

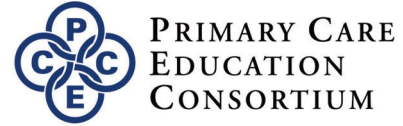
WHAT'S NEW & AROUND THE CORNER IN CGM

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HENRY FORD HEALTH, DIV OF ENDOCRINOLOGY, DIABETES BONE DISORDERS, DETROIT, MI



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IN COLLABORATION WITH



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The AAFP has reviewed What's New and Around the Corner in CGM and deemed it acceptable for AAFP credit. Term of approval is from December 20, 2024, to December 19, 2025. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Following this CME activity, participants will have the opportunity to earn an additional two Prescribed credits for participation in each Translation to Practice® exercise. Information on Translation to Practice® will be shared within the activity.

WANT TRANSLATION TO PRACTICE (T2P™) CREDIT?

- You may qualify for an additional 2.0 credits IF you make a commitment to change your practice behaviors in your post-presentation survey. In that survey, you will be asked
 - to commit to changes in your practice behaviors
 - to specify what those changes are, and
 - to provide your name and email address.
- If you do not enter the required data mentioned above, you will not be eligible for T2P credit, so please include all the information!
- Approximately six weeks later, we will contact you, asking if those changes were made, along with some additional questions. If you have completed those changes, you will be eligible to complete the survey and generate a certificate for the additional credits.

CME INFORMATION FOR NPS AND PAS

The American Association of Nurse Practitioners Certification Program and the American Nurses Credentialing Center accept AAFP Prescribed Category 1 Credits™.

The American Academy of PAs accepts AAFP Prescribed Category 1 Credits™.

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DISCLOSURES

- **David Kruger, NP**, discloses that she serves as a speaker, consultant and researcher for Abbott Diabetes and Insulet; as a speaker and researcher for Tandem; as a consultant and researcher for Embecta; as a researcher for Sequel; as a consultant and speaker for CeQur and Lilly; as a speaker for Dexcom and Novo Nordisk; and as a consultant for MannKind, Medtronic, Ascentia, Arcor, Structural Therapeutics, and Proteomics.
- **Austin Ulrich, PharmD**, medical writer, and **Michael Hanak, MD**, CME Reviewer, have no disclosures to report.
- All relevant financial relationships have been mitigated.

LEARNING OBJECTIVES

- **Describe** new and emerging technologies in CGM use, including OTC CGM devices and continuous glucose-ketone monitoring.
- **Interpret** CGM data such as the AGP accurately to inform changes in diabetes therapy and optimize glucose control.
- **Initiate** CGM in patients with diabetes who would benefit from enhanced glucose monitoring and better blood glucose control, including those with insulin delivery devices.
- **Engage** members of the health care team in collaborating on diabetes management and to help patients receive CGM.

EXISTING MODELS OF CARE ARE NOT ENOUGH



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The majority of diabetes care transpires between visits, outside of clinical encounters.¹

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A1C alone may not be enough

Using A1C alone may not be very helpful to patients for understanding their diabetes.²

A1C, glycosylated hemoglobin or HbA1C; BGM, blood glucose monitoring.
1. Ombroff P et al. Diabetes Spectr. 2003;16(1):22-30. © AACZ Consensus Guidelines. Endocr Pract. 2003;9(1):107-130.
2. Adelman P et al. Eur Endocrinol. 2018;14(1):24-29.

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BGM has notable limitations³
It only measures blood glucose at a single point in time.

A1C, glycosylated hemoglobin or HbA1C; BGM, blood glucose monitoring.
1. Crafton S et al. *Diabetes Care*. 2003;26(11):22-30. 2. AACE Consensus Guidelines. *Endocr Pract*. 2020;26(1):107-130.
3. Abdallah P et al. *Eur Endocrinol*. 2016;14(1):24-29.

Suboptimal A1C Only 50% achieve an A1C <7%¹ THREE MONTHS TURNS INTO ALMOST THREE YEARS!

Therapeutic Inertia

The failure to initiate or intensify therapy when therapeutic goals are not reached

Suboptimal glucose management for ~2.9 years
due to therapeutic inertia^{4,5}



Economic burden
Substantial clinical and economic burden⁴

A1C, glycosylated hemoglobin or HbA1C.
1. Ford DE et al. *N Engl J Med*. 2007;356(22):2233-2241. 2. Whittle K et al. *Diabetes Care*. 2013;36(11):3411-3417. 3. Ziemer DC et al. *Diabetes Educ*. 2005;31(4):564-571.
4. Ali SH et al. *Adv Ther*. 2020;7:1989-992.

CGM EARLY CAN SUPPORT GLYCEMIC OUTCOMES



Reaching & sustaining A1C targets in the first year of treatment, showed long-term health improvements, even when control waned over time.¹

A1C, glycosylated hemoglobin or HbA1C; T2D, type 2 diabetes.
1. Lallavegaon N et al. *Diabetes Care*. 2019;42:426-428.

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Managing glucose levels early in diagnoses reduces chance of complications.¹

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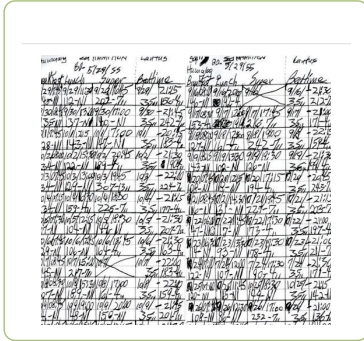


People with T2D that achieve targets soon after diagnosis are more likely to keep glucose in target range.¹

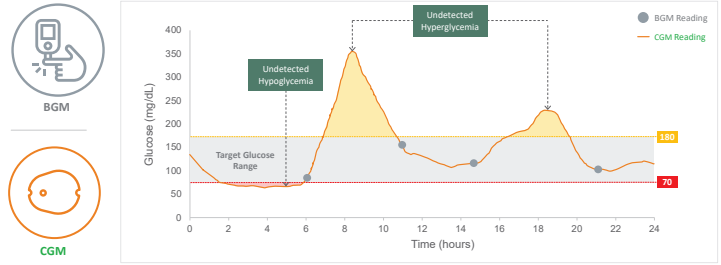
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LIMITATIONS OF BLOOD GLUCOSE MONITORING

