CONTINUOUS GLUCOSE MONITORING FOR THE INTERNIST

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Adult Endocrinology

Disclosures:

- No conflict of interest

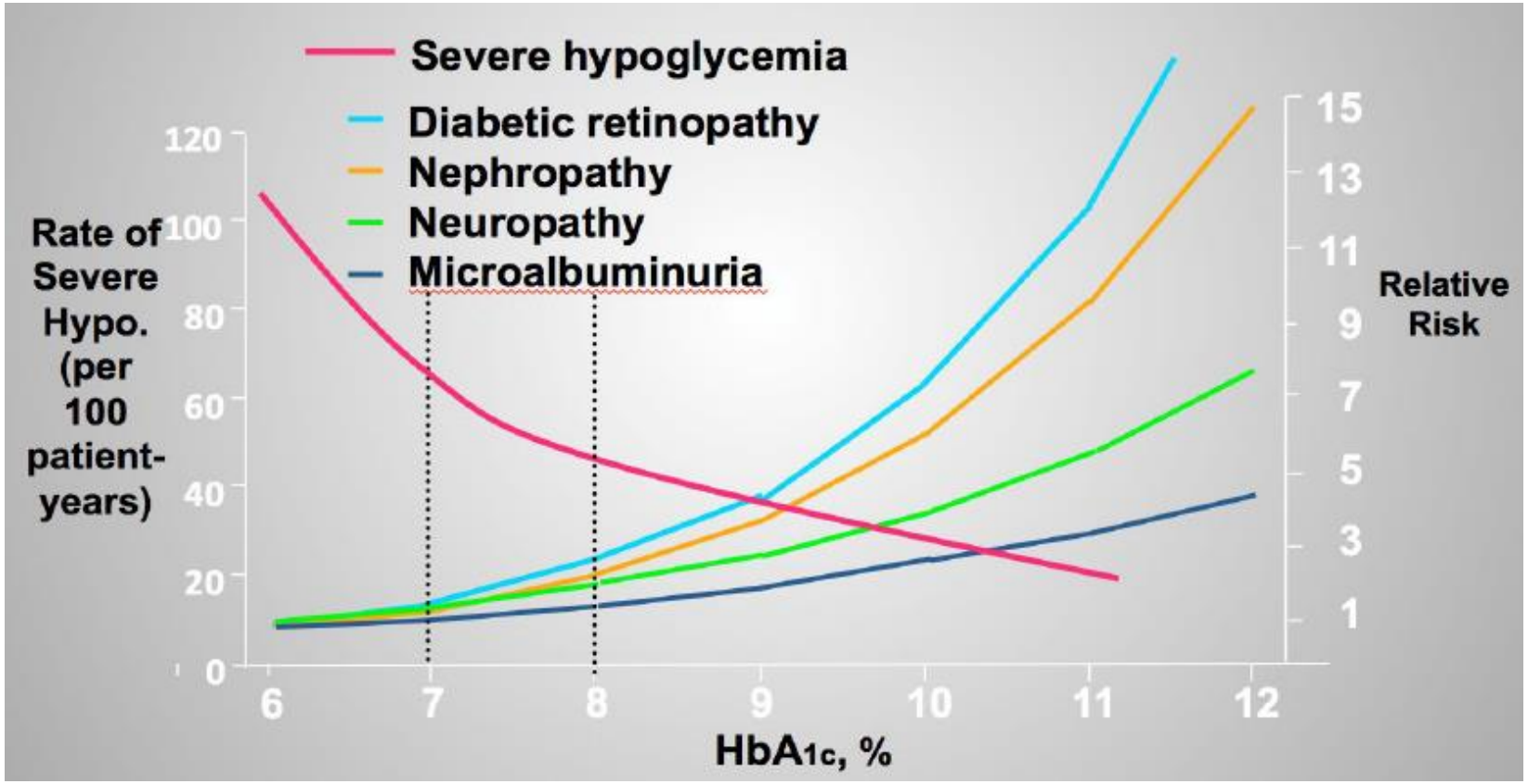
Objectives

- Is it meaningful to use diabetes technology in 2020?
- Explain how continuous glucose monitoring (CGM) works
- Explain how to interpret main aspects of AGP
- Most common and accessible alternatives in Puerto Rico
- Main differences among them
- Cases for discussion

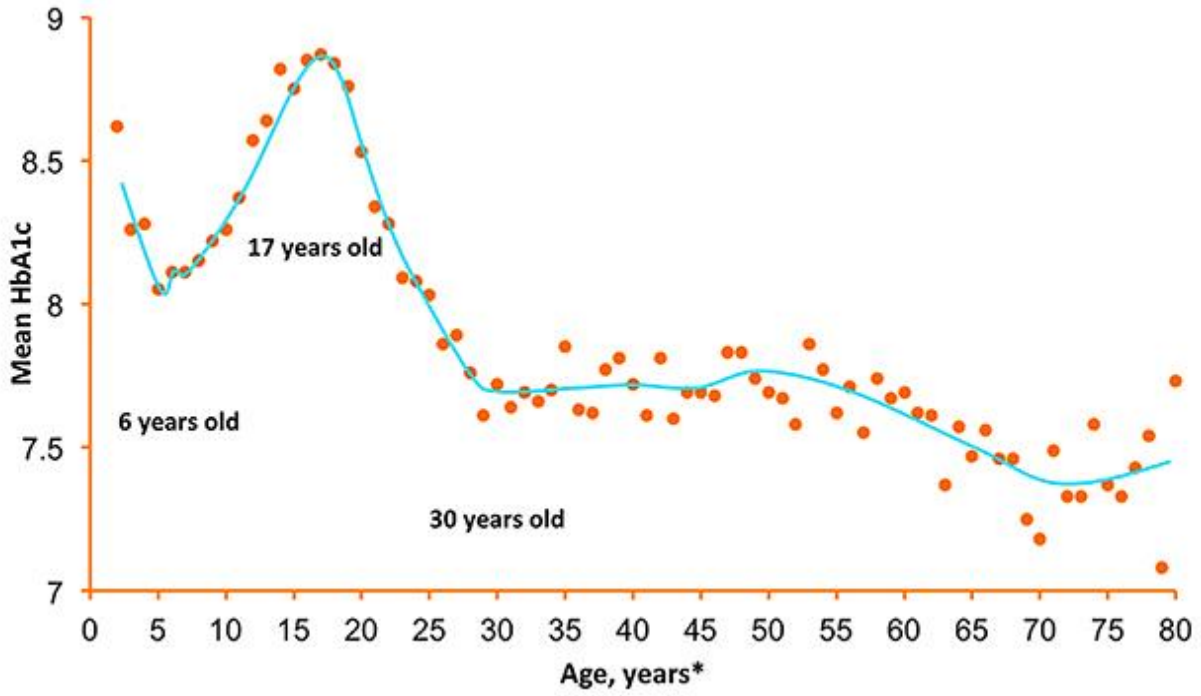
IS IT MEANINGFUL TO USE DIABETES TECHNOLOGY IN 2020?

Glucose Control and Complications (Diabetes Control and Complication Trial, DCCT)

LOWER AIC → LOWER COMPLICATION RISK



How controlled are our patients?

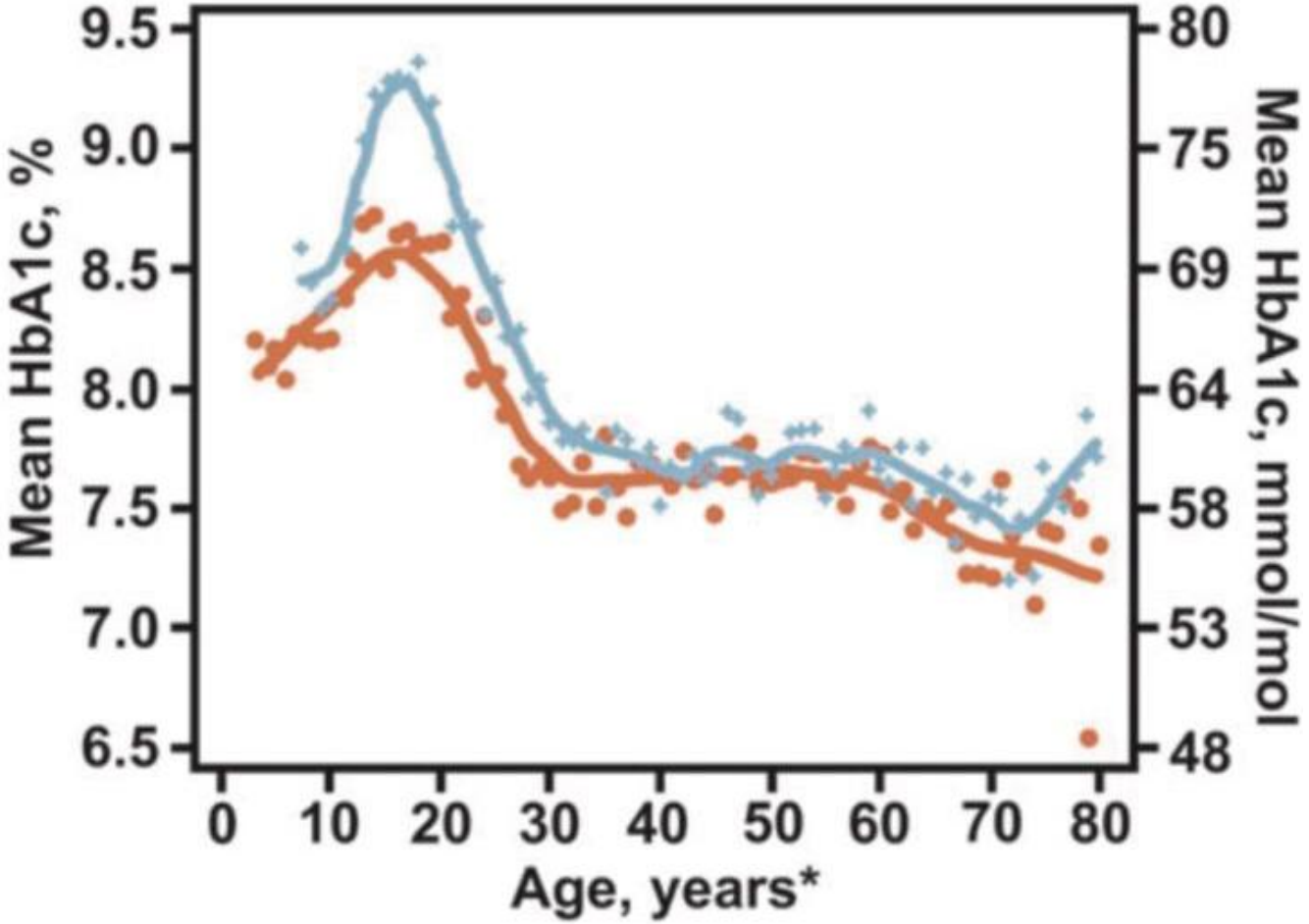


Data from 2010-2012

- The majority of young adults in their 20's do not fully achieve glycemic control until they are 30.
- Only 14 % of registrants between 18 and 25-years old met the recommended 7 % A1c level compared with 30 % of older adults.

https://myglu.org/articles/recent-findings-from-the-t1d-exchange-clinic-registry

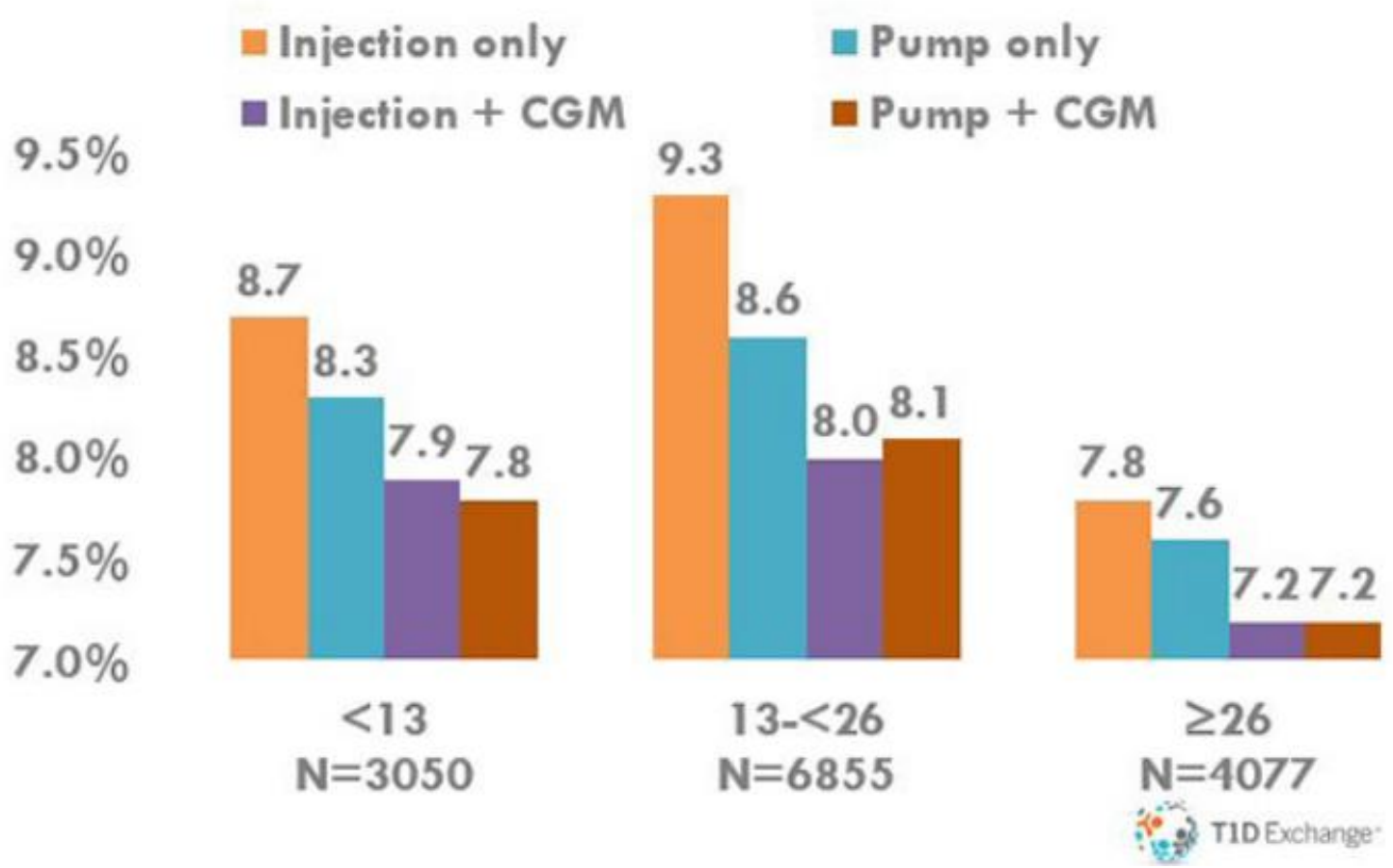
More recent data (2016-2018 cohort)



