Welcome!

MCT2D Fall Regional Meetings

Lauren Oshman, MD, MPH, FAAFP

MCT2D Program Director

Liisa, PAB member

Prediabetic for many years, diagnosed with T2D in Feb 2022

I don't know if it was my doctor's approach but it was what I needed, at the right time. It made all the difference.

In our first appointment, immediately, she says enough playing around. Your numbers have been going up and up and up. And it's time to take this serious. **It was very emotional. I've never cried like that in a doctor's office before.**

She put my name in for the diabetes education and started me on a prescription of Rybelsus. But it was the perfect conversation to have at the right time when I needed to make this change. So I'm grateful to it.

MCT2D

It was the perfect conversation to have at the right time when I needed to make this change.

Rybelsus and having the chance to make the right diet choices

Such a supportive family. I feel it. I’m on the receiving end of it this time.

Year in Review

Meetings

Spring Regional Meetings (April/May 2022)

- First time convening practice clinical champions
- Introduced to the MCT2D Data Dashboards
- Discussed barriers and challenges amongst peers
- Learned about chronic kidney disease

Collaborative Wide Meeting (June 2022)

Available on YouTube!

- Convened physician organization leadership
- Shared best practices and implementation strategies from pilot/accelerated sites
- Keynote speaker (Dr. David Ludwig) presentation on low carbohydrate diets
- Demonstrated cost savings of SGLT2is/GLP-1RAs

Year in Review

What We've Been Working On

Launching the Learning Community

- Hosting educational events
- Learning Community Newsletter
- Learning from you (blog posts, patient stories, feedback)

Submitting Case Summaries

Each MCT2D physician submitted a case summary about their experience with the initiatives. **We are using these case summaries for the following:**

- Case examples
- Understanding needs (e.g. prioritized low carb resource creation based on feedback)
- Learning challenges with each initiative
- Demonstrating challenges to key stakeholders (e.g. insurers)

Today's Agenda

Time	Topic	Presenter
6:00pm - 6:15pm	**Welcome and Updates**	Lauren Oshman, MD MCT2D Program Director
6:15pm - 6:35pm	**Data Dashboard Updates**	Jake Reiss, MHSA Associate Program Manager
6:35pm - 6:55pm	**Regional Summary Statistics And Performance**	Table discussions
6:55pm - 7:05pm	**Break**	N/A
7:05pm - 7:25pm	**CGM in Type 2 Diabetes**	Opada Alzohaili, MD, FACE, MBA Metro Detroit Endocrinology Center
7:25pm - 7:50pm	**Operationalizing a Low Carb Diet In Type 2 Diabetes**	Rina Hisamatsu, RDN MCT2D Dietitian
7:50pm - 8:00pm	**Wrap Up & Closing**	Lauren Oshman, MD MCT2D Program Director

Updates

- Who is MCT2D?
- Coverage Wins
- Jumpstart Program
- New Tools

Who is MCT2D?

>300 Primary Care Practices

15 Nephrology Practices

14 Endocrinology Practices

1000+ Participating Physicians

Represented by

28 Physician Organizations

Steering Committee

12 members, representatives from each stakeholder in MCT2D (POs, PCP practices, patients, endocrinology, & nephrology)

Patient Advisory Board

Meetings bi-monthly
~12-14 regular attendees
Invited to all regional and collaborative meetings

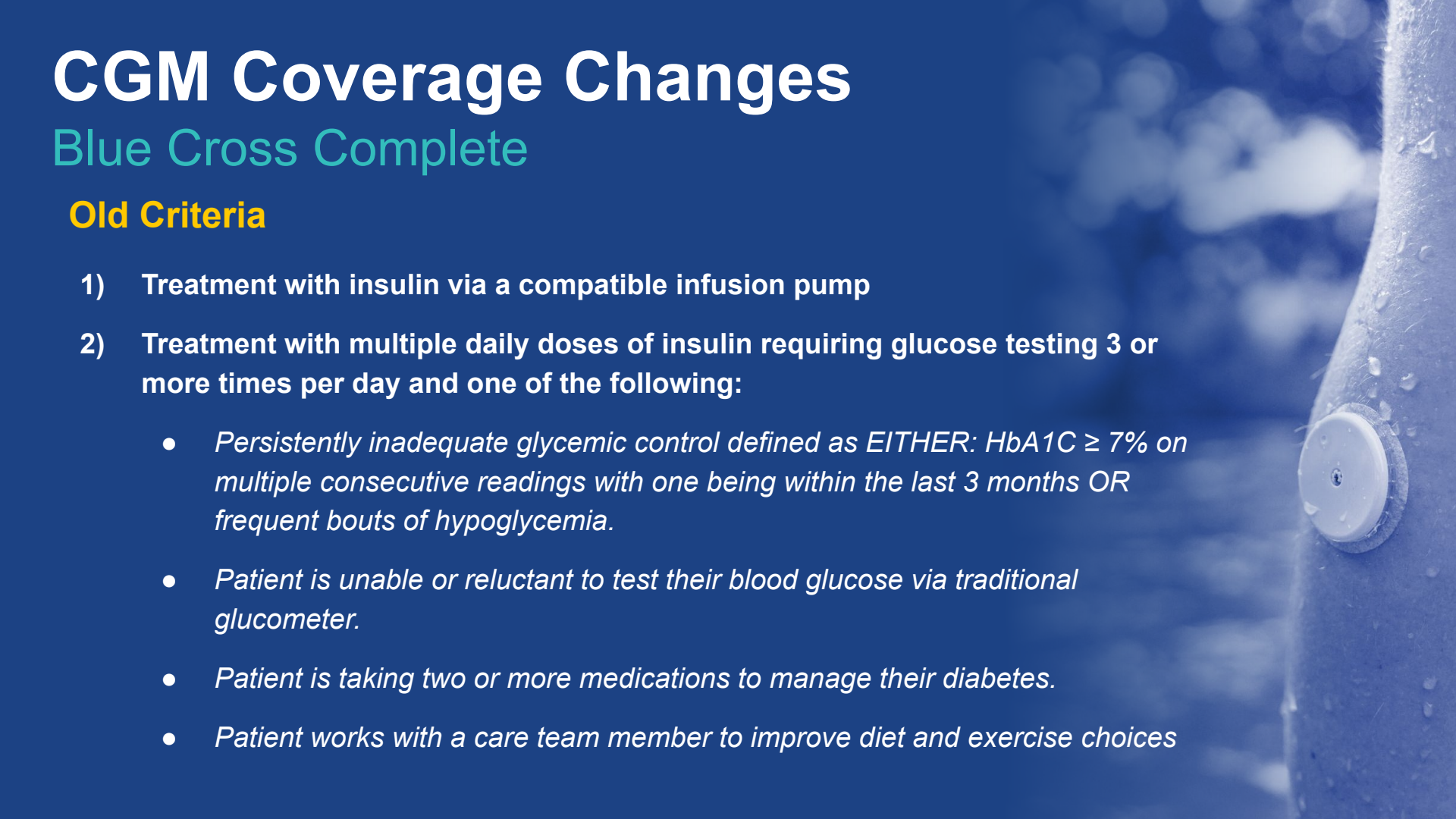
Expansions in CGM Coverage

CGM Coverage Changes

Blue Cross Complete

Old Criteria

1) **Treatment with insulin via a compatible infusion pump**
2) **Treatment with multiple daily doses of insulin requiring glucose testing 3 or more times per day and one of the following:**
    - *Persistently inadequate glycemic control defined as EITHER: HbA1C ≥ 7% on multiple consecutive readings with one being within the last 3 months OR frequent bouts of hypoglycemia.*
    - *Patient is unable or reluctant to test their blood glucose via traditional glucometer.*
    - *Patient is taking two or more medications to manage their diabetes.*
    - *Patient works with a care team member to improve diet and exercise choices*



CGM Coverage Changes

Blue Cross Complete

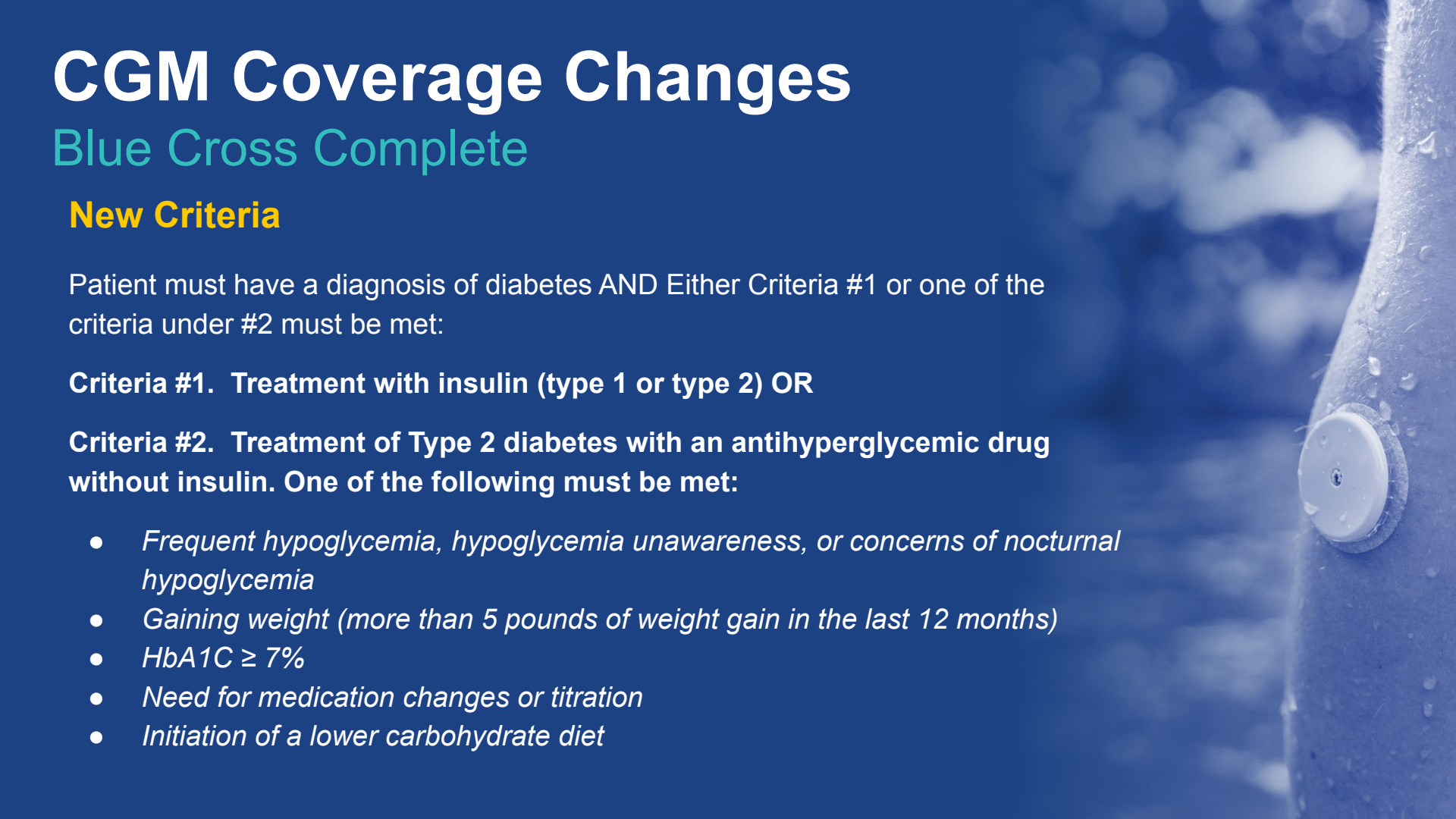
New Criteria

Patient must have a diagnosis of diabetes AND Either Criteria #1 or one of the criteria under #2 must be met:

Criteria #1. Treatment with insulin (type 1 or type 2) OR

Criteria #2. Treatment of Type 2 diabetes with an antihyperglycemic drug without insulin. One of the following must be met:

- *Frequent hypoglycemia, hypoglycemia unawareness, or concerns of nocturnal hypoglycemia*
- *Gaining weight (more than 5 pounds of weight gain in the last 12 months)*
- *HbA1C ≥ 7%*
- *Need for medication changes or titration*
- *Initiation of a lower carbohydrate diet*



CGM Coverage Changes

United Healthcare

DME Criteria and Criteria for non-MCT2D Physicians

- Diagnosis of diabetes requiring insulin
- Blood glucose testing at least 4x daily
- Insulin injections at least 3 x daily OR use of continuous insulin infusion pump
- Frequent adjustments to treatment regimen necessary based on glucose testing results
- Documented compliance to physician-directed comprehensive diabetes management program

New Criteria for MCT2D Physicians

- Ordered by an MCT2D member provider
- Patient has T2D diagnosis

Great News: United Healthcare will be adding NPs and PAs to the prior authorization removal. Stay tuned for more details!

How to use Poll Everywhere

Join by Web

1. Go to **PollEv.com**
2. Enter **MCT2D945**
3. Respond to activity

Join by Text

1. Text **MCT2D945** to **22333**
2. Text in your message

When poll is active, respond at **pollev.com/mct2d945**

Text **MCT2D945** to **22333** once to join

Have you submitted any CGM prescriptions for United Healthcare patients since the coverage change in mid-August?

Yes, and they went through without any issues

Yes, but there were issues with getting the CGM prescription without prior authorization

No

Start the presentation to see live content. For screen share software, share the entire screen. Get help at **pollev.com/app**

HEALTHY EATING JUMPSTART

GROCERY DELIVERY PROGRAM

An MCT2D + HBOM + MSHIELD Initiative

PURPOSE

To allow individuals diagnosed with **Type 2 Diabetes** who experience **food insecurity or are low-income** to have healthy, lower carb foods delivered to their home to **promote healthy eating patterns.**

OVERVIEW

3 Months of Shipt Healthy Choice Credits

$240 of total food credits ($80 per month)

Multiple Options for Ordering

Online ordering can be done on computer or mobile device

12 Weeks of Education and Support

Via website, email, and print

JUMPSTART practices in this region!

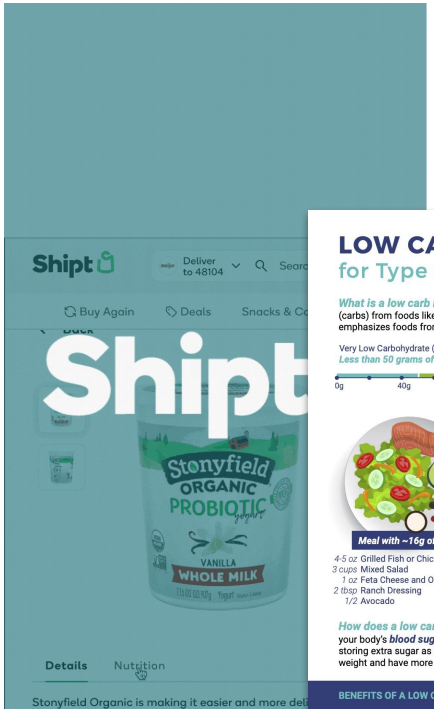
Western Wayne Physicians - Allen Park

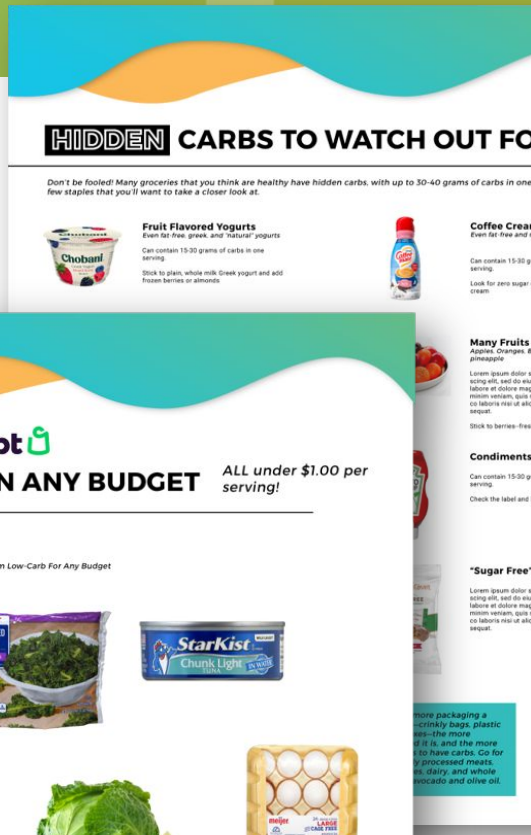
JUMPSTART practices in this region!

Practice Names

12 WEEKS of lower carb lifestyle education

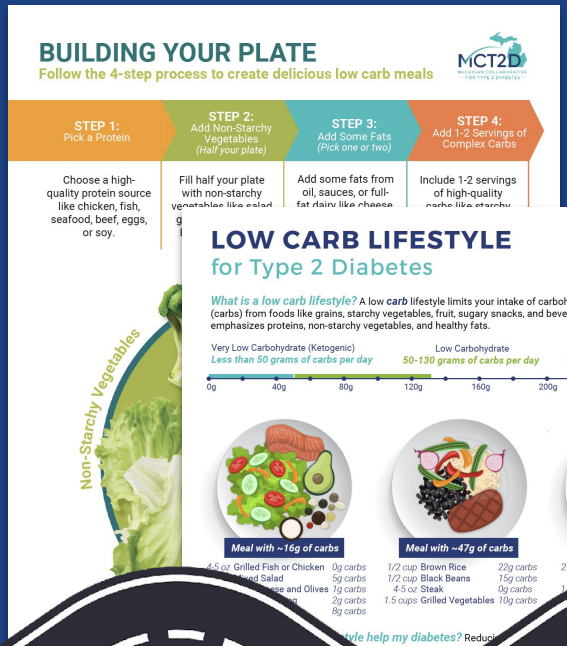
Each week participants will get meal plans, recipes, tips tools, and educational materials delivered directly to them.