SELF MONITORING OF BLOOD GLUCOSE

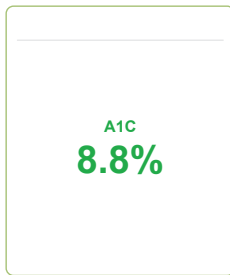


GLYCEMIC PATTERNS ARE OFTEN MISSED BY BLOOD GLUCOSE MONITORS (BGM) BUT SEEN WITH CONTINUOUS GLUCOSE MONITORING (CGM)



BGM, blood glucose monitoring; CGM, continuous glucose monitoring.

IS A1C STILL THE GOLD STANDARD OF CARE ?



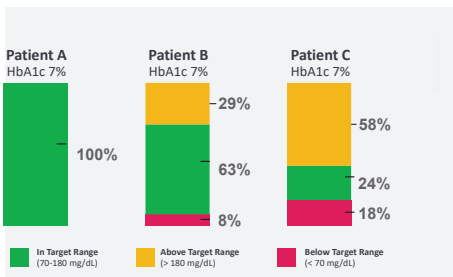
AN INDIVIDUAL'S GLYCEMIC CONTROL AND TREATMENT PLAN SHOULD NOT BE DEFINED BY HBA1C ALONE

- ▶ May underestimate or overestimate glucose control (eg, HbA1c of 7% could represent good, fair, or poor control)
- ▶ Does not indicate extent or timing of hypoglycemia or hyperglycemia
- ▶ Does not reveal glycemic variability
- ▶ Limited utility for insulin dosing decisions
- ▶ Unreliable in patients with hemolytic anemia, hemoglobinopathies, iron deficiency, or who are pregnant
- ▶ Correlation with mean glucose can vary across races

HbA1c, %	mg/dL	95% CI
5	97	(76 to 120)
6	126	(100 to 152)
7	154	(123 to 185)
8	183	(147 to 217)
9	212	(170 to 249)
10	240	(193 to 282)
11	269	(217 to 314)
12	298	(240 to 347)

Beck RW, et al. Diabetes Care. 2017;40:994-999; Nathan DM, et al. Diabetes Care. 2008;31:1473-1478.

EQUAL A1C VALUES DO NOT EQUATE TO EQUAL TIME IN RANGE (TIR)



A1c provides only an average of a patient's glucose history.

TIR provides more actionable information than A1c alone and should complement A1c.

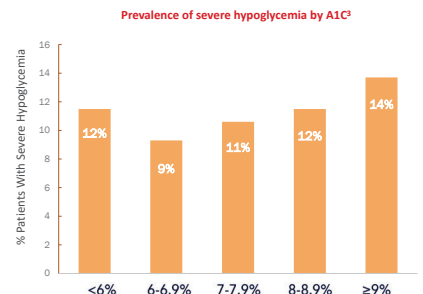
Each 5% increase in TIR is clinically beneficial.

A1C DOES NOT REVEAL GLYCEMIC VARIABILITY OR EXTENT OR TIMING OF HYPOGLYCEMIA¹



11% of individuals with T2D reported ≥1 severe hypoglycemic event.²

9094 persons with Type 2 diabetes (ages 30-77 years) in Kaiser Diabetes Registry on glycemic-lowering medication surveyed.

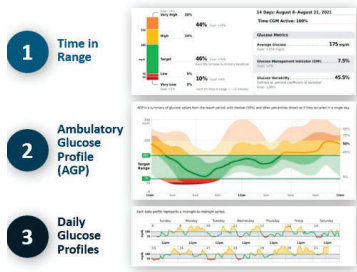


1. Nathan DM et al. Diabetes Care. 2008;31(8):1473-1478. 2. Lipska KJ et al. Diabetes Care. 2013;36(11):3535-3542. 3. Hirsch, I.F. et al. Diabetic Medicine. 2015;38(12):1637-1642.

SEVERE HYPOGLYCEMIA DEFINED AS LOSS OF CONSCIOUSNESS OR REQUIREMENT OF ASSISTANCE FOR TREATMENT

Battelino T, Danne T, Bergenstal RM, et al. Clinical targets for continuous glucose monitoring data interpretation: recommendations from the International Consensus on Time in Range. Diabetes Care. 2019;42:1593-1603

WHAT ABOUT CONTINUOUS GLUCOSE MONITORING ?



ElSayed NA, et al. Diabetes Care. 2023;46(Suppl):S97-S110

ADA STANDARDS OF CARE

Diabetes devices should be offered to people with diabetes (A)*

* Grade A: Clear evidence from well-conducted, generalizable randomized controlled trials that are adequately powered; † Grade B: Supportive evidence from well-conducted cohort studies; ‡ Grade C: Supportive evidence from poorly controlled or uncontrolled studies.
 ADA, American Diabetes Association; AID, automated insulin delivery; CGM, continuous glucose monitoring; CSII, continuous subcutaneous insulin infusion; IS-CGM, intermittently scanned continuous glucose monitoring; MDI, multiple daily injection; T1D, type 1 diabetes.
 * 1. American Diabetes Association. Diabetes Care. 2024;47(Suppl. 1):S1-S4. 2. American Diabetes Association. Diabetes Care. 2024;47(Suppl. 1):S126-S144. 3. American Diabetes Association. Diabetes Care. 2024;47(Suppl. 1):S111-S125.