- Orange: 2010-2012
- Blue: 2016-2018

- No significant improvement in A1C despite CGM/insulin pump/diabetes technology

A1C comparison regardless of insulin delivery method



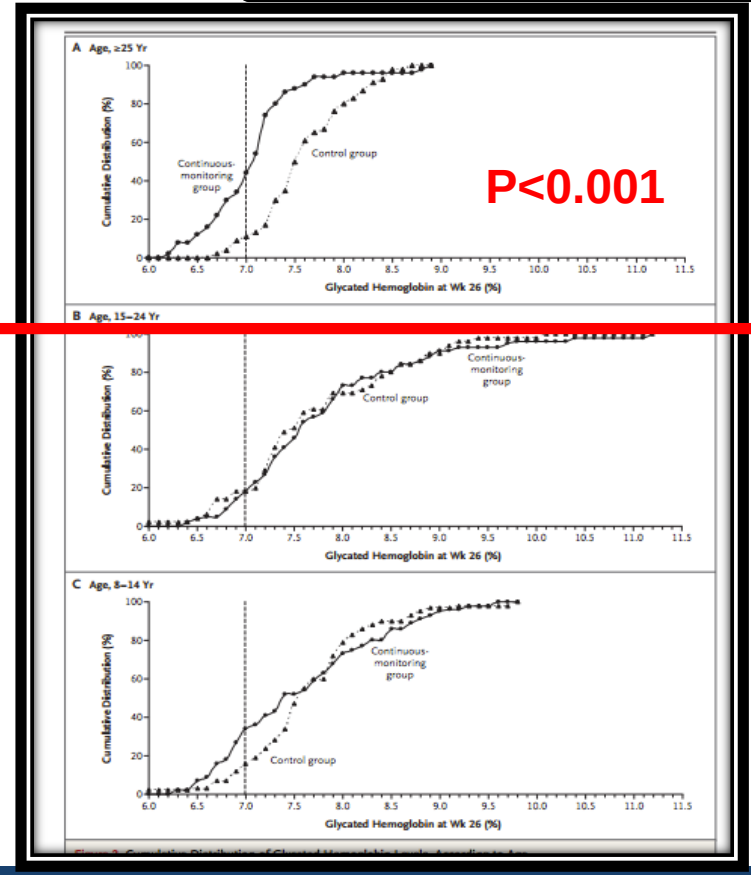
https://myglu.org/articles/recent-findings-from-the-t1d-exchange-clinic-registry

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Continuous Glucose Monitoring and Intensive Treatment of Type 1 Diabetes

The Juvenile Diabetes Research Foundation Continuous Glucose Monitoring Study Group*



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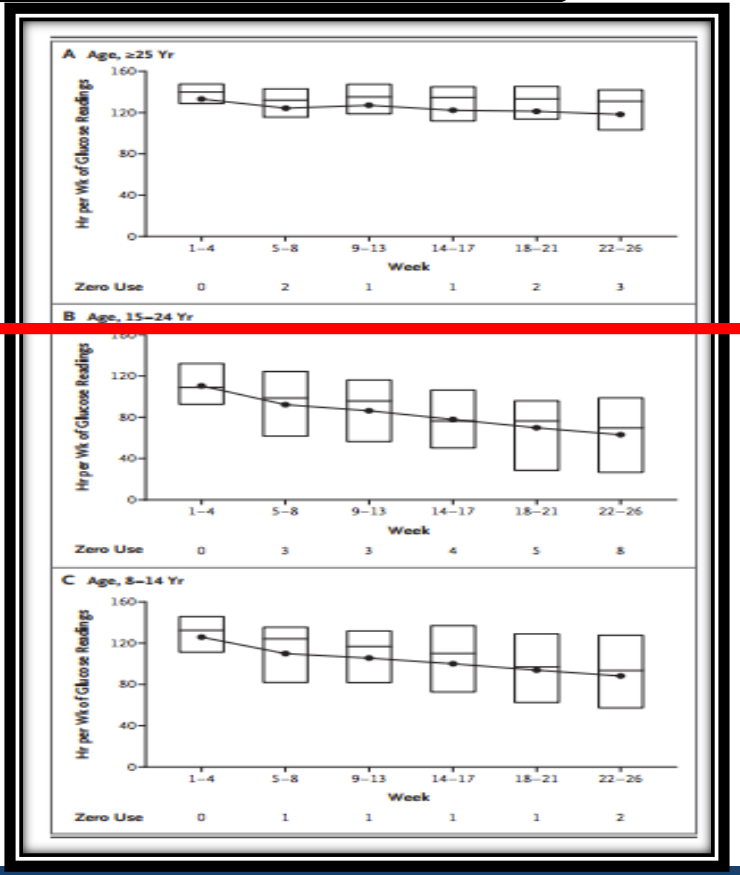
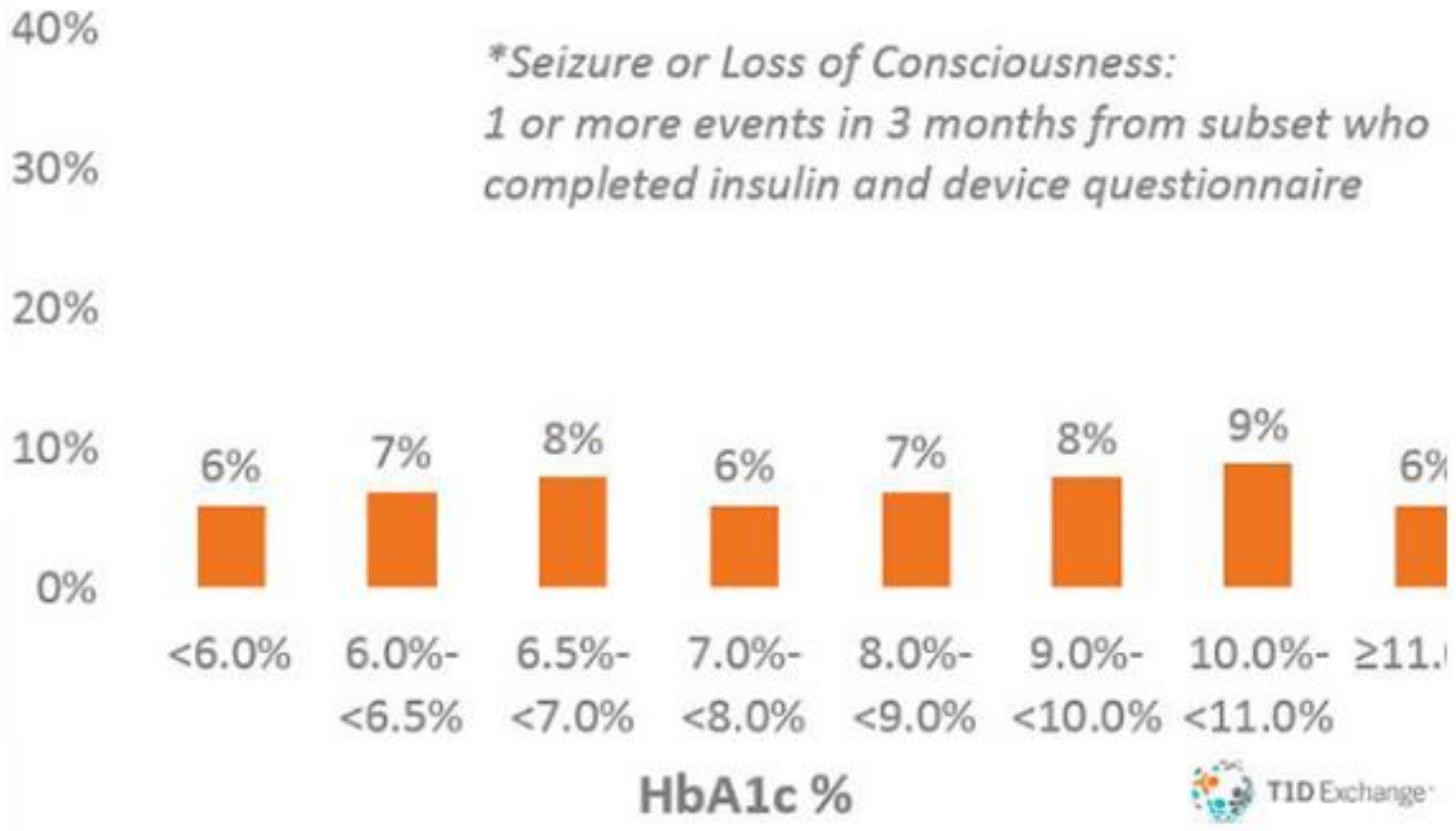


3 Month frequency of severe hypoglycemia according to A1C



https://myglu.org/articles/recent-findings-from-the-t1d-exchange-clinic-registry

HBA1C pitfalls and interpretation

Table 6.1—Estimated average glucose (eAG)

A1C (%)	mg/dL*	mmol/L
5	97 (76–120)	5.4 (4.2–6.7)
6	126 (100–152)	7.0 (5.5–8.5)
7	154 (123–185)	8.6 (6.8–10.3)
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11	269 (217–314)	14.9 (12.0–17.5)
12	298 (240–347)	16.5 (13.3–19.3)

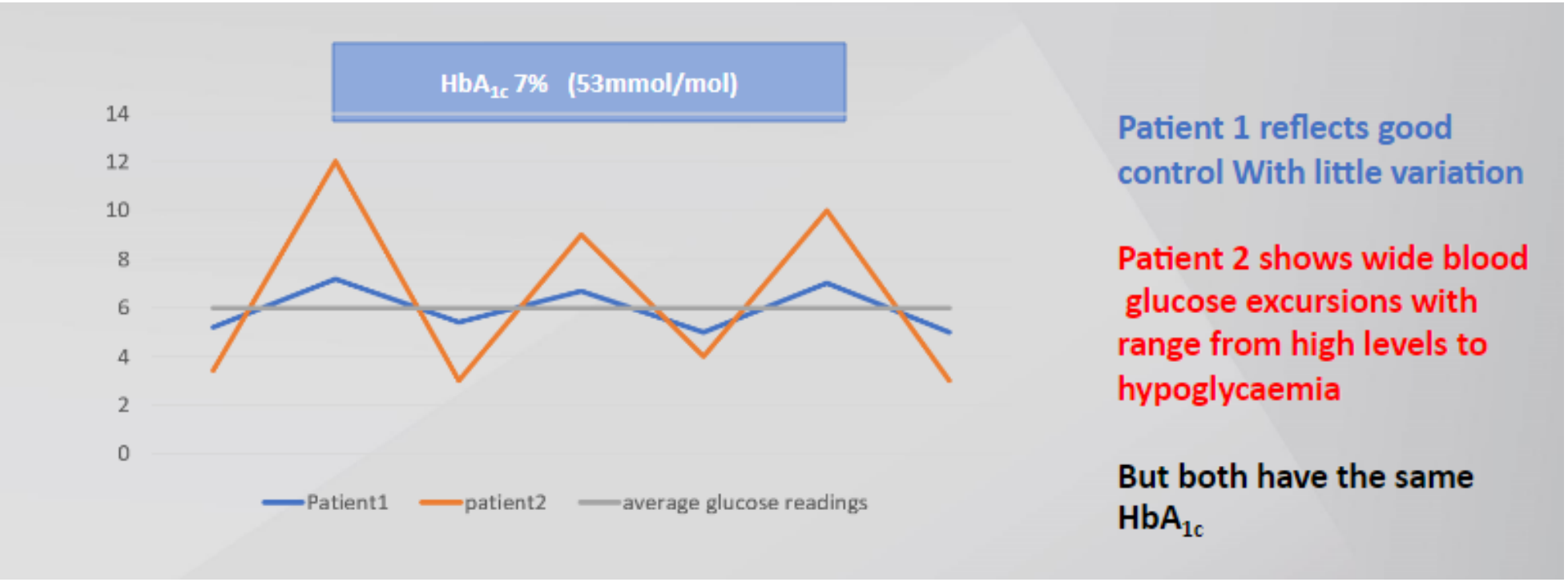
ABG of 173 mg/dl

Data in parentheses are 95% CI. A calculator for converting A1C results into eAG, in either mg/dL or mmol/L, is available at professional.diabetes.org/eAG. *These estimates are based on ADAG data of ~2,700 glucose measurements over 3 months per A1C measurement in 507 adults with type 1, type 2, or no diabetes. The correlation between A1C and average glucose was 0.92 (6,7). Adapted from Nathan et al. (6).

Inappropriately Low HbA1c	Inappropriately High HbA1c	Variable Effect on HbA1c+
• Hemolysis • Certain hemoglobinopathies • Recent blood transfusion • Acute blood loss • Hypertriglyceridemia • Drugs* • Chronic liver disease	• Iron deficiency • Vitamin B12 deficiency • Alcoholism • Uremia • Hyperbilirubinemia • Drugs*	• Fetal hemoglobin • Methemoglobin • Certain hemoglobinopathies

https://care.diabetesjournals.org/content/diacare/suppl/2019/12/20/43.Supplement_1.DC1/Standards_of_Care_2020.pdf

A1C by itself does not tell much…



Laboratory measured A1C lacks: actual Average Blood Glucose, Variability and interference with other conditions