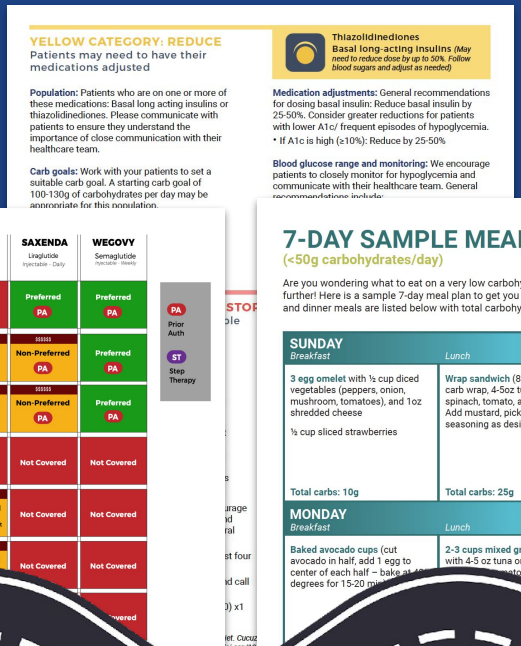


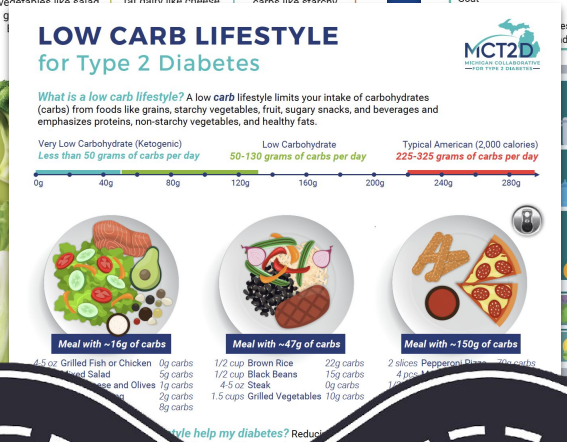


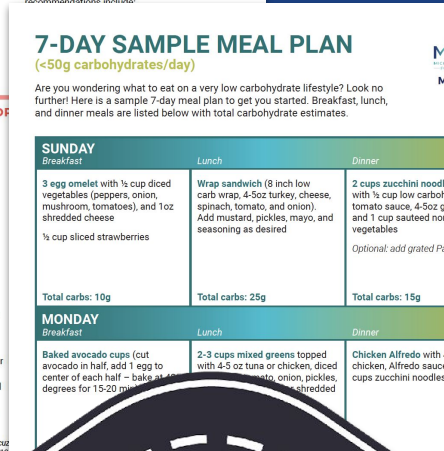
New MCT2D Tools

What we've been working on: new tools and resources!









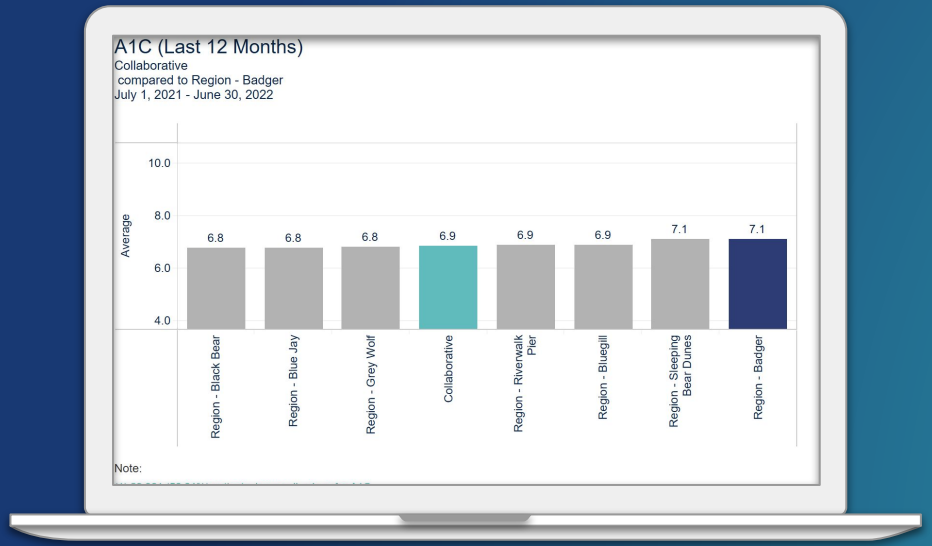
Patient Data Dashboard Updates and Demo

Jake Reiss, MHSA

MCT2D Associate Program Manager

Dashboard Enhancements

Conducted dashboard usability testing sessions



Focusing on design and user experience

Data up to date through 6/30/2022

Launched summary statistics

Later this year, addition of BCN claims data

Future Directions: Data

Rel #	MCT2D Publish date		Paid claims data through	Clinical data through
	2/15/2023	Data Refresh	11/30/2022	11/30/2022
1	4/11/2023	Release 1 Enhancement & Data Refresh	12/31/2022	12/31/2022
	5/4/2023	Data Refresh	2/28/2023	2/28/2023
2	6/19/2023	Release 2 Enhancement & Data Refresh	3/31/2023	3/31/2023
	8/4/2023	Data Refresh	5/31/2023	5/31/2023
3	9/21/2023	Release 3 Enhancement & Data Refresh	6/30/2023	6/30/2023
	11/7/2023	Data Refresh	8/31/2023	8/31/2023
4	12/14/2023	Release 4 Enhancement & Data Refresh	9/30/2023	9/30/2023

- **User experience/design changes**
- **Planned enhancements**
  - Patient exclusion tool to remove patients who should not be in the dashboard.
  - Dashboard will be limited to patients at least 18 years old.
  - Actual medication names and strengths will be listed rather than just the medication class.
  - Prepopulated reports of common and relevant filtering.
  - Adding serum creatinine
- **All payor PPQC data delayed- MDC determining an updated date this can be incorporated**

MCT2D
MICHIGAN COLLABORATIVE
FOR TYPE 2 DIABETES

Discussion: **Regional Reports**

Discussion Question Suggestions

Knowing that the insurance coverage for all of these patients are the same, why do you think we are seeing variability amongst regions?

Looking at patients who are on no therapy or patients who are on therapy that is not guideline concordant (e.g. DPP4is and sulfonylureas), what ideas do you have to improve the use of SGLT2is and GLP-1RAs?

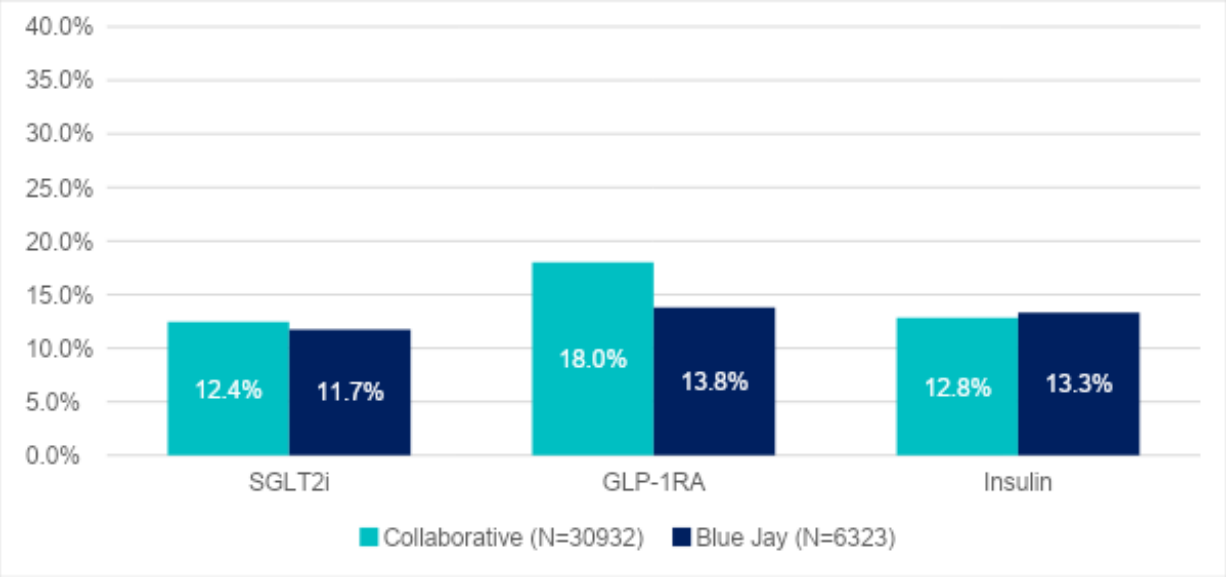
The Blue Jay Region has the lowest percentage of patient on a GLP-1RA of all of the regions for the time period of January 1st, 2021 to June 30th, 2022. What factors do you think may contribute to this lower rate?

Michigan collaborative for type 2 Diabetes (MCT2D): BLUE Jay

Overview

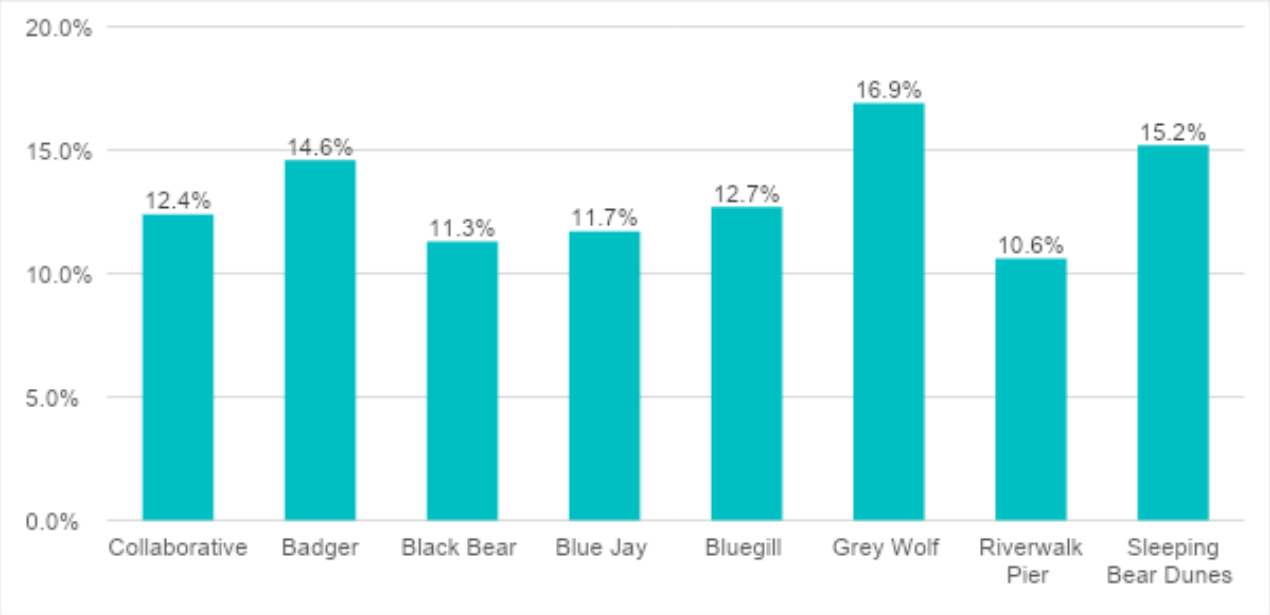
Collaborative level data includes any type 2 diabetes patient in participating practices who has been seen by a primary care physician (PCP) part of the Michigan Collaborative for Type 2 Diabetes (MCT2D). The patient population includes those who have a diagnosis code for type 2 diabetes, A1c of 6.5 or greater, and/or have been prescribed diabetes medication (ex. metformin, SGLT2i, GLP-1RA, insulin, sulfonylurea, etc.) The data is limited to just type 2 diabetes patients. Patients included must be covered by either Blue Cross Blue Shield Blue Care Network of Michigan (BCBSM) Preferred Provider Organization (PPO) or Medicare Advantage. The data in this report is preliminary and there are limitations. For instance, medication data is not available for patients with pharmacy carve outs; therefore, medication rates may be underestimated. The time frame used was from January 1, 2021 until June 30, 2022.

1. Comparison of Prescribing Rates of SGLT2i, GLP-1RA, and Insulin Between Blue Jay Region and Collaborative (Excluding Pharmacy Carve Outs)



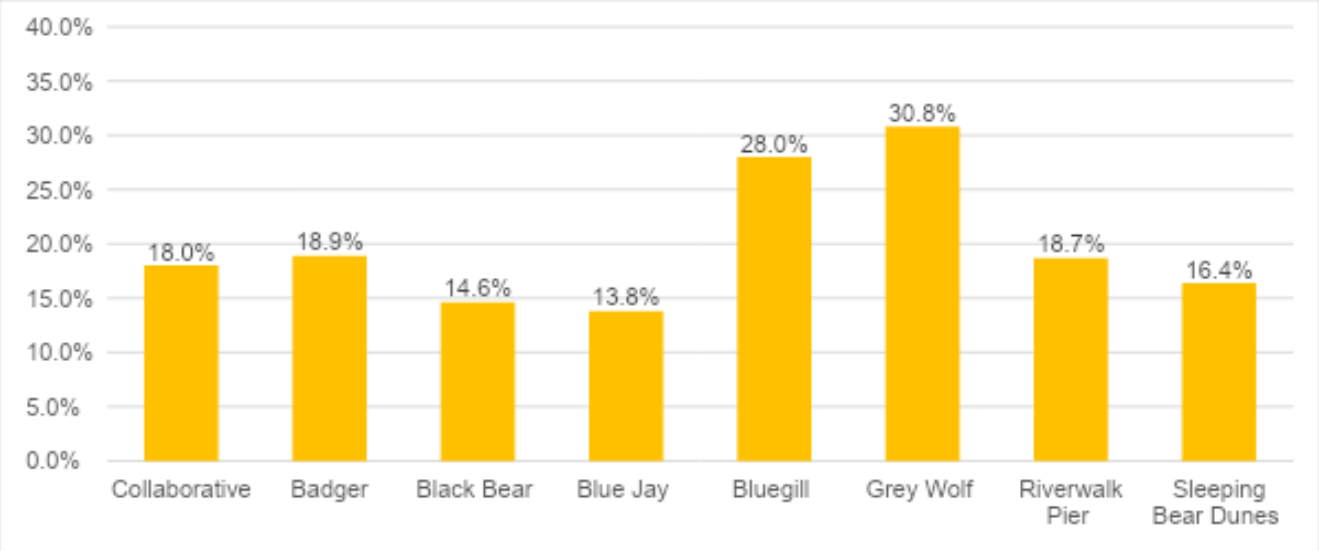
*The denominator used to calculate the medication prescribing rates was the number of unique patients (N=30,932) part of MCT2D. The patients included must be covered by either BCBSM PPO or Medicare Advantage. Data is currently unavailable for patients with other insurance coverage. The data also excludes pharmacy carve outs. For the Blue Jay bars, the denominator used to calculate the medication prescribing rates was the number of unique patients (N=6,323) part of the Blue Jay region of MCT2D.

2. Comparison of Prescribing Rates of SGLT2i Across MCT2D Regions (Excluding Pharmacy Carve Outs)



*The denominator used to calculate the medication prescribing rates was the number of unique patients (N=30,932) part of MCT2D. For each region, the denominator used to calculate the medication prescribing rates was the number of unique patients part of the region (Badger: N=3,103, Black Bear: N=9,829, Blue Jay: N=6,323, Bluegill: N=1,767, Grey Wolf: N=3,126, Riverwalk Pier: N=5,156, Sleeping Bear Dunes: N=1,628).

3. Comparison of Prescribing Rates of GLP-1RA Across MCT2D Regions (Excluding Pharmacy Carve Outs)



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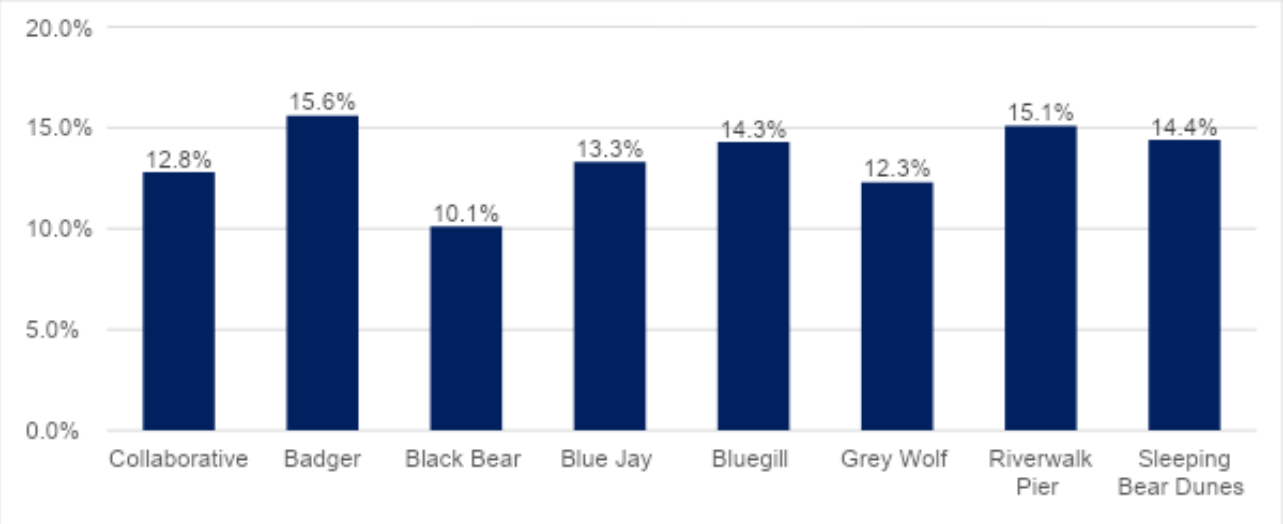
4. Comparison of Prescribing Rates of Insulin Across MCT2D Regions (Excluding Pharmacy Carve Outs)



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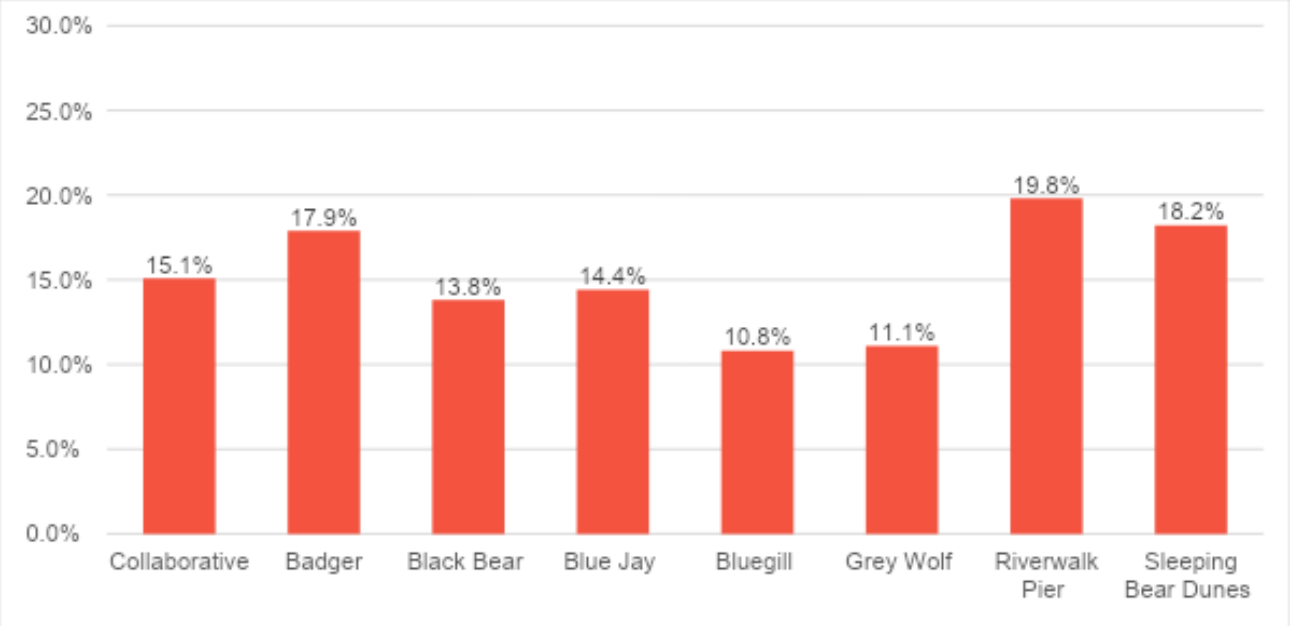
5. Comparison of Prescribing Rates of Sulfonylurea Across MCT2D Regions (Excluding Pharmacy Carve Outs)



