

# NHS Greater Glasgow and Clyde Adult Blood Glucose and Combined Ketone Meter and Test Strip Formulary 2018-20

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Primary Care and Acute Joint Formulary

Blood Glucose Meter formulary developed by the Diabetes MCN Blood Glucose Meter Formulary Review Group.

Review date: March 2020

## **Foreword**

The NHS Greater Glasgow & Clyde Blood Glucose and Combined Ketone Meter Test Strip Formulary has been developed to provide practitioners with a selection of preferred meters and test strips for adult patient self monitoring of blood glucose and ketones.

Self monitoring of blood glucose (SMBG) is necessary for patients treated with insulin or other medication with a high risk of hypoglycaemia. The NHS GGC Guideline for Self Monitoring of Blood Glucose is available on staffnet (via [www.ggcprescribing.org.uk](http://www.ggcprescribing.org.uk)).

Self monitoring of blood glucose and ketones involves the use of meters and test strips. Meters are not available on the NHS while the testing strips or discs are. Historically, meters were supplied either by the diabetes team, practice nurse or purchased online or through community pharmacies by the patient or family members.

All blood glucose meters and test strips meet the international manufacturing quality standard for blood glucose meters and test strips ISO 15197 (2013).

Taking a formulary approach to monitoring systems will provide benefits in terms of aiding continuity and increase familiarity with a select range of meters amongst healthcare professionals. Rationalising the range of products in use assures that only clinically proven and cost effective products are used.

It is recognised that variation in product choice may occur in specialist areas. In such circumstances providing primary care clinicians with the rational for an alternative choice to the preferred meters will avoid any delay in the supply of strips and lancets.

Practitioners should aim to prescribe a product included in the Formulary and only use a non-formulary product when there is a good clinical reason for doing so. Test strips out with the formulary may only be prescribed on GP10 if there is a clear clinical need for a non-formulary choice to be made.

Supplies of the preferred meters and starter packs can be obtained by contacting the local representatives as listed in the reference table. Patients should be dissuaded from purchasing a meter themselves without prior discussion with their healthcare professional as strips and lancets will not automatically be supplied.

The Blood Glucose and Combined Ketone Meter Formulary follows the same structure as the NHSGGC Formulary with choices being subdivided into two categories: Preferred List – these represent the first line choices for use by the majority of patients with type 1 and type 2 diabetes requiring a meter, Total Formulary List– contains a specialist meters for use with insulin pumps plus a second line option for general use.

## NHS GG&C Blood Glucose and Combined Ketone Meters & Strip Formulary

Specific meter & test strip information can be found in the attached Reference Table

### Preferred List Blood Glucose Meters & Strips

Preferred blood glucose meters for adult patients with type 1 and type 2 diabetics not on an insulin pump

- **GlucRx Nexus system meters including Nexus, Mini Ultra & Voice.**

This includes three device options: the Voice provides an audible option for the visually impaired, the Mini a small discrete meter and the standard Nexus easy to read device.

- **Glucomen Areo**

The Areo is a simple easy to read & use device. It uses near field communication (NFC) to allow electronic transfer of results.

### Blood Glucose & Ketone Monitoring in patients with type 1 diabetes

- **Glucomen Areo 2K**

Glucomen Areo with the addition of ketone and blood glucose testing in the one meter with NFC technology to transfer information to Android devices

- **CareSens Dual** CareSens Dual is an easy to read device combining blood glucose & ketone testing in one meter. The addition of Bluetooth™ technology enables easy transfer of information to both Android and Apple[iOS] devices.

### Total Formulary Blood Glucose Meters & Strips

**Second line** blood glucose meter for adult patients with type 1 and type 2 diabetes who are not on an insulin pump:

- **One Touch Select Plus**

Currently the One Touch offers a different visual display but requires a larger blood volume size and uses small strips that patients with dexterity problems may find hard to use.

- **Contour Next Link For use with Insulin Pump.** Contour Next Link is used in conjunction with Medtronic insulin pump and will be supplied from the diabetes clinic.