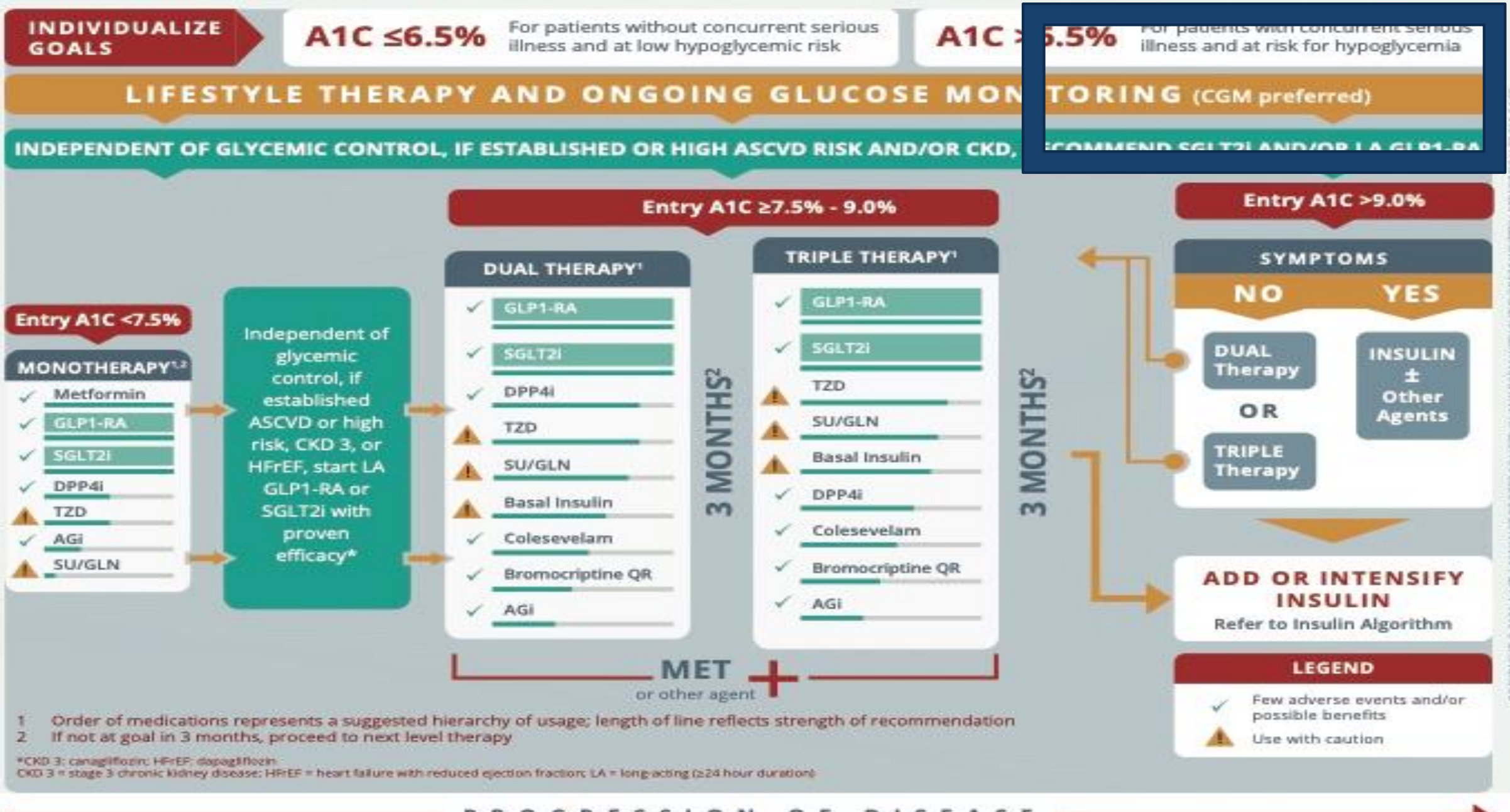
Candidates for CGM technology

- Patient is on MDI of insulin therapy
- Frequent hypoglycemia, nocturnal hypoglycemias and/or unawareness
- Increased glucose variability (discrepancy between FBG, SMBG, A1C)
- Variations in physical activity
- Willing to use CGM in a daily basis
- Willing to assist to a certified diabetes educator for training
- Children
- Seeking insulin pump therapy or already on it
- To document the need for intensifying therapy

2020 AACE Recommends

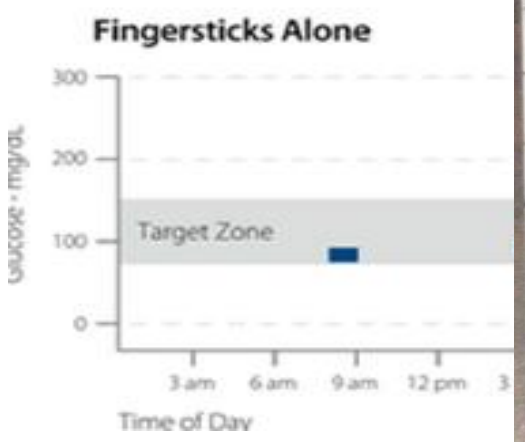
- Professional CGM devices (those owned by the clinician's practice) should be considered in patients:
  - who have not reached their glycemic target after 3 months of the initial antihyperglycemic therapy
  - those who require therapy that is associated with risks of hypoglycemia (SU, insulin)
- Personal CGM devices (those owned by the patient) should be considered for:
  - patients who are on intensive insulin therapy (3 to 4 injections/day or on insulin pump)
  - history of hypoglycemia unawareness
  - recurrent hypoglycemia

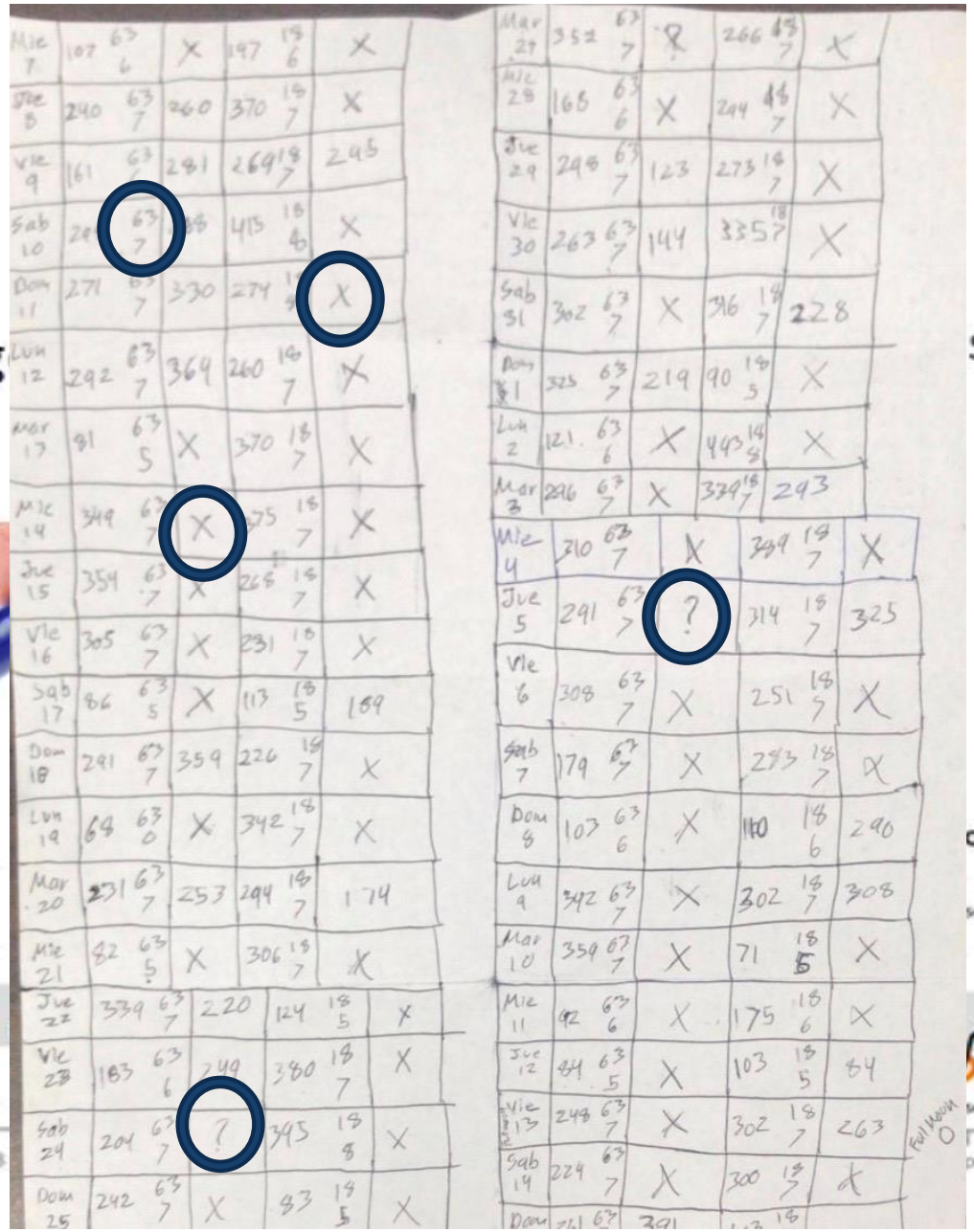
GLYCEMIC CONTROL ALGORITHM



HOW CONTINUOUS GLUCOSE MONITORING (CGM) WORKS

Traditional “fing
glucose testing



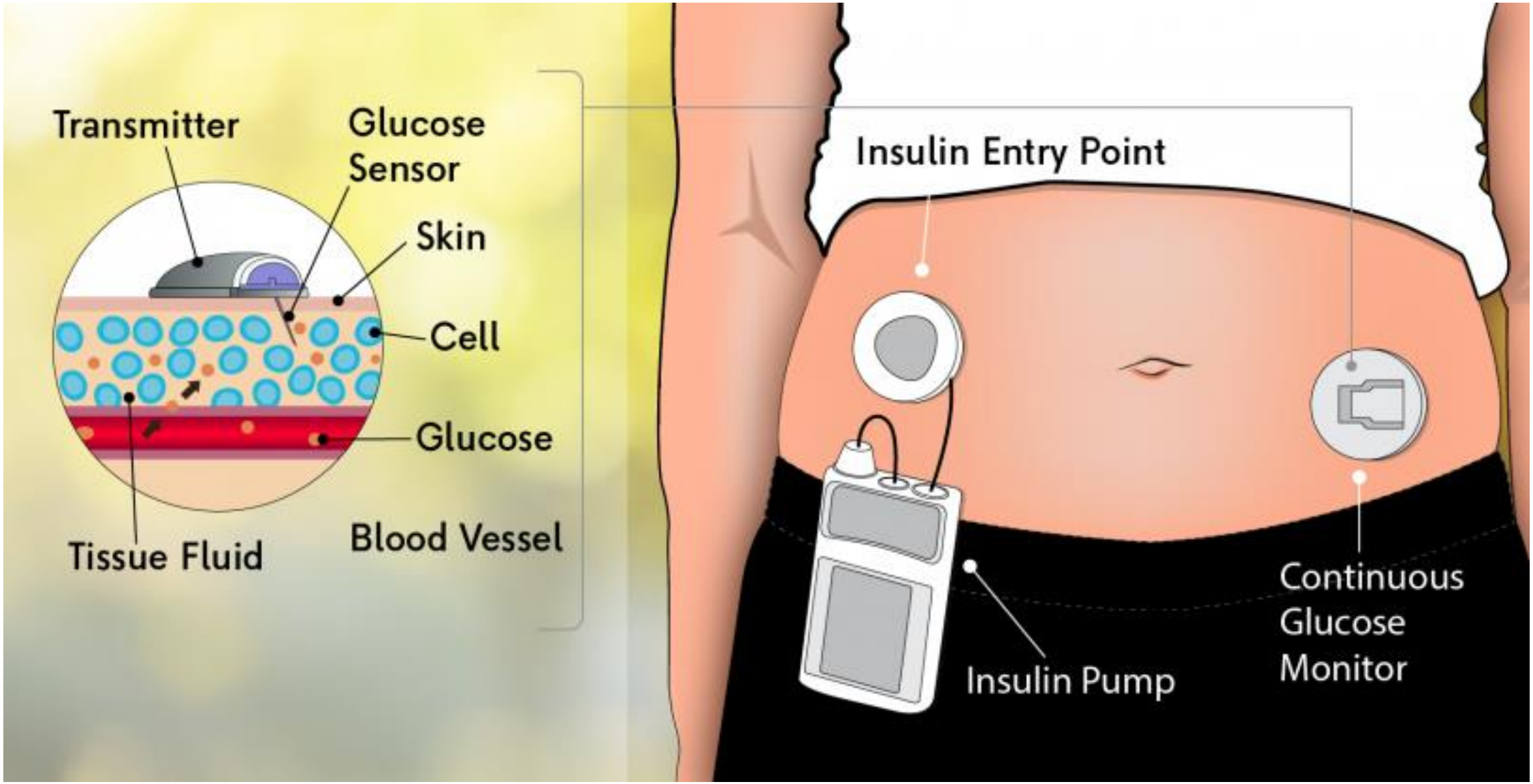


se monitoring

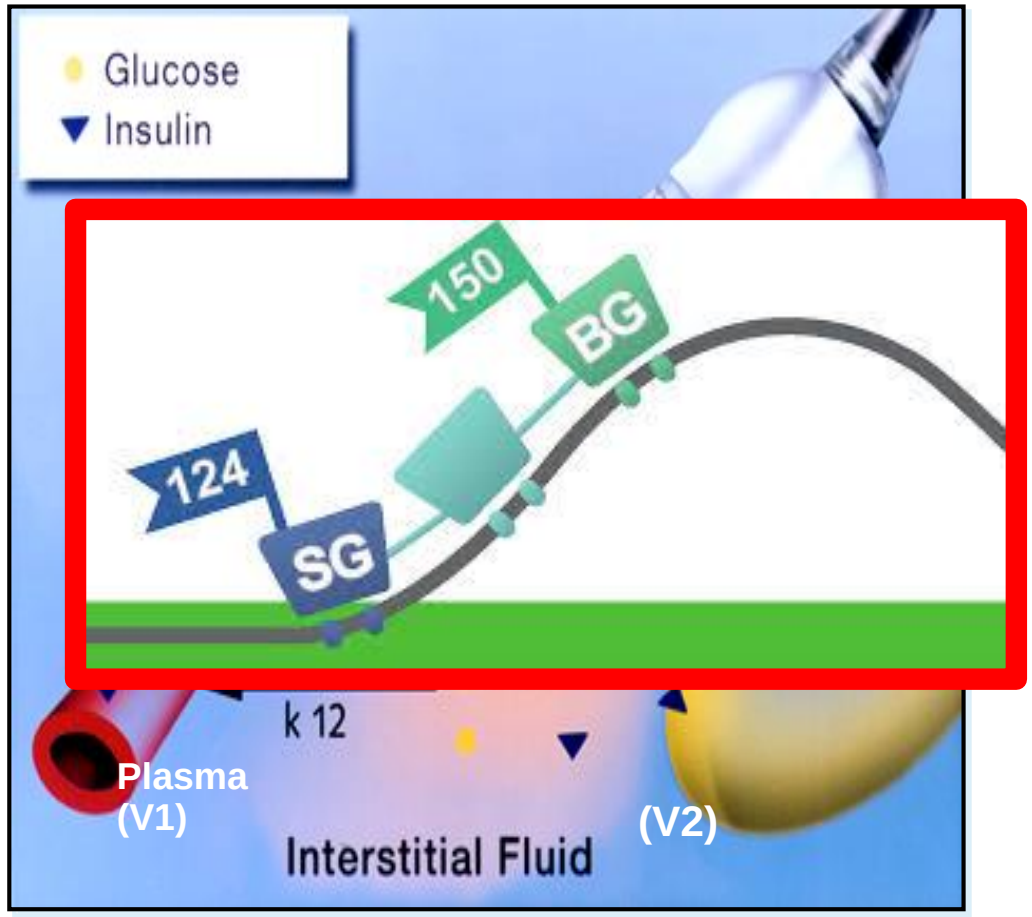
A. Sensor

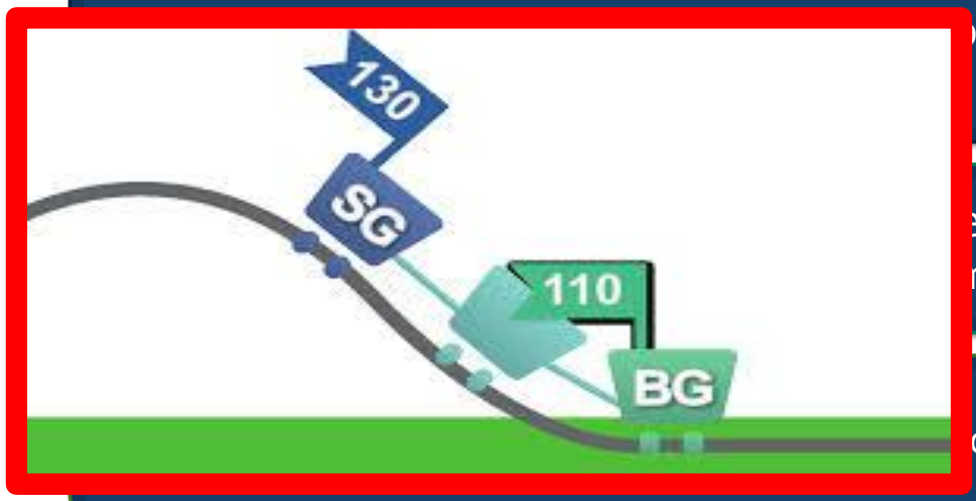
B. Transmitter

C. Display device


Transmitter
Glucose Sensor
Skin
Cell
Glucose
Blood Vessel
Tissue Fluid
Insulin Entry Point
Insulin Pump
Continuous Glucose Monitor

