A1C TO Z: WHAT'S NEW IN THE 2025 ADA DIABETES STANDARDS OF CARE

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Kansas Pharmacists Association // 2025 Annual Meeting & Trade Show August 22-24 // Lawrence, KS

DISCLOSURES

Faculty

Michelle Koverman and Kristen Thompson, faculty for this activity, have no relevant financial relationship(s) with ineligible companies to disclose.

Planners

None of the planners for this activity have any relevant financial relationships with ineligible companies to disclose.

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PRE-TEST

1. True or false: Type 1 diabetes is due to complete beta cell deficiency versus type 2 diabetes is due to progressive loss of beta cell insulin secretion.
2. Which medication would be preferred in a patient who is 78 years old with PMH of type 2 diabetes, chronic kidney disease Stage 3a, hypertension, vitamin B-12 deficiency, and hypothyroidism with no known drug allergies.
3. At what stage should a pharmacist utilize A1c and glucose data to make treatment intensification?

ABBREVIATIONS

- A1c/HgbA1c: glycated hemoglobin A1c
- ACE-I: angiotensin converting enzyme inhibitor
- ALT: alanine aminotransferase
- ARB: angiotensin receptor blocker
- ASCVD: atherosclerotic cardiovascular disease
- AST: aspartate aminotransferase
- BMI: Body mass index
- BP: Blood pressure
- CGM: Continuous glucose monitor
- CHF: Chronic heart failure
- CKD: Chronic kidney disease
- CV: Cardiovascular
- CVD: Cardiovascular disease
- DKA: diabetic ketoacidosis
- DSMES: diabetes self-management education and support
- eGFR: estimate glomerular filtration rate
- GIP: dual glucose-dependent insulinotropic polypeptide
- GLP1-RA: glucagon-like peptide 1 receptor agonist
- HCC: hepatocellular carcinoma
- HFpEF: Heart failure preserved ejection fraction
- HFrEF: Heart failure reduced ejection fraction
- HHS: hyperosmolar hyperglycemic state
- MACE: major adverse cardiovascular event
- MASH: metabolic dysfunction – associated steatohepatitis
- MASLD: metabolic dysfunction – associated steatotic liver disease
- MRA: mineralocorticoid receptor antagonist
- NAFLD: nonalcoholic fatty liver disease
- NASH: nonalcoholic steatohepatitis
- SLGT2i: sodium-glucose cotransporter 2 inhibitor
- TBR: time below range
- TIR: time in range
- UACR: urine albumin creatine ratio
- UTIs: urinary tract infections

ADA EVIDENCE GRADING SYSTEM FOR "STANDARDS OF CARE IN DIABETES" (TABLE 1)

Level of Evidence	Description
A	Clear evidence from well-conducted, generalizable randomized controlled trials that are adequately powered, including: • Evidence from a well-conducted multicenter trial • Evidence from a meta-analysis that incorporated quality ratings in the analysis Supportive evidence from well-conducted randomized controlled trials that are adequately powered, including: • Evidence from a well-conducted trial at one or more institutions • Evidence from a meta-analysis that incorporated quality ratings in the analysis
B	Supportive evidence from well-conducted cohort studies, including: • Evidence from a well-conducted prospective cohort study or registry • Evidence from a well-conducted meta-analysis of cohort studies Supportive evidence from a well-conducted case-control study
C	Supportive evidence from poorly controlled or uncontrolled studies, including: • Evidence from randomized clinical trials with one or more major or three or more minor methodological flaws that could invalidate the results • Evidence from observational studies with high potential for bias (such as case series with comparison with historical controls) • Evidence from case series or case reports Conflicting evidence with the weight of evidence supporting the recommendation
E	Expert consensus or clinical experience

American Diabetes Association Professional Practice Committee; Introduction and Methodology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S1–S5.

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C	Supportive evidence from **poorly controlled or uncontrolled studies,** including: • Evidence from **randomized clinical trials** with one or more major or three or more minor **methodological flaws** that could invalidate the results • Evidence from **observational studies** with high potential for bias (such as case series with comparison with historical controls) • Evidence from **case series or case reports** Conflicting evidence with the weight of evidence supporting the recommendation
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American Diabetes Association Professional Practice Committee; Introduction and Methodology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S1–S5.

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2. DIAGNOSIS AND CLASSIFICATION OF DIABETES

WHAT IS DIABETES MELLITUS?

- Diabetes mellitus is a group of metabolic disorders of carbohydrate metabolism in which glucose is both underutilized as an energy sources and overproduced due to inappropriate gluconeogenesis and glycogenolysis, resulting in hyperglycemia.

DIAGNOSTIC CRITERIA

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

A1C ≥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.

Preferred Plasma Glucose Testing:

- Pregnancy
- Glucose-6-phosphate dehydrogenase deficiency
- Human immunodeficiency virus (HIV)
- Recent blood loss/transfusion
- Hemolysis
- Erythropoietin therapy

American Diabetes Association Professional Practice Committee. 2. Diagnosis and classification of diabetes: Standards of Care in Diabetes—2025. Diabetes Care 2025;48(Suppl. 1): S27–S49

CLASSIFICATIONS

Type 1 diabetes	• autoimmune beta-cell destruction leading to insulin **deficiency,** including latent autoimmune diabetes in adults.
Type 2 diabetes	• progressive loss of beta-cell function due to insulin **resistance.**
Other causes	• monogenic diabetes syndrome, exocrine pancreas, drug- or chemical-induced diabetes
Gestational diabetes	• diagnosed in the 2nd or 3rd trimester of pregnancy

American Diabetes Association Professional Practice Committee. 2. Diagnosis and classification of diabetes: Standards of Care in Diabetes—2025. Diabetes Care 2025;48(Suppl. 1): S27–S49

SCREENING PATIENTS WITH RISK FACTORS

Recommendations:

- Use a validated risk calculator for asymptomatic adults
- Should be considered for all adults with overweight or obesity and one or more risk factor
- **All others should be screened at age 35 years**
- Risk-based screening should be considered after the onset of puberty or after age 10 years, whichever is first with overweight (BMI >85th percentile) or obesity (BMI >95th percentile) and have one or more risk factor
- **Certain medication use: glucocorticoids, statin, thiazide diuretics, some HIV medications, and 2nd generation antipsychotics**
  - 2nd generation antipsychotics: Screen at baseline then repeat 12-16 weeks after initiation or sooner, and annually thereafter
  - HIV medications: baseline and 3-6 months after and if switching therapy

Table 2.5—Criteria for screening for diabetes or prediabetes in asymptomatic adults

1. Testing should be considered in adults with overweight or obesity (BMI ≥25 kg/m^2 or ≥23 kg/m^2 in individuals of Asian ancestry) who have one or more of the following risk factors:
   - First-degree relative with diabetes
   - High-risk race, ethnicity, and ancestry (e.g., African American, Latino, Native American, Asian American)
   - History of cardiovascular disease
   - Hypertension (≥130/80 mmHg or on therapy for hypertension)
   - HDL cholesterol level <35 mg/dL (<0.9 mmol/L) and/or triglyceride level >250 mg/dL (>2.8 mmol/L)
   - Individuals with polycystic ovary syndrome
   - Physical inactivity
   - Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans, metabolic dysfunction–associated steatotic liver disease)
2. People with prediabetes (A1C ≥5.7% [≥39 mmol/mol], IGT, or IFG) should be tested yearly.
3. People who were diagnosed with GDM should have testing at least every 1–3 years.
4. For all other people, testing should begin at age 35 years.
5. If results are normal, testing should be repeated at a minimum of 3-year intervals, with consideration of more frequent testing depending on initial results and risk status.
6. Individuals in other high-risk groups (e.g., people with HIV, exposure to high-risk medicines, evidence of periodontal disease, history of pancreatitis) should also be closely monitored

GDM, gestational diabetes mellitus; IFG, impaired fasting glucose; IGT, impaired glucose tolerance.

American Diabetes Association Professional Practice Committee. 2. Diagnosis and classification of diabetes: Standards of Care in Diabetes—2025. Diabetes Care 2025;48(Suppl. 1): S27–S49

American Diabetes Association
Connected for Life.

Are you at risk for type 2 diabetes?

Diabetes Risk Test

1. **How old are you?**
   Less than 40 years (0 points)
   40–49 years (1 point)
   50–59 years (2 points)
   60 years or older (3 points)
2. **Are you a man or a woman?**
   Man (1 point) Woman (0 points)
3. **If you are a woman, have you ever been diagnosed with gestational diabetes?**
   Yes (1 point) No (0 points)
4. **Do you have a mother, father, sister or brother with diabetes?**
   Yes (1 point) No (0 points)
5. **Have you ever been diagnosed with high blood pressure?**
   Yes (1 point) No (0 points)
6. **Are you physically active?**
   Yes (0 points) No (1 point)
7. **What is your weight category?**
   See chart at right.

WRITE YOUR SCORE IN THE BOX.

Height	Weight (lbs.)		
4′ 10″	119–142	143–190	191+
4′ 11″	124–147	148–197	198+
5′ 0″	128–152	153–203	204+
5′ 1″	132–157	158–210	211+
5′ 2″	136–163	164–217	218+
5′ 3″	141–168	169–224	225+
5′ 4″	145–173	174–231	232+
5′ 5″	150–179	180–239	240+
5′ 6″	155–185	186–246	247+
5′ 7″	159–190	191–254	255+
5′ 8″	164–196	197–261	262+
5′ 9″	169–202	203–269	270+
5′ 10″	174–208	209–277	278+
5′ 11″	179–214	215–285	286+
6′ 0″	184–220	221–293	294+
6′ 1″	189–226	227–301	302+
6′ 2″	194–232	233–310	311+
6′ 3″	200–239	240–318	319+
6′ 4″	205–245	246–327	328+
	1 point	2 points	3 points

If you weigh less than the amount in the left column: **0 points**

Adapted from Bang et al., Ann Intern Med 151:775–783, 2009 • Original algorithm was validated without gestational diabetes as part of the model.

ADD UP YOUR SCORE

If you scored 5 or higher:

You are at increased risk for having type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes, a condition in which blood glucose levels are higher than normal but not yet high enough to be diagnosed as diabetes. Talk to your doctor to see if additional testing is needed.

Type 2 diabetes is more common in African Americans, Hispanic/Latino individuals, Native Americans, Asian Americans, and Native Hawaiians and Pacific Islanders.

Higher body weight increases diabetes risk for everyone. Asian Americans are at increased diabetes risk at lower body weight than the rest of the general public (about 15 pounds lower).

Learn more at diabetes.org/diabetes-risk-test | 1-800-DIABETES (800-342-2383)

Lower your risk:

The good news is you can manage your risk for type 2 diabetes. Small steps make a big difference in helping you live a longer, healthier life.

If you are at high risk, your first step is to visit your doctor to see if additional testing is needed.

