

This evening we will be using Poll Everywhere to ask a few questions. Please take a few minutes to join the conversation now prior to the meeting starting. Complete either step below and you will be ready to participate.

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



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.

**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.



They're observing things that are specific to what I'm going through right now so that they can be helpful.

Year in Review

Meetings

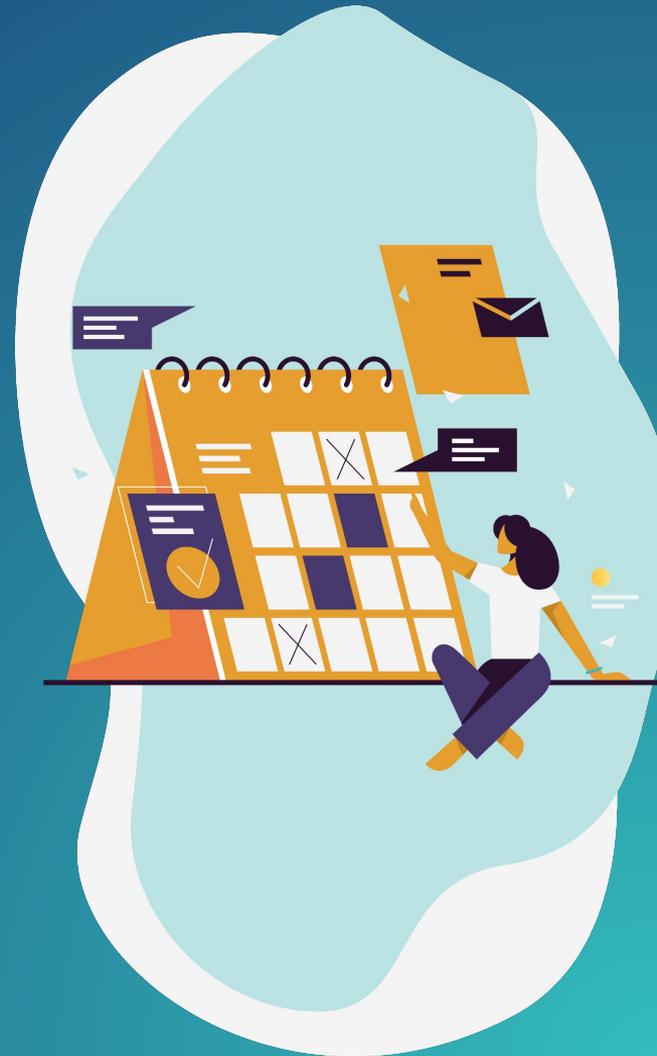
Spring Regional Meetings (April/May 2022)

- 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 - 6:25pm	Data Dashboard Updates	Jake Reiss, MHSA Associate Program Manager
6:25pm - 6:45pm	Regional Summary Statistics And Performance	Table discussions
6:45pm - 6:55pm	Break	N/A
6:55pm - 7:20pm	Protecting the Kidneys in Type 2 Diabetes Mellitus	Amanda Morris, DO Lakeland Diabetes and Endocrinology
7:20pm - 7:55pm	Operationalizing a Low Carb Diet In Type 2 Diabetes	Rina Hisamatsu, RDN MCT2D Dietitian
7:55pm - 8:00pm	Wrap Up & Closing	Jackie Rau, MHSA MCT2D Program Manager

Who is MCT2D?

Coverage Wins

Jumpstart Program

New Tools

Updates

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 \geq 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 \geq 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

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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





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.**





3 Months of Shipt Healthy Choice Credits

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

Shipt 



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

OVERVIEW

JUMPSTART practices in this region!



**Bronson Family Medicine -
John St**

12 WEEKS of lower carb lifestyle education

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

LOW CARB CHEATSHEET

0g CARB FOODS (Per serving)									
1-2g CARB FOODS									

HIDDEN CARBS TO WATCH OUT FOR

Don't be fooled! Many groceries that you think are healthy have hidden carbs, with up to 30-40 grams of carbs in one or two staples that you'll want to take a closer look at.

Fruit Flavored Yogurts
Even fat-free, greek, and "natural" yogurts can contain 15-30 grams of carbs in one serving.
Stick to plain, whole milk Greek yogurt and add frozen berries or almonds.

Coffee Creamers
Even fat-free and "natural" creamers can contain 15-30 grams of carbs in one serving.
Look for zero sugar creamers.

Many Fruits
Apples, Oranges, & Pineapples
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

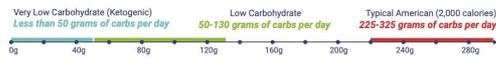
Condiments
Check the label and...

"Sugar Free"
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Some packaging is tricky
Some packaging is tricky, bags, plastic, etc. - the more you know, the better. If it's not clear, and the more you know, the better. If it's not clear, and the more you know, the better. If it's not clear, and the more you know, the better.

LOW CARB LIFESTYLE for Type 2 Diabetes

What is a low carb lifestyle? A low carb lifestyle limits your intake of carbohydrates (carbs) from foods like grains, starchy vegetables, fruit, sugary snacks, and beverages and emphasizes foods from proteins, non-starchy vegetables, and healthy fats.



Meal with ~16g of carbs	Meal with ~47g of carbs	Meal with ~150g of carbs
<ul style="list-style-type: none"> 4-5 oz Grilled Fish or Chicken 0g carbs 3 cups Mixed Salad 5g carbs 1 oz Feta Cheese and Olives 1g carbs 2 tbsp Ranch Dressing 2g carbs 1/2 Avocado 8g carbs 	<ul style="list-style-type: none"> 1/2 cup Brown Rice 22g carbs 1/2 cup Black Beans 15g carbs 4-6 oz Steak 0g carbs 1.5 cups Grilled Vegetables 10g carbs 	<ul style="list-style-type: none"> 2 slices Pepperoni Pizza 70g carbs 4 pcs Mozzarella Sticks 30g carbs 1/2 cup Marinara Sauce 10g carbs 12 oz Regular Soda 40g carbs

How does a low carb lifestyle help my diabetes? Reducing your carb intake also reduces your body's blood sugar and insulin levels. When your insulin levels are low, your body stops storing extra sugar as fat, and starts using stored fat for energy. This can make it easier to lose weight and have more energy!

BENEFITS OF A LOW CARB LIFESTYLE

Shipt ON ANY BUDGET ALL under \$1.00 per serving!

Adapted from Low-Carb For Any Budget

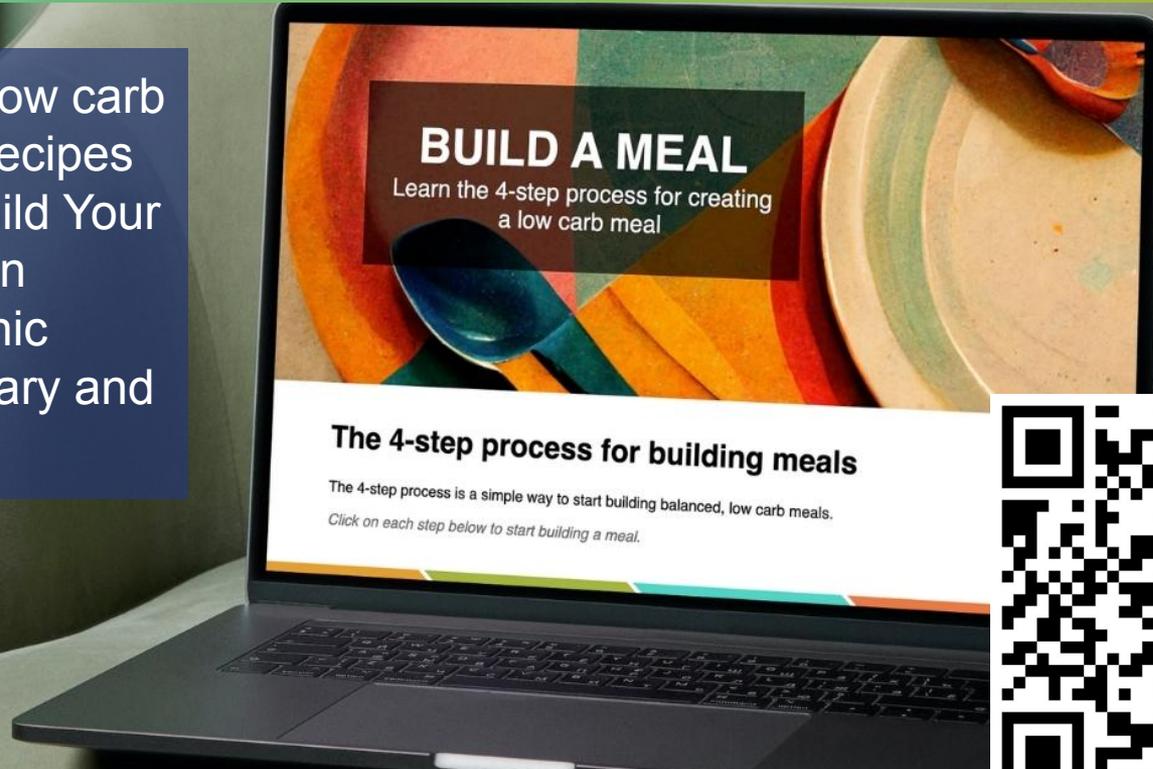
Shipt
Deliver to 48104
Buy Again Deals Snacks & Grains
Stonyfield Organic Probiotic Vanilla Whole Milk

Stonyfield Organic is making it easier and more deli...

www.jumpstart.mct2d.org

Patient-focused website open to any patient curious about starting a lower carb lifestyle

- Build a custom low carb meal plan with recipes
- Learn about “Build Your Plate” through an interactive graphic
- Set specific dietary and lifestyle goals



New MCT2D Tools

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

BUILDING YOUR PLATE

Follow the 4-step process to create delicious low carb meals



STEP 1: Pick a Protein

Choose a high-quality protein source like chicken, fish, seafood, beef, eggs, or soy.

STEP 2: Add Non-Starchy Vegetables (Half your plate)

Fill half your plate with non-starchy vegetables like salad, cauliflower, zucchini, etc.