Interstitial Fluid and "Lag Time"





Capillary glucose must diffuse into the interstitial fluid (ISF)

…y 5–15

…e levels
…nilar

…ctual BG

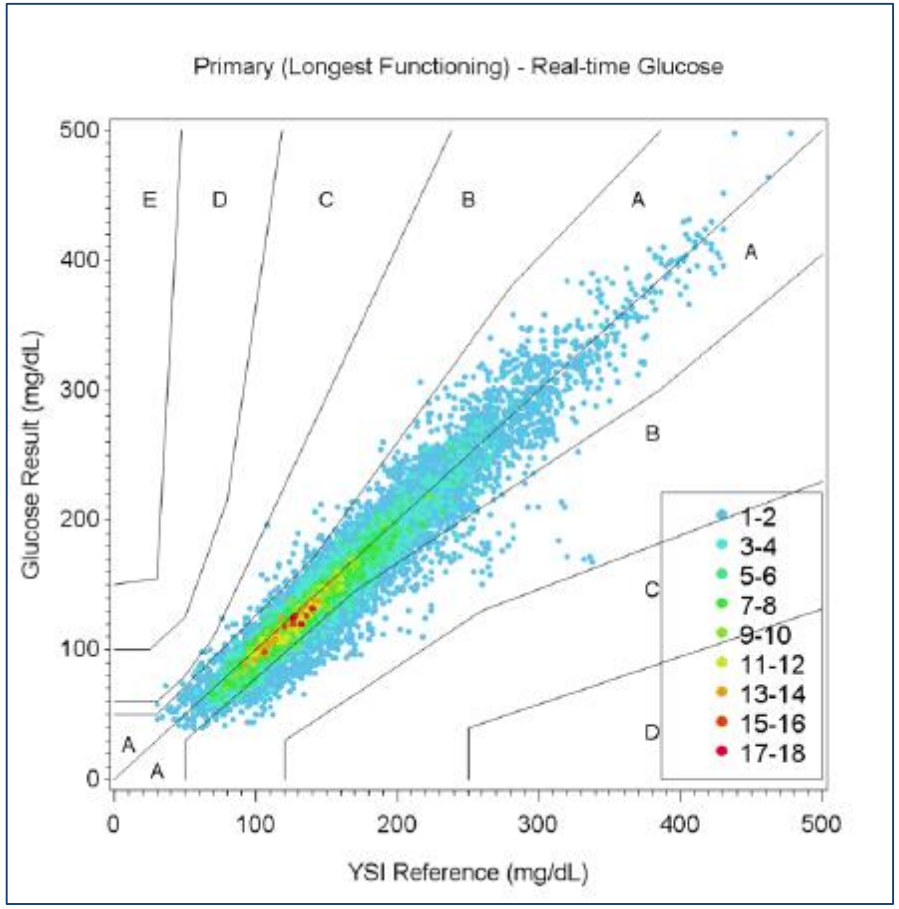
When glucose is **falling:** SG likely **higher** than actual BG

Illustration adapted from Rebrin K, et al. *Am J Physiol*. 1992;277:E561–E571.

Sensor Accuracy – improving over time

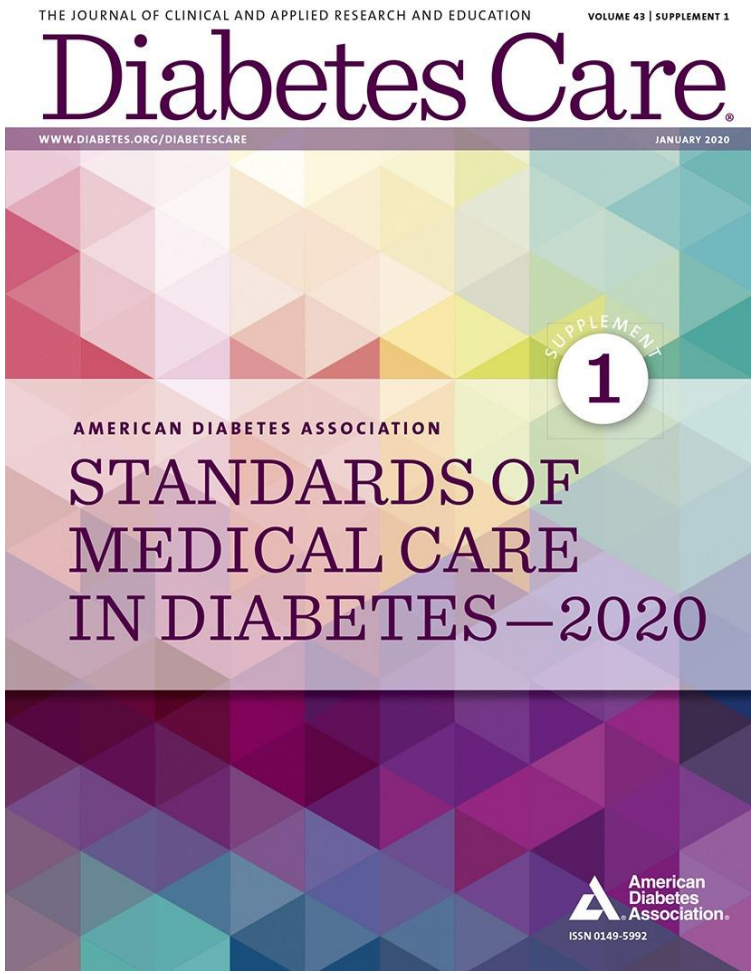
MARD: average difference between sensor glucose and YSI

	MARD
MiniMed iPro retrospective CGM	26%
GlucoWatch	22%
Original Dexcom	21.2%
Medtronic Soft Sensor	18.4%
Dexcom 7 Plus	16%
Medtronic Enlite	15.3%
Dexcom G4	13%
FreeStyle Libre	**11.4%**
Medtronic Guardian 3	**10%**
Dexcom G5	9%
Senseonics Eversense	**9.4%**
Dexcom G6*	**9%**



American Diabetes Association®

Connected for Life



AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS
AACE
The Voice of Clinical Endocrinology®

DIABETES UK
KNOW DIABETES. FIGHT DIABETES.

FREE

Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations From the International Consensus on Time in Range

Diabetes Care 2019;42:1593–1603 | https://doi.org/10.2337/dci19-0028

European Society of Endocrinology
The voice for endocrinology

Device-Driven Diabetes Management

International consensus on ***TIME IN RANGE*** standardized CGM metrics

More Actionable

Guiding medical nutrition therapy and physical activity

Prevent Hypoglycemia

Table 6.2—Standardized continuous glucose monitoring (CGM) metrics for clinical care	
1. Number of days CGM device is worn (recommend 14 days)	
2. Percentage of time CGM device is active (recommend 70% of data from 14 days)	
3. Mean glucose	
4. Glucose management indicator (GMI)	
5. Glycemic variability (%CV) target ≤36%*	
6. Time above range (TAR): % of readings and time >250 mg/dL (>13.9 mmol/L)	Level 2
7. Time above range (TAR): % of readings and time 181–250 mg/dL (10.1–13.9 mmol/L)	Level 1
8. Time in range (TIR): % of readings and time 70–180 mg/dL (3.9–10.0 mmol/L)	In range
9. Time below range (TBR): % of readings and time 54–69 mg/dL (3.0–3.8 mmol/L)	Level 1
10. Time below range (TBR): % of readings and time <54 mg/dL (<3.0 mmol/L)	Level 2

CGM, continuous glucose monitoring; CV, coefficient of variation. *Some studies suggest that lower %CV targets (<33%) provide additional protection against hypoglycemia for those receiving insulin or sulfonylureas. Adapted from Battelino et al. (17).

Diabetes Care 2020;43(Suppl. 1):S66–S76

AGP (Ambulatory Glucose Profile)

AGP Report

Name

MRN

GLUCOSE STATISTICS AND TARGETS

26 Feb 2019–10 Mar 2019	**13 days**
% Time CGM is Active	**99.9%**

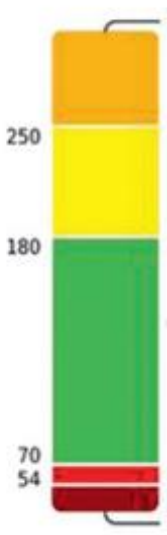
Glucose Ranges	**Targets** [% of Readings (Time/Day)]
Target Range 70–180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)

Each 5% increase in time in range (70–180 mg/dL) is clinically beneficial.

Average Glucose	**173 mg/dL**
Glucose Management Indicator (GMI)	**7.6%**
Glucose Variability	**49.5%**

Defined as percent coefficient of variation (%CV); target ≤36%

TIME IN RANGES



Very High (>250 mg/dL) **20%** (4h 48min)

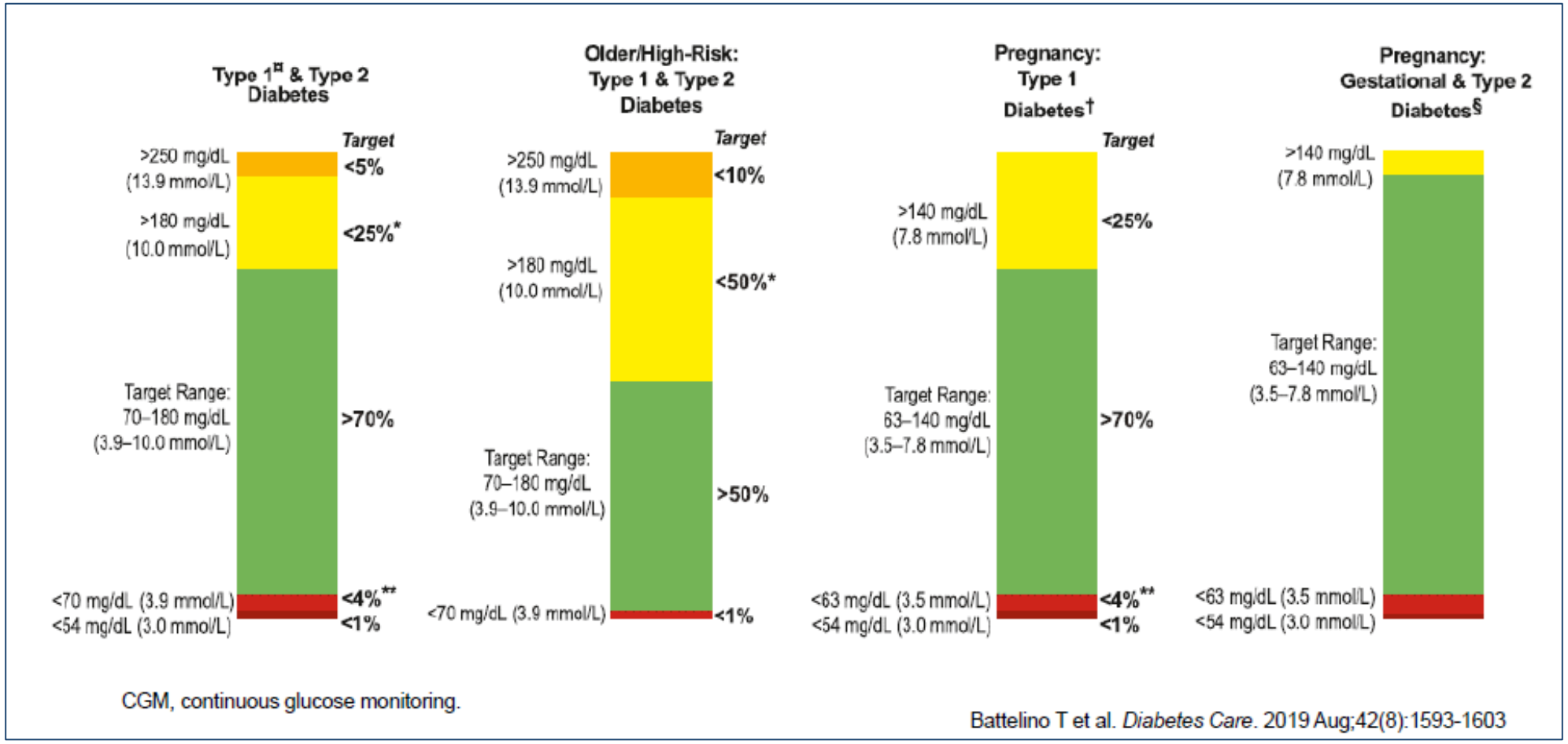
High (181–250 mg/dL) **23%** (5h 31min)

Target Range (70–180 mg/dL) **47%** (11h 17min)

Low (54–69 mg/dL) **4%** (58min)

Very Low (<54 mg/dL) **6%** (1h 26min)

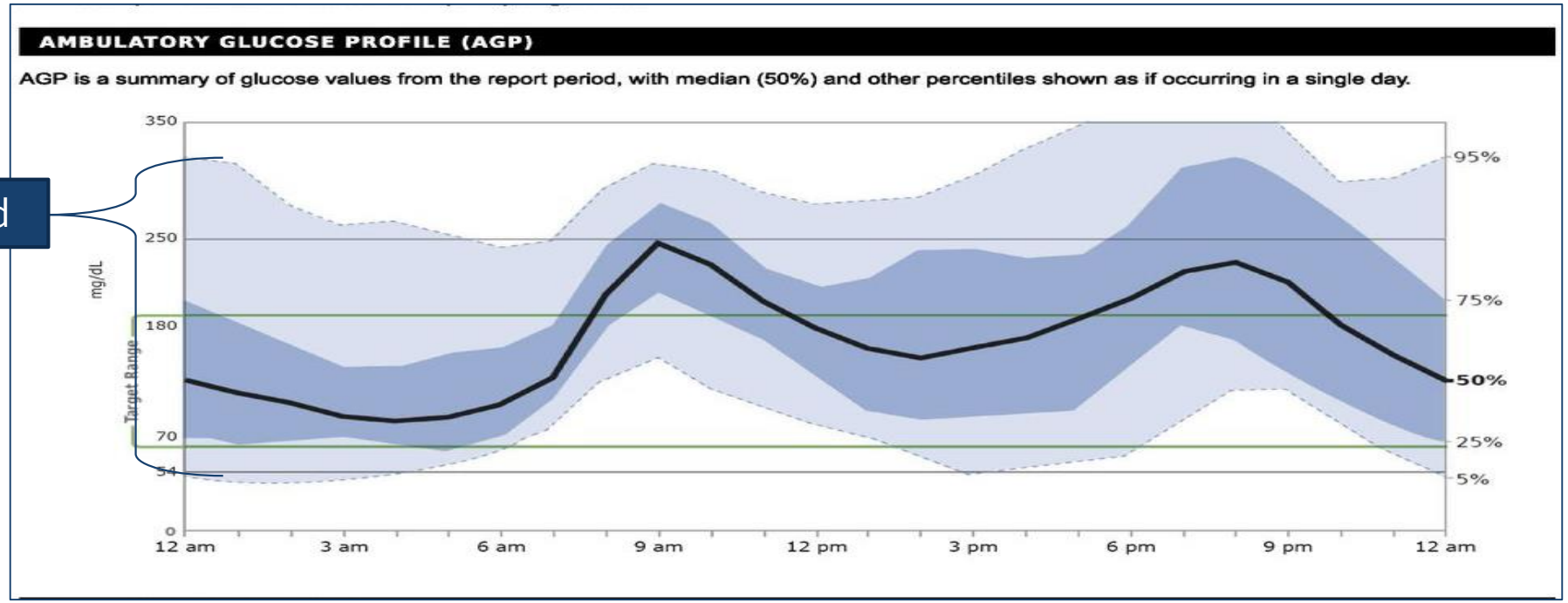
We may personalize individual glycemic targets



CGM, continuous glucose monitoring.