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Diabetes devices should be offered to people with diabetes (A)*

Real-time CGM (A)* or IS-CGM (B)† should be offered for diabetes management in adults with diabetes on basal insulin, MDI or CSII

Use of CGM is beneficial and recommended for individuals at high risk for hypoglycemia. (A)*

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Use of CGM is beneficial and recommended for individuals at high risk for hypoglycemia. (A)*

Initiation of CGM, CSII, or AID early, even at diagnosis, in the treatment of diabetes can be beneficial (C)‡

Initiation of CGM should be offered to people with T1D early in the disease, even at time of diagnosis. (A)*

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NEW: ADA STANDARDS OF CARE 2025!!

7.16 Consider using rtCGM and isCGM in adults with type 2 diabetes treated with glucose-lowering medications other than insulin to achieve and maintain individualized glycemic goals. The choice of device should be made based on the individual's circumstances, preferences, and needs. B

ADA TABLE 7.4: CGM DEVICE INTERFERING SUBSTANCES

Medication	Systems affected	Effect
Acetaminophen >4 g/day Any dose	Dexcom G6, Dexcom G7 Medtronic Guardian	Higher sensor readings than actual glucose
Ascorbic acid (vitamin C), >500 mg/day	FreeStyle Libre 14 day, FreeStyle Libre 2, FreeStyle Libre 3	Higher sensor readings than actual glucose
Ascorbic acid (vitamin C), >1,000 mg/day	FreeStyle Libre 2 Plus, FreeStyle Libre 3 Plus	Higher sensor readings than actual glucose
Hydroxyurea	Dexcom G6, Dexcom G7, Medtronic Guardian	Higher sensor readings than actual glucose
Mannitol (intravenously or as peritoneal dialysis solution)	Senseonics Eversense	Higher sensor readings than actual glucose
Sorbitol (intravenously or as peritoneal dialysis solution)	Senseonics Eversense	Higher sensor readings than actual glucose

REMEMBER YOUR KNOWLEDGE QUESTION?



The HbA1c is the gold standard of care and used to guide the Health Care Provider in managing diabetes.

- A. Looking at an A1c value advises the HCP when the person with diabetes is having low BG.
- B. The A1c provides enough data to determine how well the person's diabetes is controlled.
- C. The A1c provides a 30- to 90-day retrospective average of blood glucose data.
- D. The A1c and the GMI are interchangeable.

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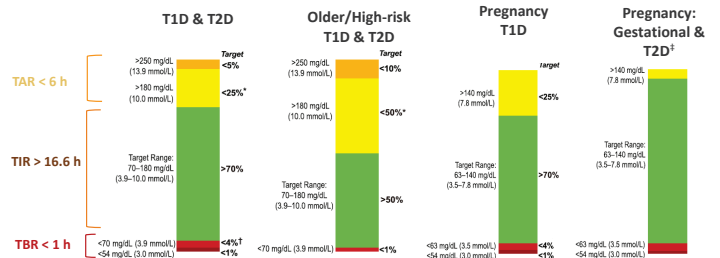
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INITIATION OF CONTINUOUS GLUCOSE MONITORING IS LINKED TO IMPROVED GLYCEMIC CONTROL AND FEWER CLINICAL EVENTS IN TYPE 1 AND TYPE 2 DIABETES IN THE VETERANS HEALTH ADMINISTRATION

	CGM initiation versus self-monitoring glucose	
	Type 1 diabetes	Type 2 diabetes
12-month change in HbA1c	n = 4,930 vs n = 3,263	n = 15,292 vs n = 28,467
CGM use leads to more reduction in 12-month HbA1c		
B (95% CI):	-0.26 (-0.33, -0.19) ↓	-0.35 (-0.42, -0.36) ↓
Clinical events over 12 months	n = 5,015 vs n = 3,815	n = 15,706 vs n = 29,912
I. Hypoglycemia admissions		
CGM use leads to reduced hypoglycemia admissions in T1D		
HR (95% CI):	0.69 (0.48, 0.98) ↓	0.93 (0.74, 1.16)
II. Hyperglycemia admissions		
CGM use leads to reduced hyperglycemia admissions in T2D		
HR (95% CI):	0.83 (0.65, 1.06)	0.87 (0.77, 0.99) ↓
III. All hospitalizations		
CGM use leads to reduced hospitalizations		
HR (95% CI):	0.75 (0.63, 0.93) ↓	0.89 (0.82, 0.87) ↓

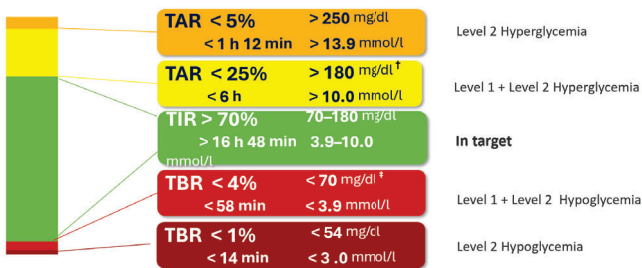
Reaven PD, et al. Diabetes Care. 2023;46:854-863.

TIME RANGE TARGETS



*Includes percentage of values >250 mg/dL
 †Includes percentage of values <54 mg/dL
 ‡Percentages for time in range have not been included because there is limited evidence in this area; more research is needed
 Battellino T, et al. Diabetes Care 2019;42:1593-1603.

CGM TIR TARGETS FOR MOST INDIVIDUALS WITH T1D AND T2D*

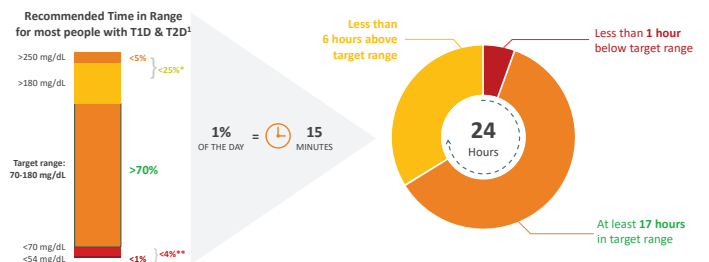


TAR = time above range; TIR = time in range; TBR = time below range.