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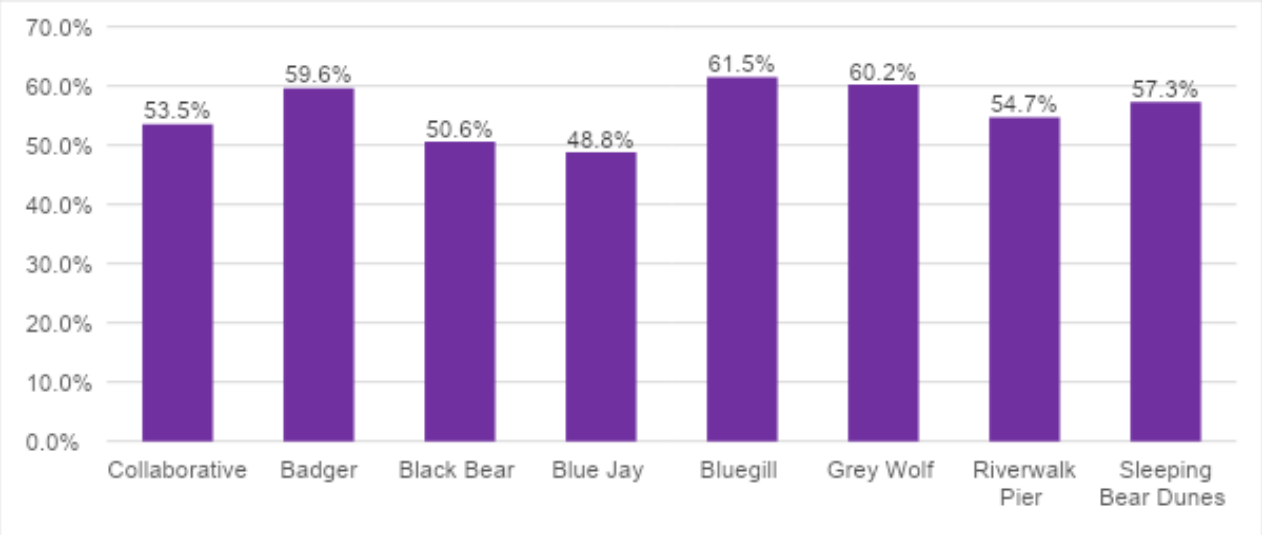
6. Comparison of Prescribing Rates of Metformin Across MCT2D Regions (Excluding Pharmacy Carve Outs)



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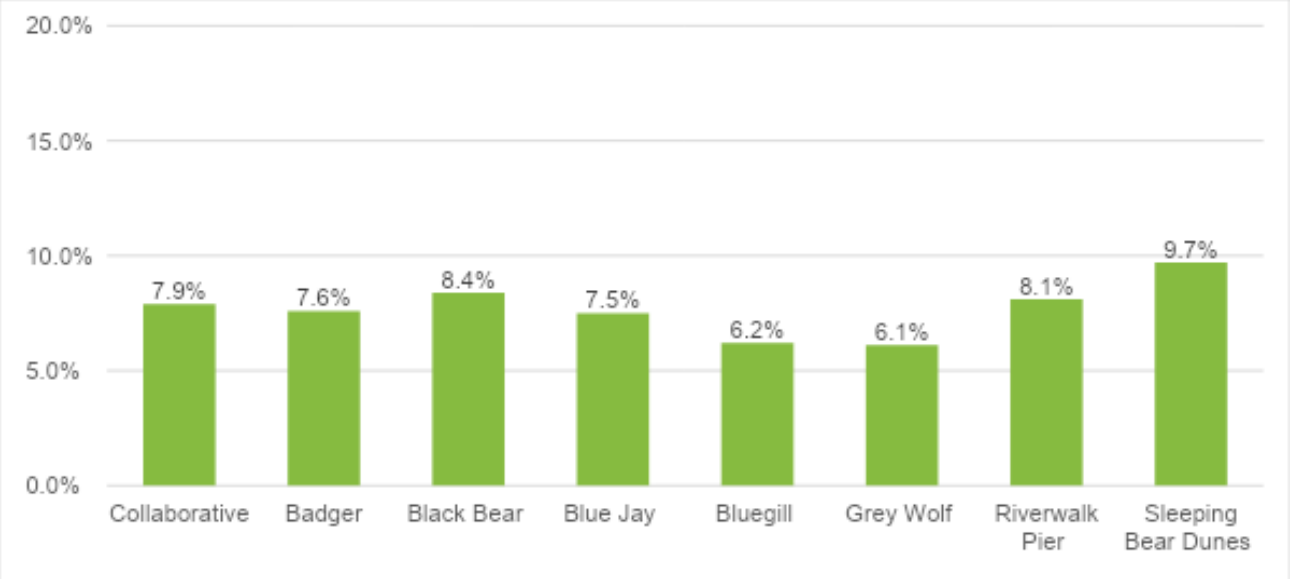
7. Comparison of Prescribing Rates of Dipeptidyl Peptidase 4 Inhibitors (DPP4i) Across MCT2D Regions (Excluding Pharmacy Carve Outs)



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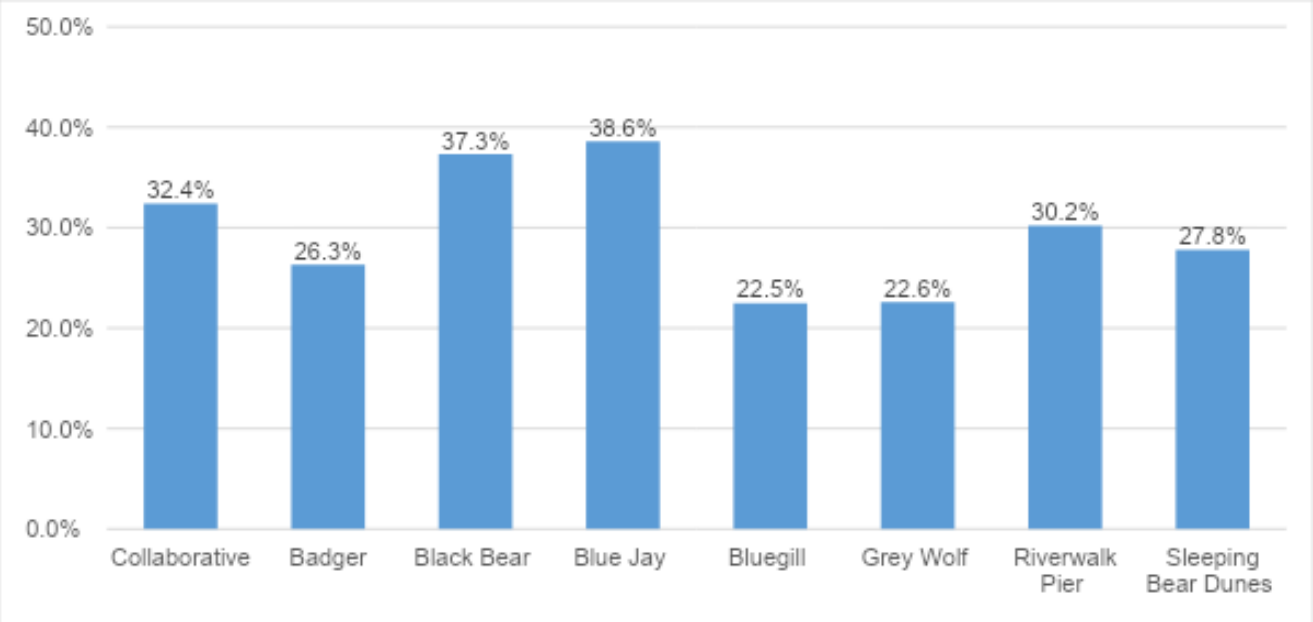
8. Percentage of Patients Not On Any Diabetes Medication Across MCT2D Regions



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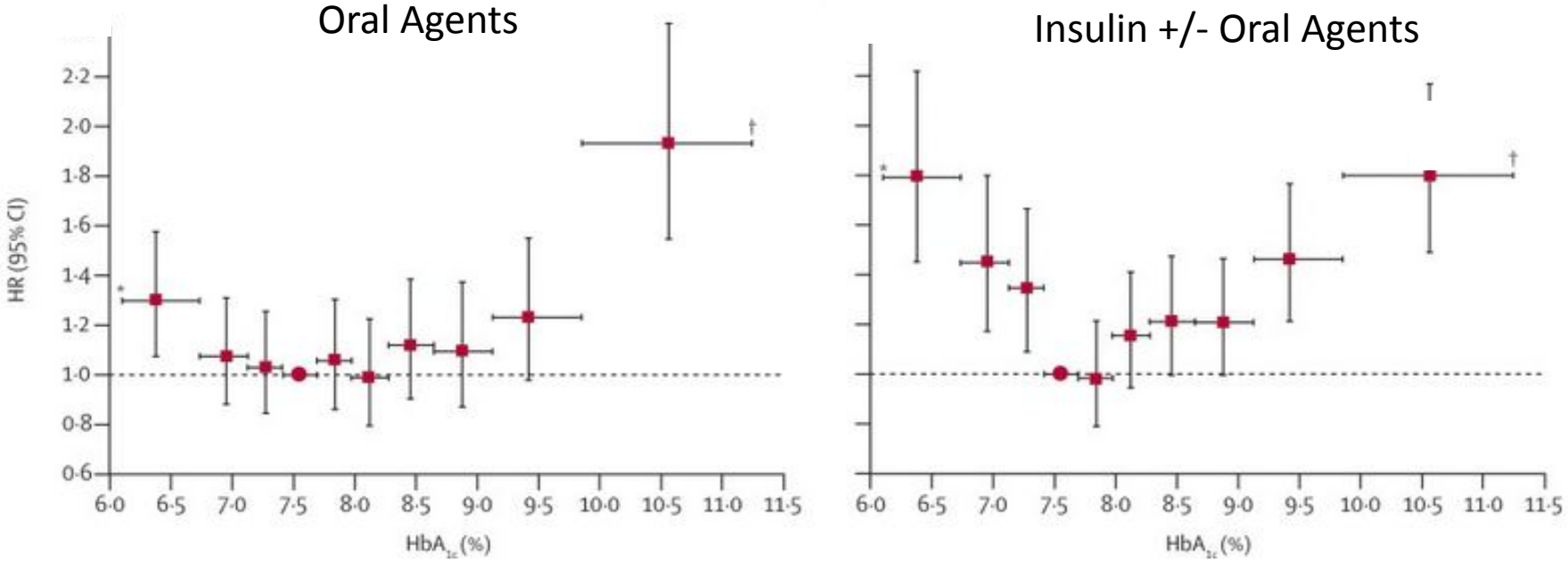
Use of CGMS in type 2 diabetes

OPADA ALZOHAILI MD FACE
Endocrinology
Assistant Professor
Wayne State University

Objectives

- Continuous Glucose Monitoring in type 2 diabetes use
- CGM in outpatient office settings

Survival as a Function of A1C in Patients Type 2 Diabetes: A Retrospective Cohort Study*

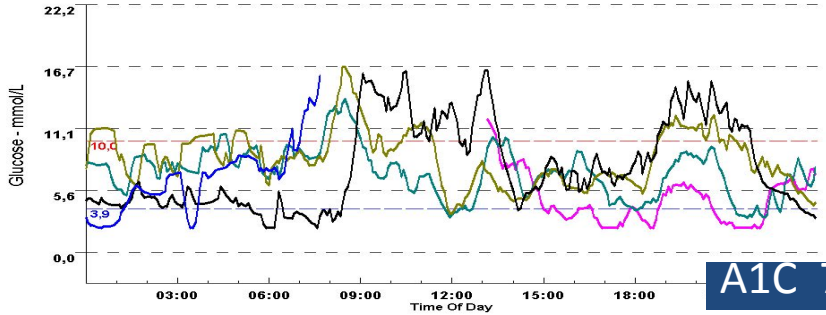


Currie CJ, et al. *Lancet.* 2010;6(375):481-9.

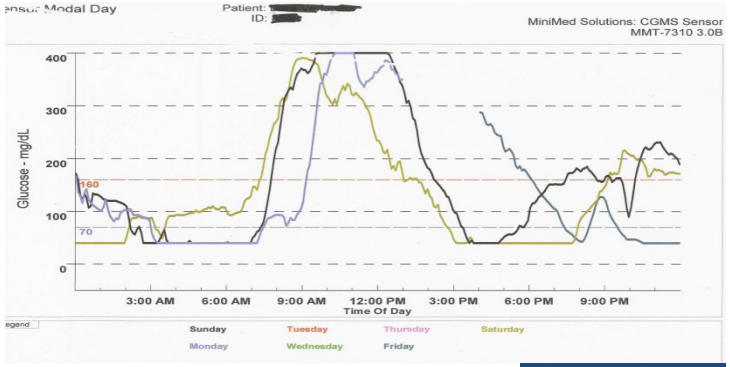
*28,000 patients 50 years and older

It’s Not Just About A1C Anymore!

Glycemic Variability



A1C 7

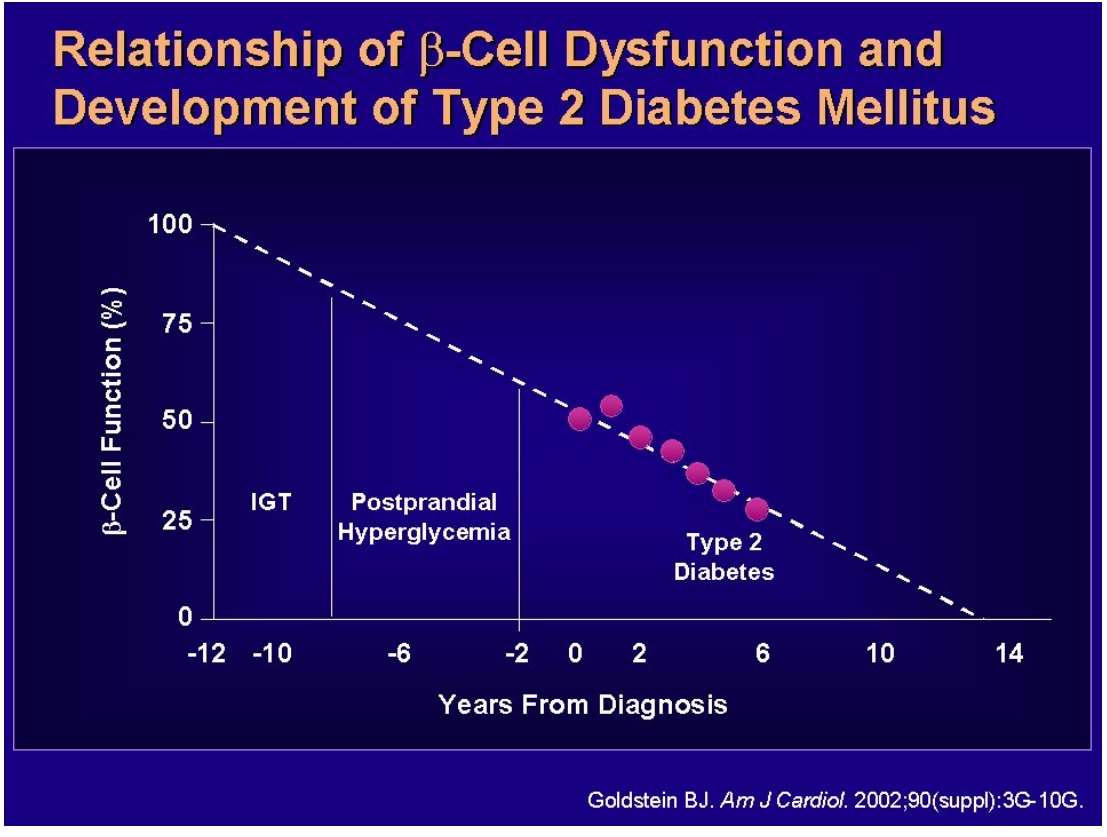


A1C 7.2

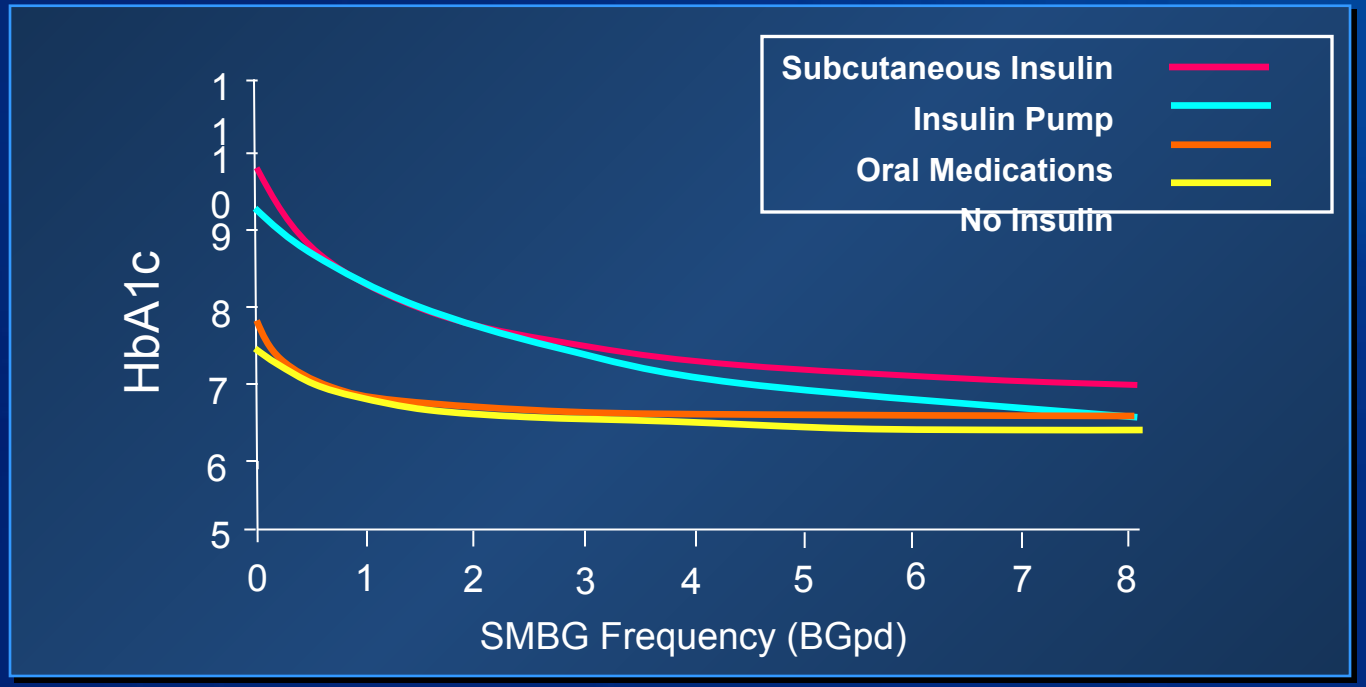
- Very high or very low blood glucose levels
  - Missed with Fingersticks
  - Missed with A1C

Many HCP’s strongly believe measuring glycemic variability in combination with A1C may be a more reliable indicator to reduce long term complications

Relationship of β-Cell Dysfunction and Development of Type 2 Diabetes Mellitus



Increased SMBG Testing Frequency is Associated With Lower HbA_{1c}

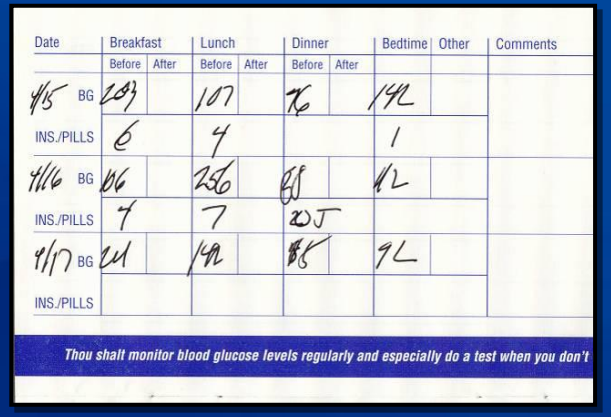


- n=1255 patients
- n=552 no insulin
- Results indicate frequent BG testing reduces HbA_{1C}

Adapted with permission from Davidson PC, et al. *J Diabet Sci Technol*. 2007;1(6):850-856.