Visit diabetes.org or call 1-800-DIABETES (800-342-2383) for information, tips on getting started, and ideas for simple, small steps you can take to help lower your risk

2Diabetes Risk Test | American Diabetes Association®

American Diabetes Association Professional Practice Committee. 2. Diagnosis and classification of diabetes: Standards of Care in Diabetes—2025. Diabetes Care 2025;48(Suppl. 1): S27–S49

4. COMPREHENSIVE MEDICAL EVALUATION AND ASSESSMENT

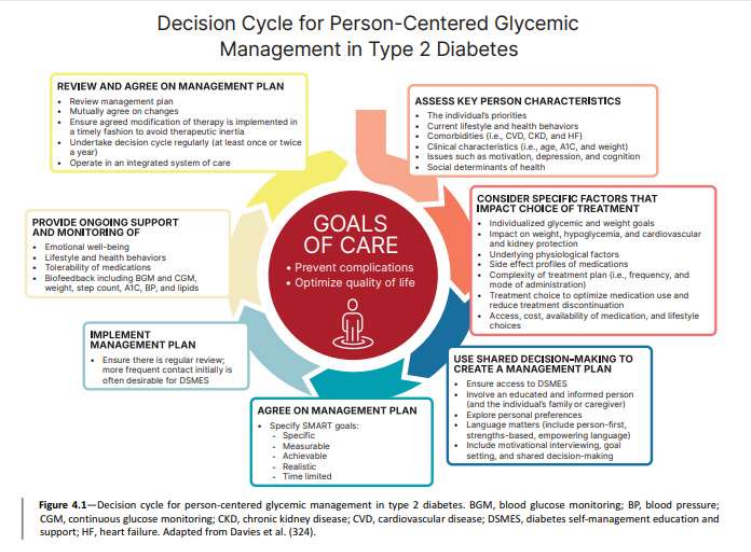


Figure 4.1—Decision cycle for person-centered glycemic management in type 2 diabetes. BGM, blood glucose monitoring; BP, blood pressure; CGM, continuous glucose monitoring; CKD, chronic kidney disease; CVD, cardiovascular disease; DSMES, diabetes self-management education and support; HF, heart failure. Adapted from Davies et al. (324).

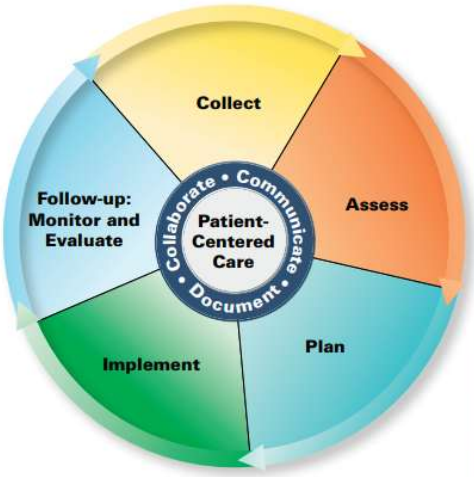


Figure 1: Pharmacists' patient care process

Pharmacists' Patient Care Process

Pharmacists use a patient-centered approach in collaboration with other providers on the health care team to optimize patient health and medication outcomes.

Using principles of evidence-based practice, pharmacists:

Collect
The pharmacist assures the collection of the necessary subjective and objective information about the patient in order to understand the relevant medical/medication history and clinical status of the patient.

Assess
The pharmacist assesses the information collected and analyzes the clinical effects of the patient's therapy in the context of the patient's overall health goals in order to identify and prioritize problems and achieve optimal care.

Plan
The pharmacist develops an individualized patient-centered care plan, in collaboration with other health care professionals and the patient or caregiver that is evidence-based and cost-effective.

Implement
The pharmacist implements the care plan in collaboration with other health care professionals and the patient or caregiver.

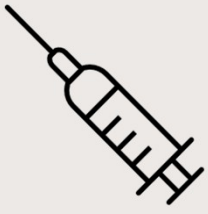
Follow-up: Monitor and Evaluate
The pharmacist monitors and evaluates the effectiveness of the care plan and modifies the plan in collaboration with other health care professionals and the patient or caregiver as needed.

Joint Commission of Pharmacy Practitioners. Pharmacists' Patient Care Process. May 29, 2014. Available at: https://jcpp.net/wp-content/uploads/2016/03/PatientCareProcess-with-supporting-organizations.pdf.

IMMUNIZATION UPDATES

Table 4.3

1. COVID-19
2. Hepatitis B
3. Influenza
4. Pneumococcal pneumonia
5. Respiratory syncytial virus
6. Tetanus, diphtheria, pertussis
7. Zoster



American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities – 2025. Diabetes Care 2025;48(Suppl. 1): S59–S85

DENTAL CARE

- **Recommendation 4.15:** People with diabetes should be referred for a dental exam at least once per year **E**
- **Recommendation 4.16:** Efforts between medical and dental teams should be coordinated so that glucose-lowering medications can be appropriately adjusted prior to and in the post–dental procedure period as needed **B**

American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities – 2025. Diabetes Care 2025;48(Suppl. 1): S59–S85

ADDRESSING SEXUAL DYSFUNCTION

Erectile Dysfunction

Recommendation 4.19: men with diabetes or prediabetes should be screened for ED, particularly those with high CV risk, retinopathy, CVD, CKD, neuropathy, depression, or hypogonadism **B**

Female Sexual Dysfunction

Recommendation 4.20: screening for desire (libido), arousal, and orgasm difficulties particularly those with depression and/or anxiety and with recurrent UTIs **B**

Recommendation 4.21: Screen for symptoms/sign of genitourinary syndrome of menopause, including vaginal dryness/dyspareunia **B**

American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities – 2025. Diabetes Care 2025;48(Suppl. 1): S59–S85

Metabolic Dysfunction – Associated Steatotic Liver Disease (MASLD)

- Formally known as NAFLD
  - Definition change to identify steatotic liver disease
- Includes presence of steatotic liver disease with least one cardiometabolic marker associated with insulin resistance (e.g. prediabetes, diabetes, atherogenic dyslipidemia, or hypertension)
  - This is in the absence of ongoing amounts of alcohol
- **Estimated >70% of people with MASLD also have type 2 diabetes**
- Removes potential stigma from the term "fatty"

Metabolic Dysfunction – Associated Steatohepatitis (MASH)

- Formally known as NASH
- Diabetes is a major risk factor for MASH
- **Affects >50% of people with type 2 diabetes and ~20% with type 1 diabetes (driven by obesity)**
- MASH increases risk for cirrhosis, HCC, and liver transplantation

American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities – 2025. Diabetes Care 2025;48(Suppl. 1): S59–S85