*High risk individuals have different targets—eg, patients with complications or comorbidities and patients who are pregnant
 †Includes percentage of values >250 mg/dL
 ‡Includes percentage of values <54 mg/dL

Battellino T, et al. Diabetes Care 2019;42:1593-1603.

TIME IN RANGE (TIR) TARGETS AND HOURS PER DAY^{1,2}



*Includes percentage of values >250 mg/dL **Includes percentage of values <54 mg/dL
 1. Battellino T et al. Diabetes Care. 2019;42(8):1593-1603. 2. American Diabetes Association. Diabetes Care 2021;44(Suppl. 1):S73-S84.

THE AGP REPORT

1 Metrics, Values, Goals
Summary of values to help assess the overall quality of glucose management

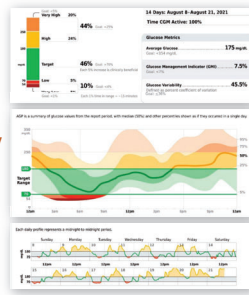
1 Time in Range

2 AGP Profile
Shows all values as if collected over a single 24-h period. Shows variability in the mean glucose and patterned areas of highs and lows.

2 Ambulatory Glucose Profile (AGP)

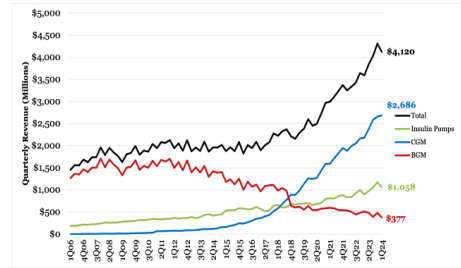
3 Daily Views
Shows daily values -- helpful in determining causes of patterns or exceptions to usual patterns.

3 Daily Glucose Profiles



ElSayed NA, et al. Diabetes Care. 2023;46(Suppl):597-610.

Overall Diabetes Technology Market (1Q06 - 1Q24)



Developed by Kelly Close of Close Concerns. Reprinted with Permission July 2024

CGM DEVICES

	FreeStyle Libre 14 day tscGM / 2 tscGM / 3/3plus tscGM/Libre 2 plus/Go	Dexcom G6 / G7 tscGM/Stelo	Guardian Sensor 3 & 4 (pump integrated) and Guardian Connect (standalone) tscGM/Simplera	Eversense 90-Day / E3 tscGM
Approved labeling	Replaces fingersticks for treatment decisions; no fingerstick calibration required	Replaces fingersticks for treatment decisions; no fingerstick calibration required	4: Replaces fingersticks for treatment decisions; no fingerstick calibration required 3: Requires ≥ 2 fingerstick calibrations/d	Replaces fingersticks for treatment decisions; requires ≥ 2 fingerstick calibrations/d
Age	≥ 18 y / ≥ 4 y / ≥ 4 y 2 / 3: Use during pregnancy by women with T1D, T2D, or GDM	≥ 2 y G 7: Use during pregnancy by women with T1D, T2D, or GDM Stelo	Guardian 4: ≥ 7 y Guardian 3: ≥ 14 y Connect: ≥ 14 y Simplera: ≥ 7 y	≥ 18 y
Medicare coverage	Yes / Yes / Yes/No	Yes / Yes/No	Sensor 3: Yes / 780 G: Yes / Connect: No	Yes
Wear length	14 d / up to 15 d / up to 15 d/15d	10 d / 10 d + 12 h 15.5 days	7 d / up to 7 d	90 d / 180 d
Warm-up	1 h	2 h / up to 30 min	2 h	24 h after implementation
Alarms	No / Yes / Yes/no	Yes/no	Yes	Yes
Data display/Integration	Reader; Android and iOS Apps 2 / 3: Libre 2 plus for integration with AID systems	Receiver; Android and iOS Apps; smartwatches Integrated tslim X2 pump, Omnipod 5	Android and iOS Apps Guardian 3: 530G, 670G, 770G Guardian 4: 780G	Android and iOS Apps, smartwatches
Form	Disposable transmitter integrated with sensor patch	G6: Transmitter (3-mo use) separate from sensor/G7 integrated	Transmitter (rechargeable every 6 days) separate from sensor	Transmitter (lasts 1 year, charge daily) separate from sensor
Accuracy	11.4% / 9.3% / 7.9%	9.0% / 8.2%	9.6% / 9.0% to 11%	8.5% to 9.5%

AID, automated insulin delivery; FDA, US Food and Drug Administration; GDM, gestational diabetes mellitus; T1D, type 1 diabetes; T2D, type 2 diabetes.

MOST RECENTLY FDA-APPROVED CGM DEVICES

	FreeStyle Libre 2 Plus/3 Plus	G7	Guardian™ Connect Simplera™	Eversense® 965
Approved labeling	Replaces fingersticks for treatment decisions; no fingerstick calibration required	Replaces fingersticks for treatment decisions; no fingerstick calibration required;	Replaces fingersticks for treatment decisions; no fingerstick calibration required	Replaces fingersticks for treatment decisions; requires calibration once a week after first 2 weeks
Age	≥ 2 y 2/3 Plus: T1D, T2D, GDM, pregnancy	≥ 2 y G7: T1D, T2D, GDM, pregnancy	Connect: ≥ 14 y T1D, T2D Simplera™: ≥ 7 y	≥ 18 y T1D, T2D
Medicare coverage	Yes / Yes	Yes	780G/Guardian™ 4: Yes Simplera (awaiting Laundry Coverage)	Yes
Wear length	14 / up to 15 d	10 d + 12 h	7 d / up to 7 d	365 d
Warm-up	1 h	Up to 30 min	2 h	24 h after implementation
Alarms	Yes / Yes	Yes	Yes	Yes
Data display/Integration	Reader; Android and iOS Apps Integrated: Libre 2 plus + tslim X2 and Omnipod 5 insulin pump; Libre 3 plus + Beta Bionics insulin pump	Reader; Android and iOS Apps; smartwatches	Android and iOS Apps Guardian™ 4: 780G Simplera: For MDI and connects with Inpen. Use with Smart phone	Android and iOS Apps, smartwatches
Form	Integrated sensor-transmitter	Integrated sensor-transmitter	Transmitter (rechargeable) separate from sensor Integrated sensor-transmitter	Smart transmitter (charge daily) separate from sensor

All data in this table has been taken from the manufacturer's product websites Accessed September 13, 2024.
AID, automated insulin delivery; CGM, continuous glucose monitoring; FDA, US Food and Drug Administration; GDM, gestational diabetes mellitus; T1D, type 1 diabetes.