### The Formulary recommendations apply across primary and secondary care.


Supplies of the preferred meters and starter packs can be obtained by contacting the local representatives as listed in the reference table.


**Glucomen Areo and Areo 2K:** Martha MacKenzie 07833682116

**GlucRx Nexus system meters including Nexus, Mini & Voice:** Linda Brown 07741262097

**CareSens Dual:** Jim Swift 07880385464

**Patients should be dissuaded from purchasing a meter themselves without prior discussion with their healthcare professional as strips and lancets will not automatically be supplied.**

	Preferred List Formulary Meter	Preferred List Formulary Meter	Preferred List Formulary Meter	Preferred List Formulary Meter
Meter	Glucomen Areo	GlucorX Nexus System	GlucorX Nexus Mini Ultra	GlucorX Nexus Voice
				
Features	Large glow in the dark display. Strip ejection avoids blood contact.	Large LCD screen with backlight. Strip ejection avoids blood contact.	Small & compact. Strip ejection avoids blood contact.	Audio feedback for visually impaired patients. Strip ejection.
Memory capacity	730	1000	1000	450
Glucose Strip Name	Glucomen Areo	GlucorX Nexus	GlucorX Nexus	GlucorX Nexus
Drug Tariff price (pence)	995	995	995	995
Test Strips		2 vials of 25 strips or 1 vial of 50 strips	2 vials of 25 strips or 1 vial of 50 strips	2 vials of 25 strips or 1 vial of 50 strips
Strip expiry date	9 months from opening	6 months from opening vial	6 months from opening vial	6 months from opening vial
Sample size	0.5 µL	0.5 µL	0.5 µL	0.5 µL
Time for results	5 sec	5 sec	5 sec	5 sec
Range	1.1-33.3 mmol/L	1.1-33.3 mmol/L	1.1-33.3 mmol/L	1.1-33.3 mmol/L
Alternative Site Testing Supported	Yes – fingertip, palm and forearm	Yes – fingertip, forearm, upper arm, hand, thigh and calf	Yes –fingertip, forearm, upper arm, hand, thigh and calf	Yes – fingertip, forearm, upper arm, hand, thigh and calf
Haematocrit	10-70%	30- 60%	30- 60%	30- 60%
Enzyme	Glucose Oxidase	GDH – FAD	GDH – FAD	GDH – FAD
Replacement batteries	Two 3V CR2032 Lithium Battery Contact Customer Service – supplied by courier	Two 1.5V AAA size alkaline batteries Contact Customer Service – supplied by courier	One 1.5V AAA alkaline battery. Contact Customer Service – supplied by courier	Two 1.5V AAA size alkaline batteries Contact Customer Service – supplied by courier
Website	<a href="http://www.glucomen.co.uk">www.glucomen.co.uk</a> includes videos	<a href="http://www.glucorx.co.uk">www.glucorx.co.uk</a> include videos - FAQ & ordering	<a href="http://www.glucorx.co.uk">www.glucorx.co.uk</a> include videos - FAQ & ordering	<a href="http://www.glucorx.co.uk">www.glucorx.co.uk</a> includedVideos - FAQ & ordering
Connectivity to Diasend	yes	yes	No @ February 2018	yes
Company details	Menarini	Glucor X	Glucor X	Glucor X
Customer Service	0800 243 667	01483 75133	01483 75133	01483 75133
Working hours	Mon- Fri - 8.30-5.30	9-5 Monday to Friday	9-5 Monday to Friday	9-5 Monday to Friday
Local representative	Martha MacKenzie 07833682116	Linda Brown 07741262097	Linda Brown 07741262097	Linda Brown 07741262097

	Combined Meter Preferred List Formulary	Combined Meter Preferred List Formulary
	<b>CareSens Dual</b>	<b>Glucomen Areo 2K</b>
		
