

**Olga Gómez Ramón.**

Advanced Practice Nurse in Diabetes.
Family and Community Specialist Nurse.
Xarxa Sanitària, social i docent de Santa Tecla.

**Ángeles Álvarez Hermida.**

Advanced Practice Nurse in Diabetes. Family and Community
Specialist Nurse. Centro de Salud Goya (Madrid, Spain).



Glucose Monitoring:

New Functionalities and Frequently Asked Questions in T2DM

Continuous glucose monitoring (CGM) systems have revolutionized the management of type 2 diabetes mellitus (T2DM), offering precise tools to optimize glycemic control and reduce complications. Their early implementation, supported by recent evidence, demonstrates significant clinical and economic benefits (1-2).

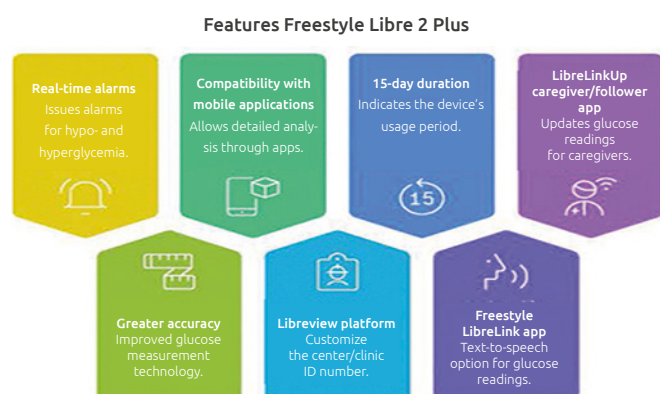
Currently, devices such as the **Freestyle Libre 2 Plus** and the **Dexcom One+** offer innovative tools that facilitate therapeutic decision-making and improve the quality of life for people with diabetes.

NEW FUNCTIONALITIES IN CONTINUOUS GLUCOSE MONITORING (CGM)

Advances in CGM systems have allowed for the incorporation of features that improve measurement accuracy and make them easier for people with diabetes to use. Among the main new features of the two **most widely used devices in T2DM** are:

1. Freestyle Libre 2 Plus (3)

The Freestyle Libre 2 Plus sensor has incorporated key improvements:



2. Dexcom One+ (4)

The **Dexcom One+** is an evolution within the Dexcom One system line and incorporates the following improvements:

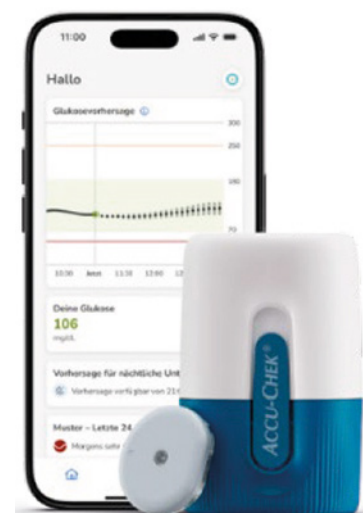


3. CGM Sensors Pending Commercialization in Spain

Currently, there are new additions to the use of CGM systems for people with type 2 diabetes mellitus in Spain. »

FEATURE	DESCRIPTION
Hypoglycemia Prediction	Notifies of "low glucose soon" within 30 minutes, customizable.
2-Hour Prediction	Glucose values displayed in a graph after 1 hour of CGM data.
Nighttime Hypoglycemia Prediction	Probability of low glucose at night and the period of highest risk. Normal: < 30% (green). High: between 30% and 60% (yellow). Very High: > 60% (red).
Pattern Detection	Detects recurrent glucose events, ordered by risk.
Weekly Summary	Summary of patterns detected in the previous week, sent every Monday.
Sensor and Transmitter	All-in-one unit.
Real-Time CGM	Sensor sends a glucose value to the app every 5 minutes.
Duration	14 days of use.
Value Modes	Trend Mode and Therapy Mode (requires calibration).
Warm-up	1 hour.
App	Accu-Chek Smart Guide Predict and Accu-Chek Smart Guide for Android and iOS.
Data Visualization Platform for Health care Professionals	ROCHE diabetes care platform.

TABLE 1



Smartphone nicht im Lieferumfang van Accu-Chek enthalten.

THE INCORPORATION OF CGM TECHNOLOGY INTO CLINICAL PRACTICE IS A KEY STEP TOWARDS MORE EFFECTIVE AND PERSON-CENTERED DIABETES CARE, OPTIMIZING HEALTH OUTCOMES IN TYPE 2 DIABETES MELLITUS CONTROL

» 3.1 Accu-chek SmartGuide (5)

This is the first continuous glucose monitoring system to incorporate predictive algorithms (*Table 1*).

3.2 GlucoMen® iCan (6)

GlucoMen® iCan is a CGM system indicated for measuring glucose in interstitial fluid in patients aged 2 years and older.

The main characteristics of the GlucoMen® iCan system are (*Table 2*):

FAQ FROM CLINICAL PRACTICE

Despite the evident benefits of CGM, questions arise among health care professionals and people with diabetes regarding its use and applicability. Some of the most common questions are:

1. Does the use of CGM completely replace capillary blood glucose measurement?

Although the accuracy of these devices has improved significantly, capillary blood glucose should be checked in certain situations, such as suspected hypoglycemia or when the person's symptoms do not match the sensor reading.