OVER-THE-COUNTER CGM FOR USE IN NON-INSULIN REQUIRING TYPE 2 DIABETES

	Stelo	FS Rio
Wear Period	15.5 Days	15 Days
Warm Up	30 Min	1 Hour
Reading Interval	15 Min *	1 Min
Glucose Range	70-250	40-400
Alarms	No	No
Finger sticks	None	None
Placement	Back of arm	Back of arm
Insurance Coverage	No	No
Reader	No	No

*Looks at data every minute, reports every 5 Min

OVER-THE-COUNTER CGM FOR PEOPLE WITHOUT DIABETES: LINGO

- Designed to track blood glucose levels for those without diabetes
- Provides insights to help users understand how the body reacts to food, exercise, stress
- Worn on the back of the arm for up to 14 days
- Sends data to a smart phone app, which provides personalized coaching and insights, glucose graph, food and activity logs
- Over the counter, no prescription needed, not covered by insurance
- Available in two-week, four-week, or three-month plans

NEW PARTNERSHIP

- Abbott is building a new CGM to be integrated exclusively in the Medtronic insulin pump.
- Stay tuned for updates.

WHAT IS PROFESSIONAL CGM?

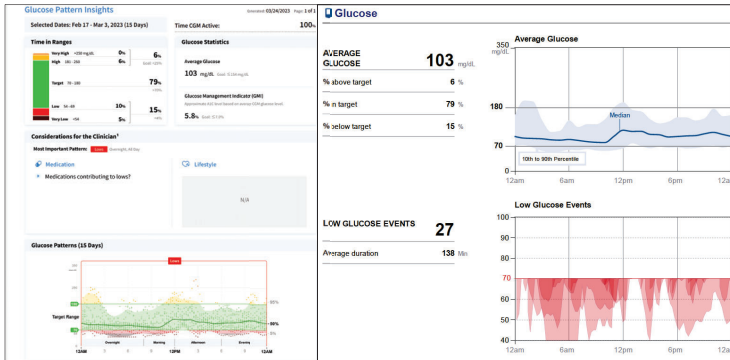
- New to practice and no CGM
- Does not qualify for Personal CGM
- Wear 10/14 days
- Blinded and unblinded
- Clinic owns the sensor, must have compatible phone for unblinded only

Reimbursement

- 95250—Professional CGM**
 - Ambulatory CGM of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours
 - Physician or other qualified health care professional (office) provided equipment, sensor placement, hook-up, calibration of monitor, patient training, removal of sensor, printout of recording
 - Do not bill more than once per month
- 95251—CGM Interpretation**
 - Ambulatory CGM of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; analysis, interpretation, report
 - Do not bill more than once per month

Libre Professional CGM no longer available after December 31st 2024

WHAT TO LEARN FROM PROFESSIONAL CGM RESULTS

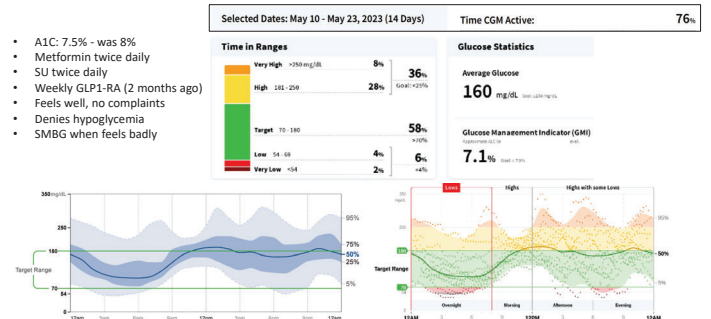


INTERPRETING CGM DATA

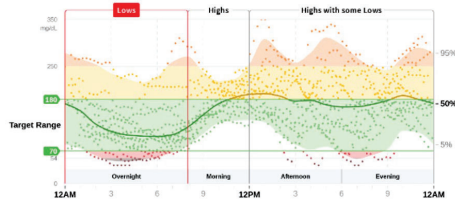
WHAT WOULD YOU DO WITH THIS DATA?

- A1C: 7.5% - was 8%
- Metformin twice daily
- SU twice daily
- Weekly GLP1-RA (2 months ago)
- Feels well, no complaints
- Denies hypoglycemia
- SMBG when feels badly

WHAT WOULD YOU DO BASED ON THIS INFORMATION?



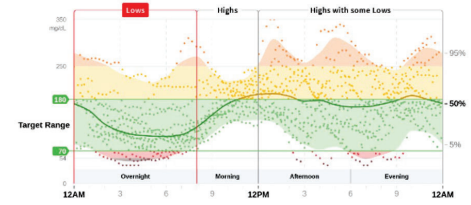
STEPS TO QUICKLY REVIEW AND INTERPRET DATA



STEPS TO QUICKLY REVIEW AND INTERPRET DATA

1) Riding the Waves

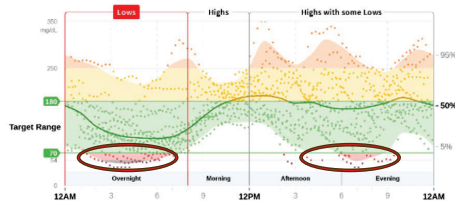
- a) Have patient explain what they see



STEPS TO QUICKLY REVIEW AND INTERPRET DATA

1) Riding the Waves

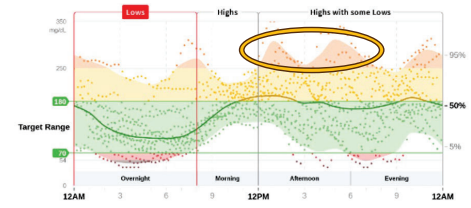
- a) Have patient explain what they see
- b) Identify hypoglycemia



