

Diabetes for Primary Care 2026

Thursday, March 26, 2026

Live Online via MS Teams

About the Course

This course is designed to provide up-to-date, evidence-based information on common diabetes medical issues while suggesting pragmatic approaches to clinical management. The format will encourage audience participation through practical lectures, case studies, breakout sessions, and audience response questions. Faculty will discuss recent advancements, diabetes management at KPWA, and industry updates in diabetes. Successful completion of this program will increase confidence in diagnosis, treatment, and effective prescribing, with the ultimate goal of improving patient outcomes.

Target Audience

Primary care physicians, advanced practice nurses, physician assistants, and members of the health care team who seek to advance their knowledge in this area.

Course Objectives

At the end of the conference, attendees will be able to:

- Discuss the Kaiser Permanente Diabetes Program.
- Cite how the CDM Program at KPWA improves the quality of care for individuals with chronic diseases through comprehensive management, patient education, and coordinated care plans.
- Provide an overview of the fundamental principles and current best practices in the treatment of type 2 diabetes.
- Utilize continuous glucose monitors (CGMs), including their indications, insurance coverage, and data interpretation, to enhance diabetes management and patient outcomes.
- Cite the latest updates on GLP-1 receptor agonists, including their clinical indications, efficacy, safety profiles, and recent advancements in treatment protocols.
- Cite essential knowledge for primary care providers on the diagnosis, management, and ongoing care of patients with type 1 diabetes.
- Outline the key aspects of preconception counseling for individuals with diabetes and provide updates on the management of gestational diabetes, including when to refer to Maternal-Fetal Medicine (MFM).
- Provide guidance on effective nutrition counseling strategies for individuals with diabetes, focusing on dietary modifications, meal planning, and the role of nutrition in glycemic control.
- Explore the latest smart tools and resources available for diabetes management and provide practical coding tips to enhance documentation accuracy.
- Engage with faculty in a discussion addressing complex questions and real-world challenges in diabetes management and reflect on course content and apply insights to improve clinical practice in diabetes care.

Agenda

a.m.

8:00 - 8:30

Introduction and Overview of KPWA Diabetes Program
- *Meredith Cotton, RN, MSN, CDCES, BC-ADM, Annie Gayman, MD, Mamatha Palanati, MD*

8:30 - 9:30

Type 2 Diabetes Treatment Basics
- *Katie Paul, MD, MPH, Rakesh Popli, MD*

9:30 - 10:30

Continuous Glucose Monitors: Indications, data interpretation, coverage
- *Meredith Cotton, RN, MSN, CDCES, BC-ADM*

10:30 - 10:45

Break

10:45 - 11:45

GLP-1 Updates - *Melissa Sturgis, PharmD, BCACP*

11:45 - 12:15

Diabetes Smart Tools, Resources, and Coding Tips
- *Meredith Cotton, RN, MSN, CDCES, BC-ADM, Mamatha Palanati, MD*

p.m.

12:15 - 1:00

Lunch

1:00 - 2:00

What Should I Know About Type 1 Diabetes in Primary Care? - *Su Ah Bae, MD, Emily Omura, MD*

2:00 - 3:00

Preconception Counseling in Diabetes and Updates in Gestational Diabetes - *Anna Walton, MD*

3:00 - 3:15

Break

3:15 - 4:00

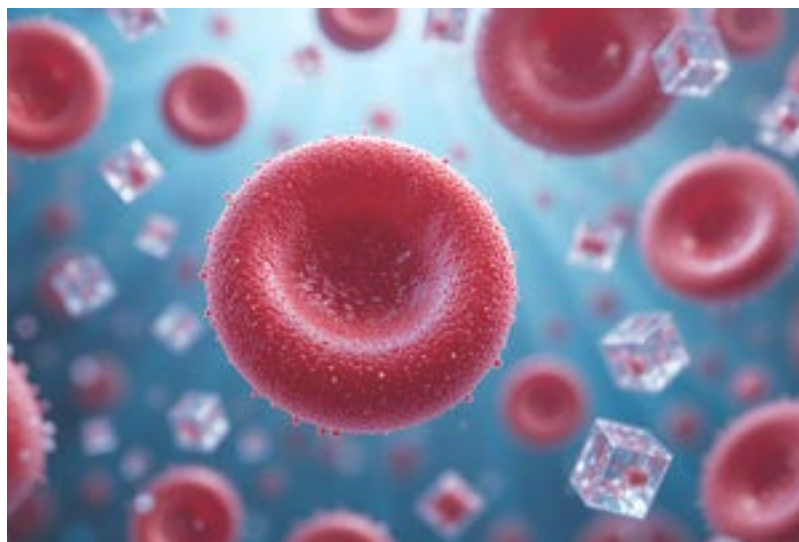
Nutrition Counseling in Diabetes
- *Jessica Kim, MS, RDN, CD, CDCES*

4:00 - 4:30

Faculty Q&A - *All Faculty*

4:30

Adjournment



Diabetes for Primary Care 2026 • March 26, 2026

Faculty and Planners

Su Ah Bae, MD

Endocrinology, Capitol Hill Seattle

Washington Permanente Medical Group

Meredith Cotton, RN, MSN, CDCES, BC-ADM

Nurse Manager I, Diabetes Program

Population Health

KP Medical Foundation

Annie Gayman, MD

Family Medicine, Capitol Hill Campus

Washington Permanente Medical Group

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Diet and Nutrition Counseling

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KP Medical Foundation

Melissa Sturgis, PharmD, BCACP

Pharmacy Care Delivery Specialist - Diabetes, HIV/PrEP

Co-Lead for Interregional Opioid Utilization Improvement Group

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Amber Sweeny, RN, MSN, CDCES, BC-ADM

Clinical Consultant, Special Populations

Population Health

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Anna Walton, MD

Obstetrics, Bellevue Medical Center

Washington Permanente Medical Group

Accreditation and Disclosure

Kaiser Foundation Health Plan of Washington is accredited by the Washington State Medical Association CME Accreditation Committee to sponsor continuing medical education for physicians.

Kaiser Foundation Health Plan of Washington designates this educational activity for a maximum of 6.75 hours in Category 1 to satisfy the relicensure of the Washington State Medical Quality Assurance Commission.

Kaiser Foundation Health Plan of Washington designates this live activity for a maximum of 6.75 *AMA PRA Category 1 Credit(s)*[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Kaiser Permanente requires that all individuals participating in a KPWA CME activity disclose to the audience any relationship with an ineligible company that might pose a potential, apparent, or real conflict of interest with regard to that faculty or planning member's contribution to the program.

Individuals listed above have disclosed that their participation/presentation includes no promotion of any commercial products or services, they have not had any financial relationships with an ineligible company in the last 24 months, and they do not anticipate discussing any off-label uses of a product.

Register online using our secure registration and payment site

Tuition

Kaiser Permanente Staff	\$140
Community Attendees	\$150



KP Medical Foundation

For more information contact

Christopher Scott - E-mail: Christopher.J.Scott@kp.org

For upcoming events visit the [KPWA CME Catalog](#)



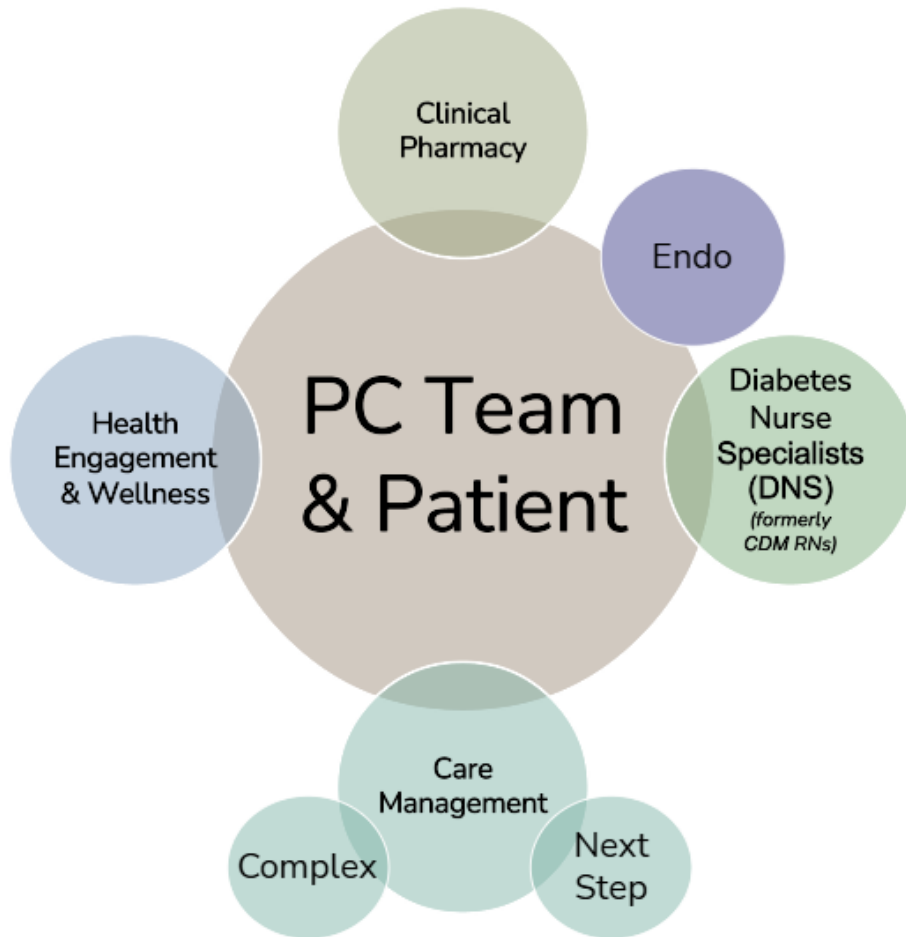
Introduction and Overview of KPWA Diabetes Care Program

Diabetes for Primary Care CME 2026

Mamatha Palanati, MD | Diabetes Program Medical Director

Meredith Cotton, MSN, RN, CDCES, BC-ADM | Nurse Manager I, Diabetes Program

The Diabetes Care Program is a *TEAM*



The Diabetes Care Program

The “Team” is a **multidisciplinary group** of resources working cohesively to support patient diabetes-specific needs.



Use **REF Diabetes** to connect patients to any internal diabetes service at KPWA.

Diabetes Referral

REF DIABETES - INTERNAL ✓ Accept ✗ Cancel

Reference Links:

- Diabetes QCG
- QCG: Endocrinology
- Pharmacy CDTA Guideline
- RN HTN Standing Orders
- Referral Resource Guide
- QCG: Weight Management
- RN Type 1 Diabetes Standing Orders
- HbA1c Guideline Goals
- Group Practice Specialty Services Guide
- CDM Program Criteria & Capacity Status
- RN Type 2 Diabetes Standing Orders

Process Instructions:

Please order A1C if one hasn't been completed in last 3 months and validate patient is actively monitoring glucose.

- Please be sure you have discussed placement of this referral, patients understands this is a virtual resource, and patient is ready and agrees to participate.
- Your patients will be offered virtual education/ support, nutrition group classes/appointments, consultation with specialty, medication management with RN or CP based on the current status or review of their needs
- If this is a re-referral within 6 months, please confirm patient willingness to participate prior to sending

❗ What is the patient's diagnosis status?

❗ Is patient currently on or requesting an insulin pump?

❗ Does patient have one of the following urgent circumstances that need priority review?

None Urgent Insulin Pump Issue Steroid induced hyperglycemia Severe or prolonged hypoglycemia

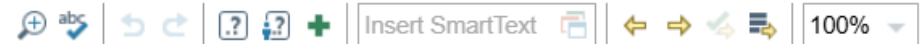
Recent DM hospitalization New Insulin Start Other

❗ Does the patient have comorbid HTN and/or Statin medication management needs?

❗ Indicate the timeframe that patient care needs to occur.

This is an internal request. Please indicate if you would like this service to be evaluated by the service line to be sent externally.

Comments:

 100%

❗ **Next Required** ✓ Accept ✗ Cancel

Inclusion Criteria for Diabetes Care Program

Inclusion Criteria

- Member is willing to adjust insulin or medication doses at RN's instruction
- The member is willing and able to monitor their glucose and report the results to the nurse
- The member agrees to frequent contact with the RN, generally every 1-4 weeks for medication management. Alternately: The member has a single, reliable, consistent caregiver to fulfill the above criteria during the period of medication titration
- The member agrees to work with RN primarily through virtual modalities.

Exclusion Criteria for Diabetes Care Program

Exclusion Criteria

- Member not willing to adjust insulin or medication doses at RNs' instruction
- Member is pregnant
- Member and/or their primary caregiver are unable to reliably administer insulin and/or medications
- Member is unable/unwilling to monitor and report home glucose results
- Members using an insulin pump
- Member is a resident of a skilled nursing facility, assisted living, or adult family home, or in hospice care

Diabetes Care Program Discharge Criteria

Enrollment is for short-term medication management and diabetes education. Program goals are to help the member achieve:

- Home glucose values in a safe range

OR

- A HbA1c less than 8% (or trending that direction) or target appropriate for the member's age and comorbidities.

Members are also discharged if:

- We are unable to reach the member
- The member specifically expresses lack of interest in participation in the program
- The member repeatedly does not provide glucose data to the RN for review (after 3 occurrences)

Clinical Pharmacy: Diabetes Care

Who do they manage?

- A1c > 8% with comorbid HTN or heart disease (statin titration)
- HbA1c > 8% on basal insulin



REF Diabetes

Virtual management

- CPs operate under a Collaborative Drug Treatment Agreement (CDTA) that gives them prescriptive authority for initiation and titration of diabetes medications and insulin
- Care delivered by phone and secure messaging

Diabetes Referral – Comorbidity Question

REF DIABETES - INTERNAL ✓ Accept ✗ Cancel

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Comments:

100%

❗ Next Required ✓ Accept ✗ Cancel

Diabetes Nurse Specialist RN Role

Who We Are

Expert nurses who partner with patients, families, and care teams to support safe and effective diabetes management.

What We Provide

The focus is **medication optimization, self-management support, and reducing complications** through episodic engagement and evidence-based interventions.

- Support members via **short-term, episodic care** (3-5 months of active management) **or consultation** (for primary care or patient).
- Video and in-person visits may occur based on patient need; RN evaluates appropriateness
 - Video and F2F visits incur copay



REF Diabetes

Endocrinology and Technology Team

Visits

- Endocrinology will see all type 1 diabetes patients for at least one consultation and an annual follow up is recommended
- The technology team works with members using insulin pumps



REF Diabetes

Consultations

- The e-consult process may be utilized to get recommendations for any member with diabetes.



E-consult Diabetes

Health Engagement and Wellness

Visits and Resources

- 1:1 face-to-face or virtual visits with Registered Dietitian
- Nutrition E-visit
- Health Coaching
- Community Resource Specialists

Classes

- Thriving with Diabetes classes
- Thrive: Eat Well, Be Well
- Lifestyle Medicine
- Intuitive Eating

Care Management

Complex Care Management

- Members on the Complex Registry for persistent high-cost high utilization

Next Step Care

- All eligible adults with multiple unmet health and social needs or emerging risks (registry in development)



REF Care Management

Primary Care Provider Role

Responsibilities

- Routine care: annual diabetes visit, health maintenance, care gap closure
- CGM orders: Initial and recredentials **Use DMCGM**
- CGM renewals and provider visit:
 - Every 12 months for commercial plans
 - Every 6 months for Medicare plans
- Inform member of new diabetes diagnosis
- Initiate and titrate metformin, empagliflozin, & GLP1s
- Initiate insulin in type 1 diabetes (at least basal) and type 2 (when A1c >10%)
- Collaborate and consult with DNS RN as needed
- Refer to Thriving with Diabetes classes! Appropriate for anyone with impaired glucose tolerance or Type 2 diabetes

Primary Care Team RN Role

Perform in-person appointments

- New glucose meter teach
- New insulin start
- New GLP-1 start
- New CGM start/sensor insertion
- New diagnosis (RN only)
- Refresh education (RN only)

Triage urgent patient concerns

- Routine care, health maintenance, care gaps
- In-person education



Q & A

Type 2 Diabetes Cases

Rakesh Popli, MD - Endocrinology
Katie Paul, MD MPH – Family Medicine

Objectives

- Identify best practices for Type 2 diabetes diagnosis
- Recognize which patients should be tested to rule out Type 1 diabetes
- Understand KP evidence-based guidelines for Type 2 diabetes management including oral and injectable medications
- Highlight often overlooked preventive care needs for patients with Type 2 diabetes
- Understand how to start and titrate basal insulin
- Identify KP resources to support patients with diabetes including diabetes nurse specialists and dietitians

Disclosures

We have no financial disclosures.

Case 1

- 41yo man is seen at UC for cellulitis
- Labs show normal CBC, normal BMP except for random glucose of 210
- He is treated with antibiotics and discharged home
- You see him for UC follow up on week later; he is feeling better and his cellulitis is improving
- He denies any recent symptoms like polyuria, polydipsia, weight loss
- +Family hx of diabetes in mother (adult onset) and brother (childhood onset, takes insulin)
- Has HTN which is well controlled on 50mg losartan
- Active job as a baggage handler at the airport, gets >10k steps per day, BMI 26



What is your next step? ARS #1

- A. Diagnose him with diabetes since his blood sugar was over 200
- B. Order a hemoglobin A1c
- C. Order a fasting glucose
- D. Order an oral glucose tolerance test
- E. Order islet cell and GAD antibodies

Case 1 – ADA criteria for Diabetes diagnosis

Table 2.1—Criteria for the diagnosis of diabetes in nonpregnant individuals

A1C $\geq 6.5\%$ (≥ 48 mmol/mol). The test should be performed in a laboratory using a method that is NGSP certified and standardized to the DCCT assay.*

OR

FPG ≥ 126 mg/dL (≥ 7.0 mmol/L). Fasting is defined as no caloric intake for at least 8 h.*

OR

2-h PG ≥ 200 mg/dL (≥ 11.1 mmol/L) during OGTT. The test should be performed as described by the WHO, using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water.*

OR

In an individual with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose ≥ 200 mg/dL (≥ 11.1 mmol/L). Random is any time of the day without regard to time since previous meal.

DCCT, Diabetes Control and Complications Trial; FPG, fasting plasma glucose; OGTT, oral glucose tolerance test; NGSP, National Glycohemoglobin Standardization Program; WHO, World Health Organization; 2-h PG, 2-h plasma glucose. *In the absence of unequivocal hyperglycemia, diagnosis requires two abnormal results from different tests which may be obtained at the same time (e.g., A1C and FPG), or the same test at two different time points.

DETERMINING DIABETES TYPE

Quick Guide

Patients with type 2 diabetes most commonly present as overweight and hyperglycemic, with gradual onset of symptoms such as fatigue, blurred vision, polydipsia, and polyuria.

Although patients with type 1 diabetes most commonly present with abrupt onset of symptoms and weight loss, type 1 diabetes can occur in patients at any age and weight. Diabetic ketoacidosis is also a frequent initial presentation.

Determining if the diabetes diagnosis is type 1 versus type 2 can be challenging. You may be able to definitively diagnose type 1 diabetes with positive antibody tests, but not everyone with type 1 has positive antibodies. If there are symptoms of ketosis, concern for insulin deficiency, or HbA1c > 10, **the patient should be on insulin therapy until diagnosis has been established.**

Recommended tests

Order **islet cell antibody (ICA)** and **glutamic acid decarboxylase antibody (GAD)** testing when suspicious for type 1 diabetes.

Consider ICA and GAD testing for differential diagnosis in the following patient populations:

- Children and teenagers to distinguish early type 1 from type 2.
- Adults who are not overweight who are not responding well to oral hypoglycemic and lifestyle modification.
- Patients with at least one of the following:
 - Normal to low BMI
 - Extreme variability in glucose (i.e., swings of > 100 mg/dL)
 - Heightened insulin sensitivity (i.e., significant drops in blood sugar with very low doses of insulin)
 - Other autoimmune disorders (e.g., Hashimoto's, rheumatoid arthritis)
 - Positive ketones or history of ketoacidosis
 - Primary relative with type 1 diabetes

Case #1

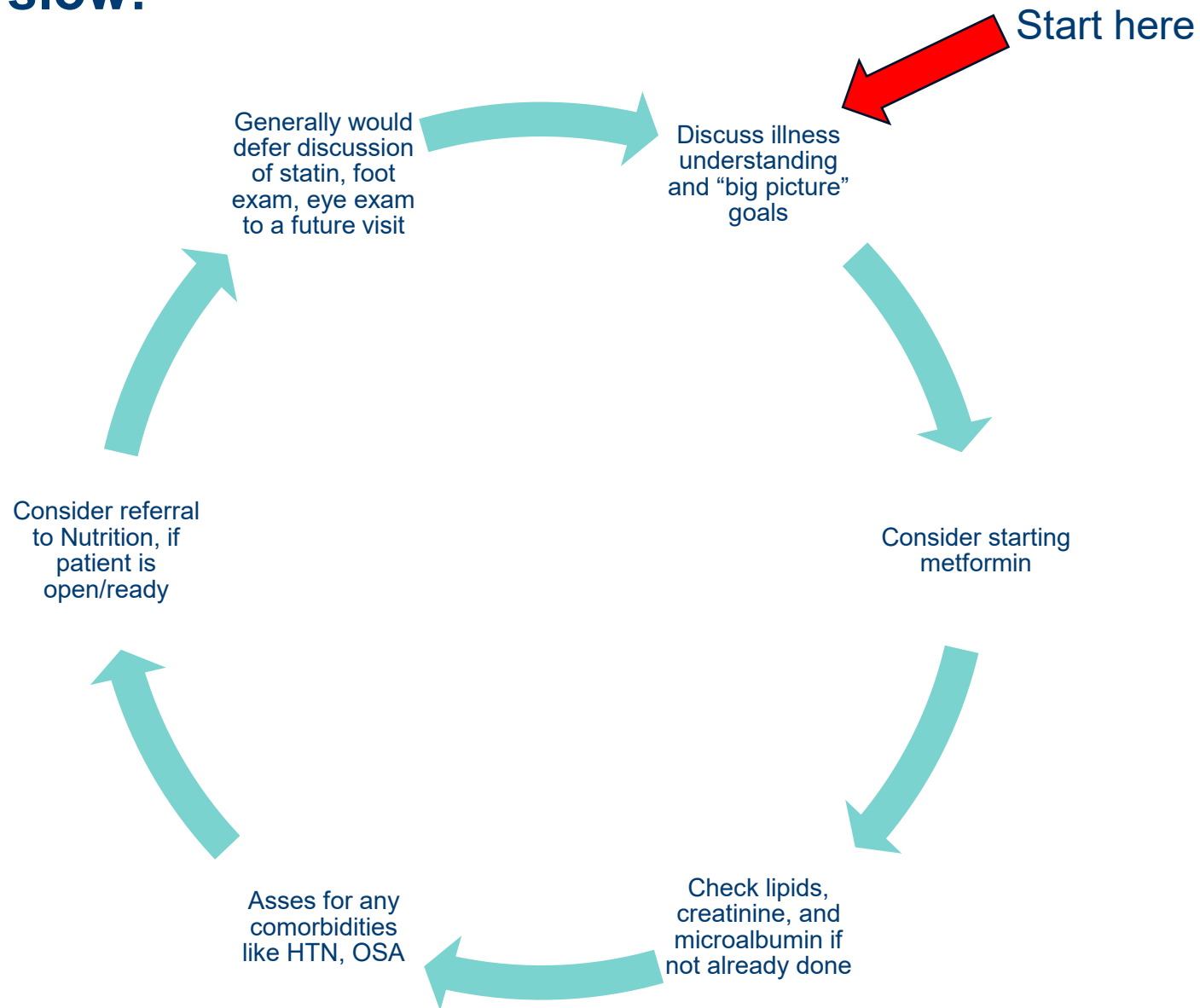
- You order a hemoglobin A1c, which comes back at 9.5%
- You also order islet cell and GAD antibodies, which come back negative
- You ask the patient to schedule a follow up phone visit to discuss the result and next steps
- What do you do at that first phone visit?

Case 1 – ARS #2

What do you want to do during this phone visit?

- A. Assess illness understanding, collect detailed history about diet and exercise, discuss lifestyle change
- B. Start metformin titration
- C. Refer to Nutrition for Diabetes class
- D. Check lipids and start moderate intensity statin
- E. Refer for diabetic eye exam and schedule office visit for foot exam
- F. Order blood glucose meter and schedule RN teaching visit
- G. All of the above

Case #1 - Start slow!



Thriving with Diabetes Virtual Group Classes



Who is this series for?

This class series is for people living with type 2 diabetes. You may be newly diagnosed or just interested in gaining information about your condition. The class series is offered several times a month. It is a 2-week series, with each class lasting 90 minutes.

The class is not appropriate for people with:

- Type 1 diabetes
- Gestational diabetes

How will I benefit from attending?

This class series will help participants manage type 2 diabetes as they learn about lifestyle changes in nutrition, physical activity, heart health, and much more! The instructors are Registered Nurses and Registered Dietitians who specialize in diabetes.

What is covered in the classes?

These sessions are meant to be taken in order.

Session 1	Session 2
<ul style="list-style-type: none">• Introduction• Importance of Checking Blood Sugar• Benefits of Taking Medications• How Balancing Meals Affects Blood Sugar	<ul style="list-style-type: none">• Regular Care to Stay Healthy• Getting Active for Better Diabetes Control• Managing Stress and Preventing Burnout• Creating a Plan 2, Resources, and Appendix

How do I attend the classes?

- The virtual classes are a group setting and will include other participants.
- You can attend on a computer, smartphone, or tablet. The class is provided on the Zoom platform. You will be sent a link and instructions on how to join once you're registered.
- A camera and microphone are required for participation.
- You may have a support person join you for classes from your device.

What is the cost?

Your health plan may be billed for this class. Please contact Member Services for more information: 1-888-901-4636.

How do I sign up?

To register for a class, call 877-751-1053.

Case 1

- Patient understands diabetes pretty well given family history. He is amenable to doing a nutrition class, and starting metformin.
- He's already pretty active but feels he could improve his diet
- You start metformin IR titration and tolerates this fine, getting up to 500mg BID at one month
- A1c at 3 months is 7.9% - great improvement!



What should his target A1c be? ARS #3

- A. <8%
- B. <7.5%
- C. <7%
- D. It depends

Glycemic Control Targets

Table 6. Recommended SMBG Targets to Achieve A1C Goal	
For A1C <7.0%	80-130 mg/dL pre-meal
For A1C <8.0%	100-140 mg/dL pre-meal
Individualizing A1C Targets	
Patients Age 18-64	Target A1C <7.0%
<ul style="list-style-type: none"> A1C < 8.0% is acceptable if there is a history of dementia, blindness, lower extremity amputation, CKD 4/5, ESRD, cardiomyopathy/HF, or ASCVD (acute coronary syndrome, history of MI, stable or unstable angina, coronary or other revascularization, ischemic stroke, TIA, or symptomatic PAD, all of atherosclerotic origin). 	
Patients Age 65-75	Target A1C of <8.0%
<ul style="list-style-type: none"> The ACCORD trial demonstrated that those with longstanding (median 10 yrs) diabetes and established CVD (or ≥ 2 CVD risk factors) with an A1C of < 6.5% are at higher risk for mortality than similar patients with an A1C of 7.5%. This does not apply to diet-controlled diabetes or diabetes controlled only with medications with a low risk of causing hypoglycemia (e.g., metformin, SGLT-2 inhibitors, GLP-1 agonists). A1C 6.5% to 6.9% is acceptable in the absence of multiple comorbidities, and/or history of severe hypoglycemia, and/or medications that may cause severe hypoglycemia. A1C 7.0% to 7.4% for older adults with few chronic conditions and intact cognitive and functional status (longer life expectancy). A1C 7.5% to 7.9% for older adults with multiple chronic conditions, minor cognitive deficits, or ≥ 2 deficits in instrumental activities of daily living (life expectancy <10 years). 	
Patients Age ≥ 76	Target A1C of <9.0%
<ul style="list-style-type: none"> A1C 6.5% to 6.9% is acceptable in the absence of multiple comorbidities, and/or history of severe hypoglycemia, and/or medications that may cause severe hypoglycemia. A1C 7.0% to 7.4% for older adults with few chronic conditions and intact cognitive and functional status (longer life expectancy). A1C 7.5% to 7.9% for older adults with multiple chronic conditions, minor cognitive deficits, or ≥ 2 deficits in instrumental activity of daily living (life expectancy <10 years). A1C 8.0% to 9.0% for older adults with multiple chronic conditions, significant cognitive deficits, or ≥ 2 deficits in basic activities of daily living (short life expectancy and/or significant geriatric syndromes leading to a decreased quality of life). 	

Should this patient be checking BG at home using glucometer? ARS #4

A. Yes

B. No

C. If they want one

Case 1



You increase his metformin to a total of 2g daily and switch to long-acting formulation because he's having trouble remembering to take the evening dose



Repeat A1c is 7.2% in 3 months

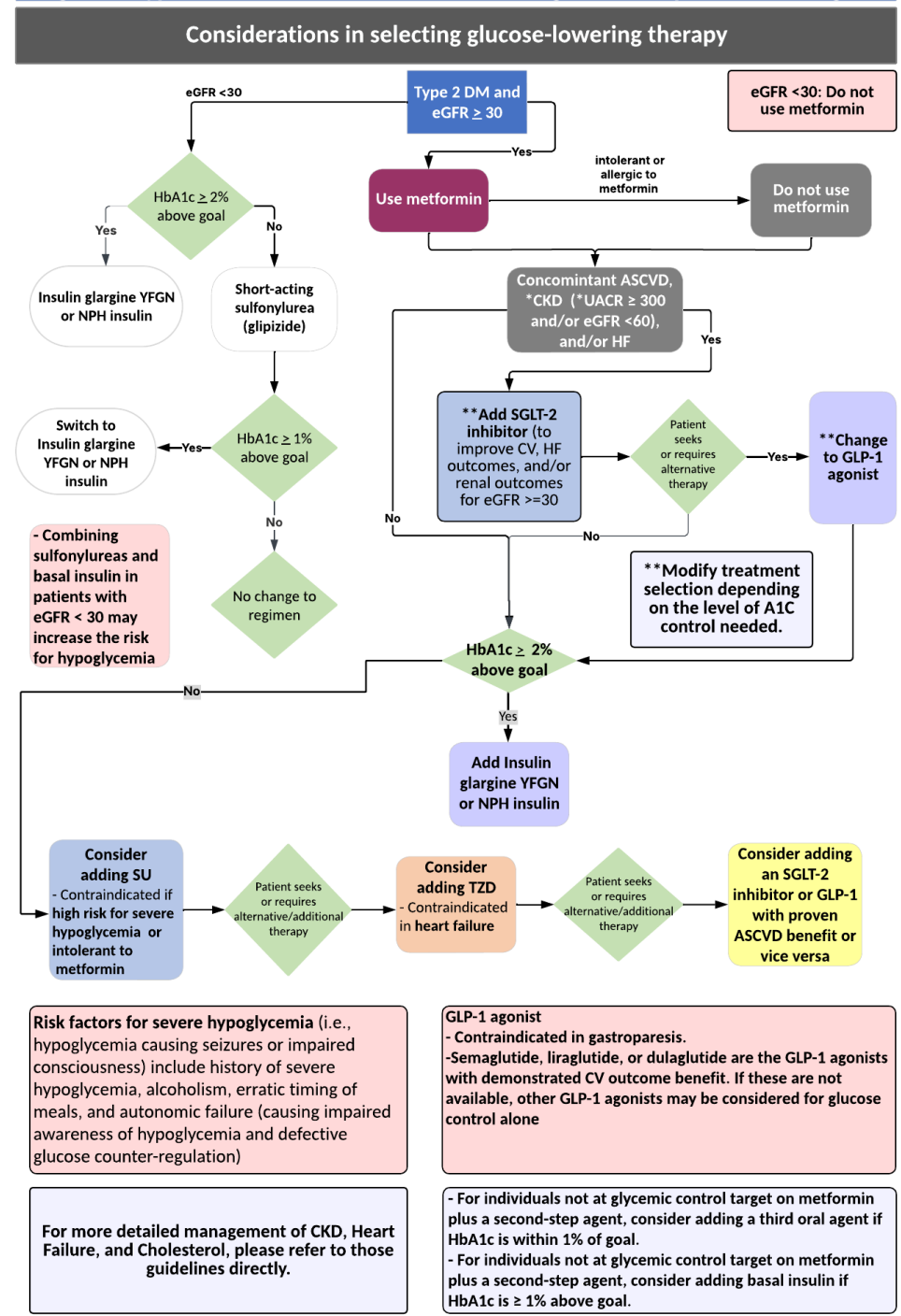


Creatinine is 1.2, GFR 55

So he's not quite at goal...now what?

- Use Diabetes Oral SmartRx
- Maximize metformin first (2g daily IR or ER)
- SGLT-2 next step for many patients, especially if they have comorbidities
 - Sulfonylureas or TZDs are alternatives
- For this patient, while he doesn't have microalbuminuria, he does have eGFR<60 so you start 12.5mg empagliflozin

Figure 1. Type 2 diabetes medication treatment algorithm for patients not at goal



Diabetes SmartRx

Type 2 Diabetes Treatment Algorithm

** To order insulin, refer to the INSULIN ORDERS Smart Rx.

- Type 2 Diabetes Clinical Guidelines

1st Line: Metformin

- Do not start metformin if eGFR < 45. OK to continue max dose (1,000 mg/day) if eGFR 30-45.
- If A1c is 2% or more above goal, add insulin (use insulin smart rx).
- See Other Options section if patient is intolerant or allergic to metformin.

- metFORMIN INITIAL titration to 1,000 mg bid
Disp-90 tablet, R-0
- metFORMIN 1,000 mg bid MAINTENANCE dose
- metFORMIN extended release INITIAL titration to 2,000 mg daily
Disp-70 tablet, R-0
- metFORMIN extended release 2,000 mg daily MAINTENANCE dose

2nd Line: SGLT-2 Inhibitor (No PA needed to order)

Recommended especially for patients with or at high risk for cardiorenal complications.

Consider adding SGLT-2 Inhibitor for:

- ASCVD
- Heart Failure
- eGFR 20-59
- Age \geq 55 **plus** at least 2:
 - HTN (on meds)
 - BMI \geq 30
 - dyslipidemia

empagliflozin (JARDIANCE) 25 mg tablet

 Take 0.5 tablets (12.5 mg) by mouth every morning, E-Prescribe, Disp-45 tablet, R-3

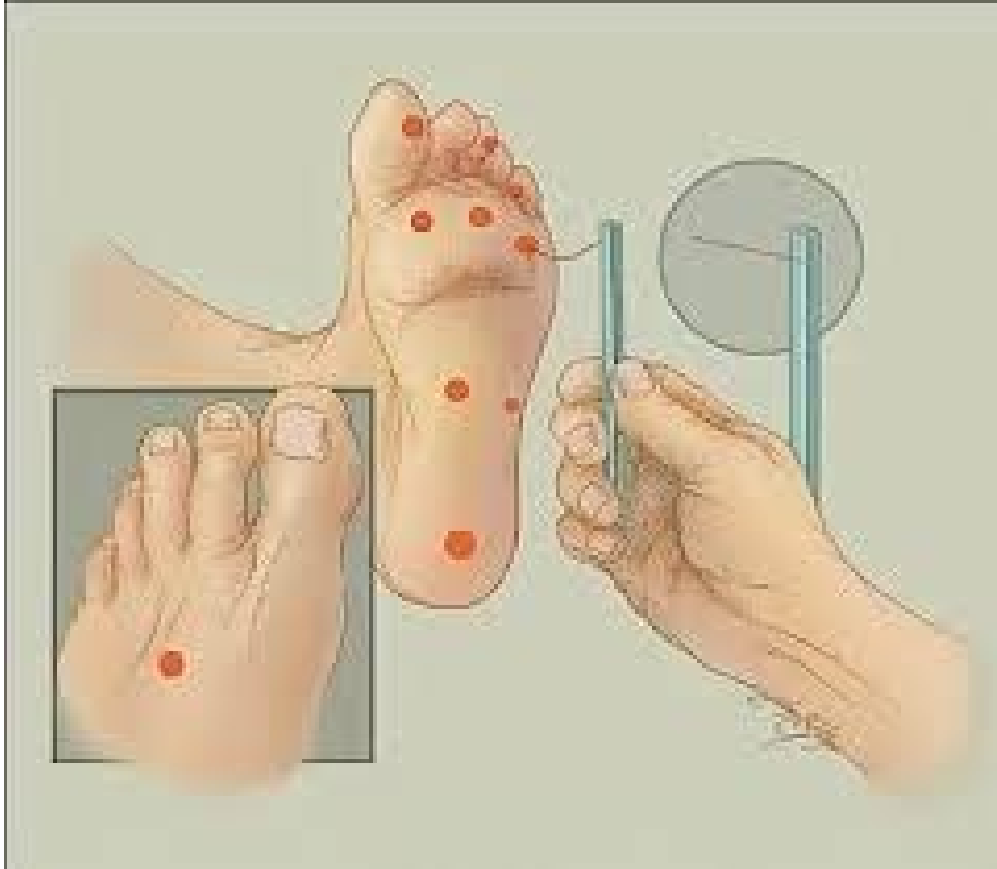
- 3rd Line: GLP-1 Agonist (PA Required)
- Other options based on patient characteristics
- REF CHRONIC DISEASE MANAGEMENT (CDM)

Case 1, continued

- On metformin and empagliflozin, A1c is now well controlled at 6.7%
- He has no diabetes complications
- He is feeling well overall and his diabetes is stable
- He learned a lot from the Diabetes class and has made significant diet changes, reducing refined carbohydrates and eating meals balanced with protein



Now is a good time to think about preventive care



Diabetic retinal exam (q 2 yrs if no retinopathy)

Annual foot exam

Annual creatinine and urine albumin/creatinine ratio

Pneumococcal vaccine

Screening for MASLD – CBC and LFTs to calculate FIB-4

Statin for age 40+ to reduce ASCVD risk

B12 monitoring (if on metformin for 5+ years)

3 years later...

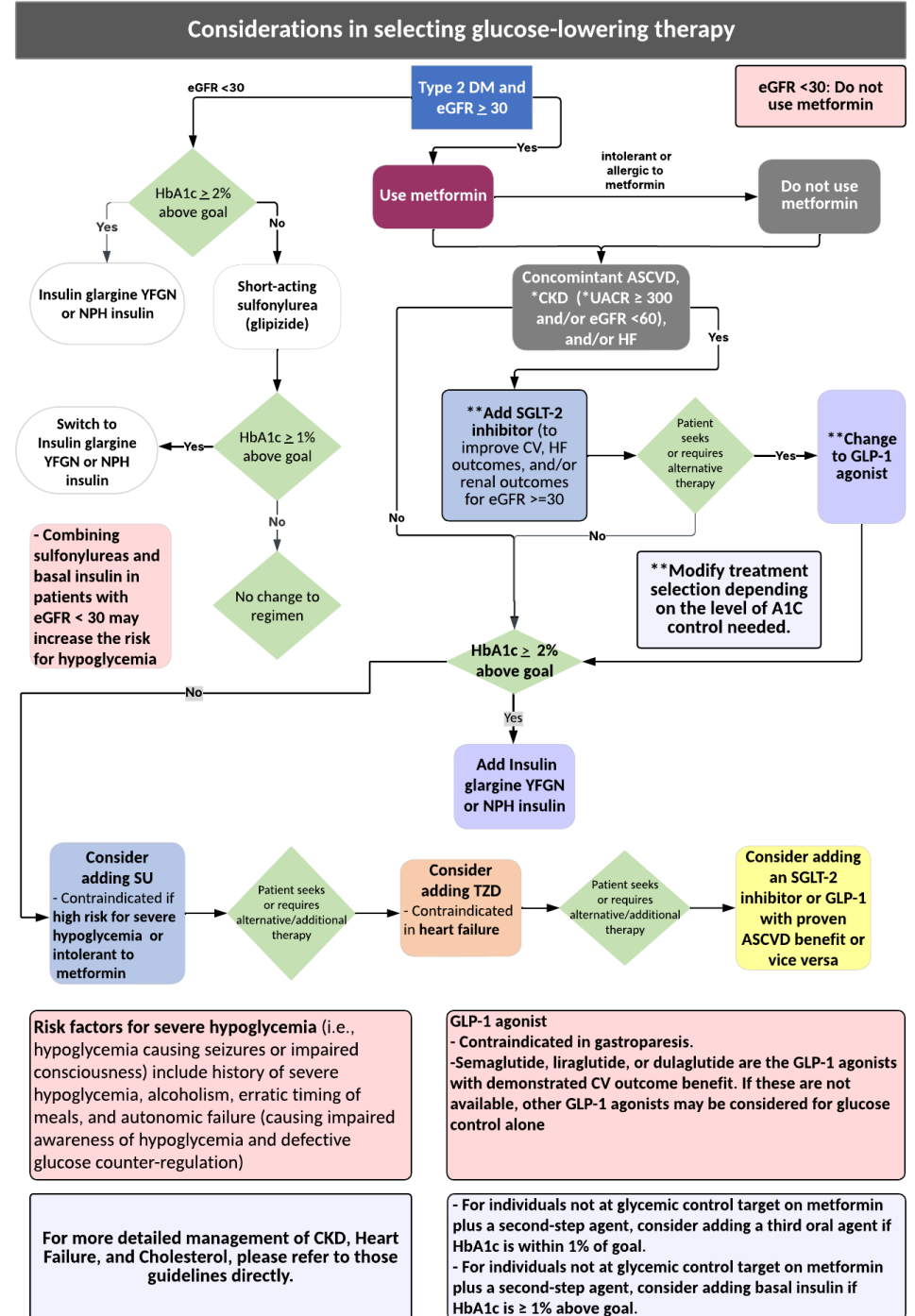
- He switches insurance and you don't see him for another 3 years.
- During that time he was working out of state and had a very stressful job. He had a close family member pass away unexpectedly which led to depression for the past year. He hasn't been eating as well and hasn't been able to be active.
- He is still taking metformin and empagliflozin
- A1c is now 8.5%
- BMI is now 31

What do you do next? ARS #5

- A. Discuss lifestyle changes and give him time to get diet and exercise back on track
- B. Offer mental health referral for counseling
- C. Start sulfonylurea
- D. Start insulin
- E. Send prior auth for GLP-1

Figure 1. Type 2 diabetes medication treatment algorithm for patients not at goal

- This patient now is a candidate for GLP-1
- He is on max dose of metformin
- He is on SGLT-2
- A1c is still not at goal
- BMI is 31



Type 2 Diabetes Treatment Algorithm

** To order insulin, refer to the INSULIN ORDERS Smart Rx.

- Type 2 Diabetes Clinical Guidelines

- 1st Line: Metformin
- 2nd Line: SGLT-2 Inhibitor (No PA needed to order)
- 3rd Line: GLP-1 Agonist (PA Required)

Consider especially for patients with elevated BMI and at risk for ASCVD who have tried SGLT-2 inhibitors for at least 3 months.

Drug Name	Recommended Dosing
LIRAGLUTIDE (Preferred) Prior Auth	<ul style="list-style-type: none"> Take 0.6 mg daily x 1 week, then increase to 1.2 mg daily If additional glycemic control is needed after an additional week, may increase to 1.8 mg daily <i>Order pen needles for new starts (not included with liraglutide pens)</i>
SEMAGLUTIDE Prior Auth - trial of liraglutide required	<ul style="list-style-type: none"> Start with 0.25 mg once weekly for 4 weeks; then increase to 0.5 mg once weekly If additional glycemic control is needed after at least 4 weeks on the 0.5 mg dose, may increase to 1 mg once weekly If additional glycemic control is needed after at least 4 weeks on the 1 mg dose, may increase to 2 mg once weekly but studies show limited benefit Maximum dosage is 2 mg once weekly <i>Pen needles included with semaglutide pens</i>

- Liraglutide (VICTOZA) Pens + Needles
- semaglutide (OZEMPIC) 0.25 mg or 0.5 mg INITIAL titration
Disp-3 mL, R-11
- semaglutide (OZEMPIC) 1 mg MAINTENANCE dose
- semaglutide (OZEMPIC) 2 mg MAINTENANCE dose
- Other options based on patient characteristics
- REF CHRONIC DISEASE MANAGEMENT (CDM)

GLP-1s for Type 2 Diabetes

- Still quite expensive and require PA, but can be helpful as second or third line treatment for many patients who qualify
- **.GLP1COVERAGECRITERIA** SmartPhrase has the most up to date criteria
- Liraglutide is our KP formulary preferred GLP-1
- Send staff msg to Pharmacy Benefit Help Desk using **.PRIORAUTHORIZATIONREQUEST** Smartphrase

Liraglutide dose escalation schedule

Week	Daily dose
1	0.6 mg
2	1.2 mg
3	1.8 mg

Liraglutide injection
18 mg/3 mL (6 mg/mL)

3 Pens

For Single-Patient-Use Only

Each pen delivers doses of 0.6 mg, 1.2 mg or 1.8 mg. Subcutaneous use only

NDC 0480-**3667**-22
List 366722



Contains: 3 Liraglutide Injection Pens, Product Literature
Dispense the enclosed Medication Guide to each patient

Discard pen 30 days after first use
REFRIGERATE – DO NOT FREEZE
Rx Only

Case 2

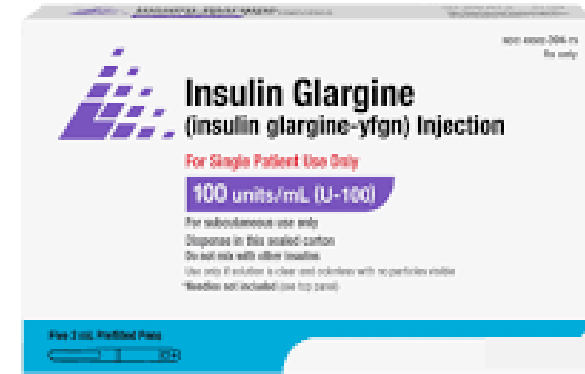
- 55yo woman has screening A1c at preventive visit which comes back at 12.2%
- She is asymptomatic
- BMI 33
- Normal creatinine
- Also has HTN and hyperlipidemia, which are well controlled

What medication do you start first? ARS #6

- A. Metformin titrating up to 2g daily
- B. GLP-1
- C. Insulin glargine
- D. Insulin lispro
- E. Metformin and glargine

Case 2

- You start the patient on insulin glargine once daily at bedtime
- You ask clinic PAR to schedule RN teaching visit for patient to learn how to inject insulin
- You refer to Diabetes Nurse Specialist to help titrate insulin (previously called CDM)



KP National Diabetes Guideline

Insulin Glargine YFGN (basal)

Start 10 units a day OR 0.1-0.2 units/kg a day

•Start bedtime insulin glargine YFGN first to correct pre-breakfast hyperglycemia. Increase by 2 units twice a week until pre-breakfast SMBG is 80-130 mg/dL. Do not mix with other insulins.