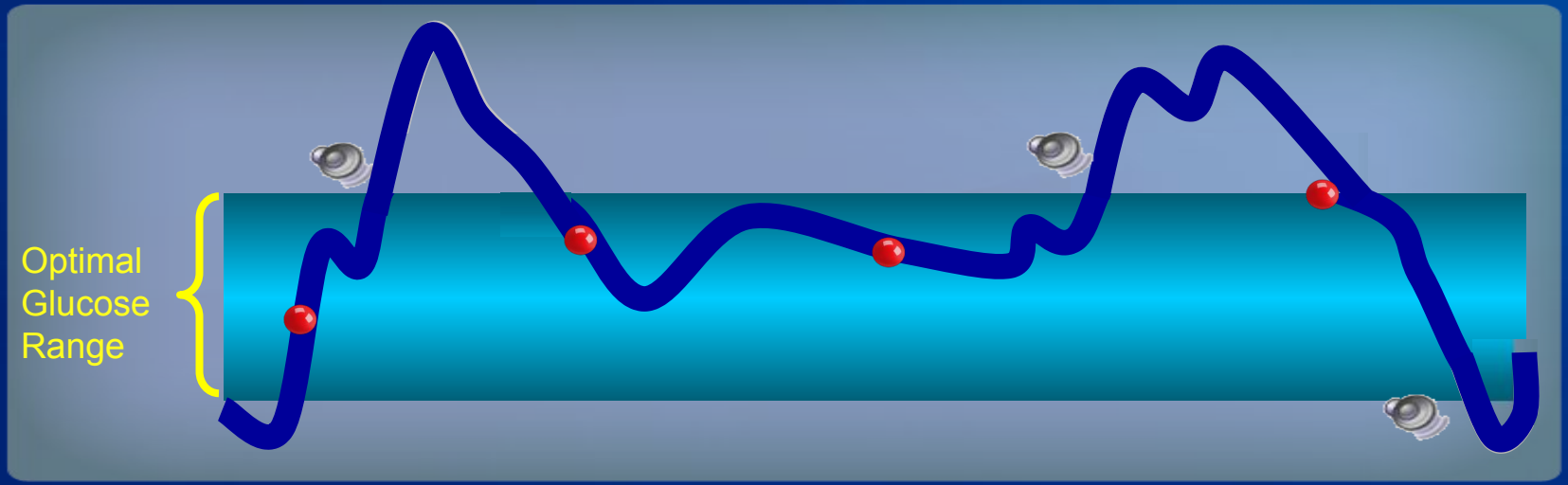
Logbook Diary Limitations: The Traditional Approach

- Problems faced with logbook approach[1,2]:
  - inconsistent record-keeping
  - Incorrect transcription of glucose
  - Missing data:
  - falsification of information
  - Illegibility of diary



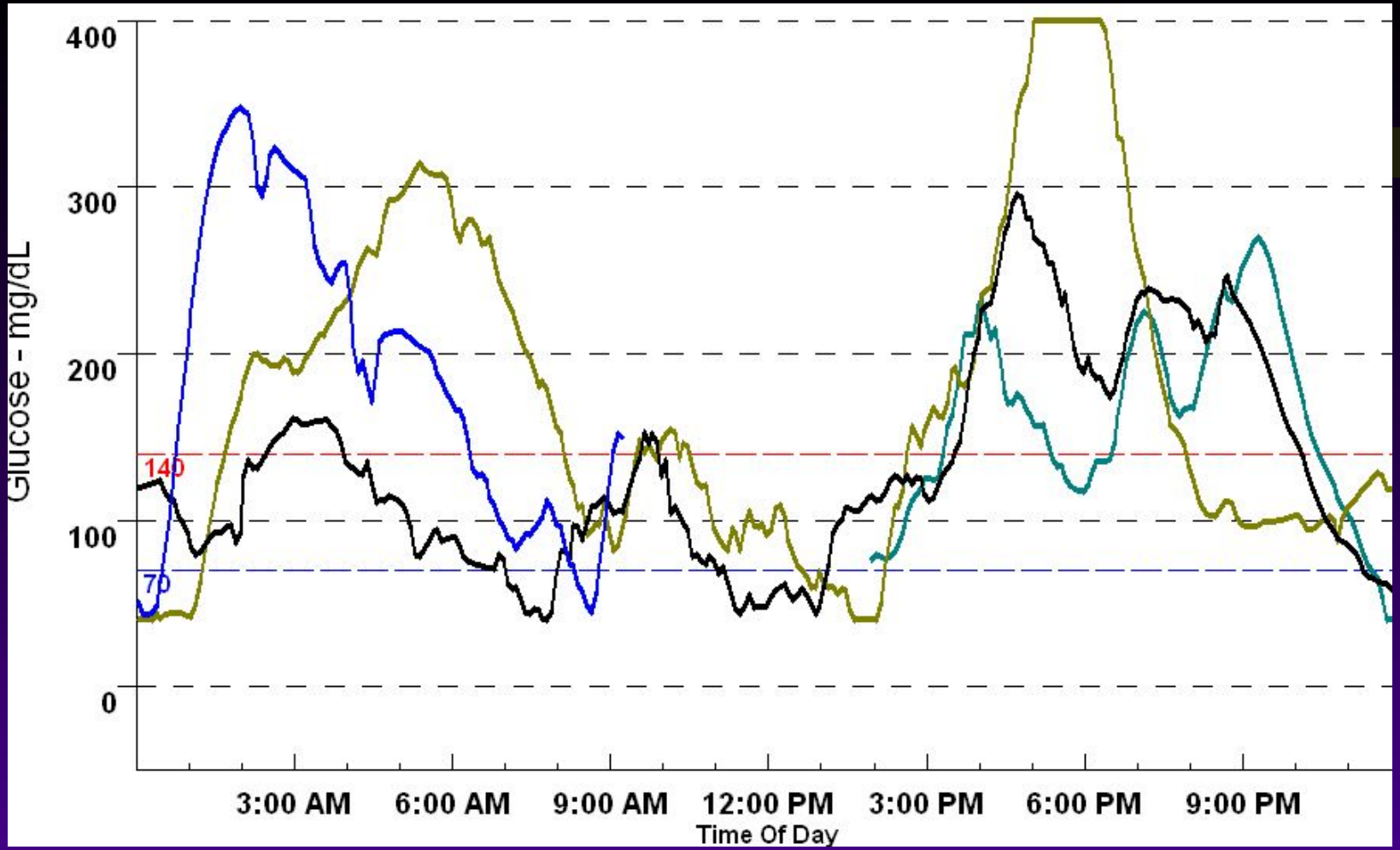
1. Gonder-Frederick LA, et al. *Diabetes Care*. 1988;11(7):579-585.

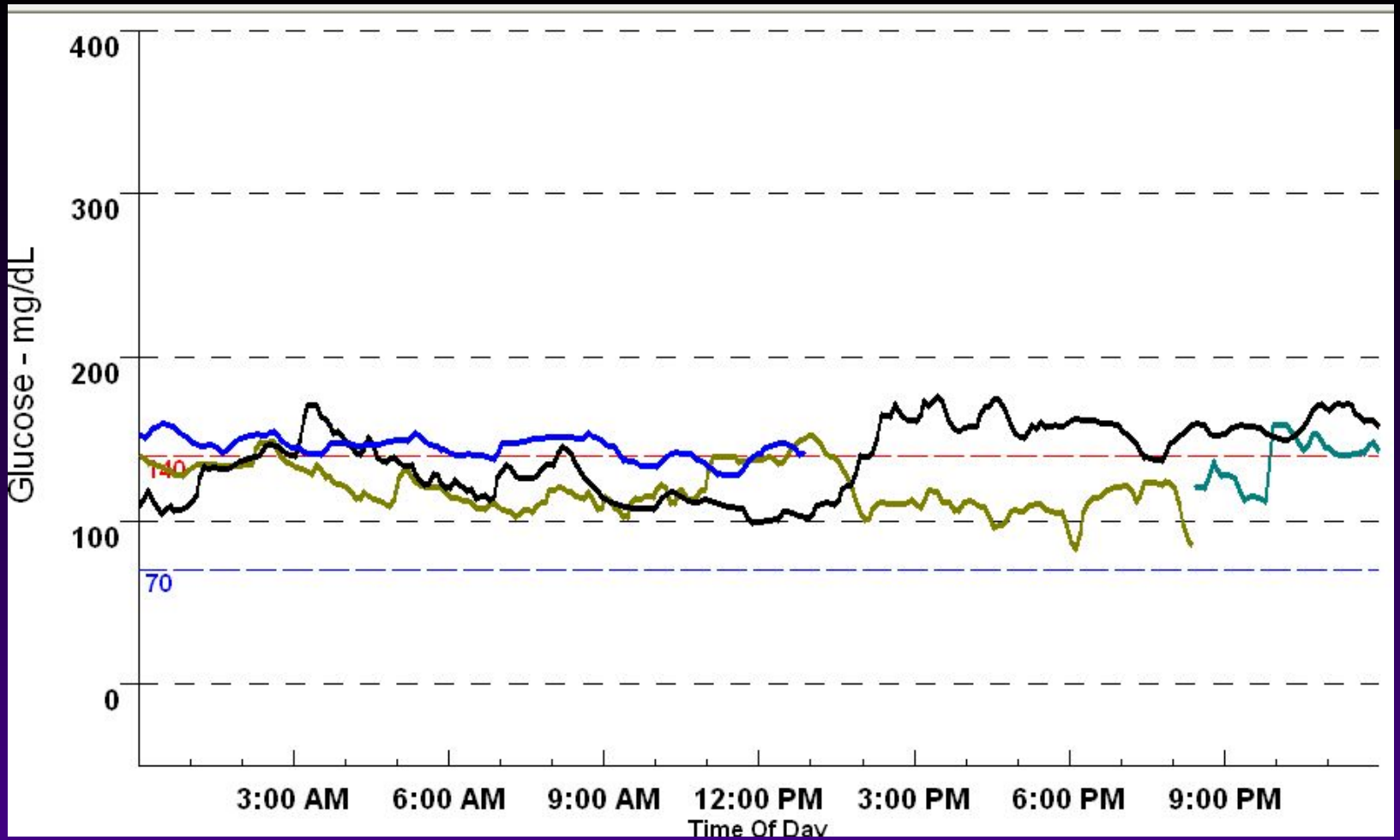
The Value of REAL-Time



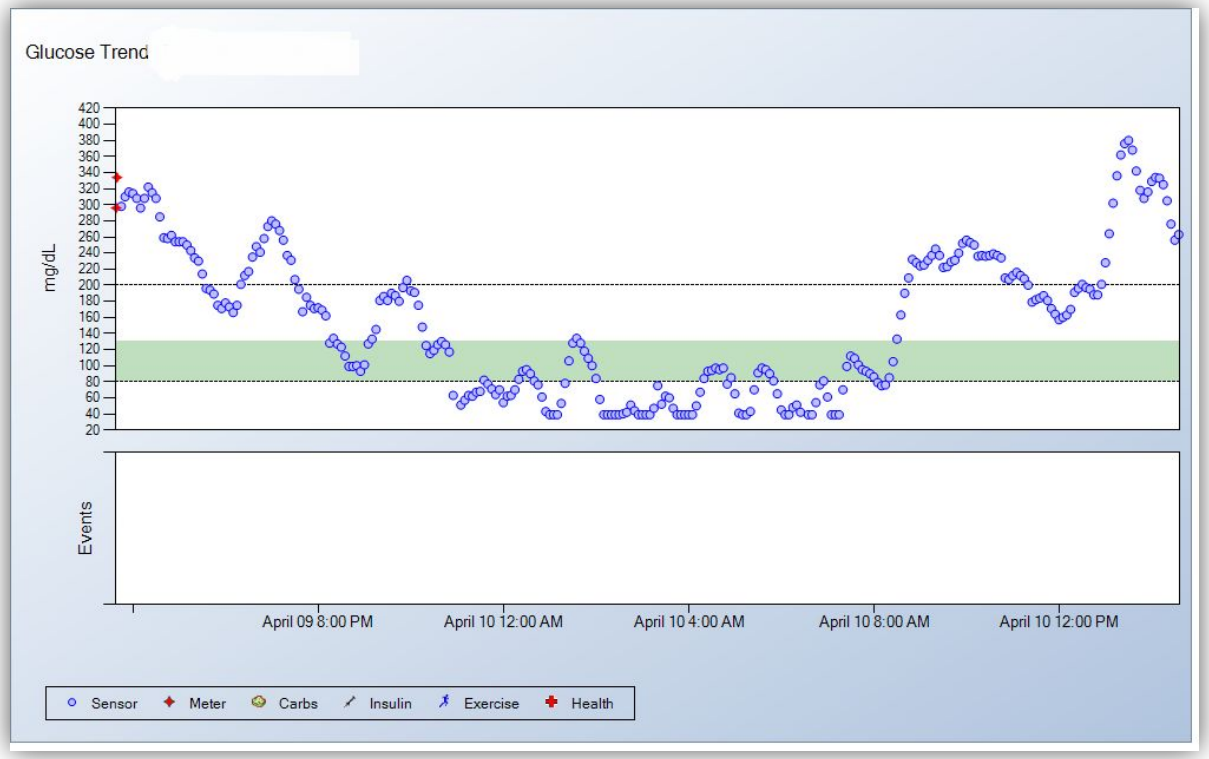
Fingerstick Alert

Schematic representation only.


Glucose - mg/dL
400
300
200
100
0
140
70
3:00 AM
6:00 AM
9:00 AM
12:00 PM
3:00 PM
6:00 PM
9:00 PM
Time Of Day


Glucose - mg/dL
400
300
200
140
100
70
0
3:00 AM
6:00 AM
9:00 AM
12:00 PM
3:00 PM
6:00 PM
9:00 PM
Time Of Day

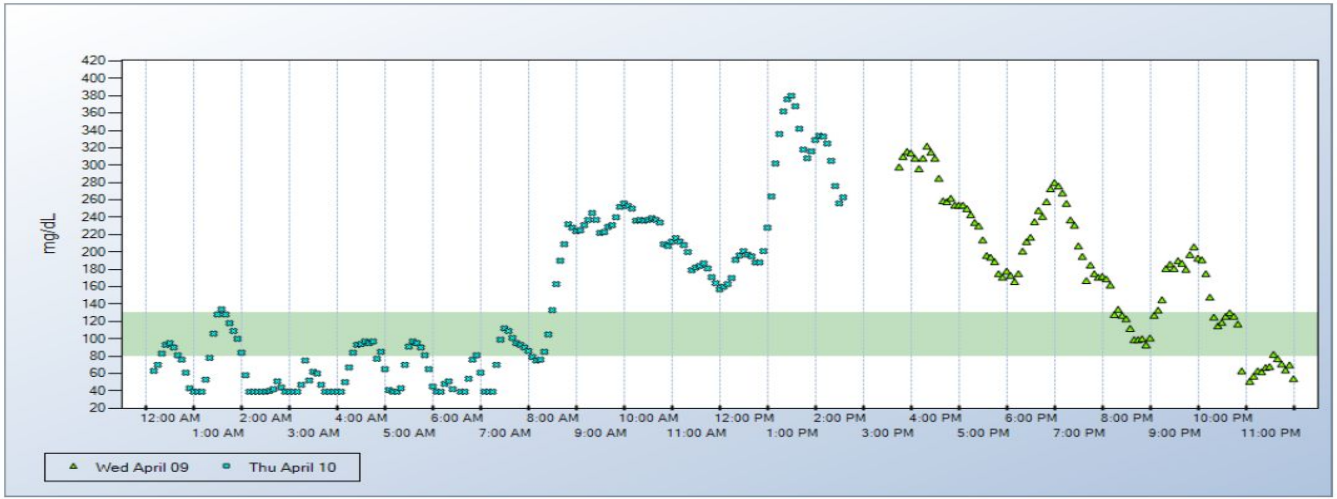
samples


Glucose Trend
mg/dL
420
400
380
360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
Events
April 09 8:00 PM
April 10 12:00 AM
April 10 4:00 AM
April 10 8:00 AM
April 10 12:00 PM
Sensor
Meter
Carbs
Insulin
Exercise
Health

samples

Dexcom
Take control. live uninterrupted.

Modal Day Chart



Stat	Totals	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM
# of Readings	273	12	12	12	12	12	12	11	12	12	12	12	12
Average	156	71	93	42	48	79	66	52	81	150	236	232	187
Min	39	39	39	39	39	39	39	39	39	75	222	207	157
Quartile 25	75	62	72	39	39	66	42	39	62	84	228	228	177

samples

dexcom
Take control. live uninterrupted.