Memory capacity	1000	730
Glucose Strips name	CareSens Pro	Glucomen Areo Sensor
Drug Tariff price	£9.95	£9.95
Test Strips	One vial of 50	One vial of 50 strips
Strip expiry date	12 months from opening	9 mnths from opening
Sample size	0.4 µL	0.5 µL
Time for results	5 sec	5 sec
Range	1.1-33.3 mmol/L	1.1-33.3 mmol/L
Alternative Site Testing Supported	Yes – fingertip, palm and forearm	Yes – fingertip, palm and forearm
Haematocrit	15-65%	10-70%
Enzyme	GDH – FAD	Glucose Oxidase
Replacement batteries	Two 3V CR2032 Lithium Battery	Two 3V CR2032 Lithium Battery
Website	<a href="http://spirit-healthcare.co.uk">http://spirit-healthcare.co.uk</a>	<a href="http://www.glucomen.co.uk">www.glucomen.co.uk</a> includes videos
Connectivity to Diasend	yes	yes
Company details	Spirit Healthcare	Menarini
Customer Service	0800 881 5423	0800 243 667
Working hours	24 hours	Mon- Fri - 8.30-5.30
Local representative	Jim Swift 07880385464	Martha MacKenzie 07833682116
Wireless connectivity	Bluetooth	NFC or blue tooth dongle
App name	SmartLog	Glucalog Lite/ Mobile
Carb Counting App	Balansio	RapidCalc
	<b>Ketone</b>	<b>Ketone</b>
Blood sample size	0.5	0.8
Ketone Strips name	Ketosens	Glucomen Areo Ketone Sensor
Shelf life strips	Expiry date on pack Foil Wrapped	Expiry date on pack Foil Wrapped
DT Ketone Strip Price (10)	£9.95	£9.95
Measurement time	8 sec	8 sec

## **Additional Information**

### **Training**

Most meters have the same basic functions and the process to obtain a blood glucose and/ or ketone reading is similar. However it is important that all patients are trained on how to use their meter and know:

- the purpose of testing
- how to interpret the blood glucose results and what action to take
- how often and when to test
- how to use the meter and the lancing device to achieve an accurate result
- when to seek advice from their healthcare professional

NICE recommend that patients with type 1 & type 2 diabetes who are self-monitoring their blood glucose levels, have a structured assessment at least annually to include self monitoring skills. In addition to this the assessment should take account on the impact on the person's quality of life & the continued benefit of monitoring.

### **Good Practice in Self Testing & Safe Storage of Blood Glucose and Ketone Testing Strips - Information for Patients**

Specific information is included in product leaflets for meters & strips.

#### **SELF TESTING**

- Ensure hands are washed with soap and thoroughly dried (with a clean towel) prior to testing. Contaminants on the skin or excess moisture can affect the accuracy of the reading.
- Ensure sufficient blood sample size is applied to the test strip. Do not add more blood after the first drop has been applied.
- Apply fresh blood drop to test strip immediately after blood drop obtained. Not testing promptly can lead to evaporation of blood drop which can affect accuracy of the reading.
- Do not test with a smeared or spread blood drop as this can introduce contaminants. Also, do not wipe or smear the blood drop onto the test strip, simply touch the test strip and blood drop together without excess pressure.

#### **STORAGE**

- Store strips in accordance with manufacturer's instructions. Heat, cold, humidity and moisture can all affect how the strips work which in turn affects the accuracy of the reading.
- Keep strips in their original sealed container only. Ensure container lid is closed properly after each use.
- Check expiry dates of test strips and control solutions. Do not use if out of date. Most strip packaging allows the opening or expiry date once opened to be written on the label
- Store the meter and test strips at room temperature. Keep away from direct sunlight & heat. Do not freeze.
- Do not leave test strips in vehicles for extended periods of time as they are subject to temperature extremes.
- Do not bend, cut or alter test strip in any way.

A Control Solution, available free from meter companies, contains a known amount of glucose and is used to ensure the meter and strips are working correctly. It is advised to routinely use the control solution to test the meter and if there are situations where the blood glucose test results are not as expected.