STEP 3: Add Some Fats (Pick one or two)

Add some fats from oil, sauces, or full-fat dairy like cheese.

STEP 4: Add 1-2 Servings of Complex Carbs

Include 1-2 servings of high-quality carbs like oatmeal, quinoa, etc.

LOW CARB LIFESTYLE for Type 2 Diabetes

What is a low carb lifestyle? A low carb lifestyle limits your intake of carbohydrates (carbs) from foods like grains, starchy vegetables, fruit, sugary snacks, and beverages and emphasizes proteins, non-starchy vegetables, and healthy fats.



Meal with ~16g of carbs



Meal with ~47g of carbs



Meal with ~150g of carbs

How can a low carb lifestyle help my diabetes? Reducing carbohydrate intake can help lower blood sugar levels. When your insulin levels are low, your body may not be able to use the stored fat for energy.

LOW CARB GROCERY SHOPPING LIST

Stock your fridge and pantry with low carb foods

Meats & Meat Alternatives

- Beef (ground, steaks, ribs, or roast)
- Chicken/Turkey
- Duck
- Lamb
- Pork (ground, chops, ribs, or roast)
- Veal
- Goat

Dairy

- (no added sugars or starches)
- Butter
- Cheeses (full-fat – all types)
- Cottage cheese
- Cream cheese
- Eggs
- Cream (heavy or whipping)

Fats & Oils

- Avocado/Avocado oil
- Coconut oil
- Ghee/Lard
- Olive/Olive oil
- Schmaltz (chicken fat)
- Sesame oil
- Vegetable oil

PRIVATE & PBM COVERAGE for Anti-Obesity Meds

	PHENTERMINE <small>Generic: High Dose Oral: Daily w/ Meals</small>	LOMAIRA <small>Phentermine & Low Dose Oral: Daily w/ Meals</small>	QSYMIA <small>Phentermine/ Topiramate Oral: Daily</small>	CONTRACE <small>Nicotine/HC1- Bipropion HC Oral: 2x/Day</small>	SAXENDA <small>Liraglutide Injectable: Daily</small>	WEGOVY <small>Semaglutide Injectable: Weekly</small>
AETNA	Preferred <small>PA</small>	Not Covered	Preferred	Not Covered	Preferred <small>PA</small>	Preferred <small>PA</small>
BCBSM	Preferred	Non-Preferred	Non-Preferred <small>PA</small>	Non-Preferred <small>PA</small>	Non-Preferred <small>PA</small>	Preferred <small>PA</small>
EXPRESS SCRIPTS <small>National Preferred</small>	Preferred	Preferred	Non-Preferred <small>PA</small>	Non-Preferred <small>PA</small>	Non-Preferred <small>PA</small>	Preferred <small>PA</small>
HAP	Preferred	Not Covered	Not Covered	Not Covered	Not Covered	Not Covered
PRIORITY	Preferred	Non-Preferred <small>ST Must try generic first</small>	Non-Preferred <small>ST Must try generic first</small>	Non-Preferred <small>ST Must try generic first</small>	Not Covered	Not Covered
PRIORITY (OPTIMIZED)	Preferred	Not Covered	Non-Preferred <small>ST Must try generic first</small>	Non-Preferred <small>ST Must try generic first</small>	Not Covered	Not Covered
UNITED	Not Covered	Not Covered	Not Covered	Not Covered	Not Covered	Not Covered

PA Prior Auth
ST Step Therapy

YELLOW CATEGORY: REDUCE

Patients may need to have their medications adjusted

Population: Patients who are on one or more of these medications: Basal long acting insulin or thiazolidinediones. Consider greater reductions for patients with lower A1c or frequent episodes of hypoglycemia. • If A1c is high ($\geq 10\%$): Reduce by 25-50%

Carb goals: Work with your patients to set a suitable carb goal. A starting carb goal of 100-130g of carbohydrates per day may be appropriate for this population.

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

Medication adjustments: General recommendations for dosing basal insulin: Reduce basal insulin by 25-50%. Consider greater reductions for patients with lower A1c or frequent episodes of hypoglycemia. • If A1c is high ($\geq 10\%$): Reduce by 25-50%

Blood glucose range and monitoring: We encourage patients to closely monitor for hypoglycemia and communicate with their healthcare team. General recommendations include:

7-DAY SAMPLE MEAL PLAN (<50g carbohydrates/day)

Are you wondering what to eat on a very low carbohydrate lifestyle? Look no further! Here is a sample 7-day meal plan to get you started. Breakfast, lunch, and dinner meals are listed below with total carbohydrate estimates.

SUNDAY Breakfast	Lunch	Dinner
3 egg omelet with 1/2 cup diced vegetables (peppers, onion, mushroom, tomatoes), and 1oz shredded cheese	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 with 1/2 cup low carb tomato sauce, 4-5oz ground beef, and 1 cup sautéed non-starchy vegetables
1/2 cup sliced strawberries		Optional: add grated Parmesan cheese
Total carbs: 10g	Total carbs: 25g	Total carbs: 15g
MONDAY Breakfast	Lunch	Dinner
Baked avocado cups (cut avocado in half, add 1 egg to center of each half – bake at 350 degrees for 15-20 minutes)	2-3 cups mixed greens topped with 4-5 oz tuna or chicken, diced onion, tomato, and shredded cheese	Chicken Alfredo with zucchini noodles

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](#) >>

Update on Anti-Obesity Medications (AOM's)

May 17, 2022



Six Game Changers in Implementing CGMs in Your Primary Care Practice

DME Hacks — like getting to know your reps and snagging their customized ordering templates — shortcuts for billing documentation in the EMR — and clues to getting CGMs covered for more of your patients. Insights from our panel of expert members, a recording of our September discussion, and additional resources to guide you. [READ MORE >>](#)

“
I have pretty much all diabetes in my practice. If you're seeing one of my patients, you better be putting one of these bad boys on! Because it's a game changer in all this. And then a lot of folks come back and say, 'Hey, now I want to do this.'
”

—Panelist and Family Nurse Practitioner



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?





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



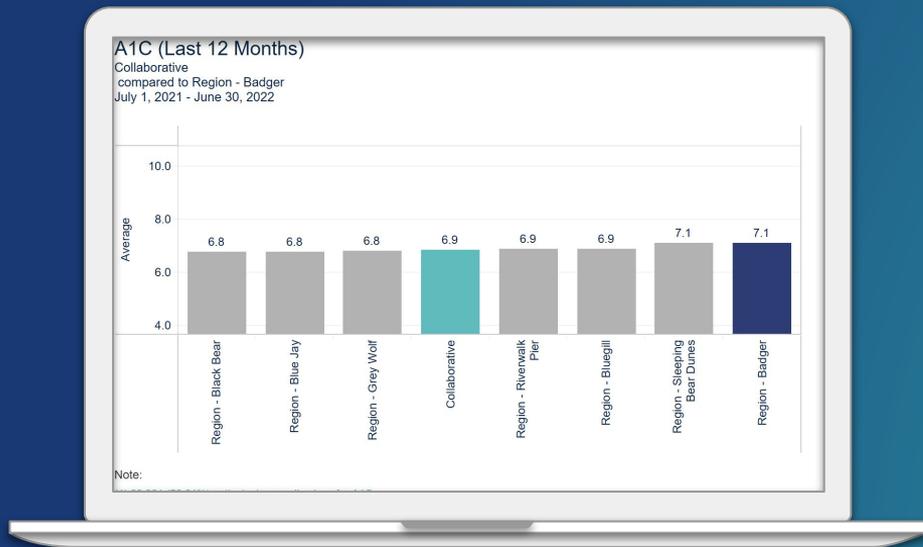
Data up to date through 6/30/2022



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**



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?



The Grey Wolf region has the highest prescribing rate of SGLT2is and GLP1-RAs across all 7 MCT2D regions. Why do you think this may be?



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?

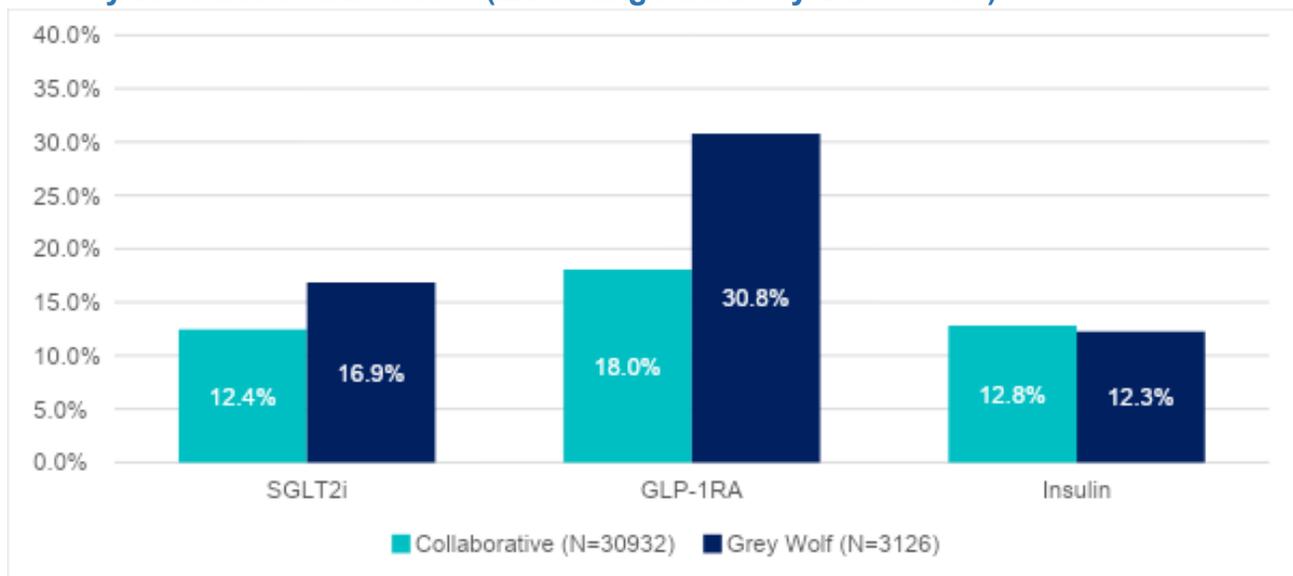
MICHIGAN COLLABORATIVE FOR TYPE 2 DIABETES