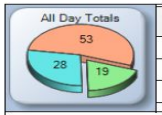
Stat	Totals	12:00 AM	1:00 AM	2:00 AM	3:00 AM	4:00 AM	5:00 AM	6:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	11:00 AM
Median	160	73	103	39	43	84	68	48	92	148	234	236	183
Quartile 75	230	85	120	42	54	94	90	58	100	213	241	238	202
Max	380	95	134	58	75	97	97	81	112	232	256	253	216
Std. Dev.	90	18	34	6	12	19	24	15	28	65	11	15	19
Est Std. Dev.	115	17	36	3	11	21	35	14	28	96	10	7	19
IQR	155	23	49	4	15	28	48	18	37	129	13	9	25
SE Mean	5	5	10	2	3	6	7	5	8	19	3	4	5
%CV	58	26	37	14	25	25	36	29	34	43	5	6	10

Stat	Totals	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM	8:00 PM	9:00 PM	10:00 PM	11:00 PM
# of Readings	273	12	12	7	4	12	12	12	12	12	12	11	12
Average	156	190	333	299	310	286	211	223	212	121	176	130	66
Min	39	160	264	256	298	254	171	166	167	93	127	63	51
Quartile 25	75	184	314	270	307	259	186	194	174	100	171	118	61
Median	160	193	332	305	312	290	205	226	201	118	184	126	66
Quartile 75	230	198	364	329	314	308	236	250	242	130	191	139	70
Max	380	228	380	334	316	322	254	280	276	169	206	191	82
Std. Dev.	90	19	34	34	8	27	31	39	40	25	26	33	9
Est Std. Dev.	115	11	37	44	6	37	37	42	50	22	14	16	7
IQR	155	14	50	60	8	49	50	56	68	30	20	21	10
SE Mean	5	5	10	13	4	8	9	11	12	7	7	10	3
%CV	58	10	10	11	3	9	15	17	19	21	15	26	14

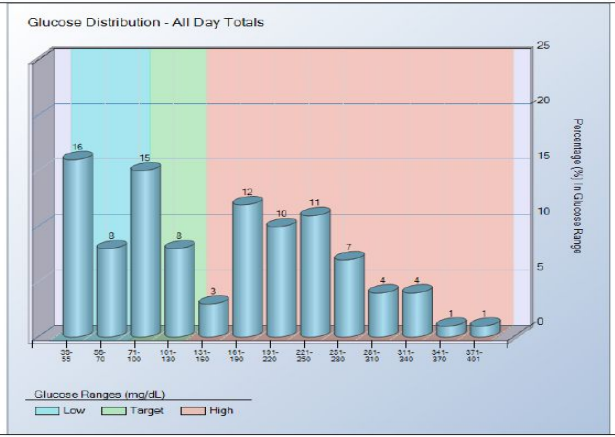
samples

dexcom
Take control. live uninterrupted.

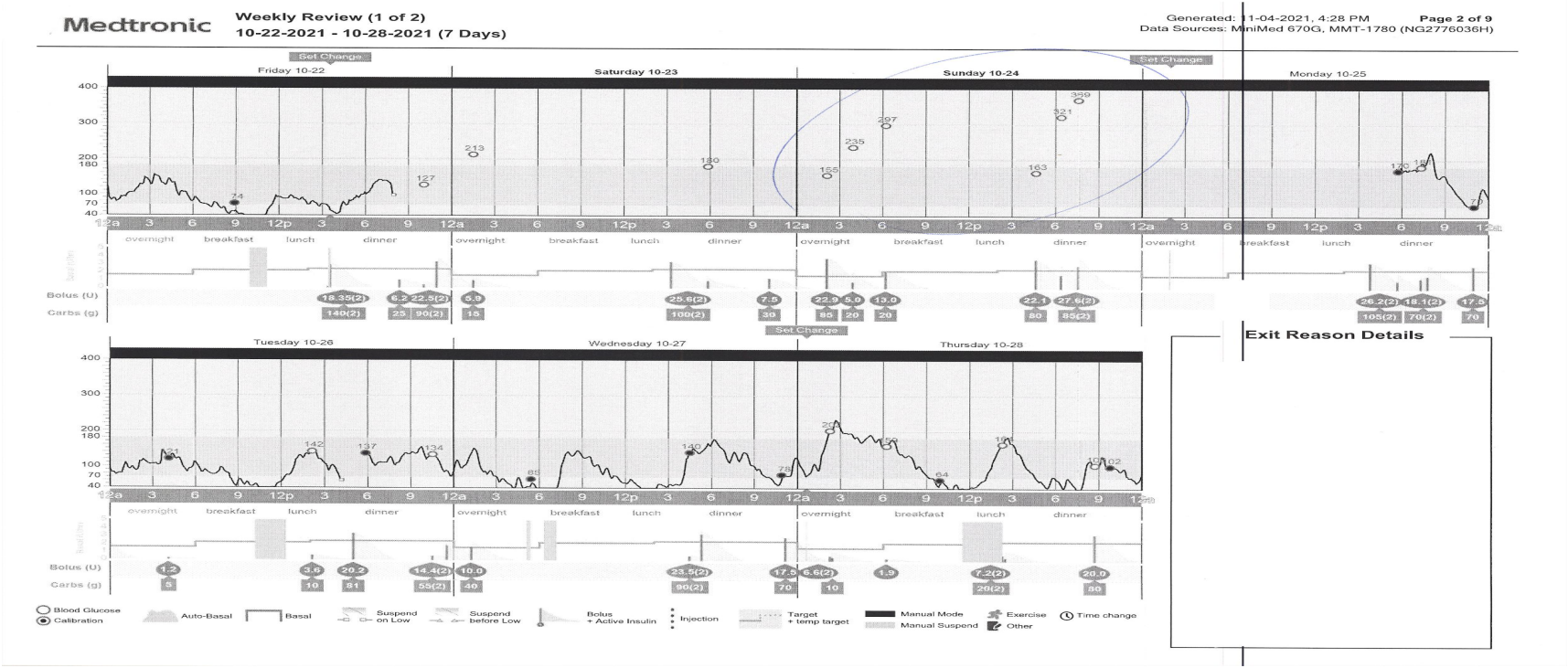
Glucose Distribution Chart



Range	% of Readings	# of Readings	Mean	Median	SD
Target (80- 130)	19	53	Mean	Median	15
Low (39- 79)	28	76	Mean	Median	14
High (131- 401)	53	144	Mean	Median	56



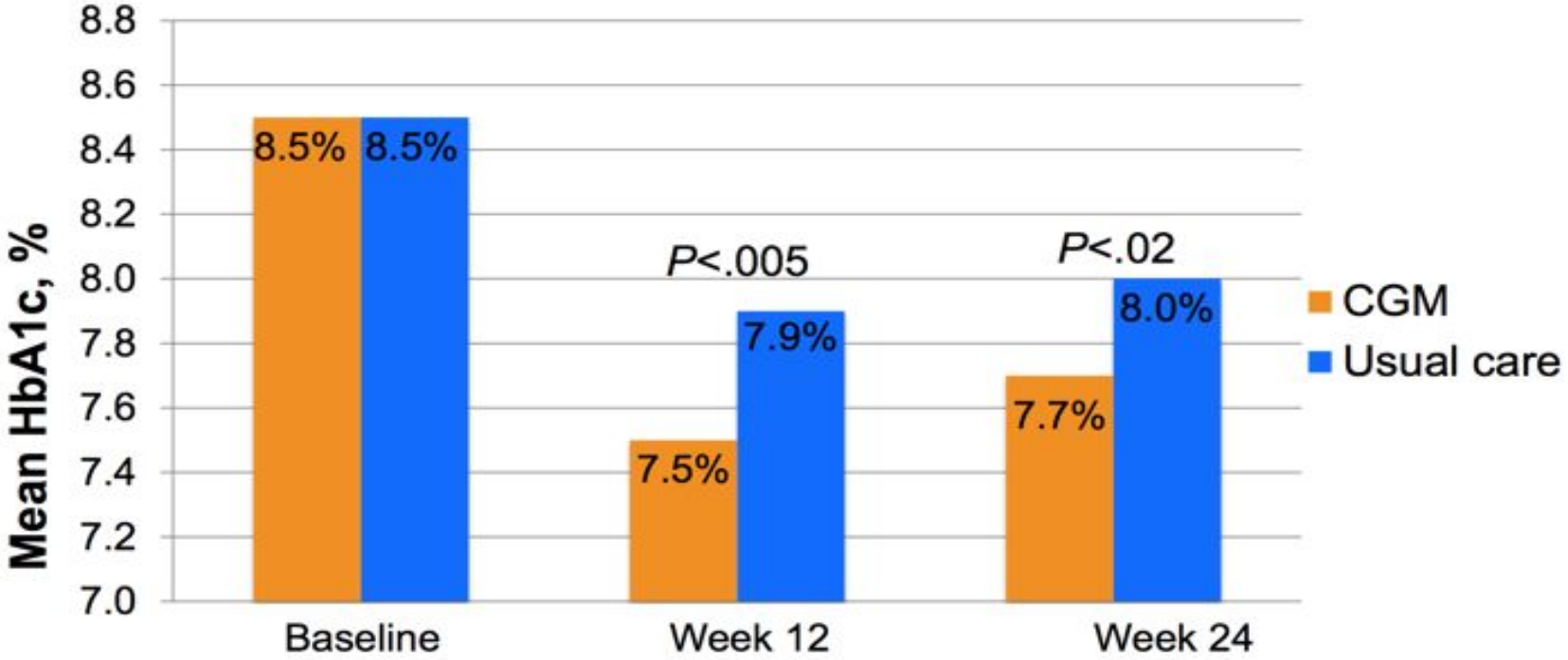
Examples

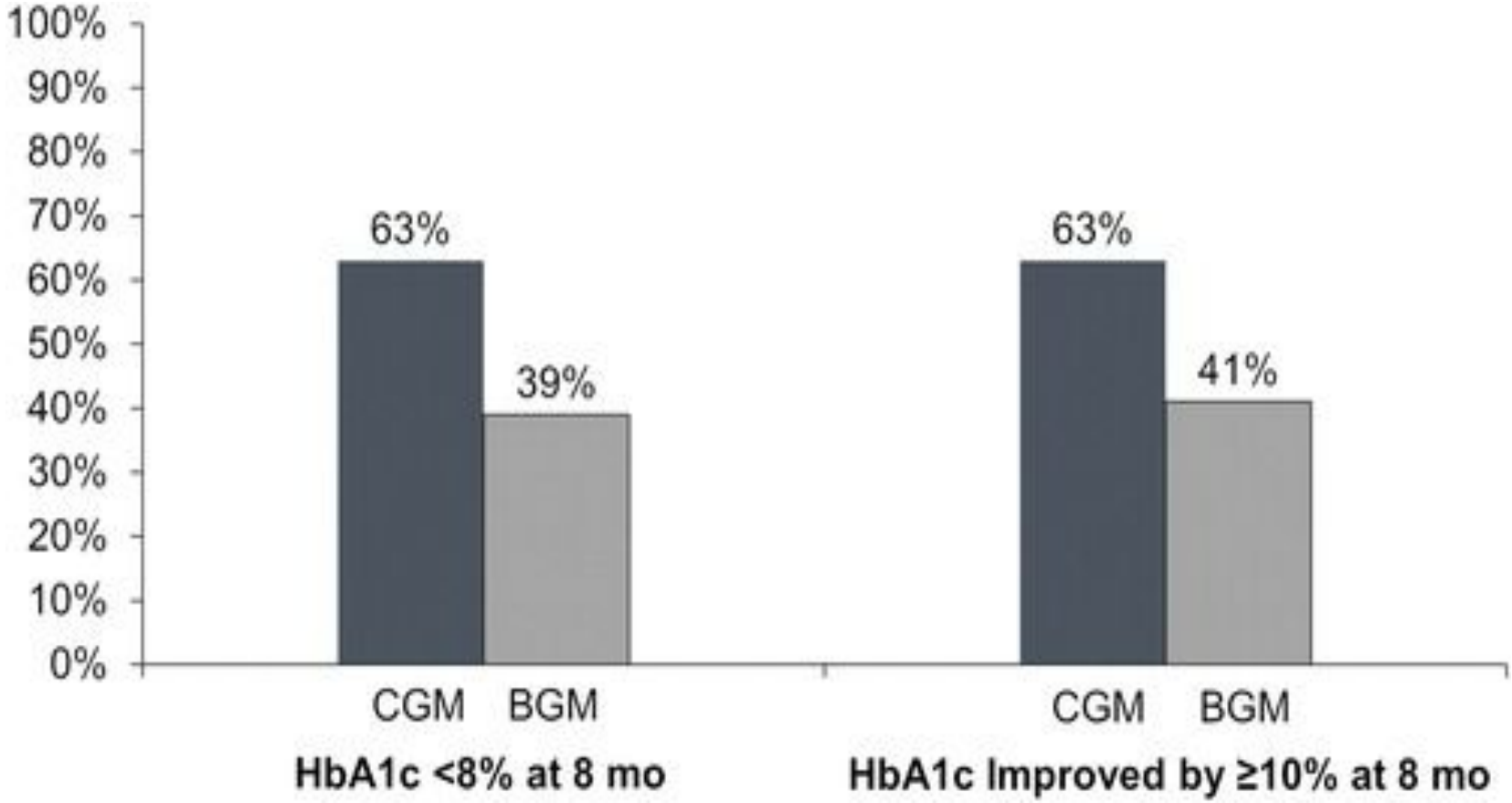

Medtronic
Weekly Review (1 of 2)
10-22-2021 - 10-28-2021 (7 Days)
Generated: 11-04-2021, 4:28 PM
Page 2 of 9
Data Sources: MiniMed 670G, MMT-1780 (NG2776036H)
Friday 10-22
Saturday 10-23
Sunday 10-24
Monday 10-25
Tuesday 10-26
Wednesday 10-27
Thursday 10-28
Set Change
overnight
breakfast
lunch
dinner
Bolus (U)
Carbs (g)
Exit Reason Details
Blood Glucose
Calibration
Auto-Basal
Basal
Suspend on Low
Suspend before Low
Bolus + Active Insulin
Injection
Target + temp target
Manual Mode
Manual Suspend
Exercise
Other
Time change