•If AC breakfast SMBG <70 mg/dL, reduce insulin dose by 2 units.

Case 3

67 yo man (100 kg) seen for confusion in the hospital, concern for UTI and sepsis, found to have BG of 60

- ▲ Initially diagnosed with T2DM at age 40
- ▲ Started on metformin 1000 mg twice daily
- ▲ A1C > 9% so started on glimepiride 2 mg daily
- ▲ Despite metformin and glimepiride, A1C > 10, so patient started on glargine 10 units, up titrated slowly to 20 units
- ▲ You have discussed mealtime insulin but patient says he prefers not to take, stopped metformin and only on glargine and glimepiride for the last few years
- ▲ In the last 2 years, his blood sugars have been much better overall. Sometimes the insulin causes him to go low and he has gone down from 20 units down to about 15 units glargine at night
- ▲ He has been noticing some weight loss and decreased appetite, he wonders if his diabetes is “just getting better over time”
- ▲ Patient found to have CKD3b with GFR 38 today



Case 3 – ARS #7

You see patient for hospital follow up. What is your next step?

- A. Stop glimepiride
- B. Stop glargine
- C. D5W fluids
- D. Nutrition referral to assess dietary intake

Case 3 – Key points

Insulin and CKD

- ▲ The kidney clears insulin, so when patients develop CKD (particularly GFR 30-45), insulin is not cleared as effectively
 - As a result, patients will require less insulin as it circulates for longer and becomes more potent
 - Some patients will be able to stop insulin entirely
- ▲ Consider higher HbA1C goal of 8 or even 9 to prevent hypoglycemia

Case 3 – Key Points for DM with CKD

Oral medications and CKD

- ▲ Metformin: Dose reduced at GFR to 500 mg twice daily; at GFR <30, it is contraindicated
- ▲ Sulfonylureas: Generally contraindicated in CKD, glimepiride (long-acting) more dangerous than glipizide
- ▲ SGLT-2 (empagliflozin): Generally safe above GFR > 20; not studied in GFR < 20 but the benefit decreases as GFR decreases
- ▲ DPP4 (Sitagliptin): GFR >45 Full Dose (50 mg twice daily) GFR 30-45 Dose reduction to 50 mg, GFR < 30 Further dose reduction to 25 mg
- ▲ GLP-1 (liraglutide): Safe for GFR > 30, use caution with GFR <30, slower dose escalation

Case 3

67 yo man (100 kg) seen for confusion in the hospital, concern for UTI and sepsis, found to have BG of 60

Patient was not found to have sepsis, instead had symptomatic hypoglycemia

- ▲ Glimeperide was stopped
- ▲ Glargine reduced from 20 units to 5 units
- ▲ Goal blood sugars: Morning 100-200 and Evening: 120-220
- ▲ Eventually patient was started on liraglutide 0.6 mg sq daily which was enough to control his blood sugars, and glargine was stopped

Case 3 – Key Points

- Important to realize that as kidney function declines, insulin requirements also decline
- Avoid sulfonylureas in CKD
- Many DM medications need dose reduction in CKD
- Generally, insulin and GLP-1 are the most commonly used diabetic medications for patients with CKD
- **Emphasize avoiding hypoglycemia**, okay to tolerate higher blood sugar goals (ex: BS 120-250 if necessary)

Case 4

58 yo man (150 kg) seen for significant hyperglycemia, weight gain despite significant doses of insulin. He was initially diagnosed with T2DM at age 30.

- ▲ Started on metformin 1000 mg twice daily, but within 1 year was on basal-bolus insulin
- ▲ Initially started on glargine 30 units and Humalog 10 units with meals
- ▲ Over time he has moved to Glargine 70 units twice daily, Humalog 40 units with meals
- ▲ A1C is currently 9.5%
- ▲ Patient is frustrated that he has such high blood sugars despite being compliant with insulin
- ▲ He is also continuing to gain weight which he believes is from the insulin, he feels like it is a bad cycle; insulin leads to weight gain which leads to higher insulin needs

Case 4

Approaches to high insulin burden:

- ▲ Insulin resistance medications
- ▲ Concentrated insulin
- ▲ U500 Insulin

Case 4

Insulin resistance medications:

- ▲ SGLT-2 and GLP-1 probably the most efficacious at this time
- ▲ SGLT-2 naturally allows excess sugar and water to leave through the urine
 - One would expect higher sugar in the urine to lead to kidney problems but interestingly is protective of the kidney
 - Brita filter analogy: Lemonade is not damaging to Brita filter but rock candy is
- ▲ GLP-1 naturally lead to improved islet cell function, reduced digestive motility and reduced appetite
- ▲ Other reasonable options include metformin and DPP-4 such as sitagliptin

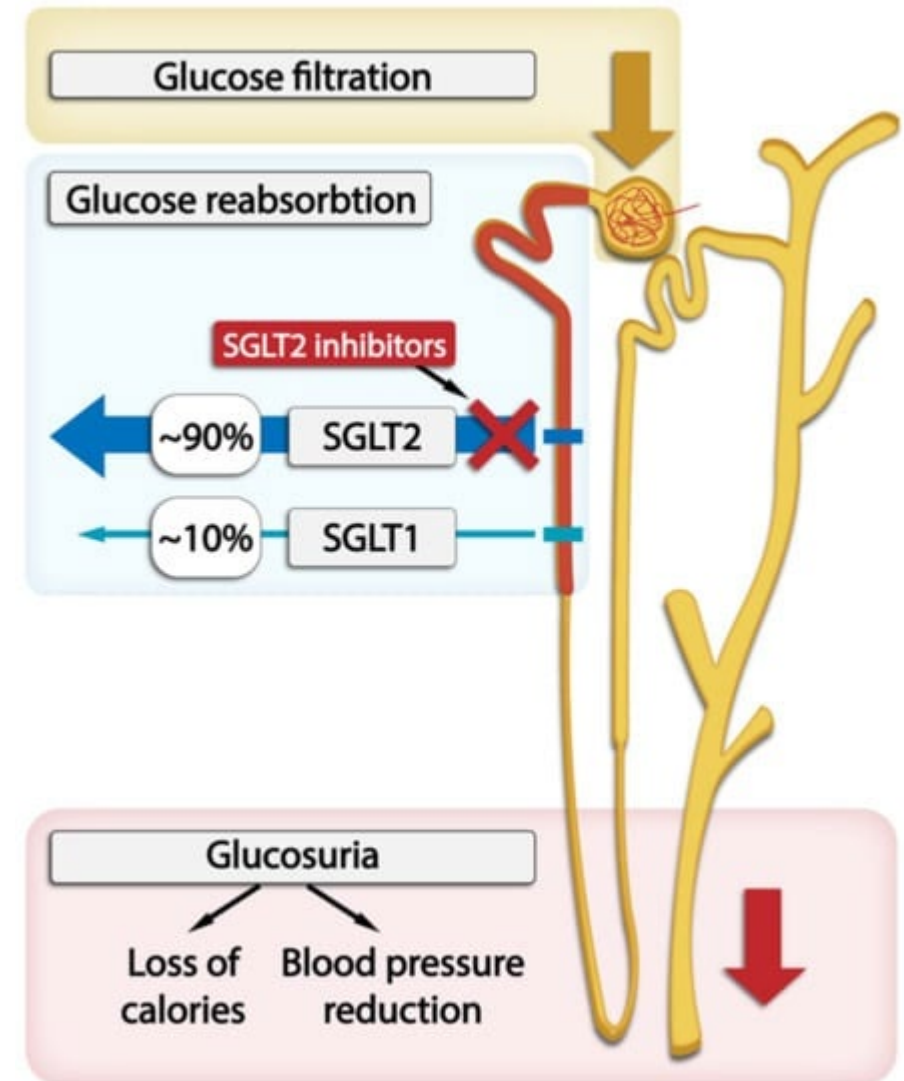


Image credit: [SGLT2 Inhibitors in the Treatment of Diabetic Kidney Disease: More than Just Glucose Regulation | MDPI](#)

Case 4

Insulin resistance medication

- ▲ Patients with good glycemic control can still benefit from insulin resistance medications
 - Can reduce the insulin requirements which can help reduce insulin-associated weight gain
 - Can help with glucose stability, for example significant post-prandial peaks are oftentimes improved with empagliflozin
- ▲ Can be used in patients with T2D and T1D
 - Concern with empagliflozin in T1D as dehydration leads to higher risk of diabetic ketoacidosis
 - Risk less common in T2D as these patients have functional pancreas to produce insulin, ketoacidosis occurs in setting of no sugar, no insulin or both; patients with t1d do not produce significant amounts of endogenous insulin

Case 4

Concentrated Insulin (UX00)

- ▲ Most insulins are U100 meaning each 1 mL = 100 units of insulin
- ▲ U200 = 1 mL = 200 units of insulin
- ▲ U500 = 1 mL = 500 units of insulin
- ▲ Effect of volume on insulin injections
 - In general, giving more than 0.5 mL injection leads to significant pain and discomfort and the large volume leads to poor absorption
 - Many patients going up from semglee (glargine) 50 to 60 units do not see much improvement in blood sugars, mostly because the insulin is not well absorbed due to the high volume under the skin
 - Can also lead to significant pain, bruising and lipohypertrophy (firm, rubbery tissue)

Case 4

Concentrated Insulin (UX00)

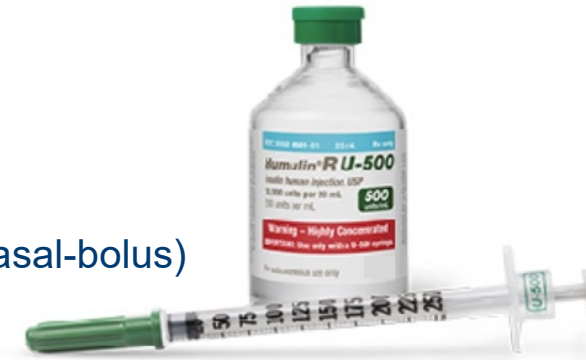
- ▲ Rapid acting
 - U200 Humalog (Lispro)
- ▲ Long acting
 - U200 Tresiba (Degludec)
 - U300 Toujeo (Glargine)
- ▲ U500 Regular Insulin (Intermediate Acting)



Case 4

U500 Insulin

- ▲ U500 insulin has very unique properties that mean it can be used as the sole insulin (no need for basal-bolus)
 - Surprisingly stable, and tends to lead to a very slow reduction in blood sugar
- ▲ Common regimens are BID (breakfast and dinner) or TID with meals (breakfast, lunch and dinner)
 - For example, patient's regimen may be:
 - U500 60 units with breakfast, 50 units with lunch, 60 units with dinner
 - U500 80 units with breakfast, 60 units with dinner
 - We don't use often at KP, but can be indicated for Total Daily Dose (TDD) insulin > 200 units per day
- ▲ Main problems
 - Very different characteristics compared to other insulins so unfamiliar to most providers
 - Danger when using syringe
 - When switching from 50 units Humalog (U100) to 50 units U500 syringe, you would go from 0.5 mL to 0.1 mL
 - Some patients may give themselves the same volume 0.5 mL U500 insulin and give 250 units of insulin
 - **Very easy to make life-threatening mistakes**



Case 4 – Key Points

Approaches to high insulin burden:

- ▲ Insulin resistance medications
 - Can help stabilize blood sugars
 - Can lead to reduced insulin requirement and prevent weight gain
- ▲ Concentrated insulin
 - Can be used to avoid high volume injections which are painful and less effective
 - Can lead to more predictable insulin dosing due to better absorption
- ▲ U500 Insulin (not commonly used anymore)
 - Usually given twice a day or three times a day with meals as only insulin
 - Be very careful with U500 syringes and conversions

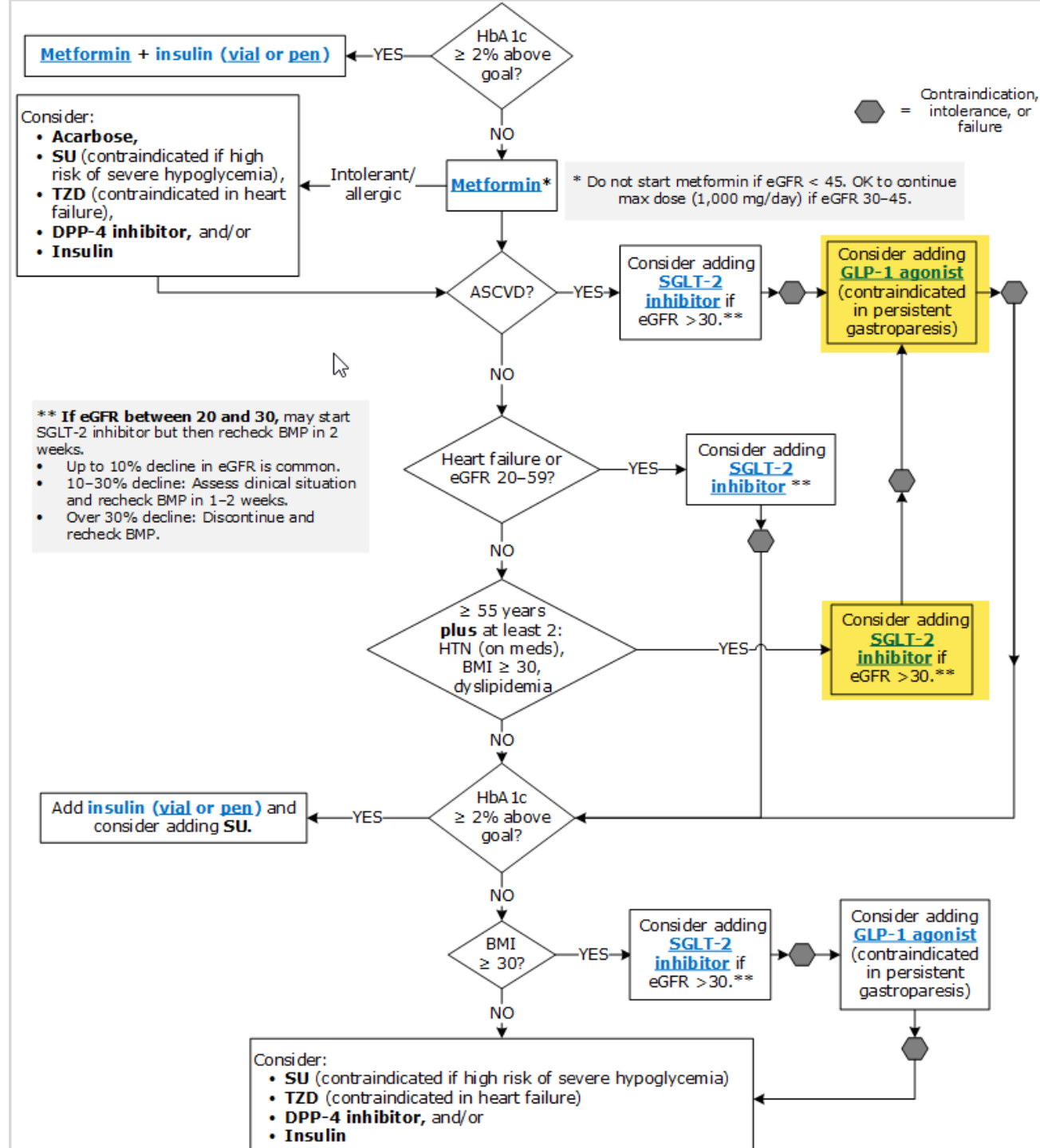
Case 4 – ARS #8

Back to our patient: high insulin burden (TDD 320 units), already on max metformin, continuing to gain weight as insulin has been increased. A1c 9.5%. What would you do next?

1. Start empagliflozin 12.5mg daily
2. Start U-500 BID; work with diabetes nurse specialist to help titrate dose
3. Send prior authorization for GLP-1
4. Start glipizide

Case 4 – Wrap Up

- Start SGLT-2 first in this case, because it may help stabilize blood sugar somewhat, and is associated with modest weight loss
- SGLT-2 has cardiovascular and kidney benefit beyond effect of blood sugar lowering
- However, adding SGLT-2 alone likely won't get patient to A1c goal and won't help enough with weight loss
- Next step would be adding GLP-1, which would likely help more with weight loss and therefore improve insulin sensitivity, reducing insulin burden



Key Points

- With a new diagnosis of diabetes in an adult, consider whether you need to rule out Type 1
- Use Diabetes SmartRx (Non-Insulin) for starting and titrating most medications
- Use Diabetes Insulin SmartRx for starting insulin, and involve diabetes nurse specialists to help with titration to goal
- Use **.GLP1COVERAGECRITERIA** for most up to date information on PA criteria by payor
- Consider referring to Endocrinology for:
 - Patients with severe or repeated hypoglycemia
 - Hyper- and hypoglycemia (labile blood sugars)
 - Significant CKD plus diabetes
 - High insulin needs and considering concentrated insulin



Thank you!

Questions?
Kathleen.J.Paul@kp.org or
Rakesh.X.Popli@kp.org



Continuous Glucose Monitors

Amber Sweeny, MSN, RN, CDCES, BC-ADM
Meredith Cotton, MSN, RN, CDCES, BC-ADM
March 26, 2026

Objectives

- ✓ **Discuss the CGM devices recommended and used within KPWA**
- ✓ **Understand processes to order (and reauthorize) CGM devices based on insurance coverage**
- ✓ **Describe how to access CGM data**
- ✓ **Interpret CGM data and make clinical decisions based on patterns**

Overview

Current Devices Available

Dexcom → G7 10-day or G7 15-day

FreeStyle Libre → Libre 2 Plus or Libre 3 Plus



General Device Differences

	Dexcom G7 10 day	Dexcom G7 15 day	Libre 2+	Libre 3+
Cost	Most affordable covered device		Most affordable cash device	
Alarms	High alarms, low alarms, delay/silence alarms, trending low alarms		High alarms, low alarms, delay/silence alarms	
Warm Up Time	30 min	60 min		
Device Duration	10 days	15 days		
Viewable Data	No scanning Required			
Pump Integration	Tandem, Omnipod, iLet Bionic Pancreas	Omnipod, iLet Bionic Pancreas, Tandem** soon	Tandem, Omnipod	iLet Bionic Pancreas, myLife Loop

Over The Counter Biosensors

Devices Available OTC

- Dexcom Stelo biosensor – for people with or without diagnosis of DM/ **not on insulin**
- Libre Rio: designed for pts with DM “**not on insulin**”
- Libre Lingo: marketed for people **without DM**

Key Points:

- Not appropriate for hypoglycemia monitoring or for insulin users
- **No alarms**
- Cannot make medical decisions/ take actions based on data
- Review normal glycemic excursion including appropriate ranges for patients who do not have DM

Bottom line: Not recommended for people with a diagnosis of diabetes using glucose lowering agents (like insulin), or when data is used to make clinical decisions

How to Order

Criteria

Medicare

Medicaid/ Molina

Commercial

Patients not meeting criteria have the option to pay out of pocket for an approved CGM device

Use **.DMCGM** to walk you through specific criteria, steps, documentation

Use [this link](#) to answer any additional questions you may have

Criteria

	Criteria – Appt info	Criteria – Meds info	How to order if meeting criteria	Recertification/ Reauthorization
KP Medicare Advantage	Once every 6 months	1+ injection OR documented hypoglycemia	Ref DME CGM	Ref DME CGM every 6 months, and visit within the past 6 months of reorder
Medicare CORE (no KP ins)	Once every 6 months with chart notes		Ref DME CGM (tracking only) Fax notes to Byram, then sign and fax prescription to Byram	Fax notes and signed prescription to Byram
Commercial	Once every 12 months	3+ injections OR hypo unawareness	Ref DME CGM	Ref DME CGM every 12 months
Molina	Once every 6 months with chart notes	1+ injection OR pregnant	PA to Molina and Prescription to Mail Order Pharmacy	New PA and prescription every 6 months

.DMCGM

.CGMREAUTHSIGN
.DMCGM

Use [this link](#) to answer any additional questions you may have

Updated Criteria – Commercial

1. Diabetes

2. DM management includes **1 or more** of the following:

a. 3 or more injections per day

b. Need for additional glucose information as indicated by:

i. hypoglycemia unawareness

ii. recurrent level 2 hypoglycemia (glucose < 54) or a level 3 event (glucose > 54 with altered mental state) events

.DMCGM

[Job Aid_CGM Criteria, Devices, and Ordering.docx](#)

Ref DME CGM

How to Access Data

How Do Patients View Data?



Phone App – most common

Requires pt to download CGM app and enter in sharing/ linking code

Data can then be viewed on external website



Reader/ Receiver – less common and requires upload in clinic or manually scrolling through physical handheld device to view data

Log in to Access Data

1. Each user needs their own username and password
2. Suggest saving these sites to favorites tab

Libreview.com

Clarity.Dexcom.com

3. Copy/paste or snip data into chart note as needed

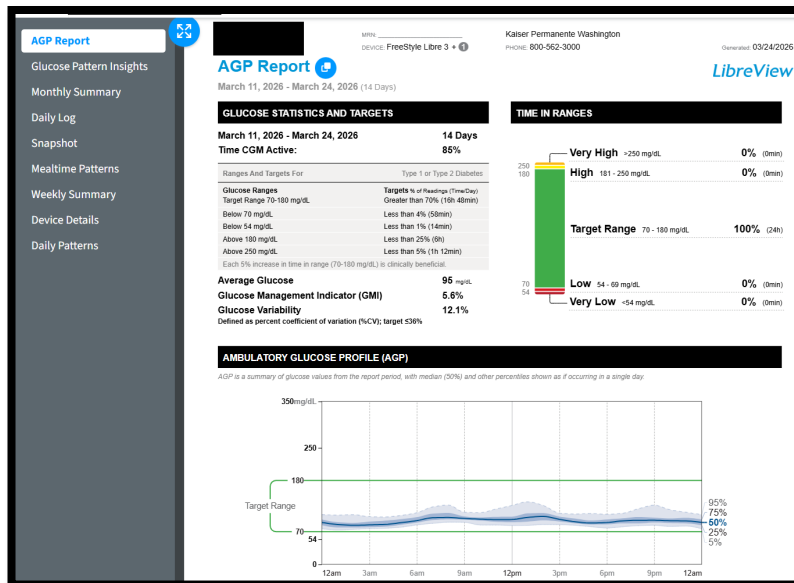
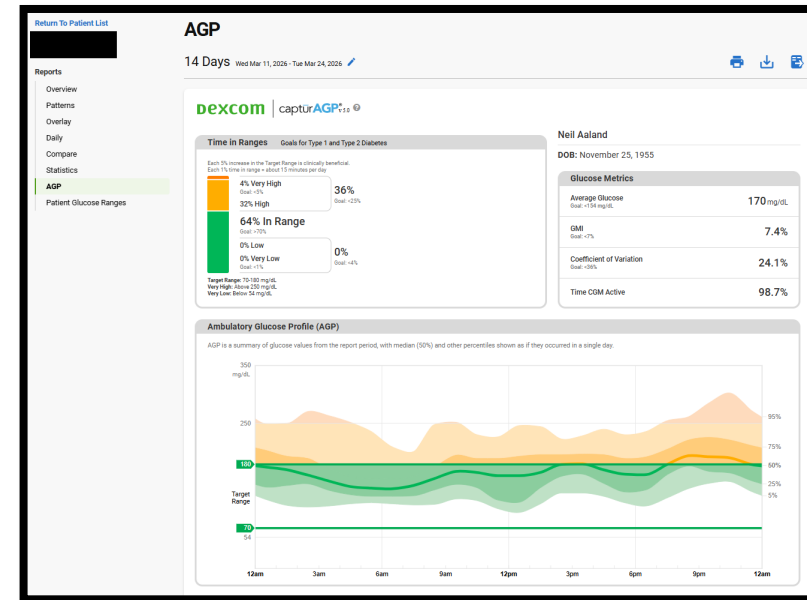
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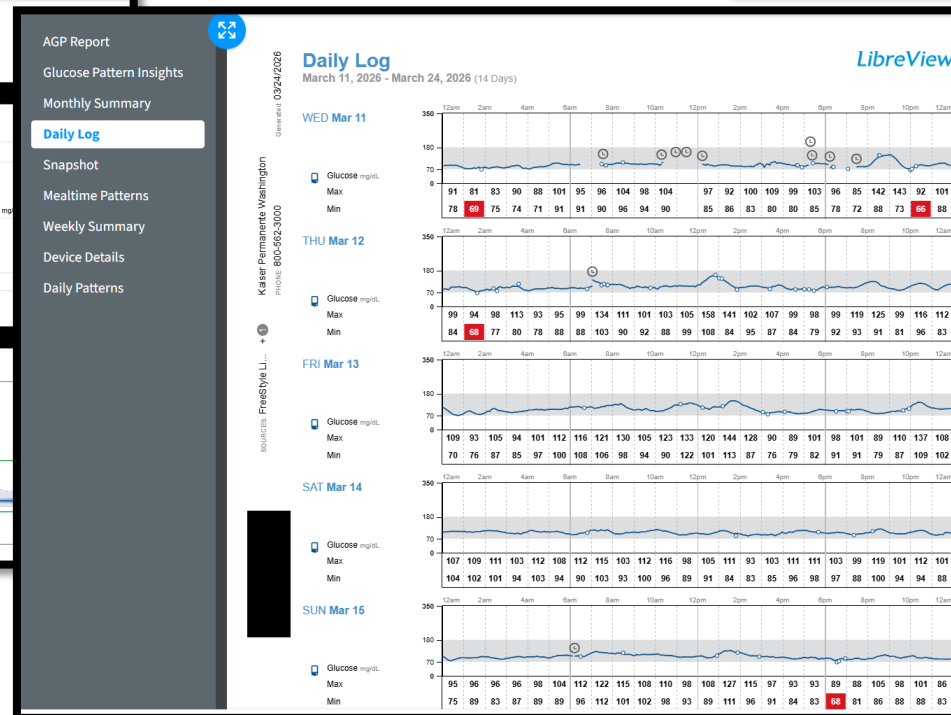
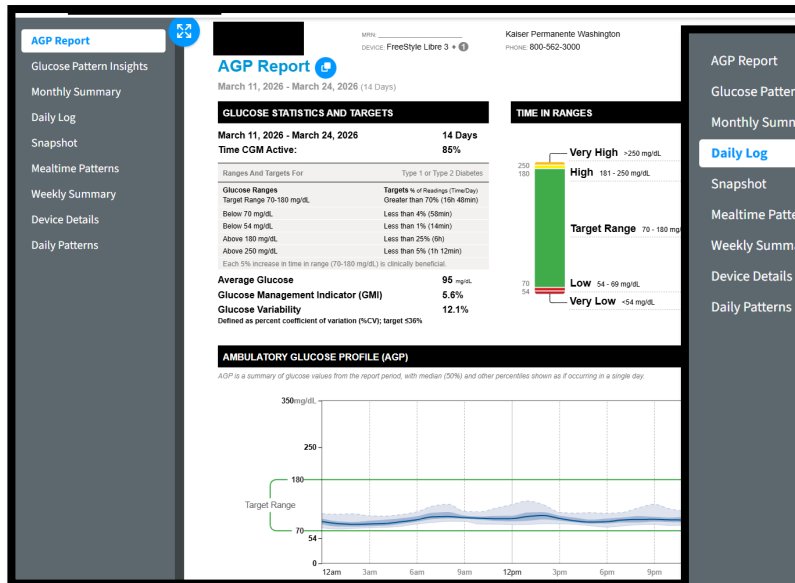
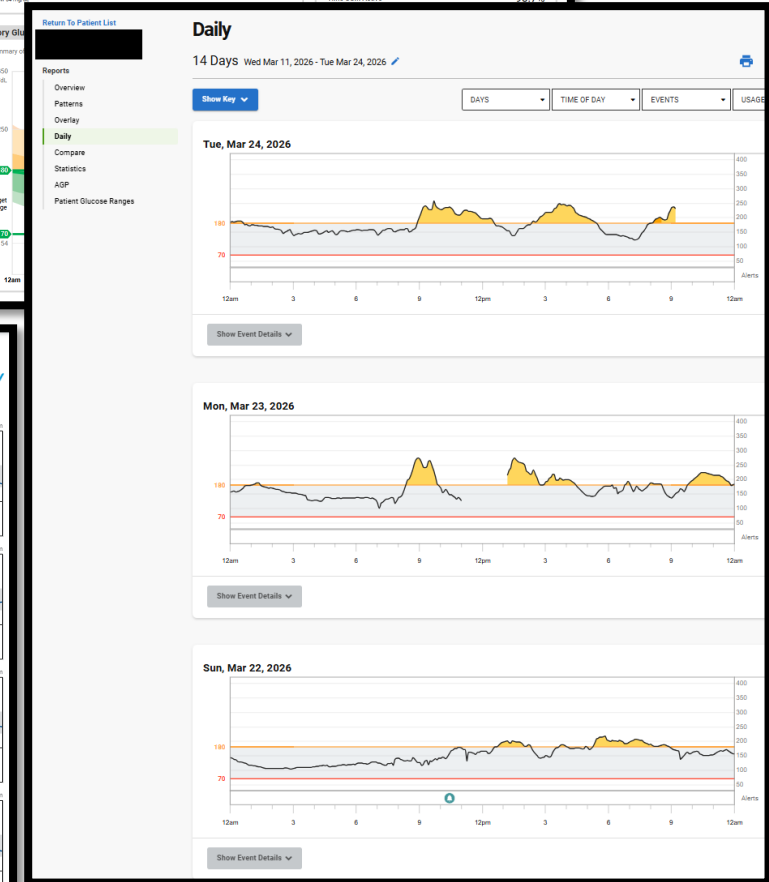
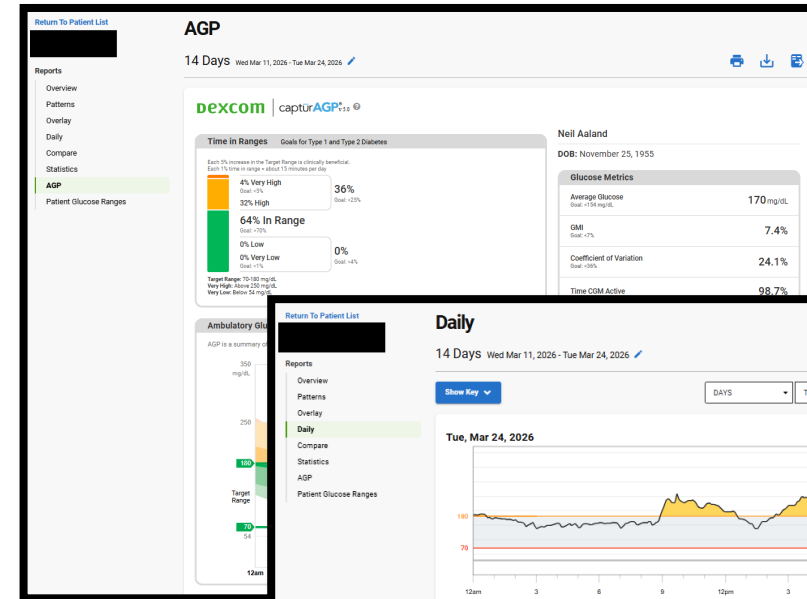
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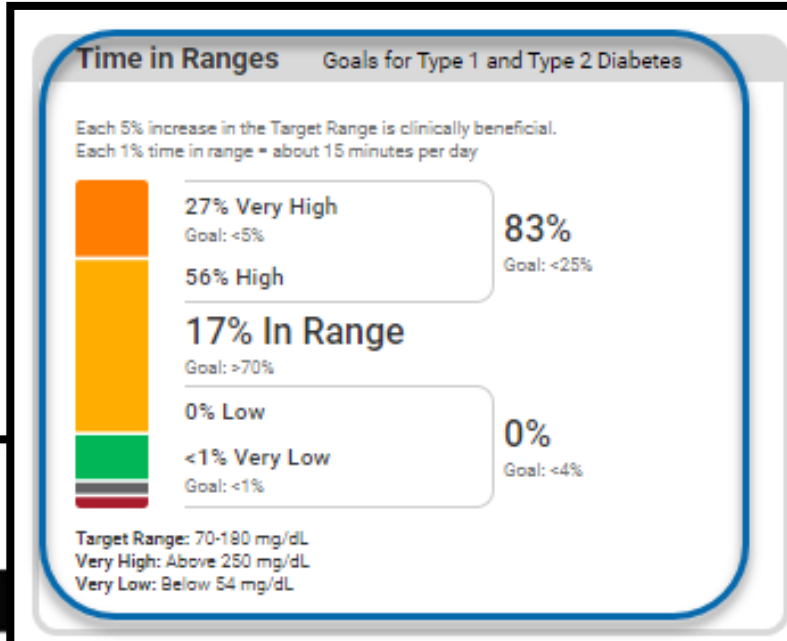


Interpreting The Data

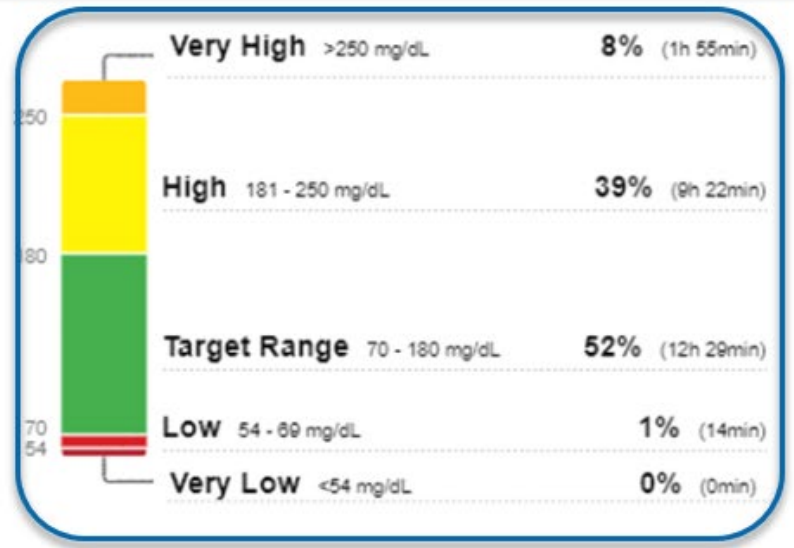
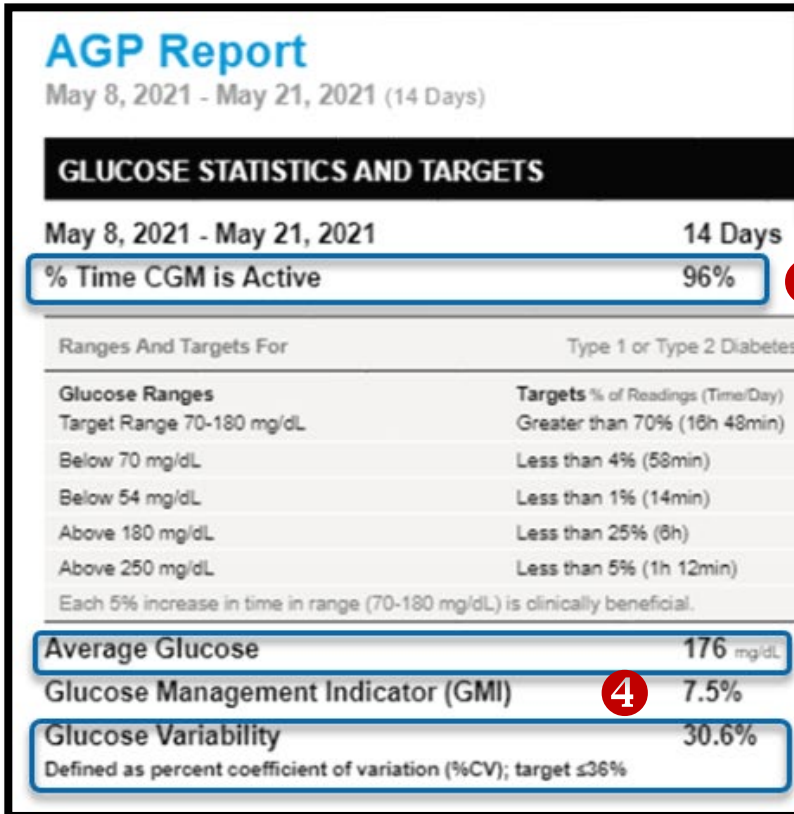
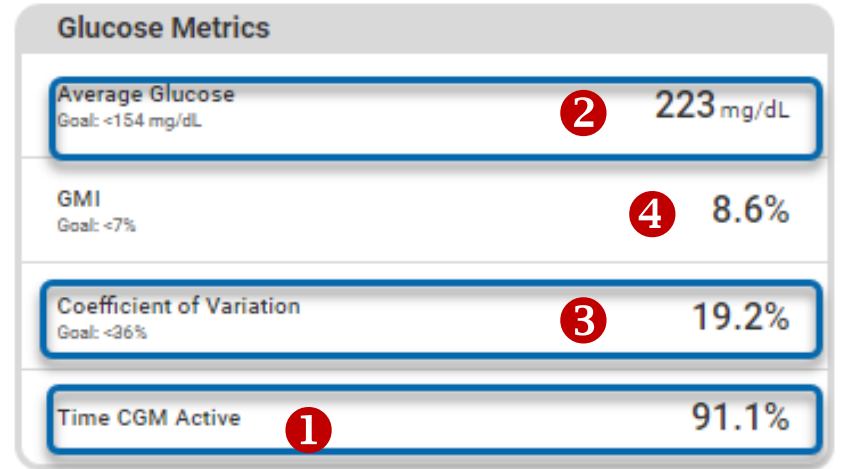
Deconstructing the Ambulatory Glucose Profile (AGP)

LIBRE

5



DEXCOM



5

Battelino et al., 2019

Glucose Management Indicator (GMI)

- GMI provides an A1c estimate based on the average (interstitial) glucose readings in the CGM data
- GMI meets A1c measure standards

Necessary:

- Patient must share data with us to be “captured”
 - Libre = KPWASHINGTON
 - Dexcom = KPWASHINGTON
- Patients MRN must be entered in external website to ensure proper matching

Preferred:

- Add CGM to problem list (details including which device and how it's received, RX or Byram)

Clinical Decisions Based on GMI Alone?

Although GMI offers a much more real-time look at the average glucose levels, consider this:

A [Redacted] MRN: [Redacted] DEVICE: Libre app + 5

AGP Report [Share Icon]

March 11, 2026 - March 24, 2026 (14 Days)

GLUCOSE STATISTICS AND TARGETS

March 11, 2026 - March 24, 2026 **14 Days**
Time CGM Active: 100%

Ranges And Targets For		Type 1 or Type 2 Diabetes
Glucose Ranges	Targets	% of Readings (Time/Day)
Target Range 70-180 mg/dL	Greater than 70%	(16h 48min)
Below 70 mg/dL	Less than 4%	(58min)
Below 54 mg/dL	Less than 1%	(14min)
Above 180 mg/dL	Less than 25%	(6h)
Above 250 mg/dL	Less than 5%	(1h 12min)

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

Average Glucose **168 mg/dL**
Glucose Management Indicator (GMI) **7.3%**

B [Redacted] MRN: [Redacted] DEVICE: FreeStyle Libre 3 + 5

AGP Report [Share Icon]

March 11, 2026 - March 24, 2026 (14 Days)

GLUCOSE STATISTICS AND TARGETS

March 11, 2026 - March 24, 2026 **14 Days**
Time CGM Active: 98%

Ranges And Targets For		Type 1 or Type 2 Diabetes
Glucose Ranges	Targets	% of Readings (Time/Day)
Target Range 70-180 mg/dL	Greater than 70%	(16h 48min)
Below 70 mg/dL	Less than 4%	(58min)
Below 54 mg/dL	Less than 1%	(14min)
Above 180 mg/dL	Less than 25%	(6h)
Above 250 mg/dL	Less than 5%	(1h 12min)

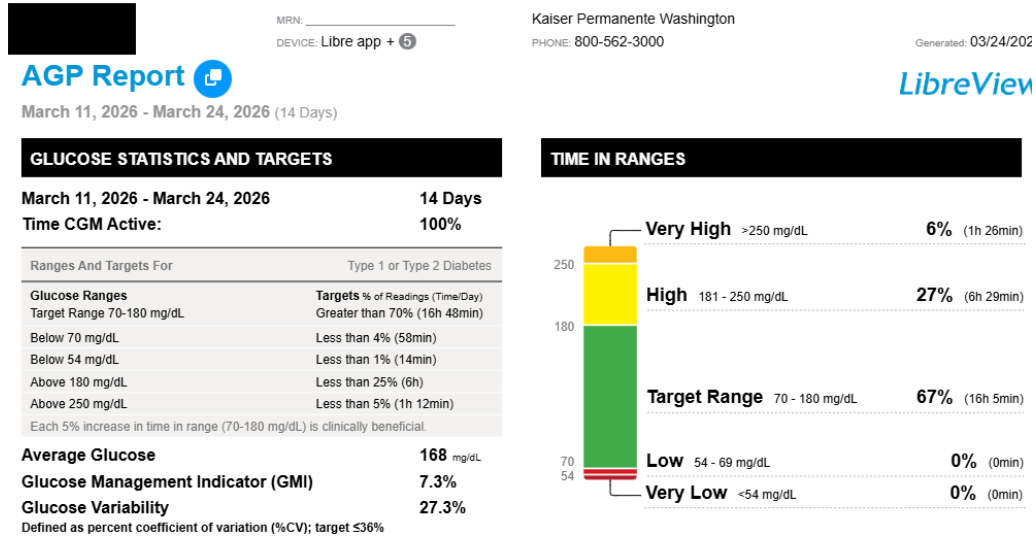
Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.

Average Glucose **166 mg/dL**
Glucose Management Indicator (GMI) **7.3%**

Clinical Decisions Based on GMI Alone?

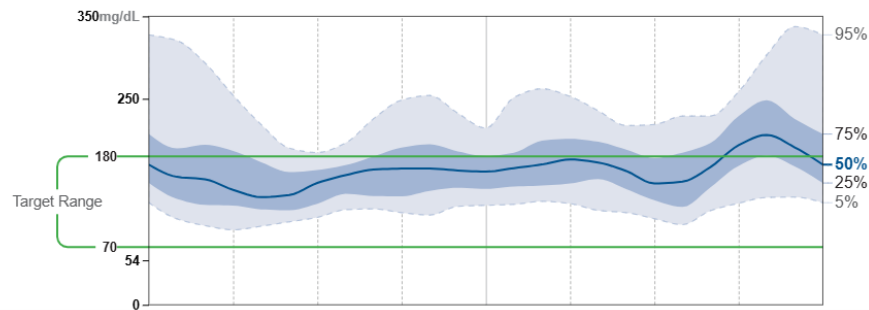
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A

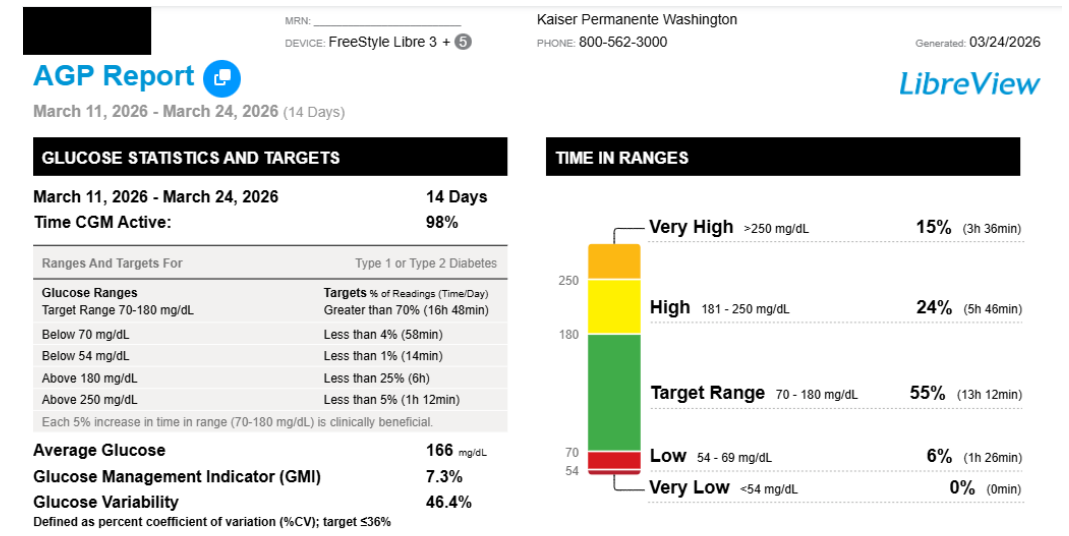


AMBULATORY GLUCOSE PROFILE (AGP)

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.