(MCT2D): GREY WOLF

OVERVIEW

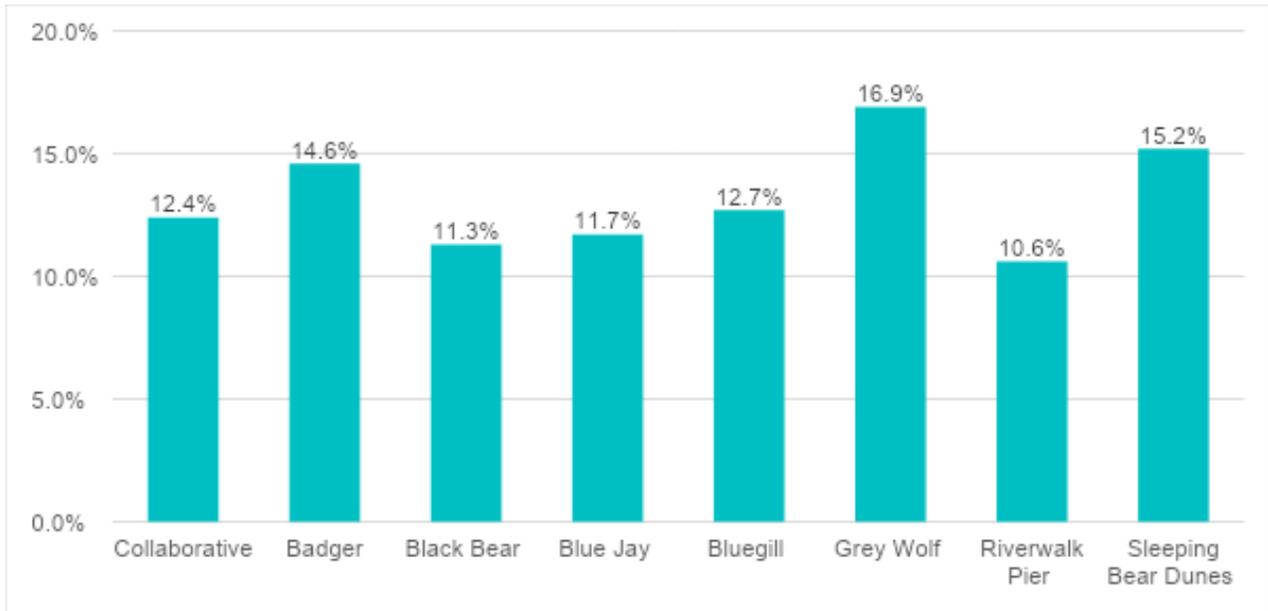
Collaborative level data includes any type 2 diabetes patient in participating practices who has been seen by a primary care physician (PCP) part of the Michigan Collaborative for Type 2 Diabetes (MCT2D). The patient population includes those who have a diagnosis code for type 2 diabetes, A1c of 6.5 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 Grey Wolf and Collaborative (Excluding Pharmacy Carve Outs)



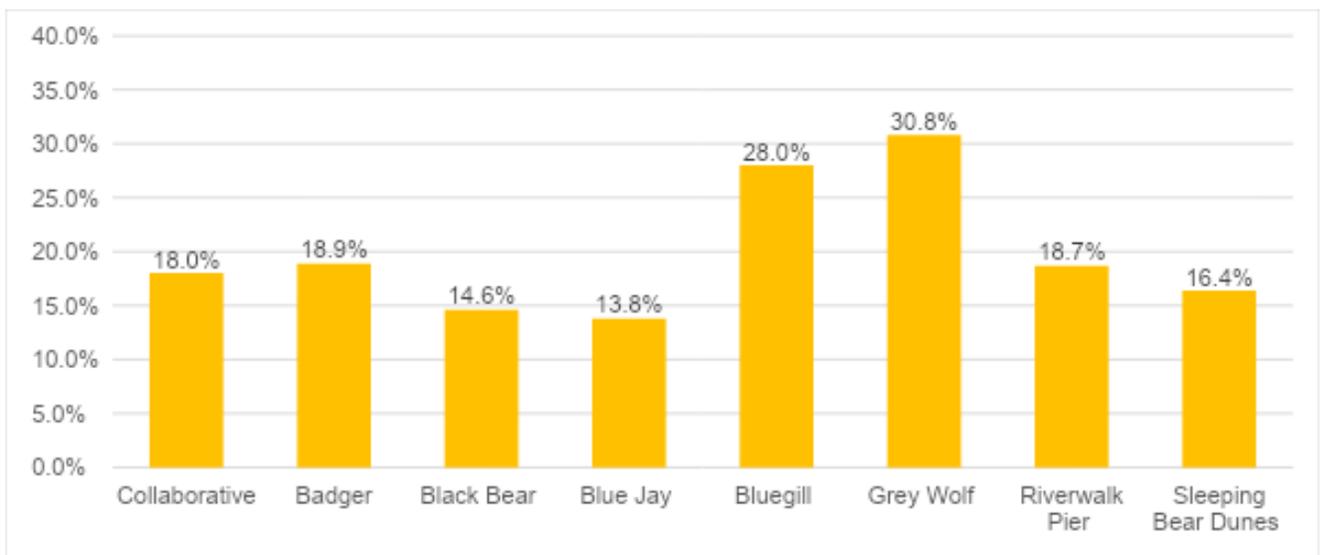
*The denominator used to calculate the medication prescribing rates was the number of unique patients (N=30,932) part of MCT2D. The patients included must be covered by either BCBSM PPO or Medicare Advantage. Data is currently unavailable for patients with other insurance coverage. The data also excludes pharmacy carve outs. For the Grey Wolf bars, the denominator used to calculate the medication prescribing rates was the number of unique patients (N=3,126) part of the Grey Wolf 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).

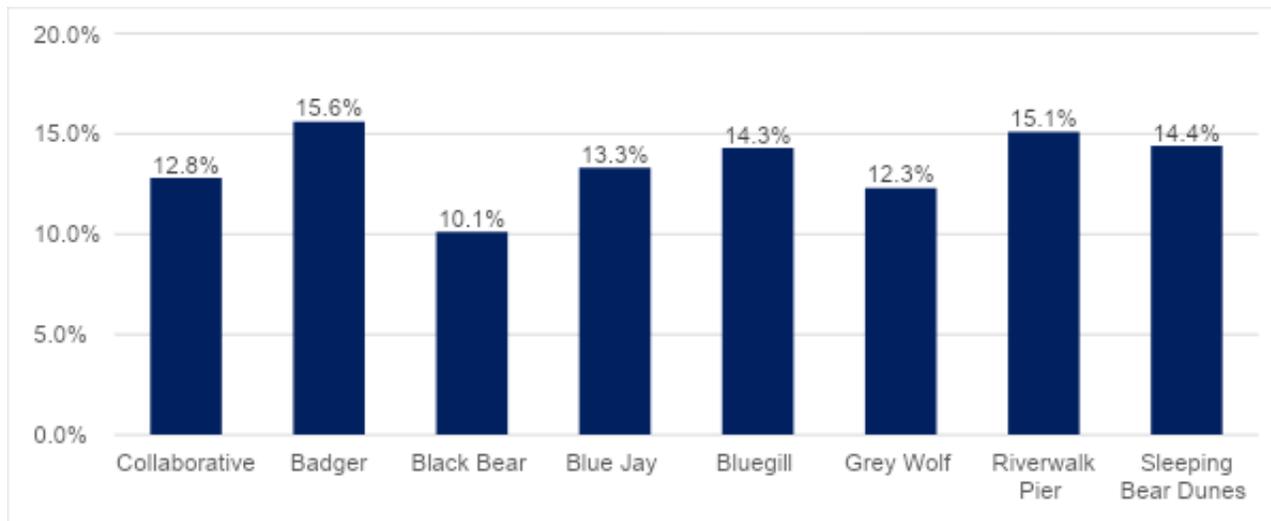
3. Comparison of Prescribing Rates of GLP-1RA Across MCT2D Regions (Excluding Pharmacy Carve Outs)



*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

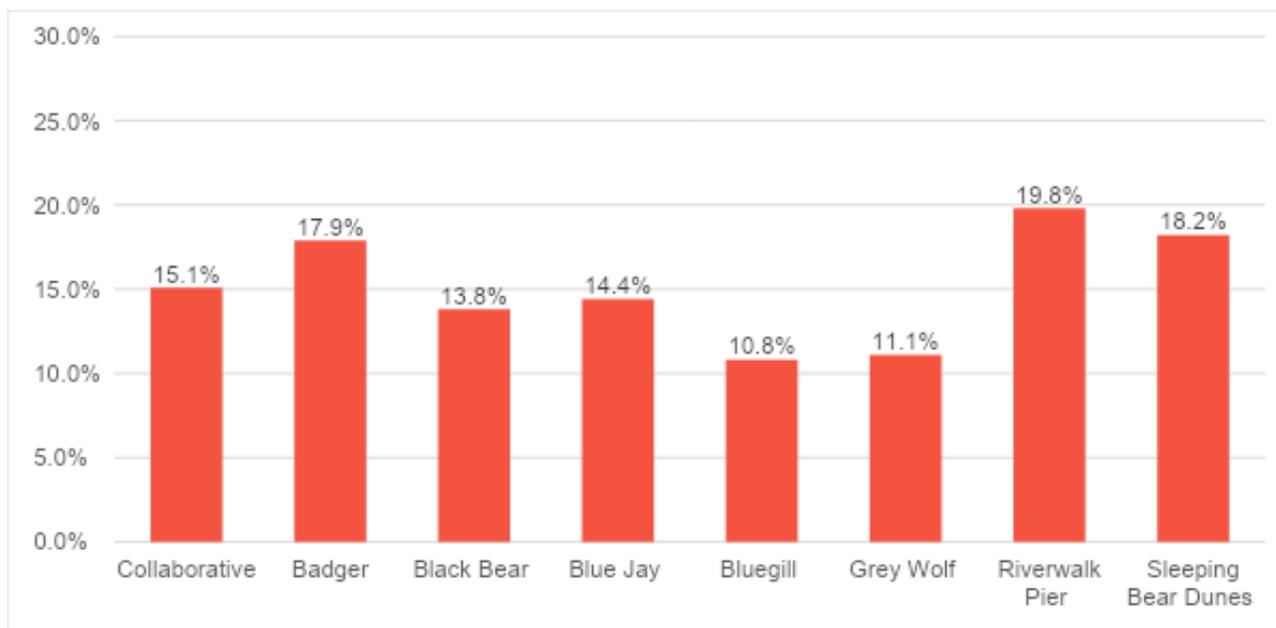
of unique patients part of the region (Badger: N=3,103, Black Bear: N=9,829, Blue Jay: N=6,323, Bluegill: N=1,767, Grey Wolf: N=3,126, Riverwalk Pier: N=5,156, Sleeping Bear Dunes: N=1,628).