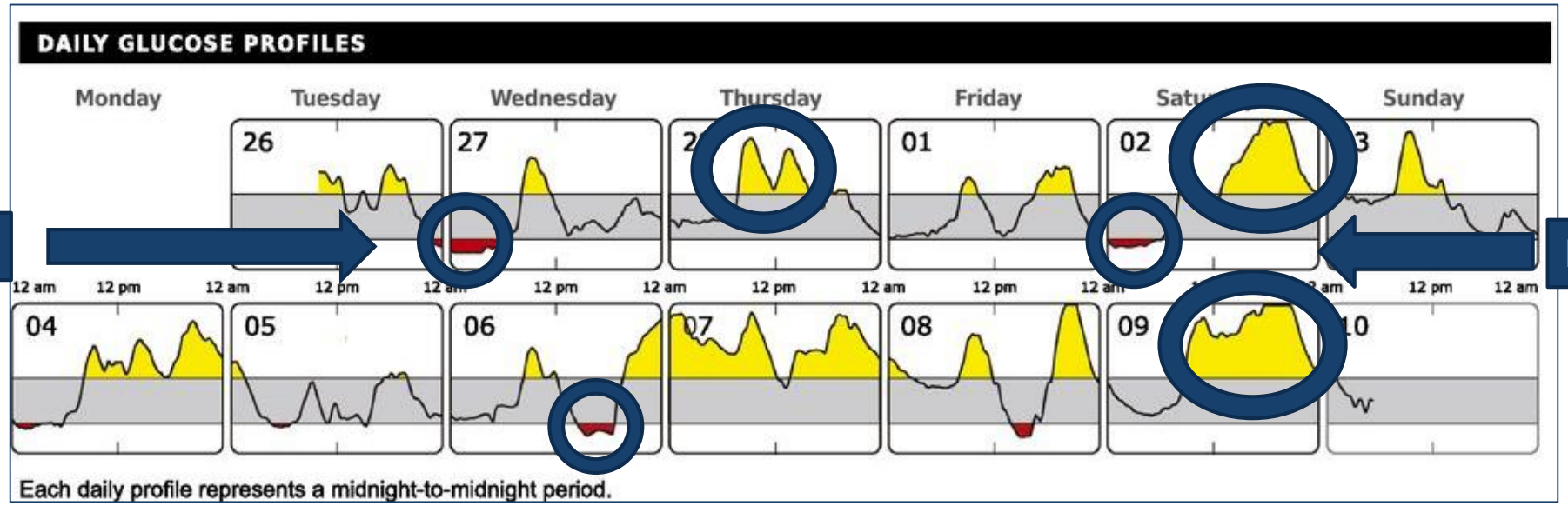
Battelino T et al. *Diabetes Care*. 2019 Aug;42(8):1593-1603

Variabilidad



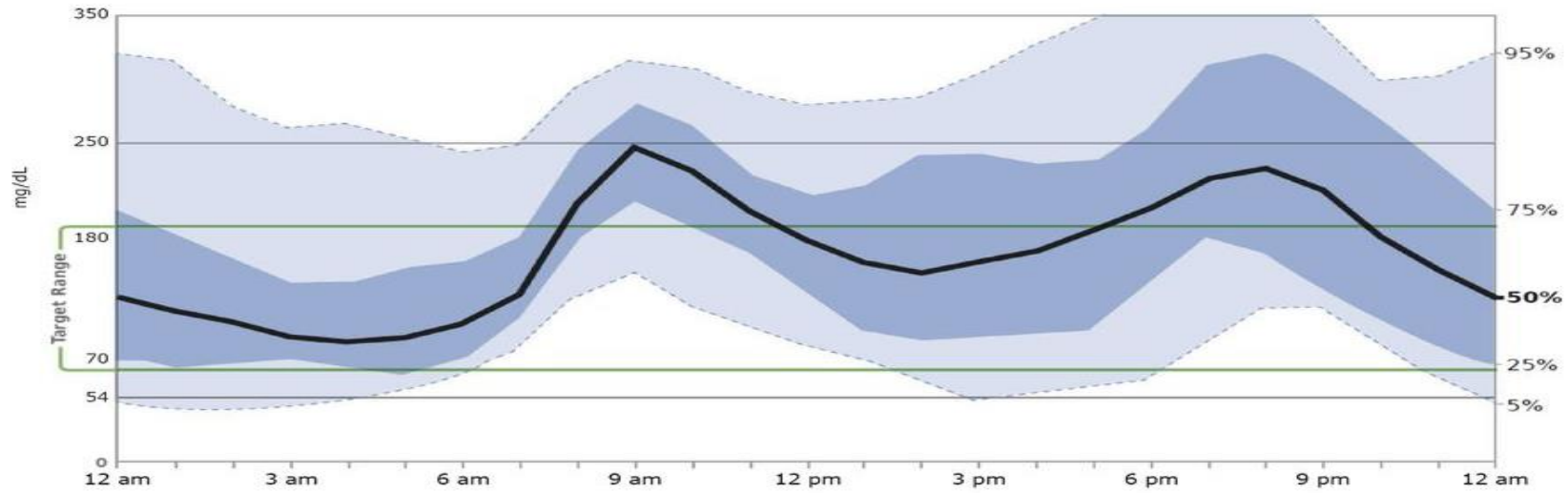
Hypoglycemia

Hyperglycemia

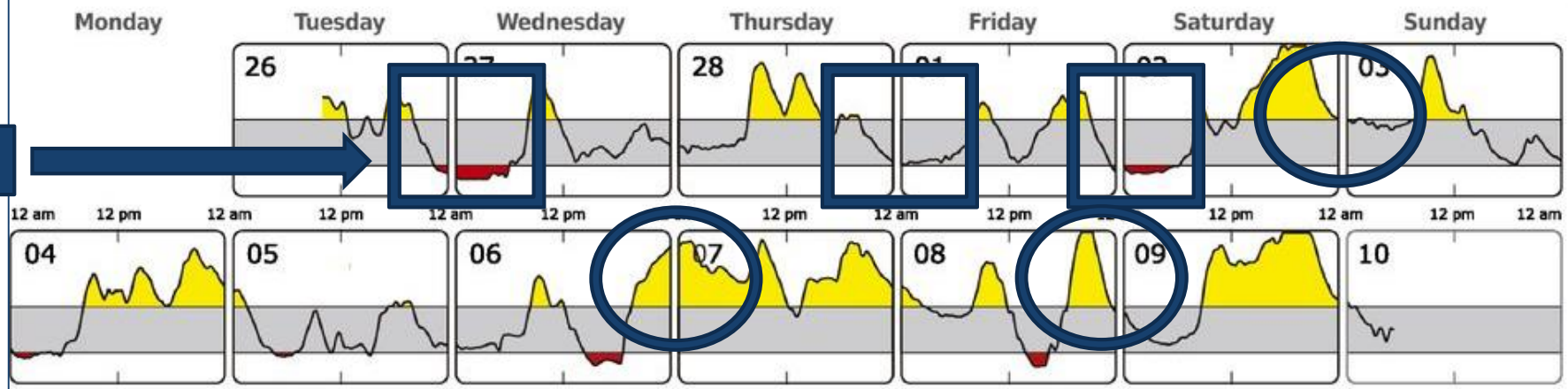


AMBULATORY GLUCOSE PROFILE (AGP)

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



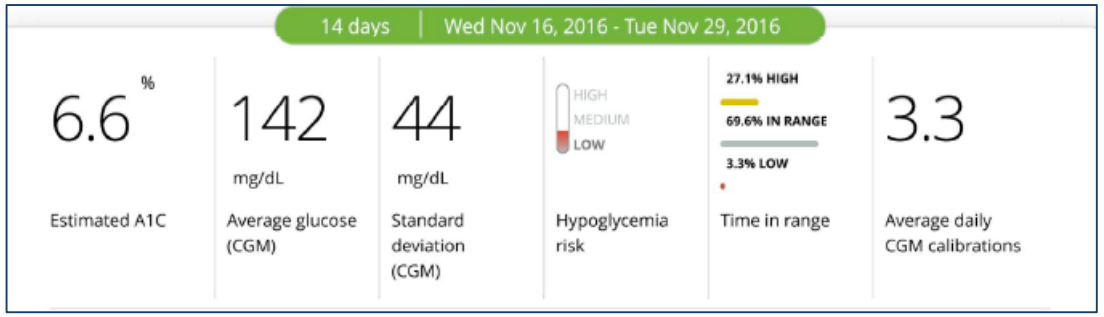
DAILY GLUCOSE PROFILES



Each daily profile represents a midnight-to-midnight period.

Trends

Glucose Management Indicator (GMI) aka Real time A1C



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Her average glucose is not contained in the 95%CI for HBA1C of 8.2%

- 25 y/o using Dexcom CGM with Hba1c of 8.2%, Hb of 10 g/dl, Hct 31%
- Patient note with glycation gap due to iron deficiency anemia
- Up to 15% of glycated hemoglobin may be misleading in clinical practice
- GMI lower that lab A1C, means glucose is lower that reported by lab and caution is needed in order to avoid hypoglycemia
- Plan: iron supplements to correct anemia, NO INSULIN optimization

Benefits of Time in Range

Table 5—Estimate of A1C for a given TIR level based on type 1 diabetes and type 2 diabetes studies

Beck et al. (26) (n = 545 participants with type 1 diabetes)			Vigersky and McMahon (27) (n = 1,137 participants with type 1 or type 2 diabetes)	
TIR 70–180 mg/dL (3.9–10.0 mmol/L)	A1C, % (mmol/mol)	95% CI for predicted A1C values, %	TIR 70–180 mg/dL (3.9–10.0 mmol/L)	A1C, % (mmol/mol)
20%	9.4 (79)	(8.0, 10.7)	20%	10.6 (92)
30%	8.9 (74)	(7.6, 10.2)	30%	9.8 (84)
40%	8.4 (68)	(7.1, 9.7)	40%	9.0 (75)
50%	7.9 (63)	(6.6, 9.2)	50%	8.3 (67)
60%	7.4 (57)	(6.1, 8.8)	60%	7.5 (59)
70%	7.0 (53)	(5.6, 8.3)	70%	6.7 (50)
80%	6.5 (48)	(5.2, 7.8)	80%	5.9 (42)
90%	6.0 (42)	(4.7, 7.3)	90%	5.1 (32)
Every 10% increase in TIR = ~0.5% (5.5 mmol/mol) A1C reduction			Every 10% increase in TIR = ~0.8% (8.7 mmol/mol) A1C reduction	

The difference between findings from the two studies likely stems from differences in number of studies analyzed and subjects included (RCTs with subjects with type 1 diabetes vs. RCTs with subjects with type 1 or type 2 diabetes with CGM and SMBG).

https://care.diabetesjournals.org/content/diacare/42/8/1593.full.pdf

Ambulatory Glucose Profile works if:

- Data can be effectively downloaded for each patient visit
  - Limitations in software, hardware, TIME! or even having the device present
- Data can be effectively interpreted
  - Assess patent routine, wake and sleep times, feedings, medication intake
  - Ask the patient to remember exactly what he was doing for a specific hypoglycemia event in that 14 day log
  - Discuss times of the day where more glucose fluctuations (variability) exist
- Physician and Patient design a course of action (simple solutions are always better!)
  - Correct hypo/hyperglycemia management
  - Teach the patient to carb counting
  - Teach the patient to calculate Sensitivity Factors for corrections, Carbs Ratio, Active insulin time, ect
  - Exercise activity and glucose changes

Reimbursement

- 95249 - CGM patient provided equipment, sensor placement, hook-up, calibration of monitor, patient training, and printout
- 95250 - CGM HCP (office) provided equipment, sensor placement, hook-up, calibration of monitor, patient training, removal of sensor, and printout
- 95251 - CGM analysis, interpretation and report
  - Can be billed monthly on ongoing basis
- General comments:
  - All codes require a minimum of 72 hours of data
  - Use -25 modifier for CGM codes if billing same day as a Problem Visit code (99212-99215) if significant an separately identifiable service took place
    - Ie 99212-99215: Pre-CGM evaluation (+) -25 95250: CGM start-up and instruction

CGM'S CURRENTLY AVAILABLE IN PR

Types of CGM

- Real Time CGM
  - CGM systems that measure glucose levels continuously and provide the user automated alarms and alerts at specific glucose levels and/or for changing glucose levels.
- Intermittent Scanning CGM
  - CGM systems that measure glucose levels continuously but only display glucose values when swiped by a reader or a smart phone that reveals the glucose levels
- Blinded (professional) CGM
  - CGM devices that measure glucose levels that are not displayed to the patient in real time. These devices are generally initiated in a clinic, using a reader that is owned by the clinic. They are removed after a period of time (generally 10–14 days) and analyzed by the patient and provider to assess glycemic patterns and trends

Abbot FreeStyle Libre

- Intermittent Scanning CGM
- Professional (Blinded) CGM available
- Factory Calibrated
- 14-day wear following 12-hr warm-up
- For best results need to read at least q8 hours
- No acetaminophen interference

Daily Patterns

a graph showing the pattern and variability of your Sensor glucose over a typical day.

