

Choice of Blood Glucose (BG) meters for patients with Diabetes

Self-monitoring of Blood Glucose (SMBG) is a key part of diabetes self-care, an important consideration in all patients, allowing individuals to adjust elements of lifestyle or treatment to effect better overall control, or to safely manage their diabetes during concomitant illness.

Self-use blood glucose meters can be categorised by a number of different features, one of which is the cost of prescribing the test strips (2 categories of meter are recognised; category 1 where 50 strips cost ~£10 and category 2 where 50 strips cost ~£15)

In order to control costs of SMBG it is reasonable to offer a category 1 meter as a “routine” first choice (assuming it is “fit for purpose”), progressing only to a category 2 meter where the requirements of an individual patient (or their treatment) demand it. With this strategy 70% of meters supplied could be category 1.

We have recently undertaken a review of available category 1 meters that meet requirements for a “standard meter” including compliance with the new ISO standard, clinical information on use, a memory compatible with DVLA requirements (and download facility), local product support, and clinical features which support patient self-management and review. The results of this review have influenced the following recommendations.

Recommendations

- **Each Surgery advised to stock and routinely offer to patients as a first-line meter a category 1 device that comes from the “approved list” (Appendix 1 overleaf)**
- **If a patient requires features from a meter which are not available on a category 1 device, this should be recorded and they should be offered a category 2 device appropriate to their needs. This does NOT need to be locally stocked but can be accessed direct from a manufacturer (This information will be circulated separately).**
- **Potential indications for category 2 meters include: impaired vision, impaired manual dexterity, requirement for data analysis on meter, requirement for bolus dose advice on meter, requirement for a discreet / all-in-one meter to allow situational testing in patients on multiple daily dose insulin regimens, requirement for ketone monitoring.**
- **Where in doubt about meter choice, the Community Diabetes Team (CDT) or the specialty team will be happy to offer input.**
- **The locally approved list of meters will be reviewed and circulated on an annual basis**
- **Specific advice on patterns and frequency of SMBG testing appropriate to individualised care within different patient categories will be produced and circulated.**

Recommended Meter List as at 01/05/2013**Category 1 Meters** (alphabetical listing)

Meter	Manufacturer	Compatible Test strip	Test strip PIP code
Accucheck Active	Roche Diagnostics	Active Test Strips	281 3103
TRUEYou Mini	Nipro	TRUEYou Test strips	378 2216
WaveSense Jazz	AgaMatrix	WaveSense Jazz test strips	340 1619

Category 2 Meters (Alphabetical Listing)

Meter	Manufacturer	Compatible Test strip	Test strip PIP code
Accucheck Aviva Nano	Roche Diagnostics	Aviva Test strips	317 1253
*Accucheck Aviva Combo	Roche Diagnostics	Aviva Test strips	317 1253
*Accucheck Aviva Expert	Roche Diagnostics	Aviva Test strips	317 1253
Accucheck Mobile USB	Roche Diagnostics	Mobile Test Cassette	351 3322
Contour XT	Bayer	Contour Next	368 2119
Contour Next USB	Bayer	Contour Next	368 2119
*Freestyle Insulinx	Abbott	Freestyle Lite	329 6571
Freestyle Lite	Abbott	Freestyle Lite	329 6571
Freestyle Optium	Abbott	Freestyle Optium	287 9922
Glucomen LX Plus	Menarini	Glucomen LX glucose test sensors	332 8226
iBGStar	Sanofi	BGStar	368 2192
OneTouch Verio IQ	Johnson & Johnson	One Touch Verio	355 2841
OneTouch VerioPro	Johnson & Johnson	One Touch Verio	355 2841
*SuperCheck 2	BioTest Medical Corporation	SuperCheck 2	363 6982

* meters so marked should be provided only with specialty support (either CDT or Secondary Care teams)

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Step-up meter choices (Category 2 meters) with approved use indications

Category 2 meters should fulfil the same initial criteria as category 1 meters, but will generally offer additional features or usability issues that make them more clinically appropriate for an individual in whom a stock meter may be inappropriate:

- a) Screen visibility - for those with impaired vision (category 1 meters tend to have a “grey on grey” screen which has low contrast). Different individuals find different screens easier or more difficult to read, but those with highest contrast with largest digits include: **OneTouch VerioPro / IQ , Accucheck Aviva Nano, Accucheck Mobile USB.**
- b) Talking Meters for patients registered blind – refer to community or specialty diabetes team for input **Cleverchek & Super Check 2**
- c) Meter handling – for those with manual dexterity issues, smaller and more modern meters can often pose handling problems. Alternative larger meters include: **Contour**
- d) Alarms – to prompt the individual to undertake monitoring at an appropriate time
- e) Meters which allow easy visualisation of data on a PC for the patient to make decisions regarding future treatment without the need for complex software. **Contour USB / Accucheck Mobile USB / OneTouch Verio IQ**
- f) On-meter data management where an individual uses the last few days trends on the meter to guide future insulin doses: **OneTouch Verio IQ**
- g) Bolus Advice from the meter (based on HCP programmed carbohydrate counted iCHO ratio, correctional ISF target BG ranges and situational cues – for individuals who use true basal bolus – usually following structured education) **Accucheck Expert / Freestyle Insulinx**
- h) Convenience-related monitoring issues, either needing a very small inconspicuous meter that will tie in with an “i-thing” lifestyle and thus encourage a younger or more active individual to test in circumstances where they would not use a traditional meter – **iBGstar** by Sanofi, **Freestyle Lite** meter by Abbott or requiring an all-in-one meter where there are no disposables once a test is undertaken – **Accucheck Mobile USB meter**
- i) Meters with built-in ketone monitoring ability can be an important benefit for individuals (especially those who have been admitted with DKA) who are ketosis prone in order to allow earlier and more aggressive intervention to prevent future admissions – **Freestyle Optium / Glucomen LX Plus**
- j) Short-term meter use for situational issues (eg holidays) – **TRUEone meter**
- k) Insulin pump users often require a specific glucose meter which is able to communicate (via Bluetooth) with their pump **Accucheck Combo / Contour USB**
- l) Simple preference (style-related) – particularly in younger adults the social acceptability of SMBG is often related to the perceived acceptability of the meter. SMBG undertaken at inappropriate times is often unhelpful, so style preference can be an important element of meter choice in such individuals to ensure that they use it at a clinically appropriate time. No meter should therefore be considered “forbidden” and clinics should be able to provide advice about what is available and how the individual can contact the appropriate company for a free meter.