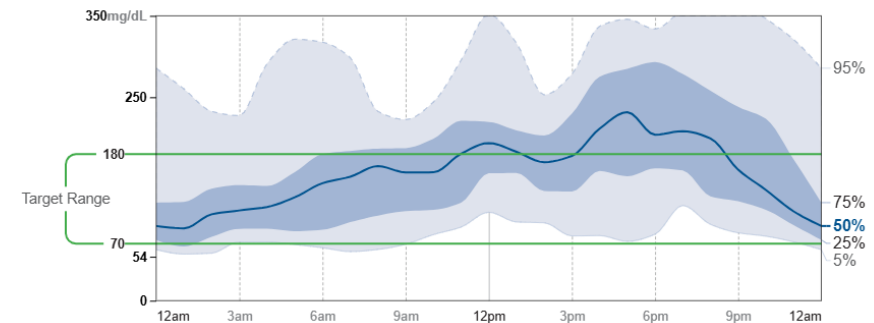


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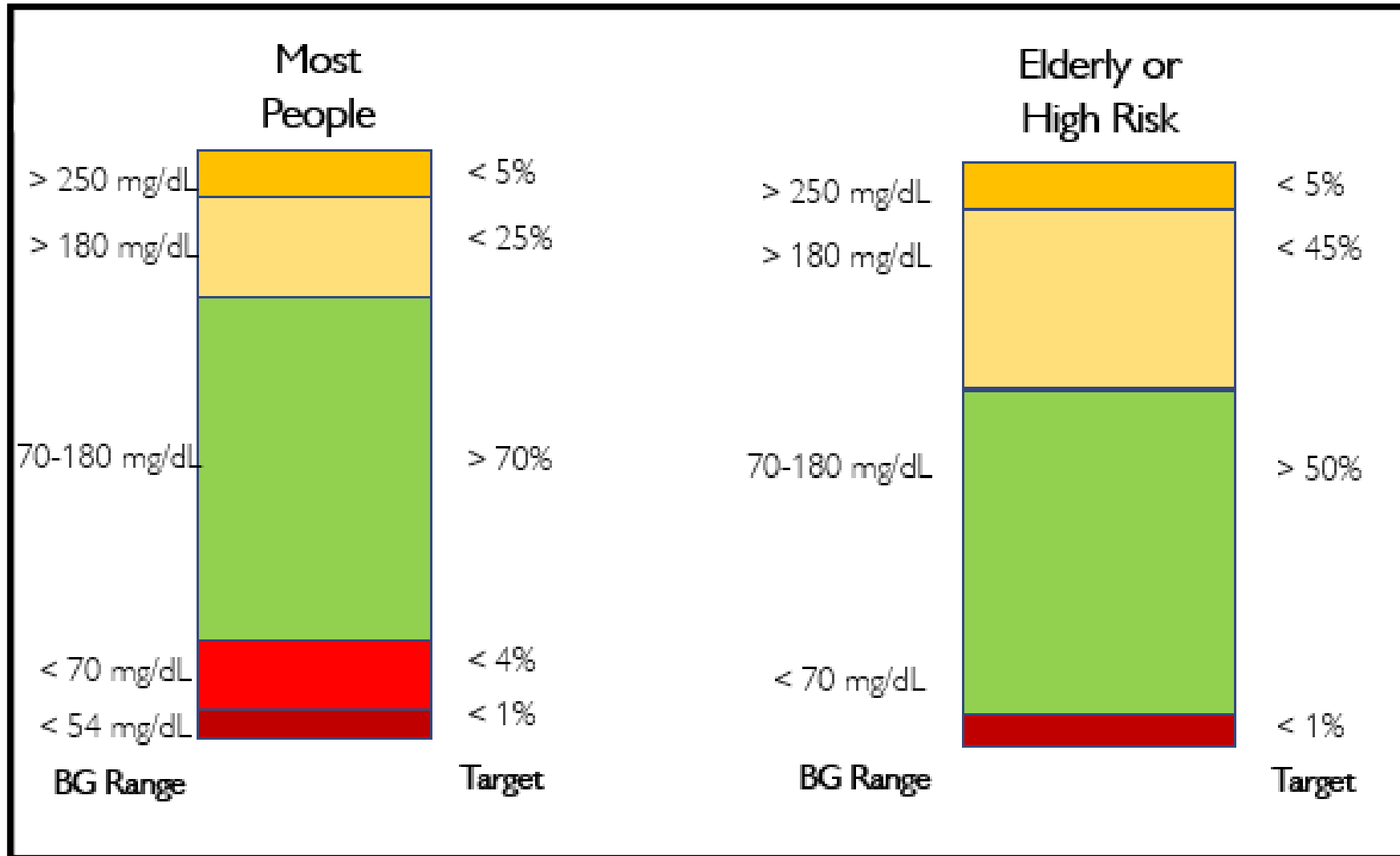


AMBULATORY GLUCOSE PROFILE (AGP)

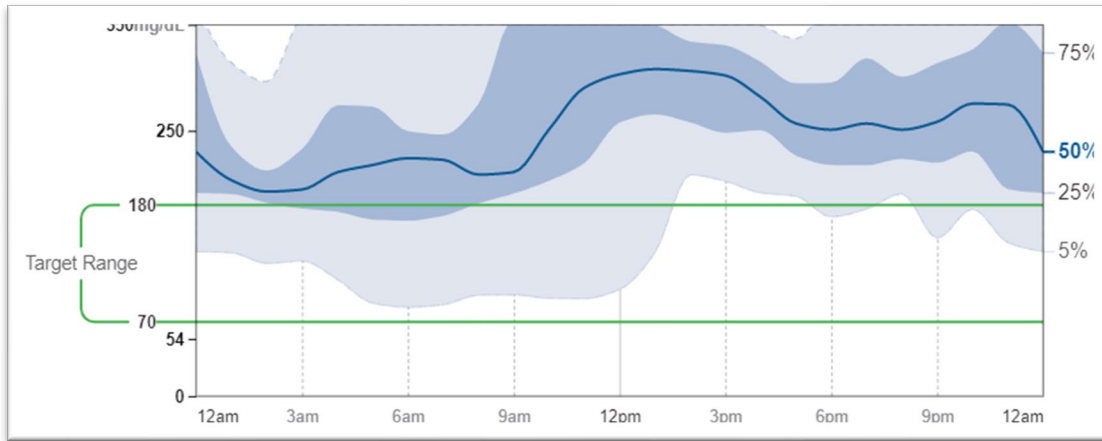
AGP is a summary of glucose values from the report period, with median (50%) and other percentiles shown as if occurring in a single day.



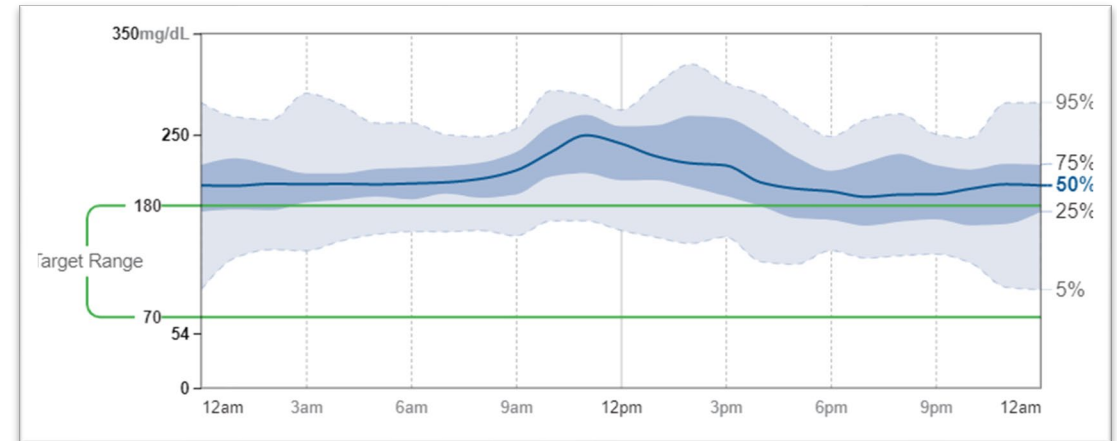
CGM Data: Time in Range Targets



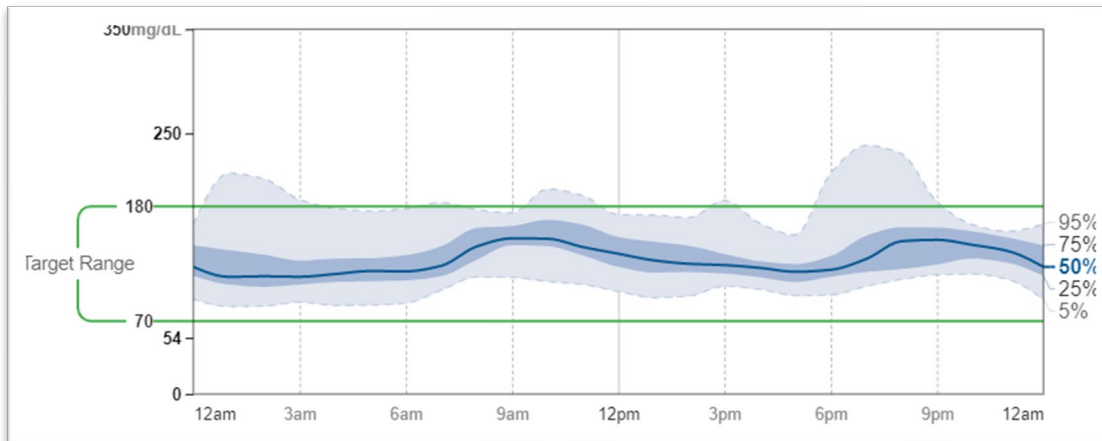
Flat, Narrow, In Range...



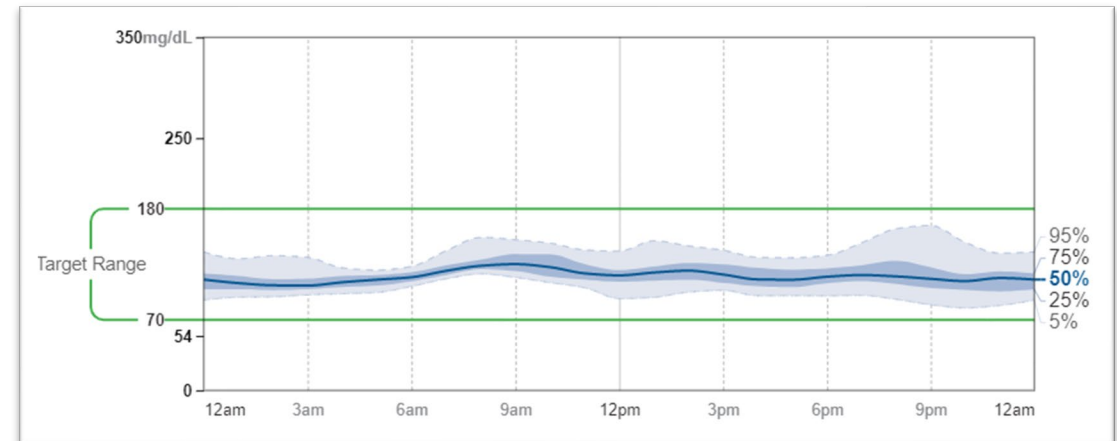
Not flat, Not narrow, Not in range



Flat, Not narrow, Not in range



Flat, Not narrow, **In Range**



Flat, **Narrow**, **In Range**

Quick Review Priorities



Lots of RED (hypo)



High Variability of High Coefficient of Variation



Stable high GMI/ average glucose



Little green (<70%)/ lots of yellow





Little hypoglycemia, little variability




Lots of green (>70%), even if GMI < Target A1c

Data Flags


 Lots of RED (hypo) 

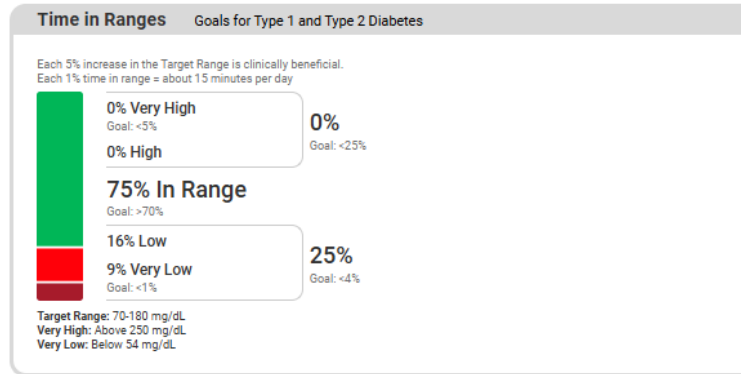
 High Variability of High Coefficient of Variation

 Stable high GMI/ average glucose

 Little green (<70%)/ lots of yellow

 Little hypoglycemia, little variability

 Lots of green (>70%), even if GMI < Target A1c



GLUCOSE STATISTICS AND TARGETS	
March 11, 2026 - March 24, 2026	14 Days
Time CGM Active:	65%
Ranges And Targets For Type 1 or Type 2 Diabetes	
Glucose Ranges	Targets % of Readings (Time/Day)
Target Range 70-180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)
Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.	
Average Glucose	186 mg/dL
Glucose Management Indicator (GMI)	7.8%
Glucose Variability	64.4%
Defined as percent coefficient of variation (%CV); target ≤36%	

Data Flags

🚩 Lots of RED (hypo) →

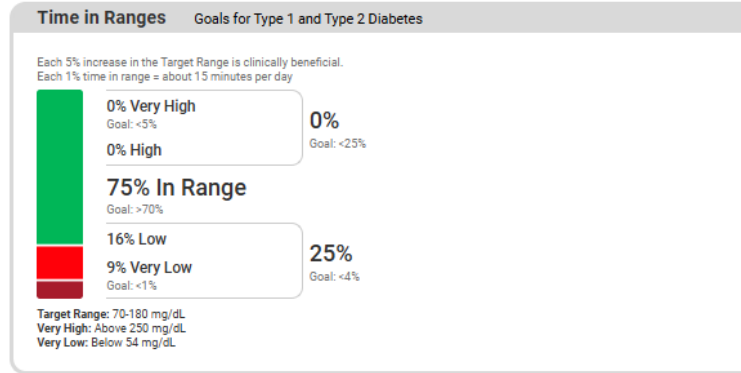
🚩 High Variability of High Coefficient of Variation

🚩 Stable high GMI/ average glucose

🚩 Little green (<70%)/ lots of yellow

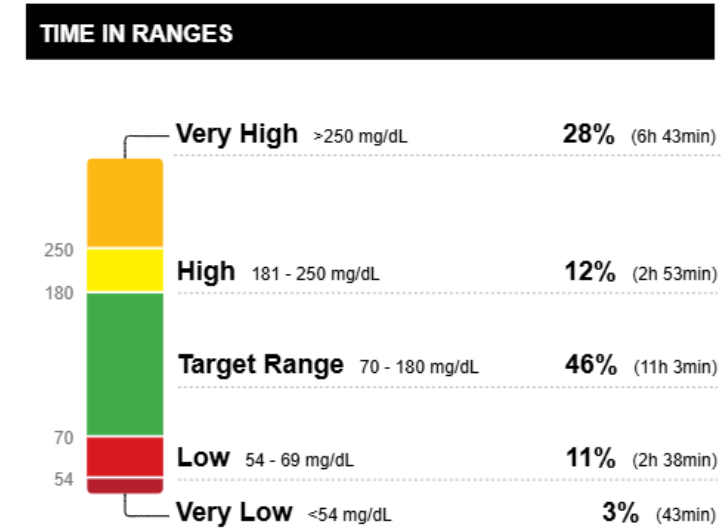
🚩 Little hypoglycemia, little variability

🚩 Lots of green (>70%), even if GMI < Target A1c



Glucose Metrics	
Average Glucose Goal: <154 mg/dL	90 mg/dL
GMI Goal: <7%	5.5%
Coefficient of Variation Goal: <36%	31.1%
Time CGM Active	99.8%

GLUCOSE STATISTICS AND TARGETS	
March 11, 2026 - March 24, 2026	14 Days
Time CGM Active:	65%
Ranges And Targets For Type 1 or Type 2 Diabetes	
Glucose Ranges	Targets % of Readings (Time/Day)
Target Range 70-180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)
Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.	
Average Glucose	186 mg/dL
Glucose Management Indicator (GMI)	7.8%
Glucose Variability	64.4%
Defined as percent coefficient of variation (%CV); target ≤36%	




Data Flags


 Lots of RED (hypo)

 High Variability of High Coefficient of Variation

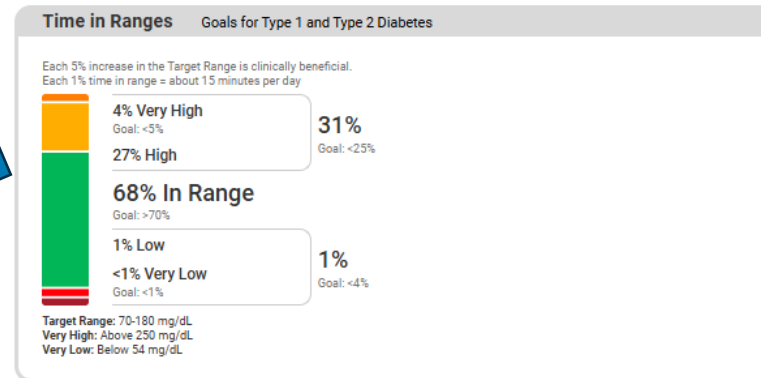
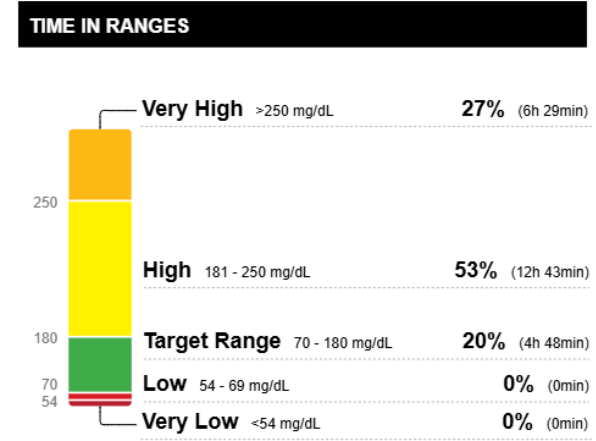
 Stable high GMI/ average glucose

 Little green (<70%)/ lots of yellow

 Little hypoglycemia, little variability

 Lots of green (>70%), even if GMI < Target A1c

GLUCOSE STATISTICS AND TARGETS	
March 11, 2026 - March 24, 2026	14 Days
Time CGM Active:	91%
Ranges And Targets For Type 1 or Type 2 Diabetes	
Glucose Ranges	Targets % of Readings (Time/Day)
Target Range 70-180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)
Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.	
Average Glucose	219 mg/dL
Glucose Management Indicator (GMI)	8.5%
Glucose Variability	20.8%
Defined as percent coefficient of variation (%CV); target ≤36%	



31-year old male

Glucose Metrics	
Average Glucose Goal: <154 mg/dL	156 mg/dL
GMI Goal: <7%	7.0%
Coefficient of Variation Goal: <36%	33.9%
Time CGM Active	98.9%

Data Flags



Lots of RED (hypo)



High Variability of High Coefficient of Variation



Stable high GMI/ average glucose



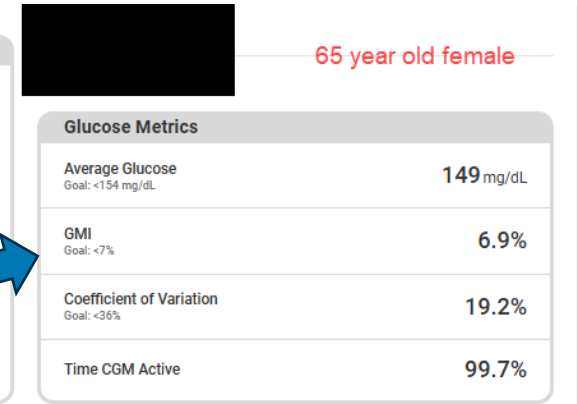
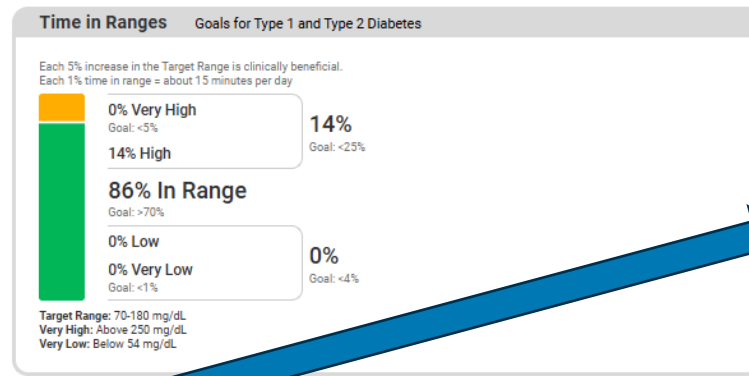
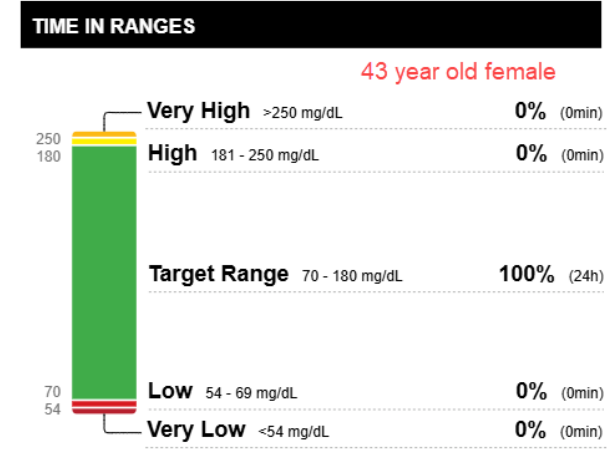
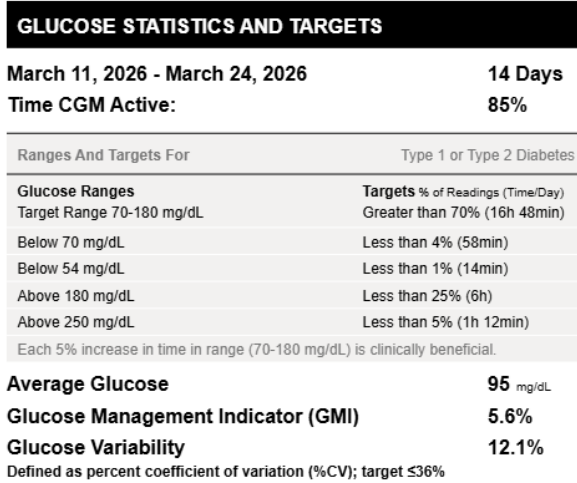
Little green (<70%)/ lots of yellow



Little hypoglycemia, little variability



Lots of green (>70%), even if GMI < Target A1c

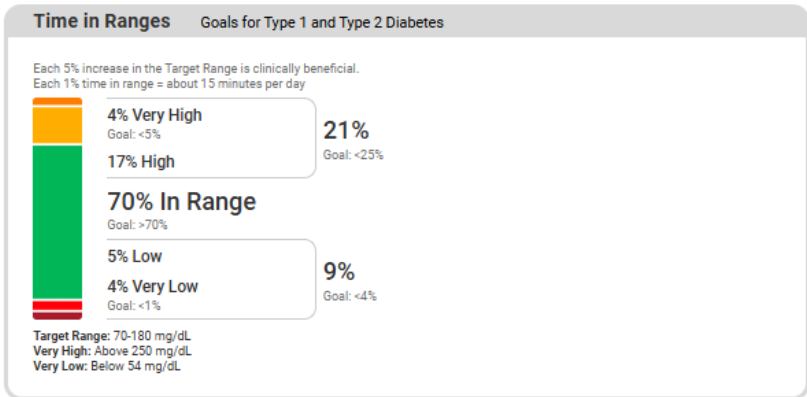


Case Study 1

44-year-old male, BMI 38, 106 kg, physically active, trying to limit carbs

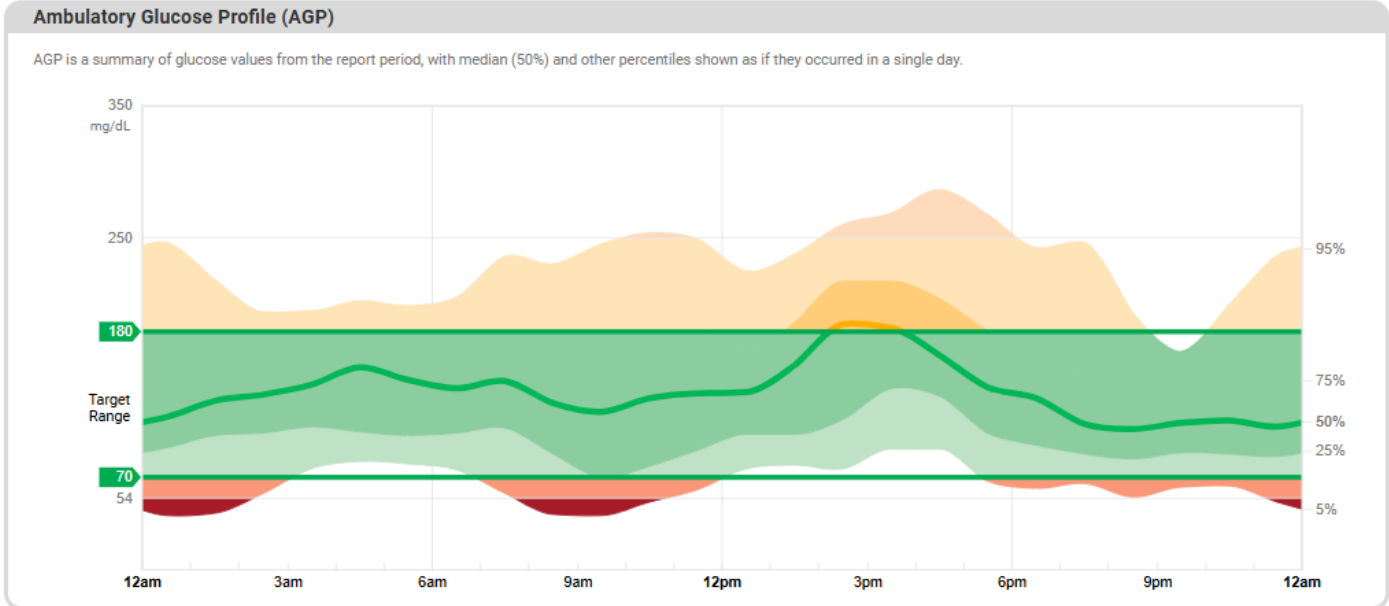
Status: T2 DM, last A1c 7.2%

Medications: Metformin XR 2000 mg, empagliflozin 12.5 mg, Semglee 40 units BID



Glucose Metrics

Average Glucose Goal: <154 mg/dL	138 mg/dL
GMI Goal: <7%	6.6%
Coefficient of Variation Goal: <36%	39.2%
Time CGM Active	98.6%



What are your next steps?

- A. Reduce physical activity temporarily to see if hypoglycemia can be reduced
- B. Add mealtime insulin with largest meal of the day
- C. Reduce basal insulin by 20% (40 BID → 32 BID)
- D. No adjustment, GMI in target

What are your next steps?

A. Reduce physical activity temporarily to see if hypoglycemia can be reduced

A. Although patient may need to, a more assertive intervention is necessary

B. Add mealtime insulin with largest meal of the day

A. May need mealtime insulin given overbasalization, but unknown and not the priority until the hypo concerns are addressed

C. Reduce basal insulin by 20% (40 BID → 32 BID)

A. Patient is overbasalized and experiencing hypoglycemia. Recommend minimum 20% reduction (consider more based on assessment; is pt “feeding” insulin, are they using CGM to “prevent” some hypos, etc.)

D. No adjustment, GMI in target

A. GMI may be “in target” for patients age, however, he’s clearly having too many lows, and is overbasalized. Clinical intervention is necessary

Refer to REF DIABETES
Eligible to work with the
Diabetes Nurse Specialist
or Clinical Pharmacist

Case Study 2

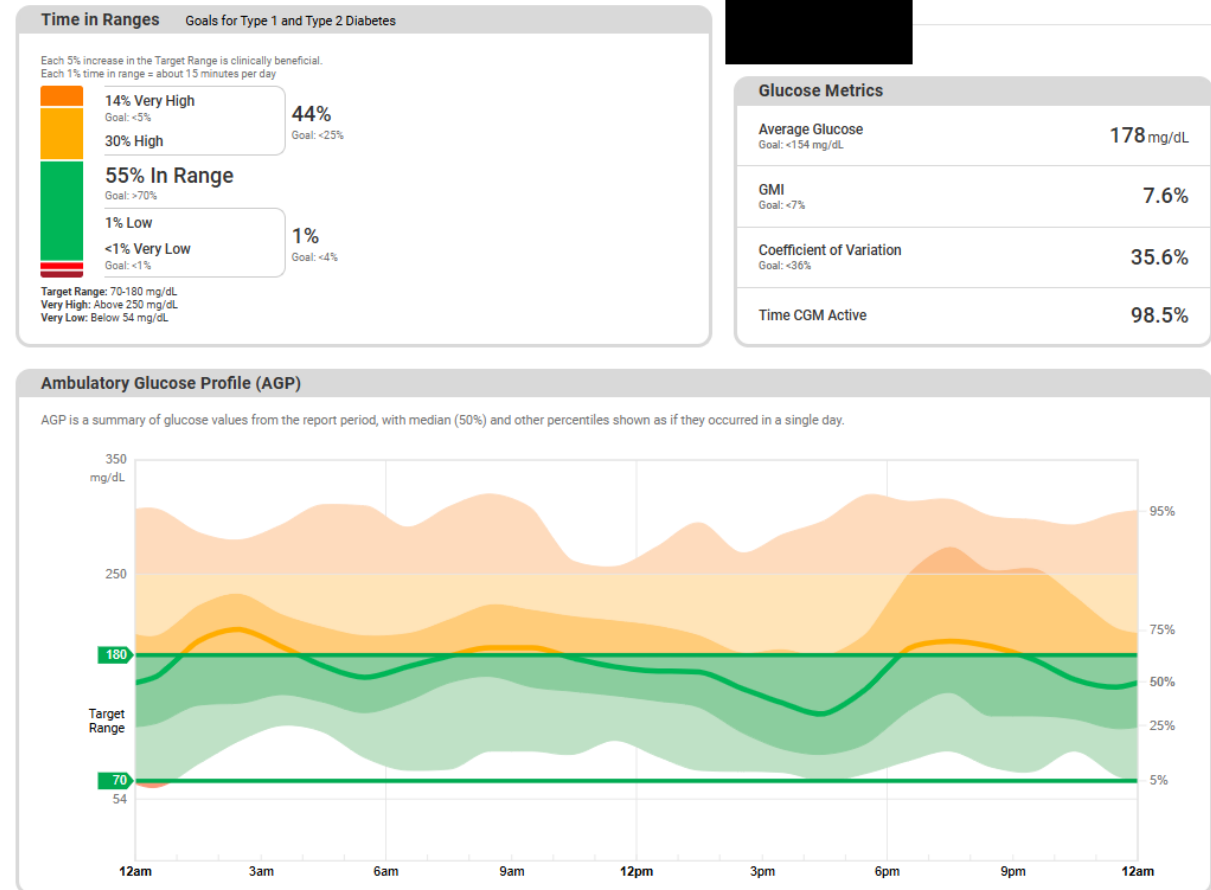
65-year-old female, BMI 32, 75 kg, recent foot injury resulting in reduced physical activity and eating out more since unable to stand to cook

Status: T2 DM, last A1c 7.1%

Medications: Metformin XR 2000 mg, Semglee 50 units QAM; failed empaglifozin d/t frequent UTI

You've confirmed:

- Patient is not missing/skipping doses of any medication
- Patient has come in to see Team RN to confirm adequate injection technique
- No lipohypertrophic sites noted, and avoids any suspicious tissue for injection



What are your next steps?

- A. Decrease basal insulin by 10%. Consider splitting basal insulin into two separate injections, 20 and 25 or moving to BID.
- B. Reduce basal dose while adding/ increasing mealtime dose(s)
- C. Increase basal insulin by 10% (50 QD → 55 QD in divided doses)
- D. No medication adjustment, last A1c was close to target, patient should limit high-carb foods and increase physical activity

What are your next steps?

A. Decrease basal insulin by 10%. Consider splitting basal insulin into two separate injections, 20 and 25 or moving to BID.

Patient will most certainly need a reduction in basal insulin if adding mealtime insulin. Patient is overbasalized but reduction in basal insulin alone will not address the persistent hyperglycemia noted in the AGP report. Splitting the insulin may lead to better absorption

B. Reduce basal dose while adding/ increasing mealtime dose(s).

Patient needs a more physiologically appropriate approach to insulin dosing including basal insulin and bolus insulin. Consider a 20% reduction of basal insulin and adding a small dose of Kirsty (aspart-hjhz) with the largest meal.

C. Increase basal insulin by 10% (50 QD → 55 QD in divided doses).

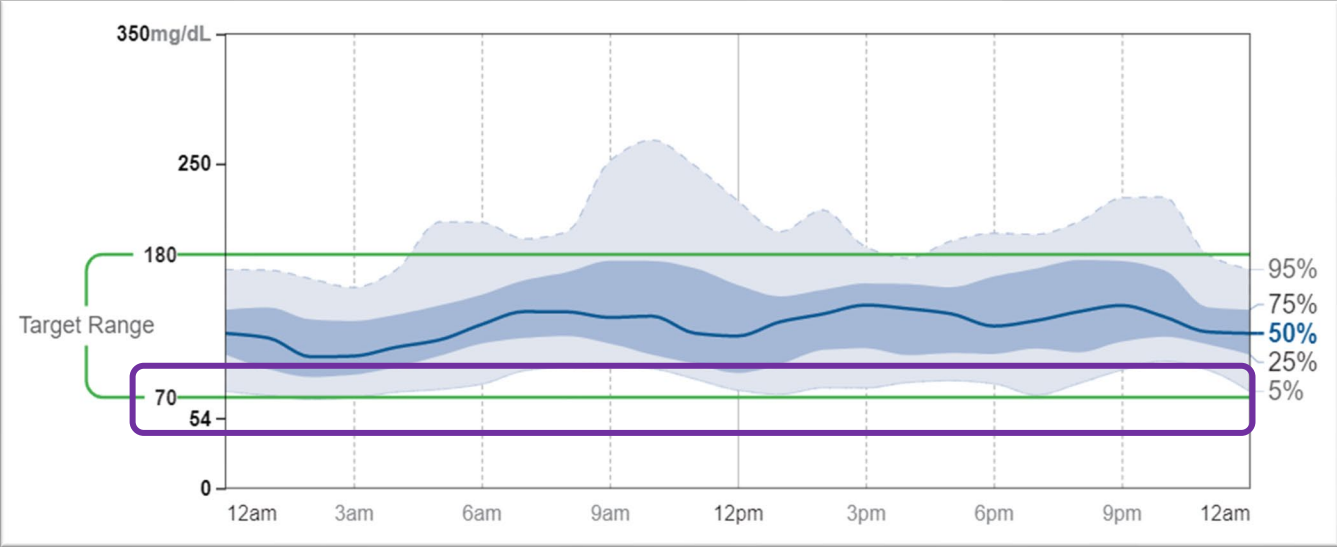
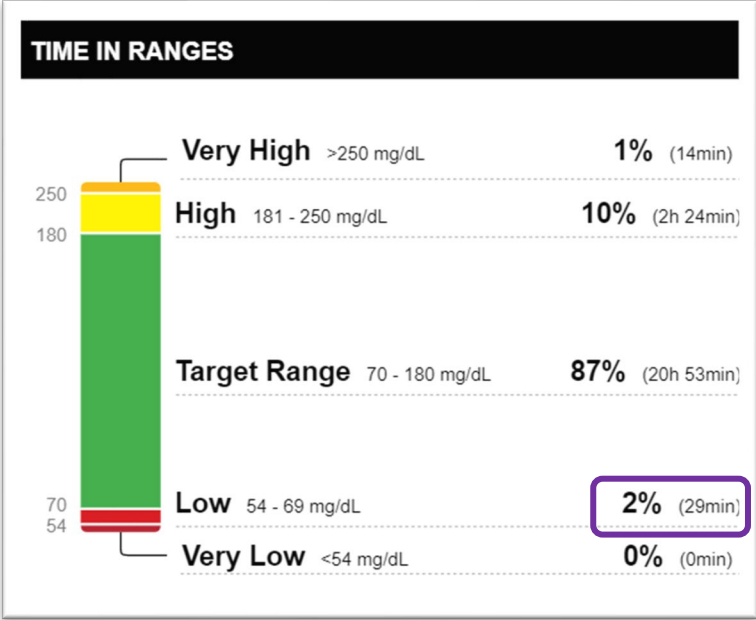
Although patient *appears* to need more insulin, increasing the basal insulin in a patient that is already overbasalized will only further increase risk of hypoglycemia, weight gain, and variability. Patient needs more physiologically matched insulin to cover glucose

D. No medication adjustment, last A1c was close to target, patient should limit high-carb foods and increase physical activity.

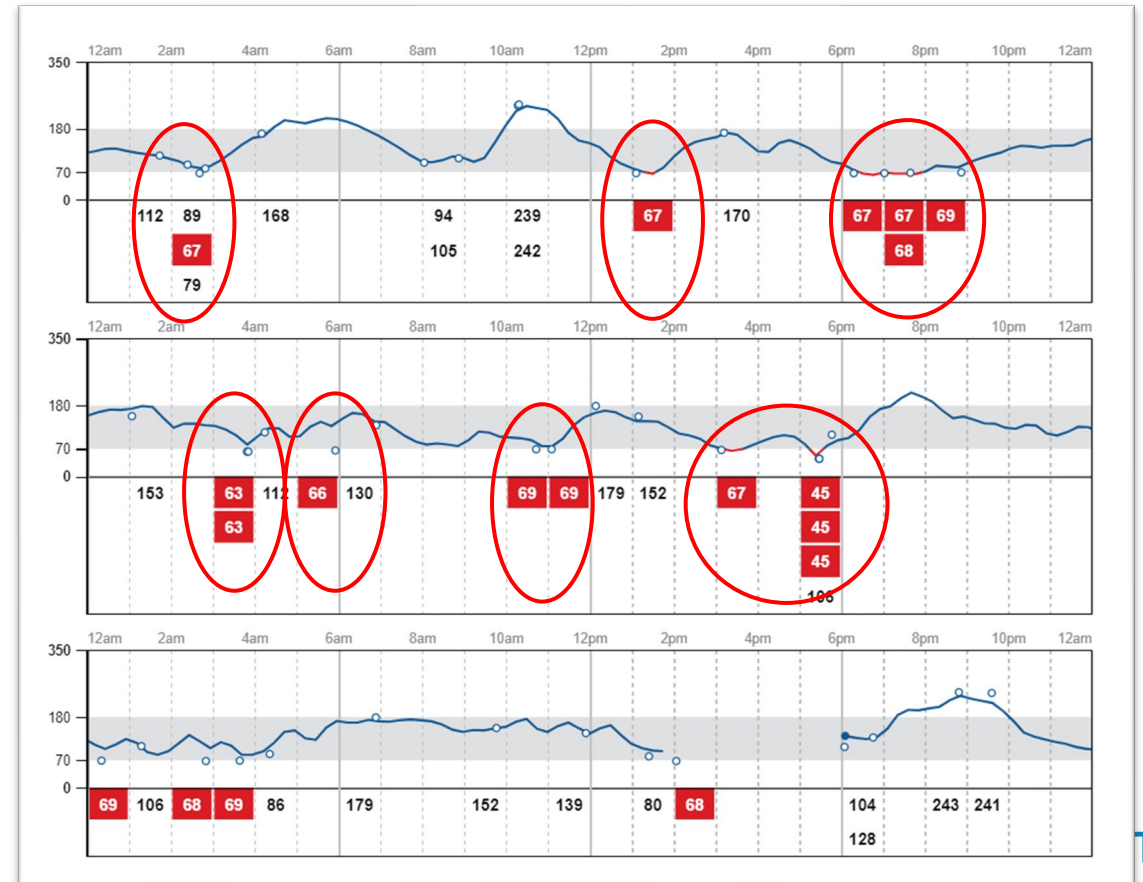
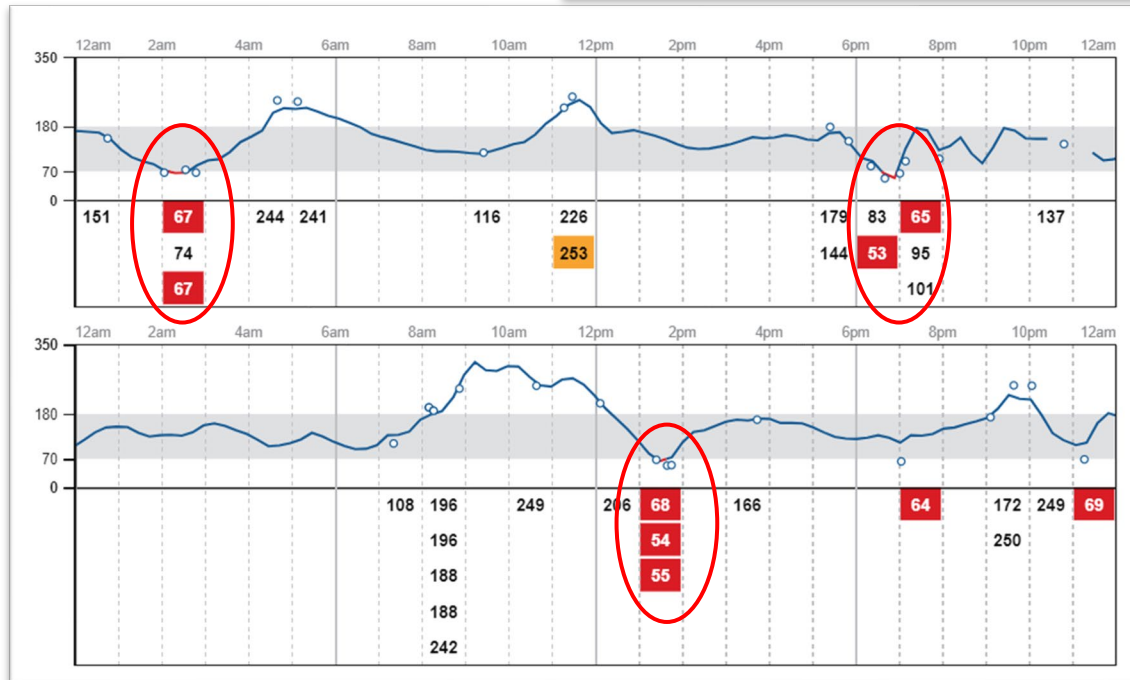
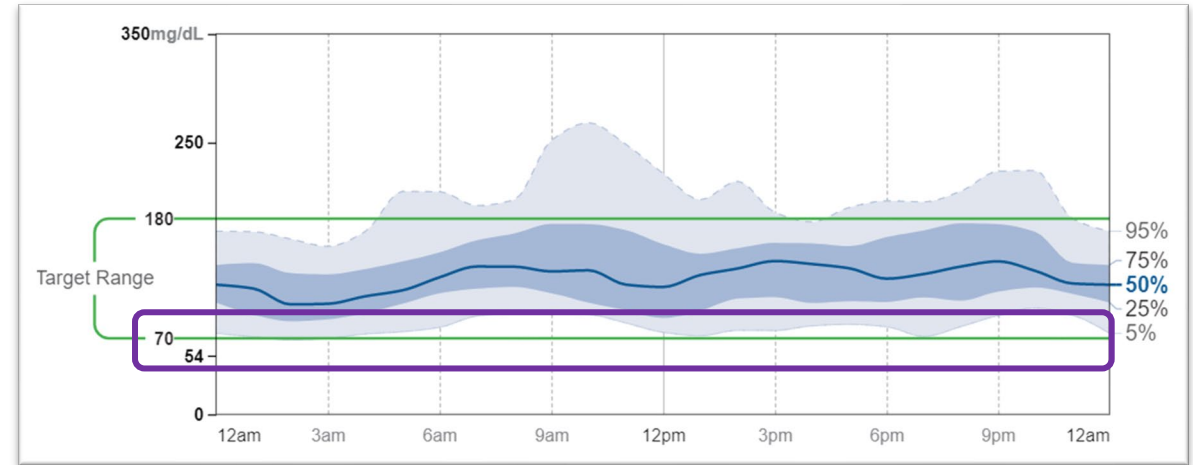
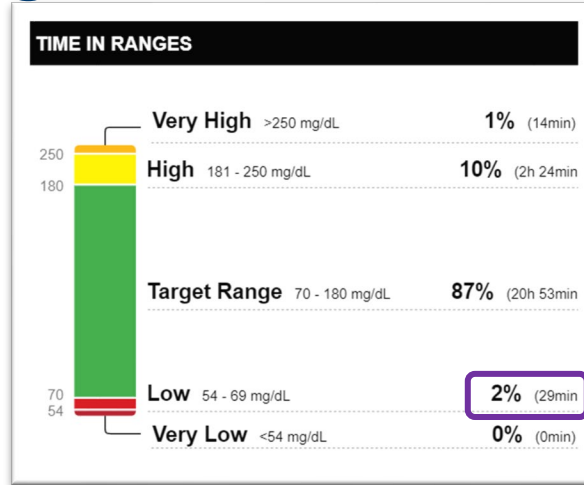
Healthy eating and physical activity are great things to reinforce; however, this should not preclude you from adjusting medication/ insulin regimens. As glucose levels come down, patients tend to feel better, which leads to an innate increase in physical activity and eating more nutritious foods

Refer to REF DIABETES
Eligible to work with the
Diabetes Nurse Specialist

The AGP Report is great, but...



The AGP Report is great, but...



Future State

Coming Soon(ish)

1. **CGM Education Modules for Staff**
2. **Expanding CGM uploads in clinic for patients not using Smart Phones**
3. **GMI used to close care gaps**
4. **CGM data integration in EPIC → eta mid- 2027**

Appendix

Criteria – KP Medicare

Has a diagnosis of diabetes **AND**

1. Have had an appointment (phone, video, or in person) with a clinician specifically for their diabetes in the past 6 months to ensure criteria is met **AND**
2. Treating practitioner has concluded that the beneficiary (or beneficiary's caregiver) has sufficient training using the CGM prescribed as evidenced by providing a prescription **AND**
3. Beneficiary meets **at least one** of the criteria below:
 - a. Be on **1 or more** daily administrations of insulin
 - b. If on orals only, has a history of problematic hypoglycemia with documentation

Order via Ref
DME
Continuous
Glucose
Monitor and
Supplies

.DMCGM

[Job Aid CGM Criteria, Devices, and Ordering.docx](#)

Criteria – Medicare CORE (non- KP)

Patient must schedule a visit with PCP for CGM every 6 months

- “Patient would benefit from a CGM for their diabetes management, guide treatment decisions, prevent severe hypoglycemia, etc.
- “Patient currently using {insulin plan}”

PCP to fax visit note to Byram at fax 866-880-4894

Patients should follow up by phone with Byram 1-2 weeks after visit with PCP

Byram

- Order via Ref DME CGM One-time only.
- Byram sends back prescription form
- PCP then signs form and sends back with additional

.DMCGM

[Job Aid CGM Criteria, Devices, and Ordering.docx](#)

Criteria –Molina Insurance

1. Type 1 diabetes **OR**
2. Type 2 diabetes, on insulin therapy

AND

Documentation of **any one** of the following

- a. Unable to achieve target HbA1c despite adherence to an appropriate glycemic management plan
 - b. Experiencing recurrent severe (blood glucose <50 mg/dL or symptomatic) episodes of hypoglycemia despite adherence to an appropriate glycemic management plan (intensive insulin therapy)
 - c. Has hypoglycemia unawareness
3. Pregnant with any type of diabetes

Submit a prior authorization (PA) to Molina for approval. Fill out the following [form](#), attach chart notes and fax to Molina and include

Completion of training and support for the CGM device and counseled on potential drugs/substances

After approval, order
Prescriptions to KP Mail Order Pharmacy

.DMCGM

[Job Aid_CGM Criteria, Devices, and Ordering.docx](#)

Resources

Resources at Your Fingertips

Systemwide SmartPhrases for Primary Care

.DMCGM

.CGMREAUTHSIGN

Ref Diabetes → connect your patient to diabetes resources including nutrition, Team RN diabetes appointment scheduling, Diabetes Nurse Specialist or Clinical Pharmacy for medication titration, and more

[Diabetes Quick Care Guide](#)

[KPWA Type 1 Diabetes Guideline](#)

[KPWA Type 2 Guideline](#)

Diabetes Classes

[Thriving with Diabetes Virtual Group Classes](#)

Healthy Habits

Diabetes Nutrition class

Nutrition referral for 1:1 assessment

GLP-1 Receptor Agonists in Diabetes: Recent Updates

Kaiser Permanente Washington
CME: Diabetes for Primary Care
March 26, 2026
Melissa Sturgis, PharmD, BCACP

Disclosure Statement

- I have no relevant disclosures

Learning Objectives

At the end of this presentation, the learner should be able to:

Review GLP-1 RA pharmacology relevant to the treatment of diabetes

Apply evidence to primary care prescribing decisions

Discuss the role of emerging oral GLP-1 RA therapies

Incorporate KP HealthConnect decision-support tools to assess current GLP-1 RA coverage requirements within clinical workflows

GLP-1s in the News (recent stories relative to DM)

Oral GLP-1 Advances

Eli Lilly's orforglipron is an oral GLP-1 under FDA review for DM and weight reduction

Strategic Rebranding

Novo Nordisk rebranded oral semaglutide as Ozempic tablets to unify brand and reduce confusion. Updated product launch expected in May.