Time in Target

displays percentage of time your sensor glucose readings were within, above or below your Target Glucose Range

Low Glucose Events

shows readings lower than 70 mg/dL (for a minimum of 15 minutes) in four different 6-hour periods of the day

FreeStyle LibreLink

Download on the App Store

GET IT ON Google Play

User only gets a glucose reading when they wave the receiver device over the sensor which is unique to this CGM system.

The reader is 95mm x 60mm x 16mm and store up to 90 days of glucose readings.

No calibration needed; pre-calibrated at the factory.

Can be used with or without and insulin pump.

Lowest cost of any CGM on the market.

No automatic alerts for high/low glucose levels when user doesn't wave the receiver over the sensor.

14 day sensor, the longest lasting sensor in the CGM industry.

Freestyle Libre Report:

Snapshot

March 1, 2018 - March 14, 2018 (14 Days)

LibreView

Glucose

AVERAGE GLUCOSE	141 mg/dL
% above target	19 %
% in target	77 %
% below target	4 %

Average Glucose

LOW GLUCOSE EVENTS	3
Average duration	40 Min

Low Glucose Events

Sensor Usage

SENSOR DATA CAPTURED	97 %
Daily scans	4

Sensor Data Captured

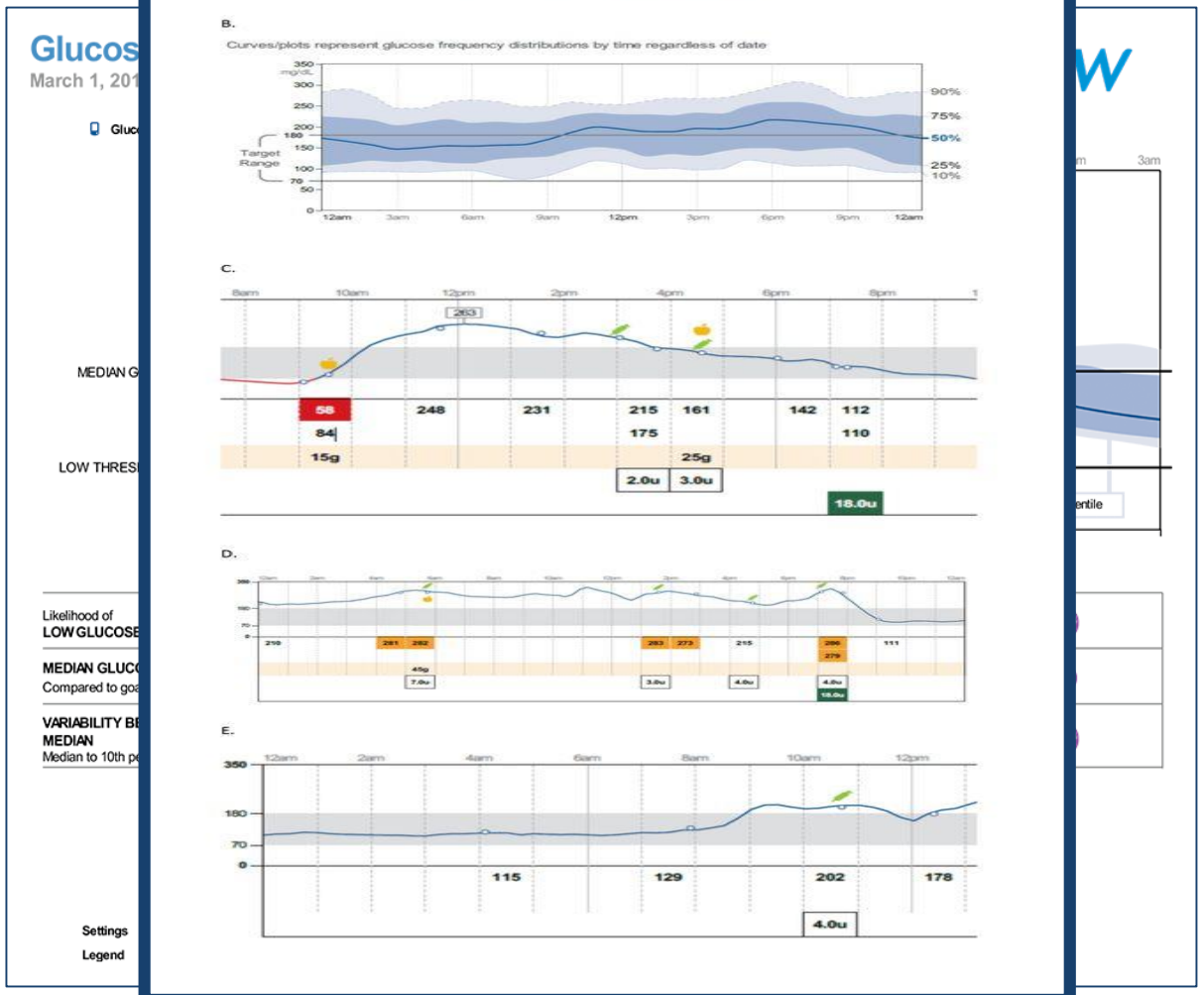
DAILY CARBS	326 grams/day

INSULIN

RAPID-ACTING INSULIN	39.3 units/day
Meal	
Correction	
User Change	
Manual	39.3u
LONG-ACTING INSULIN	units/day
Total Daily Insulin	39.3 units/day

Comments

- There was a ketone test. The result was 0.6 mmol/L.
- Gaps found in food data. 1 day in this reporting period has no recorded food events.



Glucos

March 1, 201

Gluc

MEDIAN G

LOW THRES

Likelihood of LOW GLUCOSE

MEDIAN GLUC

Compared to goa

VARIABILITY BE

MEDIAN

Median to 10th pe

Settings

Legend

A.

Average Glucose

183 mg/dL

88-116*

Time In Range

Above 180 mg/dL (above 250 mg/dL: 16%) 51 %

In Target Range 70-180 mg/dL 46 %

Below 70 mg/dL (below 54 mg/dL: 1%) 3 %

Coefficient of Variation (CV)

38 %

19-25*

B.

Curves/plots represent glucose frequency distributions by time regardless of date

C.

D.

E.

Dexcom G6

- Real Time, Stand Alone CGM
- No confirmatory fingersticks unless
  - Discrepancy with symptoms and readings
  - Device malfunction
- No Calibrations Needed
- Remote monitoring
- Alerts available
- 10 days sensor wear

Readings may be viewed on a smart phone, smart watch (via phone bluetooth connection), Tandem X2 insulin pump, or handheld receiver

Zero fingersticks: no calibration required, but can calibrate if sensor is off-track

FDA approved for ages 2+

Customizable high/low alerts

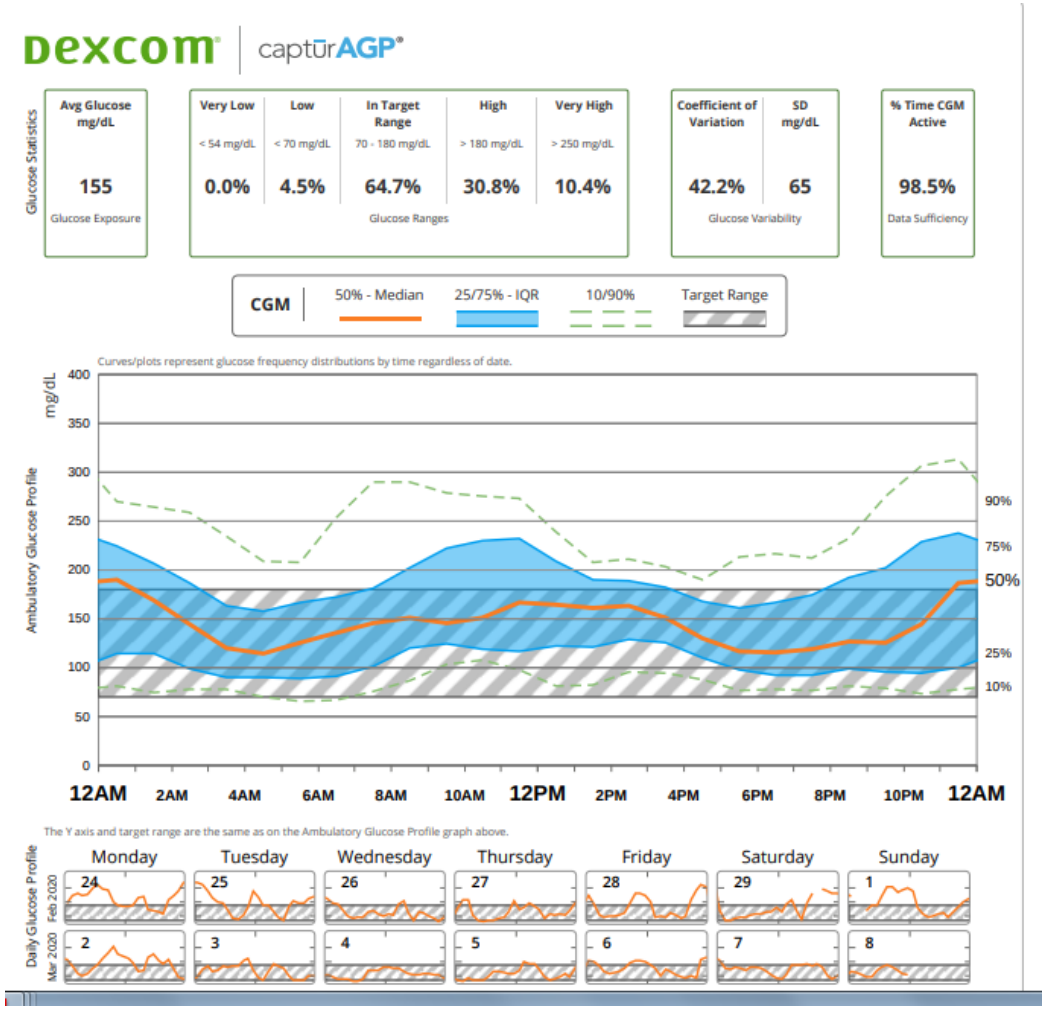
* Smart phone and smart watch not included

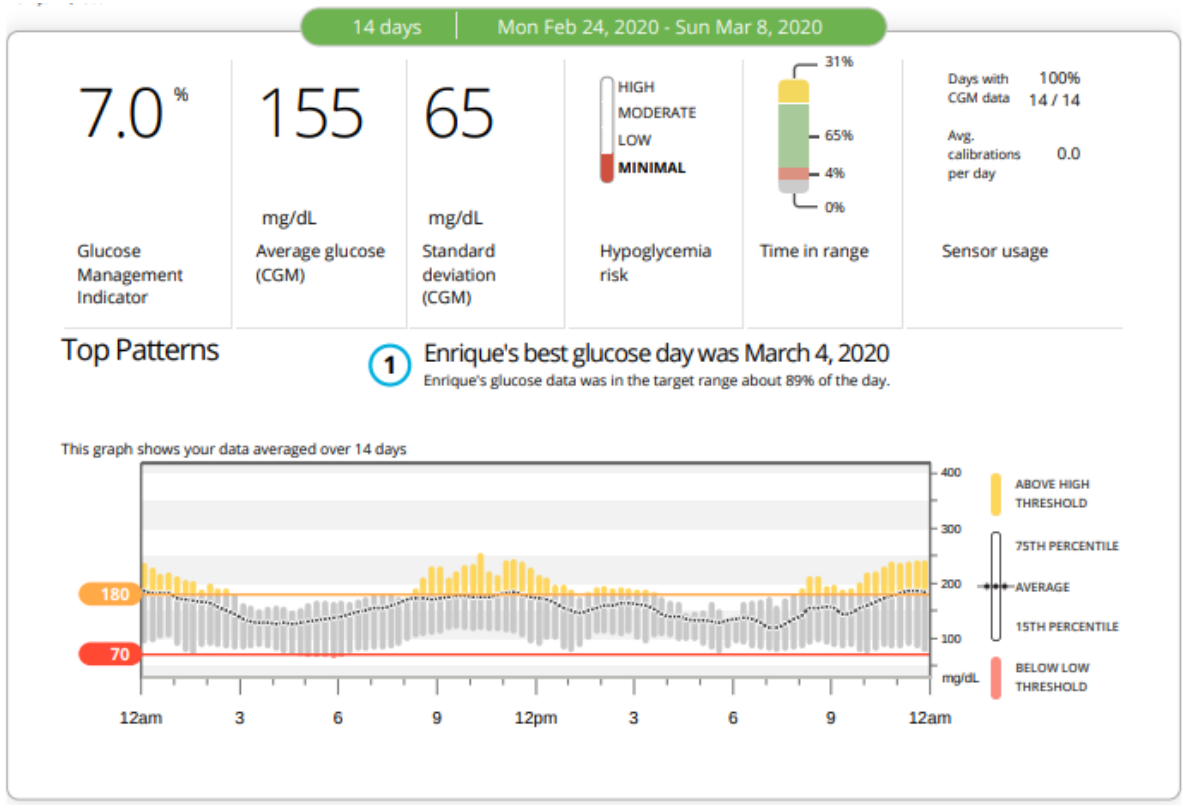
Easy-to-use sensor applicator with one button insertion

Slim, water resistant sensor that lasts 10 days

2-hour warmup time for new sensor

Dexcom Clarity





Medtronic

Medtronic 670G

Medtronic Guardian Connect

- Key unique features
  - First hybrid closed loop system
    - Modulates insulin infusion based on sensor glucose information
  - Predictive Low Glucose Suspend and Low Glucose Suspend
  - Calibration at least once every 12 hours (3-4x/day recommended)
  - 7 day sensor use
  - Acetaminophen sensitive
  - Approved for 14 years and older

- Stand-alone CGM system
- Key unique features
  - No receiver; display device is iOS phone only
  - Predictive Alert Schedules
    - 10-60 minute prediction of hypo-/ hyperglycemia based on threshold settings
  - Calibration at least once every 12 hours (4x/day recommended)
  - 7 day sensor
  - Acetaminophen sensitive
  - Approved for 18 and older

FDA approved for ages 14-75

Calibration required 3-4 times daily

* Smart phone and smart watch not included

Readings may be viewed on a smart phone or smart watch (via phone bluetooth connection)

Automatic upload to Carelink software

Customizable high/low alerts, including extended predictive alerts

Sensor life is 7 days

2-hour warmup time for new sensor

Medtronic Carelink

	Guardian Connect/640G SmartGuard	Dexcom G6	FreeStyle Libre
			
Sensor life (days)	7	10	14
Alarms	Multiple	High, low and trend	None
Predictive	Yes	Yes	n/a
Trends	Yes	Yes	n/a
Rate change	Yes	Yes	n/a
Calibration	12-hourly	None	None
MARD	9.64%	9.0%	9.7%