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



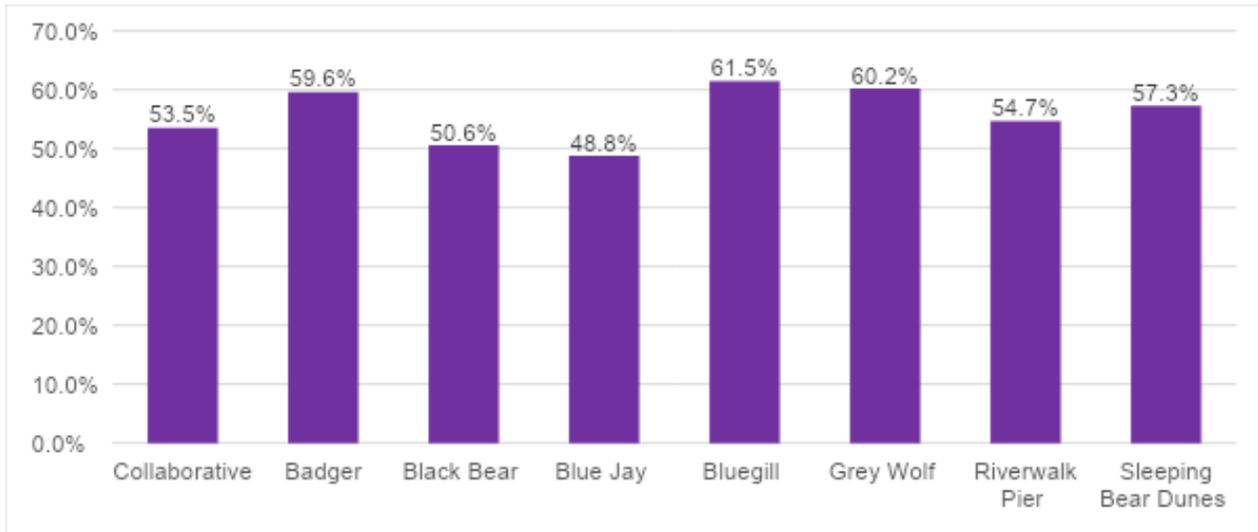
*The denominator used to calculate the medication prescribing rates was the number of unique patients (N=30,932) part of MCT2D. For each region, the denominator used to calculate the medication prescribing rates was the number of unique patients part of the region (Badger: N=3,103, Black Bear: N=9,829, 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).

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



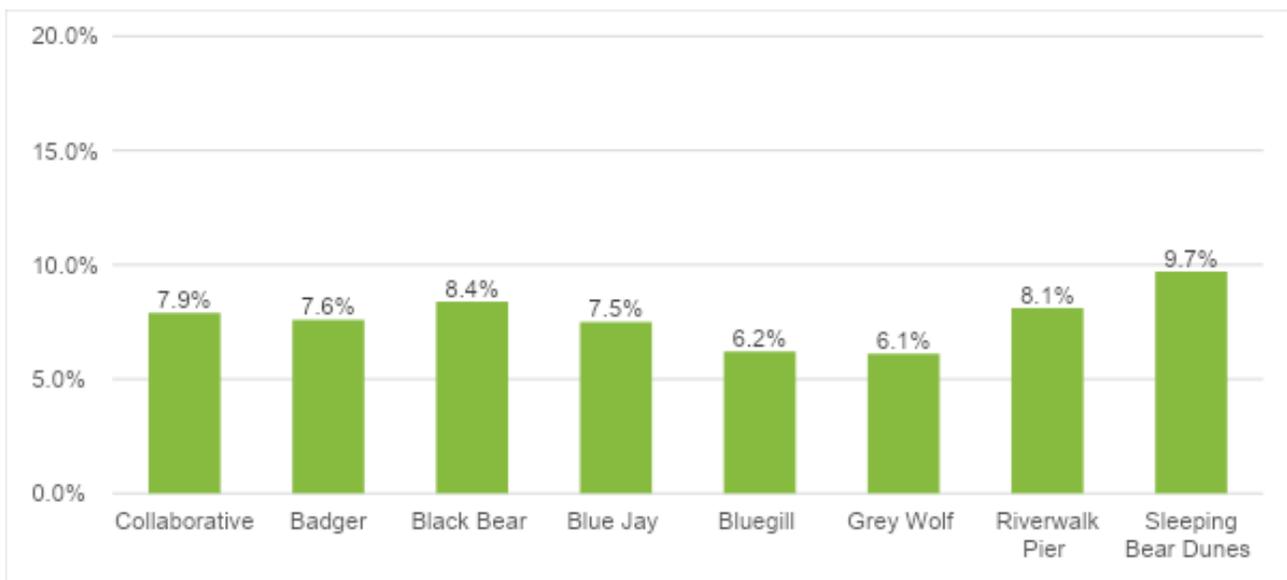
*The denominator used to calculate the medication prescribing rates was the number of unique patients (N=30,932) part of MCT2D. For each region, the denominator used to calculate the medication prescribing rates was the number of unique patients part of the region (Badger: N=3,103, Black Bear: N=9,829, 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).

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



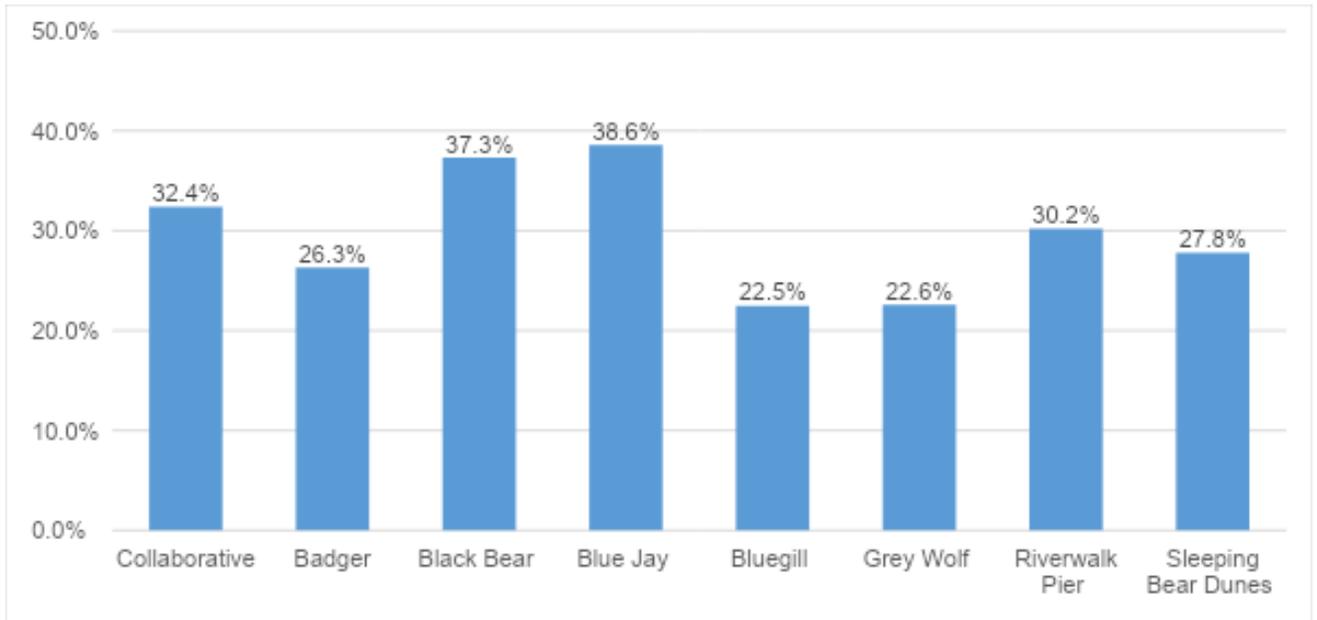
*The denominator used to calculate the medication prescribing rates was the number of unique patients (N=30,932) part of MCT2D. For each region, the denominator used to calculate the medication prescribing rates was the number of unique patients part of the region (Badger: N=3,103, Black Bear: N=9,829, 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).

7. Comparison of Prescribing Rates of Dipeptidyl Peptidase 4 Inhibitors (DPP4i) 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).

