



FreeStyle

Libre 2

Support people with diabetes to monitor their glucose with confidence¹.

**The FreeStyle Libre 2
system support guide**

Images are for illustrative purposes only. Not actual patient.
1. Fokkert M. *BMJ Open Diab Res Care* (2019); <http://dx.doi.org/10.1136/bmjdr-2019-000809>.



FreeStyle Libre 2

The FreeStyle Libre 2 system measures interstitial fluid glucose levels (the fluid between the body's cells). It's been shown to be a reliable indicator of glucose levels in blood.

THE LIBRE 2 PLUS SENSOR

- Lasts for up to 15 days
- Applied to the back of the upper arm
- Inserts a thin, sterile filament approx. 5mm under the skin
- Continuously measures glucose levels every minute

A compatible smartphone or the FreeStyle Libre 2 reader is used to view glucose readings.

What is the FreeStyle Libre 2 system?



Sensor

The FreeStyle LibreLink app

FREE to download from the App Store or Google Play

Optional reader

For those without compatible smartphones

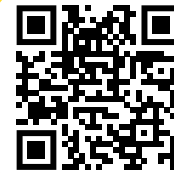
Applicator

Used to apply sensor

Sensor pack



Scan to find a list of compatible smart devices



Watch how to apply and activate the FreeStyle Libre 2 Plus sensor

Images are for illustrative purposes only. Not actual patient data.
The FreeStyle LibreLink app is only compatible with certain mobile devices and operating systems. Please check the website for more information about device compatibility before using the app. Use of FreeStyle LibreLink may require registration with LibreView.

Benefits of the FreeStyle Libre 2 system



Real-time glucose readings automatically updated every minute and sent directly to users' smartphone^{1,2}



Easy to apply and comfortable³ to wear for up to 15 days



Outstanding accuracy, including strong low-end performance⁴, no more finger pricks⁵



Optional glucose alarms⁶ let the wearer know the minute their glucose is too low or too high



TIPS



1. Ensure the FreeStyle LibreLink app is open to receive continuous real-time glucose readings.
2. FreeStyle Libre 2 reader users must scan the sensor to view glucose readings.
3. The smartphone needs to be within 6 metres of the person to receive alarm notifications.
4. Finger prick testing is required when glucose readings and alarms do not match symptoms or expectations.

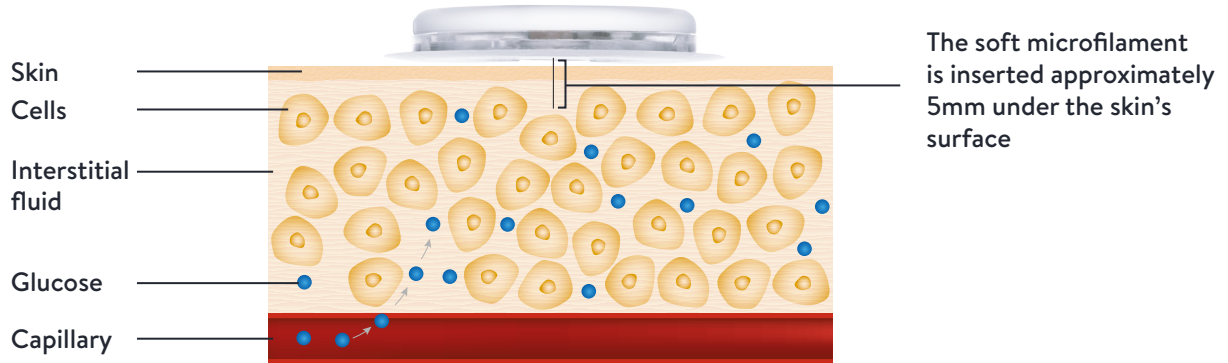
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1. The FreeStyle LibreLink app is only compatible with certain mobile devices and operating systems. Please check the website for more information about device compatibility before using the app. Use of FreeStyle LibreLink may require registration with LibreView. 2. Glucose readings are automatically displayed in the app only when the smartphone and sensor are connected and in range. 3. Haak, T. Diabetes Ther. (2017): <https://doi.org/10.1007/s13300-016-0223-6>. 4. Data on file, Abbott Diabetes Care, Inc. 5. Finger pricks are required when glucose readings and alarms do not match symptoms or expectations. 6. Notifications will only be received when alarms are turned on and the sensor is within 6 metres unobstructed of the reading device.