Pediatric Indication

Mounjaro gained FDA approval for pediatric type 2 diabetes treatment for children aged 10 and older.

Expanded Organ Protection

GLP-1 therapies now address liver disease (MASH/MASLD) and kidney disease (CKD) progression, extending beyond glucose control.

Semaglutide Patent expiration in Canada

Multiple manufacturers looking to launch generic semaglutide in Canada this year.



Diabetes

GLP-1

Mounjaro

Ozempic

Zepbound

Weight loss

Wegovy

GLP-1 RA

Background/ Pharmacology

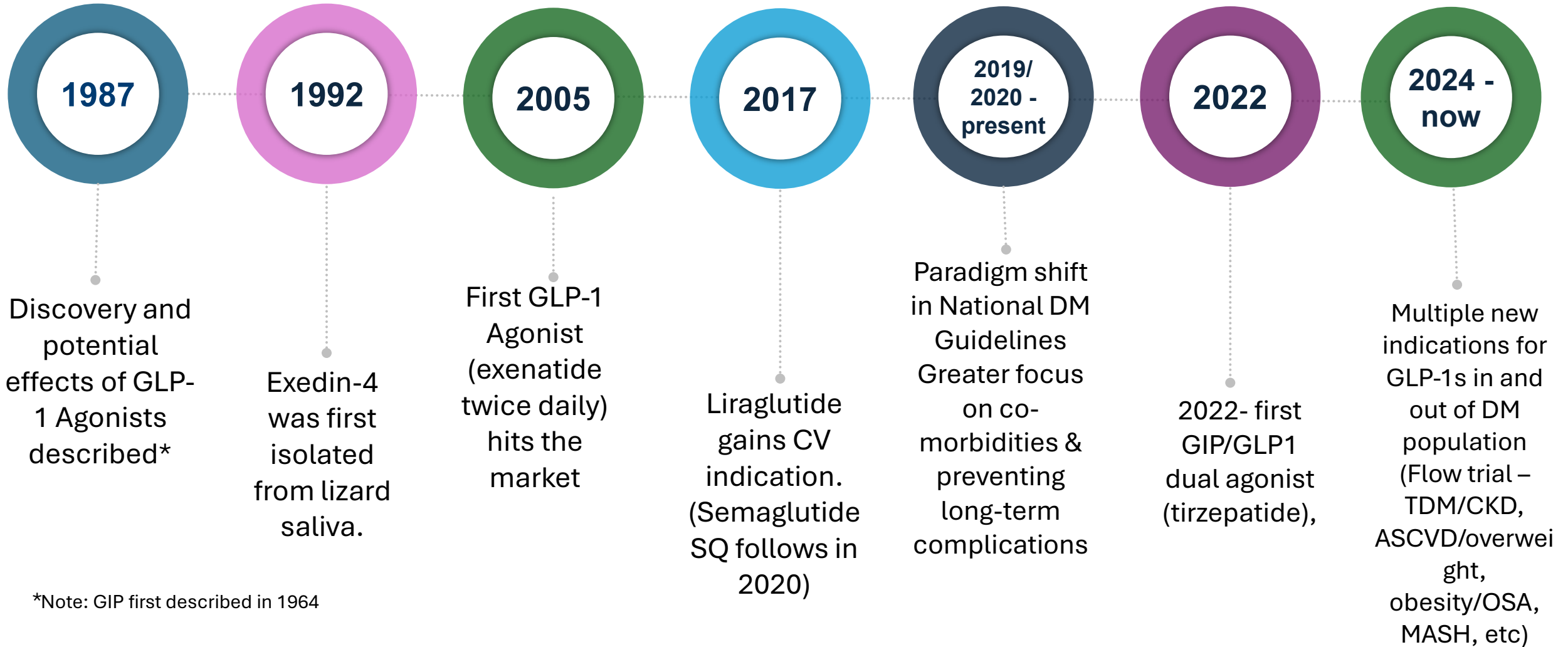
Refresh

Amino acid sequence of GLP-1



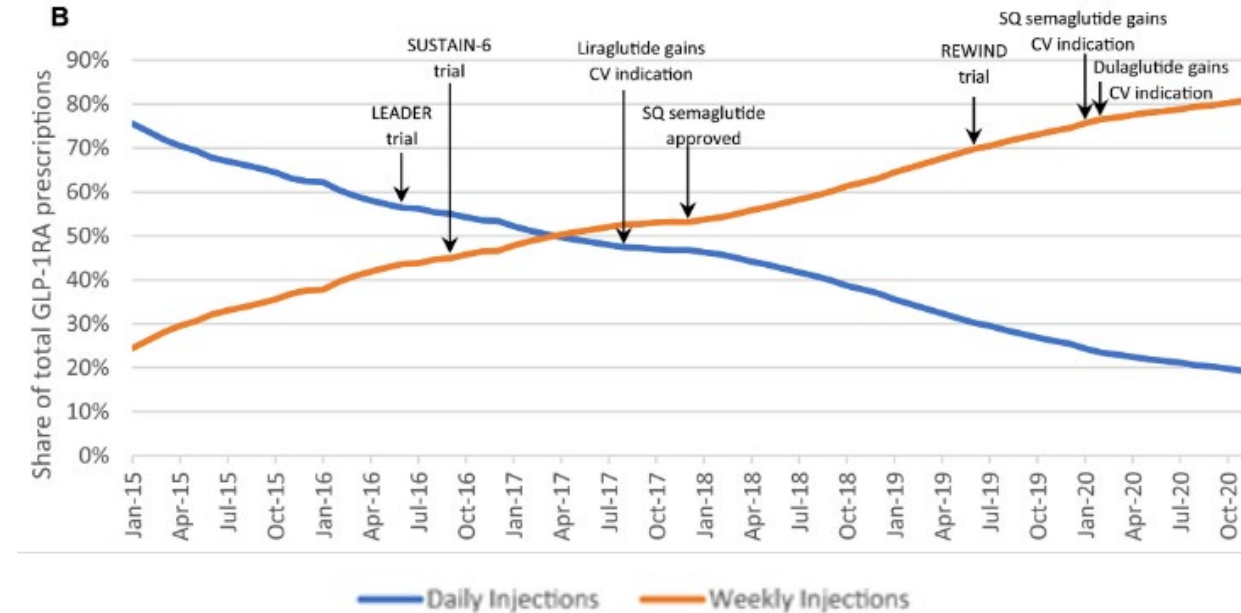
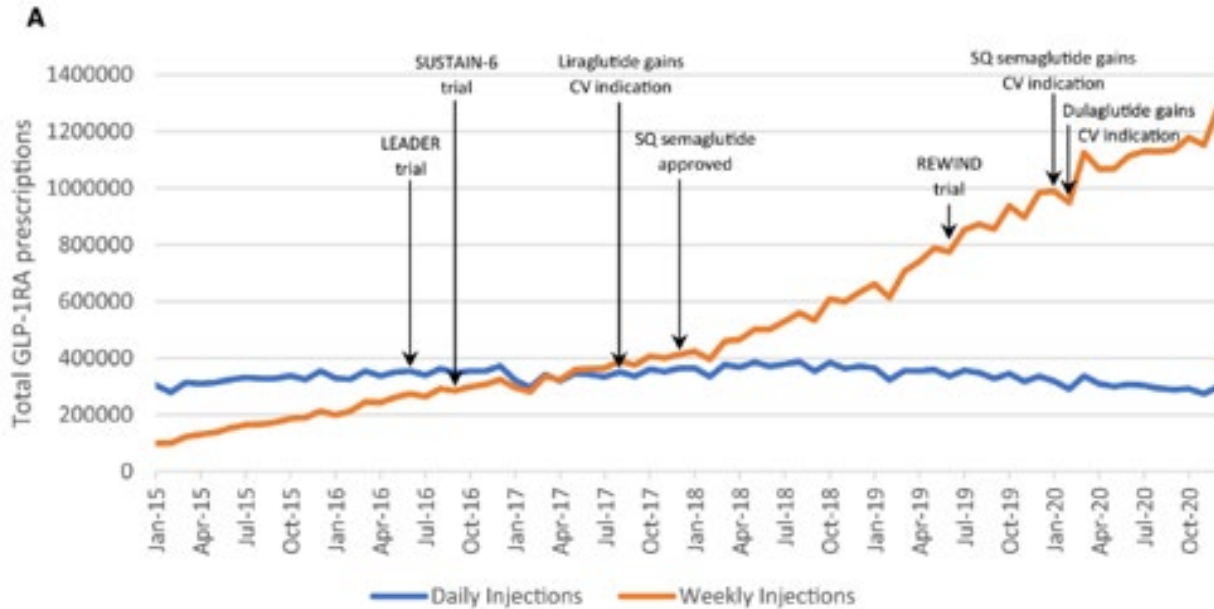
Source: Bell, et al. Nature. 1983.

GLP-1 RA Timeline of Key Events



*Note: GIP first described in 1964

Trends in Prescribing based on daily vs weekly GLP1 Agents



Significant changes occurring based on:

- Availability of weekly injections
- Cardiovascular outcomes data

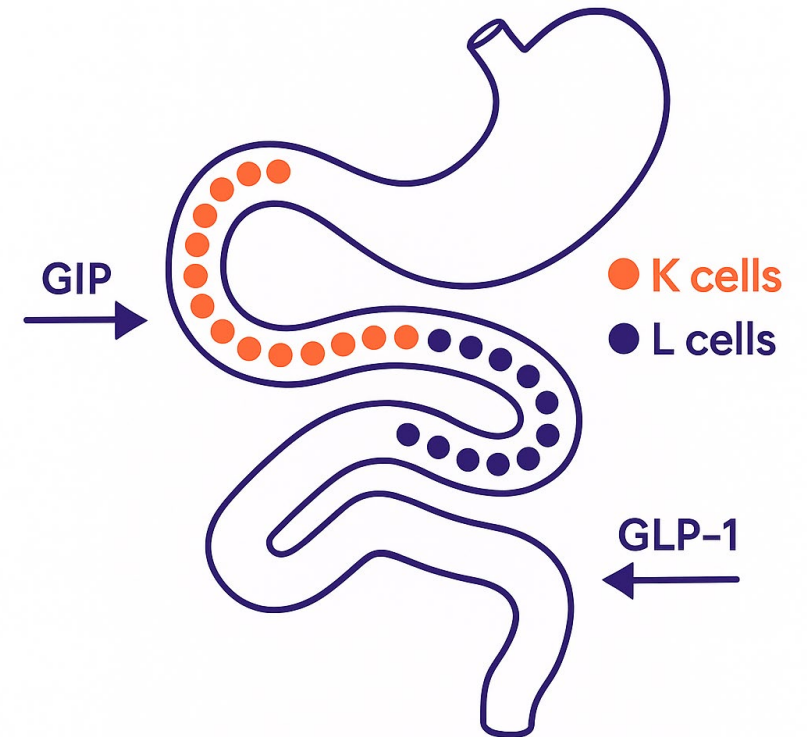
Incretin hormones: GLP-1 and GIP

Glucagon-like peptide-1 (GLP-1) – L cells

- GLP-1 is a 31-amino acid peptide
 - Some basal secretion in the fasting state
 - Levels are amplified several times over in response to food.
- GLP-1-secreting **L cells** are thought to be found in highest numbers in the distal part of the small intestine and in the colon

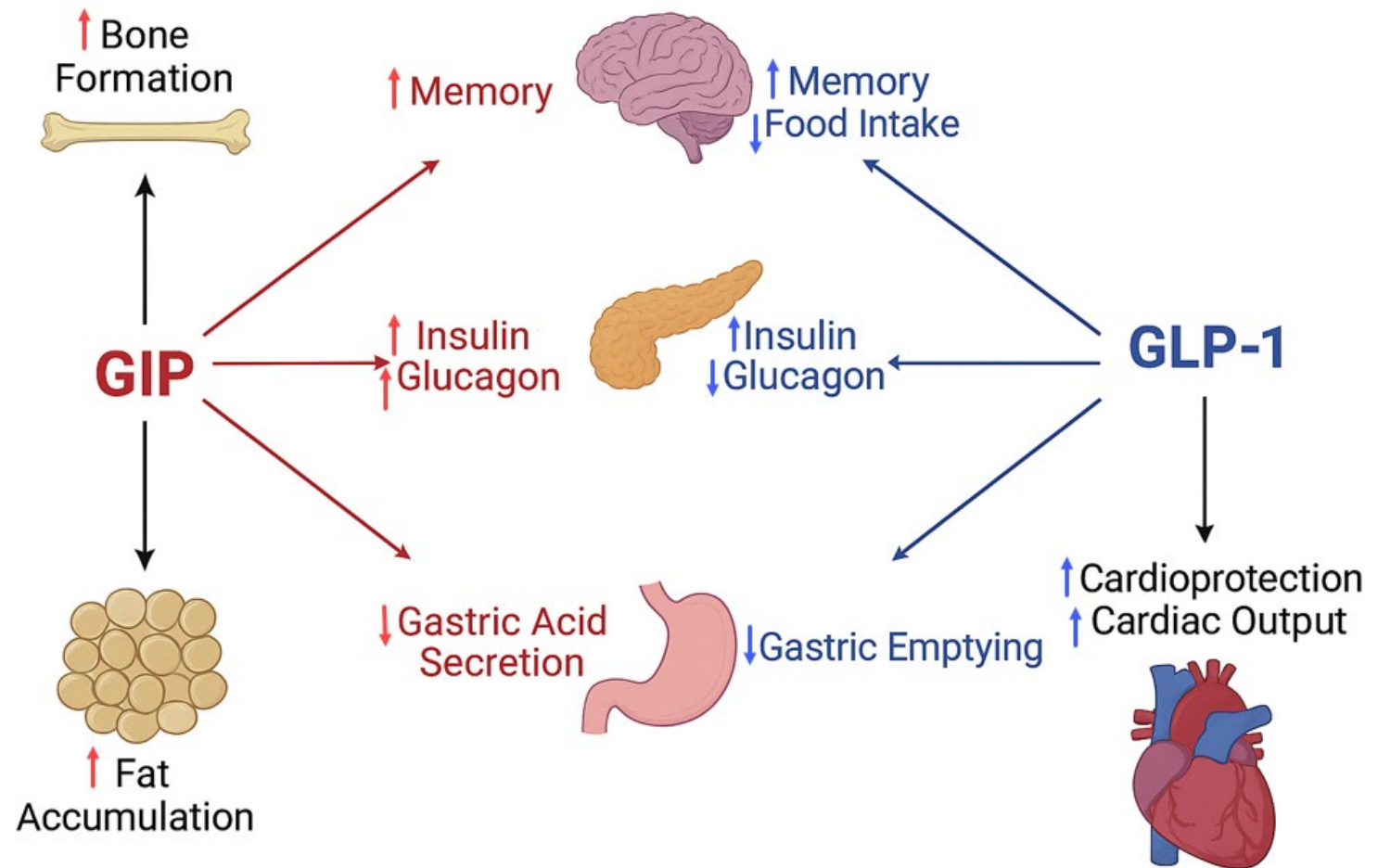
Glucose-dependent insulinotropic polypeptide (GIP)

- GIP is a 42-amino acid peptide hormone
 - GIP is secreted following ingestion of nutrients (e.g. glucose, long-chain fatty acids, amino acids)
- GIP-secreting **K cells** are primarily found in the proximal part of the small intestine



Educational figure generated using AI and reviewed for accuracy by faculty

Incretin Mechanism of Action



Educational figure generated using AI and reviewed for accuracy by faculty

A few Take-aways

- Incretin receptors are found in many different tissues/ organs
- Native incretin release is relative to food intake, pulsatile
- Long-acting exogenous versions are theorized to engage CNS activity more

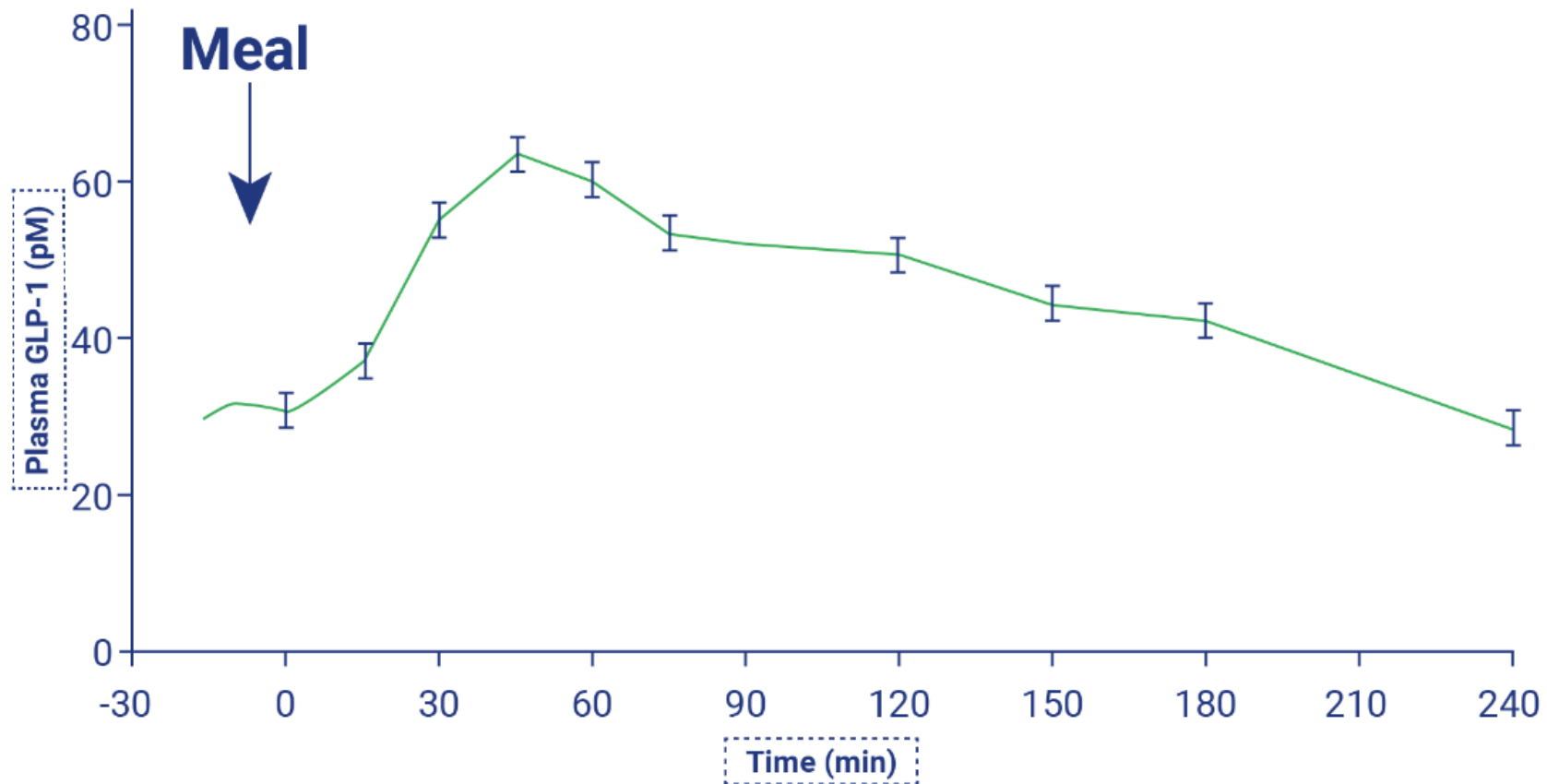
The Tale of GLP-1 Agonists & Expanding FDA Indications

- GLP-1 therapies have moved well beyond treatment of diabetes or weight loss
- FDA standpoint → multi-organ, cardiometabolic platform
 - multiple simultaneous trials across heart, kidney, liver, joints, sleep, and inflammation, etc.
 - many trials independent of weight alone

Indication	FDA Proximity
CV risk reduction	✓ Approved
Obstructive sleep apnea	✓ Approved
HFpEF	◆ Very close
MASH / NASH	✓ Accelerated approval based on surrogate endpoint
CKD	◆ Close
Osteoarthritis	⚠ Mid-stage
Hypertension	⚠ Supportive only
Addiction	● Early-stage
Neurodegeneration	● Early-stage

Areas of trial investigation beyond DM or weight loss

Endogenous GLP-1 Release in response to meals



Source: Knop, et al. Am J Physiol Endocrinol Metab. 2007.

GLP-1 Agonist effect on Glucose Reduction

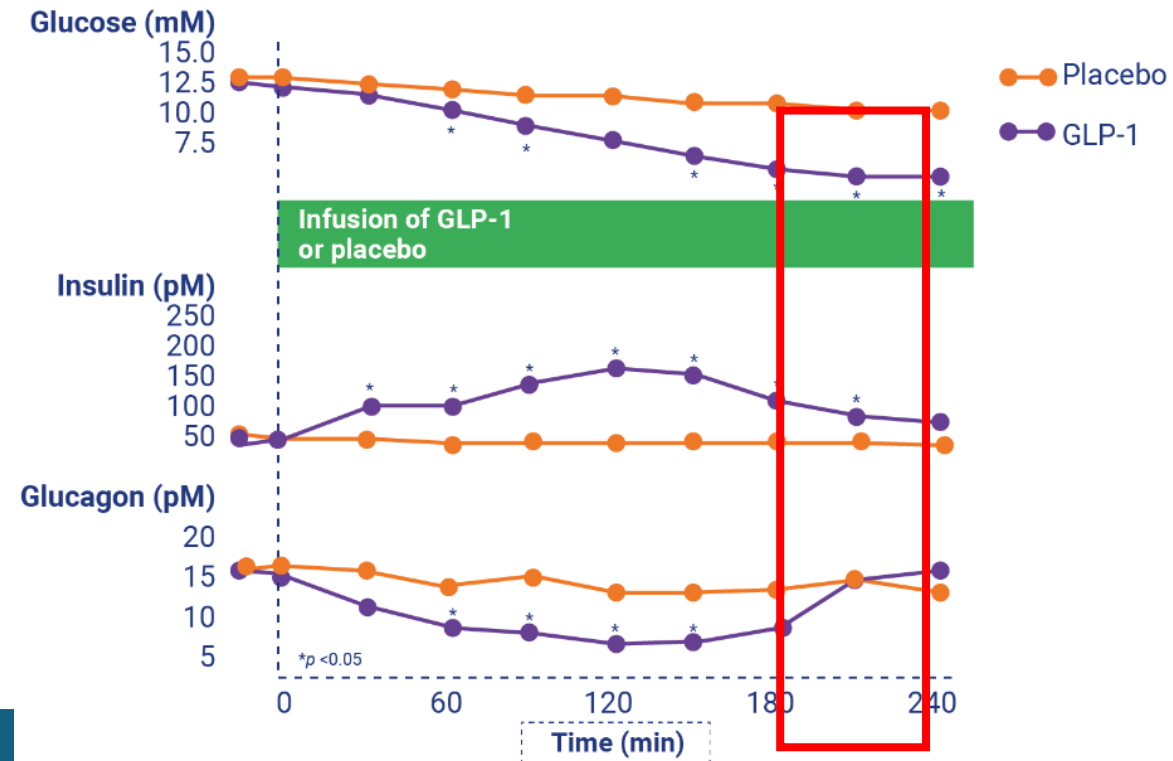
After GLP-1 is secreted from L cells in the small intestine (in response to food)

It travels through the blood stream to pancreatic beta cells, where it stimulates GLP-1 receptors

Pancreatic GLP-1 receptor activations leads to 2 potent glucose-lowering effects from islet cells

- Increase in insulin secretion
- Suppression of glucagon secretion

Once glucose levels are in the normal range, these glucose-lowering effects cease



Normal range: 70 mg/dL (3.9 mM/L) to 126 mg/dL (7.0 mM/L)

GLP-1 Agonists

Side Effects & Warnings

Side Effects:

- Nausea
- Vomiting
- Diarrhea
- Headache
- Rare: pancreatitis, renal dysfunction
- Risk of retinopathy
- Loss of Lean Muscle Mass (More problematic when GLP-1 used without resistance training or nutritional support)

Contraindications

- Severe gastroparesis
- For exenatide only: eGFR < 30 mL/min/1.73m²
- Personal or family Hx of medullary thyroid carcinoma
- Patients with multiple endocrine neoplasia syndrome type 2 (MEN-2)

Trial evidence for DM related Complications/ Co-morbidities

Brief Overview



GLP-1 Agonist Cardiovascular Outcomes Data

DRUG/ TRIAL SIZE	COMPARATOR	TRIAL	MAJOR ADVERSE CV EVENTS*	BENEFIT? Y/N	HOSPITALIZATIONS FOR HEART FAILURE (HHF)	BENEFIT? Y/N	RENAL** OUTCOMES	BENEFIT? Y/N
Liraglutide n=9340	Placebo	LEADER	0.87 (0.78-0.97)	Y	0.87 (0.73-1.05)	N	0.78 (0.67-0.92)	Y
Semaglutide n=3297	Placebo	SUSTAIN-6	0.76 (0.62-0.92)	Y	0.82 (0.47-1.44)	N	0.64 (0.46-0.88)	Y
Semaglutide oral n=3183	Placebo	PIONEER-6	0.78 (0.57-1.11)	N	0.86 (0.48-1.55)	N	N/A	N/A
Semaglutide oral N=9650	Placebo	SOUL	0.86 (0.77-0.96)	Y			0.91 (0.80-1.05)	N/A – 5point MAKE
Dulaglutide n=9901	Placebo	REWIND	0.97 (0.85-1.11)	Y	0.93 (0.77-1.12)	N	0.85 (0.77-0.93)	Y
Tirzepatide n=13,299	Dulaglutide	SURPASS- CVOT	0.92 (0.83-1.01)	Y (non-inferior to dulaglutide)	~1.00 (neutral) Death +HF events (composite) had a significant risk reduction (0.86 (0.77-0.95))	N (not with same metric)	0.74-0.79†	Y

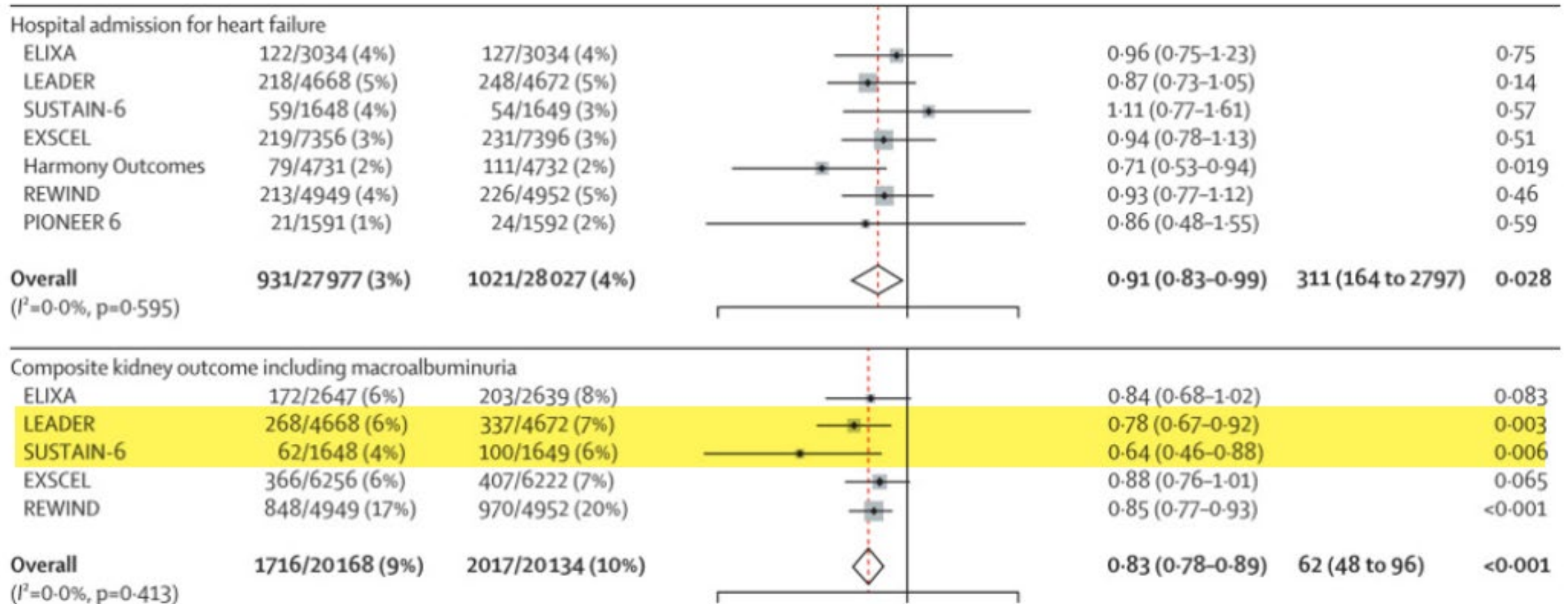
*Major Adverse CV Events (MACE) refers to 3-point MACE (stroke, non-fatal myocardial infarction, and CVD death) unless otherwise indicated

**Primary renal outcomes refer to worsening nephropathy unless otherwise indicated

† SURPASS-CVOT renal outcomes were secondary/exploratory but consistent across eGFR slope and albuminuria endpoints

Renal Outcomes: GLP-1 agonists Demonstrated Consistent Reductions in Composite Renal Outcomes

Kristensen, S, et al. *Lancet Diabetes & Endocrinology*.
2019;7(10): 776-785



Renal subpopulation in CV Outcome trials (liraglutide and semaglutide)

- Limited number of patients with eGFR <30 mL/min/1.73 m² in pivotal T2DM trials
- Insights for this renal subpopulation provided by pivotal CV outcome trials

	LEADER (N=9,340)	SUSTAIN-6 (N=3,297)
Study drug	liraglutide	semaglutide
Generalized population	T2DM + comorbidities (ASCVD/HF, ≥CKD stage 3, or CV risk factors)	T2DM + comorbidities (ASCVD/HF, ≥CKD stage 3, or CV risk factors)
Severe renal impairment	<ul style="list-style-type: none"> • eGFR <60 mL/min/1.73 m² (n=2,158) • eGFR <30 mL/min/1.73 m² (n=224; 2.4%) 	<ul style="list-style-type: none"> • eGFR <60 mL/min/1.73 m² (n=939) • eGFR <30 mL/min/1.73 m² (n=107; 3.2%) • Excluded dialysis
Primary endpoint subanalysis†	<ul style="list-style-type: none"> • eGFR <60: HR 0.69 (95% CI: 0.57 to 0.85) • eGFR <30: HR 0.89 (95% CI: 0.51 to 1.54) 	<ul style="list-style-type: none"> • eGFR <60: HR 0.84 (95% CI: 0.57 to 1.15) • eGFR <30: HR 0.73 (95% CI: 0.27 to 1.97)
Other renal endpoint	Nephropathy* HR 0.78 (95% CI: 0.67 to 0.92)	Nephropathy* HR 0.64 (95% CI: 0.46 to 0.88)

KEY: T2DM=type 2 diabetes, ASCVD=atherosclerotic cardiovascular disease, CKD=chronic kidney disease, ACS=acute coronary syndrome, eGFR=estimated glomerular filtration rate, HR=hazard ratio, CI=confidence interval, N/A=not applicable.

† Prespecified for severe renal impairment: 3-point MACE included CV death, non-fatal myocardial infarction, or non-fatal stroke.

* Prespecified nephropathy endpoint is defined as new macroalbuminuria or doubling of serum creatinine and eGFR of ≤45 mL/min/1.73 m², or need for continuous renal-replacement therapy (liraglutide also included renal death).

FLOW: Renal Outcome trial for semaglutide

	FLOW (N=3,533)
Study drug	semaglutide
Generalized population	T2DM + CKD
Renal criteria	<ul style="list-style-type: none"> • Adult patients diagnosed with T2DM and HbA1c $\leq 10\%$ • eGFR ≥ 50 to ≤ 75 mL/min/1.73 m² + UACR >300 mg/g but $<5,000$ mg/g <u>or</u> eGFR ≥ 25 to <50 mL/min/1.73 m² + UACR >100 mg/g but $<5,000$ mg/g <ul style="list-style-type: none"> • eGFR <30 mL/min/1.73 m² (n=400; 11.3%) • Receiving max dose of ACEi or ARB
Primary endpoint†	<ul style="list-style-type: none"> • All patients: HR 0.76 (95% CI: 0.66 to 0.88) • eGFR <30: HR 0.81 (95% CI: 0.58 to 1.13)
Other renal endpoints	<ul style="list-style-type: none"> • Persistent $\geq 50\%$ reduction from baseline in eGFR: HR 0.73 (0.59 to 0.89) • Persistent eGFR <15 mL/min/1.73 m²: HR 0.8 (0.61 to 1.06) • Initiation of kidney-replacement therapy: HR 0.84 (0.63 to 1.12) • Death from kidney-related causes: HR 0.97 (0.27 to 3.49)

KEY: T2DM=type 2 diabetes, eGFR=estimated glomerular filtration rate, UACR=urine albumin-to-creatinine ratio, ACEi=angiotensin-converting enzyme inhibitor, ARB=angiotensin II receptor blocker, ESRD=end stage renal disease, CV=cardiovascular, HR=hazard ratio, CI=confidence interval.

† Kidney failure (dialysis, transplantation, or eGFR <15 mL/min/1.73 m²), $\geq 50\%$ reduction in eGFR from baseline, or death from kidney-related or CV causes.

FLOW Trial: Baseline Population Characteristics

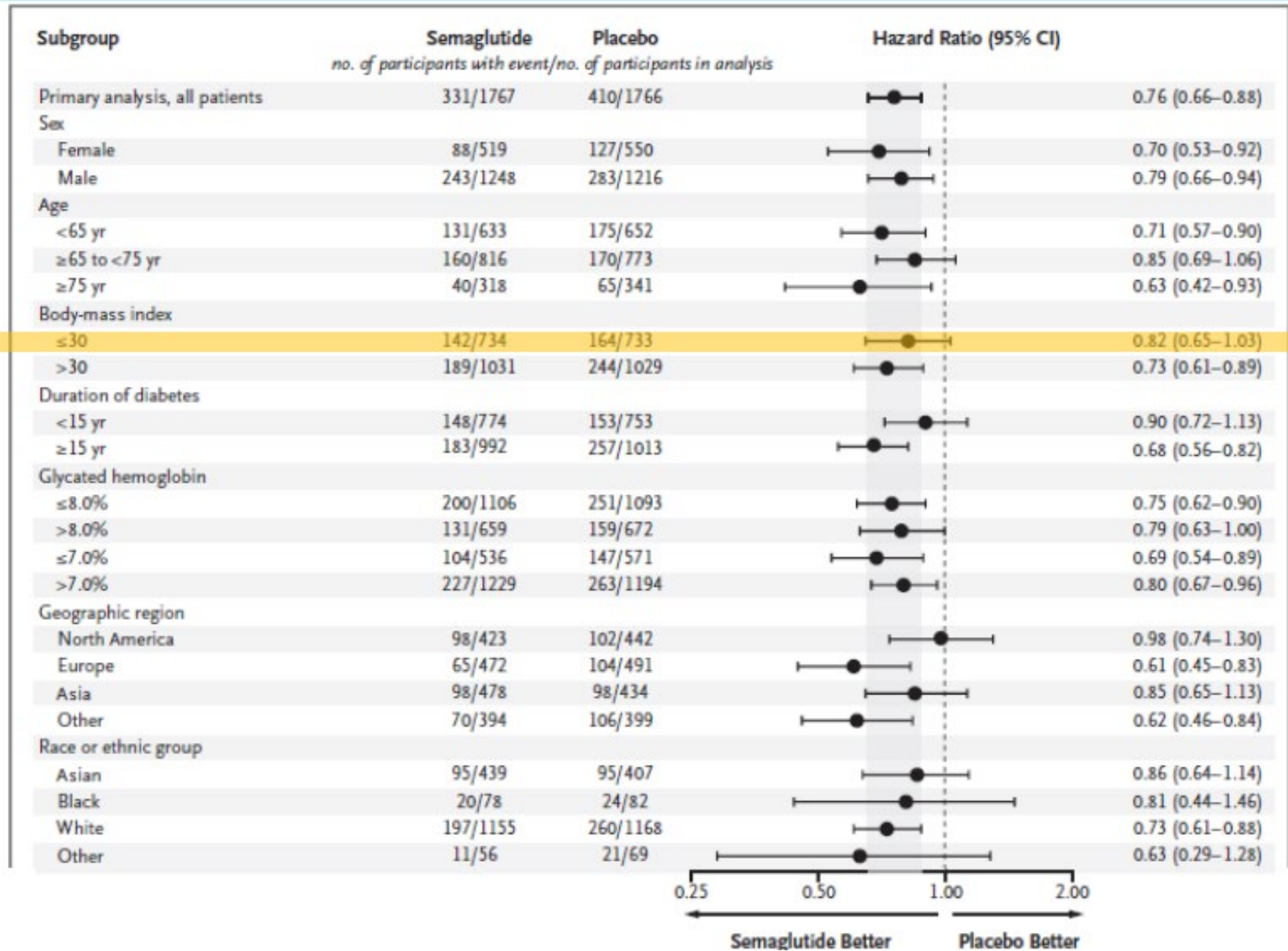
<https://www.nejm.org/doi/full/10.1056/NEJMoa2403347>

Characteristic	Semaglutide (N=1767)	Placebo (N=1766)	Total (N=3533)
Age — yr	66.6±9.0	66.7±9.0	66.6±9.0
Female sex — no. (%)	519 (29.4)	550 (31.1)	1069 (30.3)
Glycated hemoglobin level — %	7.8±1.3	7.8±1.3	7.8±1.3
Body-mass index‡	31.9±6.1	32.0±6.5	32.0±6.3
eGFR — ml/min/1.73 m ² ¶	46.9±15.6	47.1±14.7	47.0±15.2
eGFR distribution — no. (%)¶			
≥60 ml/min/1.73 m ²	366 (20.7)	353 (20.0)	719 (20.4)
≥45 to <60 ml/min/1.73 m ²	515 (29.1)	540 (30.6)	1055 (29.9)
≥30 to <45 ml/min/1.73 m ²	667 (37.7)	691 (39.1)	1358 (38.4)
<30 ml/min/1.73 m ²	218 (12.3)	182 (10.3)	400 (11.3)
Category of albuminuria — no. (%)**			
A1, normoalbuminuria	52 (2.9)	57 (3.2)	109 (3.1)
A2, microalbuminuria	509 (28.8)	495 (28.0)	1004 (28.4)
A3, macroalbuminuria	1205 (68.2)	1214 (68.7)	2419 (68.5)
Medication use — no. (%)			
ACE inhibitor	625 (35.4)	615 (34.8)	1240 (35.1)
ARB	1066 (60.3)	1061 (60.1)	2127 (60.2)
Insulin	1083 (61.3)	1085 (61.4)	2168 (61.4)

FOR INTERNAL KP USE ONLY

FLOW Trial: Subgroup Analysis

- All patients (n= 3533)
- Key takeaway –
 - BMI ≤ 30 (n=1467; 41.5%) did NOT achieve statistically significant benefit after 3.4 years

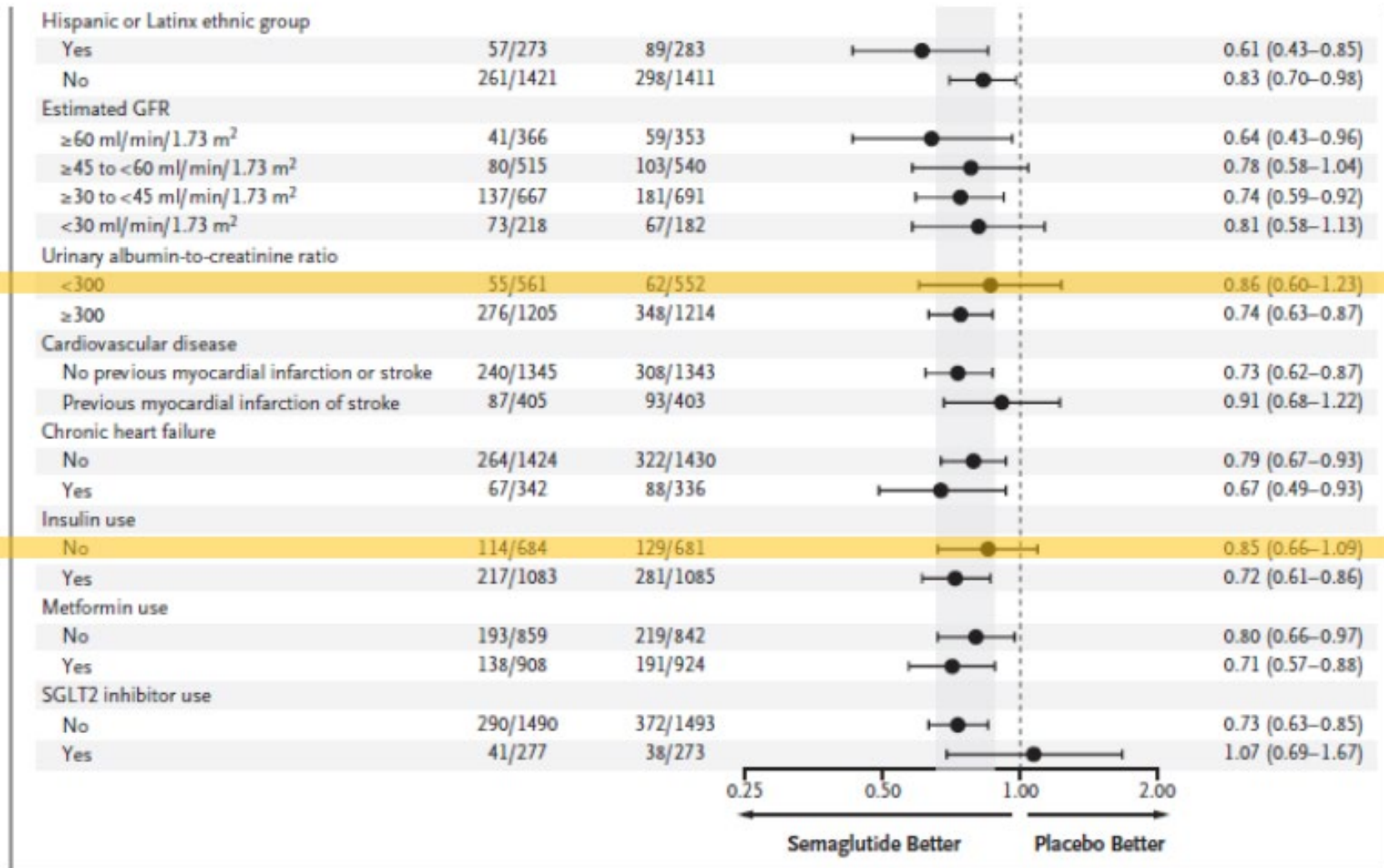


KEY: BMI= body-mass index.