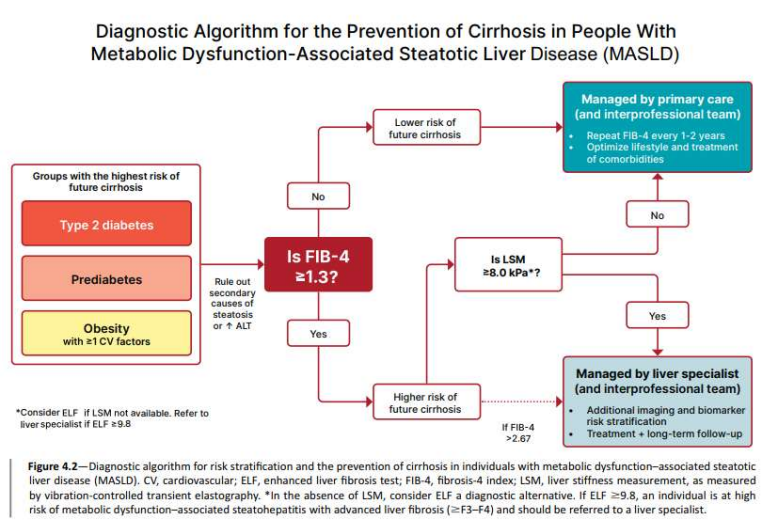


Figure 4.2—Diagnostic algorithm for risk stratification and the prevention of cirrhosis in individuals with metabolic dysfunction–associated steatotic liver disease (MASLD). CV, cardiovascular; ELF, enhanced liver fibrosis test; FIB-4, fibrosis-4 index; LSM, liver stiffness measurement, as measured by vibration-controlled transient elastography. *In the absence of LSM, consider ELF a diagnostic alternative. If ELF ≥9.8, an individual is at high risk of metabolic dysfunction–associated steatohepatitis with advanced liver fibrosis (≥F3–F4) and should be referred to a liver specialist.

- New algorithm for prevention of cirrhosis in people with MASLD
- Prior recommendation included just FIB-4 testing now threshold of >1.3 with additional recommendations

American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities – 2025. Diabetes Care 2025;48(Suppl. 1): S59–S85

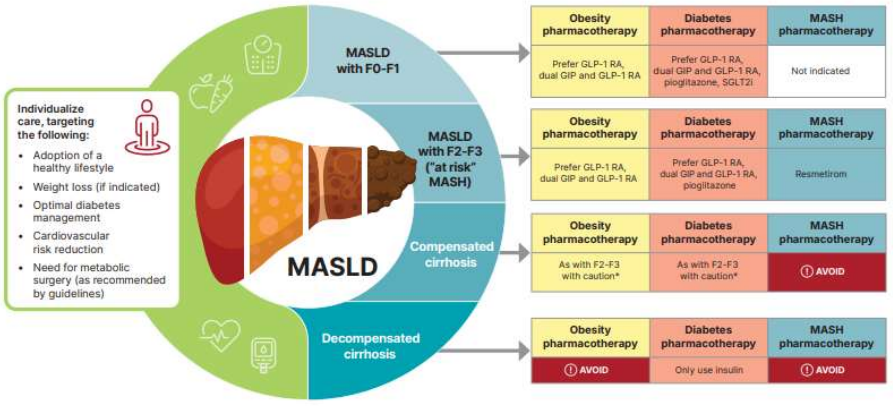
MASLD/MASH CONTINUED…

Medication Recommendations:

- Adults with type 2 diabetes, MASLD, and overweight/obesity consider use with GLP1-RA or GLP1-RA/GIP for treatment of obesity with potential MASH adjunct to lifestyle modifications
- Adults with type 2 diabetes and biopsy-proven MASH or high risk for liver fibrosis, pioglitazone, GLP1-RA, or dual GLP1-RA/GIP is preferred for glycemic management
- Insulin therapy is preferred treatment for hyperglycemic in patients with decompensated cirrhosis
- Statin therapy is safe in adults with type 2 diabetes and compensated cirrhosis from MASLD and should be used in caution with decompensated cirrhosis (limited safety/efficacy)

American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities – 2025. Diabetes Care 2025;48(Suppl. 1): S59–S85

Metabolic Dysfunction–Associated Steatotic Liver Disease (MASLD) Treatment Algorithm



*Individualized care and close monitoring needed in compensated cirrhosis given limited safety data available.

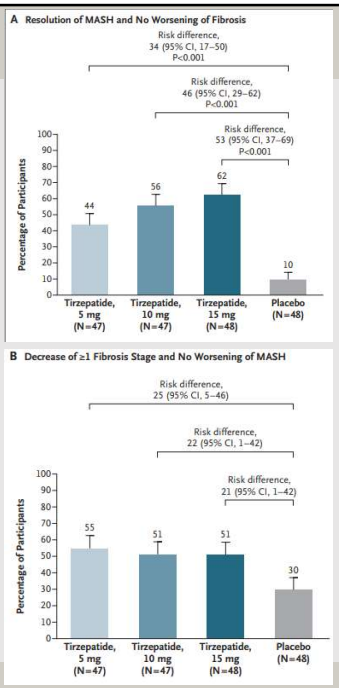
Figure 4.3—Metabolic dysfunction–associated steatotic liver disease (MASLD) treatment algorithm. F0-F1, no to minimal fibrosis; F2-F3, moderate fibrosis; F4, cirrhosis; GIP, glucose-dependent insulinotropic polypeptide; GLP-1 RA, glucagon-like peptide 1 receptor agonist; MASH, metabolic dysfunction–associated steatohepatitis; SGLT2i, sodium–glucose cotransporter 2 inhibitor.

