

TYPE 1 DIABETES CONTINUOUS GLUCOSE MONITORING GUIDANCE

TARGET AUDIENCE	Specialist Diabetes Team in Secondary care, Primary care
PATIENT GROUP	Type 1 diabetes patients using Continuous Glucose Monitors (CGM) available on General Practice prescriptions as standalone CGM devices or integrated with hybrid closed loop insulin pump systems

Clinical Guidelines Summary

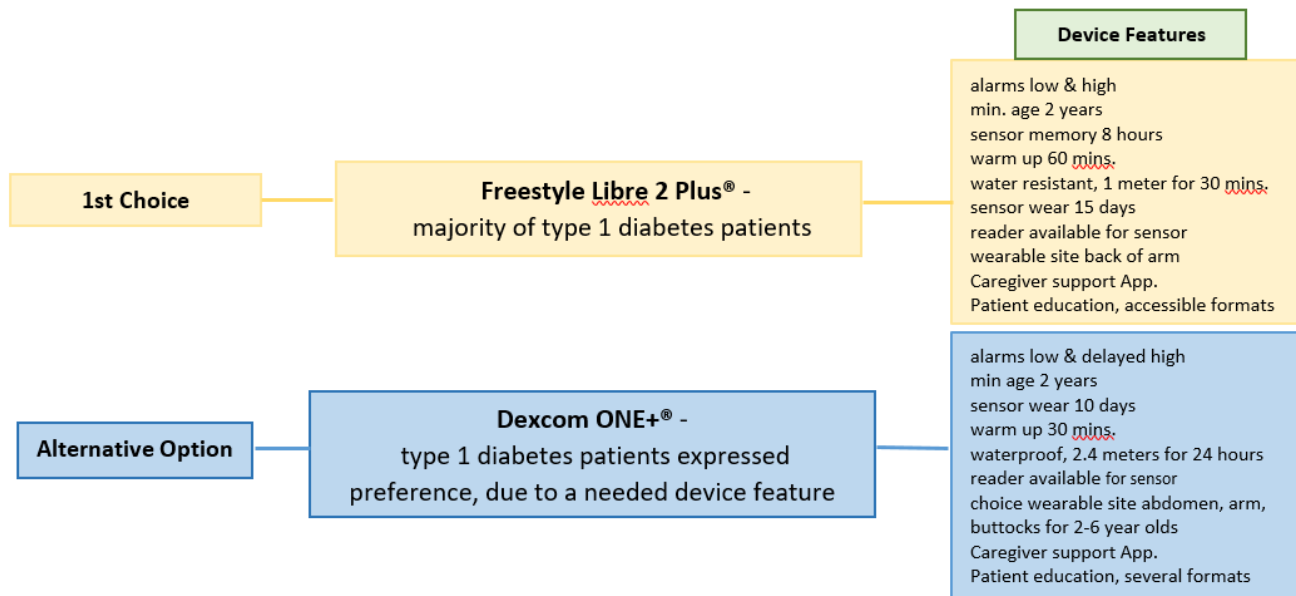
This guideline outlines the Continuous Glucose Monitoring (CGM) systems available for prescription by general practitioners within NHS Lanarkshire.

All CGM devices in the guideline are under the 'specialist initiation category' within the NHS Lanarkshire formulary with ongoing prescription by general practitioners.

The guidance details the Freestyle Libre Continuous Glucose Monitoring devices that can integrate with insulin pump systems. Importantly the guideline details the recommended use of Freestyle Libre 3.

Freestyle Libre 3 prescription is restricted within NHS Lanarkshire and only permitted when Libre 3 is used in combination with an insulin pump as part of a hybrid closed loop (HCL) insulin pump system under Specialist Diabetes team supervision.