Perkovic V, Tuttle KR, Rossing P, et al. *N Engl J Med.* 2024;391(2):109-121

FLOW Trial: Subgroup Analysis is continued

- All patients (n= 3533)
- Key takeaways–
 - UACR < 300 (n=1113; 31.5%) or not taking insulin (n=1365; 38.6%) did NOT achieve statistically significant benefit after 3.4 years
 - Study not powered for concomitant SGLT2i use



Study Design	Two-part, Phase 3, randomized, double-blind, multicenter trial; n=800	> 50% of participants had T2DM
Duration	Part 1: 72 weeks (published), Part 2: Event driven (ongoing)	
Treatment Arms	semaglutide 2.4 mg weekly vs placebo weekly	
Patient Population	<div style="border: 2px solid red; padding: 2px;">Histological evidence of MASH with fibrosis stage 2 or 3</div> NAS \geq 4 and Score \geq 1 for steatosis, lobular inflammation and hepatocyte ballooning	
Endpoints	Part 1: Two primary binary histology endpoints: <ul style="list-style-type: none"> • Resolution of steatohepatitis without worsening of fibrosis • Improvement in liver fibrosis and no worsening of steatohepatitis Part 2: Time to first clinical outcome (composite of cirrhosis, all cause death, MELD score \geq 15, liver transplant, hepatic decompensation)	

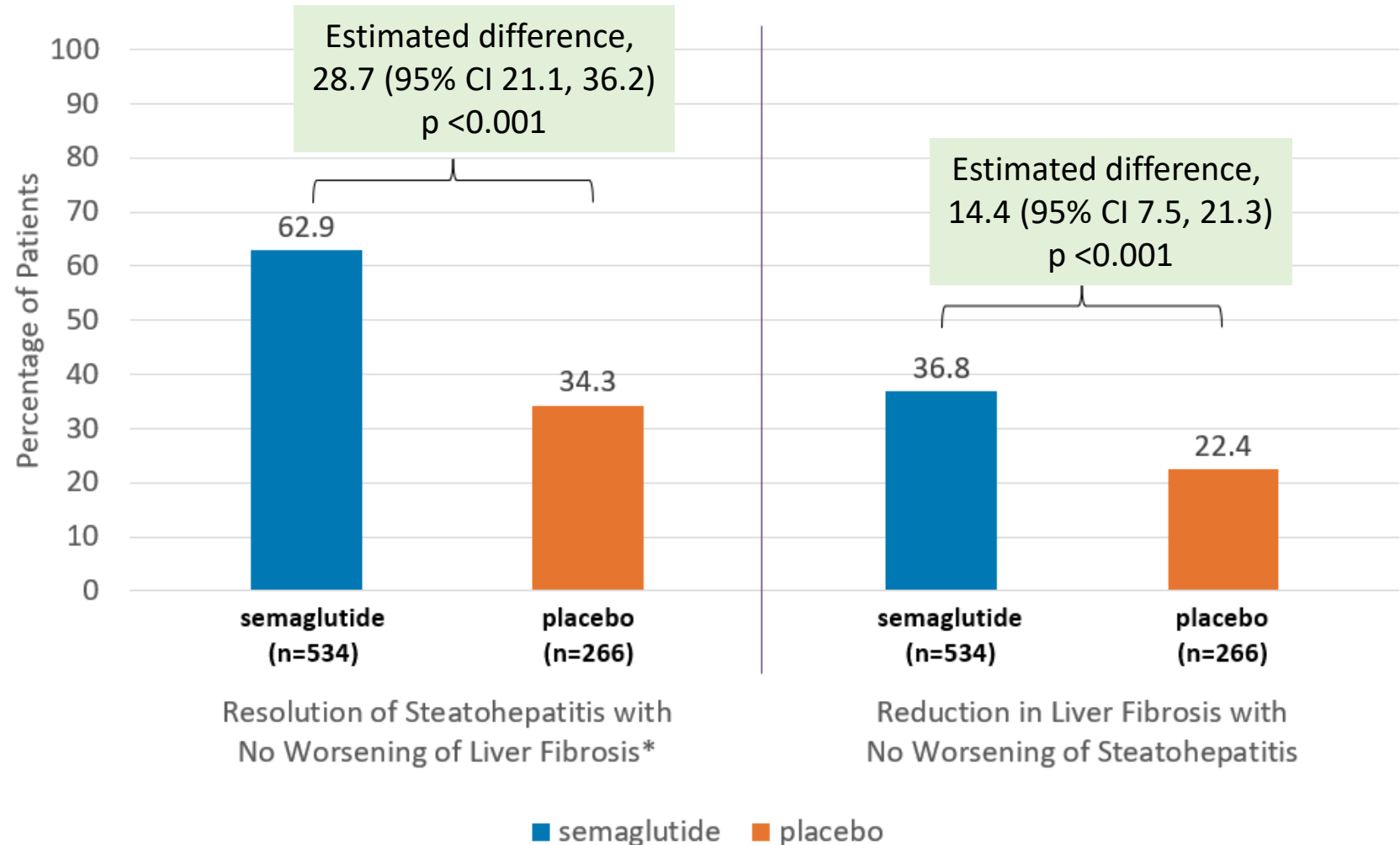
Key: NAS = NASH (MASH) activity score; MELD = Model for End-Stage Liver Disease. Note that at the time ESSENCE was conducted, MASH was called nonalcoholic steatohepatitis (NASH).

GLP-1 agonists for MASH

ESSENCE Trial: Overview

Sanyal AJ, et al; ESSENCE Study Group. Phase 3 Trial of Semaglutide in Metabolic Dysfunction-Associated Steatohepatitis. *N Engl J Med*. 2025 Apr 30.

ESSENCE: Dual Primary Endpoints (Week 72)



Sanyal AJ, et al; ESSENCE Study Group.
Phase 3 Trial of Semaglutide in Metabolic
Dysfunction-Associated Steatohepatitis.
N Engl J Med. 2025 Apr 30.

*Resolution of steatohepatitis defined as NAS 0-1 for inflammation, 0 for ballooning and any value for steatosis according to NASH CRN. No worsening of liver fibrosis defined as no increase in fibrosis score on NASH CRN.

GLP-1 Indications and Areas of Study

Currently FDA-Approved / FDA-Recognized Indications

- **Type 2 Diabetes Mellitus (T2DM)**
 - Multiple GLP-1 agents, multiple studies
- **T2DM + Established ASCVD (CV Risk Reduction)**
 - LEADER (liraglutide)
 - SUSTAIN-6 (semaglutide)
 - SOUL (oral semaglutide)
- **T2DM + Chronic Kidney Disease (CKD)**
 - FLOW trial (semaglutide)
- **Chronic Weight Management (Obesity / Overweight)**
 - Semaglutide (Wegovy)
 - Tirzepatide (Zepbound)
- **ASCVD Risk Reduction (Non-Diabetic)**
 - Wegovy (SELECT trial)
- **Obstructive Sleep Apnea (OSA)**
 - Tirzepatide (Zepbound, SURMOUNT-OSA)
- **Metabolic Liver Disease (MASH / NASH with Fibrosis)**
 - Semaglutide (ESSENCE, Phase 3)

Likely Next FDA Approvals (Late-Stage)

- **Heart Failure with Preserved Ejection Fraction (HFpEF)**
 - Semaglutide (STEP-HFpEF)
- **Chronic Kidney Disease (Expanded / Non-Diabetic Label)**
 - FLOW-based extension logic
- **Expanded CV–Renal Claims in Diabetes**
 - Label evolution rather than new indication

Other Areas of Study (Early)

- **Addiction / Substance Use Disorders**
 - Alcohol use disorder
 - Nicotine dependence
- **Neurodegenerative Disease**
 - Alzheimer disease
 - Parkinson disease
- **Osteoarthritis (Disease-Modifying)**
 - Knee OA pain/function studies
- **Hypertension (Standalone)**
 - Secondary BP effects only
- **PCOS / Reproductive Endocrinology**
- **Peripheral Artery Disease (PAD)**
- **Inflammatory / Immune-Mediated Disease**

GLP-1 Agonists

Overview Summary

Mechanism of Action:

- Synthetic analog of human GLP-1 which results in the following:
 - Glucose-dependent increase in insulin secretion
 - Glucose-dependent inhibition of glucagon secretion
 - Reduced/ Delayed gastric emptying
 - Increased satiety/ Central appetite regulation

Efficacy:

- Expected A1c reduction 0.8-1.8%
- Short-acting agonists primarily reduce post-prandial glucose
- Long-acting agonists have mixed effects on post-prandial and fasting glucose

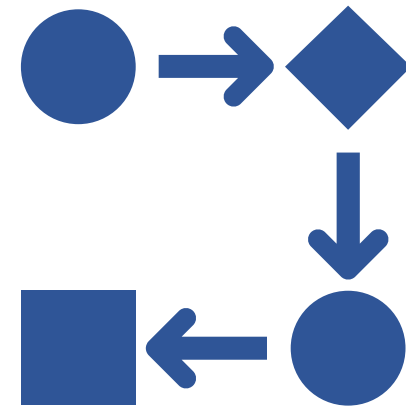
Other effects:

- ASCVD benefits (semaglutide, liraglutide, dulaglutide)
- CKD benefits (seen in LEADER trial (liraglutide) but population too small for indication, FLOW trial (semaglutide) received T2DM/CKD indication)
- Other benefits seen for Weight Loss, OSA, MASH
- Other studies/ indications pending (esp. HF, CKD outside of DM, etc.)

GLP-1 agonists - Place in Therapy

[KPWA Guidelines](#) – Type 2 Diabetes

[KP National Guidelines](#) – Adult Diabetes



New Pillar added in recent years:
Emphasis on utilization of Agents with Cardiovascular & Kidney Benefit

Figure 10.1
Cardiovascular Disease and Risk Management:
Standards of Care in Diabetes - 2026 Diabetes Care
2026;49(Suppl. 1):S216-S245

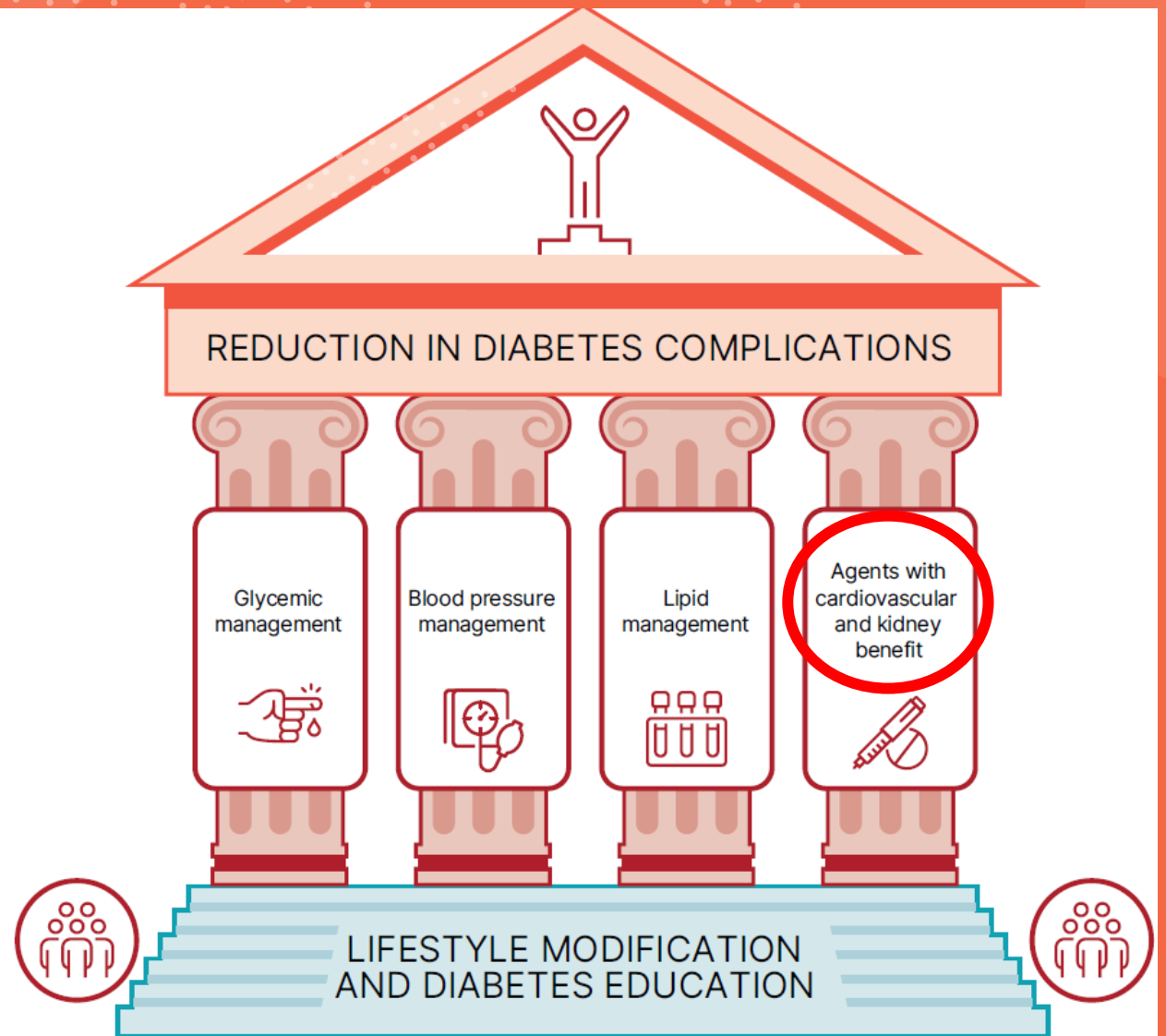
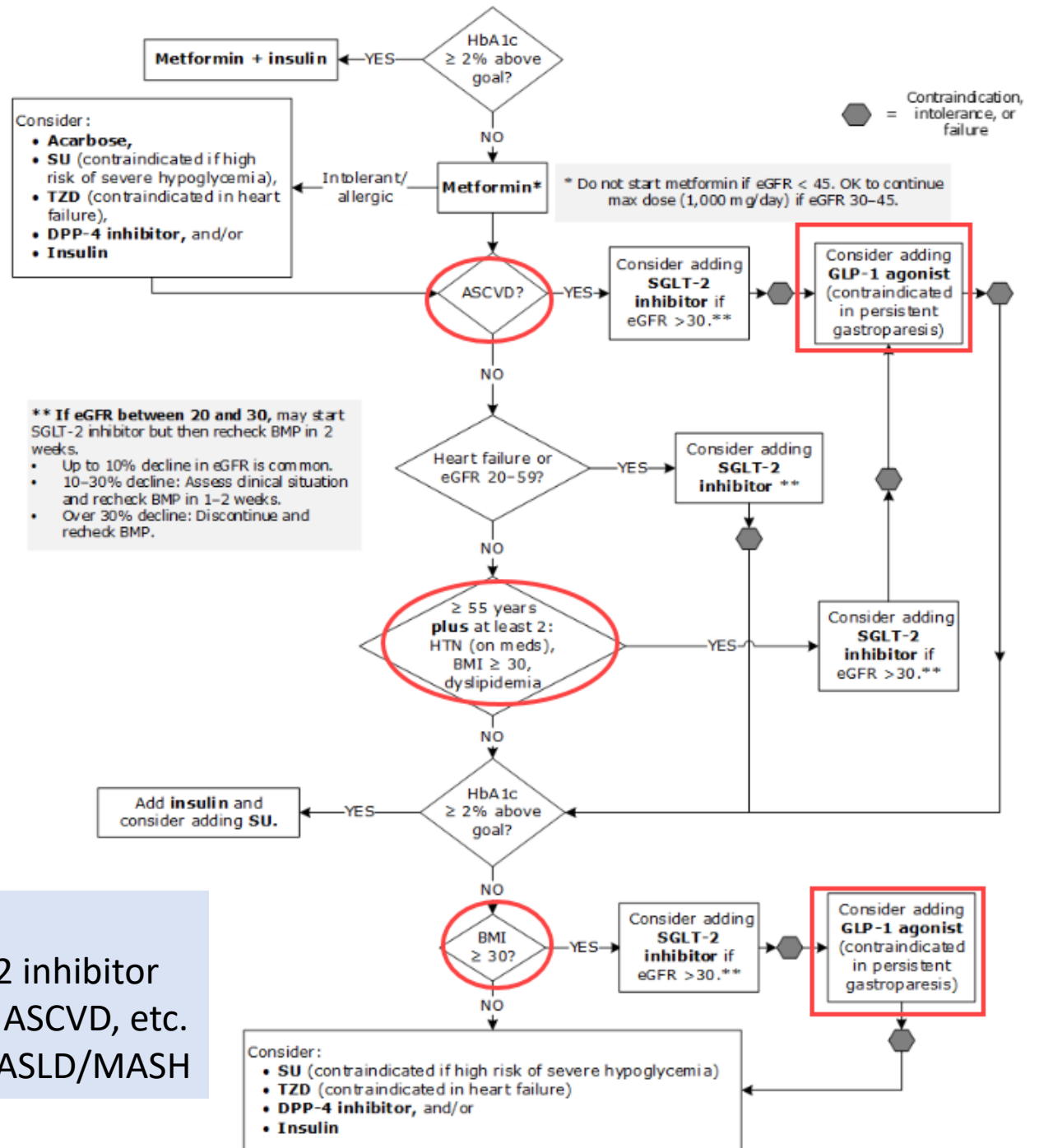


Figure 10.1— Multifactorial approach to reduction in risk of diabetes complications.

KPWA Algorithm for T2DM – GLP -1

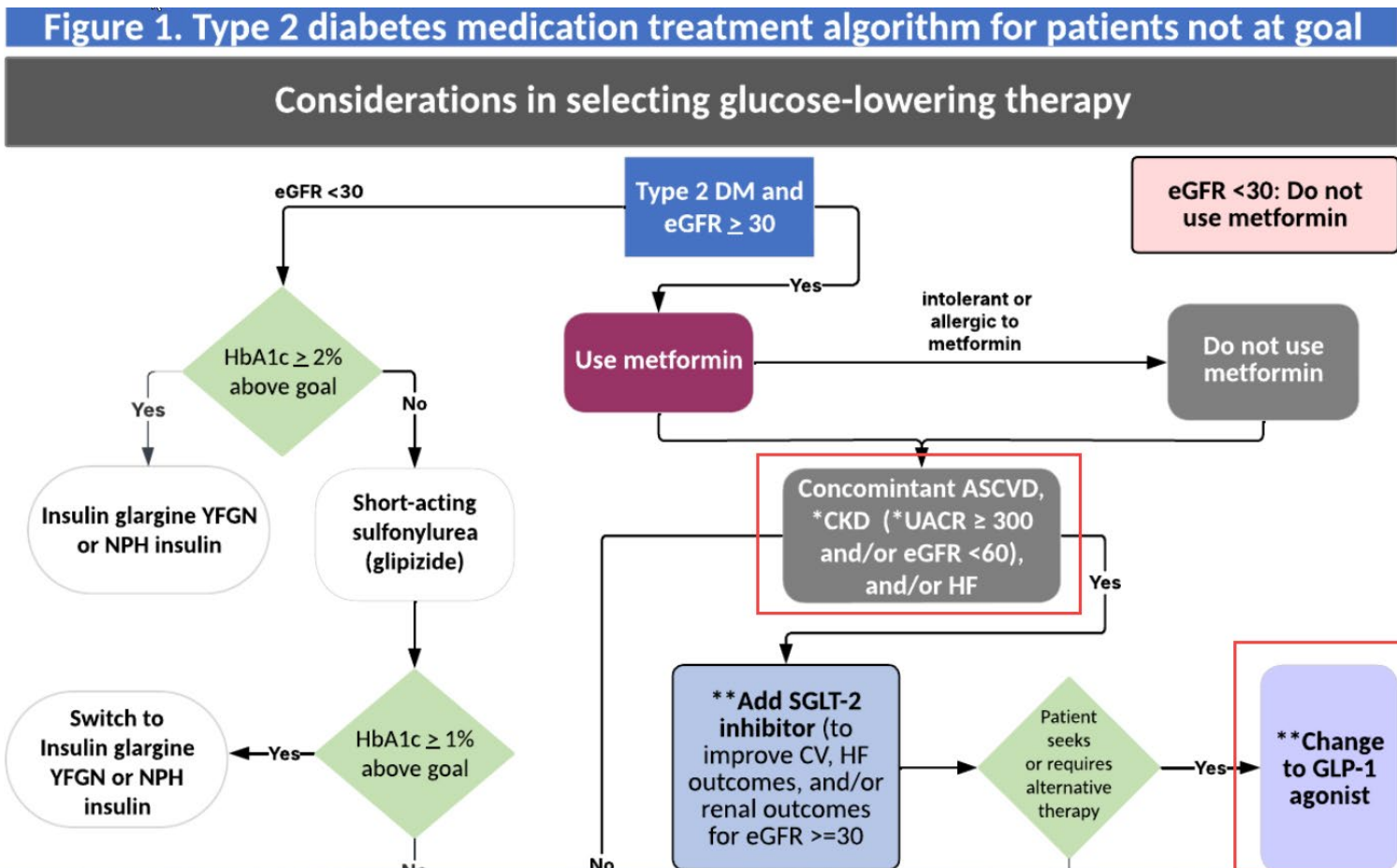
[KPWA Guidelines](#) –
Type 2 Diabetes

- Last reviewed in 2024
- GLP-1 should be considered typically after SGLT2 inhibitor in patients with co-morbid ASCVD/ high-risk for ASCVD, etc.
- Algorithm doesn't specifically call out CKD or MASLD/MASH



KP National Algorithm for T2DM not at glycemic goal

KP National Guidelines – Adult Diabetes
Last reviewed mid 2025

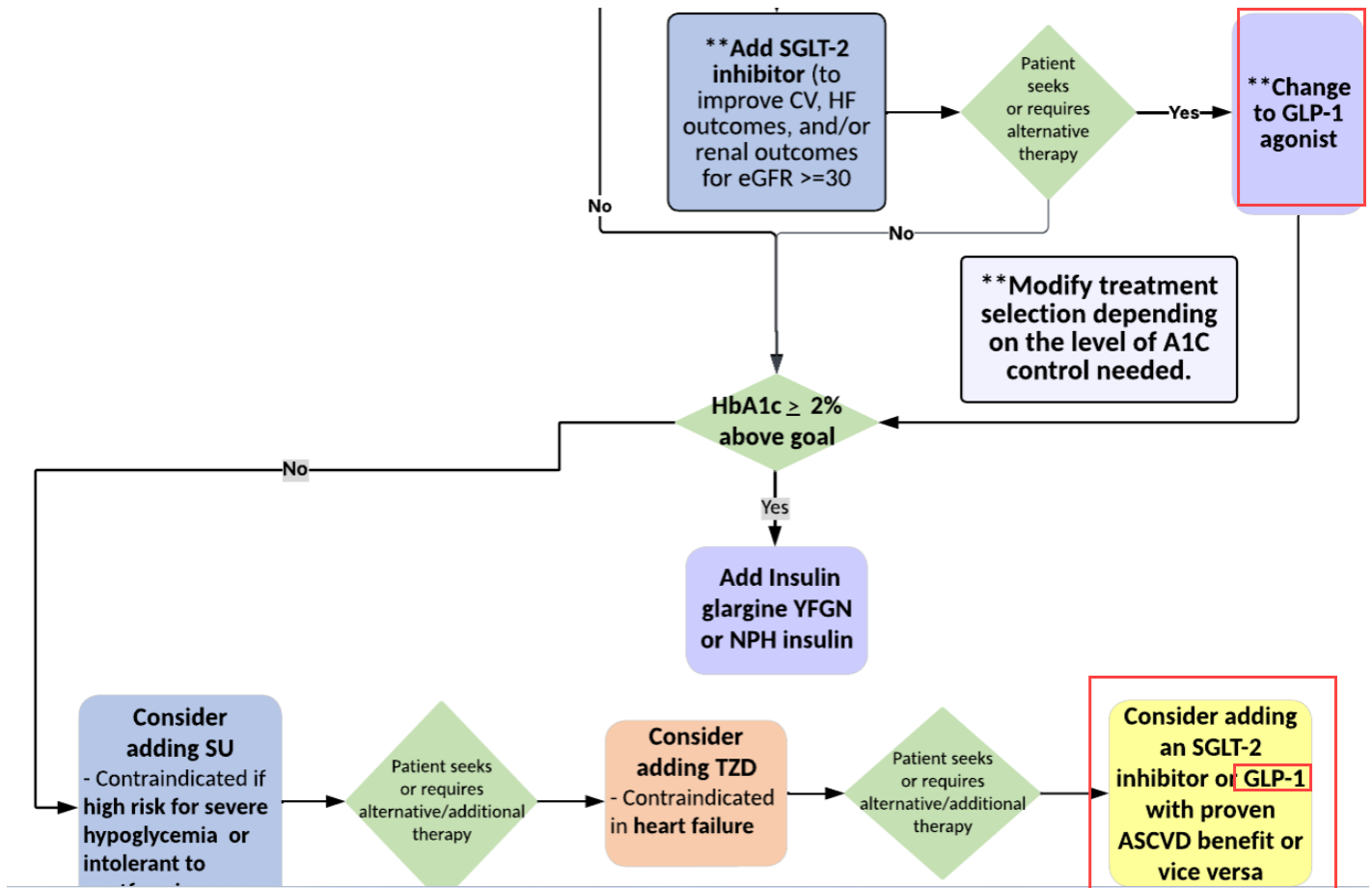


*For patients with concomitant ASCVD, *CKD (see definition above), and/or HF, consider SGLT2 inhibitor or GLP-1 if needed*

Continued on next slide

KP National Adult T2D Algorithm Continued

[KP National Guidelines](#) – Adult Diabetes



For patients without compelling co-morbidity, consider maximizing other oral options as appropriate

Primary Care Algorithm: When to consider a GLP-1 agonist in T2DM

T2DM + ASCVD or high CV risk

T2DM + CKD + albuminuria

T2DM + obesity (especially if on insulin therapy)

T2DM + MASH (F2 or F3)

T2DM + obesity + severe OSA (AHI \geq 30)

Audience
Participation
Question 1

Which factor most strongly supports early
GLP-1 agonist initiation in T2DM?

A. Elevated A1C alone

B. Presence of ASCVD

C. Duration of diabetes

D. Prior insulin use

Audience
Participation
Discussion 1

Which factor most strongly supports early GLP-1 agonist initiation in T2DM?

- A. Elevated A1c alone
- B. Presence of ASCVD
- C. Duration of diabetes
- D. Prior insulin use

GLP-1 agonist	Target dose per ASCVD study design
Liraglutide	1.8 mg SQ daily
Semaglutide (injectable)	1 mg SQ weekly
Semaglutide (oral)	14 mg orally every day (PK extrapolation would suggest 9mg orally every day of updated formulation)
Dulaglutide	1.5 mg SQ weekly
Tirzepatide	15 mg SQ weekly*

GLP-1 agonist target Dose for ASCVD Risk Reduction in T2DM

**Draft - Report recently published, waiting for FDA approval to ASCVD risk reduction. In the SURPASS-CVOT trial, 72.7% of patients in the tirzepatide arm were taking 15mg SQ weekly*

[Cardiovascular Outcomes with Tirzepatide versus Dulaglutide in Type 2 Diabetes | New England Journal of Medicine](#)

Audience Participation Question 2

- S.S. is a 55-year-old white woman with obesity and T2DM who is treated with:
 - metformin 1 g twice daily and
 - empagliflozin 12.5mg daily (half of 25mg tab)
- She has elevated postprandial Blood Glucose.
- Most recent A1C is 7.5%.
- Which best represents how this patient's diabetes regimen should be changed?
 - A. Increase the metformin dose to 850 mg three times daily.
 - B. Substitute metformin with a sulfonylurea.
 - C. Add an evening dose of NPH insulin.
 - D. Add liraglutide SQ injection once daily

Audience Participation Discussion 2

- A. Increase the metformin dose to 850 mg three times daily.
- B. Substitute metformin with a sulfonylurea.
- C. Add an evening dose of NPH insulin.
- D. Add liraglutide SQ injection once daily

- When an oral agent does not control hyperglycemia in a patient with T2DM at goal, adding – not substituting – is required. (Answer B incorrect).
- Patient has elevated postprandial BG values, and QHS NPH would primarily manage AM Fasting blood glucose elevation. (Answer C incorrect).
- Increasing Metformin from 2000mg to 2550mg/day would have minimal additional glucose-lowering effects. (Answer A incorrect).
- Patient has risk factors for ASCVD (age 55, obesity) and is already taking metformin & SGLT2i. Therefore, adding on GLP-1 agonist would be appropriate.

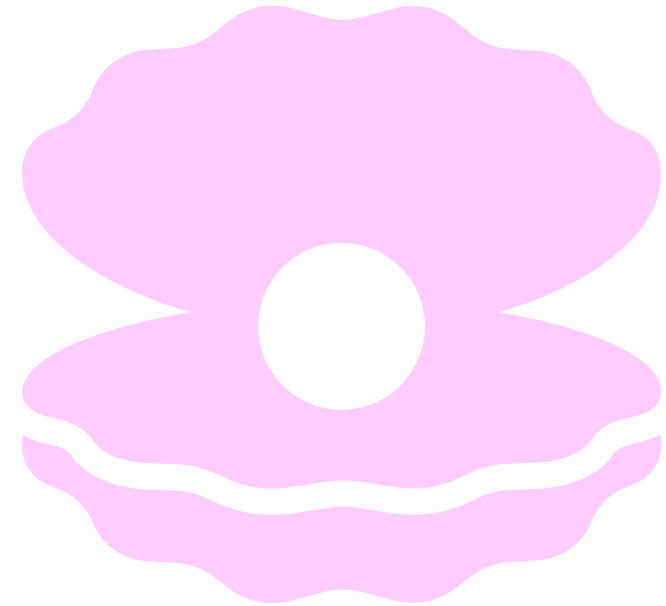
Clinical Pearls when starting/ titrating GLP-1 agonists

Look for opportunities to deprescribe other hypoglycemics

- Insulin (especially fast-acting insulin)
- Secretagogues (sulfonylureas, meglitinides)

DO NOT use GLP-1 agonists with DPP4 inhibitors

- Duplication of mechanism of action, no evidence to support concomitant use



Selecting a GLP-1 agonist

KP preferred options



Incremental Cost- Effectiveness Ratio (ICER) Analysis - Diabetes

- Last ICER analysis specific to DM was released in 2022
- More recent ICER results are driven by obesity and cardiometabolic outcomes and don't look specifically at diabetes.

Indication	ICER Conclusion
T2D treatment (older models)	Marginal unless priced lower
T2D with CV risk (modern data)	Increasingly cost-effective
Obesity + cardiometabolic risk	✓ Cost-effective
Prediabetes prevention	✗ Not cost-effective
Budget impact	! Major concern despite good ICERs

ICER Analysis

– Not specific to Diabetes

ICER update – October 2025

- Considered semaglutide and tirzepatide cost effective at \$100,000 per QALY gained
- Yet, with significant concern for impact on budget

Dimension	2022 ICER Report	2025 ICER Report
Scope	4 FDA-approved drugs: Semaglutide (injectable), Liraglutide, Phentermine/Topiramate, Bupropion/Naltrexone	Focused on Semaglutide (injectable & oral) and Tirzepatide
Population	Adults with obesity or overweight + comorbidity, excluding diabetes	Adults with obesity or overweight + comorbidity, excluding diabetes
Weight Loss (vs. placebo)	Semaglutide: -13.7% Phentermine/Topiramate: -9.1% Liraglutide: -5.0% Bupropion/Naltrexone: -4.6%	Tirzepatide: -17.8% Injectable Semaglutide: -13.1% Oral Semaglutide: -11.4%
CV Outcomes	Semaglutide: CV benefit inferred from diabetes trials Liraglutide: modest CV benefit Others: no CV data	Semaglutide: SELECT trial shows ↓MACE (HR 0.80) Tirzepatide: SURPASS CVOT shows ↓MACE (HR 0.72)
Cost per QALY	Semaglutide: \$238K Liraglutide: \$485K Phentermine/Topiramate: \$8K Bupropion/Naltrexone: \$124K	Tirzepatide: \$53.4K Injectable Semaglutide: \$61.4K Oral Semaglutide: \$69.3K
Adverse Events	Semaglutide: GI AEs common, thyroid warning Liraglutide: GI + gallbladder AEs P/T: psychiatric AEs B/N: psychiatric + CV AEs	GI AEs common across all Serious AEs <10% Gallbladder AEs: SEM > T2P Mental health: SEM may lower SF-36 MCS
Persistence	Semaglutide: ~36% at 1 year Oral SEM: ~25% P/T: ~50–70% at 6 months	Injectable SEM: 36% Oral SEM: 25% Tirzepatide: 54–74% at 6 months
Budget Impact	Semaglutide not affordable at WAC; P/T cost-saving if generic	All 3 drugs cost-effective but <1% of eligible population can be treated before exceeding ICER's \$880M/year threshold

Audience Participation Question 3

For a T2DM patient with ASCVD and cost concerns, best initial GLP-1 agonist?

A. Injectable semaglutide

B. Oral semaglutide

C. Generic liraglutide

D. Exenatide

Audience
Participation
Discussion 3

For a T2DM patient with ASCVD and cost concerns, best initial GLP-1 agonist?

A. Injectable semaglutide

B. Oral semaglutide

C. Generic liraglutide

D. Exenatide

The Case for Liraglutide

Generic

- Better cost for both Kaiser and Patient
- 90-day supply available immediately

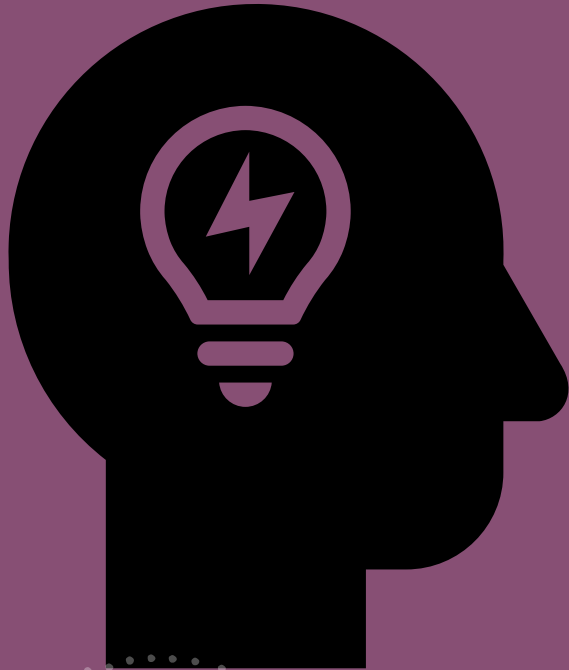
Similar A1c lowering
to Semaglutide

Evidence in DM for
ASCVD risk reduction
and reduction in CKD
progression

Easy to titrate
(same pen can deliver
multiple doses)

Average weight loss in
RCT 6-7% vs Real
World up to 18%

Think Liraglutide



Type 2 Diabetes - 1st GLP-1 agent (PA still required)

Consideration	Liraglutide
A1c lowering	1.1-1.3% (similar to Ozempic)
Weight loss	-2.5 kg (Ozempic ~4kg)
Evidence in cardiac risk reduction?	Yes
Evidence in CKD?	Yes
Generic availability?	Yes
Number of patients that can be treated with liraglutide for every 1 Ozempic patient.	3 or more

Liraglutide can be dosed up to 3.0mg

Off-label use in DM requires 2 injections/day with generic Victoza product

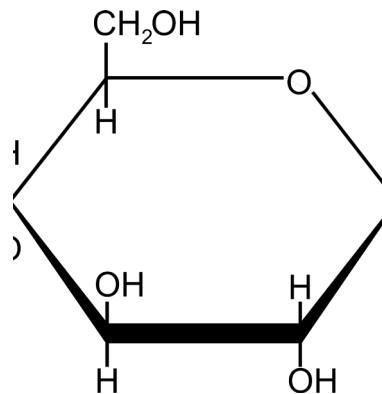


Weight Loss Benefits

Higher liraglutide doses, especially 3.0 mg, produce greater weight loss than lower doses in clinical trials.

SCALE Diabetes RCT:

<https://jamanetwork.com/journals/jama/fullarticle/2428956>

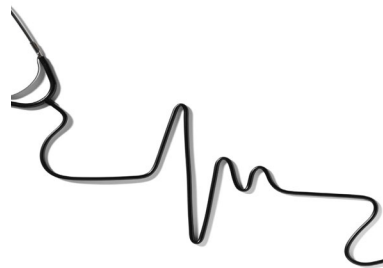


Glycemic Control Improvement

3.0 mg dose reduces hemoglobin A1c and insulin requirements, enhancing glycemic control over placebo.

SCALE Insulin RCT:

<https://diabetesjournals.org/care/article/43/5/1085/35698/Efficacy-and-Safety-of-Liraglutide-3-0-mg-in>



Dose-Dependent Relationship

Phase II trials demonstrate a clear dose-dependent effect on weight reduction from 1.2 mg to 3.0 mg doses.

Dose-ranging Phase II trials:

<https://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2809%2961375-1/fulltext>

Dosing Liraglutide Beyond 1.8 mg/day



Dosing Strategies

Covered for Commercial and Medicare

Daily dose	Potential strategies
2.4mg	Two injections of 1.2mg each
	One injection of 1.8mg + One injection of 0.6mg
3.0mg	One injection of 1.8mg + One injection of 1.2mg

Multiple Daily Injections

- Doses above 1.8 mg using generic liraglutide (Victoza) product require two daily injections
- Similar to splitting insulin doses –
 - Ex. Insulin pens often only dial up to max 60-80 units depending on pen, so higher doses must be split into 2 injections note that insulin doses above 50 units are often split into 2 injections

Injection Technique

- Injections should be spaced 2 inches apart and injection sites rotated to prevent lipodystrophy.

Needle Use and Sterility

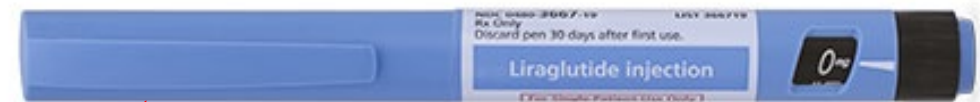
- Patients should use a new needle for every injection
- Note: liraglutide pen devices do not include needles

Liraglutide Product Updates

- Additional generics coming to market
- KP members will likely see this new product in the near future



- New Meitheal Pharmaceuticals generic Product
- Expected substantial cost reductions with additional generic competition
 - Note pen cap is different color than current Teva generic product



Current Teva Product

(Current as
of 3/2026)

Coverage Considerations – KP Commercial coverage for Liraglutide

Note: PA required on all GLP-1 agonists

T2D + ...	Pre-requisite Meds	A1c requirements or other considerations
Clinical ASCVD or high-risk of ASCVD*	Metformin	Independent of A1c/ weight
CKD ** with albuminuria	Metformin, ACE or ARB	Independent of A1c/ weight
MASH/ MASLD (fibrosis F2 or F3 within 1 year)	N/A	Independent of A1c, In conjunction with a lifestyle program and GI specialist <i>May use either liraglutide or semaglutide</i>
BMI ≥ 30	Metformin	A1c remains > 7.0% with metformin
Severe OSA (AHI ≥ 30) + BMI ≥ 30	N/A	Independent of A1c, PAP use

*for purposes of GLP-1 commercial coverage, includes having ASCVD as defined in [ASCVD secondary prevention clinical guideline](#) or high-risk for ASCVD which is defined as - age ≥55 years old PLUS 2 or more of the following: hypertension (on medication), obesity (BMI ≥30), dyslipidemia, or severe obstructive sleep apnea (OSA) defined by apnea-hypopnea index (AHI) ≥ 30

**for purposes of GLP-1 commercial coverage, CKD defined as: eGFR 20 to <60 mL/min/1.73m²) + Urine Albumin to Creatinine Ratio (UACR) > 300 or Urine Protein to Creatinine Ratio (UPCR) > 0.3

GLP-1 agonist Commercial Coverage Beyond Liraglutide

- Coverage of other GLP-1 agonists depends on multiple factors:
 - patient co-morbidities
 - trials/ failures/ or contraindications of other medication or medication classes, especially
 - Liraglutide
 - SGLT2 inhibitors
- Once weekly preferred option – Ozempic (semaglutide)
- For specific coverage criteria, see the following:
 - [Liraglutide \(generic Victoza\)](#)
 - [Semaglutide \(Ozempic\)](#)
 - [Tirzepatide \(Mounjaro\)](#)

Type 2 Diabetes GLP-1 agonist coverage —

Medicare insurance

1

Liraglutide

- Required before access to other GLP-1 therapies
 - Prior Authorization still required
 - Liraglutide adjudicates as a generic (more affordable)
 - Metformin not required

2

Semaglutide (Ozempic)

- Available after trial/failure of liraglutide
- May be considered as initial GLP-1 therapy in patients with T2DM + CKD*

*LEADER outcome trial showed benefit of liraglutide in T2DM + CKD but population was not large enough to go for indication. Recommend consideration of liraglutide for T2DM + CKD due to affordability

Audience Participation Question #4

- 78 yo male with T2DM, diagnosed at age 58
- Current Meds: Metformin 1g, Jardiance 12.5mg, Glargine 30u QAM; Lispro 5-0-10-0
- A1c 9.0%
- BMI 35
- CKD – Stage 3a with eGFR 40-50s
- Weight gain of 10 pounds in the past year since addition of insulin
- Tried Jardiance 3 months ago due to CKD and high A1c; tolerating but no change in Blood Glucose readings.

What intervention do you recommend?

- A. Titrate Lispro
- B. Titrate Metformin
- C. Start CGM
- D. Start GLP1 agonist

Audience Participation Discussion 4

- 78 yo male with T2DM, diagnosed at age 58
- Current Meds: Metformin 1gm/day, Jardiance 12.5mg/day, Glargine 30u QAM; Lispro 5-0-10-0
- A1c 9.0%
- BMI 35
- CKD – Stage 3a with eGFR 40-50s
- Weight gain of 10 pounds in the past year since addition of insulin
- Tried Jardiance 3 months ago due to CKD and high A1c; tolerating but no change in Blood Glucose readings.

What intervention do you recommend?

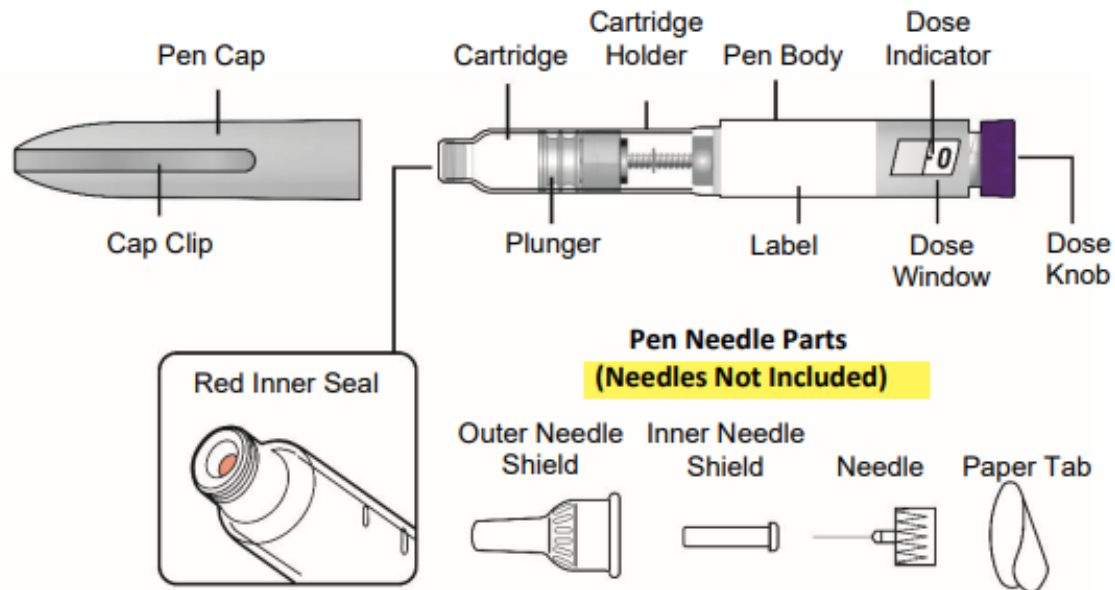
- A. Titrate Lispro – could, but has been experiencing weight gain on insulin and is high risk for hypoglycemia
- B. Titrate Metformin – probably not the best choice given lower eGFR
- C. Start CGM – could, but if you start GLP-1, might be able to discontinue the lispro and lower risk for hypoglycemia, so may not be as necessary
- D. Start GLP1 agonist ---- a reasonable choice given obesity, high A1c, and CKD

GLP-1 Product updates and emerging oral therapies



Mounjaro and Zepbound KwikPens

- New Multidose Pens
- Currently available for Zepbound self-pay options, may be available soon for Mounjaro
- Each pen contains 4 doses, so only 1 pen needed per month
- Ordering to be updated in KP HealthConnect



Instructions for use:

<https://pi.lilly.com/us/zepbound-kwikpen-us-ifu.pdf?s=ug3>

<https://pi.lilly.com/ca/mounjaro-ca-ifu-kp.pdf>

Oral Ozempic

Feb 2026 - Novo

Nordisk announces will

brand reformulated

Rybelsus as Ozempic

Note: Existing patients on Rybelsus® (semaglutide) tablets 3 mg, 7 mg, and 14 mg will need a new prescription for Ozempic® tablets from their HCP

Rybelsus mg	Equivalent oral Ozempic mg
3 mg →	1.5 mg
7 mg →	4 mg
14 mg →	9 mg

	Oral semaglutide basics
Rybelsus Dosing (R1 formulation)	<ul style="list-style-type: none"> 3mg daily x 30 days <ul style="list-style-type: none"> ❖ initiation dose Then increase to 7mg daily x 30 days Then increase to 14mg daily if needed, or continue at 7mg
Oral Ozempic ** (R2 formulation) - Dosing <i>Formal launch in US on May 4th</i> <i>**same base as oral Wegovy</i>	<ul style="list-style-type: none"> 1.5mg orally x 30 days <ul style="list-style-type: none"> ❖ initiation dose not intended for glycemic control Then 4mg orally daily May increase to 9mg daily after 30 days of 4mg dose if BG remains above target
Oral Ozempic (R2) Improvements over Rybelsus (R1)	<ul style="list-style-type: none"> Smaller pill Lower mg needed to achieve same
Key counseling points for oral semaglutide	<ul style="list-style-type: none"> Take orally once daily with sip of water <ul style="list-style-type: none"> • max 4 oz • Take first thing, 30 minutes before eating • Swallow whole (do not crush or chew) • Take separately from all other medications • Keep in original bottle until ready to take

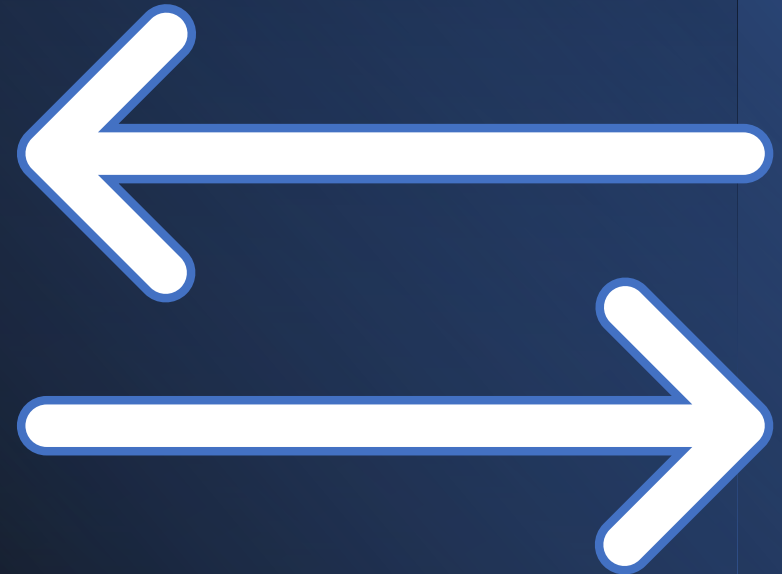
Aside – oral Wegovy approved in Dec 2025

Currently not available to
order through KP
pharmacies

Orders may be sent to
outside pharmacies or
participating self-pay
program or if Medicare
coverage
(NovoCares or GoodRx)

Guiding Principles When Switching GLP-1 therapy

- Only liraglutide and initial Ozempic (semaglutide) dosing are available with dials for titration
- Consider Reasons for Switch when selecting starting dose of new agent
 - If due to GI symptoms
 - wait for symptom resolution before restarting GLP-1 agonist.
 - consider starting low/initial dose, and potentially slower than typical titration
- Start with Equivalent or one dose lower, titrate up as tolerated
- Discontinue current GLP-1
 - If switching from daily → weekly administration
 - 1st dose can be next day
 - If switching from weekly → any another agent, wait 7 days after last dose before starting new agent



Switching from Injectable to Oral Semaglutide

*Recommendations based on Wegovy Package Insert and Rybelsus/Ozempic Package Insert

Injectable Semaglutide Dose	Tolerating or taking current injectable dose x 4 weeks?	Comparable Oral Semaglutide Dose
0.25 mg SQ once weekly	No	Consider alternative
	Yes	Switch to 1.5mg by mouth daily for 30 days, then titrate per typical dosing titration based on indication
0.5 mg SQ once weekly	No – mild side effects or not on dose x 4 weeks	Switch to 4 mg by mouth daily for 30 days, then titrate per typical dosing titration based on indication
	Yes	Switch to 9 mg by mouth daily for 30 days Consider titration to 25mg after 30 days (Wegovy only)
1.0 mg SQ once weekly Disclaimer: <i>an oral dose equivalent to 1.0 mg SQ semaglutide has not been established</i>	Yes	Consider initial switch to 9mg by mouth daily (May titrate after 30 days to 25mg orally daily for Wegovy)
Ozempic 2mg or Wegovy 1.7mg or 2.4 mg once weekly	Yes	For Wegovy only - Switch to 25mg oral daily dose For Oral Ozempic – 9mg is maximum dose

Notes: Both oral Wegovy and oral Ozempic are Non-formulary as of March 2026.