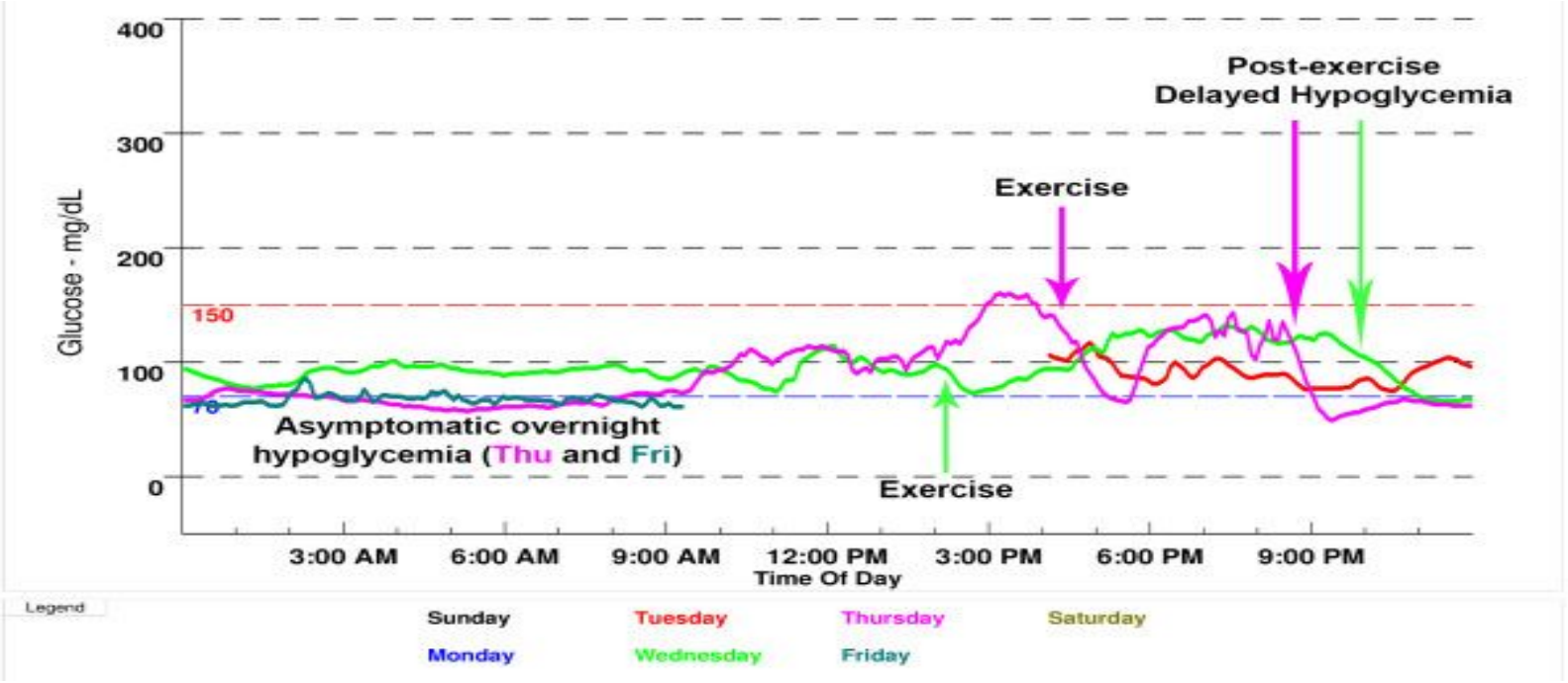
Abbott Freestyle vs Dexcom G6

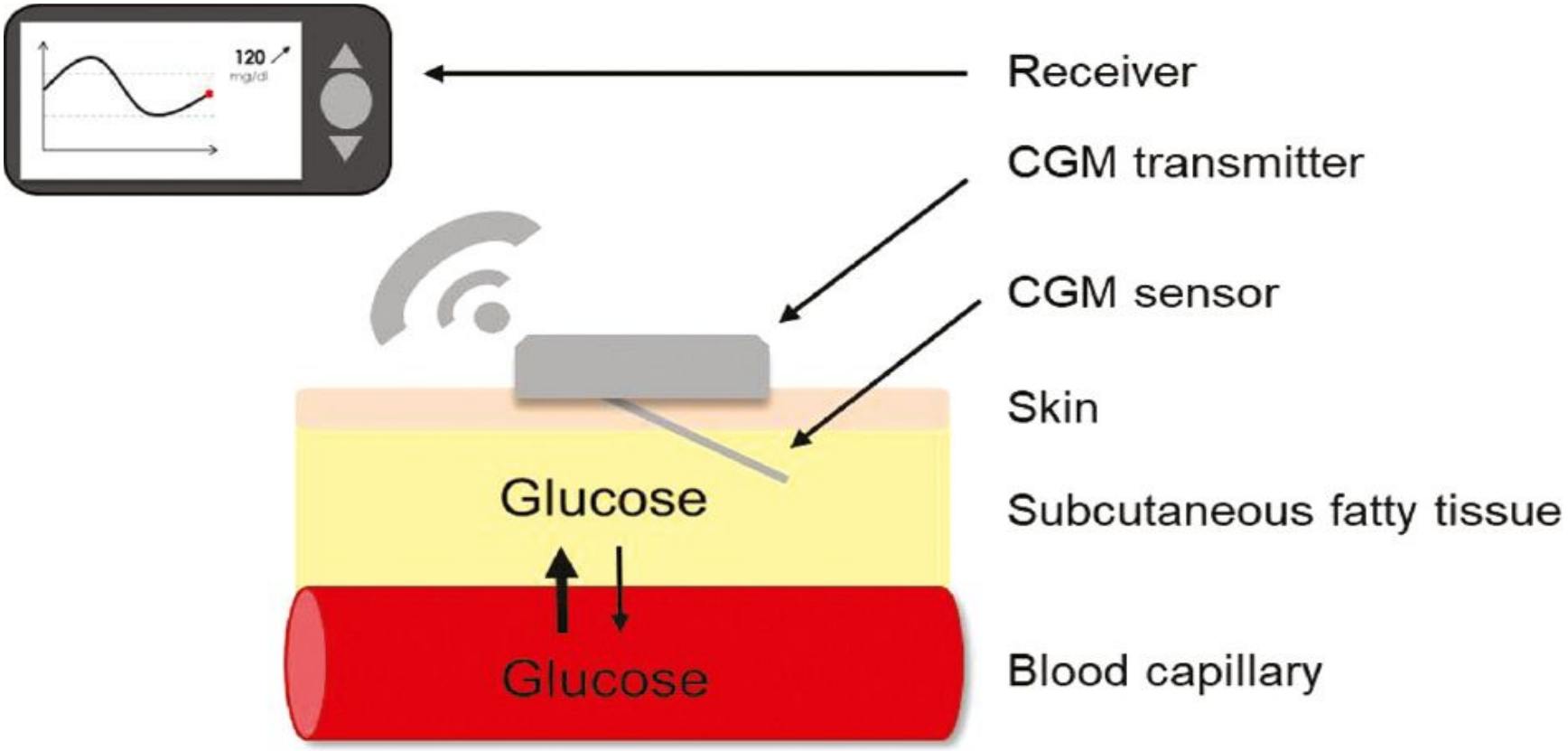
	FreeStyle 14-Day System	Libre 2	Libre Pro	Dexcom G6
Type	Intermittently scanned (at least every 8h)	Intermittently scanned (at least every 8h)	Professional model, blinded to patient.	Real time
Reading Frequency	15 minutes	15 minutes	15 minutes	5 minutes
Sensor Wear	14 days	14 days	14 days	10 days
Require Calibration	No	No	No	No
Optional Calibration	No	No	No	Yes
Warm-Up Period	1 hour	1 hour	Blinded to patient	2 hours
Active Alarms/Alerts	No	Yes	No	Yes
Transmitter	Built in with Sensor	Built in with Sensor	Built in with Sensor	90 days
Communication Type	Near Field	Near Field & Bluetooth	Near Field (scanned once at end of wear period)	Bluetooth

REPORTS
AND DATA
REPORTS
AND DATA
2020

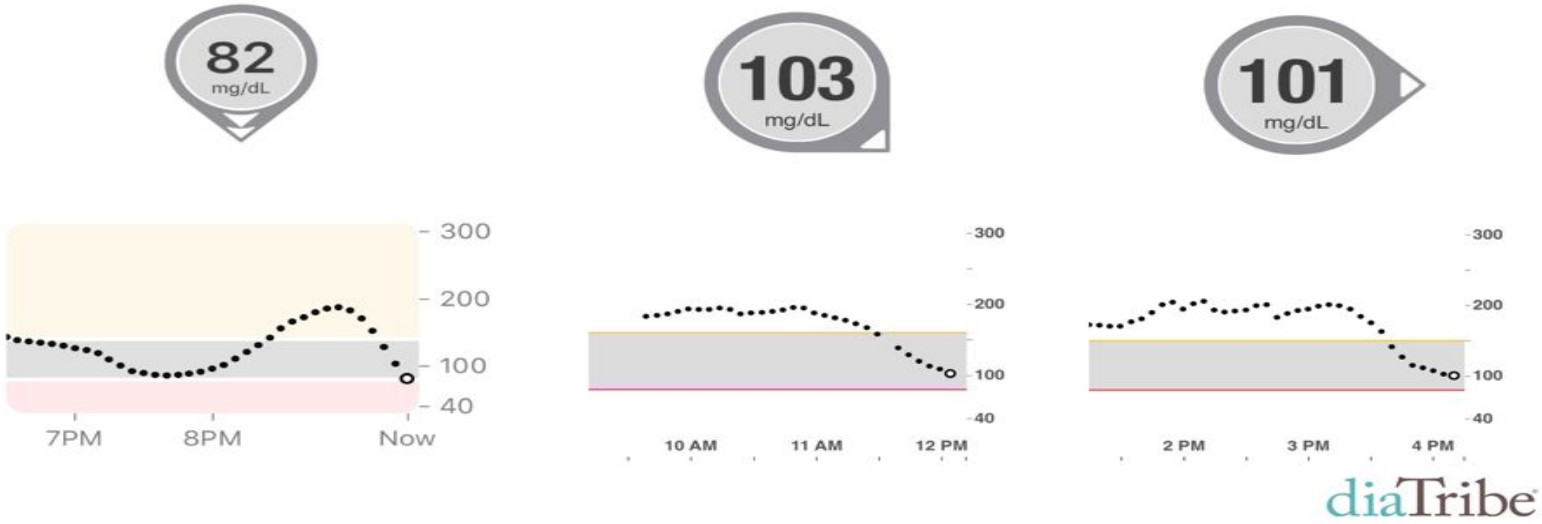

Mean HbA1c, %
8.8
8.6
8.4
8.2
8.0
7.8
7.6
7.4
7.2
7.0
8.5%
8.5%
P<.005
7.9%
7.5%
P<.02
8.0%
7.7%
CGM
Usual care
Baseline
Week 12
Week 24

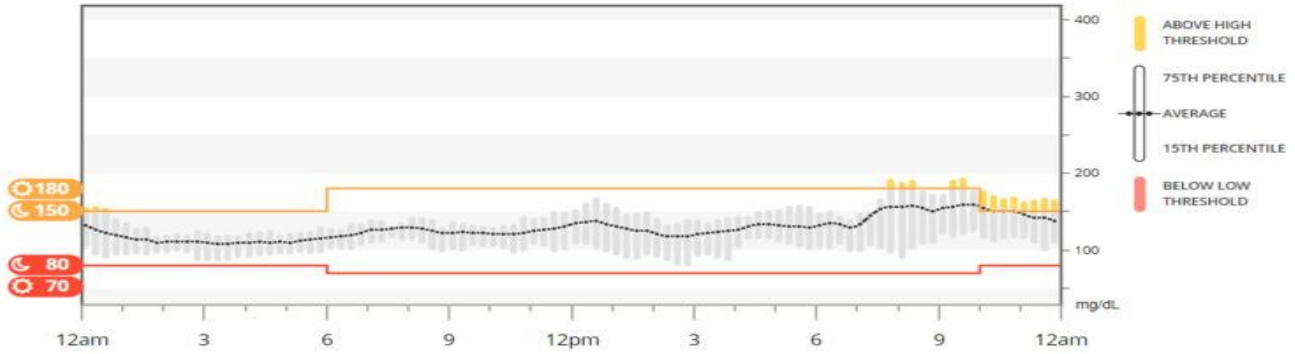

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
63%
39%
63%
41%
CGM
BGM
CGM
BGM
HbA1c <8% at 8 mo
HbA1c Improved by ≥10% at 8 mo


400
300
200
150
100
70
0
Glucose - mg/dL
Post-exercise
Delayed Hypoglycemia
Exercise
Asymptomatic overnight
hypoglycemia (Thu and Fri)
Exercise
3:00 AM
6:00 AM
9:00 AM
12:00 PM
3:00 PM
6:00 PM
9:00 PM
Time Of Day
Legend
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday


120
mg/dl
Receiver
CGM transmitter
CGM sensor
Skin
Glucose
Subcutaneous fatty tissue
Glucose
Blood capillary

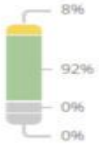
Walking after meals – a powerful way to reduce blood glucose and insulin needs





Statistics for this date range

6.4 %	128	29			
	mg/dL	mg/dL			
Glucose Management Indicator	Average glucose (CGM)	Standard deviation (CGM)	Hypoglycemia risk	Time in range	Sensor usage



Days with CGM data	93% 13 / 14
Avg. calibrations per day	1.6

AGP Report

Name

MRN

GLUCOSE STATISTICS AND TARGETS

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

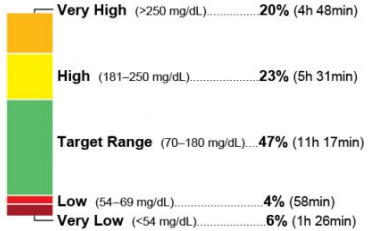
Glucose Ranges	**Targets** [% of Readings (Time/Day)]
Target Range 70-180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 250 mg/dL	Less than 5% (1h 12min)

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)

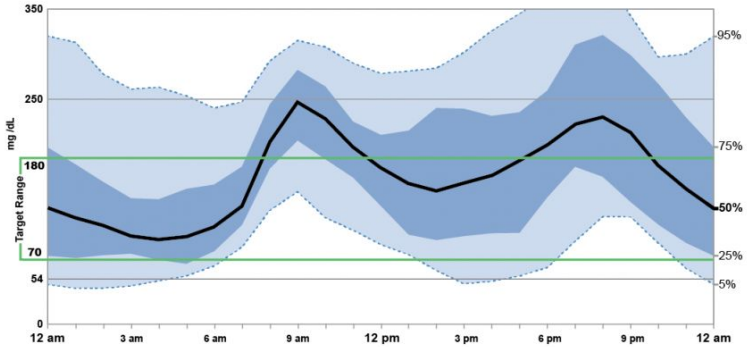
Target Range (70–180 mg/dL) **47%** (11h 17min)

Low (54–69 mg/dL) **4%** (58min)

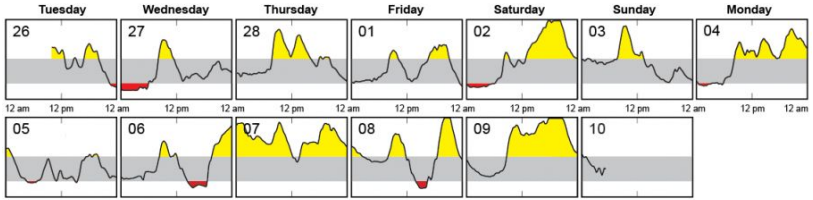
Very Low (<54 mg/dL) **6%** (1h 26min)

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.

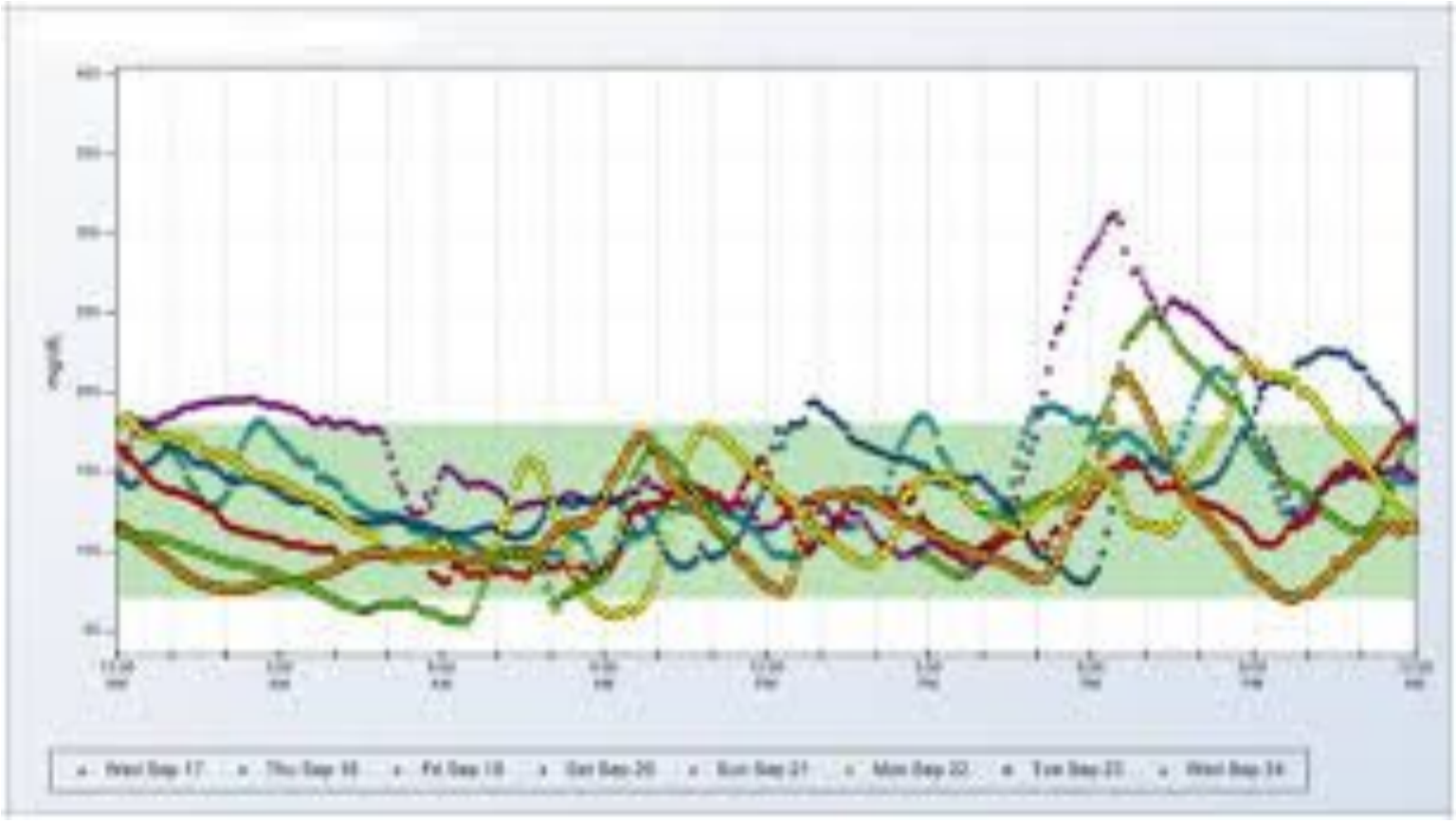
Patents pending-HealthPartners Institute dba International Diabetes Center-All Rights Reserved. 2019

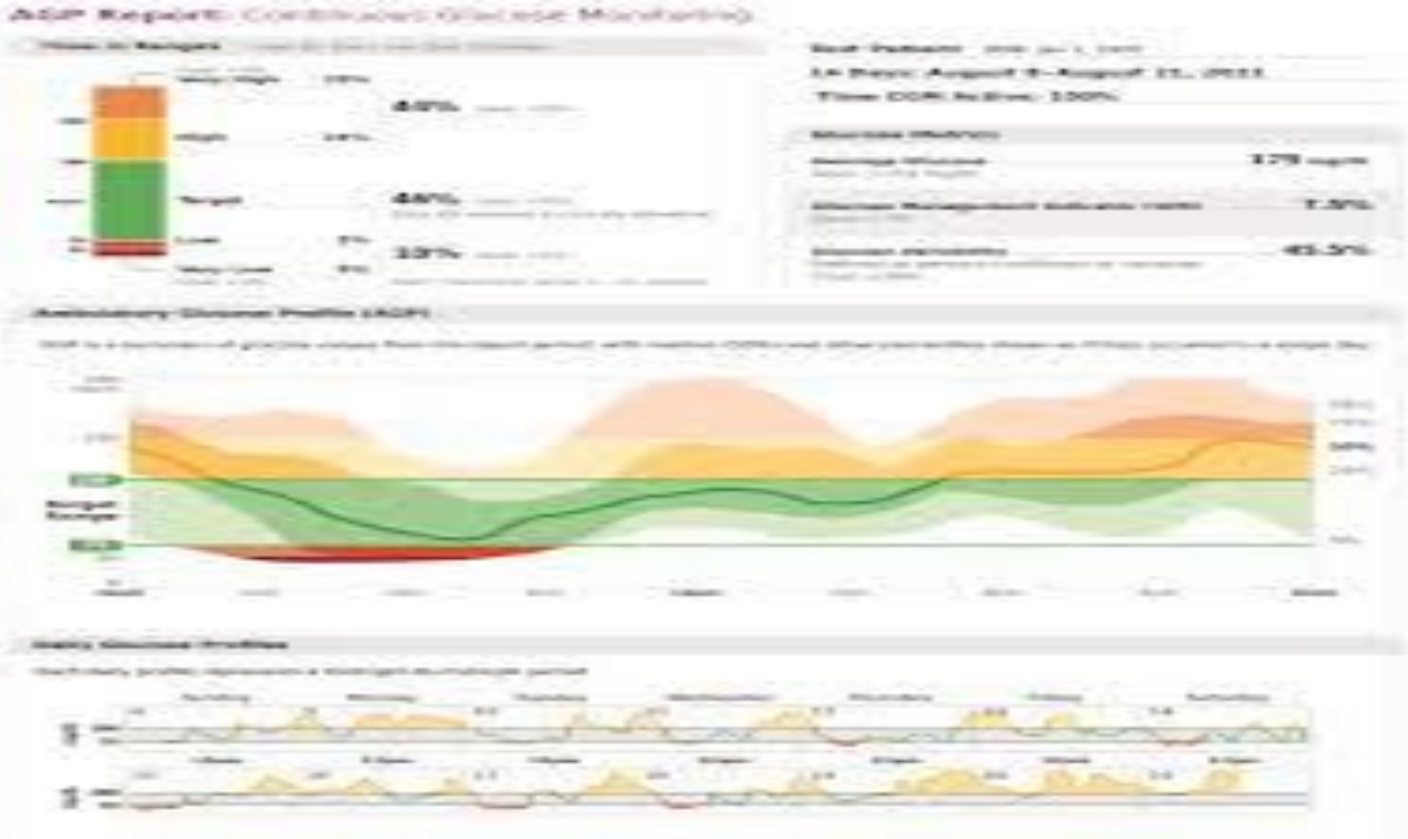
captur AGP v 4.0

Glucose Monitor
Add Note
In Range
108
mg
dL
10m ago
90 Day Overview
20 Readings/Day
Low
Normal
High
Recent Events
Today
This Week
This Month
19:30 108 mg/dL
19:00 142 mg/dL
18:30 87 mg/dL
18:00 72 mg/dL
17:30 73 mg/dL

Lunch
Dinner
Snack
Breakfast
= glucose reading
mg/dL
200
150
100
50
12am
3am
6am
9am
12pm
3pm
6pm
9pm
12pm

Questions?