Guidance on Continuous Glucose Monitoring Systems for Type 1 Diabetes



Key Points:

- Continuous Glucose Monitoring (CGM) should be offered to all persons with type 1 diabetes using insulin daily injections or insulin pump therapy (standalone)
- Initiation and training of patients for CGM use will be provided by the patient’s diabetes care team
- Under Diabetes Specialist Supervision Freestyle Libre 2 Plus may be used in a Hybrid Closed Loop system
- Support patients with data interpretations and practical issues when wearing CGM devices (common issues include skin reactions may be rectified by barrier creams, secondary dressings, etc.)
- If patients may be struggling, explore reasons and consider further training or psychological support
- Patients using CGM devices need to test capillary blood glucose using finger prick tests on occasion and hence require blood glucose and ketone monitoring test strips to be available on their repeat prescription

Continuous Glucose Monitor (CGM) restricted to patients with Hybrid Closed Loop Insulin Pump System

Hybrid closed loop (HCL) insulin pump systems require CGM devices to be used in combination with the insulin pump. The technologies are rapidly changing and patients using hybrid closed loop systems must be attending specialist diabetes services for training and monitoring. HCL pump systems are compatible with different CGM devices. Freestyle Libre 2 Plus and Freestyle Libre 3 are the only CGM devices available for General Practice prescription that currently can be used as part of a HCL pump system. Whilst Libre 2 Plus should be offered to the majority of type 1 diabetes patients for CGM, Libre 3 prescription should be restricted to use ONLY as part of an HCL system initiated by specialist diabetes technology team, with the ongoing prescription by their general practitioner.



Protocol for Restricted Use Freestyle Libre 3

The Freestyle Libre 3 is a continuous glucose monitoring (CGM) system. It has a factory-calibrated sensor that measures interstitial fluid (not blood) glucose levels in people (aged 4 years and over) with diabetes mellitus, including pregnant women. The overall MARD score is 7.8% making it one of the most accurate CGM sensors.

Recommendations for Use

Freestyle Libre 3 should only be used within NHS Lanarkshire in combination with a licenced hybrid closed loop (HCL) insulin pump system. As a standalone CGM system Libre 3 is less cost efficient than Freestyle Libre 2 Plus and Dexcom One+ and therefore is **not** recommended for use.

An HCL system consists of an insulin pump device, a connected CGM and an insulin automation algorithm. There are several commercially available systems. Currently Freestyle Libre 3 is licenced for use with Ypsomed Mylife Loop® and offers an effective cost efficient system.

The recommendation to commence Freestyle Libre 3 should originate from a secondary care diabetes specialist/team. The first sensor will be provided by the company and given to patients at training. Thereafter prescriptions for Freestyle Libre 3 sensors should be issued by General Practitioners.

In addition, a supply of finger-prick blood glucose test measurements will still be needed, such as when a person is unwell, scanned readings are at the extremes of glycaemia or don't correlate with patient's symptoms.

Patient Eligibility Freestyle Libre 3 prescription

Completed training for use Freestyle Libre 3 and prepared to wear with HCL system
Attending offered diabetes specialist team appointments
Agree to share HCL data with diabetes specialist care team

Recommendations for Continuation

Diabetes specialist should review patients and assess benefits as part of routine clinical review (6 monthly). Examples of measureable benefit include, improved HbA1c and less glucose variability.

Discontinuation Criteria

Not attending diabetes team appointments or failing to share data needed for safe management. Failing to wear Freestyle Libre 3 or another part of HCL system. Patient's preference e.g. perceived lack of benefit or burden.

Provision of Sensors / Year

No more than 26 sensors should be supplied. It would be recommended that General Practitioners should not prescribe more than 2 at a time and that it is up to the patient to contact the company to report any sensor faults and request replacement.

Finger Prick Blood Monitoring Back Up / Sick Day Rules

All patients using Libre 3 on HCL systems or CGM with either an insulin pump system or multiple daily insulin injections must continue have blood glucose monitoring strips and blood ketone test strips available for infrequent use and sick day rules. Preferred meters being Glucomen Areo GK® or CareSens Duo®.

Audit / Evaluation

Sci-DC which is the diabetes electronic clinic record allows the data entry of diabetes technologies used. Hence patients using Freestyle Libre 3 can be audited for outcome measures, such as improvement in glycaemic control, hypoglycaemia recorded. Through Sci-DC data entry data will be contributed to Scottish Diabetes Survey and live diabetes dashboard.