Blood glucose vs. interstitial fluid

The FreeStyle Libre 2 system measures glucose in the interstitial fluid. Blood glucose and sensor glucose are closely related but not identical.

UNDERSTANDING GLUCOSE MEASUREMENTS



A finger prick blood glucose test should be done if glucose readings and alarms don't match symptoms or expectations. So, a person with diabetes needs access to appropriate quantities of finger prick blood glucose equipment.

Driving with diabetes



The FreeStyle Libre 2 system can be used for DVLA requirements¹ for group 1 drivers but finger prick testing must be carried out to confirm blood glucose levels:

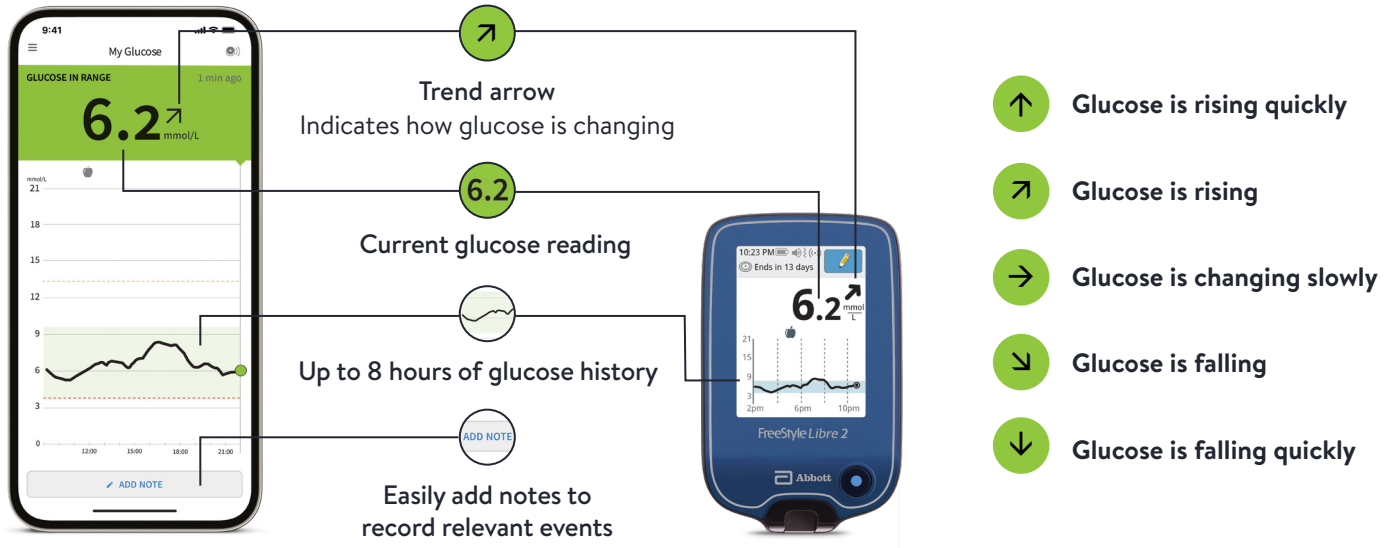
- If glucose level is 4.0mmol/L or below
- If there are symptoms of hypoglycaemia
- If readings are not consistent with a person's symptoms
- If the person becomes hypoglycaemic or has indication of impending hypoglycaemia

Group 2 drivers still need to use finger prick glucose testing

Images are for illustrative purposes only. Not actual patient.

1. Diabetes and driving: <https://www.gov.uk/diabetes-driving>. Accessed August 2024

What info is shown on the app or reader?



