGTS) to support shared patient care.
Please note: the issue of these meters or prescribing of these test strips should NOT be initiated in Primary Care by GPs.
Continuous glucose monitors are provided by specialist services through a named patient purchase scheme according to NICE/NHSEI guidance.

Blood Glucose meter	Test strip	Additional features
Contour Next Link	Contour Next	Insulin Pump Link
MyLife Pura X	Mylife Pura	Insulin Pump Link
Accu-Chek Combo	Accu-Chek Aviva	Insulin Pump Link
Accu-Chek Insight	Accu-Chek Aviva	Insulin Pump Link
FreeStyle Libre	FreeStyle Libre Sensors +glucose and ketone strips	Flash Monitoring
Dexcom	Dexcom sensors	Continuous Glucose Monitoring (CGM)
Medtronic Enlite	Enlite glucose sensors	Continuous Glucose Monitoring (CGM)
GluComen Day	GluComen CGM sensors	Continuous Glucose Monitoring (CGM)

LANCETS:

- Use cost-effective lancets (which may not be the ones provided with the meter). There are a range of different sized lancets available on prescription at a cost of **≤£3 / 100.** Currently the most cost effective medium gauge lancets (0.28-0.38mm) suitable for most patients are:

Agamatrix Ultra-thin	**IME-DC**	**Palmdoc**
Apollo Twist	**Microdot**	**Touch Delica**
Carasens	**Mylife (multi-coloured)**	**TRUEplus**
Fastclix	**Mylife (standard)**	
Greenlan	**Omicon Lance Soft**	

- The higher the gauge (G) of a lancet; the smaller the diameter or the width of the wire that makes up the lancet. A low gauge lancet (28G) may be quite uncomfortable for the patient while a higher gauge (33G) may not provide sufficient blood for testing. Generally 30G lancets are suitable for most patients
- Lancets are designed to fit into proprietary finger-pricking devices but from local experience most appear to be a universal fit for all. Finger pricking devices are not prescribable but are supplied with the blood glucose monitoring meter
- Multi-device lancets (Multiclix® Roche or Fastclix® drum), which contain a pre-loaded drum, can be used for patients with specific clinical needs e.g. those with dexterity problems, needle phobia or visual impairment.
- **Safety Lancets–Unistik 3** where the needle retracts after use. These should only be used by healthcare workers or carers to avoid needle stick injury. Examples include Unistik 3 range of lancets , Apollo Pressure-Activated Safety lancets, Neo Verifine Safety lancets, Sterilance Lite II Safety lancets

INSULIN PEN NEEDLES:

- Use cost-effective needles. There are a range of different sized needles available on prescription at a cost of **<£5 / 100**
- Currently the most cost effective and preferred brands which are compatible with all pens include;

4Sure	**GlucoRx CarePoint Ultra**	**Neon Verifine**
BD Viva	**GlucoRx FinePoint**	**PROfine**
Carefine	**Microdot Droplet**	**TriCare**
GlucoRx CarePoint	**Microdot Max**	
	MyLife Penfine Classic	

- Clinical recommendations support the use of shorter needles and help to prevent inadvertent intramuscular injection of insulin. IM injection of insulin may inadvertently lead to unpredictable blood glucose levels and hypoglycaemia
- 4 and 5 mm needles are suitable for all people regardless of BMI
- **Safety needles** which incorporate automatic safety locks are available but should **not be prescribed on FP10 by GP**s, except for the following exceptional use; patients whose insulin is administered by a professional healthcare worker or carer

Safety needles should be compliant with "Safer Sharps" in line with the council of the European Union Directive 2010/32/EU

Examples of safety needles include: BD Autoshield Duo, Microdot Max Safety Pen needles

DISPOSAL OF USED LANCETS & NEEDLES

- Lancets & needles are for single use only. Please ensure that patients are educated and aware of safe disposal
- Sharpsguard yellow 1litre / Sharpsafe yellow 1 litre are suitable for insulin needles (and lancets) and are available on FP10
- For more information on healthcare waste, visit your local Council website

REFERENCES AND ACKNOWLEDGEMENTS

1. In 2013, an updated set of standards (ISO: 15197:2013) were published and these standards will need to have been met by blood glucose meter manufacturers by the end of May 2016. The new standard has implications not only for the manufacturers of currently available and future devices but also for the end-users. The International Organization for Standardization (ISO) is based in Geneva, Switzerland. For more information visit. http://www.diabetes.co.uk/blood-glucose-meters/iso-accuracy-standards.html
2. Acknowledging work done in Portsmouth & East Berkshire Federated CCGs.
3. Health and Safety (Sharps Instruments in Healthcare) Regulations 2013. HSE has produced a Health Services Information sheet Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 to assist employers and employees to understand their legal obligations under the Regulations.
4. DVLA link for more information visit https://www.gov.uk/diabetes-driving
5. NICE Guideline for diabetes NG17, NG18, NG19 and NG28. See links
    a. https://www.nice.org.uk/guidance/ng17
    b. https://www.nice.org.uk/guidance/ng18
    c. https://www.nice.org.uk/guidance/ng19 and
    d. https://www.nice.org.uk/guidance/ng28

PLEASE NOTE:
Version control for the document will be every three years. When a meter device is upgraded and the meter strips remain the same, the new meter can be considered "approved" and compliant with formulary choices; however if the upgrade requires a different strip, then the upgraded meter will be considered in the next document revision.