2. Does the use of CGM improve glycemic control? (7)

Evidence suggests that CGM use reduces glycemic variability,

improves glycated hemoglobin (HbA1c), and decreases the risk of hypoglycemia, especially in patients with unstable control.

3. For what tests do I need to remove the sensor?

Most sensors must be removed before tests that involve radiation (X-rays, MRI, CT scans) or high-frequency electrotherapy (diathermy) because their correct functioning after exposure is not guaranteed. In the case of X-rays, if the area to be radiated is not the sensor area, it is not necessary to remove it.

4. Is it possible to reuse it once the diagnostic test is finished?

No, once the sensor has been removed, either due to falling off or for clinical reasons, it cannot be reused. You will need to start a new sensor.

5. Can I practice swimming or scuba diving using CGM?

Depending on the sensor type, FreeStyle Libre 2 Plus can be submerged up to 1 meter for 30 minutes, and Dexcom One+ supports 2.4 meters depth for 24 hours (for other sensors, check the user manual).

6. Does the sensor deactivate when passing through the metal detector at the airport?

We should always review the user manual for our CGM. In the case of FreeStyle Libre 2 Plus, it states that some fu- »

FEATURE	DESCRIPTION
Sensor Lifespan	15 days, guaranteed for > 99% of sensors.
Waterproof Rating	IP28 (2 hours, 2.5 m depth).
Adhesive	Hypoallergenic, free of IBOA, phthalates, latex, and colophony.
System Components	Sensor and transmitter, single-use applicator, iCan App, iCan Reach App.
Data Transmission	Automatic via Bluetooth every 3 minutes.
App Compatibility	iOS and Android.
App Alerts	Customizable.
Remote Monitoring (Caregiver)	iCan Reach App, with customizable viewing and alerts.

TABLE 2



- » II-body airport scanners include X-rays or millimeter-wave radiation to which the sensor cannot be exposed. The effect of these scanners has not been evaluated, and exposure to them can damage the sensor or cause it to show inaccurate results. You should request another type of screening to avoid having to remove the sensor. If you choose to go through a full-body scanner, you will need to remove your sensor. The sensor can be exposed to electrostatic discharges and common electromagnetic interference, including that from airport metal detectors. The reader can be left on when passing through such detectors.

In the case of the Dexcom ONE+ sensor, for passing through a metal detector arch or an advanced imaging technology (AIT) body scanner, you can also ask for a wand detector check, a full-body pat-down, or a visual inspection. You should request a visual inspection of any Dexcom ONE+ component instead of placing it in the luggage X-ray machine.

7. If I bleed when inserting the sensor, what should I do?

It depends. When a sensor is inserted, a small trauma occurs, which sometimes causes minor bleeding, and in these cases, it is not necessary to change the sensor. In case of major or persistent bleeding, the sensor should be removed, the insertion area cleaned and disinfected, and a new sensor placed in another validated area. **D**

CONCLUSIONS

The incorporation of CGM technology into the routine clinical practice is a key step towards more effective and person-centered diabetes care, optimizing health outcomes in type 2 diabetes mellitus control. However, its use should not only be individualized but also accompanied by a structured therapeutic education program to achieve these objectives.



REFERENCES:

1. Aijan RA, Battelino T, Cos X, Del Prato S, Philips JC, Meyer L, Seufert J, Seidu S. Continuous glucose monitoring for the routine care of type 2 diabetes mellitus. *Nat Rev Endocrinol*. 2024 Jul;20(7):426-440. doi: 10.1038/s41574-024-00973-1. Epub 2024 Apr 8. PMID: 38589493.
2. Grunberger G, Sherr J, Allende M, Blevins T, Bode B, Handelsman Y, Hellman R, Lajara R, Roberts VL, Rodbard D, Stec C, Unger J. American Association of Clinical Endocrinology Clinical Practice Guideline: The Use of Advanced Technology in the Management of Persons With Diabetes Mellitus. *Endocr Pract*. 2021 Jun;27(6):505-537. doi: 10.1016/j.eprac.2021.04.008. PMID: 34116789
3. Freestyle Libre 2 Plus | Abbott. <https://www.freestyle.abbott/es-es/productos/freestyle-libre-2-plus.html>. Accedido 27 de febrero de 2025.
4. «Nuevo sensor Dexcom ONE+». Dexcom, <https://www.dexcom.com/es-es/dexcom-one-plus>. Accedido 27 febrero de 2025.
5. App Accu-Chek SmartGuide. https://www.accu-chek.com/sites/g/files/papvje226/files/document/dms/Spanish/User%20Manual%20Accu-Chek%20Smart-Guide%20App/SmartGuide-app-man-html-es_2024-06/index/appaccu-chek/appaccu-chek.html. Accedido 26 de febrero de 2025.
6. GlucoMen iCan – The 3rd Generation CGM Is Here! <https://glucomen-ican.com/>. Accedido 27 de febrero de 2025.
7. American Diabetes Association Professional Practice Committee; 7. Diabetes Technology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Supplement_1): S146–S166. <https://doi.org/10.2337/dc25-S007>