- The FreeStyle Libre 2 system enables the user to learn about how diet, exercise, stress, insulin, and other activities affect glucose levels
- The trend arrows show the direction that glucose is heading, supporting insulin management decisions per healthcare professionals' advice
- Optional glucose alarms¹ let the wearer know the minute their glucose is too low or too high, but people with diabetes who drive should have adequate hypo-awareness so they're not reliant on alarms

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The FreeStyle LibreLink app is only compatible with certain mobile devices and operating systems. Please check the website for more information about device compatibility before using the app. Use of FreeStyle LibreLink may require registration with LibreView. **Important information:** When starting the FreeStyle Libre 2 Plus sensor with the FreeStyle Libre 2 reader, users will not receive real-time glucose readings, even if they use the updated FreeStyle LibreLink app as their second device. Users will need to scan to get their glucose readings on both devices. Glucose alarms are only received on the device used to start the sensor.

1. Notifications will only be received when alarms are turned on and the sensor is within 6 metres unobstructed of the reading device.

Identifying patients who may be eligible

Offer FreeStyle Libre 2 to adults with T2DM on multiple daily injections if any of the following apply¹:



They have recurrent hypoglycaemia or severe hypoglycaemia



They have impaired hypoglycaemia awareness



They would otherwise be advised to self-measure at least 8 times a day



They have a condition or disability (including a learning disability or cognitive impairment) that means they cannot self-monitor their blood glucose by capillary blood glucose monitoring but could use an isCGM device



Offer the FreeStyle Libre 2 system to adults with insulin-treated type 2 diabetes who would otherwise need help from a care worker or healthcare professional to monitor their blood glucose.

Do check local guidance as it may vary in your locality. For example, Health Technology Wales guidance states that FreeStyle Libre 2 is indicated for use in anyone on insulin therapy.

T2DM=type 2 diabetes mellitus; isCGM=intermittently scanned continuous glucose monitoring.

1. NICE NG28 available at: <https://www.nice.org.uk/guidance/ng28/resources/type-2-diabetes-in-adults-management-pdf-1837338615493>.

How to initiate the Libre 2 system

OPTION 1

Self-learning:

Allows people with diabetes to get started in their own time, at home.

OPTION 2

HCP-led training:

Use resources on our website to assist you to get people with diabetes started.

OPTION 3

Live online training:

Saves you time as it's delivered by an Abbott trainer.

OPTION 4

In-person training:

Face-to-face group sessions delivered as required by an Abbott trainer.

Having identified suitability for FreeStyle Libre 2, follow local pathways.

A dedicated website helps you easily get people with diabetes started on the Libre 2 system. Simply choose 1 of the 4 options that best fits their needs.

NEXT STEPS

- 2 x FreeStyle Libre 2 Plus system sensors per 30 days [PIP CODE: 428-0194] – each sensor lasts for 15 days
- Supply an appropriate quantity of capillary blood glucose test strips and lancets for finger prick testing
- Sharps disposal unit
- Agree target glucose ranges in line with guidelines and individual preferences and discuss optional alarm settings
- Set a review date
- Signpost to additional information, including the Abbott Customer Careline for general enquiries

0800 170 1177

(Mon–Fri 8:00am–8:00pm,
Sat 9:00am–5:00pm)

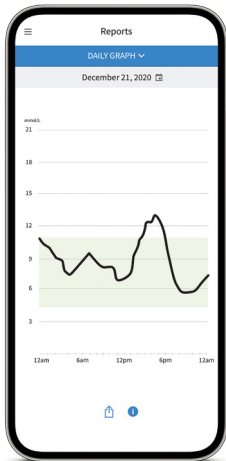
GET STARTED



Pro.FreeStyle.Abbott/uk-en/libre-hub.html

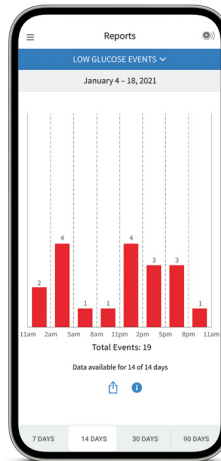
Making sense of the data

The FreeStyle Libre 2 system will show **graphs**. After five days or more of data, it will start to show patterns such as **time spent in target range**, **low glucose events**, **average glucose reading**, **daily patterns** and **estimated HbA1c***. The user can also add notes on food, insulin doses and exercise.