- **Oral Wegovy is not available at KP Pharmacies;** coverage for Medicare members may be requested under medical necessity review for members with co-morbid ASCVD and BMI 27+
- **Oral Ozempic will replace oral Rybelsus.** It is a reformulated version of Rybelsus that is better absorbed/ tolerated. Launch of oral Ozempic is expected launch in May 2026. Dosing of oral Ozempic is similar to oral Wegovy in dose/ titration schedule.

Orforglipron (Lilly's oral GLP-1 agent)

What is Orforglipron?

- Once daily, oral, small-molecule, non-peptide GLP-1 agonist
- Does NOT require fasting or water restriction
- Expected FDA approval anytime, unclear what dose (12mg? 36 mg?)

Key Studies for T2DM

- ACHIEVE - 1 (vs placebo) - 40 week, phase 3, DB, PCT, (3mg, 12mg, 36mg, vs placebo) in T2DM
ACHIEVE - 2 (vs dapagliflozin) (not yet published)
- ACHIEVE - 3 (vs oral semaglutide) 52 week, open-label, non-inferiority, randomized phase 3 trial

Key Side effects

- Nausea, vomiting, diarrhea (generally dose-dependent, mild to moderate)
- Discontinuation rates - ~ 5-10%

ACHIEVE 1, <https://pubmed.ncbi.nlm.nih.gov/40544435/>

ACHIEVE 3, <https://pubmed.ncbi.nlm.nih.gov/41765029/>

Primary Care
GLP-1 Prescribing
Support



KPWA Diabetes Quick Care Guide



QCG provides quick answers for GLP-1 related common questions, such as:

When to hold GLP-1 agonists?

When should a GLP-1 agonist be restarted/ re-titrated after missed doses?

What should be monitored in a patient taking GLP-1 agonist therapy?

Links to SmartRxs, CDM Referrals



Limitation: Current QCG for GLP-1 agonist is mainly focused on DM/ weight related concerns.



News: We are in the process of developing a standalone practice resource specific for GLP-1 agonist therapy

This will enable more nimble updates for rapidly changing landscape

Diabetes Topics

[Determining Diabetes Type](#)

[Continuous Glucose Monitoring](#)

[Hypoglycemia](#)

[Diabetic Foot Infections](#)

[Chronic Disease Management](#)

[Type 1 Diabetes Referrals](#)

[Type 2 Diabetes Treatment](#)

[Type 2 Diabetes Referrals](#)

[SGLT-2 Inhibitors](#)

[GLP-1 Agonists](#)

Diabetes – Type 2 (non-insulin) SmartRx

recommended to access GLP-1 orders through SmartRx

- SmartRx identifies liraglutide as preferred GLP-1 the Smart Rx
- Additional updates pending

SmartSets, Panels, & Express Lanes Search panels and SmartSets by user 🔍 (Alt+1)

Name	User Version Name	Type
DIABETES-TYPE 2 (NON INSULIN) SMART RX		Order Panel



DIABETES-TYPE 2 (NON INSULIN) SMART RX

[Type 2 Diabetes Treatment Algorithm](#)

** To order insulin, refer to the INSULIN ORDERS Smart Rx.

- [Type 2 Diabetes Clinical Guidelines](#)

- 1st Line: Metformin
- 2nd Line: SGLT-2 Inhibitor (No PA needed to order)
- 3rd Line: GLP-1 Agonist (PA Required)
- Other options based on patient characteristics
- REF CHRONIC DISEASE MANAGEMENT (CDM)



3rd Line: GLP-1 Agonist (PA Required)

Consider especially for patients with elevated BMI and at risk for ASCVD who have tried SGLT-2 inhibitors for at least 3 months.

Drug Name	Recommended Dosing
LIRAGLUTIDE <i>(Preferred)</i> <i>Prior Auth</i>	<ul style="list-style-type: none"> • Take 0.6 mg daily x 1 week, then increase to 1.2 mg daily • If additional glycemic control is needed after an additional week, may increase to 1.8 mg daily • <i>Order pen needles for new starts (not included with liraglutide pens)</i>
SEMAGLUTIDE <i>Prior Auth - trial of liraglutide required</i>	<ul style="list-style-type: none"> • Start with 0.25 mg once weekly for 4 weeks; then increase to 0.5 mg once weekly • If additional glycemic control is needed after at least 4 weeks on the 0.5 mg dose, may increase to 1 mg once weekly • If additional glycemic control is needed after at least 4 weeks on the 1 mg dose, may increase to 2 mg once weekly but studies show limited benefit • Maximum dosage is 2 mg once weekly • <i>Pen needles included with semaglutide pens</i>

- Liraglutide (VICTOZA) Pens + Needles
- semaglutide (OZEMPIC) 0.25 mg or 0.5 mg INITIAL titration
Disp-3 mL, R-11
- semaglutide (OZEMPIC) 1 mg MAINTENANCE dose
- semaglutide (OZEMPIC) 2 mg MAINTENANCE dose

SmartPhrase Help: .GLP1 Coverage Criteria

Purpose: Help provide guidance to preferred GLP-1 agents for various insurance types during a visit as needed

Provide an overview of Prior Authorization criteria for Commercial/ Medicare Plans

- Allows for easier comparison between GLP-1 medicines
- For Commercial plans: Provides links directly to coverage criteria

Utilizes disappearing text so no need to delete

Step 1:
Type **.GLP1CoverageCriteria**
in note

{ ⓘ *Disappearing text, no need to delete ->*

GLP1 Coverage Criteria by Insurance ▾

GLP-1s require PA (Commercial or Medicare)

1) Order appropriate medication

*2) Submit a PA request through **staff message** using SmartPhrase **.RxPriorAuthorization** to Epic Pool P Pharmacy Benefit Help Desk Technician*

*3) Expect a **staff message** response regarding the PA request, and should get a fax notification of the outcome*

:1}

Step 2:
Select insurance from drop
down

GLP1 Coverage Criteria by Insurance ▾

- Medicare
- Commercial
- Sound Health Wellness
- Molina
- Self Pay

Demonstration Graphics

GLP1 Coverage Criteria SmartPhrase – Indications based on insurance type

Commercial Insurance



Medicare Insurance

Categorized by indication
Cascades into specific PA for condition

Commercial

- T2DM
- T1DM or LADA
- ASCVD + Obesity/Overweight (BMI >= 27) and no T2DM
- Severe OSA + Obesity (BMI >= 30)
- MASH
- Weight Loss Rider

Medicare

- T2DM
- BMI >= 30 AND moderate to severe OSA
- BMI >= 27 AND ASCVD
- MASH
- T1DM - Not Covered. E-consult Diabetes or contact primary endocrinologist

Commercial Insurance GLP1 Coverage Criteria for patients with T2DM

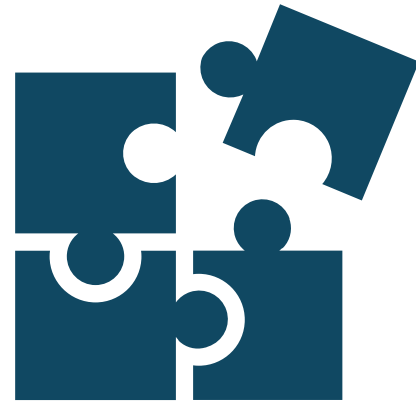
- o T2DM - A1c $\geq 7.0\%$ but $\leq 10\%$
 - o **Liraglutide**
 - o BMI ≥ 30 : requires max tolerated metformin dose
 - o BMI < 30 : requires max tolerated metformin dose + trial of 2 other med classes
 - o **Semaglutide (Ozempic)**
 - o BMI ≥ 30 : requires max tolerated metformin dose + 3 month trial of SGLT2i + trial of liraglutide
 - o **Tirzepatide (Mounjaro)**
 - o Meet criteria for semaglutide + Trial/failure of semaglutide
 - **GLP-1 Failure definition:** Failure of GLP-1 agent considered if patient is unable to achieve A1c $< 7.5\%$ after a trial of at least 3 months
- o T2DM + significant insulin resistance
 - o Significant insulin resistance defined as established on U-500, on total daily insulin
 - o Currently on max tolerated metformin + 3 month trial of SGLT2i + trial of liraglutide and semaglutide
 - **GLP-1 Failure definition:** Failure of GLP-1 agent considered if patient is unable to achieve
- o T2DM + ASCVD or high risk for ASCVD*
 - o [*High risk for ASCVD defined as age ≥ 55 + TWO of the following: HTN, obesity (BMI ≥ 30), dyslipidemia, or severe OSA defined by apnea-hypopnea index (AHI) ≥ 30]

Medicare Insurance GLP1 Coverage Criteria for patients with T2DM

- o **Liraglutide**
 - Covered for all Medicare patients with T2DM
- o **Semaglutide (Ozempic)**
 - Covered after trial of liraglutide
 - Exception: no liraglutide trial required in T2DM + CKD
- o **Tirzepatide (Mounjaro)**
 - Not Covered

Putting it all
together

Summary



Key Takeaways

GLP-1 agonists are a dynamic area of study beyond diabetes and weight loss

GLP-1 agonists are high interest medications with varying costs

- New generic products may increase ability to expand/ increase utilization

GLP-1 agonists have foundational in modern T2DM care, especially in patients with co-morbid conditions benefited by GLP-1 agonist therapy

- Don't forget to optimize GLP-1 agonist dose for ASCVD protection where applicable

Deprescribe background insulin/ secretagogue therapy where appropriate when starting/ titrating GLP-1 agonists.

Generic liraglutide is currently the most affordable GLP-1 agonist with evidence supporting use in T2DM with comorbid ASCVD and CKD.



Thank you for your attendance

Questions?

Smart Tools, Resources, and Patient Education for Diabetes Care

Meredith Cotton, MSN, RN, CDCES, BC-ADM | Nurse Manager I, Diabetes Program

Coding Tips for Diabetes

Mamatha Palanati MD, DABOM, DipABLM | Family Physician, Diabetes Program Director KPWA

Diabetes for Primary Care

March 2026



SmartPhrases

- ★ PROVIDERINTROTOPDCP
- ★ DMCGM
- ★ GLP1 COVERAGE CRITERIA
- ★ Index of SmartPhrases

PROVIDERINTROTODCP

- Use this to introduce program. Ideally, get agreement from member **before** referring.
- This communication helps the member understand the program and reinforces expectations:
 - Enrollment requires regularly engagement by phone with RN or CP
 - We need glucose data to safely adjust medications

Note: Provide scheduling limitation information in the comment section of the referral.

Provider Introduction to Diabetes Care Program

PROVIDERINTROTOCDM or PROVIDERINTROTODCP

I would like you to work with one of the clinicians in our diabetes program. If you choose to participate, you will work with a care manager -- either a Registered Nurse or Clinical Pharmacist -- who specializes in diabetes to help you move your blood sugars to a safe range.

Participation in our diabetes program involves contact with the care manager every few weeks. The care manager will connect with you by secure message, telephone, or video visits. There is **no cost** for secure messages or phone visits but there may be a co-pay for video or in-person visits depending on your plan. This service will provide you with significant health benefits.

You are eligible to work with a care manager because you have at least one of the following:

- You have an A1c greater than 8% and currently take medicine for your diabetes.
- You would benefit from medication changes which the care manager can recommend and manage.
- You are ready to start insulin to get your blood sugars in a safe range.
- You are experiencing low blood sugars less than 70 mg/dL.

To prepare for your first contact from the diabetes program

- Please start checking your blood sugars {DM BG Frequency:43556}

Your care manager will ask you to share:

- your blood sugars, the amount of insulin and any other medicines you take.
- any challenges and successes since your last visit.
- other information that might help with your care goals.

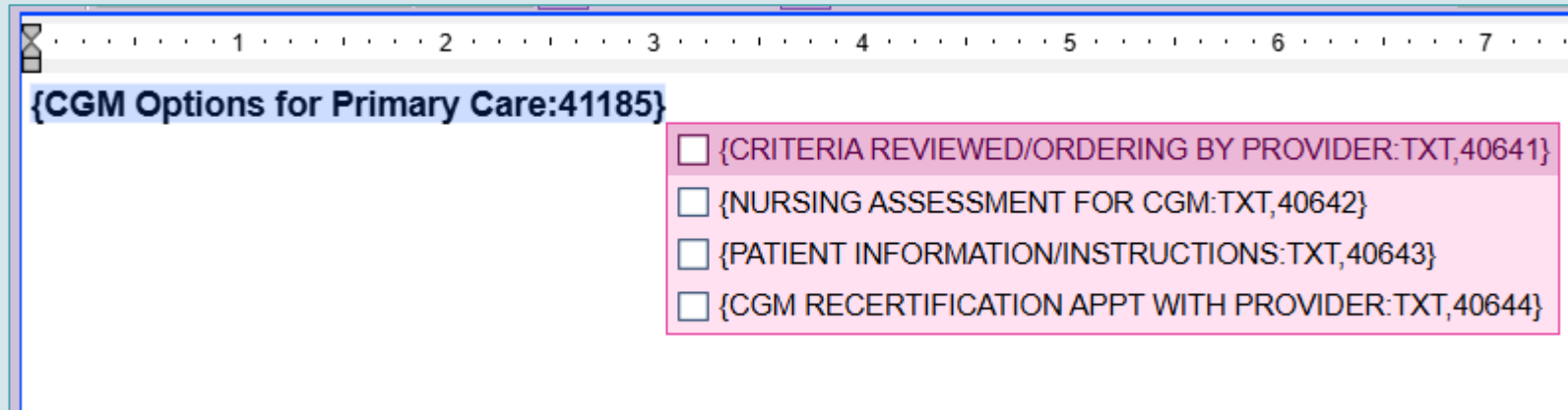
You can opt out of the program any time by telling your care manager or provider you would no longer like to participate.

You will receive a call from the diabetes program to arrange your first appointment.

@ME@

DMCGM

DMCGM is a one-stop shop for continuous glucose monitoring criteria, ordering, reordering, and patient education.



The screenshot shows a web browser window with a scroll bar at the top. The page title is "{CGM Options for Primary Care:41185}". Below the title, there are four checkboxes, each followed by a text label in curly braces. The checkboxes are currently unchecked. The labels are: "{CRITERIA REVIEWED/ORDERING BY PROVIDER:TXT,40641}", "{NURSING ASSESSMENT FOR CGM:TXT,40642}", "{PATIENT INFORMATION/INSTRUCTIONS:TXT,40643}", and "{CGM RECERTIFICATION APPT WITH PROVIDER:TXT,40644}".

This job aid is very helpful (but long):

[CGM Criteria, Devices and Ordering](#)

Example 1

CGM Options for Primary Care ▾

- CRITERIA REVIEWED/ORDERING BY PROVIDER
- NURSING ASSESSMENT FOR CGM
- PATIENT INFORMATION/INSTRUCTIONS
- CGM RECERTIFICATION APPT WITH PROVIDER

Insurance Type ▾

- CGM KPWA COMMERCIAL CRITERIA PCP
- CGM MEDICARE ADVANTAGE CRITERIA PCP
- CGM MEDICARE CORE CRITERIA PCP
- CGM MOLINA CRITERIA PCP
- Other. ***

Medicare Advantage Criteria for Continuous Glucose Monitoring (CGM)
The member must: {Click box if selection is true :1}

- Have a diagnosis of diabetes

AND

- Have had an appointment (in-person, video, telephone) with a primary care provider specifically for their diabetes in the past 6 months

AND one of the following

- Be on 1 or more daily administrations of insulin {If on insulin, hypo not required :1}

OR

- Have a history of problematic hypoglycemia with documentation of at least **one** of the following REQUIREMENTS: {Select the option below that meets this part of the criteria. Patient does not need to be on insulin if having hypo. RN **must** provide screen shots of record of hospitalization related to hypo, report of 911 call, or screen shots of recurrent blood glucose <54 :1}
- Recurrent (more than 1) BG < 54 that persist despite multiple (more than 1) attempts to adjust medications/ modify treatment plan (as documented below)
- A history of one BG <54 characterized by altered mental and/or physical state requiring third-party assistance for treatment of hypoglycemia (as documented below)

{All above items must be true to meet eligibility criteria :1}

Does patient meet criteria for Medicare Advantage/ KP Medicare? **CGM Yes/No Team RN** ▾

{If the patient meets criteria, use the following steps to place the CGM order -
To place a CGM DME order -

- Type "CGM DME" in order entry.
- Select REF DME CONTINUOUS GLUCOSE MONITOR AND SUPPLIES (aka CGM).

Order and SmartSet Search

CGM 1

SmartSets, Panels, & Express Lanes (No results found)

Example 2

CGM Options for Primary Care ▾

- CRITERIA REVIEWED/ORDERING BY PROVIDER
- NURSING ASSESSMENT FOR CGM
- PATIENT INFORMATION/INSTRUCTIONS
- CGM RECERTIFICATION APPT WITH PROVIDER

DM DATA SHARING ▾

- PATIENT INFO - DEXCOM
- PATIENT INFO - LIBRE:

- General CGM information **DM CGM PATIENT INFO**
- What to expect regarding the ordering of your device **DM CONTACT INFO BYRAM**
- LIBRE INSTRUCTIONS
- How to get started with my Libre device **DM LIBRE2 AND 3 PATIENT START**
- How to share your Libre 2 data **DM LIBRE2 APP SHARING**
- How to share your Libre 3 or 3 Plus data **DM HOW TO SHARE LIBRE 3 DATA**
- CGM Tips and Tricks for the Libre 2 **DM LIBRE2 TIPS AND TRICKS**
- CGM Tips and Tricks for the Libre 3 **DM LIBRE3 TIPS AND TRICKS**
- Information about how to use the Libre CGM including information about the difference b
- CGM Alarms **CGM ALARMS**
- Information about using trend arrows with your Libre device **DMC GM TREND ARRC**
- How to view your data using the Libre AGP report **DM LIBRE AGP USE**

GLP-1 Coverage Criteria

GLP1COVERAGECRITERIA

{ ⓘ Disappearing text, no need to delete ->

GLP1 Coverage Criteria by Insurance ▾

GLP-1s require PA (Commercial or Medicare)

1) Order appropriate medication

*2) Submit a PA request through **staff message** using SmartPhrase **.RxPriorAuthorization** to Epic Pool P Pharmacy*

Benefit Help Desk Technician

*3) Expect a **staff message** response regarding the PA request, and should get a fax notification of the outcome*

:1}

Menus are based on insurance coverage and clinical indications.

GLP Example 1

GLP1 Coverage Criteria by Insurance ▾

- Medicare
- Commercial
- Sound Health Wellness
- Molina**
- Self Pay

GLP-1s require PA (Commercial or Medicare)
1) Order appropriate medication
*2) Submit a PA request through **staff message** to **Benefit Help Desk Technician***
*3) Expect a **staff message** response regarding the PA request, and should get a fax notification of the outcome*
:1}

Molina Insurance GLP1 Coverage Criteria

Please see link [WA State Health Care Authority – GLP-1 Agonist coverage policy](#)

GLP-1s require PA (Commercial or Medicare)
1) Order appropriate medication
*2) Submit a PA request through **staff message** using SmartPhrase **.RxPriorAuthorization** to Epic Pool **P Pharmacy Benefit Help Desk Technician***
*3) Expect a **staff message** response regarding the PA request, and should get a fax notification of the outcome*
:1}

GLP Example 2

Commercial ▾

GLP-1s require
1) Order appropriate
2) Submit a PA
Benefit Help D
3) Expect a sta
:1}

- T2DM
- T1DM or LADA
- ASCVD + Obesity/Overweight (BMI \geq 27) and no T2DM
- Severe OSA + Obesity (BMI \geq 30)
- MASH
- Weight Loss Rider

Commercial Insurance GLP1 Coverage Criteria for patients with T2DM

- **T2DM - A1c \geq 7.0% but \leq 10%**
 - **Liraglutide**
 - BMI \geq 30: requires max tolerated metformin dose
 - BMI <30: requires max tolerated metformin dose + trial of 2 other med classes
 - **Semaglutide (Ozempic)**
 - BMI \geq 30: requires max tolerated metformin dose + 3 month trial of SGLT2i + trial of liraglutide
 - BMI <30: requires max tolerated metformin dose + 3 month trial of SGLT2i + 1 other DM med class + trial of liraglutide
 - **Tirzepatide (Mounjaro)**
 - Meet criteria for semaglutide + Trial/failure of semaglutide
 - **GLP-1 Failure definition: Failure of GLP-1 agent considered if patient is unable to achieve A1c < 7.5% after a trial of at least 3 months**
- **T2DM + significant insulin resistance**
 - Significant insulin resistance defined as established on U-500, on total daily insulin doses > 1 u/kg/day, total insulin dose of > 250 units/day, or basal insulin dose of \geq 0.5 units/kg/day.
 - Patients on insulin with BMI \geq 30 may be considered for GLP-1 therapy.
- **Liraglutide**
 - Currently on max tolerated metformin (or failure/contraindication)
- **Semaglutide (Ozempic)**
 - Currently on max tolerated metformin + 3 month trial of SGLT2i + trial of liraglutide
- **Tirzepatide (Mounjaro)**
 - Currently on max tolerated metformin + 3 month trial of SGLT2i + trials of liraglutide and semaglutide

Index of Diabetes SmartPhrases

- **Index of SmartPhrases for type 1 and Type 2 diabetes**

[HealthConnect SmartPhrases - WA | WA Clinical Library](#)

.dmcgm	Progress Note	Extensive note for documenting continuous glucose monitoring. Includes criteria for CGM, nu
.dmjardiance	Progress Note	@NAME@ meets criteria to add empagliflozin (Jardiance), the SGLT-2 inhibitor shown to prov risk.
.avshomebpmmonitoring	AVS	Managing Your Blood Pressure at Home Checking your blood pressure at home is actually the most accurate way to monitor your bloo checking bp at home.
.avsdminsulinstart	AVS	As we talked about together, I recommend that you start taking insulin before you go to bed
.avsdmmed	AVS	I would like you to start taking metformin for your diabetes. Metformin is a safe medicine tha
.avsinsulinpump	AVS	Insulin pump therapy Today we talked about the possibility of starting you on the insulin pump. Here's more inform
.avsinsulinshotow	AVS	How to give an insulin shot using a syringe and insulin bottle and what you need for the shot.
.avsinsulinshotwhere	AVS	Pictures show different places on the body where you can take an insulin shot.
.avsmediterraneandiet	AVS	Research has proven that by eating little or no animal protein, people can lower their risk for



SmartRx, Panels, and SmartSets

- ★ Non-Insulin SmartRxs
- ★ Insulin SmartRx, Pen Orders and Needles Panel
- ★ Blood Glucose Meter Kit Panels
- ★ Documentation SmartSet for Primary Care Nursing

Diabetes-Type 2 (NON INSULIN) SMART RX

DIABETES-TYPE 2 (NON INSULIN) SMART RX

✓ Accept

Type 2 Diabetes Treatment Algorithm

** To order insulin, refer to the INSULIN ORDERS Smart Rx.

- Type 2 Diabetes Clinical Guidelines

- 1st Line: Metformin
- 2nd Line: SGLT-2 Inhibitor (No PA needed to order)
- 3rd Line: GLP-1 Agonist (PA Required)
- Other options based on patient characteristics
- REF CHRONIC DISEASE MANAGEMENT (CDM)

ⓘ Next Required

✓ 2nd Line: SGLT-2 Inhibitor (No PA needed to order)



Recommended especially for patients with or at high risk for cardiorenal complications.

Consider adding SGLT-2 Inhibitor for:

- ASCVD
- Heart Failure
- eGFR 20-59
- Age \geq 55 **plus** at least 2:
 - HTN (on meds)
 - BMI \geq 30
 - dyslipidemia

✓ empagliflozin (JARDIANCE) 25 mg tablet

Take 0.5 tablets (12.5 mg) by mouth every morning, E-Prescribe, Disp-45 tablet, R-3

New Insulin Start: Type 2 diabetes treatment workflow for Primary Care

Step 1:	Start AM glargine. <ul style="list-style-type: none"> Start AM glargine at 0.1-0.2 units/kg and adjust every 4-5 days to target fasting blood glucose (FBG) -or- Start AM glargine at 10 units and adjust by 1-3 units every 4-5 days to target FBG.
Alternate Step 1:	Start bedtime NPH. <ul style="list-style-type: none"> Start QHS NPH at 0.1-0.2 units/ kg and adjust every 4-5 days to target FBG. -or- Start QHS NPH at 10 units and adjust by 1-3 units every 4-5 days to target FBG.
Targeting AM fasting only before insulin initiation (all other BG within appropriate range)	
Step 2:	Monitor and adjust. <ul style="list-style-type: none"> Periodically check blood glucose before and after meals to help determine if glargine is lasting full 24 hours. If patient has elevated AM blood sugar, but all other BG within target range, consider splitting dose equally and give 12 hours apart.
Step 3:	When to consider mealtime insulin: <ul style="list-style-type: none"> Patient is on too much basal insulin <ul style="list-style-type: none"> Blood glucose is dropping more than 50 mg/dL overnight. -or- Only on basal insulin and dose is at or exceeds 0.6 units/kg/day. Post-prandial BG remains elevated while fasting blood glucose is at target.

Switching Patients on NPH to Glargine

Job aid linked [HERE](#)

Provide education on identifying and treating hypoglycemia:

- [15/15 Rule Patient Education](#)
- SmartPhrase: .1515RULEDETAILED
- Diabetes Quick Care Guide ([Hypoglycemia](#))

General Tips and Resources:

- Schedule training for self-administration techniques with care team (RN), if needed.
- Evaluate other medications that may need to be adjusted or discontinued when adding/ titrating insulin (especially sulfa)
- Be aware of renal function status when adding or titrating insulin.
- In general, target fasting blood glucose in the range of 80-130mg/dL. For patient safety, consider less aggressive range other special populations.
- If switching to an insulin mix, see link to FDA guidance on switching.

- [Diabetes Quick Care Guide](#)
- [Clinical Guidelines Washington - Diabetes, Type 1](#)
- [Clinical Guidelines Washington - Diabetes, Type 2](#)
- [FDA: Insulin Storage and Switching Insulins](#)
- [When to refer to CDM I Referral guidance](#)

- PEN Orders + Needles
- VIAL Orders + Syringes/Needles
- Diabetes Testing Supplies
- REF CHRONIC DISEASE MANAGEMENT (CDM)

- INSULIN SMART RX
- PEN Orders + Needles Panel
- VIAL Orders = Syringes/Needles

PEN Orders + Needles

Please NOTE:

- **Must order needles** in addition to insulin (see "Insulin Pen Needle Orders" , below)
- **Plan Exceptions:** Lispro remains a preferred rapid-acting insulin for **Molina** and **SHWT**
- **Insulin Pumps:** Aspart-xjhz (Kirsty) is not yet approved for use with Medtronic pumps. Using Kirsty insulin in Medtronic pumps may void the manufacturer's warranty.

- Glargine Insulin 100 units/mL Pen Orders
- Aspart Insulin 100 units/mL (Kirsty Pen) Orders
- Lispro Insulin 100 units/mL (HumaLOG KwikPen) Orders
- 70/30 Insulin 100 units/mL (HumuLIN 70/30 KwikPen) Orders
- NPH Insulin 100 units/mL (HumuLIN N) orders
- Insulin Pen Needle Orders

Glucose Meter Kits

Panels:



OneTouch Verio Flex
(Commercial and Medicare)





True Metrix (Molina)





Prodigy (talking meter)

AMB MED PANEL - VERIO FLEX

- blood glucose meter kit (ONETOUCH VERIO FLEX)
Use for home blood glucose monitoring, E-Prescribe, Disp-1 each, R-0
-  blood glucose test strips (ONETOUCH VERIO)
Use, E-Prescribe
-  lancets 33 gauge (ONETOUCH DELICA PLUS)
Use, E-Prescribe
- SHARPS CONTAINER SMALL
- SHARPS CONTAINER LARGE

PANEL - PRODIGY VOICE

- blood glucose meter kit (PRODIGY VOICE)
Use for home blood glucose monitoring, E-Prescribe, Disp-1 kit, R-0
-  blood glucose test strips (PRODIGY NO CODING)
Use, E-Prescribe
- lancet device with lancets (ONETOUCH DELICA PLUS)
Use as directed for testing blood sugar, E-Prescribe, Disp-1 each, R-0
-  lancets 33 gauge (ONETOUCH DELICA PLUS)
Use, E-Prescribe
- SHARPS CONTAINER SMALL
- SHARPS CONTAINER LARGE

Diabetes Nursing Care Documentation SmartSet

SmartSets

diabetes + Add

SmartSets

Search Results

DIABETES NURSING CARE

Open SmartSets Clear Selection

DIABETES NURSING CARE Manage User Versions

Resources for clinical guidance:

- Endocrinology QCG
- Diabetes Care at KPWA SharePoint site
- Diabetes, Type 1 Clinical Guideline
- Diabetes, Type 2 Clinical Guideline
- Gestational Diabetes Screening and Treatment Clinical Guideline

▼ Progress Note

▼ Teaching Visit

- New Diagnosis Visit: Type 2
- New Diagnosis Visit: Type 1
- Glucometer Teaching
- Insulin Teaching
- CGM Insertion Teaching
- Injection Teaching (Non-insulin injection)
- Gestational Diabetes Teaching

▶ Assessment [Click for more](#)

▼ Orders

- ▶ Testing Supplies [Click for more](#)
- ▶ Insulin and Injection Supplies [Click for more](#)
- ▶ Routine Lab Monitoring [Click for more](#)
- ▶ Referrals [Click for more](#)
- ▶ Remote Monitoring [Click for more](#)

▼ Patient Information for AVS

▼ General Information

- Sign up for MyChart
- 24/7 Advice and Urgent Care Centers



Quick Care Guide Topics

- ★ Determining Diabetes Type
- ★ Continuous Glucose Monitoring
- ★ Hypoglycemia
- ★ Diabetic Foot Infections
- ★ Chronic Disease Management
- ★ Type 1 Diabetes Referrals
- ★ Type 2 Diabetes Referrals
- ★ Type 2 Diabetes Treatment
- ★ SGLT-2 Inhibitors
- ★ GLP-1 Agonists

Diabetes Quick Care Guide

Quick Care Guide: Diabetes

[Back to KPHC Page](#)

Diabetes Topics

- [Determining Diabetes Type](#)
- [Continuous Glucose Monitoring](#)
- [Hypoglycemia](#)
- [Diabetic Foot Infections](#)
- [Chronic Disease Management](#)
- [Type 1 Diabetes Referrals](#)
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- [Type 2 Diabetes Referrals](#)
- [SGLT-2 Inhibitors](#)
- [GLP-1 Agonists](#)

Clinical Library

Diabetes Quick Care Guide

Last updated: June 2025

search within this page

DETERMINING DIABETES TYPE

Quick Guide	Referral Guidelines
<p>Patients with type 2 diabetes most commonly present as overweight and hyperglycemic, with gradual onset of symptoms such as fatigue, blurred vision, polydipsia, and polyuria.</p> <p>Although patients with type 1 diabetes most commonly present with abrupt onset of symptoms and weight loss, type 1 diabetes can occur in patients at any age and weight. Diabetic ketoacidosis is also a frequent initial presentation.</p> <p>Determining if the diabetes diagnosis is type 1 versus type 2 can be challenging. You may be able to definitively diagnose type 1 diabetes with positive antibody tests, but not everyone with type 1 has positive antibodies. If there are symptoms of ketosis, concern for insulin deficiency, or HbA1c > 10, the patient should be on insulin therapy until diagnosis has been established.</p> <p>Recommended tests</p> <p>Order islet cell antibody (ICA) and glutamic acid decarboxylase antibody (GAD) testing when suspicious for type 1 diabetes.</p> <p>Consider ICA and GAD testing for differential diagnosis in the following patient populations:</p>	<p>Most patients with type 1 diabetes should be referred directly to the Diabetes Team REF DIABETES</p> <p>E-CONSULT DIABETES for assistance interpreting antibody results.</p>



Other Resources

- ★ OneNote
- ★ SharePoint
- ★ Clinical Library: Patient Education
- ★ KPWA public site: Articles and Videos
- ★ KP Learn modules

SharePoint: Diabetes Care at KPWA

Diabetes Care at KPWA

https://sp-cloud.kp.org/sites/DiabetesPracticeResources

KAISER PERMANENTE Diabetes Care at KPWA

Home Pages Contacts Documents Drug Formularies Frequent Visited Sites Edit

+ New Page details Preview Analytics

Published 3/21/2026 Share Edit

OneNote: KPWA Diabetes Resources

Broken Link? Click here to notify us!

Diabetes Patient Education
Learn more →

Diabetes Medications

Clinical Guidelines and Nursing Standards

Continuing Nursing Education (CNE) Library

Primary Care Nursing Diabetes Resources

Diabetes Referrals

Updated May 20, 2024

Chronic Disease Management:
[Chronic Disease Management Program Huddle Card](#)

[CDM Capacity Huddle Card](#)

- CDM Criteria Capacity Status Updates: [link](#)

Clinical Pharmacy [Chronic Disease Management Referral Criteria](#)

[Description of Nursing Diabetes Care Management for Patients](#)

OneNote: KPWA Diabetes Resources

KPWA Diabetes Resources

The screenshot shows the OneNote application window titled "New Content added to OneNote by date - OneNote". The ribbon includes File, Home, Insert, Draw, History, Review, View, and Help. The Home ribbon is active, showing options for Clipboard (Paste, Copy, Format Painter), Basic Text (font face, size, bold, italic, underline, strikethrough, text color, background color), Styles (Heading 1, Heading 2), Tags (To Do, Important), and other features like Find Tags, Outlook Tasks, Email Page, Meeting Details, and Dictate.

The main content area shows a table titled "New Content added to OneNote by date" with a subtitle "Tuesday, November 23, 2021 11:39 AM". The table has three columns: Date added, Topic/Resource, and Location in OneNote Tab/Page.

Date added	Topic/Resource	Location in OneNote Tab/Page
3-19-26	Insulin Kirsty page, resources, huddle card, pharmacy standard work	Medications/ Kirsty Insulin (apsarj-xjhz)
3-19-26	Mobile Phlebotomy Update (new process and new company)	Resources/ Mobile Phlebotomy Lab Services
3-17-26	Prevalence of blood pressure above goal in people with hypertension: UpToDate March 2026	Chronic Disease Management/ Prevalence of blood pressure above goal in people with hypertension: UpToDate March 2026
3-17-216	Omnipod insulet Device Correction Notice 3-16-26 (43 WA members)	Technology/ Temp: Omnipod Device Correction 3-16-26
3/12/26	ADA CE: Enhancing Communication with Eye Health Specialists, PCPs, and Endocrinologists 2026	Alphabetic Topic List/ Eye Health Specialists, Primary Care Providers, and Endocrinologists 2026

Clinical Library:

Diabetes Patient Education

PATIENT EDUCATION: DIABETES MATERIAL

Lowering Risk and Diagnosing Type 2 Diabetes ▼

How to lower risk and when to be tested

Skills and Self-management ▼

Tips for managing blood sugar; information about medications, supplies, meal planning, and exercise

Self-Management Skills

- [Guide to Working With Your Health Care Team](#)
- [Know Your ABCs](#)
- [Make an Action Plan](#)
- [Staying Healthy with Type 2 Diabetes, Kidneys \[Spanish\]](#)
- [Staying Healthy with Type 2 Diabetes, Nerves \[Spanish\]](#)
- [Top 10 Tips to Help You Stay in Control \[Spanish\]](#)
- [Type 1: Taking Care When You're Sick \[Spanish\]](#)
- [Type 2: Taking Care When You're Sick](#)

Blood Sugar

- [How Our Bodies Turn Food Into Energy \[Spanish\] \[Russian\] \[Tagalog\]](#)
- [Blood Sugar Numbers to Help You Stay in Control](#)
- [Low Blood Sugar: The 15/15 Rule \[Spanish\]](#)


Medications

- [Bydureon® BCise™ Pen](#)
- [Humulin KwikPen™ \[Spanish\]](#)

KPWA Public Website: Health and Wellness

Diabetes Articles and Videos

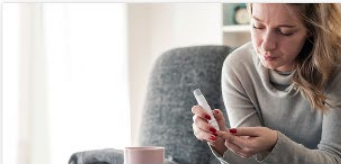
Health & wellness > Diabetes



Overview
Diabetes


Welcome to your home base for success!

Live well with diabetes. Learn how to manage your blood sugar through diet, medications, and exercise.




Health article
Why check your blood sugar

Discover how checking your blood sugar gives you the numbers you need...



Health article
Benefits of diabetes medication

Explore the medications that support your routine of successful living with...



Health article
Preventing burnout

Stay motivated as you create and live your diabetes routine - and let go of...

KP Learn Modules

Continuing Education:

- Hypoglycemia Treatment and Prevention in WA
- Diabetes Documentation and Reporting in WA
- Type Training for Nurses in WA
- Type 2 Training for Nurses in WA
- Carbohydrate Counting Introduction for Nurses



Diabetes Coding

- ★ Key Considerations
- ★ Documenting Diabetes Complications
- ★ Diabetes in Remission
- ★ Prediabetes
- ★ Case Examples

Diabetes Coding – Key Considerations

- Report the type of Diabetes Type 1, Type 2, Type 1.5 or Other
 - If you don't specify the type, it automatically default to Type 2
- Document the blood sugar control. In your assessment and plan please mention patients blood sugar control and A1c goal.
- Diabetes Evaluated as “ out of control” “ inadequately controlled” or “poorly controlled” is reported as Diabetes with hyperglycemia.
 - Type 2 diabetes with Hyperglycemia E11.65
 - Type 2 diabetes with Hypoglycemia E11.649

Documenting Diabetes Complications

- Patients may have multiple concurrent complications of Diabetes. When evaluating multiple Diabetic complications , document and report all manifestations addressed.
- When documenting Diabetes, it's important to document casual relationships like due to , secondary to etc.
- Document long term insulin or oral hypoglycemic drug use
- Document the status or history of any toe or foot amputations when applicable
- Update patient's problem lists to reflect the status of patient's diabetic manifestations .

Diabetes in Remission

E11.A

- ADA Remission criteria = A1c level less than 6.5% for at least three months after stopping the diabetic medication.
- Diabetes in Remission can be used when patient's glucose levels are in remission post sleeve gastrectomy or post laparoscopic gastric banding device.
- Code this when
 - A previous diagnosis of Diabetes and A1c less than 6.5 with out Diabetes medications
 - There must not be any other Diabetes complications
 - It remains an active problem , will not be history of diabetes.

Prediabetes R73.03

- Code Prediabetes R73.03 instead of impaired fasting glucose when patient has A1c between 5.7-6.4% or Fasting blood sugar between 100-125.
- Please add the Prediabetes diagnosis to the Problem List.

Case Examples

A. 58-year-old with uncontrolled type 2 Diabetes with A1c 8.5% and GFR 47ml/min, CKD stage 3 A .

- Diagnosis Codes :
 - Type 2 diabetes with hyperglycemia : E11.65
 - Type 2 diabetes with CKD stage 3 A : E11.22, N18.31

B. 45 year old type 1 diabetic with severe bilateral non proliferative Diabetic retinopathy with macular edema.

- Diagnosis Codes :
 - Type 1 diabetes with Severe bilateral non proliferative retinopathy with macular edema : E10.3413

Case Examples

C. Type 2 diabetic with chronic left foot ulcer with necrosis of the muscle . Patient takes insulin daily and noticing frequent low blood sugars.

- Diagnosis Codes :
 - Non pressure chronic ulcer or other part of the left foot with necrosis of the muscle.- L97.523
 - Type 2 diabetes with foot ulcer : E11.621
 - Type 2 diabetes with Hypoglycemia : E11.649
 - Long term (current) use of insulin: Z 79.4

The background is a solid blue gradient that transitions from a lighter shade on the left to a darker shade on the right. Overlaid on this gradient are several faint, semi-transparent silhouettes of human figures. Each silhouette consists of a circular head and a rounded, fan-like body, suggesting a group of people or an audience. The silhouettes are arranged in a way that they appear to be looking towards the left side of the frame.

Questions?

Type 1 Diabetes and others

Suah Bae MD

Endocrinologist Kaiser Permanente

with Emily Omura MD

Disclosures

- None

Objectives:

- Type 1 diagnosis and screening
- Other types of diabetes
- Type 1 diabetes and prevention of co-morbidities
- Type 1 diabetes treatment

Standards of Medical Care in Diabetes 2025

Type 1 diabetes

- Autoimmune β -cell destruction, usually leading to absolute insulin deficiency

Type 2 diabetes

- Progressive loss of β -cell insulin secretion in the background of insulin resistance

Gestational diabetes mellitus

- Diagnosed in the 2nd or 3rd trimester of pregnancy, not clearly overt prior to gestation

Specific types of diabetes due to other causes

- Everything else



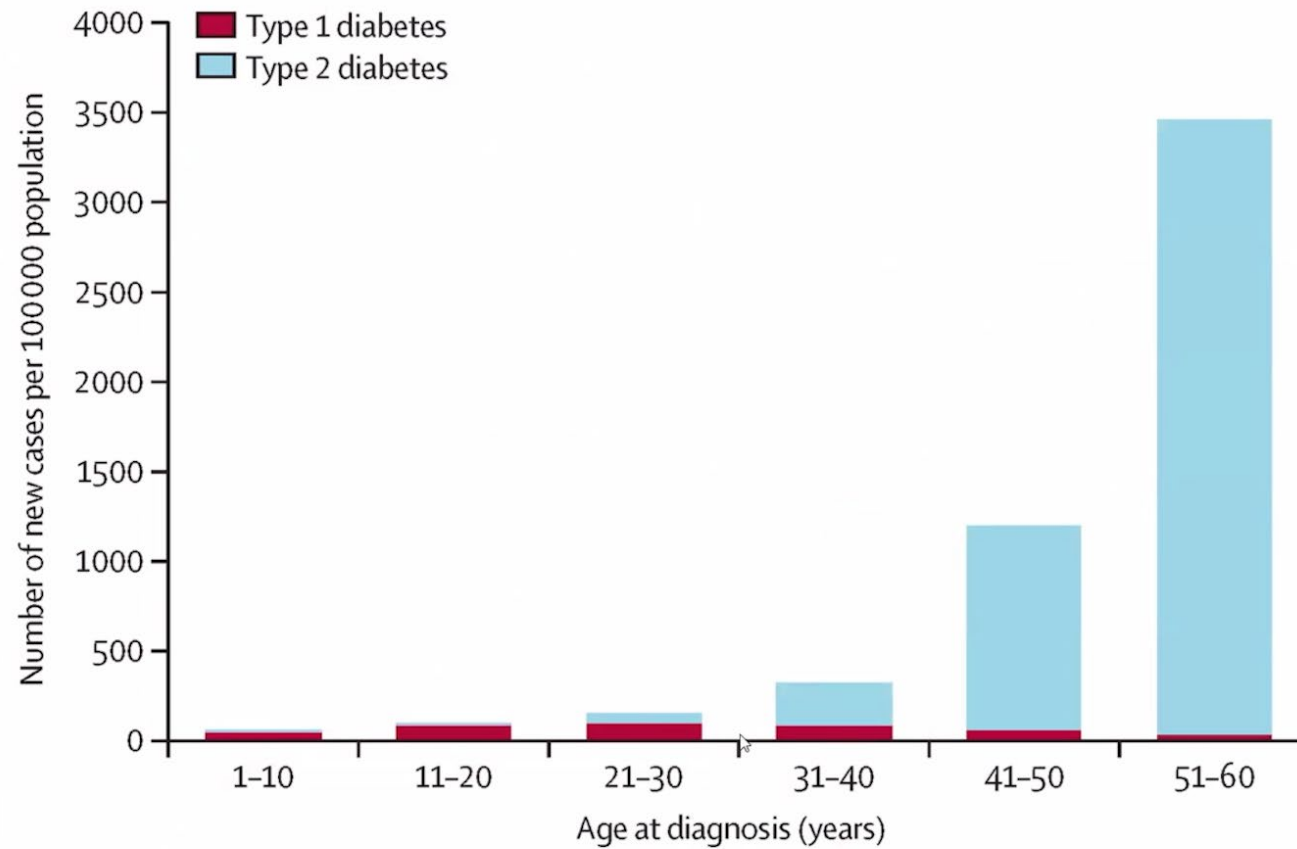
Traditional Classifications

	Type 1	Type 2
Also known as	IDDM	NIDDM
Body habitus	Lean	Obese
Age of onset	Young	Older
Treatment	Insulin	Lifestyle, orals, insulin in some cases
DKA	Yes	No
Percentage of diabetes cases	5-10%	~90%
Insulin production	None	Too much initially, not enough late

In Practice

Significant heterogeneity exists

- Onset can be variable (children to older ages)
- Different rates of progression depending on age, number of -antibodies that are positive.
- 30-40% of patients with T1DM are overweight/obese.
- T1DM Can be associated with other autoimmune disorders



Type 1 diabetes cases
(n per 100 000 population)

35

73

89

73

55

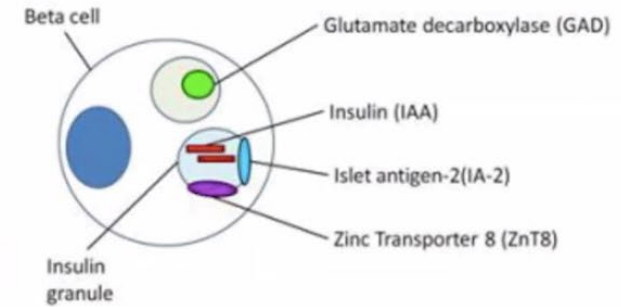
28



Family history

- More than 85% do not have a 1st degree T1DM in family.