STEPS TO QUICKLY REVIEW AND INTERPRET DATA

1) Riding the Waves

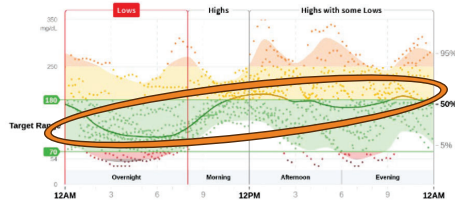
- a) Have patient explain what they see
- b) Identify hypoglycemia
- c) Identify hyperglycemia



STEPS TO QUICKLY REVIEW AND INTERPRET DATA

1) Riding the Waves

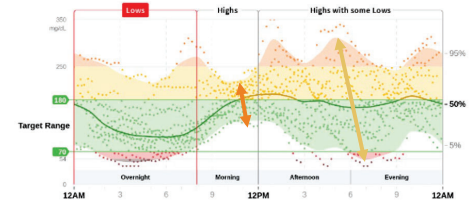
- a) Have patient explain what they see
- b) Identify hypoglycemia
- c) Identify hyperglycemia
- d) Patterns?



STEPS TO QUICKLY REVIEW AND INTERPRET DATA

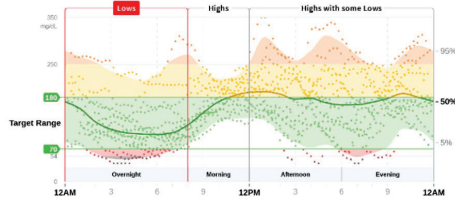
1) Riding the Waves

- a) Have patient explain what they see
 - b) Identify hypoglycemia
 - c) Identify hyperglycemia
 - d) Patterns?
- ### 2) Peaks and Valleys
- a) Variability



STEPS TO QUICKLY REVIEW AND INTERPRET DATA

- Riding the Waves
 - Have patient explain what they see
 - Identify hypoglycemia
 - Identify hyperglycemia
 - Patterns?
- Peaks and Valleys
 - Variability
- Compare with previous



4 WEEKS LATER

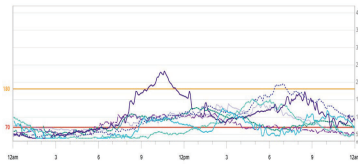
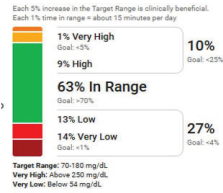
- Patient requests increase in Tirzepatide

Present Insulin Program

Lantus 20 units BID
Aspart 8 units twice daily
Tirzepatide 2.5 mg
A1c 8.0

CGM DATA IS REVIEWED:

What do you see?
What are next steps?



4 MORE WEEKS LATER

Before increasing tirzepatide, work with patient to eliminate low BG

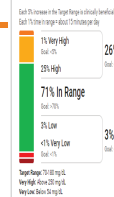
Present Diabetes Program:

Insulin
Lantus 8 units BID
Aspart 4 units twice daily
Tirzepatide 2.5 mg
GMI 6.8

Based On CGM Data and GMI:
Insulin stopped:
Tirzepatide increased to 5.0 mg

TYPE 2 DIABETES

- 62-year-old male
- Giargine 30 units twice daily
- Aspart 12 units three times daily before meals
- 6ft 252 lbs., BMI 34.2
- A1c 8.0%
- Started on 2.5 MG of Tirzepatide
- Insulin lowered 30%
- Using Personal CGM

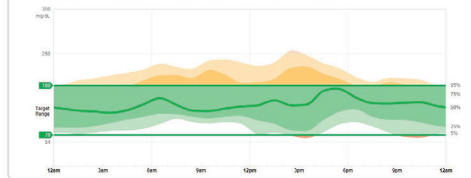


DOB: July 10, 1961

Glucose Metrics	
Average Glucose	144 mg/dL
GMI	6.8%
Coefficient of Variation	33.0%
Time CGM Active	100.0%

Ambulatory Glucose Profile (AGP)

AGP is a summary of glucose values from the report period, with median (50%) and other percentiles shown as if they occurred in a single day.



CMS EXPANDED CGM COVERAGE IN 2024

2023 changes effective April 16, 2023¹

Meet at least one of the following criteria:

- Treated with insulin
- OR
- Documented history of problematic hypoglycemia
 - Recurrent level 2 hypoglycemic events (glucose <54 mg/dL)
 - Despite 2 or more attempts to adjust medication or modify treatment plan
 - OR
 - A history of one level 3 hypoglycemic event (glucose <54 mg/dL)
 - Requiring third-party assistance for treatment of hypoglycemia

As long as the beneficiary uses any insulin, the beneficiary is eligible for CGM coverage.

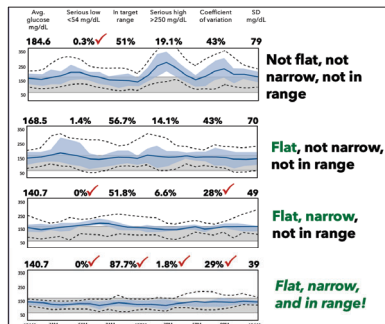


CGM, continuous glucose monitoring; CMS, Centers for Medicare & Medicaid Services. 1. Centers for Medicare & Medicaid Services. Accessed March 2, 2023. <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lclid=33822>.