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



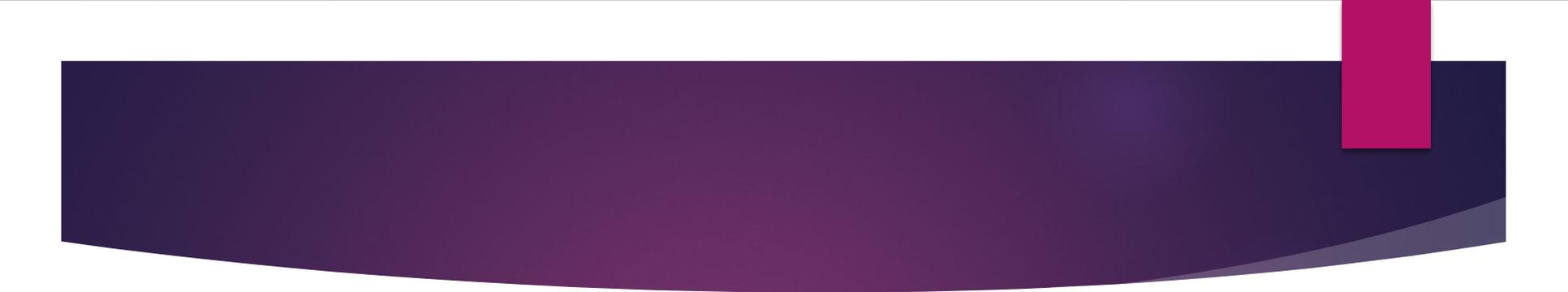
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Protecting Kidneys in Type 2 Diabetes Mellitus

AMANDA MORRIS, DO

ENDOCRINOLOGY

- 
- ▶ I have no disclosures

Long Term Progression of Kidney Disease in T2D

United Kingdom Prospective Diabetes Study (UKPDS)
5102 patients with T2D



2%

Progressed from normo- to micro- albuminuria **PER YEAR**

2.8%

Progressed from micro to macro- albuminuria **PER YEAR**

15 Years after
Diagn



Developed
Albuminuria

Developed eGFR
<60
mL/min/1.73m²
(CKD stage 3-5)

A substantial portion of patients with T2D will develop albuminuria and renal impairment

*The UKPDS enrolled patients with newly diagnosed T2D; ^bDefined as a urinary albumin concentration 50–299 mg/L; ^cDefined as a urinary albumin concentration ≥ 300 mg/L.
^dDefined as urinary albumin concentration ≥ 50 mg/L.
CKD = chronic kidney disease; eGFR = estimated glomerular filtration rate; T2D = type 2 diabetes
1. Adler A et al. *Kidney Int.* 2003;63(1):225–32; 2. Retnakaran R et al. *Diabetes.* 2006;55(6):1832–9.

Effective Treatment of CKD Includes Both Direct and Indirect Approaches

Indirect

Target Risk Factors*

Hyperglycemia

Hypertension

Hypervolemia

Direct

Target Kidney Dysfunction

Slowing down
eGFR decline

Reducing
albuminuria

*This is not an exhaustive list of treatable risk factors.

CKD = chronic kidney disease; eGFR = estimated glomerular filtration rate.

Kidney Disease: Improving Global Outcomes. *Kidney Int.* 2020;98:S1–S115.

SGLT-2 inhibitors

Name	FDA Indicated for ESKD?	Notes?	Evidence
Invokana (canagliflozin)	Yes	Reduce risk of end stage kidney disease, doubling of serum creatinine, cardiovascular death and hospitalization for heart failure in adults with type 2 diabetes mellitus and diabetic nephropathy with albuminuria	CREDESCENCE: Perkovic V, Jardine MJ, Neal B, et al. Canagliflozin and renal outcomes in type 2 diabetes and nephropathy. N Engl J Med. 2019; 380 (24):2295-2306
Farxiga (dapagliflozin)	Yes	Reduce risk of sustained eGFR decline, end stage renal disease, cardiovascular death and hospitalization in adults with chronic kidney disease at risk of progression	DAPA CKD: Heerspink HJL, Stefánsson BV, Correa-Rotter R, et al; DAPA-CKD Trial Committees and Investigators. Dapagliflozin in patients with chronic kidney disease. N Engl J Med. 2020;383(15):1436-1446.
Jardiance (empagliflozin)	No	EMPA KIDNEY trial beginning November 2022	
Steglatro (ertugliflozin)	No	Ongoing studies needed. Individuals with type 2 diabetes and cardiovascular disease are at decreased risk of time to first event of doubling of serum creatinine from baseline, renal dialysis/transplant and renal death.	VERTIS CV. Cherney DZI, Charbonnel B, Cosentino F, Dagogo-Jack S, McGuire DK, Pratley R, Shih WJ, et al; VERTIS CV Investigators. Effects of ertugliflozin on kidney composite outcomes, renal function and albuminuria in patients with type 2 diabetes mellitus: an analysis from the randomised VERTIS CV trial. Diabetologia. 2021 Jun;64(6):1256-1267.

GLP-1 mimetics

Indications

- ▶ None with a FDA approved indication specifically for renal protection

Name	Notes	Studies
Victoza (Liraglutide)	Secondary outcomes in LEADER study, showed liraglutide had reduction in new onset macroalbuminuria but not a significant difference in doubling of serum creatinine, initiation of renal replacement therapy or renal death	Mann, J. F. E., Fonseca, V., Mosenzon, O., Raz, I., Goldman, B., Idorn, T., et al. (2018). Effects of Liraglutide Versus Placebo on Cardiovascular Events in Patients With Type 2 Diabetes Mellitus and Chronic Kidney Disease. <i>Circulation</i> 138, 2908–2918.
Trulicity (dulaglutide)	Secondary outcomes in the REWIND trial showed reduction of albuminuria [HR 0.77 (95% CI: 0.68–0.87), $p < 0.001$]. The rates of a sustained decline in eGFR [HR 0.89 (95% CI: 0.78–1.01), $p=0.066$] and the need for RRT showed a downward trend but were not statistically significant	Gerstein, H. C., Colhoun, H. M., Dagenais, G. R., Diaz, R., Lakshmanan, M., Pais, P., et al. (2019a). Dulaglutide and renal outcomes in type 2 diabetes: an exploratory analysis of the REWIND randomised, placebo-controlled trial. <i>Lancet</i> 394, 131–138.
Ozempic (semaglutide)	Study currently underway to assess if semaglutide reduces the risk of eGFR decline of greater than or equal to 50 percentage from trial start, reaching ESRD, death from kidney disease or death from cardiovascular disease	
Bydureon (exenatide)	Does not appear to harm or benefit kidneys	

Mineralocorticoid Receptor Agonist



Kerendia (finerenone)

- ▶ Reduce the risk of sustained eGFR decline, end stage kidney disease, cardiovascular death, non-fatal myocardial infarction, and hospitalization for heart failure in adult patients with chronic kidney disease associated with type 2 diabetes

FIDELIO DKD

- Adult aged ≥ 18 years with T2DM meeting ADA 2010 DM definition
 - CKD, defined by 1 of the following:
 - Persistent albuminuria 30 to <300 mg/g, eGFR 25-59 mL/min/1.73 m², and known diabetic retinopathy
 - Persistent albuminuria 300-5000 mg/g and eGFR 25-74 mL/min/1.73 m²
 - Maximum dose ACE-inhibitor or/ARB Serum potassium ≤ 4.8 mmol/L
 - Not pregnant and on ≥ 2 contraceptives if child-bearing age
- Mean age: 66 years
 - Female sex: 29.8%
 - Race: White: 63.3%, Black: 4.7%, Asian: 25.4%
 - Mean HbA1c: 7.7%
 - Duration of DM: 16.6 years
 - Mean eGFR: 44.3
 - Median Urinary albumin/Creatinine: 852 mg/g
 - Serum potassium: 4.37 mmol/L
 - Medications: ACE inhibitor: 34.2 %, ARB: 65.7%,
 - Anti-hyperglycemics: Insulin: 64.1%, GLP-1 receptor agonist: 6.9%, SGLT2i: 4.6%

FIDELIO DKD

- ▶ Finerenone shown to have delayed progression of kidney failure, a sustained decrease of at least 40% in the GFR from baseline over a period of at least 4 weeks, and death from renal causes.

ADA Recommendations

- ▶ For patients with type 2 diabetes and established atherosclerotic cardiovascular disease or established kidney disease, a SGLT2 inhibitor or GLP1 receptor agonist with demonstrated cardiovascular disease benefit is recommended as part of the comprehensive cardiovascular risk reduction and/or glucose-lowering regimens.
- ▶ For patients with type 2 diabetes and established atherosclerotic cardiovascular disease, multiple atherosclerotic cardiovascular disease risk factors, or diabetic kidney disease, a SGLT2 inhibitor with demonstrated cardiovascular benefit is recommended to reduce the risk of major adverse cardiovascular events and/or heart failure hospitalization
- ▶ For patients with type 2 diabetes and established atherosclerotic cardiovascular disease or multiple risk factors for atherosclerotic cardiovascular disease, combined therapy with a SGLT2 inhibitor with demonstrated cardiovascular benefit and a GLP1 receptor agonist with demonstrated cardiovascular benefit may be considered for additional reduction in the risk of adverse cardiovascular and kidney events.

ADA recommendations

- ▶ For patients with type 2 diabetes and diabetic kidney disease, consider use SGLT-2 inhibitor if estimated glomerular filtration rate ≥ 25 or urinary albumin to creatinine ratio ≥ 300 to reduce chronic kidney disease progression and cardiovascular events
- ▶ For patients with diabetes and hypertension, either an ACE-I or ARB is recommended for those with urinary albumin-to-creatinine ratio (30–299) and those with urinary albumin to creatinine ratio ≥ 300 mg/g creatinine and/or estimated glomerular filtration rate < 60
- ▶ An ACE inhibitor or an angiotensin receptor blocker is not recommended for the primary prevention of chronic kidney disease in patients with diabetes who have normal blood pressure, normal urinary albumin to creatinine ratio (< 30), and normal estimated glomerular filtration rate.