Autoantibodies



Insulin autoantibodies (IAA)

Common as a first detected antibody (more common in children)

Frequency of appearance declines with age

Not reliable if treated with insulin

GAD

Common as a first detected antibody

Most common in adult onset cases

Associated with slower progression and is often found as a single positive antibody

IA-2/islet cell autoantigen

More advanced islet autoimmunity and faster progression to stage 3

ZnT8

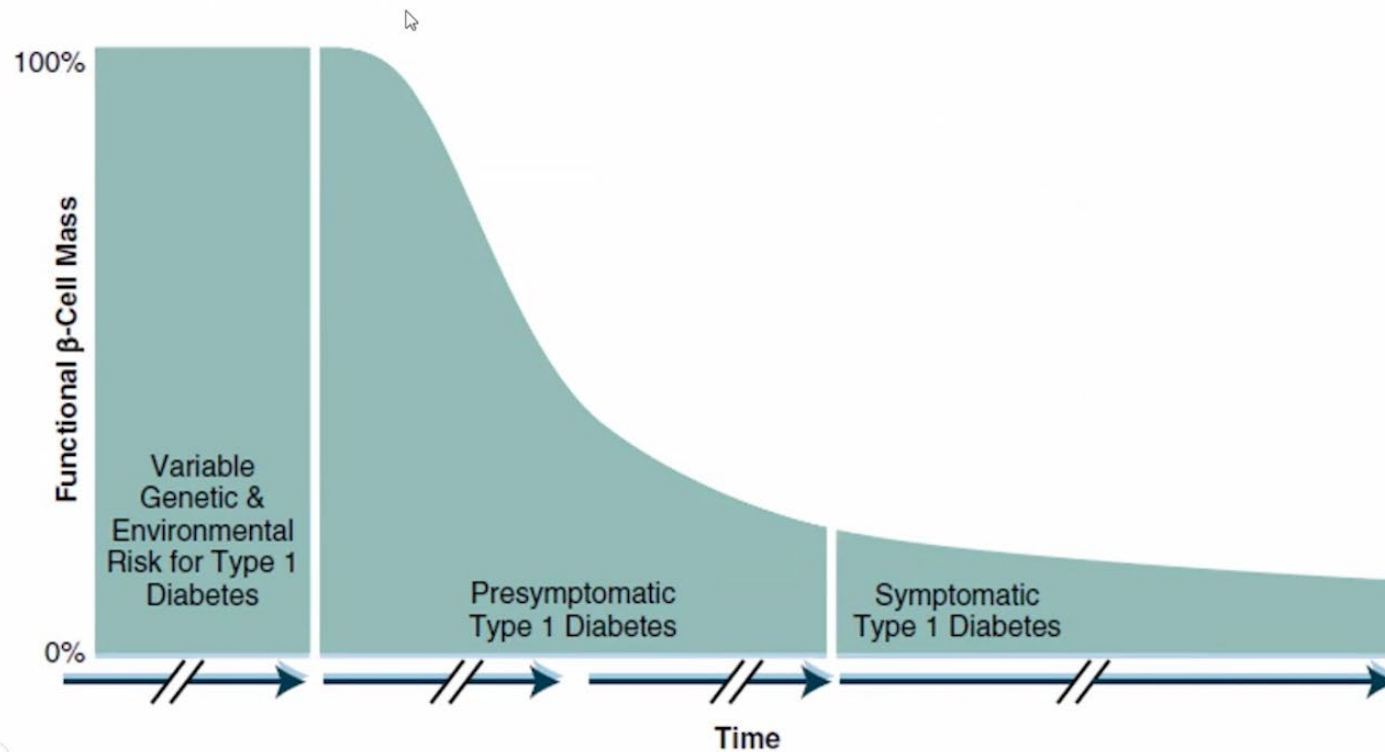
Can help with risk stratification in single antibody positivity

Autoimmunity in type 1 diabetes

Autoimmunity in type 1 diabetes

- Check GAD Ab and islet cell Ab (IA-2) when you suspect Type 1 diabetes (this will be positive most commonly in adult onset T1DM.)
- After several years of the diagnosis, AB titer can go down by 30% Or more.
- If GAD ab negative, but still high suspicion (low c peptide, abrupt onset, low BMI) consider checking other autoimmune markers.
- Some suggest to check Zink transporter 8 as a second choice.

Proposed Nomenclature	Stage 1	Stage 2	Stage 3
Phenotypic Characteristics	β -Cell Autoimmunity Normoglycemia Presymptomatic	β -Cell Autoimmunity Dysglycemia Presymptomatic	β -Cell Autoimmunity Dysglycemia Symptomatic
Phase in Natural History	[Timeline bars]		



Stages of Type 1 diabetes

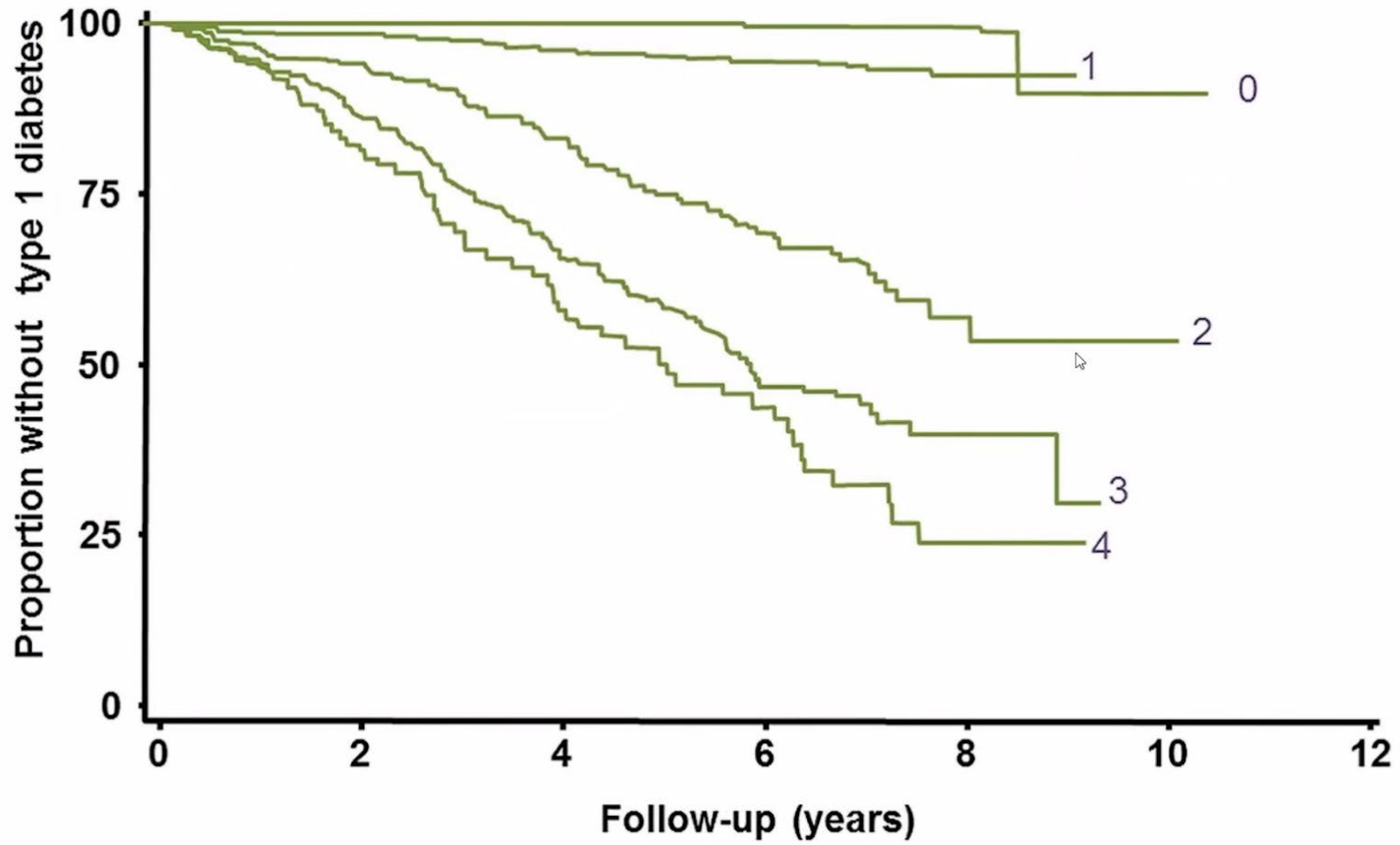


Table 1—Staging criteria for autoantibody-positive individuals in pre-stage 1 and stage 1–3 type 1 diabetes (16–18)

Stage of T1D	Islet autoantibody status	Glycemic status	Symptoms	Insulin required
At-risk (pre-stage 1 T1D)	Single autoantibody or transient single autoantibody	<ul style="list-style-type: none"> • Normoglycemia • FPG <5.6 mmol/L (<100 mg/dL) • 120-min OGTT <7.8 mmol/L (<140 mg/dL) • HbA_{1c} <39 mmol/mol (<5.7%) 	No symptoms	Not required
Stage 1 T1D (also referred to as early-stage T1D or presymptomatic T1D)	≥2 autoantibodies	<ul style="list-style-type: none"> • Normoglycemia • FPG <5.6 mmol/L (<100 mg/dL) • 120-min OGTT <7.8 mmol/L (<140 mg/dL) • HbA_{1c} <39 mmol/mol (<5.7%) 	No symptoms	Not required
Stage 2 T1D (also referred to as early-stage T1D or presymptomatic T1D)	≥2 autoantibodies*	<p>Glucose intolerance or dysglycemia not meeting diagnostic criteria for stage 3 T1D, with at least two of the following, or meeting the same single criteria at two time points within 12 months:</p> <ul style="list-style-type: none"> • FPG 5.6–6.9 mmol/L (100–125 mg/dL) • 120-min OGTT 7.8–11.0 mmol/L (140–199 mg/dL) • OGTT values ≥11.1 mmol/L (≥200 mg/dL) at 30, 60, and 90 min • HbA_{1c} 39–47 mmol/mol (5.7–6.4%) or longitudinal ≥10% increase in HbA_{1c} (66,67) from the first measurement with stage 2 T1D • CGM values >7.8 mmol/L (>140 mg/dL) for 10% of time over 10 days' continuous wear (73)† and confirmed by at least one other non-CGM glucose measurement test listed 	No symptoms	Not required
Stage 3 T1D	≥1 autoantibody	<p>Persistent hyperglycemia with or without symptoms, as measured and confirmed by one or more of the following:</p> <ul style="list-style-type: none"> • One random venous glucose ≥11.1 mmol/L (≥200 mg/dL) with overt symptoms • 120-min OGTT ≥11.1 mmol/L (≥200 mg/dL) and/or • Two random venous glucose ≥11.1 mmol/L (≥200 mg/dL) and/or • FPG ≥7.0 mmol/L (≥126 mg/dL) and/or • Laboratory-tested HbA_{1c} ≥48 mmol/mol (≥6.5%) • CGM values >7.8 mmol/L (>140 mg/dL) for 20% of time over 10 days' continuous wear (73)† and confirmed by at least one other non-CGM glucose measurement test listed 	<p>May include‡:</p> <ul style="list-style-type: none"> • Polyuria • Polydipsia • Weight loss • Fatigue • DKA 	+/- Insulin, based on glycemic status

Monitoring presymptomatic patients

Why?

- To prevent DKA and/r development of symptoms
- To identify candidates for research/intervention
- To avoid misdiagnosis of DM2

How?

A1C every 6 months, 75g OGTT annually (ADA Standards of care 2025)

CGM not recommended as it is less validated

If used, blinded preferred to help decrease anxiety and prevent alarms

Both CGM metrics and OGTT metrics can fluctuate over time

Monitoring
early-stage
patients.

We suggest a1c
every-6 Mo. , 75-
gram OGTT annually
(with endocrine
support)

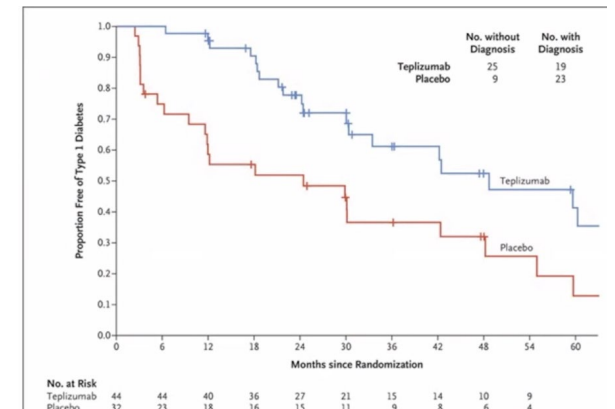
How to delay progression of T₁DM when ab +?

- Some studies in children : TEDDY, DAISY
- Low GI (Glycemic index) food, active physical activity
- Lifestyle management
 - Increased physical activity associated with a reduced risk of progression in children (TEDDY)
 - Higher GI food and total sugar intake associated with progression in children (DAISY)



Teplizumab

- Humanized anti CD3 monoclonal Ab
- Approved for 8yo+ older, stage 2 T₁DM.
- 14 days daily IV
- NEJM 2019 Aug 15; 38(7) 603- 613
- Long term effects unknown.
- Delay in dx onset may shorten duration of the type 1 DM. Which can decrease complications?
- May benefits for younger patients(harder to treat when young/children T₁DM).



Accessing Screening and Early-Stage Treatment

- Resource dependent goals-early diagnosis, prevention, and screening
- In acute setting, if unsure, treat with insulin
- No internal teplizumab (Tziel) administration
- Pathway to Prevention | Type 1 Diabetes TrialNet
 - Screening of broad antibody panel
 - Receive intervention in research setting
 - Information about other trials

How to check insulin production?

- C peptide (Fasting vs. Stimulated)
 - Stimulated is preferred
- Don't test in the hospital.
 - Wait 1-3 Mo after initial diagnosis if suspected.
 - (Avoid checking this with new onset DM with uncontrolled A₁C)
- It is normal to have low c-peptide if patients have hypoglycemia.
 - Check with glucose level.
- Renal function affects clearance of c peptide.

Other diabetes : MODY

MODY : Maturity-Onset Diabetes of the Young(**Dx < 25 yo**)

- Monogenic diabetes, **autosomal dominant** inheritance pattern.
- 2%-5 % of patients with DM
- There are at least 14 gene changes that cause MODY. Knowing the subtype you have can help guide your treatment plan. It can also predict how the disease may progress.

Other diabetes : MODY

- **HNF₄-MODY (MODY₁):** This type leads to progressive loss of insulin. Treatment begins with oral medication, but you may eventually need insulin.
- **GCK-MODY (MODY₂):** This is the second most common cause of MODY. About 3 in 10 people with MODY have MODY₂. It leads to mildly high blood sugar (glucose) that may not eventually need treatment. You may not have any symptoms.
- **HNF_{1A}-MODY (MODY₃):** This gene is the most common cause of MODY. Up to 6 in 10 people with MODY have this type. Oral medication can usually manage it.
- **PDX₁ (MODY₄):** This type affects your body's ability to signal that it needs more insulin. It can vary in severity, with symptoms ranging from mild to severe. Treatment varies according to severity. It may include oral medications or insulin.
- **HNF_{1B}-MODY (MODY₅):** This type can cause other problems like kidney disease, an abnormally small pancreas and genital anomalies. You may need insulin with MODY₅.

Other diabetes - Ketosis prone diabetes

- Transient beta cell stunning from glucotoxicity and increase counterregulatory hormones during stress
- Due to this, patient are at insulin deficiency status, with hyperglycemia. - > DKA
- More common in African American, Hispanic American.
- Relative deficiency of insulin can play a role.
- In selected patients, they can wean down insulin dosages by adding more oral meds.

Other diabetes – Pancreatic diabetes

- **Pancreatic diabetes** (Type 3c diabetes) : *develops when **pancreas experiences enough damage** to affect its ability to make insulin.*
- The damage can result from the following underlying conditions or situations.
 - Pancreatitis, pancreatectomy, pancreatic cancer, cystic fibrosis, hemochromatosis.
- Diabetes of the exocrine pancreas is frequently labeled type 2 diabetes but has **worse glycemic control and a markedly greater requirement for insulin.**

Cardiovascular disease and T₁DM

- CVD is major cause of mortality in patients with T₁DM.
- Risk of the CVD in T₁DM :
 - *An increased risk of CVD has been reported in other studies, with the age adjusted relative risk for CGD in T₁DM being ~ 10 times that of the general population.*
- CVD Events occurred on average 10- 15 years earlier than age matched non-DM subjects.
- Hazard Ratio for cardiovascular disease (MI, coronary revascularization, stroke)
 - Men 3.6 (95% CI, 2.9-4.5)
 - Women 7.6 (95% CI, 5.5-10.7)

Cardiovascular disease and T₁DM

- Statins are effective in diabetes (including T₁DM)

21% reduction in major vascular events per 38.7mg/dL reduction in LDL-C.

ADA recommendation:

Statin therapy for adults with Type 1 Diabetes (T₁DM) to manage cardiovascular risk, particularly for those over 40, with existing cardiovascular disease (ASCVD), or with high-risk factors like kidney disease or long-standing diabetes. Moderate-intensity statins are generally used, with high-intensity for higher risks

ADA recommendation-primary prevention

Ages 40–75 (No ASCVD):

Use **moderate-intensity statin** (provides a risk reduction of 25% resulting in a risk like that of people without DM)

Ages 40–75 (High CV Risk / ≥ 1 ASCVD Risk Factor):

Use **high-intensity statin**

Goal: **$\geq 50\%$ LDL reduction and LDL < 70 mg/dL (1.8 mmol/L). (A)**

If LDL ≥ 70 mg/dL despite max statin \rightarrow **Consider adding ezetimibe or PCSK9 inhibitor. (B)**

Older Adults (> 75 Years)

Already on statin \rightarrow **Reasonable to continue. (B)**

Not on statin \rightarrow **Consider initiating moderate-intensity statin after risk–benefit discussion. (C)**

Pregnancy:

Statins are contraindicated. (B)

ADA recommendation-primary prevention

High-Intensity Statin	Moderate-Intensity Statin	Low-Intensity Statin
Atorvastatin 40–80 mg	Atorvastatin 10–20 mg	Simvastatin 10 mg
Rosuvastatin 20–40 mg	Rosuvastatin 5–10 mg	Pravastatin 10–20 mg
	Simvastatin 20–40 mg	Lovastatin 20 mg
	Pravastatin 40–80 mg	Fluvastatin 20–40 mg
	Lovastatin 40 mg	Pitavastatin 1 mg
	Fluvastatin XL 80 mg	
	Fluvastatin 40 mg bid	
	Pitavastatin 2–4 mg	

^aFrom: Stone NJ, Robinson JG, Lichtenstein AH et al. 2013 ACC/AHA Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. Journal of the American College of Cardiology 2014;63:2889–934.

*ADA recommendation-primary prevention

Ages 20–39 : consider to treat if,

+ASCVD Risk Factors

20+ years of T₁DM

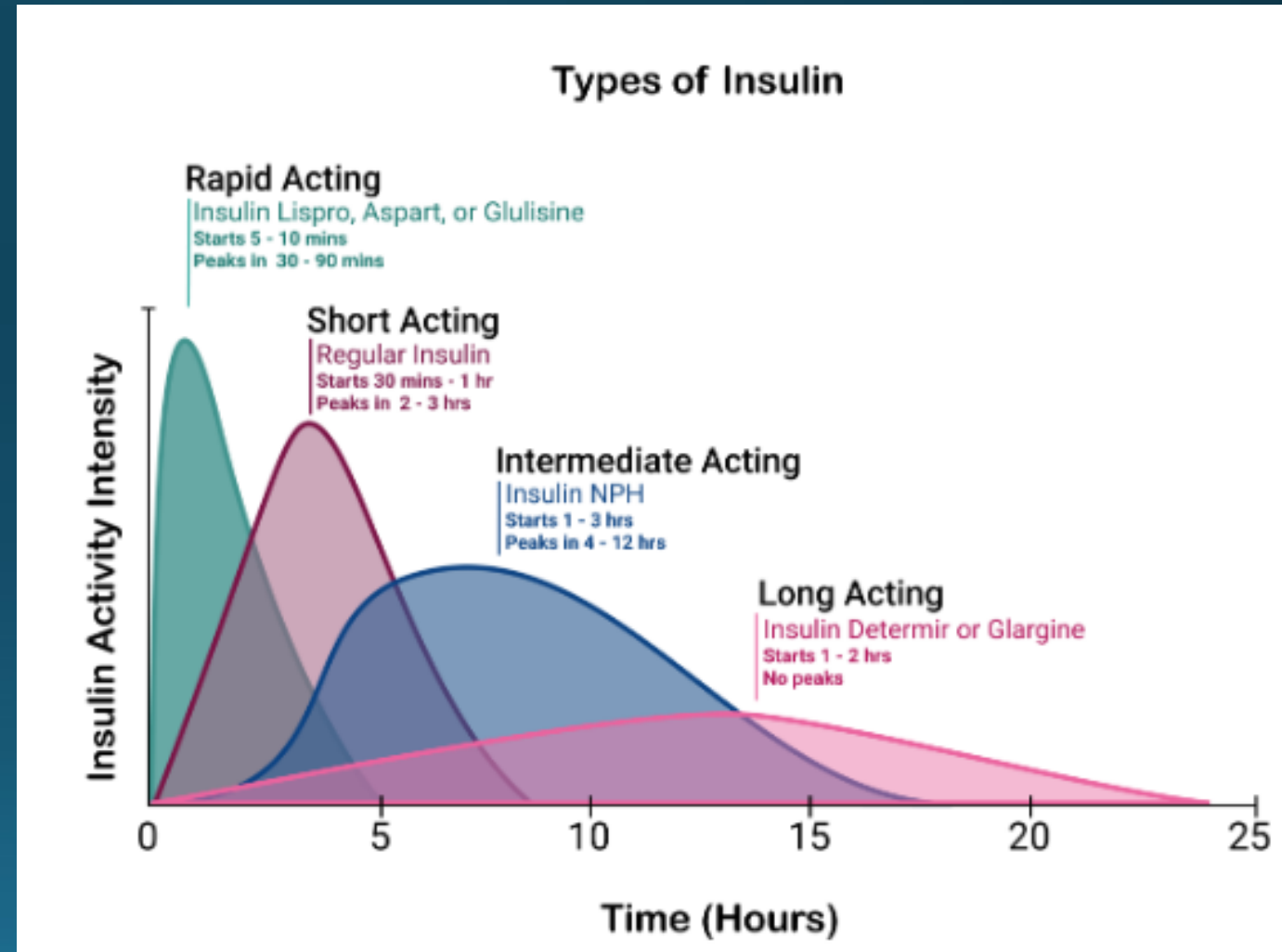
+Microvascular complications (nephropathy, neuropathy, retinopathy)

-> **Consider moderate statin therapy** + lifestyle therapy. (C)

-> *Statin is contraindicated during pregnancy or in women trying to become pregnant.*

Traditional Treatment for T₁DM

- Replacement of endogenous insulin
- Automated Insulin Delivery (AID) or "hybrid-closed loop" systems are standard of care for T₁DM
- Current resources for insulin pump management are in subspecialty
- Many different systems are available, but all require ability to appropriately adjust for carbohydrates and safe transition to insulin injections/24 hour troubleshooting
 - .DMPUMPREADINESS



Insulin pumps

Readiness for Insulin Pump Evaluation

- T1DM or other types on basal/bolus therapy with motivation and interest in using a pump
- **Ability to carbohydrate count safely and effectively**
- Able to monitor BG as prescribed (strongly encourage pt to be comfortable on CGM prior to pump evaluation)
- Able to keep appointments and share data
- **Proficiency with short and long-acting insulin doses in setting of pump failure**
- **Member or caregiver ability to maintain pump safely (cognitive, physical, and technical ability to use pump and problem solve)**
- No occupation which prohibits use (exposures high/low temperatures leading to insulin instability, safety limitations on wearable electronics/reader or cell phone access)
- No severe allergies to adhesives/cannula products
- If member requiring concentrated insulin (>200units a day) most pumps will not be able to easily accommodate volume; subspecialty consultation needed first

MiniMed™ 780G



t:slim X2™ & Mobi



Omnipod® 5



twiist™



iLet Bionic Pancreas



Non-insulin agents in Type 1 diabetes

In consultation with endocrinology

- Metformin
- **GLP₁RA (+/- GIP)**
- SGLT₂
- Acarbose

Criteria

- Currently on metformin or tried/failed/intolerant
- Type 1 diagnosis
- Insulin resistance defined as two or more of the following:
 - BMI > 30
 - Total daily dose of insulin > 80 units
 - Family hx of type 2 diabetes
 - Evidence of NAFLD (Fibrosure scores F1 or greater, evidence on US or diagnosis in chart)
 - Fasting triglyceride levels > 400
 - PCOS
 - CAD/CVD
 - OSA

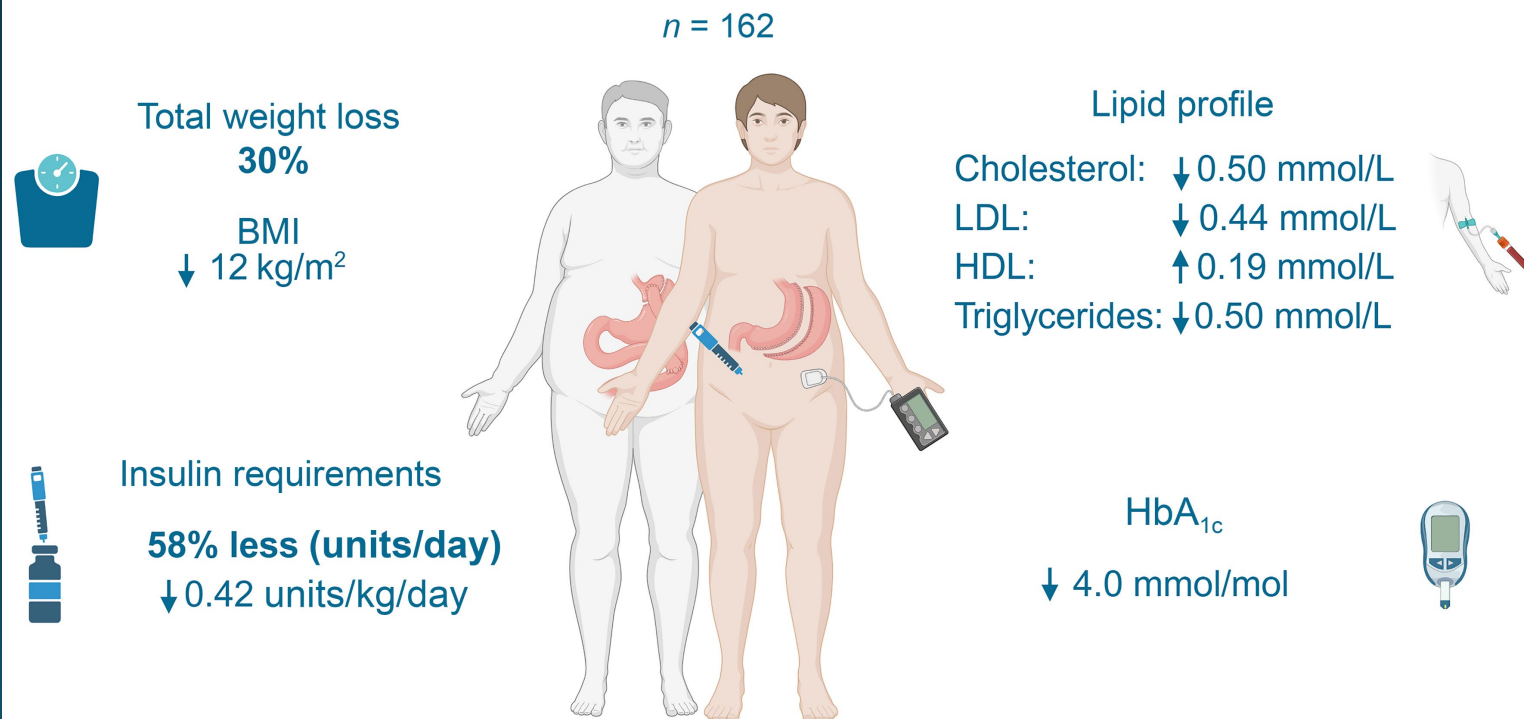
Bariatric surgery

- Bariatric surgery was associated with substantial metabolic improvement in people with T₁D and obesity, in particular in those with high HbA_{1c} and insulin need at baseline.
- Decrease insulin needs (82.6 units-> 36.3 units per day)
- BMI :Preoperative BMI was 40.2 ± 5.6 kg/m², which decreased to 28.5 ± 4.8 kg/m² at 12 months ($P < 0.001$)
- Monitor DKA : increasing risk after surgery while they lose weight. (euglycemic DKA can also occur)

This risk is driven by rapid weight loss, drastically reduced carbohydrate intake, and necessary post-surgical insulin adjustments.

Diabetes Care. 2026;49(4):658-663. doi:10.2337/dc25-2295

Metabolic Bariatric Surgery (MBS) Leads to Significant Weight Loss, Improved Metabolic Control, and Decreased Insulin Requirements in People Living With Obesity and Type 1 Diabetes 1 Year After MBS Surgery



*Multiple daily injections (57%) and pump (43%) as well as gastric bypass (42%) and sleeve gastrectomy (58%) had comparable results.

Transplantation

With types of tissue

- Whole pancreas transplantation
 - Simultaneous with kidney transplantation.
 - Pancreas after kidney
 - Pancreas alone
- Islet transplantation

Indication

- With renal failure, at the time of KTP if pancreas available. (or after)

Preconception management of insulin dependent diabetes and T₁DM

- Offer pre-conception counseling visit
 - Update autoimmune screening for thyroid disease
 - Discuss preconception targets HA_{1c}<6.5% and first trimester targets
 - Encourage reliable contraception until at target
 - Ensure appropriate device capacity for insulin requirements
- In KPWA MDI/insulin pump pts are transitioned to Maternal Fetal Medicine for management as soon as possible once they are pregnant
- Patients should anticipate 1- 2 week visits for insulin titration and adjustment, as well as increased eye checks

Resources:

- DIABETES SERVICES REFERRAL
 - Diabetes Nurse Specialists
 - Endocrinologists
 - Tech Team
- E consult DIABETES
- Clinical Practice Guidelines and QCG
- On Call Endocrinologist

Preconception Counseling in Diabetes & Gestational Diabetes Update

Anna Walton, MD
Obstetrics & Gynecology

OBJECTIVES

Outline the key aspects of preconception counseling for individuals with diabetes

Provide updates on the management of gestational diabetes, including when to refer to Maternal-Fetal Medicine

FAMILY PLANNING is
an essential part of
routine diabetes care
for people with
childbearing potential

Preconception counseling is highly effective in reducing the risk of:

- Congenital malformations
- Preterm birth
- NICU admissions
- SGA birth weight
- Perinatal mortality

Elements of Preconception Counseling

- Educate on risks of diabetes in pregnancy

Fetal/Neonatal	Obstetric	Maternal
Congenital anomalies	Miscarriage	Hypoglycemia
Abnormal growth (SGA/FGR, LGA, macrosomia)	Pre-eclampsia / Hypertension	Progression of microvascular disease
Preterm birth	Polyhydramnios	DKA
Other: hypoglycemia, erythrocytosis, hyperbilirubinemia, hypocalcemia, respiratory distress, cardiomyopathy	Shoulder dystocia, birth trauma	Cardiovascular disease
Mortality	Cesarean birth	Neuropathy sequelae
Long term: diabetes, obesity, other adverse cardiometabolic outcomes		

Elements of Preconception Counseling

- Educate on risks of diabetes in pregnancy
- Evaluate baseline health status
 - Weight/BMI
 - Labs: A1c, CMP, CBC, TSH*, urine protein assessment
 - Ophthalmologic exam
 - Foot exam
 - EKG
 - Comorbidities

Elements of Preconception Counseling

- Educate on risks of diabetes in pregnancy
- Evaluate baseline health status
 - Weight/BMI
 - Labs: A1c, CMP, CBC, TSH*, urine protein assessment
 - Ophthalmologic exam
 - Foot exam
 - EKG
 - Comorbidities
- Describe glycemic goals/monitoring differences for pregnancy (and encourage self-efficacy in management)

#GOALS

pregnancy edition

A1c < 6.5%

Timing

Target range

Fasting

70–95 mg/dL

1hr postprandial

110–140 mg/dL

2hr postprandial

100–120 mg/dL

Elements of Preconception Counseling

- Educate on risks of diabetes in pregnancy
- Evaluate baseline health status
 - Weight/BMI
 - Labs: A1c, CMP, CBC, TSH*, urine protein assessment
 - Ophthalmologic exam
 - Foot exam
 - EKG
 - Comorbidities
- Describe glycemic goals/monitoring differences for pregnancy
- **Review Medications**

MEDICATION REVIEW

Antihyperglycemic agents

Preferred Insulin (glargine, lispro)

Acceptable Metformin

Not ideal Glyburide

Avoid GLP-1 agonists · SGLT-2 inhibitors
DPP-4 inhibitors

Elements of Preconception Counseling

- Educate on risks of diabetes in pregnancy
- Evaluate baseline health status
 - Weight/BMI
 - Labs: A1c, CMP, CBC, TSH*, urine protein assessment
 - Ophthalmologic exam
 - Foot exam
 - EKG
 - Comorbidities
- Describe glycemic goals/monitoring differences for pregnancy
- Review Medications
- **Ensure Vaccination: pneumococcal, influenza, COVID-19 (MMR, VZV)**

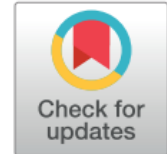
Elements of Preconception Counseling

- Educate on risks of diabetes in pregnancy
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 - Weight/BMI
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 - Foot exam
 - EKG
 - Comorbidities
- Describe glycemic goals/monitoring differences for pregnancy
- Review Medications
- Ensure Vaccination: pneumococcal, influenza, COVID-19 (MMR, VZV)
- **Connect to appropriate teams (MFM, CDE, RDN, Endocrine, Nephrology)**

When to Refer to Maternal-Fetal Medicine

- Type 1 Diabetes
- CGM/Insulin pump
- Concentrated insulins
- Poor control
- Comorbidities: CKD/nephropathy, CVD, BMI > 60, hypertension requiring multiple medications

According to KPWA guidelines: Transfer of care from midwifery/family med to OBGYN is recommended for management of pre-pregnancy diabetes (Class B may be co-managed if mutually agreeable*)

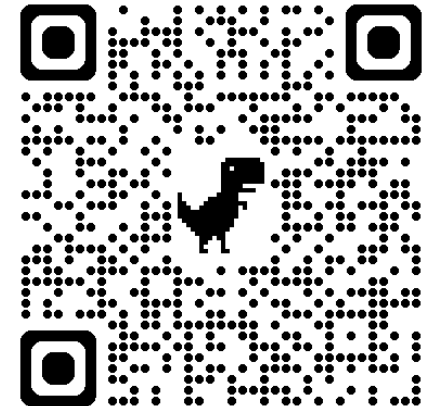


15. Management of Diabetes in Pregnancy: Standards of Care in Diabetes—2026

*American Diabetes Association
Professional Practice Committee for
Diabetes**

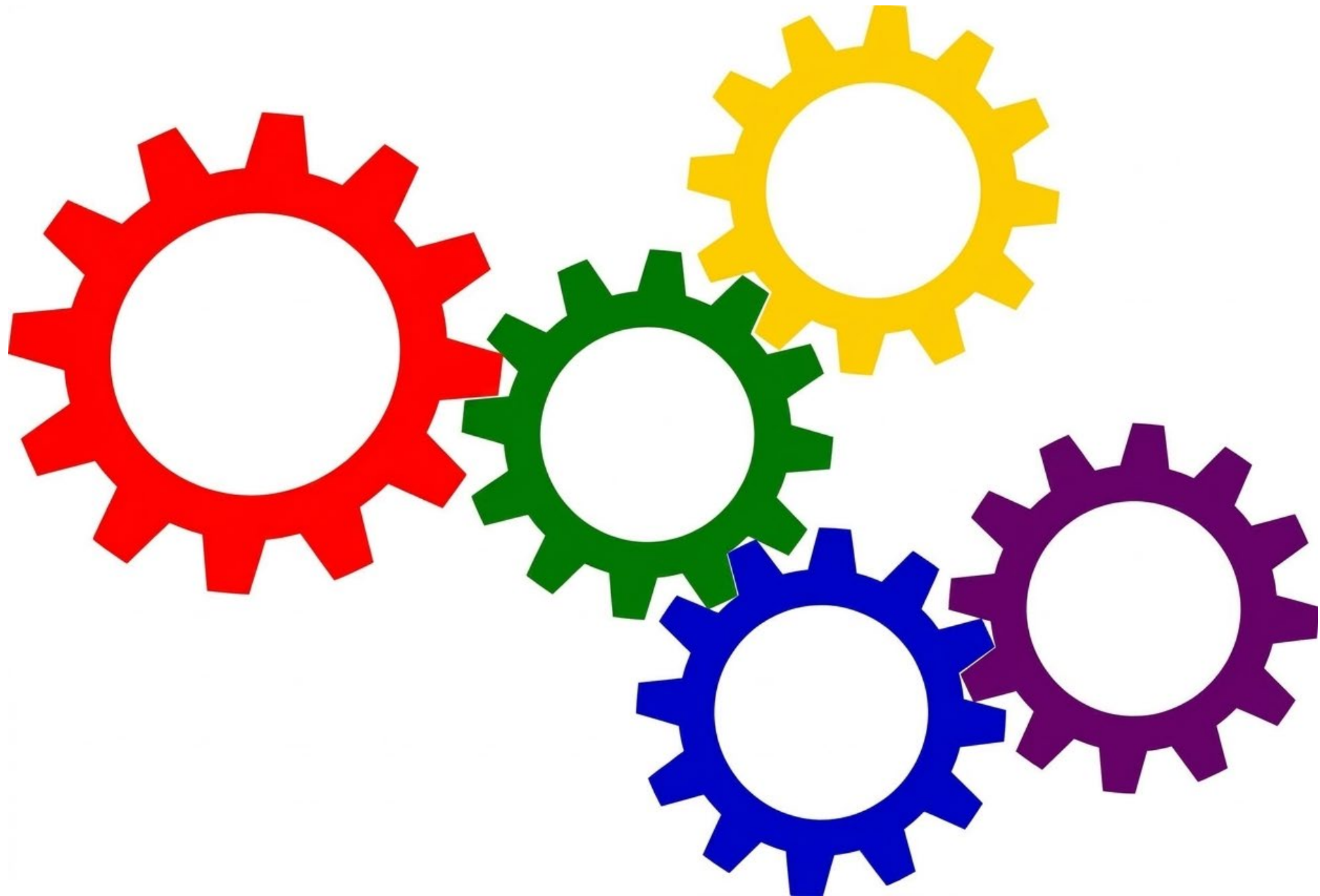
Diabetes Care 2026;49(Suppl. 1):S321–S338 | <https://doi.org/10.2337/dc26-S015>

Table 15.1—Checklist for preconception care for people with prediabetes, diabetes, or a history of gestational diabetes mellitus



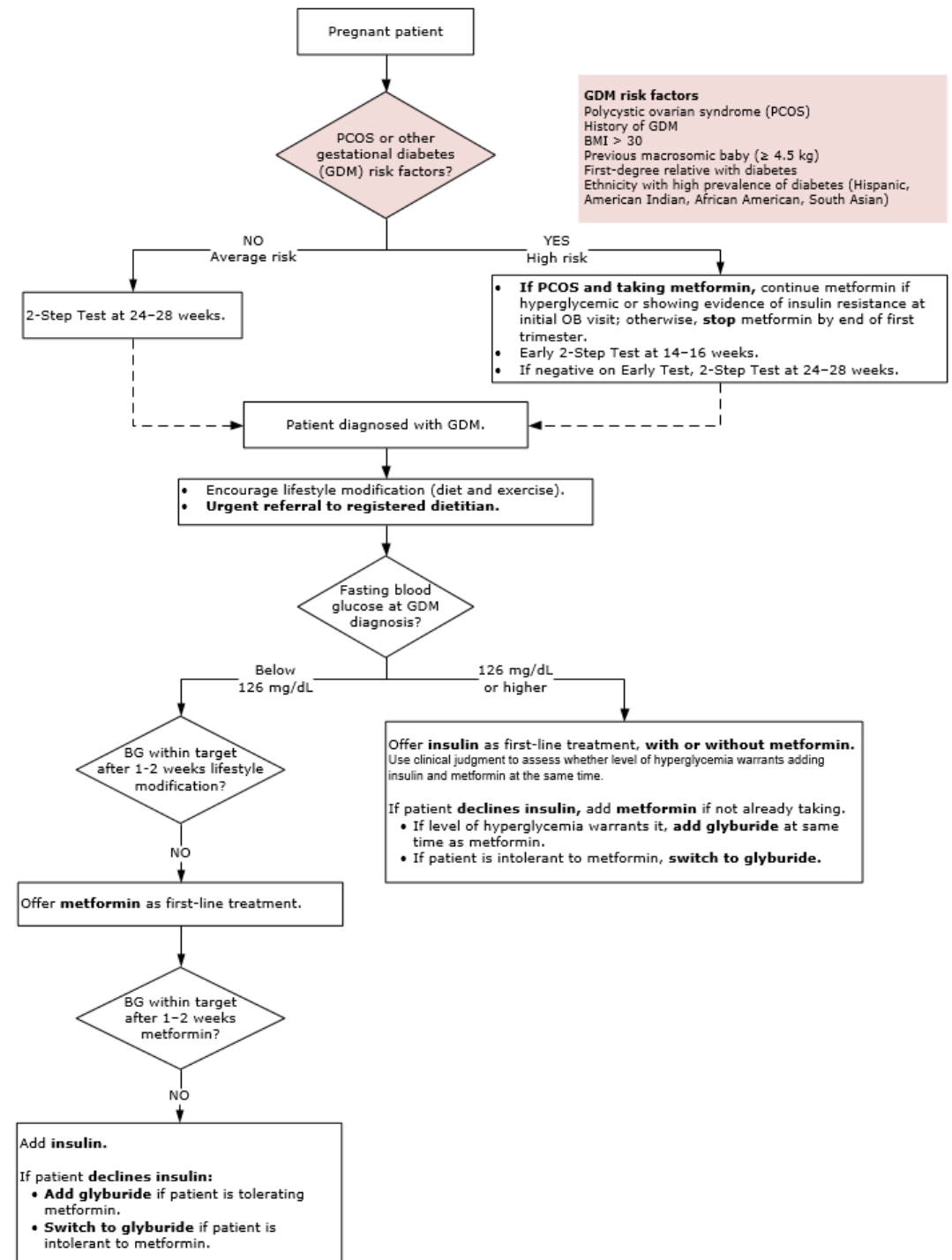
<https://pmc.ncbi.nlm.nih.gov/articles/PMC12690181/pdf/dc26S015.pdf>

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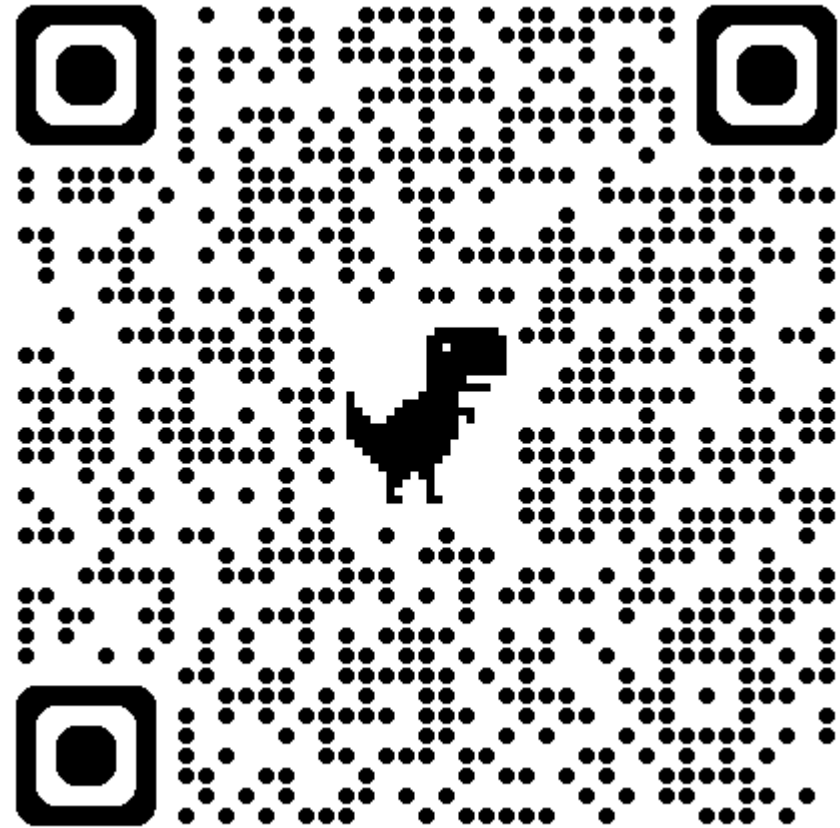


Gestational Diabetes

- Screening
- Diagnosis
- Management
 - Monitoring
 - Lifestyle modifications
 - Medications
 - Antenatal surveillance
 - Delivery
- Postpartum



KPWA Gestational Diabetes Clinical Guideline



<https://cl.kp.org/content/kp/cdts/clinicaLibrary/wa/cpg/clinical-guidelines/gdm/gdm.html>

Note: The links are clickable during the presentation.