Diving Deeper

Operationalizing a Low Carb Diet in Type 2 Diabetes

Rina Hisamatsu, MPH RDN
Registered Dietitian, Domino's Farms Family Medicine
Health Educator, MCT2D
rinhis@med.umich.edu

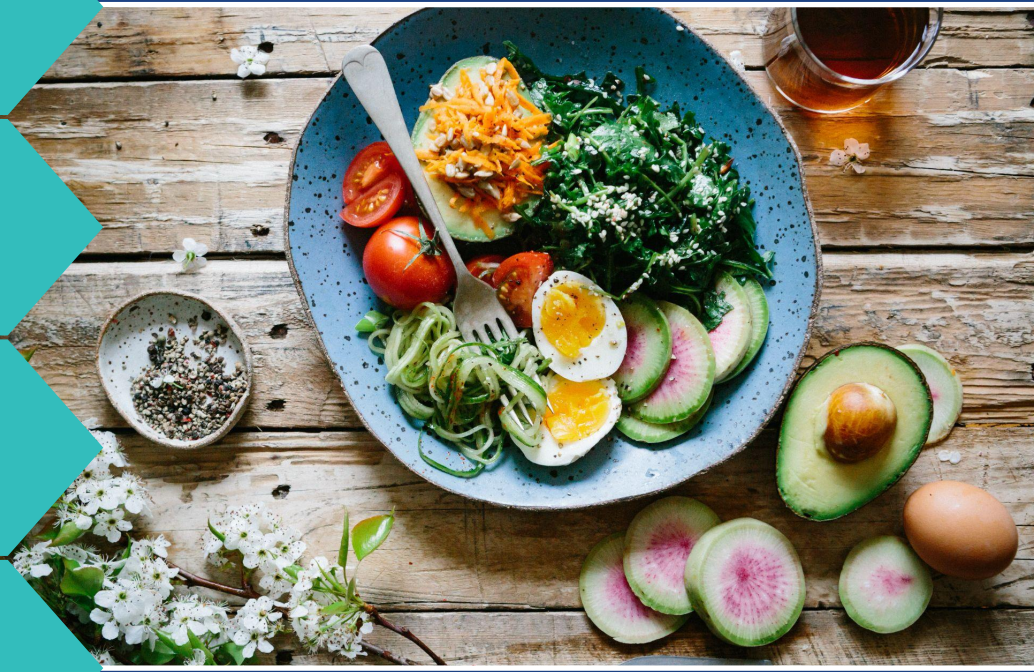
Overview

01 MCT2D core goals and the low-carb initiative

02 Fundamentals of the low-carbohydrate lifestyle

03 Identifying Suitable Patients

04 Case examples



The Michigan Collaborative for

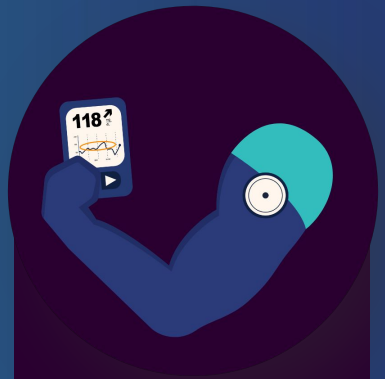
TYPE 2 DIABETES

MCT2D

MCT2D Quality Improvement Goals

Prescribing of GLP1 Receptor Agonists & SGLT2 inhibitors

Supporting Lower Carbohydrate Diets



Expanding use of Continuous Glucose Monitoring (CGM)

Focus for Today

How to integrate low-carbohydrate meal plans as an effective means of blood sugar control

Variations Of The Low-Carbohydrate Meal Plan

Very Low Carbohydrate (Keto) Diet	Low Carbohydrate Diet	Moderate Carbohydrate Diet	High Carbohydrate Diet
• ≤10% • 20-50g carbs/day	• >10-26% • 50-130g carbs/day	• 26-45% • 130-225g carbs/day	• >45% • >225g carbs/day

Based on 2000 kcal/day

Sainsbury et al. Diabetes Research and Clinical Practice, 2018

Fundamentals of The Low-Carbohydrate Lifestyle

A Well-Formulated Low-Carbohydrate Meal Plan…

Prioritizes protein intake

Includes an abundance of non-starchy vegetables

Includes some fats for satiety

A Well-Formulated Low-Carbohydrate Meal Plan

Low Carbohydrate Foods

High Carbohydrate Foods

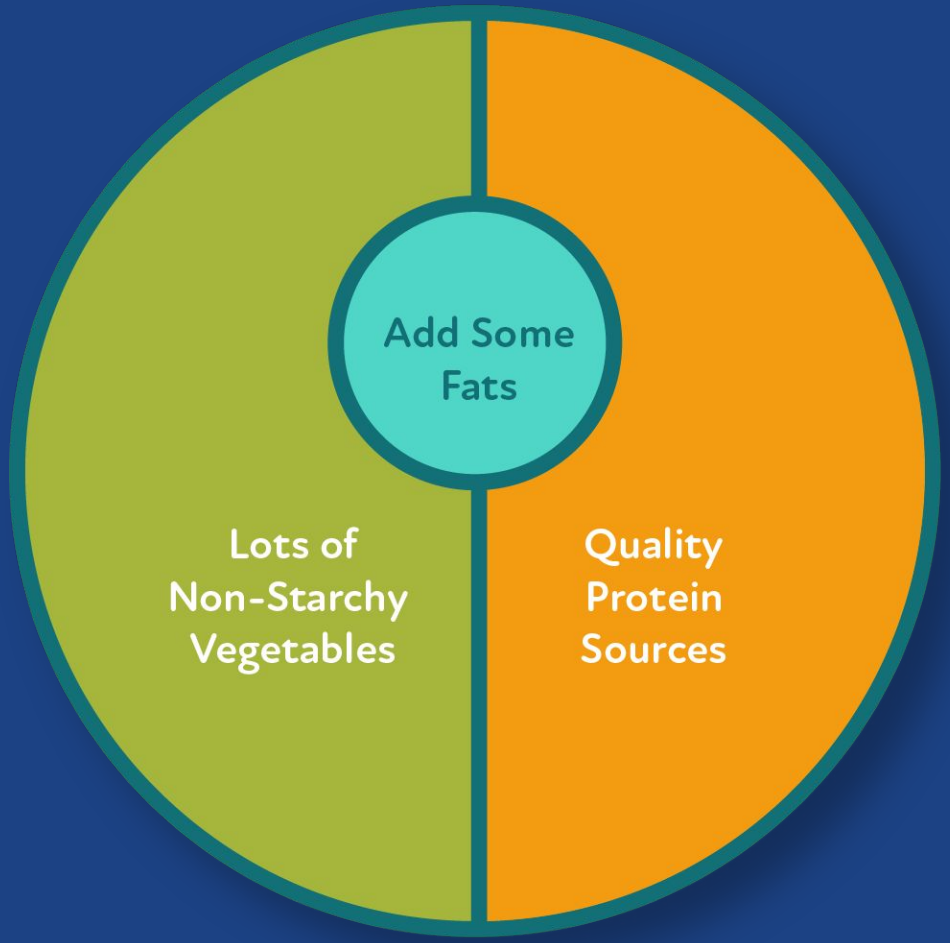
The Step Process
(3 step)

- Very low-carbohydrate meal plan
- <50g total carbohydrates/day

1) Pick a protein source

2) Add non-starchy vegetables

3) Add some fats



The Step Process
(4 step)

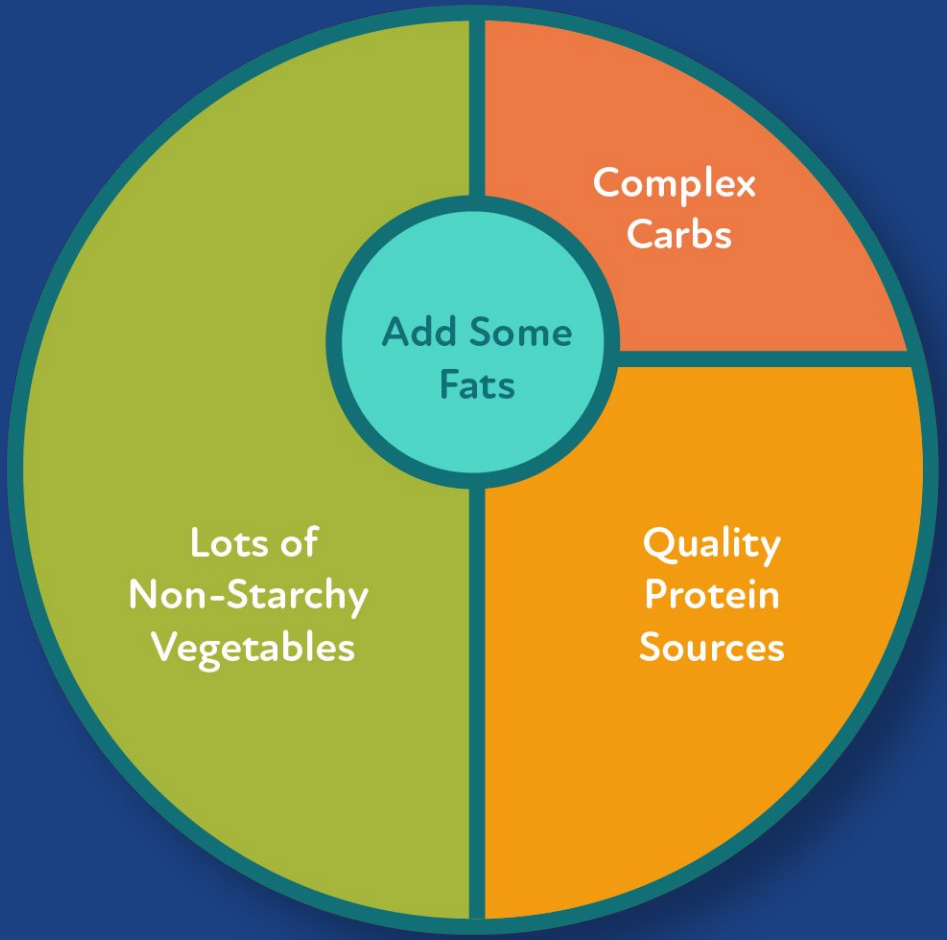
- Low carbohydrate meal plans
- 50-130g total carbohydrates/day

1) Pick a protein

2) Add non-starchy vegetables

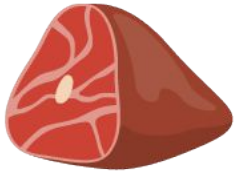
3) Add some fats

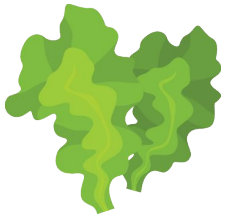
4) Add some complex carbs

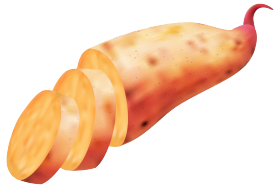


Summary

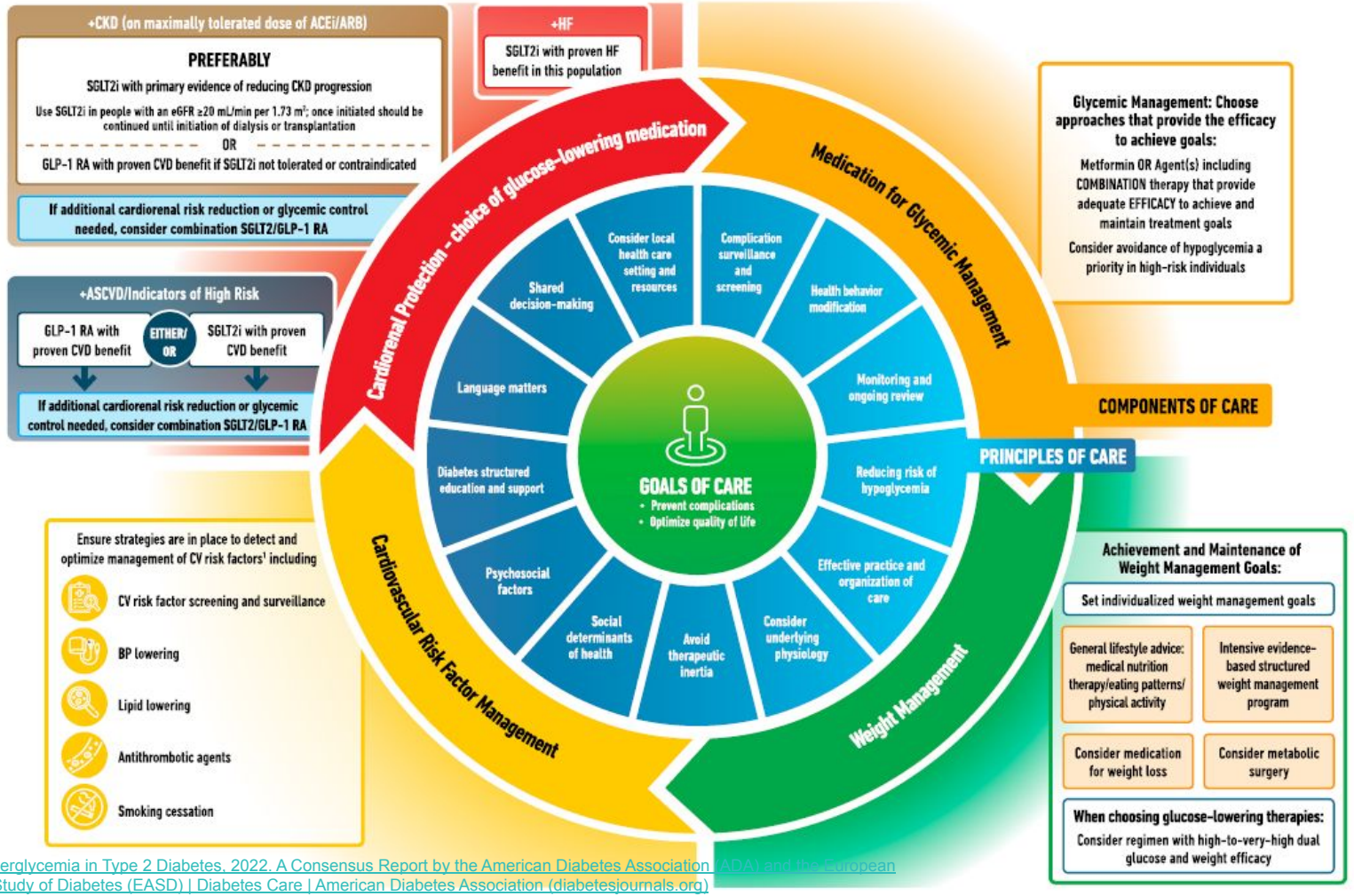
STEP 1: Pick a Protein	STEP 2: Add Non-Starchy Vegetables *(Half your plate)*	STEP 3: Add Some Fats	STEP 4: Add 1-2 Servings of Complex Carbs
Choose a high-quality protein source like chicken, fish, seafood, beef, eggs, or soy.	Fill half your plate with non-starchy vegetables like salad greens, broccoli, or Brussels sprouts.	Add some fats from oil, sauces, or full-fat dairy like cheese, butter or sour cream.	Include 1-2 servings of high-quality carbs like starchy vegetables, fruits, legumes/lentils or whole grains.







HOLISTIC PERSON-CENTERED APPROACH TO T2DM MANAGEMENT



Management of Hyperglycemia in Type 2 Diabetes, 2022. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD) | Diabetes Care | American Diabetes Association (diabetesjournals.org)

Modifying Meal Plans to Fit Dietary Restrictions And Cultural Preferences

Pescatarian

- Includes fish and shellfish
- Includes soy, nuts and seeds, legumes/lentils*

Vegetarian/Vegan

- Includes soy, nuts and seeds, legumes/lentils*
- +/- eggs and dairy products

***Legumes/lentils can be added based on individual carb goals**

Adapting to cultural food preferences including:

Hispanic cuisine

South Asian cuisine

East Asian cuisine

Case Example A

Working together with care team to reach individualized carbohydrate goal

Case Example A: Ted

40 y.o. M, with PMH of T2D, obesity, HTN, TIA (2019)

Established care 1 year ago at Diabetes Clinic with following baseline:

- Starting weight: 342 lbs, BMI 47.7
- Hemoglobin A1c: 6.6%
- FBGs: 120s range

Medications: Victoza (d/c prior to initial eval at clinic), Januvia, Lisinopril, Metformin, Aspirin

Intervention

1. **Initiated GLP1-RA (Ozempic, escalated dose from 0.25mg to 1mg over 4-5 mo)**
2. **Education on low-carbohydrate meal plan**
    a. Recommended ≤100g carbs/day
    b. 5 Ps to avoid (Pastas, regular Pop, Pastries, Potatoes, b(B)read)
    c. Focus on: lean meats, non starchy vegetables 50/50 plate method
3. **Physical activity goals discussed**
    a. Weight lifting to preserve muscle mass

Within 1 year…

- ★ **Medication Reduction:**
  - D/C metformin, Januvia, Lisinopril
- ★ **Weight Reduction:**
  - 104 lbs total: 342 → 238 lbs (BMI 47.7 → 33.2)
  - Lost 7 lbs in 1 mo, 18 lbs in 2 mos, 59 lbs in 5 mos
- ★ **A1c Reduction:**
  - 6.6% → 5.4% (at most recent visit)
- ★ **FBGs Improvement: <90 mg/dL**

Patient Quotes

“[I’m] eating smaller, more frequent meals, and increasing lean proteins and vegetables.”

“[I’m] feeling great - receiving compliments from family and friends has been motivating.”