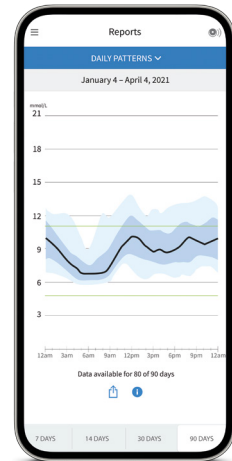
Daily Graph

Shows glucose levels for specific days



Low Glucose Events

Shows the number and times of low glycaemic events over a chosen period e.g. 7, 14, 30 and 90 days



Daily Patterns

Shows typical patterns/variation in glucose variability

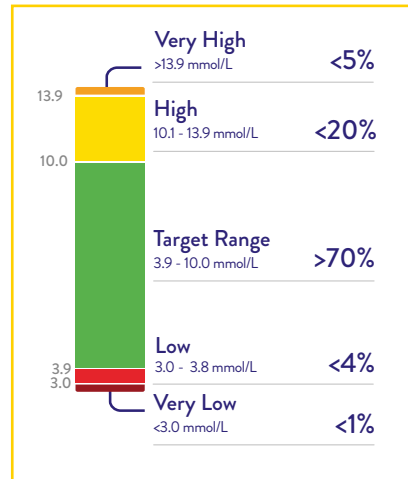
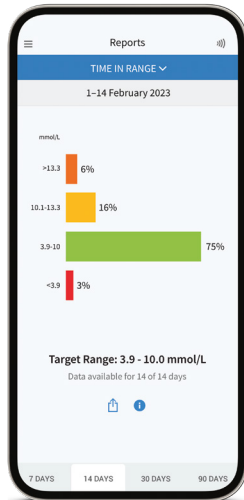
*Estimated A1c is available for FreeStyle LibreLink app users only. Images are for illustrative purposes only. Not actual patient data.

Making sense of the data:

Time in Range

TIME IN RANGE (TIR)

This shows the percentage of time glucose readings are in various ranges. The consensus for Time in Range is to aim for >70%, but for people with frailty this needs adjusting to >50%¹.



Greater time in target range is associated with reduced diabetes complications

For example, every 10% increase in Time in Range is associated with a



40% reduction in microalbuminuria²



64% reduction in retinopathy²

An individual's Time in Range report is available via the FreeStyle LibreLink app and is trackable over 7, 14, 30 and 90 day periods, as shown here.

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1. Battelino T, Danne T, Bergenstal RM, et al. *Diabetes Care*. (2019);42(8):1593-1603. 2. Beck RW et al. *Diabetes Care* 2018;42:400-405.

Consultation: Validate data and review Time in Range

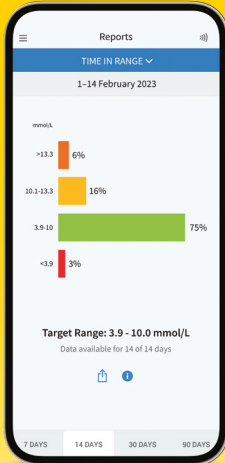


VALIDATE THE DATA

- Number of days of sensor wear (aim for 15 days)
- How much data is captured (aim for >70% of time)
 - Are there any gaps in data?
 - If using the app, is the user closing the app?
 - If using the reader, is the user scanning at least once every 8 hours?
- Confirm insulin regimen, current dosing, timing of injections
- Ask for permission to view their data and reinforce achievements before focusing on areas for review
- Always respect a person's data and avoid negative language:
<https://diabetesonthenet.com/diabetes-primary-care/how-find-ideal-words-consultations>



Consultation: Step 1 – Review Time in Range



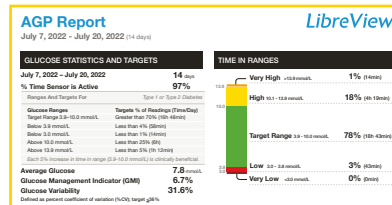
Time in Range for people with frailty should be adjusted to >50%



REVIEW TIME IN RANGE (TIR)