Data taken from manufacturers' specifications

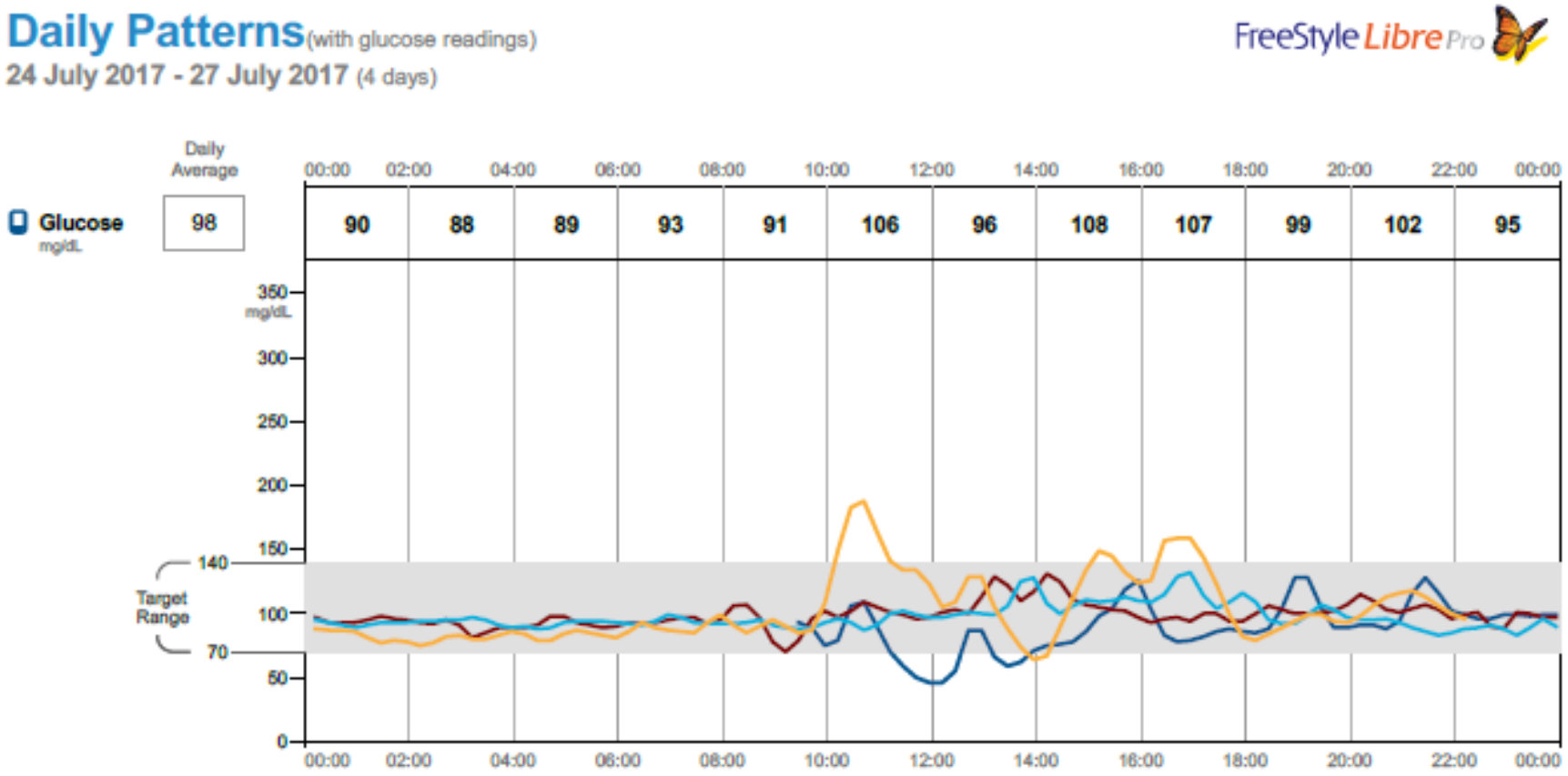
*The manufacturer claims a sensor life up to 14 days; however, the device is only licesnsed for up to 7 days.

MARD=mean absolute relative difference.

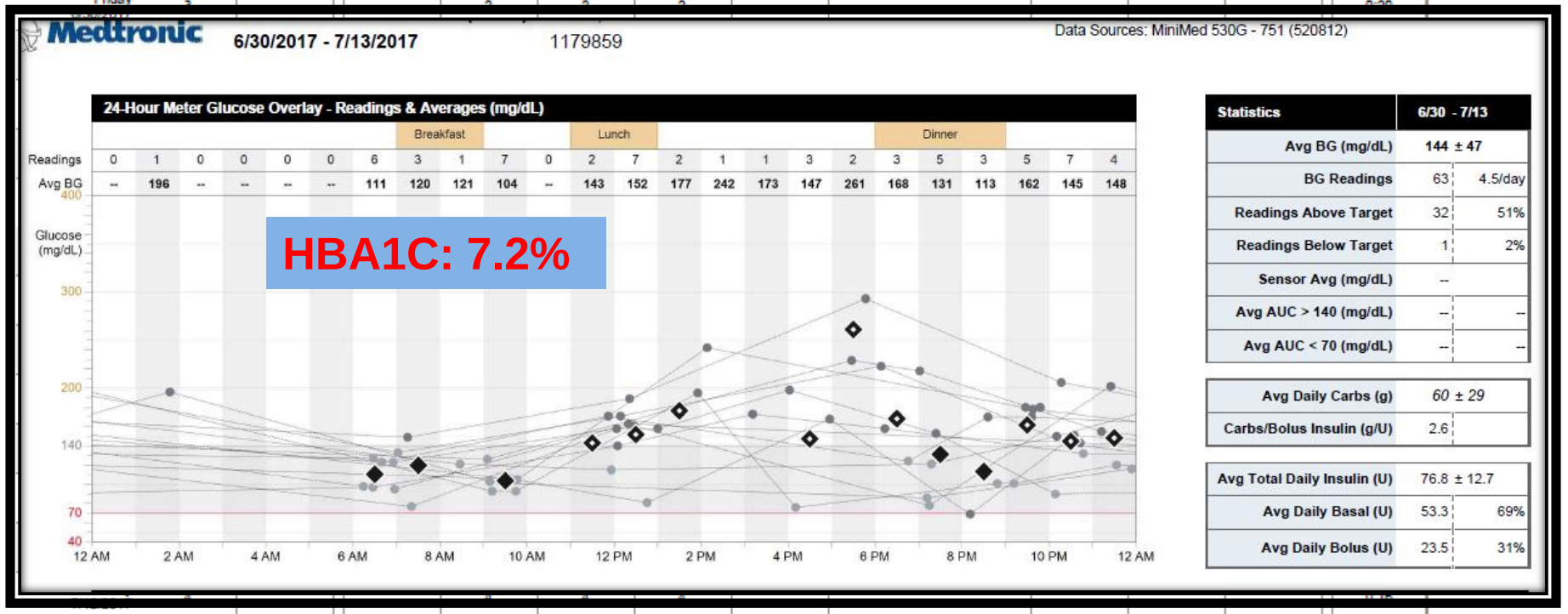
CLINICAL EXAMPLES

Patients with DM 1-2 and Insulin Pump Therapy

CGM on non-diabetic patient



59 y/o F, BMI: 29 kg/m2, HBP, no CGM



Medtronic

6/30/2017 - 7/13/2017

1179859

Data Sources: MiniMed 530G - 751 (520812)

24-Hour Meter Glucose Overlay - Readings & Averages (mg/dL)

	Breakfast										Lunch							Dinner					
Readings	0	1	0	0	0	0	6	3	1	7	0	2	7	2	1	1	3	2	3	5	3	5	7	4
Avg BG	--	196	--	--	--	--	111	120	121	104	--	143	152	177	242	173	147	261	168	131	113	162	145	148

Glucose (mg/dL): 400, 300, 200, 140, 70, 40

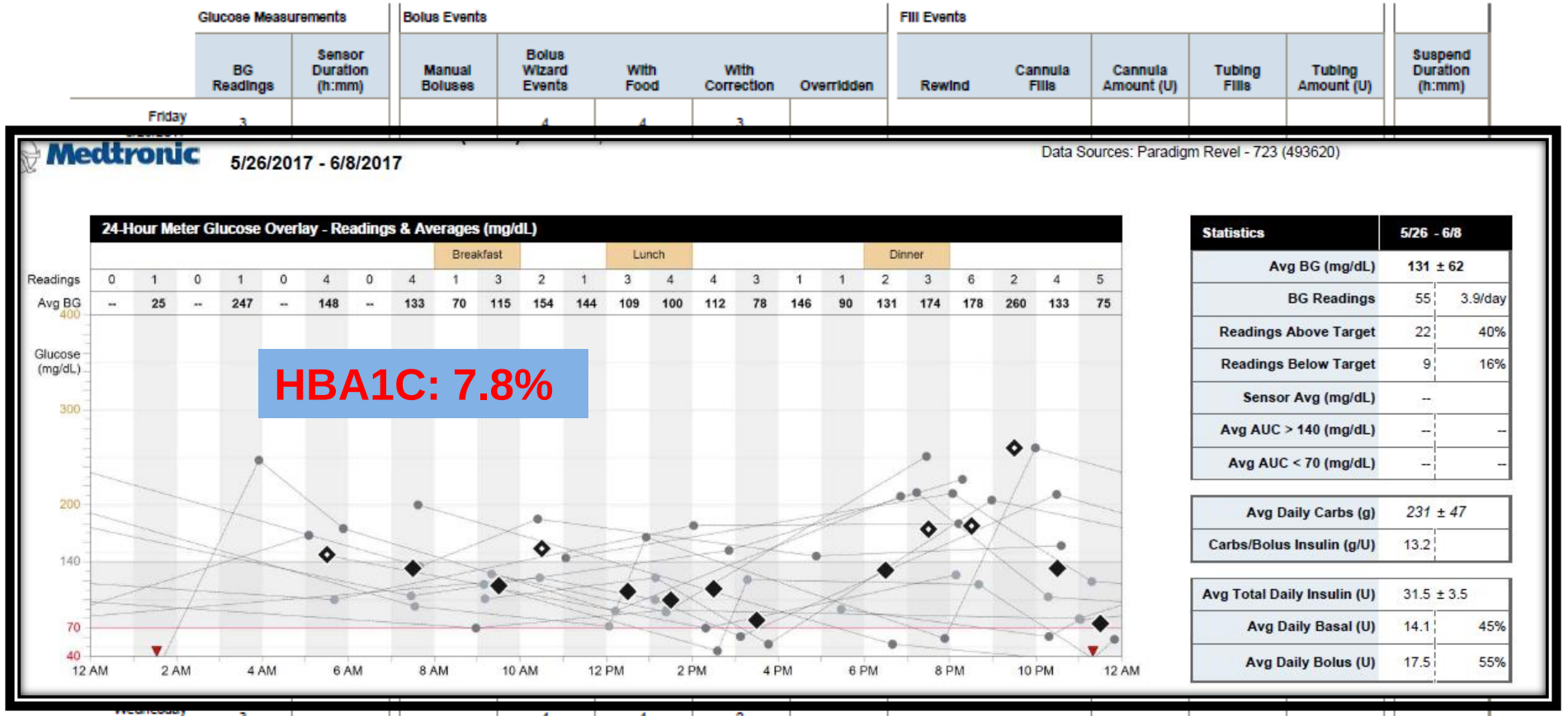
12 AM 2 AM 4 AM 6 AM 8 AM 10 AM 12 PM 2 PM 4 PM 6 PM 8 PM 10 PM 12 AM

HBA1C: 7.2%

Statistics	6/30 - 7/13	
Avg BG (mg/dL)	144 ± 47	
BG Readings	63	4.5/day
Readings Above Target	32	51%
Readings Below Target	1	2%
Sensor Avg (mg/dL)	--	
Avg AUC > 140 (mg/dL)	--	--
Avg AUC < 70 (mg/dL)	--	--
Avg Daily Carbs (g)	*60 ± 29*	
Carbs/Bolus Insulin (g/U)	2.6	
Avg Total Daily Insulin (U)	76.8 ± 12.7	
Avg Daily Basal (U)	53.3	69%
Avg Daily Bolus (U)	23.5	31%

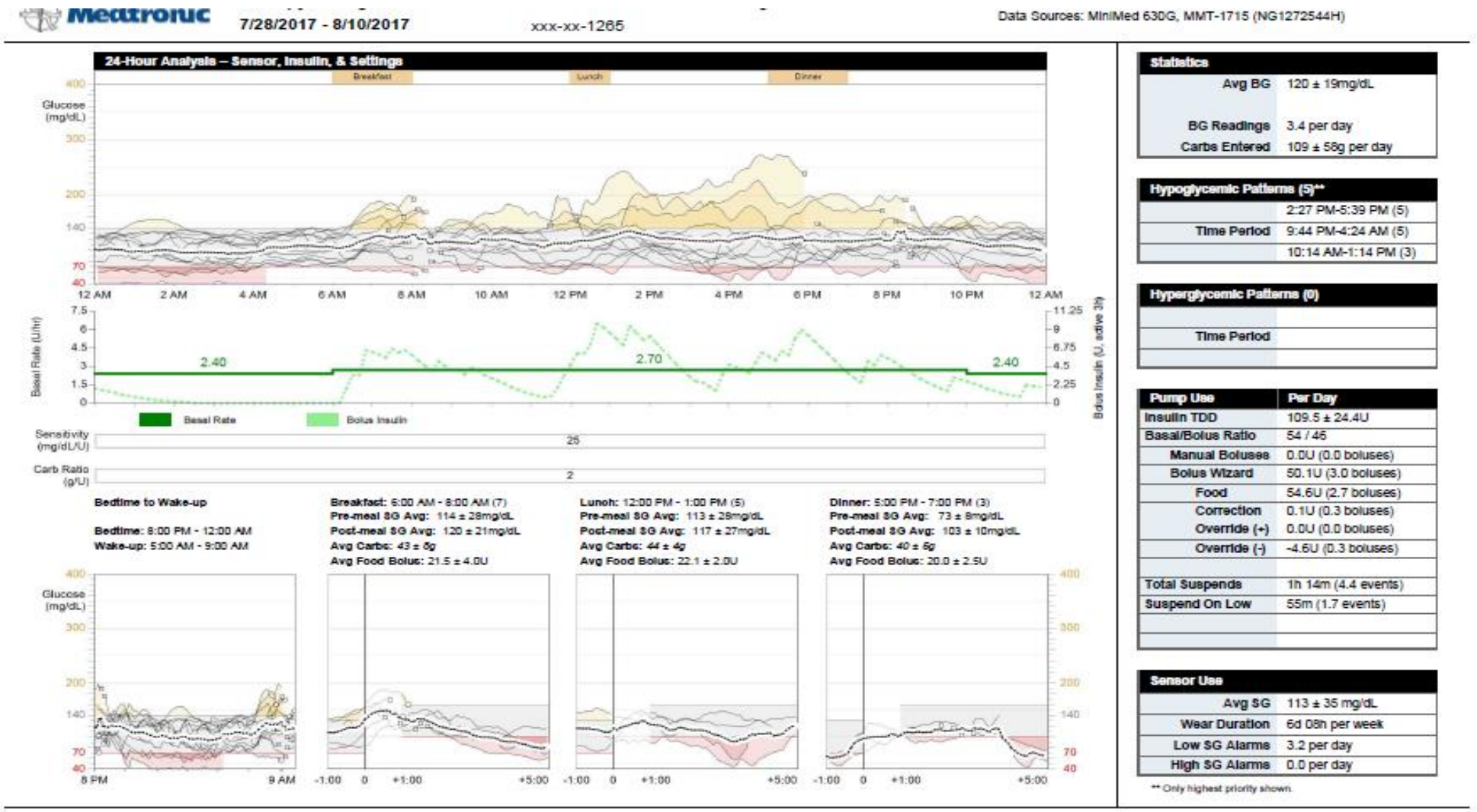
	Glucose Measurements		Bolus Events					Fill Events					
	BG Readings	Sensor Duration (h:mm)	Manual Boluses	Bolus Wizard Events	With Food	With Correction	Overridden	Rewind	Cannula Fills	Cannula Amount (U)	Tubing Fills	Tubing Amount (U)	Suspend Duration (h:mm)
Friday													
Thursday 7/13/2017	3			2	2	1		1	1	0.5	1	7.9	
Summary	4.5/day	0m	0.0/day	2.7/day	97.4%	76.3%	0.0%	5	4	0.5U /fill	2	7.3U/fill	5h 56m