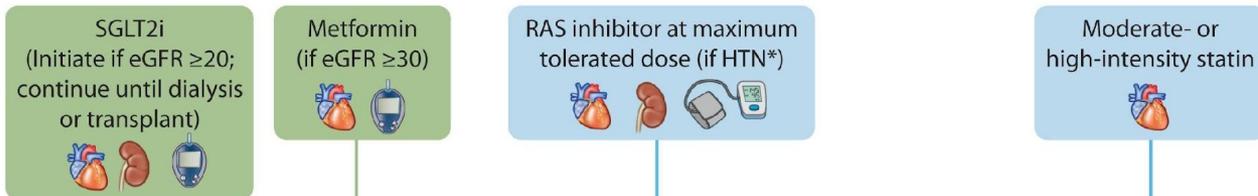
ADA Recommendations

- ▶ For patients with chronic kidney disease who are at increased risk for cardiovascular events or chronic kidney disease progression or are unable to use a SGLT2 inhibitor, finerenone is recommended to reduce chronic kidney disease progression and cardiovascular events

Lifestyle

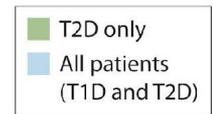
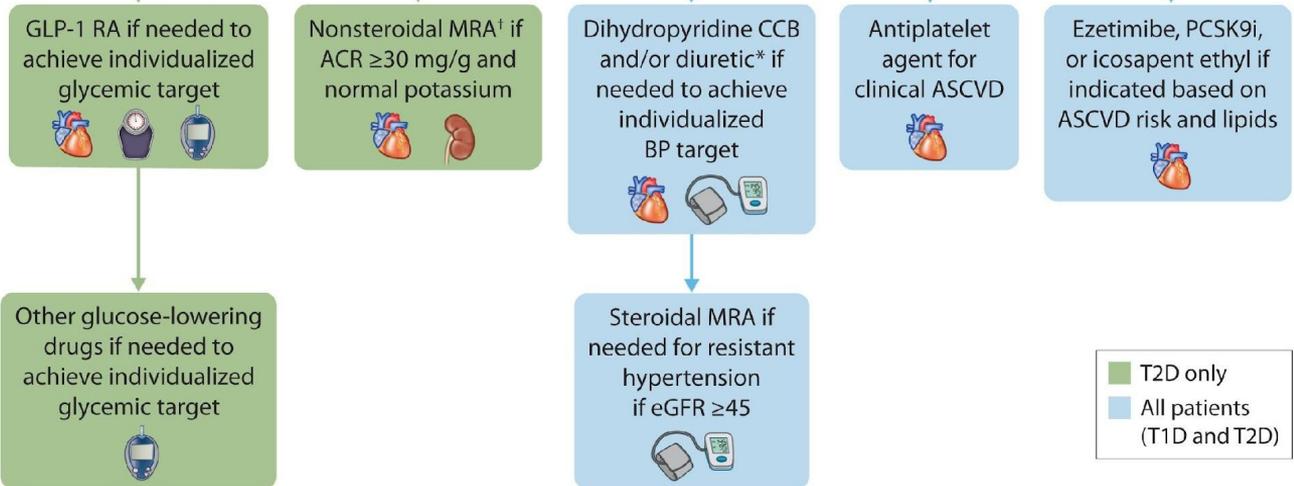


First-line drug therapy



Regular reassessment of glycemia, albuminuria, BP, CVD risk, and lipids

Additional risk-based therapy





Lifestyle therapy

Physical activity
Nutrition
Weight loss



First-line therapy

Metformin

eGFR < 45	eGFR < 30	Dialysis
Reduce dose	Discontinue	Discontinue

+

SGLT2 inhibitor

eGFR < 30	Dialysis
Do not initiate	Discontinue



Additional drug therapy as needed for glycemic control

- GLP-1 receptor agonist (preferred)
- DPP-4 inhibitor
- Sulfonylurea
- Alpha-glucosidase inhibitor
- Insulin
- TZD

- Guided by patient preferences, comorbidities, eGFR, and cost
- Includes patients with eGFR < 30 ml/min per 1.73 m² or treated with dialysis
- See Figure 20

Considerations for Glucose-Lowering Agents in Type 2 Diabetes and CKD



	Progression of CKD	ASCVD	Heart failure	Glucose-lowering efficacy	Hypoglycemia risk	Weight effects	Cost
Metformin	Neutral	Potential benefit	Neutral	High	Low	Neutral	Low
SGLT-2 inhibitors	Benefit ^a	Benefit ^c	Benefit	Intermediate	Low	Loss	High
GLP-1 receptor agonists	Benefit ^b	Benefit ^c	Neutral	High	Low	Loss	High
DPP-4 inhibitors	Neutral	Neutral	Potential risk ^c (Saxagliptin)	Intermediate	Low	Neutral	High
Insulin	Neutral	Neutral	Neutral	Highest	High	Gain	High (analog)
							Low (human)
Sulfonylureas	Neutral	Neutral	Neutral	High	High	Gain	Low
Thiazolidinediones	Neutral	Potential benefit (Pioglitazone)	Increased risk	High	Low	Gain	Low
Alpha-glucosidase inhibitors	Neutral	Neutral	Neutral	Intermediate	Low	Neutral	Low

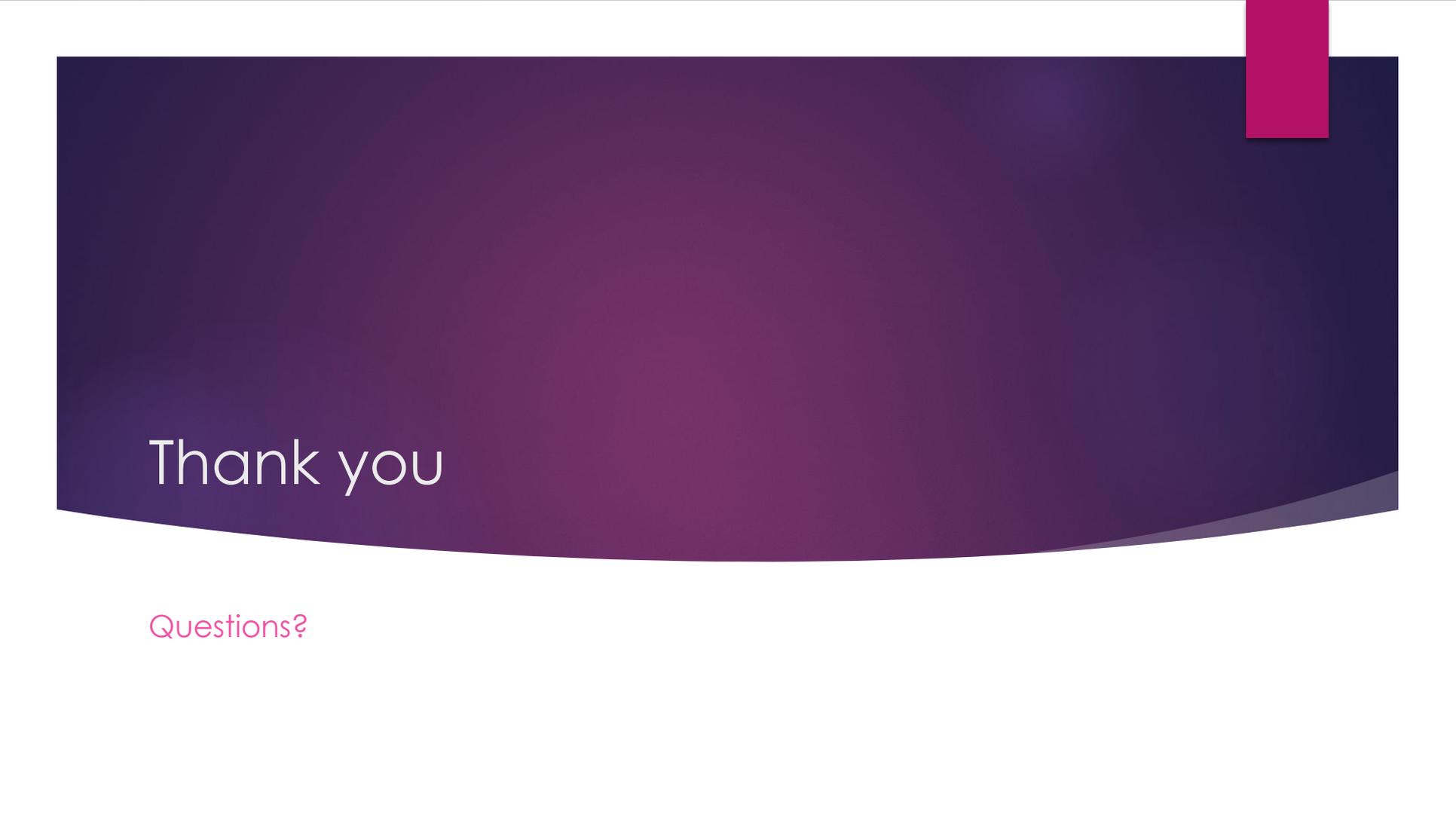
Neutral

Potential benefit or intermediate glucose-lowering efficacy

Benefit (organ protection, high efficacy, low hypoglycemia risk, weight loss, or low cost)

Potential risk or high cost to patient

Increased risk for adverse effects



Thank you

Questions?



Diving Deeper

Operationalizing a Low Carb Diet in Type 2 Diabetes

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Family Medicine
Health Educator, MCT2D
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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 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

- $\leq 10\%$
- 20-50g carbs/day

Low Carbohydrate Diet

- $>10-26\%$
- 50-130g carbs/day

Moderate Carbohydrate Diet

- 26-45%
- 130-225g carbs/day

High Carbohydrate Diet

- $>45\%$
- $>225\text{g carbs/day}$

Based on 2000 kcal/day

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

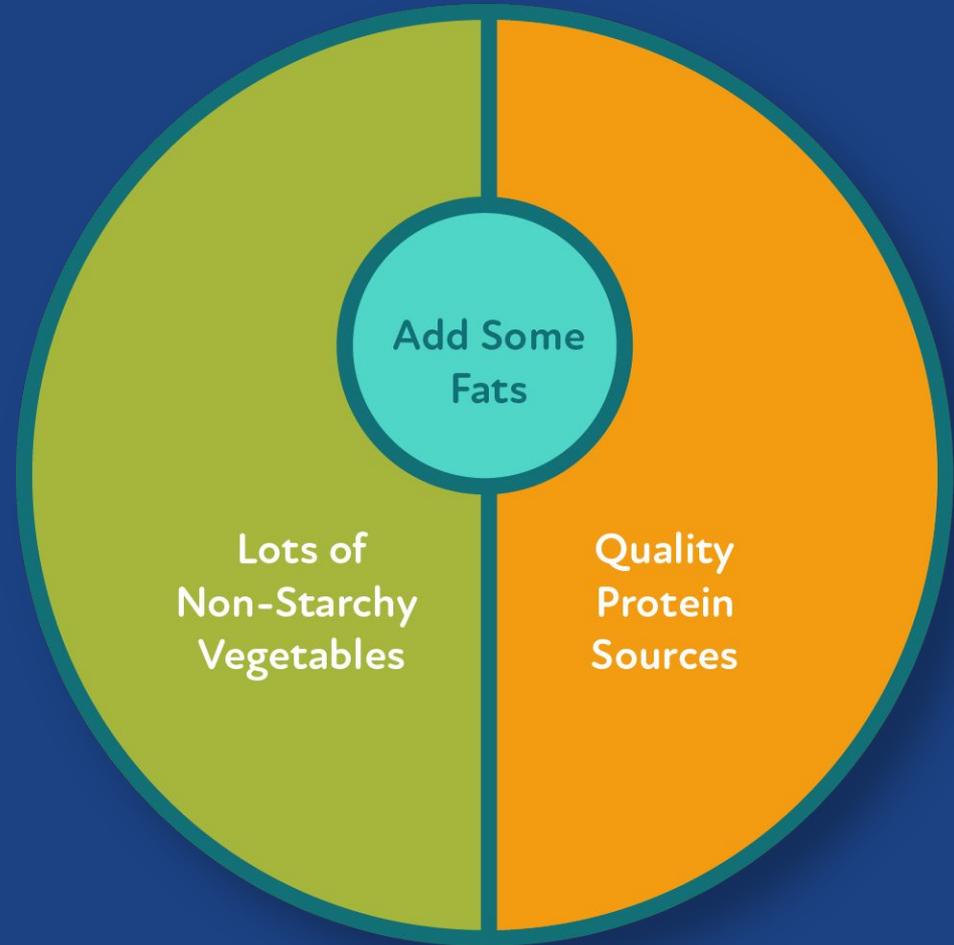


High Carbohydrate Foods

The Step Process

(3 step)