References/Evidence

- Type 1 Diabetes Mellitus (DM) – as per nationally agreed criteria 2018 for original Freestyle Libre®; based on SHTG guidance 2018 below and original NICE guidance 2017, updated 2022:
<https://www.nice.org.uk/guidance/ng17/chapter/Recommendations#blood-glucose-management>
- Optimising Glycaemic Control Type 1 Diabetes toolkit (SIGN170) 2024
<https://rightdecisions.scot.nhs.uk/optimising-glycaemic-control-in-people-with-type-1-diabetes-sign-170>
- SHTG Recommendation January 2022: Closed loop systems and the artificial pancreas for type I diabetes mellitus (T1DM) - <https://shtg.scot/our-advice/closed-loop-systems-and-the-artificial-pancreas-for-type-i-diabetes-mellitus-t1dm/>
- NICE – Hybrid closed loop system for managing hyperglycaemia in type 1 diabetes;
<https://www.nice.org.uk/guidance/documents/html-content>
- Alva S et al. Accuracy of the third generation of a 14-day continuous glucose monitoring system. Diabetes Ther 2023; Apr14(4):767-776.
- Hanson K et al.- Comparisons of point accuracy of two widely used continuous glucose monitoring systems. J Diabetes Sci Technol 2024; Jan 8:19322968231225676.doi:10.1177/19322968231225676.

Appendices

1. Governance information for Guidance document

Lead Author(s):	Dr Liz McIntyre
Endorsing Body:	Diabetes Technologies MDT
Version Number:	4
Approval date	25/09/2024
Review Date:	31/08/2027
Responsible Person (if different from lead author)	

CONSULTATION AND DISTRIBUTION RECORD	
Contributing Author / Authors	Dr Liz McIntyre
Consultation Process / Stakeholders:	Meeting to discuss Freestyle Libre 3 use within NHSL 26.4.24 Attendance: Dr Sandeep Thekkepat (Consultant Diabetes UHM), Dr Marion Devers (Consultant Diabetes UHM), Dr Louise Clark (Consultant Diabetes UHH), Dr Ian Hunter (Consultant Paediatrics UHW), Hannah Innes (Advanced Nurse Practitioner Diabetes UHW), Dr Min Chong (Consultant Diabetes adult UHW), Lesley Walker (DSN)
Distribution	General Practitioners Diabetes Multidisciplinary Care teams NHSL Clinical Guidelines site

CHANGE RECORD			
Date	Lead Author	Change	Version No.
		<i>e.g. Review, revise and update of policy in line with contemporary professional structures and practice</i>	1

16.5.24	Liz McIntyre	Title amended	2
16.5.24	Liz McIntyre	Added paragraph @Finger Prick Monitoring Back Up / Sick Day Rules	2
1.08.24	Liz McIntyre	Corrected language, blood glucose meters as per ADTC minutes July meeting	3
23.08.24	Liz McIntyre	Added sentences following feedback from pharmacist preparing Libre 2+ formulary entry to clarify Libre 2+ can now be used as part of HCL systems, BUT Diabetes Specialist teams initiated and supervised.	4



2. You can include additional appendices with complimentary information that doesn't fit into the main text of your guideline, but is crucial and supports its understanding.

You have been identified to be initiated onto the Freestyle Libre 3 continuous glucose monitoring system in order to help self-manage your diabetes. This is an advanced continuous glucose monitor for high accuracy CGM and linking to hybrid closed loop insulin pump therapy.

1. Patient Letter
2. GP letter

3. Important - Please complete the steps below to get set up.

4. Summary of Vpsomed MyLife system

Step 1. Ensure your mobile smartphone is compatible with Libre 3. The compatibility list can be found at <https://www.freestyle.abbott/uk-en/products/freestyle-libre-3.html>

Step 2. Please visit the following link <https://www.freestyle.abbott/uk-en/support/tutorialsanddownloads.html> whereby you will find a series of U-tube training videos, please watch to ensure you have the information to use Libre 3 correctly.

Step 3. You will be given a Libre 3 starter kit from the Diabetes specialist team when Libre 3 system is recommended for you, and you have confirmed both you smartphone is compatible and watch the training videos.

Step 4. Download both the Libre 3 App and the LibreLinkUp from the Google Play store on your Android phone.

Step 5. Follow the instructions in the LibreView Patient Guide to set up a LibreView account. (If you have downloaded the FreeStyle LibreLink App you will automatically have a LibreView account and just need to login using the same username and password).

Follow instructions on the LibreView Patient Guide on how to 'Link to your practice' by entering the following 'practice ID' : **MONKLANDS**

Step 6. Please complete the FreeStyle Libre Academy for additional learning and education <https://progress.freestylediabetes.co.uk/>

Kind regards

Diabetes Team

Additional Information can be found below;