55 y/o F, BMI: 23.5 kg/m2, HBP, no CGM



	Glucose Measurements		Bolus Events					Fill Events					
	BG Readings	Sensor Duration (h:mm)	Manual Boluses	Bolus Wizard Events	With Food	With Correction	Overridden	Rewind	Cannula Fills	Cannula Amount (U)	Tubing Fills	Tubing Amount (U)	Suspend Duration (h:mm)
Friday	3			4	4	3							
Wednesday 6/7/2017	3			4	4	2							
Thursday 6/8/2017	6			5	4	2							
Summary	3.9/day	0m	0.1/day	4.5/day	95.2%	54.0%	3.2%	4	4	0.1U /fill	4	8.6U/fill	0m

61 y/o F, BMI: 38 kg/m2, HBP, Sensor Augmented Tx



Statistics	
Avg BG	120 ± 19mg/dL
BG Readings	3.4 per day
Carbs Entered	109 ± 58g per day

Hypoglycemic Patterns (5)**	
	2:27 PM-5:39 PM (5)
Time Period	9:44 PM-4:24 AM (5)
	10:14 AM-1:14 PM (3)

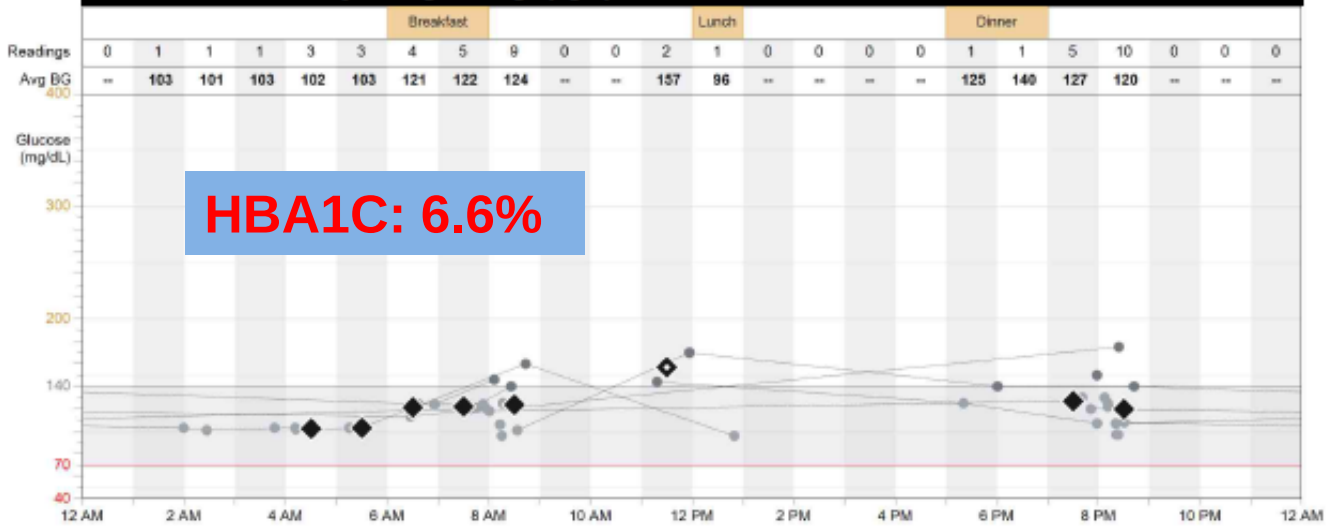
Hyperglycemic Patterns (0)
Time Period

Pump Use	Per Day
Insulin TDD	109.5 ± 24.4U
Basal/Bolus Ratio	54 / 46
Manual Boluses	0.0U (0.0 boluses)
Bolus Wizard	50.1U (3.0 boluses)
Food	54.6U (2.7 boluses)
Correction	0.1U (0.3 boluses)
Override (+)	0.0U (0.0 boluses)
Override (-)	-4.6U (0.3 boluses)
Total Suspends	1h 14m (4.4 events)
Suspend On Low	55m (1.7 events)

Sensor Use	
Avg SG	113 ± 35 mg/dL
Wear Duration	6d 08h per week
Low SG Alarms	3.2 per day
High SG Alarms	0.0 per day

** Only highest priority shown.

24-Hour Meter Glucose Overlay - Readings & Averages (mg/dL)



HBA1C: 6.6%

Statistics	7/28 - 8/10	
Avg BG (mg/dL)	120 ± 19	
BG Readings	47	3.4/day
Readings Above Target	6	13%
Readings Below Target	–	0%
Sensor Avg (mg/dL)	113 ± 35	
Avg AUC > 140 (mg/dL)	4.8	12d 17h
Avg AUC < 70 (mg/dL)	1.2	12d 17h

Avg Daily Carbs (g)	*109 ± 58*	
Carbs/Bolus Insulin (g/U)	2.2	

Avg Total Daily Insulin (U)	109.45 ± 24.4	
Avg Daily Basal (U)	59.33	54%
Avg Daily Bolus (U)	50.13	46%

Basal

Maximum Basal Rate	4.00 U/Hr

Basal 1 (active)

24-Hour Total	62.400 U

Time	U/Hr
0:00	2.40
6:00	2.70
22:00	2.40

Day Off

24-Hour Total	–

Time	U/Hr
–	–

Workday

24-Hour Total	–

Time	U/Hr
–	–

Bolus

Bolus Wizard	On
Units	g, mg/dL
Active Insulin Time (h:mm)	3:00
Maximum Bolus	25.0 U

Easy Bolus	Off
Bolus Increment	0.025 U
Bolus Speed	Standard
Dual/Square	Off/Off

Carbohydrate Ratio (g/U)

Time	Ratio
0:00	2.0

Insulin Sensitivity (mg/dL per U)

Time	Sensitivity
0:00	25

Blood Glucose Target (mg/dL)

Time	Low	High
0:00	80	120

Sensor

Sensor	On

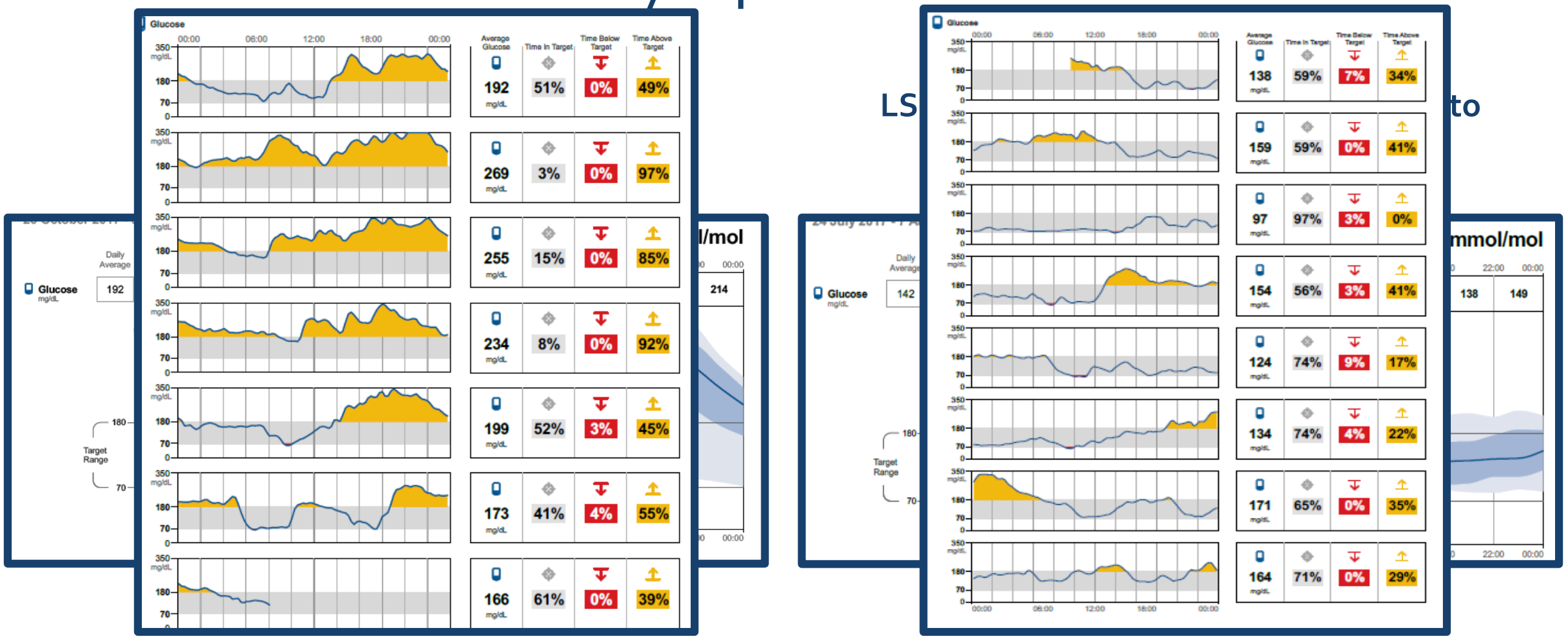
High Alerts — On (Snooze 1:00)

Start Time	High (mg/dL)	Alert On High	Alert Before High	Rise Alert Limit (mg/dL)
0:00	250			

Low Alerts — On (Snooze 0:20)

	Alert

56 y/o DM2 A1C 8.9% CAD, obesity, HBP, Dyslipidemia



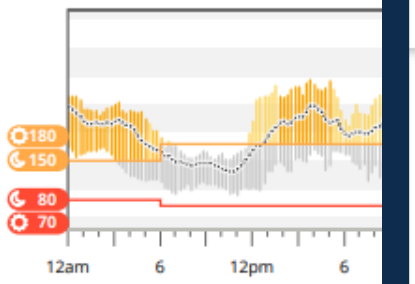
61 F DM1 x 45 years: HbA1c: 11% – Happy to learn that will not perform finger sticks anymore!

Compare Data

14 days | Sat Jan 4, 2020 - Fri Jan 17, 2020

14 days | Sat Jan 18, 2020 - Fri Jan 31, 2020

Trends



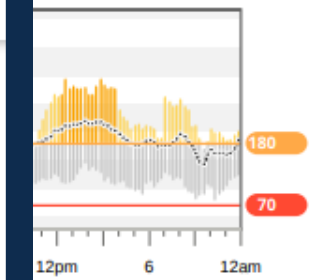
Glucose Statistics

Glucose Management Indicator	8.0 %	
Average glucose (CGM)	198 mg/dL	
Standard deviation (CGM)	71 mg/dL	
Hypoglycemia risk	HIGH / MODERATE / LOW / MINIMAL	
Time in range	59% / 41% / 0% / 0%	
Sensor usage	Days with CGM data	100% 14 / 14
	Avg. calibrations per day	0.0
Sensor usage	Days with CGM data	93% 13 / 14
	Avg. calibrations per day	0.0

Compare Data

20 days | Tue Jan 14, 2020 - Sun Feb 2, 2020

20 days | Mon Feb 3, 2020 - Sat Feb 22, 2020

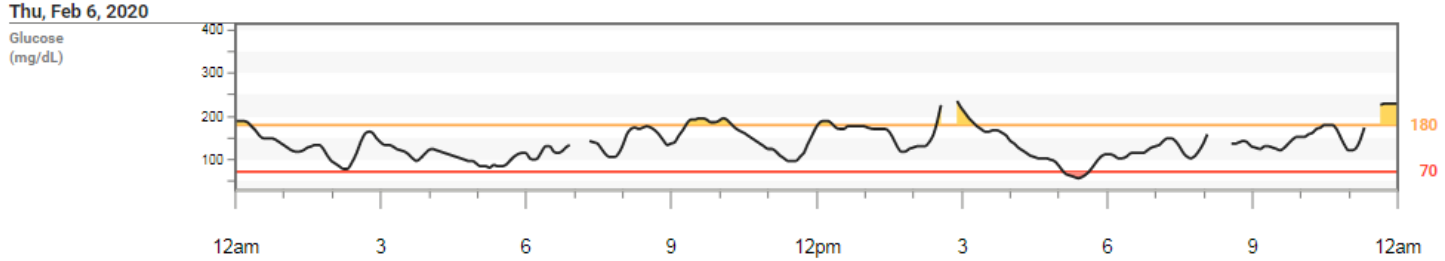


		7.8 %
		187 mg/dL
		73 mg/dL
	HIGH / MODERATE / LOW / MINIMAL	
	47% / 51% / 1% / 0%	
Sensor usage	Days with CGM data	100% 20 / 20
	Avg. calibrations per day	0.0
Sensor usage	Days with CGM data	100% 20 / 20
	Avg. calibrations per day	0.0

Patients | Staff | Settings | Support

Ernesto sola, MD
Proclinic

Thu, Feb 6, 2020

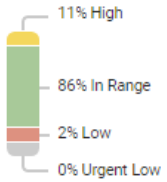


CGM | Calibrations | Alerts

Statistics for this day

137 mg/dL
Average glucose (CGM)

36 mg/dL
Standard deviation (CGM)



Time in range

There is no age limit for technology!!

- 82 y/o male
- Long standing DM2, low C-peptide
- On basal bolus
- Hx of recurrent severe hypoglycemia with 1-2 glucagon emergency kits per MONTH!
- rtCGM use, eliminated 100% hypoglycemia, A1C unchanged

THANKS!!