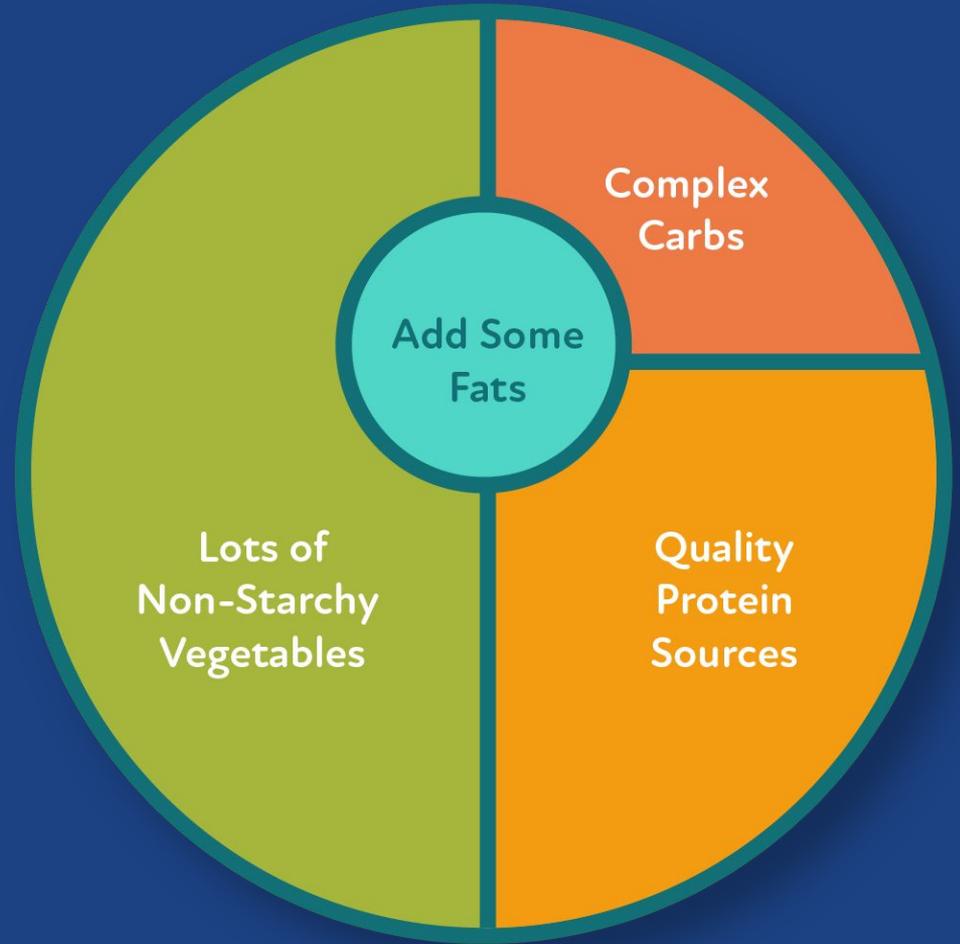
- Very low-carbohydrate meal plan
 - <50g total carbohydrates/day
- 1) Pick a protein source
 - 2) Add non-starchy vegetables
 - 3) Add some fats



The Step Process

(4 step)

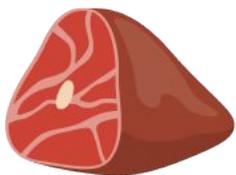
- Low carbohydrate meal plans
 - 50-130g total carbohydrates/day
- 1) Pick a protein
 - 2) Add non-starchy vegetables
 - 3) Add some fats
 - 4) Add some complex carbs



Summary

STEP 1: Pick a Protein

Choose a high-quality protein source like chicken, fish, seafood, beef, eggs, or soy.



STEP 2: Add Non-Starchy Vegetables (Half your plate)

Fill half your plate with non-starchy vegetables like salad greens, broccoli, or Brussels sprouts.



STEP 3: Add Some Fats

Add some fats from oil, sauces, or full-fat dairy like cheese, butter or sour cream.

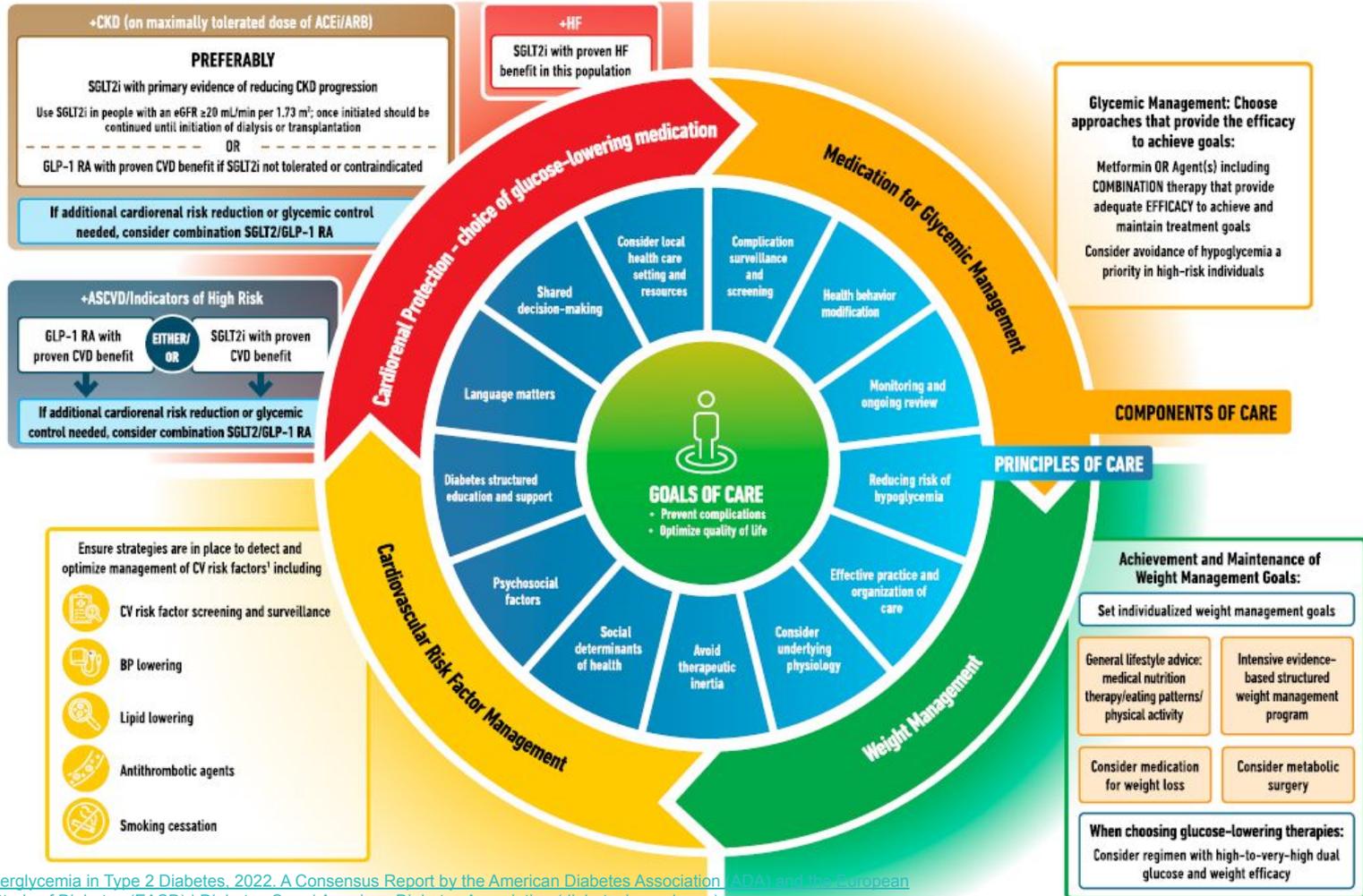


STEP 4: Add 1-2 Servings of Complex Carbs

Include 1-2 servings of high-quality carbs like starchy vegetables, fruits, legumes/lentils or whole grains.