IDEAL GLUCOSE PROFILE

Desired Targets*¹

- Time in range: >70%
- Time below range: <70 mg/dL: <4% <54 mg/dL: <1%
- Time above range: >180 mg/dL: <25% >250 mg/dL: <5%
- Coefficient of variation: <36%



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CODING FOR REIMBURSEMENT

CGM Devices

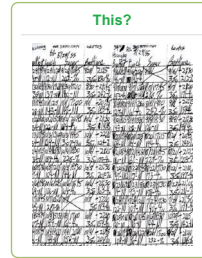
- **95249—Personal CGM Start-up and Training**
 - Ambulatory CGM of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours
 - Patient provided equipment, sensor placement, hook-up, calibration of monitor, patient training, printout of recording
 - Bill only once while the patient owns the device
- **95250—Professional CGM**
 - Ambulatory CGM of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours
 - Physician or other qualified health care professional (office) provided equipment, sensor placement, hook-up, calibration of monitor, patient training, removal of sensor, printout of recording
 - Do not bill more than once per month
- **95251—CGM Interpretation**
 - Ambulatory CGM of interstitial tissue fluid via a subcutaneous sensor for a minimum of 72 hours; analysis, interpretation, report
 - Do not bill more than once per month

Evaluation and Management

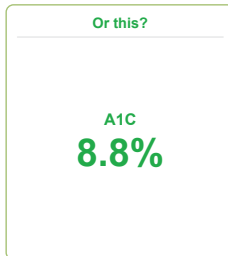
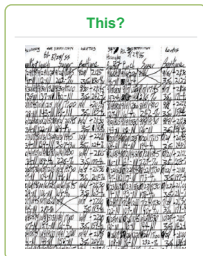
- **99212-99215**
 - For an established patient in a non-facility or health setting; appropriate code to be determined by office
 - Note: Bill E/M codes if office visit services were performed in addition to procedure codes

American Association of Clinical Endocrinologists. CPT Codes 94259, 94250, and 95251. <https://www.aace.com/practice-management/cpt-codes-95249-95250-and-95251>
 USDHHS, CMS. Physician Fee Schedule Search. <https://www.cms.gov/apps/physician-fee-schedule/search/search-criteria.aspx>
 Walker TA. Fam Pract Manag. 2007; Jan;14(1):21-25.

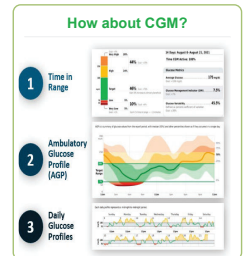
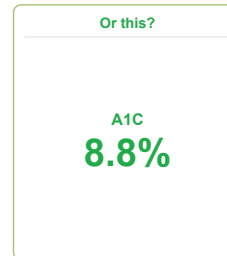
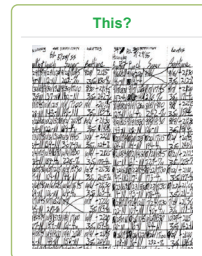
WHAT IS YOUR BEST TOOL FOR YOUR PRACTICE?



WHAT IS YOUR BEST TOOL FOR YOUR PRACTICE?



WHAT IS YOUR BEST TOOL FOR YOUR PRACTICE?



WHAT IS DIABETIC KETOACIDOSIS (DKA)?

- **Diabetic ketoacidosis is a serious complication of diabetes.**
- **The condition develops when the body can't produce enough insulin. Insulin plays a key role in helping sugar — a major source of energy for muscles and other tissues — enter cells in the body.**
- **Without enough insulin, the body begins to break down fat as fuel. This causes a buildup of acids in the bloodstream called ketones. If it's left untreated, the buildup can lead to diabetic ketoacidosis.**
- **Type 1 Diabetes: DKA occurs in 30-40% at diagnosis and 6-8% of those with established Diabetes annually**
- **Type 2 Diabetes: Less common but risk increases with age and highest in those aged 60-90.**
- **Increased risk for those on SGLT2 inhibitors**

SYMPTOMS OF DKA

Diabetic ketoacidosis symptoms often come on quickly, sometimes within 24 hours. For some, these symptoms may be the first sign of having diabetes. Symptoms might include:

- Being very thirsty
- Urinating often
- Feeling a need to throw up and throwing up
- Having stomach pain
- Being weak or tired
- Being short of breath
- Having fruity-scented breath
- Being confused

More-certain signs of diabetic ketoacidosis — which can show up in home blood and urine test kits — include:

- High blood sugar level
- High ketone levels in urine

WHAT IS AVAILABLE TODAY TO DETERMINE KETOSIS/RISK OF DKA AT HOME?

- Urine Ketone Strips
- Blood Ketone strips/meter



AROUND THE CORNER: A BIOWEARABLE: ONE SENSOR FOR GLUCOSE, KETONES

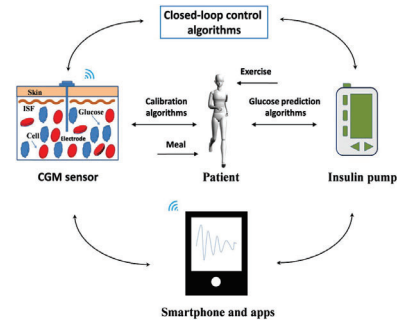
- A **first-of-its-kind dual monitoring** system that will enable people with diabetes to continuously monitor glucose and ketone levels in one sensor is under development.
- The goal is early detection of diabetic ketoacidosis, a potentially fatal condition.
- This technology, currently in development, received breakthrough device designation from the U.S. Food and Drug Administration. This designation is designed to expedite the review of innovative technologies.

ARTIFICIAL INTELLIGENCE BIOSENSORS FOR CGM

“Artificial intelligence (AI) algorithms in combination with continuous monitoring technologies have the potential to revolutionize chronic disease management. The recent innovations in both CGM and the closed loop highlight the far-reaching potential of AI biosensors for individual health care.”