Overall goal is to aim for >70% of time in glucose range of 3.9-10.0 mmol/L (this reflects an HbA1c of 53 mmol/mol; each 10% increase in TIR equates to ~ 5 mmol/mol reduction in HbA1c)

- % Time in Range – what % of readings are within the target range?
 - Is the TIR appropriate for the person?
 - Are the alarms set at appropriate levels?
- % Time Below Range (TBR) – did the user have more than 4% of readings in the hypoglycaemia range?
 - Identify episodes of hypoglycaemia, are there any patterns?
- % Time Above Range (TAR) – how much time did the user spend with high glucose above the target range?
 - Identify episodes of hyperglycaemia, are there any patterns?



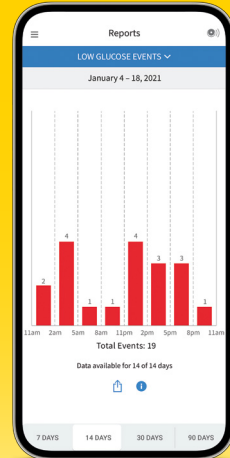
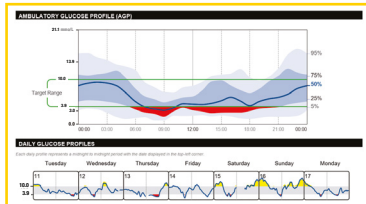
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Consultation: Step 2 – Patterns of hypoglycaemia

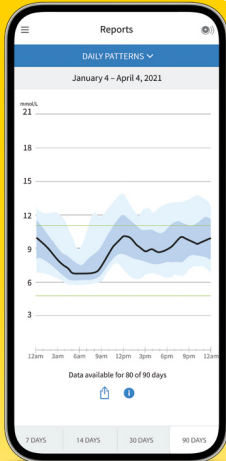


LOOK FOR PATTERNS OF HYPOGLYCAEMIA

- Are there any episodes of hypoglycaemia (below 3.9 mmol/L)?
 - What time of day are they occurring?
 - Are there any trends or patterns?
- Investigate causes of low glucose
 - Discuss what activities may have caused the trend to low glucose, for example, alcohol, exercise, fasting, stress, or sickness
 - Is there any over correction of raised glucose levels if self-adjusting insulin?
 - Is the timing of insulin doses appropriate?

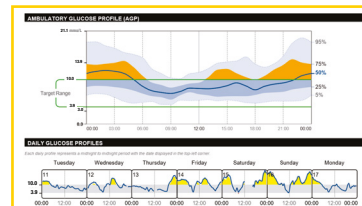


Consultation: Step 3 – Patterns of hyperglycaemia



LOOK FOR PATTERNS OF HYPERGLYCAEMIA

- Are there any episodes of hyperglycaemia (above 10.0 mmol/L) (individualise for people with frailty)
 - What time of day are they occurring?
 - Are there any trends or patterns?
- Investigate causes of high glucose
 - Discuss what may be contributing to high glucose levels
 - Have there been any missed insulin injections/glucose lowering medications?
 - Have meals been high in carbohydrate content?
 - Is the high glucose seen after low glucose, which suggests over treatment of low glucose levels?
 - Are weekends and weekdays different?

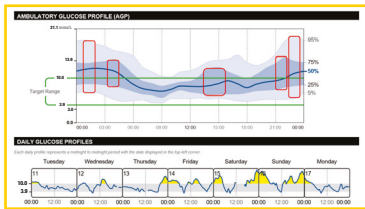


Consultation: Step 4 – Patterns of glucose variability



LOOK FOR PATTERNS OF GLUCOSE VARIABILITY

- Check for themes that may give glucose variability or reduced TIR
 - Discuss what activities/eating patterns are changing from one day to the next
 - Are the timings of insulin doses correct?
 - Is there any under/overreacting to glucose levels?
 - Is there any over treatment of hypoglycaemia?
 - Exclude any potential poor injection technique by examining injection sites for any lipohypertrophy
- A wider dark blue shaded band can indicate a need to adjust medication doses or timings
- A wider light blue shaded band is more likely to represent factors related to behaviour or lifestyle



TIR=Time in Range.