HOLISTIC PERSON-CENTERED APPROACH TO T2DM MANAGEMENT



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 ≤ 100 g 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
<p>3 egg omelet with ½ cup diced vegetables (peppers, onion, mushroom, tomatoes), and 1oz shredded cheese</p> <p>1 slice whole wheat bread or 1 cup mixed berries</p> <p>Total carbs: 20-25g</p>	<p>Wrap sandwich (8 inch low carb wrap, 4-5oz turkey, cheese, spinach, tomato, and onion). Add mustard, pickles, mayo, and seasoning as desired</p> <p><i>Optional: add 1oz nuts for crunch or avocado</i></p> <p>Total carbs: 25-30g</p>	<p>2 cups spaghetti squash* topped with ½ cup low carb tomato sauce, 4-5oz ground beef, and 1 cup sautéed non-starchy vegetables</p> <p><i>Optional: add grated Parmesan</i></p> <p><i>*Note: Can also use high-protein, low carbohydrate pasta</i></p> <p>Total carbs: 40g</p>



TUESDAY

Breakfast	Lunch	Dinner
<p>Baked avocado cups (cut avocado in half, add 1 egg to center of each half, then bake at 425 degrees for 15-20 min)</p> <p>1 piece of fruit (1 small apple, plum, kiwi, 1 cup cantaloupe, 1 cup berries)</p> <p>Total carbs: 30g</p>	<p>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)</p> <p>Total carbs: 20g</p>	<p>2 cups lentil soup (brown lentils, onions, garlic, diced carrots, zucchini, celery, mushrooms)</p> <p>Chia pudding (mix 1 tbsp chia seeds, ½ cup coconut cream, and a dash of stevia. Let sit overnight)</p> <p><i>You can make these in batches!</i></p> <p>Total carbs: 43g</p>



MONDAY

Breakfast	Lunch	Dinner
<p>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)</p> <p>Total carbs: 25g</p>	<p>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</p> <p>Serve with 2 tbsp ranch dressing or lemon and olive oil vinaigrette</p> <p>Total carbs: 25g</p>	<p>Chicken Alfredo (whole grain fettuccine with 4-5oz chicken grilled, ½ cup Alfredo sauce, and 2oz (dried) whole grain fettuccine)</p> <p>Serve with side salad (dressing full-fat or olive oil and vinegar)</p> <p>Total carbs: 50g</p>



WEDNESDAY

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



Sample Meal Plan

(Very-Low Carb <50g)

SATURDAY

Breakfast

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)

Total carbs: 5g

Lunch

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

Total carbs: 10g (26g with wrap)

Dinner

4-5 oz steak
Roasted brussel sprouts with crushed bacon
1 cup mashed cauliflower with garlic and parsley

Total carbs: 15g



SUNDAY

Breakfast

3 egg omelet with ½ cup diced vegetables (peppers, onion, mushroom, tomatoes), and 1oz shredded cheese
½ cup sliced strawberries

Total carbs: 10g

Lunch

Wrap sandwich (8 inch low carb wrap, 4-5oz turkey, cheese, spinach, tomato, and onion). Add mustard, pickles, mayo, and seasoning as desired

Total carbs: 25g

Dinner

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: 15g



TUESDAY

Breakfast

¾ cup plain Greek yogurt topped with 1 oz chopped almonds, ½ cup mixed berries

Total carbs: 18g

Lunch

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)

Total carbs: 10g

Dinner

Meatloaf made with sugar-free BBQ glaze, 1 cup sauteed green beans, 1 cup cauliflower mash

Total carbs: 18g



WEDNESDAY

Breakfast

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

Total carbs: 12g

Lunch

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

Total carbs: 17g

Dinner

4-5 oz grilled fish
2 cups sauteed non-starchy vegetables sprinkled with 1 oz walnuts

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

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

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 overall carbohydrate intake to 50-130g of total carbohydrates per day. Patients with type 2 diabetes (T2DM) who are interested in reducing a low carbohydrate lifestyle should consult their blood glucose control and work closely with their primary care team to adjust medications as needed. Risk of hypoglycemia is greater 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 adjusted) to prevent hypoglycemia. View a detailed review on medication management for patients with T2DM who follow a low carbohydrate lifestyle by visiting <https://doi.org/10.3389/fnut.2021.688540> 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 disease-related experience, cultural background, and comorbidities 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 thiazide diuretic during the first 2-4 weeks of dietary change
 - If BP remains increase return to prior dose
- Treat hypertension: advise patient to monitor for dizziness and dizziness, can give patient permission to stop a medication in this setting (HCL medication and call office)
- Monitor for hypotension
- Hyponatremia

SETTING CARB GOALS & ADJUSTING MEDICATIONS

GREEN CATEGORY: CONTINUE

Patients will need minimal medication adjustment.

Population: These patients are considered low risk for hypoglycemia/hypotension: Patients with T2DM who are NOT on insulin or sulfonylureas (Biguanides/Metformin, GLP-1 receptor agonists, DPP-4 inhibitors and SGLT2).

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.

Biguanides GLP-1 RAs DPP-4 inhibitors

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 patients 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

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 $\leq 100\text{g}$ per day



MEDICATIONS:

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

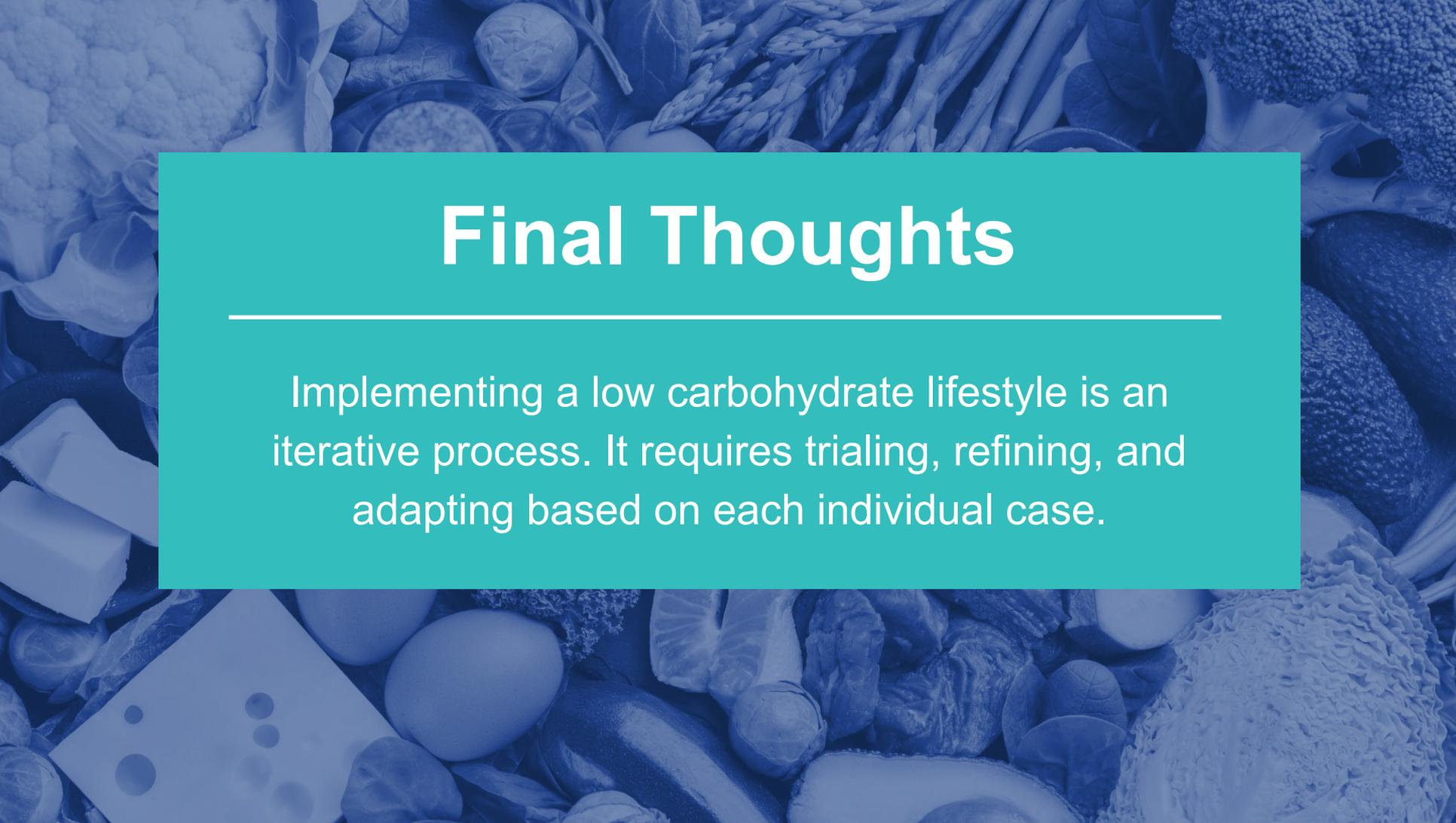
Within 1 Month of Program...

- ★ 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

Thank you!

Questions/
Concerns?

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- [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 \(diabetesjournals.org\)](https://diabetesjournals.org/management-of-hyperglycemia-in-type-2-diabetes-2022)



Closing

Jackie Rau, MHSA

MCT2D Program
Manager

**Value Based Reimbursement requirements
for Year 2**

MCT2D Learning Community

Next Steps for MCT2D

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
<i>Ongoing Learning Community Requirement:</i> 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

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

The graphic features a dark blue background. On the left, several colorful, semi-transparent ribbons in shades of purple, teal, white, yellow, and pink converge towards the right, ending in a stylized arrow with a multi-colored shaft. In the top right corner, the MCT2D logo (a map of Michigan) is positioned above the text 'LEARNING COMMUNITY NEWSLETTER'. The word 'WELCOME' is centered in large, white, bold letters. Below it, a paragraph of text describes the newsletter's content. A light blue rounded button with the text 'Subscribe to our Newsletter' is centered below the paragraph. At the bottom, the 'Table of Contents' section lists two items, and the 'Are you Always Hungry for dietician support?' section introduces new patient resources.

MCT2D
LEARNING
COMMUNITY
NEWSLETTER

WELCOME

to the [Michigan Collaborative for Type 2 Diabetes \(MCT2D\)](#) Learning Community Newsletter. This monthly digest will keep you informed on upcoming events, key requirement reminders, patient perspectives, new tools and support from MCT2D, and opportunities to network, learn, and grow as a member of the collaborative.

[Subscribe to our Newsletter](#)

Table of Contents

1. [Meet Rina, MCT2D Dietician](#)
2. [NEW Tool Alert - Patient-Friendly Low Carb Starter Guide and Anti-Obesity Medication Coverage Guide](#)

Are you *Always Hungry* for dietician support?

In this month's newsletter, we're debuting new patient resources for lower carb diets, office hours with MCT2D's dietitian, and details about our June 2022 All



THANK YOU

Thank you!

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