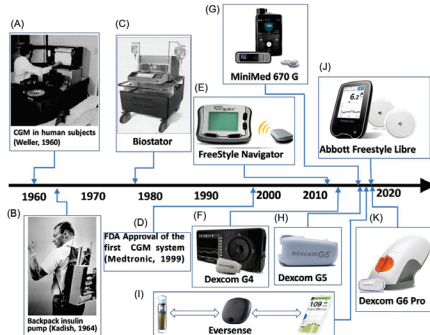
Artificial intelligence biosensors for continuous glucose monitoring, Xiaofeng Jin, Andrew Cai, Tailin Xia, Xueji Zhang, First published: 09 February 2023, <https://doi.org/10.1002/idm2.12069>

Artificial intelligence biosensors for continuous glucose monitoring: Closed-loop Control Algorithms



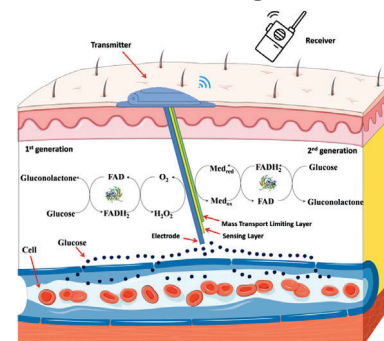
Interdisciplinary Materials, Volume: 2, Issue: 2, Pages: 290-307, First published: 09 February 2023, DOI: (10.1002/idm2.12069)

Artificial intelligence biosensors for continuous glucose monitoring : History



Interdisciplinary Materials, Volume: 2, Issue: 2, Pages: 290-307, First published: 09 February 2023, DOI: (10.1002/idm2.12069)

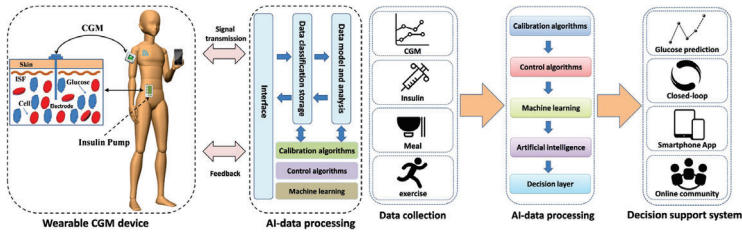
Artificial intelligence biosensors for continuous glucose monitoring



Interdisciplinary Materials, Volume: 2, Issue: 2, Pages: 290-307, First published: 09 February 2023, DOI: (10.1002/idm2.12069)

AI TECHNOLOGIES FOR CGM BIOSENSORS

Schematic Representation of AI in Diabetes Management: CGM



Interdisciplinary Materials, Volume: 2, Issue: 2, Pages: 290-307, First published: 09 February 2023, DOI: (10.1002/dm2.12069)

SUMMARY AI

- Three main applications:
 - Closed loop control algorithms
 - Glucose predictions based on CGM biosensors
 - AI Algorithms and Calibration of the CGM biosensor based on AI algorithms
- CGM Sensors can be worn up to 15 days, a calibration algorithm is required for the insulin pump after sensor change
- It is necessary for insulin pumps to take closed-loop decisions and to learn from data adaptation
- Closed-loop therapy technology is perfect embodiment of CGM and AI providing numerous clinical opportunities and technical advancements

AND A CONTINUING ISSUE

Primary Care > Diabetes

CGM Uptake Very Low for Vulnerable Diabetes Populations

— But how to achieve equitable use remains “complicated,” says expert

by Kristen Monaco, Senior Staff Writer, MedPage Today

CGM uptake very low for vulnerable diabetes populations. *MedPage Today*. <https://www.medpagetoday.com/primarycare/diabetes/113079>. Published November 22, 2024.

HEALTH DISPARITIES...

LOCATION
SOCIOECONOMIC STATUS
RACIAL/ETHNIC DISPARITIES
INSURANCE COVERAGE
TECHNOLOGICAL CHALLENGES
HEALTH LITERACY

ALL CAN IMPACT THE ACCESS AND USE OF CGM BY YOUR PATIENTS.

TELEHEALTH AND DIABETES EDUCATORS CAN HELP!

ALEPPO G, ET AL. JAMA NETW OPEN. 2023;6(12):e2338876. VRANY EA, ET AL. FRONT ENDOCRINOL (LAUSANNE). 2023;14:1083145. SHEON AI, ET AL. AMR DIABETES. 2023;72(1):KAL-PL, ET AL. DIABETES. 2023;72(SUPPL 1):POSTER 1454LB. AGARWAL S, ET AL. CUPR DIAB REP. 2022;22(7):283. AMERICAN DIABETES ASSOCIATION PROFESSIONAL PRACTICE COMMITTEE. DIABETES CARE. 2024;47(SUPPL 1):S77-S110.

SUMMARY

- A1c alone is not an appropriate actionable marker when making therapeutic changes.
- SMBG has significant limitations as well.
- Lack of symptoms does not mean patients are not experiencing dysglycemia.
- Goal of therapy is to reduce hyperglycemia without causing hypoglycemia.
- The AGP allows for visualization of patterns for HCPs, PWD, caregivers.
 - Suitable for all reading levels
 - Reduced language barrier
 - Numeracy not required
- How do you want to practice?

RESOURCE TOOLKIT:

[HTTPS://WWW.PCMG-US.ORG/TOOLKIT/NEWCGM](https://www.pcmg-us.org/toolkit/newcgm)



Links to pages devoted to the individual devices, both professional and personal, including insertion videos

Links to references used in this presentation

Links to download the deck and review the presentation (share with colleagues who can also earn additional CME credit)

Extensive cost and use data

A list of helpful resources from the ADA, diaTribe, AAFP, the Association of Diabetes Care & Education Specialists, and more

TO RECEIVE YOUR
CERTIFICATE,
PLEASE
COMPLETE THE
SURVEY AT THE
LINK BELOW OR
USE THE QR CODE
TO THE RIGHT.

[HTTPS://WWW.PCMG-
US.ORG/SURVEY/POST/NEWCGM1](https://www.pcmg-us.org/survey/post/newcgm1)