American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities – 2025. Diabetes Care 2025;48(Suppl. 1): S59–S85

SYNGERY-NASH TRIAL

Phase 2 Trial of Tirzepatide in Metabolic Dysfunction–Associated Steatohepatitis with Liver Fibrosis

- 190 adults with biopsy-defined MASH and fibrosis stage 2 or 3 randomly assigned to receive once-weekly subcutaneous tirzepatide (5 mg, 10 mg, or 15 mg) or placebo for 52 weeks (assigned 1:1:1:1)
- **Primary endpoint:** Resolution of MASH without worsening of fibrosis at 52 weeks. A key secondary end point was an improvement (decrease) of at least one fibrosis stage without worsening of MASH.
- **Patient demographics: A**ge 54.4± 11.3, Female 57%, White 86%, Black <1%, Asian 12%, American Indian/Alaska Native 2%, body weight (kg) 99.8± 21.5, BMI 36.1 ± 6.1, type 2 diabetes 58%, A1c 6.5 ± 1.1, F2 43%, F3 57%, ALT 61.8 ± 33.2 U/liter, AST 50.6 ± 23.7 U/liter

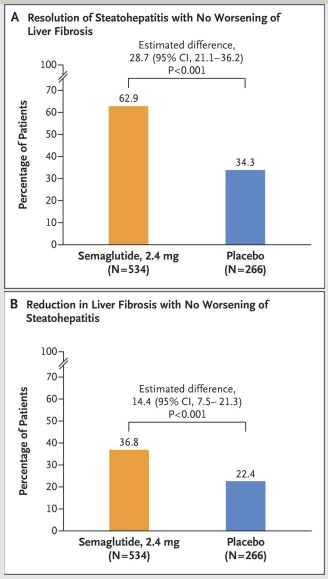


Loomba R, Hartman ML, Lawitz EJ, et al. Tirzepatide for Metabolic Dysfunction-Associated Steatohepatitis with Liver Fibrosis. *N Engl J Med*. 2024;391(4):299-310.

ESSENSE TRIAL

Phase 3 Trial of Semaglutide in Metabolic Dysfunction–Associated Steatohepatitis

- 1197 adults with biopsy-defined MASH and fibrosis stage 2 or 3 randomly assigned to receive once-weekly subcutaneous semaglutide at a dose of 2.4 mg or placebo for 240 weeks (2:1)
- **Primary endpoint:** resolution of steatohepatitis with no worsening of liver fibrosis and a reduction in liver fibrosis with no worsening of steatohepatitis
- **Patient demographics: A**ge 56.3± 11.4, Female 58.6%, Asian 27.8%, White 67.6%, Black 0.8%, Other 3.8%, body weight 97.6 ± 24.6, BMI 35.0 ± 7.1, type 2 diabetes 55.4%, ALT 67.8 ± 42.3 U/liter, AST 53.2 ± 28.6 U/liter, medium fibrosis-4 index 1.58, F2 30.5%, F3 69.3%



Sanyal AJ, Newsome PN, Kliers I, et al. Phase 3 Trial of Semaglutide in Metabolic Dysfunction-Associated Steatohepatitis. *N Engl J Med*. 2025;392(21):2089-2099.

6. GLYCEMIC GOALS AND HYPOGLYCEMIA

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January; 2025;48(Suppl. 1): S128–S145

GLYCEMIC ASSESSMENT BY CONTINUOUS GLUCOSE MONITORING

Removes Recommendations:

- **6.3** Standardized, single-page glucose reports from CGM devices with visual cues, such as the ambulatory glucose profile, should be considered as a standard summary for all CGM devices. **E**
- **6.4** Time in range (TIR) is associated with the risk of microvascular complications and can be used for assessment of glycemic status. Additionally, time below range and time above range are useful parameters for the evaluation of the treatment plan (**Table 6.2**). **C**

UPDATE citation

CGM GLYCEMIC GOALS

2024 Recommendation 6.5b

Goal for nonpregnant adults is

- TIR >70%
- TBR <4% and time <54 mg/dL <1%
- Goal for those with frailty or at high risk of hypoglycemia
  - >50% TIR
  - <1% time below range is recommended

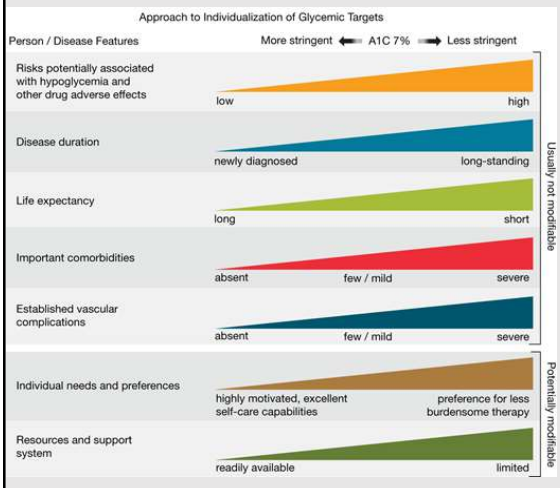
2025 Recommendation 6.3c

Goal percent TBR <70 mg/dL

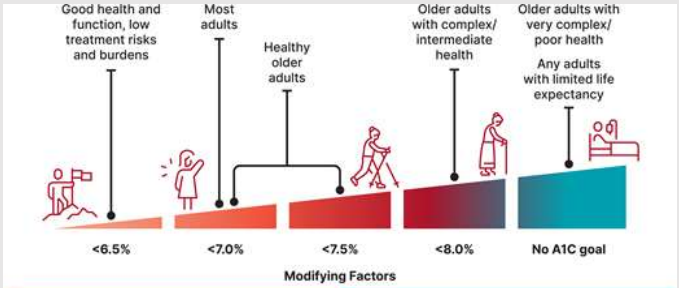
- <4% (or <1% for older adults)
- <1% <54 mg/dL

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: *Standards of Care in Diabetes—2024*. *Diabetes Care* 1 January 2024; 47 (Suppl. 1): S111–S125
American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025;48(Suppl. 1): S128–S145

FIGURE 6.2



(2024)