Delicious Ways to Enjoy Low-Carb Meals

Sample Meal Plan
(Low Carb 50-130g)

SUNDAY

Breakfast	*Lunch*	*Dinner*
3 egg omelet with ½ cup diced vegetables (peppers, onion, mushroom, tomatoes), and 1oz shredded cheese 1 slice whole wheat bread or 1 cup mixed berries	**Wrap sandwich** (8 inch low carb wrap, 4-5oz turkey, cheese, spinach, tomato, and onion). Add mustard, pickles, mayo, and seasoning as desired *Optional: add 1oz nuts for crunch or avocado*	**2 cups spaghetti squash*** topped with ½ cup low carb tomato sauce, 4-5oz ground beef, and 1 cup sautéed non-starchy vegetables *Optional: add grated Parmesan* **Note: Can also use high-protein, low carbohydrate pasta*
Total carbs: 20-25g	**Total carbs: 25-30g**	**Total carbs: 40g**

MONDAY

Breakfast	*Lunch*	*Dinner*
¾ cup plain Greek yogurt topped with 1oz mixed nuts, 1 cup berries or 1 piece fruit (1 small apple, plum, kiwi, 1 cup cantaloupe)	**2-3 cups mixed greens** topped with 4-5oz tuna or other canned fish, ½ cup chickpeas, diced cucumber, tomato, onion, pickles, olives, avocado, and feta or shredded cheese Serve with 2 tbsp ranch dressing or lemon and olive oil vinaigrette	**Chicken Alfredo** (whole grain fettuccine with 4-5oz chicken grilled, ½ cup Alfredo sauce, and 2oz (dried) whole grain fettuccine) Serve with side salad (dressing full-fat or olive oil and vinegar)
Total carbs: 25g	**Total carbs: 25g**	**Total carbs: 50g**

TUESDAY

Breakfast	*Lunch*	*Dinner*
Baked avocado cups (cut avocado in half, add 1 egg to center of each half, then bake at 425 degrees for 15-20 min) 1 piece of fruit (1 small apple, plum, kiwi, 1 cup cantaloupe, 1 cup berries)	**Lettuce wraps** (2-3 large lettuce leaves topped with 4-5 oz turkey or chicken, 2 tbsp hummus, diced tomato, onion, and 1oz pumpkin seeds)	**2 cups lentil soup** (brown lentils, onions, garlic, diced carrots, zucchini, celery, mushrooms) Chia pudding (mix 1 tbsp chia seeds, ½ cup coconut cream, and a dash of stevia. Let sit overnight) *You can make these in batches!*
Total carbs: 30g	**Total carbs: 20g**	**Total carbs: 43g**

WEDNESDAY

Breakfast	*Lunch*	*Dinner*
Farmer's breakfast made with 2 slices bacon or other breakfast meats 1-2 eggs, cooked in any style ½ cup sautéed spinach or other greens 1 slice whole grain toast	**Burrito bowl** made with 1 cup cauliflower rice, 4-5oz taco meat, 1 cup sautéed vegetables, ½ cup black beans, 2 tbsp salsa, and 1 tbsp sour cream 1 small fruit	**4-5oz Grilled/baked fish** 2 cups baked/grilled non-starchy vegetables sprinkled with 1oz mixed nuts ½ cup sautéed corn or 1 small baked sweet potato *Optional: add 1 tbsp sour cream or butter*
Total carbs: 20g	**Total carbs: 42g**	**Total carbs: 32g**

Sample Meal Plan
(Very-Low Carb <50g)

SATURDAY

Breakfast	*Lunch*	*Dinner*
Egg bites (whisk together 2-3 eggs, with chopped onion, peppers, tomato, spinach, mushrooms, herbs and spices, 1-2 oz cheese of choice. Pour mixture into muffin tin and bake at 350 degrees for 15-20 min or until set)	**1 cup tuna salad/chicken salad/ egg salad** Serve over 2 cups of mixed leafy greens or make into a wrap or sandwich using low carbohydrate bread. *Optional: 1 oz cheese or nuts*	**4-5 oz steak** Roasted brussel sprouts with crushed bacon 1 cup mashed cauliflower with garlic and parsley
Total carbs: 5g	**Total carbs: 10g (26g with wrap)**	**Total carbs: 15g**

SUNDAY

Breakfast	*Lunch*	*Dinner*
3 egg omelet with ½ cup diced vegetables (peppers, onion, mushroom, tomatoes), and 1oz shredded cheese ½ cup sliced strawberries	**Wrap sandwich** (8 inch low carb wrap, 4-5oz turkey, cheese, spinach, tomato, and onion). Add mustard, pickles, mayo, and seasoning as desired	**2 cups zucchini noodles** topped with ½ cup low carbohydrate tomato sauce, 4-5oz ground beef, and 1 cup sauteed non-starchy vegetables *Optional: add grated Parmesan*
Total carbs: 10g	**Total carbs: 25g**	**Total carbs: 15g**

TUESDAY

Breakfast	*Lunch*	*Dinner*
¾ cup plain Greek yogurt topped with 1 oz chopped almonds, ½ cup mixed berries	**Lettuce wraps** (2-3 large lettuce leaves topped with 4-5oz ground turkey or chicken, diced tomato, and ½ diced avocado, ¼ cup shredded cheese, 2 tbsp ranch dressing)	**Meatloaf** made with sugar-free BBQ glaze, 1 cup sauteed green beans, 1 cup cauliflower mash
Total carbs: 18g	**Total carbs: 10g**	**Total carbs: 18g**

WEDNESDAY

Breakfast	*Lunch*	*Dinner*
Farmer's breakfast made with 2 slices bacon or other breakfast meats 2 eggs, cooked in any style ½-1 cup spinach or other greens sauteed with garlic ½ cup berries	**Burrito bowl** made with 1.5 cups cauliflower rice, 4-5 oz taco meat, 1 cup sauteed vegetables, 2 tbsp salsa, 1 tbsp sour cream, 1 tbsp guacamole	**4-5 oz grilled fish** 2 cups sauteed non-starchy vegetables sprinkled with 1 oz walnuts
Total carbs: 12g	**Total carbs: 17g**	**Total carbs: 10g**

Identifying Your Patients

Taking The First Step

1. Identify “low-risk” patients: not on insulins, sulfonylureas, SGLT2i’s
2. Patients with high engagement/interest in pursuing a low carb lifestyle

Griauzde et al. Front Nutr. (2021)

Avoiding Potential Risks

1) Hypoglycemia

Monitor and adjust blood sugar lowering medications (insulin/combination insulins, sulfonylureas, SGLT2is etc.)

SGLT2-inhibitors

- DO NOT USE: If daily carb intake <50 grams due to risk of euglycemic DKA
- Safe in patients consuming >100 grams of carbs daily

2) Hypotension

Monitor BP for all patients

TREAT hypotension: adjust medications as needed

MONITOR for hyponatremia: consider medication adjustment, comorbidities, hydration status

Cucuzzella M, Riley K, Isaccs D, International Working Group on Remission of T2D
https://doi.org/10.3389/fnut.2021.688540
http://eguideline.guidelinecentral.com/i/1180534-low-carb-nutritional-approaches-guidelines-advisory/13?

Adapting Medications for Type 2 Diabetes to a Low Carb Diet

GUIDE FOR STARTING PATIENTS
on a Low Carb Lifestyle

A low carbohydrate (carb) lifestyle consists of reducing one's carbohydrate intake to 50-130g of total carbohydrates per day. Patients with type 2 diabetes (T2DM) who are interested in adopting a low carbohydrate lifestyle should monitor their blood glucose carefully and work closely with their primary care team to adjust medications as needed. **Risk of hypoglycemia is greatest among patients who are on insulin or sulfonylureas, particularly if they significantly reduce carbohydrate intake without adjusting their medications.**

Patients with T2DM who are on these medications may need to have their medications proactively reduced (i.e., when their diet is initiated) to prevent hypoglycemia. View a detailed review on medication management for patients with T2DM who follow a low carbohydrate lifestyle by visiting **michmed.org/Jyng5** or scanning the QR code.

Low carbohydrate lifestyles are not 'one-size-fits-all.' Success may require fine-tuning and adjustments along the way to find a suitable carbohydrate range for a patient. Considerations such as patient desire/interest, experience, cultural background, and commitment to work closely with their care team and be proactive in self-management skills are necessary tools for success.

MONITORING BLOOD PRESSURE

- Monitor BP for all patients
- For patients with controlled BP or edema:
  - Consider stopping/decreasing diuretics during the first 2-4 weeks of dietary change
  - If BP/edema increase: return to prior dose
- TREAT hypotension: advise patient to monitor for fatigue and dizziness, can give patient permission to stop a medication in this setting (HOLD medication and call office).
- Monitor for hyponatremia
- Hydration!

SETTING CARB GOALS & ADJUSTING MEDICATIONS

GREEN CATEGORY: CONTINUE
Patients will need minimal medication adjustment

Biguanides
GLP-1 RAs
DPP-4 Inhibitors

Population: These patients are considered low risk for hypoglycemia/hypotension: Patients with T2D who are NOT on insulin or sulfonylureas (Biguanides/Metformin, GLP-1 receptor agonists, DPP-4 inhibitors are OKAY).

Carb goal: Work with your patients to set a suitable carb goal. A starting carb goal of 50-130g of carbohydrates per day may be appropriate for this population.

Medication adjustments: If patients are on BP-lowering medications, close monitoring and adjustments may be necessary to prevent hypotension.

Blood glucose range and monitoring: Most patients should achieve a fasting glucose level of 70-130 mg/dL and a two-hour post-prandial meal of <180 mg/dL. Work with your patient to determine blood sugar monitoring goals.

Look for this handout!

SAFE

- Biguanides
- GLP1 Agonists
- DPP4 Inhibitors

REDUCE

- Basal long acting insulins— may need to reduce dose by up to 50%. Follow blood sugars and adjust as needed
- Thiazolidinediones

STOP

- Sulfonylureas
- Meglitinides
- SGLT2 inhibitors
- Bolus meal time insulin. *Might need small amounts to correct high blood sugar.*
- Combination insulins (70/30) — switch to basal long acting
- Alpha-glucosidase inhibitors

Cucuzzella M, Riley K, Isaccs D, International Working Group on Remission of T2D
https://doi.org/10.3389/fnut.2021.688540

Recognizing Challenges

- ★ **Time** constraints
- ★ **Availability** for clinicians to cover in routine visits
- ★ **Access** to clinic resources (MAs, RNs, RDs, Pharmacists, Care Navigators etc.)

Resources and Teaching Tools

- MCT2D Resource Library
- Diet Doctor Free CME course
- Low-Carbohydrate and Very Low-Carbohydrate Eating Patterns in Adults with Diabetes: A Guide for Health Care Providers (ADA)
- The Art and Science of Low Carbohydrate Eating
- Low Carb For Any Budget - Cooking Keto With Kristie
- Always Hungry? by Dr. David Ludwig
- Diet Doctor

Case Example B

Strategies to mitigate potential risk from medications

Team-based care

Case Example B: Fred

69 y.o. M with hx of T2D, dx in 2007 (or possibly earlier)

Started low-carb + CGM program in 7/2022 with following baseline:

- Starting weight: 235 lbs, BMI 35
- Hemoglobin A1c: 7.7%

Medications: Insulin glargine: 30 units twice daily, Insulin aspart: 5 units B/L/D, Dulaglutide: 3mg weekly

Patient counseled to keep total carbs ≤100g per day

MEDICATIONS:

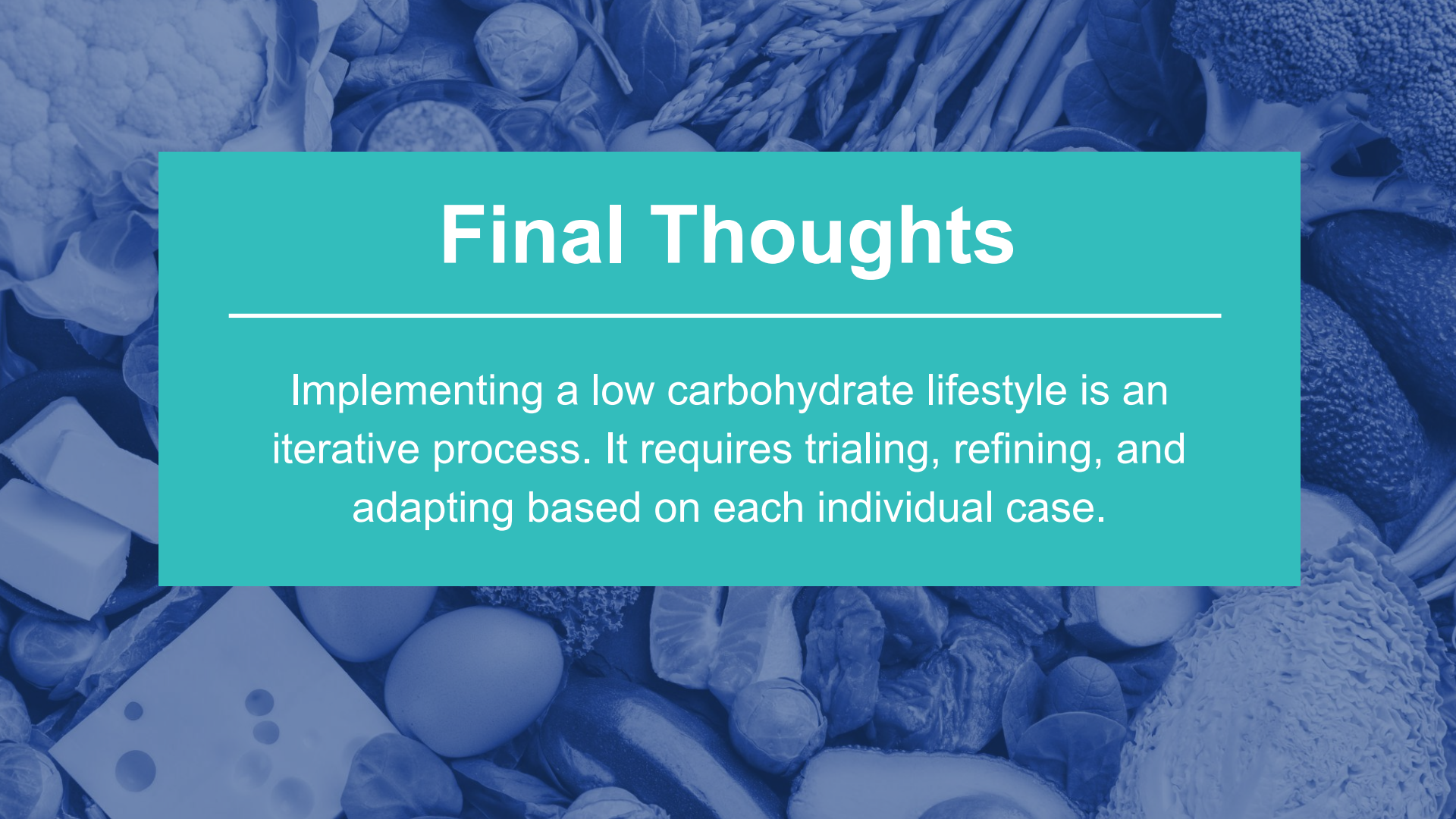
Insulin glargine: 30 units **twice** daily
Insulin aspart: 5 units B/L/D
Dulaglutide 3mg weekly

Within 1 Month of Program…

- ★ Discontinued insulin aspart
- ★ Insulin glargine: 30U bid → 20U qd
- ★ 10 lb weight loss (235 → 225)
- ★ Reduced BP meds
- ★ CGM time in range ~85%
- ★ Patient reports “feeling great”

Key Takeaways

1) Using CGM data, pt able to make real-time connections between food and its effect on blood glucose.
2) Pt felt empowered by results from low-carb lifestyle: weight loss, de-escalation of meds, improved blood glucose control.



Final Thoughts

Implementing a low carbohydrate lifestyle is an iterative process. It requires trialing, refining, and adapting based on each individual case.

Thank you!

Questions/
Concerns?

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Closing

Jackie Rau, MHSA

MCT2D Program Manager

Next Steps for MCT2D

- Value Based Reimbursement requirements for Year 2
- MCT2D Learning Community

First Official Year Coming to a Close

In that time we:

- Trained 601 MCT2D clinical champions and physicians on SGLT2i/GLP1RAs, low carbohydrate diets, and continuous glucose monitors
- Hosted 7 regional meetings and 1 collaborative wide meeting totaling over 247 attendees
- Began deploying the MCT2D interventions with patients in the practices, identifying barriers and challenges
- Shared best practices amongst collaborative members through the panels on prior authorization and CGMs.

We will be distributing a progress survey as one of the program requirements in December (due 2/1/23) to learn more about how the first year went for your practice

Year 2 VBR

Requirement	Responsibility
Ongoing Learning Community Requirement: Participate in one learning community activity for each of the two engagement levels. Details below. Due 7/15/2023	Level 1: Each physician Level 2: Each PO/Each Practice
Complete Progress Survey (due 2/1/2023)	Practice
Work with your physician organization to maintain a log of practice interventions and changes related to implementation of the quality initiatives	Practice
Identify and submit one best practice related to continuous glucose monitoring, low carbohydrate diet, prescribing SGLT2s or GLP1s, or urine albumin testing (Due 5/1/2023).	Practice
Distribute patient reported outcomes survey flyers and encourage patient participation.	Practice
Learn about coverage for your primary payor via MCT2D developed videos and materials and take a short post-test to confirm understanding.	Practice
Attend Fall 2022 and Spring 2023 regional meetings	Practice clinical champion
Present on your site's implementation of the quality improvement initiatives at a collaborative meeting, regional meeting, or conference call, if requested	Practice

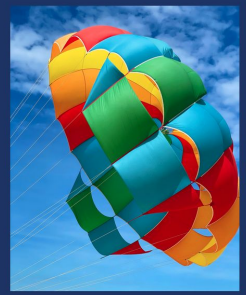
MCT2D Learning Community

The MCT2D Learning Community launched in May 2022 with opportunities to provide feedback on MCT2D developed tools, attend educational events, and contribute stories to the MCT2D blog, and the debut of the learning community newsletter.

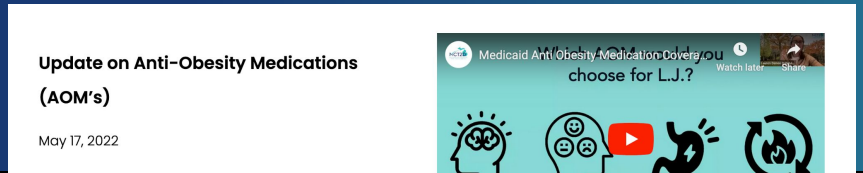
Learning Community events have included:

- Weight Loss Medications
  (Clinical Use and Medicaid Coverage Changes)
- Prior Authorization Panel
- CGM Implementation Panel

Prior Auth specialists have called this online tool "phenomenal" and "life changing." Are you using it?



Six key takeaways from our July 18th panel of Prior Authorization experts (including recommended tools), watch the recorded session, and browse past learning community webinars > >



Learning Community Newsletter

- Began distributing learning community newsletter in May
- Five editions out now, will continue sending these monthly to all clinical champions and all who subscribe
- Encourage subscriptions from your other providers in the clinic
- Will distribute tools through this, announce learning opportunities, etc.
- Where blogs will be posted, etc.

Link to subscribe: michmed.org/e8X8N

What can the learning community do for you in 2023?

We want to host additional educational events and panels.

What topics are you interested in hearing about?

What topics would you like to see covered at future learning community events?

Start the presentation to see live content. For screen share software, share the entire screen. Get help at **pollev.com/app**

Thank you!

We appreciate you joining us today and for your work improving care for patients with T2D!