Gestational Diabetes

- Screening

Table 1. Recommendations for screening for previously undiagnosed diabetes and for gestational diabetes ¹

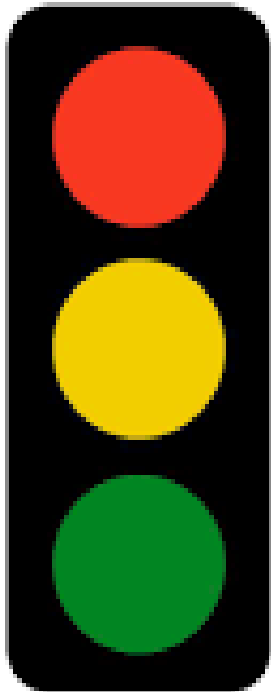
Screen for	Eligible population	Recommended frequency	Recommended tests
Previously undiagnosed diabetes	All pregnant patients ¹	Initial OB visit with nurse	HbA1c (as part of OB lab panel) If HbA1c screen is negative but diabetes is suspected due to symptoms, BMI, or ultrasound findings, a provocative test is recommended (2-step oral glucose tolerance test).

Criteria for Early GDM Screening

BMI 25+ (or >23 in Asian Americans) with one or more of the following:

- Physical inactivity
- First-degree relative with DM
- Personal history of GDM
- BIPOC
- Prior child birthweight > 4 kg
- Hypertension (140/90 &/or on meds)
- HDL <35 mg/dL or TG >250 mg/dL
- PCOS
- A_{1C} 5.7+, impaired glucose tolerance, or impaired fasting glucose on prior testing
- Other conditions associated with insulin resistance (eg, pre-pregnancy BMI 40+, acanthosis nigricans)
- History of cardiovascular disease

What if patient is on metformin for PCOS / fertility?



STOP by end of first trimester

- early screening
- repeat screening at 24-28wks if early screening neg

CONTINUE if hyperglycemic or evidence of insulin resistance at NOB

- treat as GDMA2

Gestational Diabetes

- Screening
- **Diagnosis**

Table 2. Recommendations for confirming diabetes diagnosis

Diagnosis	Recommended tests	Positive result parameters
Previously undiagnosed	<p>HbA1c</p> <p>Confirm the diagnosis with two tests done the same day: HbA1c and either fasting plasma glucose or random plasma glucose.</p> <ul style="list-style-type: none">• Abnormal results on both tests are diagnostic of diabetes.• If only one test produces an abnormal result, that test should be repeated. <p>For more information about the diagnostic process, see the Type 2 Diabetes Guideline.</p>	≥ 6.5%
Gestational	<p>2-step oral glucose tolerance test</p> <p>Step 1 is nonfasting 1-hour 50 mg glucose tolerance test.</p> <ul style="list-style-type: none">○ 1-hour result < 135 mg/dL is considered normal. No more testing required.○ 1-hour result between 135 mg/dL and 200 mg/dL is considered abnormal and the patient needs to move on to step 2.○ 1-hour result ≥ 200 mg/dL is considered diagnostic of GDM and does not require any further diagnostic tests. <p>Step 2 is fasting 2-hour 75 mg glucose tolerance test. The patient is diagnosed with GDM if any one of these three values is abnormal:</p> <ul style="list-style-type: none">○ Fasting ≥ 95 mg/dL○ 1-hour ≥ 180 mg/dL○ 2-hour ≥ 162 mg/dL	

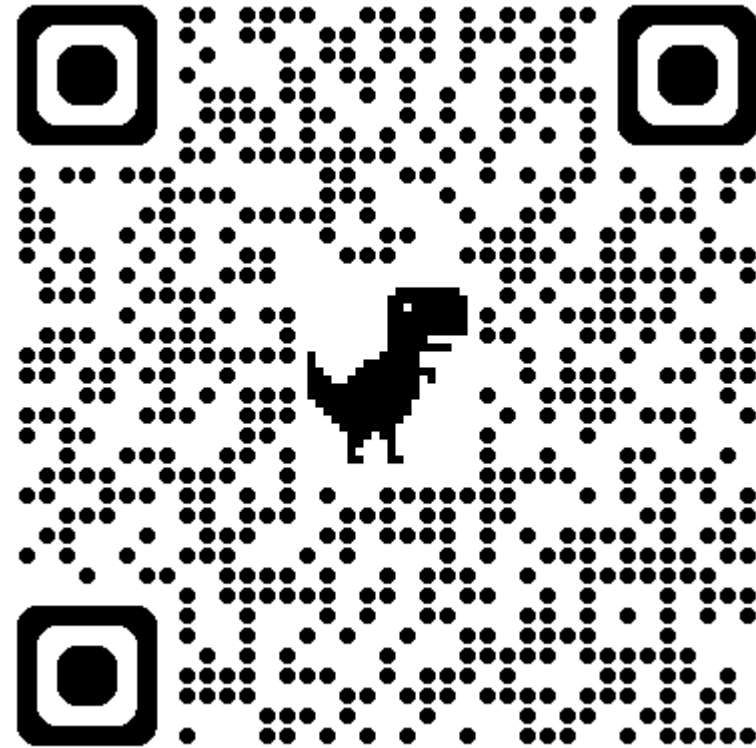
If early testing is done and is normal, you must still test at 24-28wks!

If early testing had elevated 1hr and normal 2hr, you can go straight to 2hr at 24-28wks

Gestational Diabetes

- Screening
- Diagnosis
- Management
 - Monitoring
 - Lifestyle modifications
 - Medications
 - Antenatal surveillance
 - Delivery

AIUM Practice Parameter for the Performance of Detailed Second- and Third-Trimester Diagnostic Obstetric Ultrasound Examinations



<https://onlinelibrary.wiley.com/doi/epdf/10.1002/jum.15163>

Note: The links are clickable during the presentation.

Blood sugar goals in pregnancy

What are the ADA and ACOG recommended blood glucose values in pregnancy?

- A. Fasting < 90; 1hr PP < 120; 2hr PP <110
- B. Fasting < 95; 1hr PP < 140; 2hr PP <120
- C. Fasting < 125; 1hr PP < 180; 2hr PP <140

When to start medications...

It is recommended to start medications when the fasting and/or postprandial levels exceed their target more than _____ of the time.

- A. 1/4
- B. 1/3
- C. 1/2

What medications to start...

Table 3. Recommended anti-hyperglycemic medications for patients with gestational diabetes

Population	Preferred	If needed
Fasting blood glucose 126 mg/dL or higher	Insulin	Add metformin. ¹

Medication Guidance - Insulin

Table 4. Insulin titration parameters and targets			
Step 1: Control fasting hyperglycemia by initiating insulin therapy with glargine . (Goal: average weekly fasting blood glucose < 95 mg/dL.)			
Fasting glucose	Initial insulin glargine dose	Insulin glargine dose adjustment	
95–125	0.2 u/kg	15% of current dose	
126–140	0.3 u/kg	15% of current dose	
Above 140	0.4 u/kg	15% of current dose	
Step 2: After controlling fasting hyperglycemia, control postprandial readings with insulin lispro (Goal: average weekly 1-hour postprandial readings < 140 mg/dL.)			
Medication	Frequency	Starting dose	Modified dose
Insulin lispro	If for any meal the 1-hour postprandial reading is <i>persistently</i> ≥ 140 mg/dL, add insulin lispro to be taken at that meal.	1 unit lispro per 10 g carbohydrate at largest meal	Adjust lispro 20% titration every 2 to 3 days until 1-hour postprandial glucose goal < 140. Do not exceed 40% basal and 60% bolus.

Medication Guidance – Metformin XR

Table 5. Oral medication dosing recommendations		
Medication	Starting dose	Titration
Metformin XR (extended release)	500 mg once daily	Metformin XR should be titrated as tolerated. ¹ A reasonable initial titration schedule is: a) 500 mg PO once daily x 3 days; b) 500 mg PO twice daily x 3 days; c) 1000 mg PO twice daily until delivery
¹ If a patient does not experience any GI side effects, the dose may be titrated more quickly to goal of 1000 mg twice daily. If a patient develops GI side effects, consider starting insulin.		

Medication Guidance - Glyburide

Only if patient unwilling to take insulin
AND
intolerant of OR uncontrolled with metformin

Educate about Risks

Compared to insulin therapy, glyburide may be associated with a higher risk of neonatal hypoglycemia, higher birth weight/macrosomia, and greater NICU admission duration.

SMFM: glyburide is inferior to insulin and metformin

ADA and ACOG recommend against glyburide as first-line agent.

Dosing

Start 2.5-5mg daily with breakfast

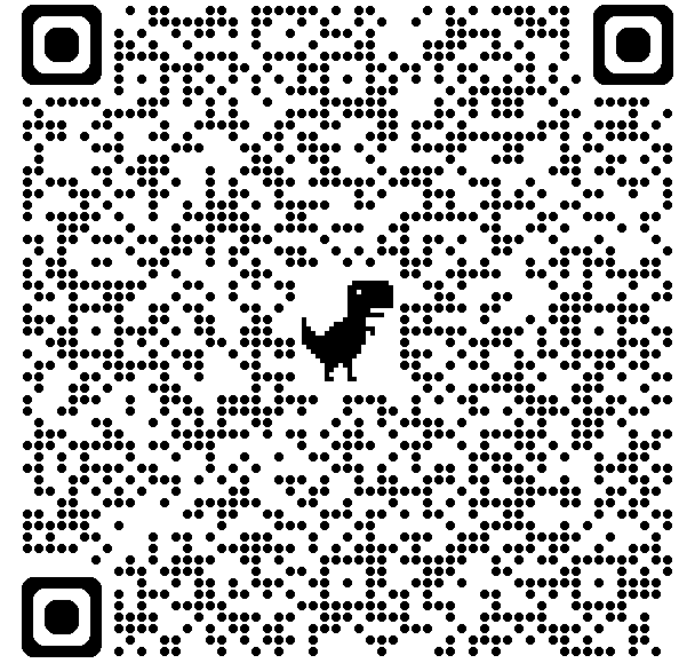
Max 10mg BID but effectiveness plateaus 5 – 7.5mg BID

Referrals

- Nutrition: urgent referral for all patients at diagnosis
- Obstetrics & Gynecology if:
 - EFW \geq 4,500g (suspected macrosomia): Cesarean delivery counseling by 36 weeks
 - Abnormal NST or AFI: URGENT
- Maternal Fetal Medicine if:
 - considering delivery $<$ 39 wks

“Patients with gestational diabetes (regardless of whether they are taking insulin) do not need to be managed by OB unless specific issues arise.”

KPWA Family Medicine and Midwife Guidelines for Obstetrical Consultation and/or Transfer of Care



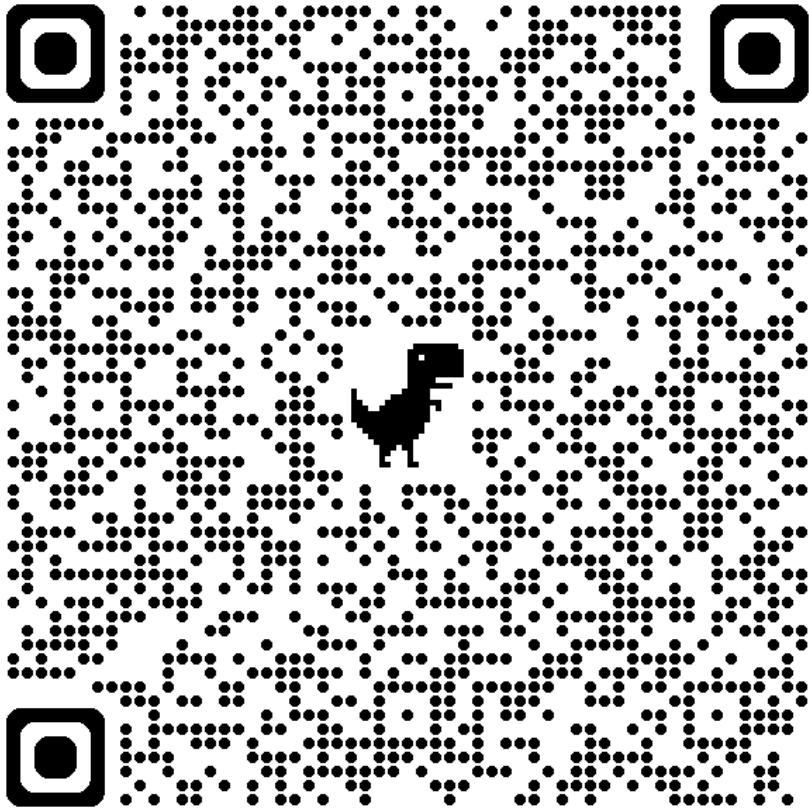
<https://cl.kp.org/content/kp/cdts/clinicallibrary/quick-care-guides/womens-health-qcg/consultation-transfer.pdf>

Note: The links are clickable during the presentation.

Antenatal Surveillance

Table 7. Recommended antenatal monitoring	
	GDM diet controlled/GDM A1
Non-stress test	Not standard practice
Ultrasound for fetal weight (estimated fetal weight)	Not standard practice
Amniotic fluid index/ maximum vertical pocket	Not standard practice

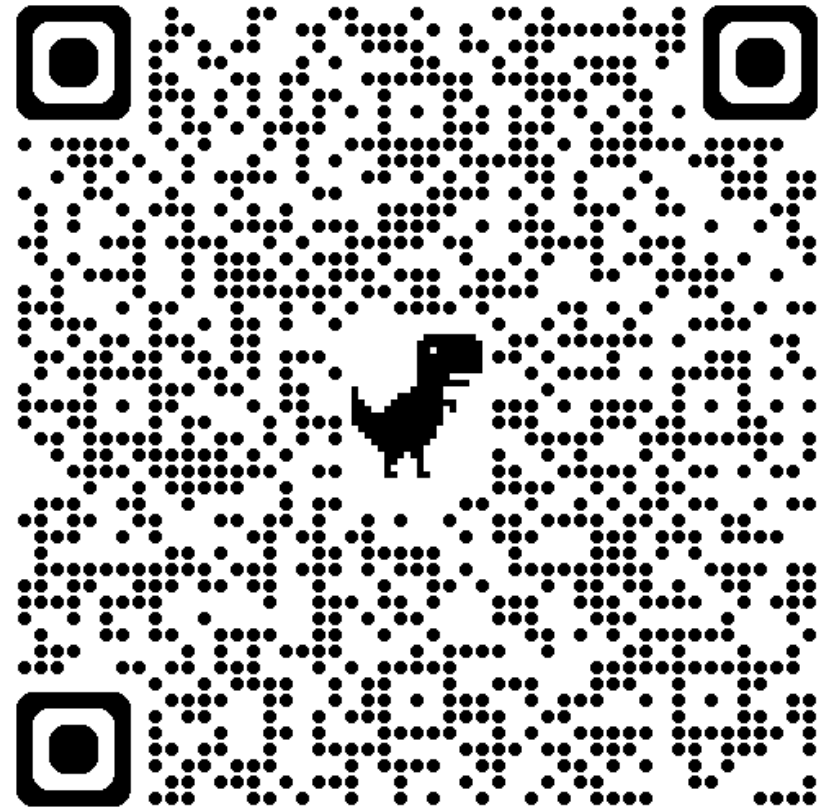
KPWA Antenatal Screening Guidelines



<https://cl.kp.org/content/kp/cdts/clinicallibrary/quick-care-guides/womens-health-qcg/antepartum-testing.pdf>

Note: The links are clickable during the presentation.

ACOG CO 828: Indications for Outpatient Antenatal Fetal Surveillance



<https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2021/06/indications-for-outpatient-antenatal-fetal-surveillance>

Note: The links are clickable during the presentation.

Gestational Diabetes

- Screening
- Diagnosis
- Management
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 - Lifestyle modifications
 - Medications
 - Antenatal surveillance
 - Delivery
- Postpartum

Postpartum

Up to what percentage of people with a history of GDM will develop diabetes later in life?

- A. 20
- B. 30
- C. 50
- D. 70
- E. 100

Postpartum and Long-Term Follow-Up

Table 8. Recommended follow-up testing		
Eligible population	Test	Frequency/timing
All patients with gestational diabetes (place order at 4-week postpartum visit)	HbA1c	3 months postpartum
All patients with a history of gestational diabetes	HbA1c	Annually

Remember to add this to Epic problem list
for automatic reminders!



THANK YOU!

References

- AIUM Practice Parameter for the Performance of Detailed Second- and Third-Trimester Diagnostic Obstetric Ultrasound Examinations. (2019). *J Ultrasound Medicine*, 38(12):3093-3100.
- American College of Obstetricians and Gynecologists. (2018). Gestational diabetes mellitus. Practice Bulletin No. 190. <https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2018/02/gestational-diabetes-mellitus>
- American College of Obstetricians and Gynecologists. (2021). Indications for Outpatient Antenatal Fetal Surveillance. Committee Opinion No. 828. <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2021/06/indications-for-outpatient-antenatal-fetal-surveillance>
- American College of Obstetricians and Gynecologists. (2021). Medically Indicated Late-Preterm and Early-Term Deliveries. Committee Opinion No. 831. <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2021/07/medically-indicated-late-preterm-and-early-term-deliveries>
- American College of Obstetricians and Gynecologists. (2018). Pregestational diabetes mellitus. Practice Bulletin No. 201. <https://www.acog.org/clinical/clinical-guidance/practice-bulletin/articles/2018/12/pregestational-diabetes-mellitus>
- American Diabetes Association. (2026). Management of diabetes in pregnancy: Standards of medical care in diabetes—2026. *Diabetes Care*, 49(Supplement 1), S321. <https://doi.org/10.2337/dc49-S321>
- Society for Maternal-Fetal Medicine. (2021). Society for Maternal-Fetal Medicine statement: Pharmacological treatment of gestational diabetes mellitus. SMFM Publications. <https://publications.smfm.org/publications/252-society-for-maternal-fetal-medicine-statement-pharmacological-treatment/>
- Society for Maternal-Fetal Medicine (SMFM), Hameed, A.B., Goulding, A.N., Gallagher, A.C., Combs, C.A. and SMFM Patient Safety and Quality Committee (2026), Society for Maternal-Fetal Medicine Special Statement: Revised updated checklist for antepartum care of pregestational diabetes mellitus. *Pregnancy*, 2: e70264. <https://doi.org/10.1002/pmf2.70264>



Nutrition Counseling in Diabetes

Jessica Kim, MS, RDN, CD, CDCES

March 26, 2026

Objective

Provide guidance on effective nutrition counseling strategies for individuals with diabetes, focusing on dietary modifications, meal planning, and the role of nutrition in glycemic control

Agenda

Introduction

Healthy Dietary Patterns for Diabetes

Nutrition Basics for Glycemic Control – Timing, Amount, Balance

Meal Planning Tips

Resources

Introduction

- **Dietitians provide Medical Nutrition Therapy with goals to**
 - **Promote healthy eating patterns**
 - **Address individual nutrition needs**
 - **Maintain enjoyment of food**
 - **Provide practical tools**
- **Nutrition “coaching”**
- **Research shows MNT can lead to decreases in A1c of up to 2.0%** (Franz et al. 2017)
- **Other healthcare team members can help to support evidence-based nutrition advice**



Healthy Dietary Patterns

Healthy Eating

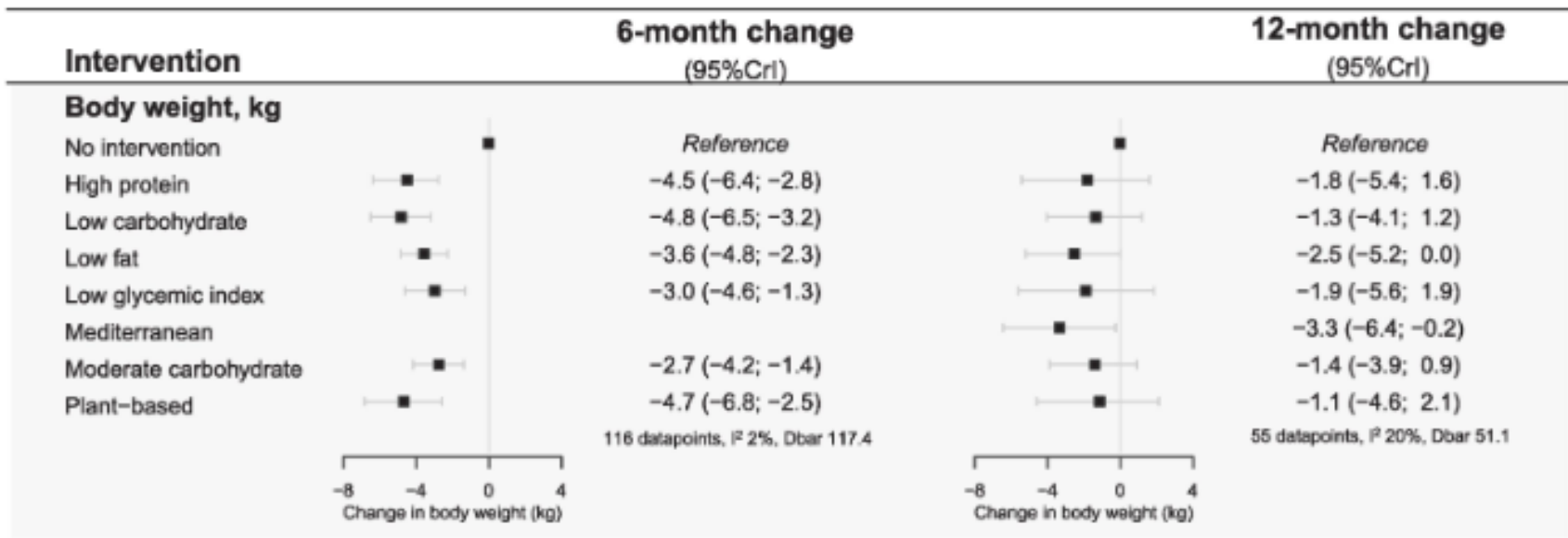
- Food is more than fuel
- Not a “one-size fits all” approach
- Balance, Variety, Moderation
- Eating Patterns vs Eating Plan



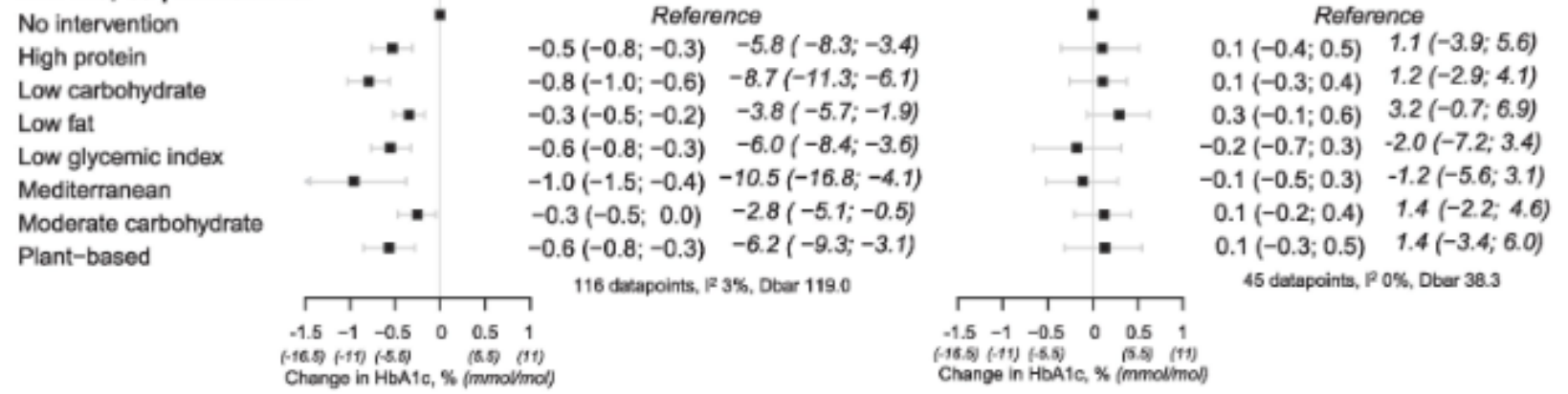
“People eat food, not nutrients”

- **A variety of dietary patterns are acceptable based on research**
 - Mediterranean
 - DASH
 - Low fat
 - Carb-restricted
 - Vegetarian/Vegan
- **No “ideal” percentage of calories from carb/protein/fat for people with diabetes**
- **Emphasis on nutrient-dense options: fruits, non-starchy vegetables, whole grains, legumes, nuts/seeds, low-fat dairy, lean protein**
- **Minimize sugar-sweetened beverages, sweets, refined grains, red meats, ultra-processed foods**





HbA1c, % | mmol/mol



Bonekamp et al. 2023

DASH4D

- **Participants had Type 2 DM, HTN** (Pilla et al. 2025)
- **Randomized to 4 diets each for 5 weeks in crossover study design**
 - DASH4D diet with lower/higher sodium
 - Comparison (typical US) diet with lower/higher sodium

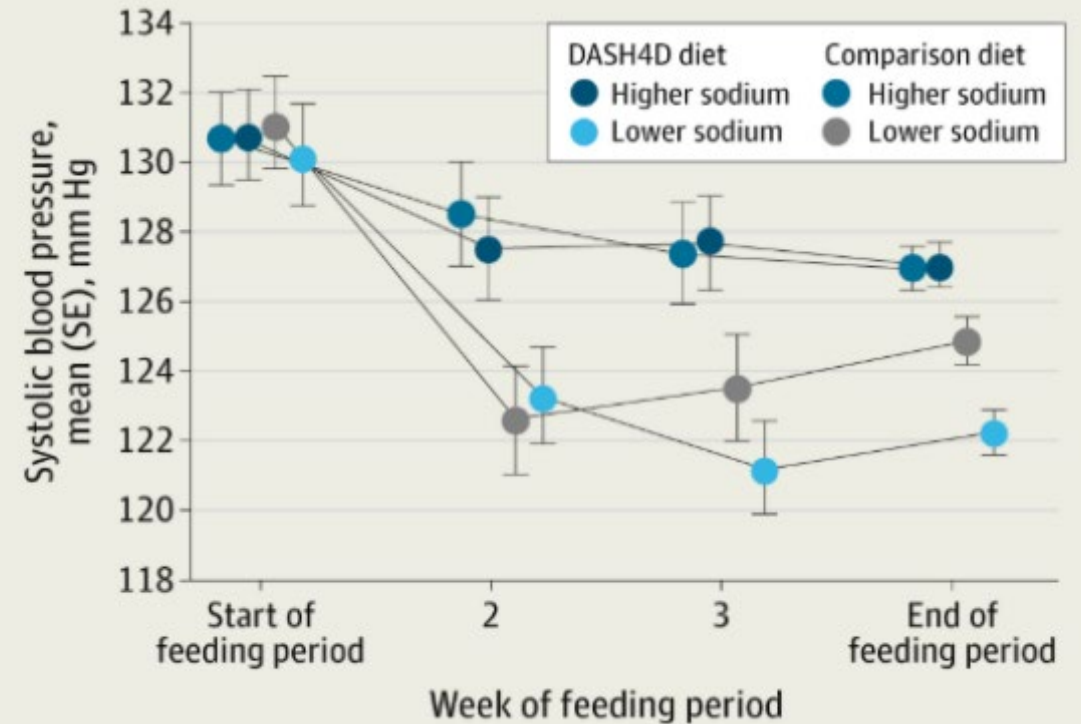


DASH4D

- **Participants had Type 2 DM, HTN** (Pilla et al. 2025)
- **Randomized to 4 diets each for 5 weeks in crossover study design**
 - DASH4D diet with lower/higher sodium
 - Comparison (typical US) diet with lower/higher sodium
- **DASH4D diet w/ lower sodium reduced SBP by 4.6mm Hg, DBP by 2.3 mm Hg**

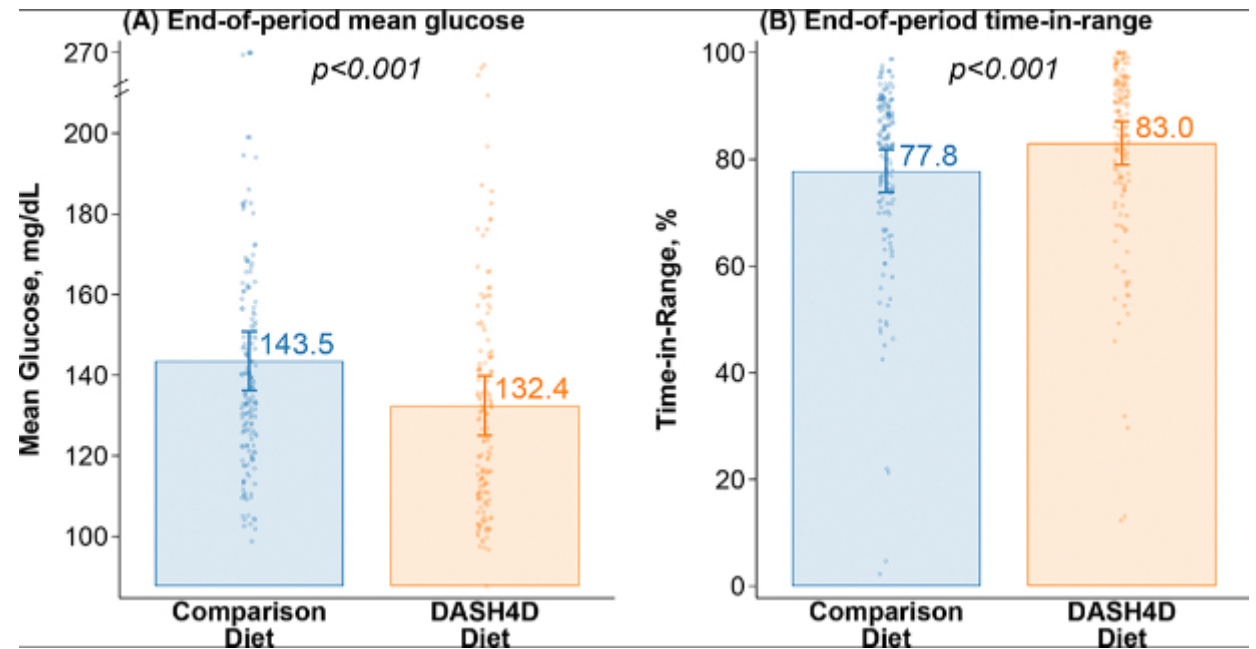
FINDINGS

Compared with the comparison diet with higher sodium, the DASH4D diet with lower sodium reduced end-of-period systolic BP



DASH4D

- **Ancillary study to examine impact on short-term glycemic control**
(Fang et al, 2025)
- **Significantly lower mean glucose (-11.1 mg/dL, $p < 0.001$) and higher time in range (5.2%, $p < 0.001$)**



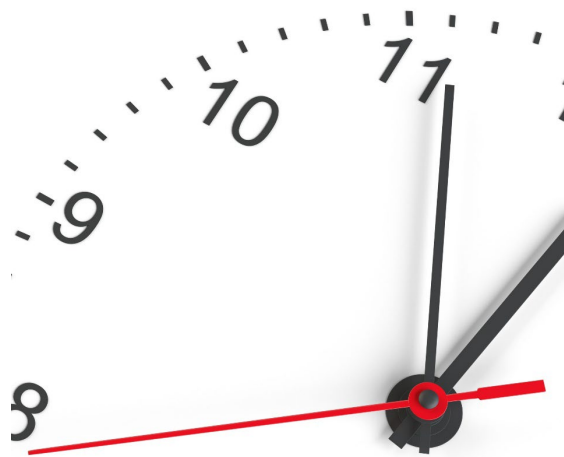
Popular diets not recommended

- **Ketogenic (“keto”) diets**
 - Can reduce A1c/BG in short term- longer studies w/ mixed results (as well as increases in LDL) (Gardner et al. 2022, Ichikawa et al. 2024)
 - Concerns for increased dietary fat/protein and limited fiber
 - Avoid in those on SGLT2 inhibitors
- **Intermittent fasting**
 - Not superior in studies compared to other energy restriction patterns
 - Can be contrary to goal of even food distribution to reduce glycemic load at meals
 - Some studies show no improvement in A1c compared to non-fasted plans (Evert et al. 2019)

Both may be challenging to sustain



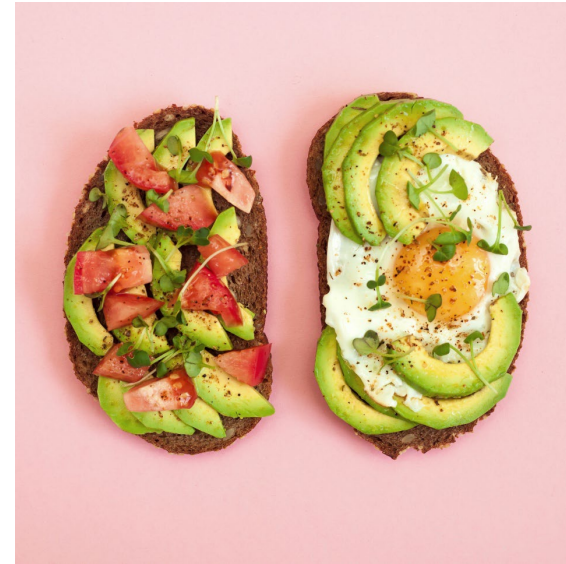
Nutrition Basics/Glycemic Control



Timing



Amount



Balance

Timing

- **Distribute food evenly throughout the day.**
- **Avoid going more than 4-5 hours without a meal or a snack**
 - **Prevents being overly hungry, reduce risk of overeating and cravings**
- **Plan at least 2 hours between meals and snacks**
 - **Gives blood sugar time to come down in between**
- **Consideration for some medications and risk of hypoglycemia**



Amount

Various ways to quantify carbohydrate

- Reading Nutrition Facts labels
- Charts with 15 g serving estimates
- Using measuring cups/spoons, fist comparisons, food scales
- Looking up info on apps, websites

Approximate amounts recommended

Women: 30-45 grams/meal

Men: 45-60 grams/meal

Individualized goals are important

Estimating portion sizes

When you can't measure, you can estimate!



A fist equals about 1 cup



A palm equals about 3 ounces

Nutrition Facts

8 servings per container
Serving size 2/3 cup (55g)

Amount per serving
Calories 230

% Daily Value*

Total Fat 8g **16%**

Saturated Fat 1g **5%**

Trans Fat 0g

Cholesterol 0mg **0%**

Sodium 160mg **7%**

Total Carbohydrate 37g **13%**

Dietary Fiber 4g **14%**

Total Sugars 12g

Includes 10g Added Sugars **20%**

Protein 3g

Vit. D 2mcg 10% • Calcium 260mg 20%

Iron 8mg 45% • Potas. 240mg 6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

1. Find the Serving Size

2. Locate the Total Carbohydrate in one serving.

Fiber and Sugars are included in Total Carbohydrate and do not need to be counted separately



These foods have **1 serving** (15 grams) of carbohydrate.

Bread (loaf-type)



1 slice

Bun (hot dog, hamburger)



1/2

Roll (plain)



1 small

Pasta (cooked)



1/2 cup

Tortilla (corn, flour)



1 (6 inches)

Rice, quinoa, couscous (cooked)



1/2 cup

Balance

Balanced meals contain all 3 macronutrients

- Each macronutrient affects your blood sugar differently- protein and fats slow gastric emptying, maintain satiety
- Recommended to opt for higher fiber carbohydrate foods
- Including non-starchy vegetables for fullness/volume



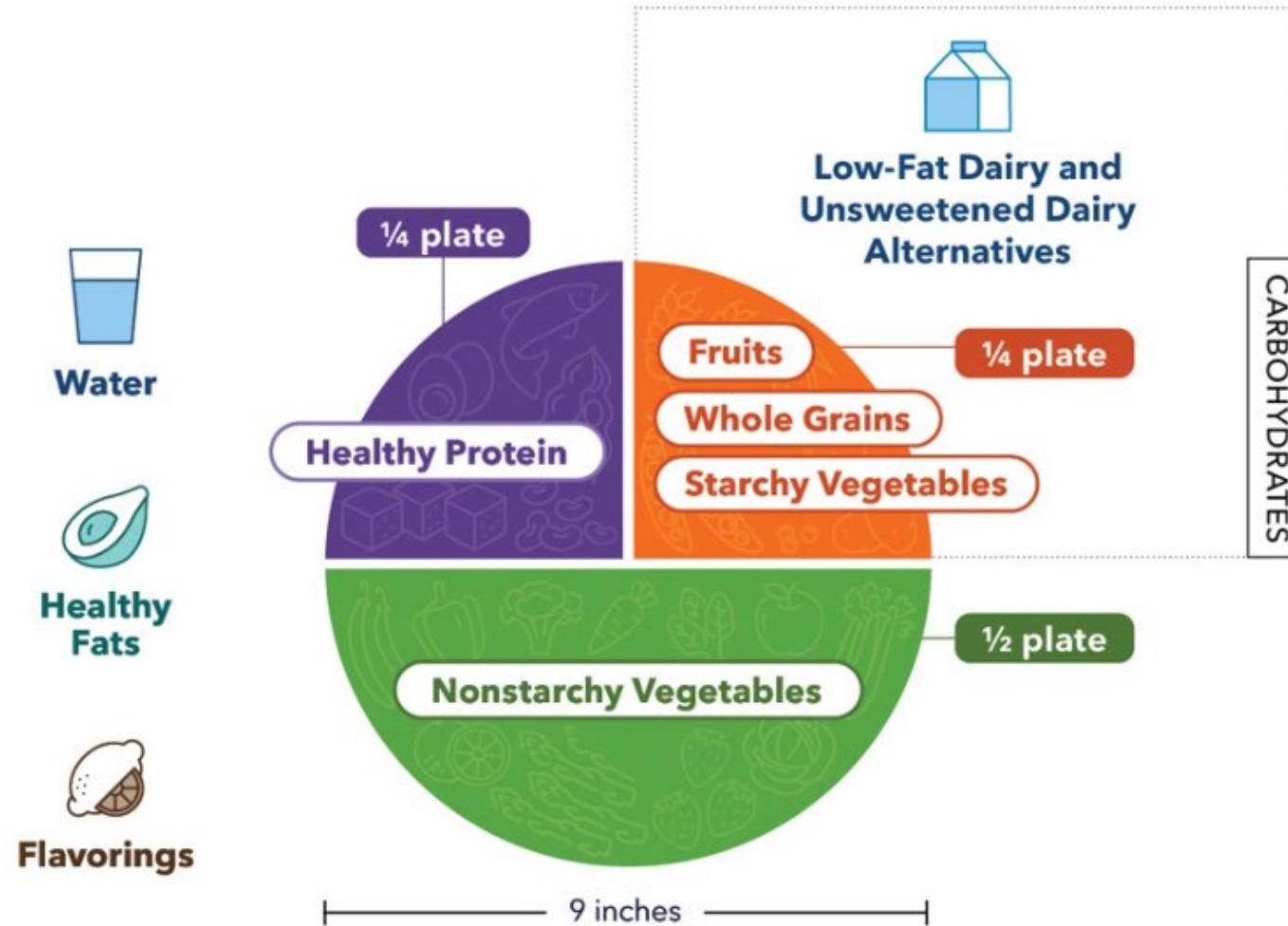
Picture from Southern California Permanente Medical Group; Center for Healthy Living, 2025

Meal Planning Tips

Assessment

- Meal timing
- Basic composition of meals (carbohydrates, protein, vegetables)
- Personal dietary preferences, cultural foods
- Sleep, stress, physical activity
- Medications
- Comorbidities (CKD, gastroparesis, food allergies, etc)
- Disordered eating, fad diets, supplement use, food beliefs
- Readiness to change
- Food preparation- cooking skills, shopping, social support, food insecurity
- Knowledge around food/nutrition
- Patient goals

The Diabetes Plate Method



Picture from Southern California Permanente Medical Group; Center for Healthy Living, 2025



Mix and Match Your Meals

Choose one item in each column to create a meal.

 **HEALTHY PROTEIN**
¼ of your plate

 **WHOLE GRAINS/
STARCHY
VEGETABLES/
FRUITS**
¼ of your plate

 **VEGETABLES**
½ of your plate

Baked fish

Sweet potatoes

Asparagus

Grilled shrimp

Potatoes

Green beans

Tuna canned in water

Whole-grain crackers

Celery

Low-fat cottage cheese

Garbanzo beans

Mixed salad greens

Skinless chicken breast half

Cooked wild rice

Sugar snap peas

Low-fat cheese

Whole-grain bread

Carrot sticks and radishes

Skinless turkey breast cutlet

Corn bread (made with whole-grain flour)

Roasted broccoli and cauliflower

Egg product, scrambled







Whole-wheat English muffin

Diced green and red sweet peppers

Tofu

Cooked brown rice

Bok choy

<p>ORANGE AND PISTACHIOS</p> 	<p>CARROTS AND HUMMUS</p> 	<p>WHOLE-GRAIN CRACKERS AND CHEESE</p> 
<p>AIR-POPPED POPCORN AND CHEESE</p> 	<p>TUNA SALAD CRISPS</p> 	<p>APPLE AND PEANUT BUTTER</p> 

Picture/info from Southern California Permanente Medical Group; Center for Healthy Living, 2025

Additional strategies

- **Healthy swaps, addition vs subtraction**
 - Adding beans or quinoa into white rice
 - Adding veggies to a casserole, substitute for some starch
 - Mixing lentils, mushrooms into ground beef
- **Eating order** (Touhamy II et al. 2025)
 - Carb first vs carb last
- **Reducing added sugars**
 - Alternative beverages
 - Label reading
 - **Non-nutritive sweeteners** (McGlynn et al, 2022)



Additional strategies

- **Dining out**
 - Looking up nutrition info ahead
 - Limiting extras on the table
 - Be mindful of beverage choices
 - Meal timing
 - To-go box
- **Mindful eating**
 - Plating food vs out of the bag/box
 - Smaller plates/bowls
 - Limit distractions
 - Awareness of food environment



Experimenting

EXAMPLE

Exercise	Time	Blood Sugar	List Foods & Beverages	Amount/ Portion Size	Carbs (gm)	
20 min walk	6:30 AM	130	Breakfast			
	7:00 AM		English Muffin with butter	1	30 gm	
			Scrambled egg	1	0	
			cantaloupe melon	1 cup	15	
	9:00 AM	152			45 gm	
			Snack			
	Noon		Lunch	Cucumber	1/2	0
			Dave's Killer Bread, thin sliced	2 slices	24 gm	
			Turkey	3 oz.	0	
			Honey Crisp apple	1/2	20 gm	
				44 gm		
2:00 pm	132					



Summary

- **A variety of healthy eating patterns can help manage diabetes and improve health outcomes**
- **Considerations for timing, amount and balance to support glycemic control**
- **Emphasis on building a sustainable eating plan**



Resources

Nutrition Classes

- **Thriving with Diabetes**
- **Foundations for Healthy Living**
- **Thrive: Eat Well, Be Well**
- **Lifestyle Medicine**
- **Gestational Diabetes**
- **Cardiac Rehab**
- **New classes coming soon!**



Questions?

References

Franz MJ, MacLeod J, Evert A, et al. Academy of Nutrition and Dietetics Nutrition Practice guideline for type 1 and type 2 diabetes in adults: systematic review of evidence for medical nutrition therapy effectiveness and recommendations for integration into the nutrition care process. *J Acad Nutr Diet* 2017;117:1659-1679

American Diabetes Association Professional Practice Committee for Diabetes*; 5. Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes: Standards of Care in Diabetes—2026. *Diabetes Care* 1 January 2026; 49 (Supplement_1): S89–S131.

Alison B. Evert, Michelle Dennison, Christopher D. Gardner, W. Timothy Garvey, Ka Hei Karen Lau, Janice MacLeod, Joanna Mitri, Raquel F. Pereira, Kelly Rawlings, Shamera Robinson, Laura Saslow, Sacha Uelmen, Patricia B. Urbanski, William S. Yancy; Nutrition Therapy for Adults With Diabetes or Prediabetes: A Consensus Report. *Diabetes Care* 1 May 2019; 42 (5): 731–754.

Bonekamp NE, van Damme I, Geleijnse JM, et al. Effect of dietary patterns on cardiovascular risk factors in people with type 2 diabetes. A systematic review and network meta-analysis. *Diabetes Res Clin Pract* 2023;195:110207.

Pilla SJ, Yeh H-C, Mitchell CM, et al.; DASH4D Collaborative Research Group. Dietary patterns, sodium reduction, and blood pressure in type 2 diabetes: the DASH4D randomized clinical trial. *JAMA Intern Med* 2025;185:937–946.

Fang M, Wang D, Rebholz CM, Echouffo-Tcheugui JB, Tang O, Wang NY, Mitchell CM, Pilla SJ, Appel LJ, Selvin E. DASH4D diet for glycemic control and glucose variability in type 2 diabetes: a randomized crossover trial. *Nat Med*. 2025 Oct;31(10):3309-3316. doi: 10.1038/s41591-025-03823-3. Epub 2025 Aug 5.

Gardner CD, Landry MJ, Perelman D, et al. Effect of a ketogenic diet versus Mediterranean diet on glycated hemoglobin in individuals with prediabetes and type 2 diabetes mellitus: the interventional Keto-Med randomized crossover trial. *Am J Clin Nutr* 2022;116:640–652.

Ichikawa T, Okada H, Hironaka J, et al. Efficacy of long-term low carbohydrate diets for patients with type 2 diabetes: a systematic review and meta-analysis. *J Diabetes Investig* 2024;15: 1410–1421.

Bowen ME, Cavanaugh KL, Wolff K, et al. The diabetes nutrition education study randomized controlled trial: a comparative effectiveness study of approaches to nutrition in diabetes self-management education. *Patient Educ Couns* 2016; 99:1368–1376.

Samir Touhamy II, Kathyayini Palepu, Ampadi Karan, Katie C. Hootman, Jessica Riad, Sriharsha Sripadrao, Alice S. Zhao, Ashley Giannita, Debra D'Angelo, Laura C. Alonso, Louis J. Aronne, Alpana P. Shukla; Carbohydrates-Last Food Order Improves Time in Range and Reduces Glycemic Variability. *Diabetes Care* 22 January 2025; 48 (2): e15–e16.

McGlynn ND, Khan TA, Wang L, Zhang R, Chiavaroli L, Au-Yeung F, Lee JJ, Noronha JC, Comelli EM, Blanco Mejia S, Ahmed A, Malik VS, Hill JO, Leiter LA, Agarwal A, Jeppesen PB, Rahelic D, Kahleová H, Salas-Salvadó J, Kendall CWC, Sievenpiper JL. Association of Low- and No-Calorie Sweetened Beverages as a Replacement for Sugar-Sweetened Beverages With Body Weight and Cardiometabolic Risk: A Systematic Review and Meta-analysis. *JAMA Netw Open*. 2022 Mar 1;5(3):e222092..