Modifying Factors

Favor more stringent goal	Favor less stringent goal
Short diabetes duration	Long diabetes duration
Low hypoglycemia risk	High hypoglycemia risk
Low treatment risks and burdens	High treatment risks and burdens
Pharmacotherapy with cardiovascular, kidney, weight, or other benefits	Pharmacotherapy without nonglycemic benefits
No cardiovascular complications	Established cardiovascular complications
Few or minor comorbidities	Severe, life-limiting comorbidities

(2025)

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: *Standards of Care in Diabetes—2024*. *Diabetes Care* 1 January 2024; 47 (Suppl. 1): S111–S125.
American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025;48(Suppl. 1): S128–S145

RECOMMENDATION 6.12

- Screen individuals at high risk for hypoglycemia or with severe and/or frequent hypoglycemia for fear of hypoglycemia at least annually and when clinically appropriate. **E**
- Refer to a trained health care professional for evidence-based intervention. **A**

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January;2025;48(Suppl. 1): S128–S145

HYPERGLYCEMIC CRISES: DIAGNOSIS, MANAGEMENT, AND PREVENTION

- **Recommendation 6.20:** Review history of hyperglycemic crises (i.e., diabetic ketoacidosis and hyperglycemic hyperosmolar state) at every clinical encounter for all individuals with diabetes at risk for these events. **C**
- **Recommendation 6.21:** Provide structured education on the recognition, prevention, and management of hyperglycemic crisis to all individuals with type 1 diabetes, those with type 2 diabetes who have experienced these events, and people at high risk for these events. **B**

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January;2025;48(Suppl. 1): S128–S145

TABLE 6.8

Table 6.8—Diagnostic criteria for DKA and HHS

DKA	
Diabetes/hyperglycemia	Glucose ≥200 mg/dL (11.1 mmol/L) or prior history of diabetes
Ketosis	β-Hydroxybutyrate concentration ≥3.0 mmol/L or urine ketone strip 2+ or greater
Metabolic acidosis	pH <7.3 and/or bicarbonate concentration <18 mmol/L
HHS	
Hyperglycemia	Plasma glucose ≥600 mg/dL (33.3 mmol/L)
Hyperosmolarity	Calculated effective serum osmolality >300 mOsm/kg (calculated as [2×Na^+ (mmol/L) + glucose (mmol/L)] or total serum osmolality >320 mOsm/kg [2×Na^+ (mmol/L) + glucose (mmol/L) + urea (mmol/L)]
Absence of significant ketonemia	β-Hydroxybutyrate concentration <3.0 mmol/L OR urine ketone strip less than 2+
Absence of acidosis	pH ≥7.3 and bicarbonate concentration ≥15 mmol/L

Adapted from Umpierrez et al. (151).

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January;2025;48(Suppl. 1): S128–S145

TABLE 6.9

Table 6.9—Risk factors for hyperglycemic crises

Type 1 diabetes/absolute insulin deficiency
Younger age
Prior history of hyperglycemic crises
Prior history of hypoglycemic crises
Presence of other diabetes complications
Presence of other chronic health conditions (particularly in people with type 2 diabetes)
Presence of behavioral health conditions (e.g., depression, bipolar disorder, and eating disorders)
Alcohol and/or substance use
High A1C level
Social determinants of health

Data are from McCoy et al. (184), Gibb et al. (185), Randall et al. (186), and Thomas et al. (187).

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January;2025;48(Suppl. 1): S128–S145

TABLE 6.10

Table 6.10—Clinical presentation in people with diabetes with DKA and HHS

DKA	HHS
Develops over hours to days	Develops over days to a week
Usually alert	Change in cognitive state common
Polyuria, polydipsia, weight loss, and dehydration	
Nausea, vomiting, and abdominal pain	Often copresenting with other acute illness
Kussmaul respiration	
One-third of hyperglycemic emergencies have a hybrid DKA-HHS presentation	

Adapted from Umpierrez et al. (151).

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January;2025;48(Suppl. 1): S128–S145

HYPERGLYCEMIC CRISES SUMMARY

- Provides risk factors and criteria for diagnosis of DKA/HHS
- Following episode of DKA/HHS patient should be evaluated for social determinants of health that could be contributing factors
- Patients at risk for DKA should be counseled on the early signs and symptoms of DKA

American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January;2025;48(Suppl. 1): S128–S145

7. DIABETES TECHNOLOGY

American Diabetes Association Professional Practice Committee; 7. Diabetes Technology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl.1): S146–S166.

TABLE 7.2

- Added: Maltose, Dopamine, Furosemide and hematocrit

Table 7.2—Common interfering substances and/or conditions that affect glucose meters (for inpatient and outpatient use)

Substance or condition	Effects on glucose values measured by blood glucose meters
☆ Maltose*	Falsely higher blood glucose values
Galactose	Falsely higher blood glucose values
Xylose	Falsely higher blood glucose values
N-Acetylcysteine†	Falsely higher blood glucose values
Acetaminophen	Falsely higher blood glucose values at low blood glucose levels
☆ Dopamine	Falsely higher blood glucose values at low blood glucose levels
☆ Furosemide	Falsely lower blood glucose values
Vitamin C	Falsely lower or higher blood glucose values
Uric acid	Falsely higher blood glucose values at very low or very high glucose levels
Hematocrit (high)	Falsely lower blood glucose values
☆ Hematocrit (low)	Falsely higher blood glucose values

*Unmodified glucose dehydrogenase method only. †Glucose dehydrogenase monitors using pyrroloquinoline quinone cofactor (GDH/PQQ).

American Diabetes Association Professional Practice Committee; 7. Diabetes Technology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl.1): S146–S166.

TABLE 7.3

- Addition of OTC CGM options

Table 7.3—Continuous glucose monitoring devices

Type of CGM	Description
rtCGM	CGM systems that measure and display glucose levels continuously
isCGM with and without alarms	CGM systems that measure glucose levels continuously but require scanning for visualization and storage of glucose values
Professional CGM	CGM devices that are placed on the person with diabetes in the health care professional's office and worn for a discrete period of time (generally 7–14 days). Data may be blinded or visible to the person wearing the device. The data are used to assess glycemic patterns and trends. Unlike rtCGM and isCGM devices, these devices are clinic-based and not owned by the person with diabetes.
Over-the-counter CGM	CGM devices called biosensors, which measure glucose continuously and display the levels at various times, have insights rather than alarms and are indicated for people with prediabetes or with diabetes not on insulin.