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Additional resources



FreeStyle Academy – certified bite-sized learning modules (each taking 10-15 minutes to complete). HCPs and people with diabetes can sign up to and create an account using: progress.freestylediabetes.co.uk



FreeStyle Libre 2 system tutorial videos – including LibreView, getting started, sensor application, alarms etc: progress.freestylediabetes.co.uk/public/hcp-tutorial-page-uk



Foreign language guides: www.FreeStyle.Abbott/uk-en/support/accessibility.html



Easy-read materials: www.FreeStyle.Abbott/uk-en/support/accessibility.html



DTN-UK – independent educational videos for HCPs and people with diabetes: abcd.care/dtn/education



Six steps to insulin safety – online learning to support HCPs (only) in making safe decisions around insulin use: diabetesonthenet.com/cpd-modules/the-six-steps-to-insulin-safety/



Insulin craft cards series: www.issuesandanswers.org/resource-types/clinical-craft-cards/



Injection technique resource: fit4diabetes.com/united-kingdom/



Hypoglycaemia article:
diabetesonthenet.com/diabetes-primary-care/hypoglycaemia-how-to/



Journal of Diabetes Nursing: How to interpret CGM data: diabetesonthenet.com/journal-diabetes-nursing/quick-guide-interpreting-cgm-data/



Hypoglycaemia unawareness article:
diabetesonthenet.com/diabetes-primary-care/at-a-glance-factsheet-impaired-hypoglycaemia-awareness



How to use CGM guide: diabetesonthenet.com/wp-content/uploads/Milne-CGM_How-to-1.pdf

CGM=continuous glucose monitoring.
Images are for illustrative purposes only. Not actual patient.



Acknowledgements

This guide has been developed in collaboration with the following people who we would like to acknowledge and thank.



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DR PAM BROWN

GP with interest in Diabetes, Obesity & Lifestyle – Swansea Editor in Chief Diabetes Distilled Tutor, Global MSc Diabetes – University of Warwick



JANE DIGGLE

Specialist Diabetes Nurse Practitioner – College Lane Surgery Committee member of Primary Care Diabetes Society Editor in Chief for Diabetes & Primary Care Journal



DR SARAH DAVIES

GP Partner, Woodlands Medical Centre – Cardiff Clinical Director for Diabetes Primary Care for Cardiff & Vale UHB Diabetes UK Clinical Champion Committee member of Primary Care Diabetes Society

FreeStyle Libre 2

The #1 CGM* used worldwide¹



Easy for patients.²
Easy for you³



Real-time glucose readings
sent right to your patients'
smartphone^{4,5}



Clinically proven to
decrease HbA1c and
increase Time in Range⁶⁻⁸

Visit Pro.FreeStyle.Abbott for more information

Images are for illustrative purposes only. Not actual patient or data.
CGM=continuous glucose monitoring.

*FreeStyle Libre 2 flash glucose monitoring is continuous glucose monitoring system

1. Data on file, Abbott Diabetes Care, Inc. Based on the number of users worldwide for the FreeStyle Libre portfolio compared to the number of users for other leading personal use sensor-based glucose monitoring systems. **2.** Haak, T. *Diabetes Ther* (2017): <https://doi.org/10.1007/s13300-016-0223-6>. **3.** Campbell, F. *Pediatr Diabetes* (2018): <https://doi.org/10.1111/pedi.12735>. **4.** The FreeStyle LibreLink app is only compatible with certain mobile devices and operating systems. Please check the website for more information about device compatibility before using the app. Use of FreeStyle LibreLink may require registration with LibreView. **5.** Glucose readings are automatically displayed in the app only when the smartphone and sensor are connected and in range. **6.** Leelarathna, L. *N Engl J Med*. (2022): DOI: 10.1056/NEJMoa2205650. **7.** Bolinder, J. *Lancet* (2016): [https://doi.org/10.1016/S0140-6736\(16\)31535-5](https://doi.org/10.1016/S0140-6736(16)31535-5). **8.** Yaron, M. *Diabetes Care* (2019): <https://doi.org/10.2337/dc18-0166>.

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