CGM, continuous glucose monitoring; isCGM, intermittently scanned CGM; rtCGM, real-time CGM.

American Diabetes Association Professional Practice Committee; 7. Diabetes Technology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl.1): S146–S166.

RECOMMENDATION 7.16

- **Consider the use of rtCGM or is CGM in adults** with type 2 diabetes on **glucose lowering agents other than insulin** to achieve and maintain individualized glycemic goals. **B**

American Diabetes Association Professional Practice Committee; 7. Diabetes Technology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl.1): S146–S166.

RECOMMENDATION 7.15

- Modified to support the use of real-time CGM (rtCGM) **A** and intermittently scanned CGM (isCGM) for youth **C** and adults **B** with diabetes (type 1 or type 2) on any type of insulin therapy based on the most recent literature.

American Diabetes Association Professional Practice Committee; 7. Diabetes Technology: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl.1): S146–S166.

8. OBESITY AND WEIGHT MANAGEMENT FOR THE PREVENTION AND TREATMENT OF TYPE 2 DIABETES

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

RECOMMENDATION 8.2B

- Monitor obesity-related anthropometric measurements at least annually to inform treatment considerations. During active weight management treatment, **increase monitoring to at least every 3 months.** **E**

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

WEIGHT STIGMA

- Health care professionals are encouraged to be aware of biases associated with people living in larger bodies
  - E.g. weight stigma, fat-bias, anti-fat-bias
- Increase empathy
- Try to understand the complexity of weight management to reduce bias

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

RECOMMENDATION 8.18

- Screen people with diabetes and obesity who have lost significant weight for malnutrition, especially those who have undergone metabolic surgery **A** and those treated with weight management pharmacologic therapy. **B**

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

RECOMMENDATION 8.19

- Weight management **pharmacotherapy indicated for chronic therapy should be continued beyond reaching weight loss goals to maintain the health benefits**. Sudden discontinuation of weight management pharmacotherapy often results in weight gain and worsening of cardiometabolic risk factors. **A**

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

RECOMMENDATION 8.25

- If post–metabolic surgery hypoglycemia is suspected, clinical evaluation should exclude other potential disorders contributing to hypoglycemia, and management should include education, medical nutrition therapy with a registered dietitian nutritionist experienced in post–metabolic surgery hypoglycemia, and medication treatment, as needed. **A** **In individuals with post–metabolic surgery hypoglycemia, use continuous glucose monitoring to improve safety.** **C**

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

TABLE 8.1

- Phentermine's weight loss from baseline has been updated

Table 8.1—Weight management pharmacotherapy

Medication name	Treatment arm; weight loss from baseline	Time frame for weight loss (weeks)*	Common side effects	Possible safety concerns and considerations
Sympathomimetic amine anorectic approved for short-term use only Phentermine (160,161)†	• 15 mg q.d.; 7.4% • 7.5 mg q.d.; 6.6% • Placebo; 2.3%	28	Dry mouth, insomnia, dizziness, irritability, increased blood pressure, elevated heart rate	• Contraindicated for use in combination with monoamine oxidase inhibitors • Caution with cardiovascular disease • Do not use if at high risk for glaucoma due to risk of acute angle-closure glaucoma
Lipase inhibitor Orlistat (4,162)‡	• 120 mg t.i.d.; 9.6% • Placebo; 5.6%	52	Abdominal pain, flatulence, fecal urgency	• Potential malabsorption of fat-soluble vitamins (A, D, E, K) and of certain medications (e.g., cyclosporine, thyroid hormone, anticonvulsants) • Rare cases of severe liver injury reported • Cholelithiasis • Nephrolithiasis
Sympathomimetic amine anorectic/antiepileptic combination Phentermine/topiramate ER (49,163)§	• 15 mg/92 mg q.d.; 9.8% • 7.5 mg/46 mg q.d.; 7.8% • Placebo; 1.2%	56	Constipation, paresthesia, insomnia, nasopharyngitis, xerostomia, increased blood pressure, nephrolithiasis	• Contraindicated for use in combination with monoamine oxidase inhibitors • Birth defects • Cognitive impairment • Caution with cardiovascular disease • Do not use if at high risk for glaucoma due to risk of acute angle-closure glaucoma
Opioid antagonist/antidepressant combination Naltrexone/bupropion ER (13,164)	• 16 mg/180 mg b.i.d.; 5% • Placebo; 1.8%	56	Constipation, nausea, headache, xerostomia, insomnia, elevated heart rate and blood pressure	• Contraindicated in people with unmanaged hypertension and/or seizure disorders • Contraindicated for use with chronic opioid therapy • Acute angle-closure glaucoma **Black box warning:** • Risk of suicidal behavior/ideation in people younger than 24 years old who have depression
Glucagon-like peptide 1 receptor agonist Liraglutide (14,51,165)‖	• 3.0 mg q.d.; 6% • 1.8 mg q.d.; 4.7% • Placebo; 2%	56	Gastrointestinal side effects (nausea, vomiting, diarrhea, esophageal reflux)	• Hypoglycemia (with concomitant use of insulin or sulfonylurea) • Pancreatitis has been reported in clinical trials, but causality has not been established; discontinue if pancreatitis is suspected. • Use caution in people with kidney disease when initiating or increasing dose due to increased risk of gastrointestinal side effects and potential risk of acute kidney injury from dehydration

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

TABLE 8.2

- New table that highlights cost

Table 8.2—Median monthly (30-day) AWP and NADAC of maximum or maintenance dose of weight management pharmacotherapies

Medication name	Typical adult maintenance dose	AWP (median and range for 30-day supply)	NADAC (median and range for 30-day supply)
Sympathomimetic amine anorectic: approved for short-term use only			
Phentermine	8–37.5 mg q.d.	$43 ($9–$98)*	$3 ($3, $79)*
Lipase inhibitor			
Orlistat	60 mg t.i.d. (OTC) 120 mg t.i.d. (Rx)	$58 ($41–$82) $843 ($781–$904)	NA $677 ($629–$724)
Sympathomimetic amine anorectic/ antiepileptic combination			
Phentermine/topiramate ER	7.5 mg/46 mg q.d.	$237	NA
Opioid antagonist/antidepressant combination			
Naltrexone/bupropion ER	16 mg/180 mg b.i.d.	$750	NA
Glucagon-like peptide 1 receptor agonist			
Liraglutide†	3 mg q.d.	$1,619	$1,296
Semaglutide	2.4 mg once weekly	$1,619	$1,296
Dual glucose-dependent insulinotropic polypeptide and glucagon-like peptide 1 receptor agonist			
Tirzepatide	5, 10, or 15 mg once weekly	$1,272	$1,017

The costs listed in this table are representative of costs at a national level. These costs may not be representative of an individual's cost and do not account for medication coverage or available discounts. AWP, average wholesale price; b.i.d., twice daily; ER, extended release; NA, data not available; NADAC, National Average Drug Acquisition Cost; OTC, over the counter; q.d., every day; Rx, prescription; t.i.d., three times daily. AWP and NADAC prices are for a 30-day supply of maximum or maintenance dose as of 1 July 2024 (167,168). *Data are for 37.5 mg q.d. dose. †New generic liraglutide pricing was not available on 1 July 2024.

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

COST AND ACCESS BARRIERS

- Choice of medication should be guided by many factors
  - Particularly cost or accessibility
- Healthcare professionals should be knowledgeable about coverage requirements to reduce financial hardship in patients receiving expensive medications

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S167–S180.

9. PHARMACOLOGICAL APPROACHES TO GLYCEMIC TREATMENT

Updates to Pharmacologic Therapy Recommendations for Adults with Type 2 Diabetes

Recommendation 9.9: Combination therapy can be considered at treatment initiation to shorten time to attainment of individualized treatment goals. **A**

Recommendation 9.10: In adults with type 2 diabetes and established ASCVD or high-risk ASCVD, the treatment plan should include medications with demonstrated benefits to reduce CV event (e.g. GLP1-RA and/or SGLT2i) for glycemic management and CV risk reduction (irrespective of A1c). **A**

Recommendation 9.12: In adults with type 2 diabetes and HFrEF or HFpEF and obesity, a GLP1-RA with demonstrated benefits for both glycemic management and reduction of HF-related symptoms (irrespective of A1c) is recommended. **A**

Recommendation 9.13: In adults with type 2 diabetes and CKD (eGFR 20-60 ml/min/1.73 m^2) an SLGT2i or GLP1-RA with demonstrated benefit in this population should be used for both glycemic management (irrespective of A1c) and for slowing progression of CKD and reduction in CV event. Glycemic benefit are reduced at eGFR < 45 ml/min /1.73 m^2. **A**

Updates to Pharmacologic Therapy Recommendations for Adults with Type 2 Diabetes

Recommendation 9.9: Combination therapy can be considered at treatment initiation to shorten time to attainment of individualized treatment goals. **A**

Recommendation 9.10: In adults with type 2 diabetes and **established ASCVD or high-risk ASCVD**, the treatment plan **should include medications with demonstrated benefits to reduce CV event** (e.g. GLP1-RA and/or SGLT2i) for glycemic management and CV risk reduction (**irrespective of A1c**). **A**

Recommendation 9.12: In adults with type 2 diabetes and **HFrEF or HFpEF and obesity**, a **GLP1-RA with demonstrated benefits** for both glycemic management and reduction of HF-related symptoms (**irrespective of A1c**) is recommended. **A**

Recommendation 9.13: In adults with type 2 diabetes and **CKD** (eGFR 20-60 ml/min/1.73 m^2) an **SLGT2i or GLP1-RA with demonstrated benefit** in this population should be used for both glycemic management (**irrespective of A1c**) and for **slowing progression of CKD and reduction in CV event**. Glycemic benefit are reduced at eGFR < 45 ml/min /1.73 m^2. **A**

American Diabetes Association Professional Practice Committee. 9. Pharmacologic approaches to glycemic treatment: Standards of Care in Diabetes—2025. Diabetes Care 2025;48 (Suppl. 1):S181–S206

Updates to Pharmacologic Therapy Recommendations for Adults with Type 2 Diabetes

Recommendation 9.15: In adults with type 2 diabetes, metabolic dysfunction–associated steatotic liver disease (MASLD), and overweight or obesity, consider using a GLP-1 RA or a GIP/GLP-1 RA with potential benefits in metabolic dysfunction–associated steatohepatitis (MASH) for glycemic management and as an adjunctive to healthy interventions for weight loss. **B**

Recommendation 9.16a: In adults with type 2 diabetes and biopsy-proven MASH or those at high risk for liver fibrosis (based on noninvasive tests), pioglitazone, a GLP-1 RA, or a dual GIP and GLP-1 RA is preferred for glycemic management due to potential beneficial effects on MASH. **B**

Recommendation 9.16b: Combination therapy with pioglitazone plus a GLP-1 RA can be considered for the treatment of hyperglycemia in adults with type 2 diabetes with biopsy-proven MASH or those at high risk of liver fibrosis (identified with noninvasive tests) due to potential beneficial effects on MASH. **B**

American Diabetes Association Professional Practice Committee. 9. Pharmacologic approaches to glycemic treatment: Standards of Care in Diabetes—2025. Diabetes Care 2025;48 (Suppl. 1):S181–S206

Updates to Pharmacologic Therapy Recommendations for Adults with Type 2 Diabetes

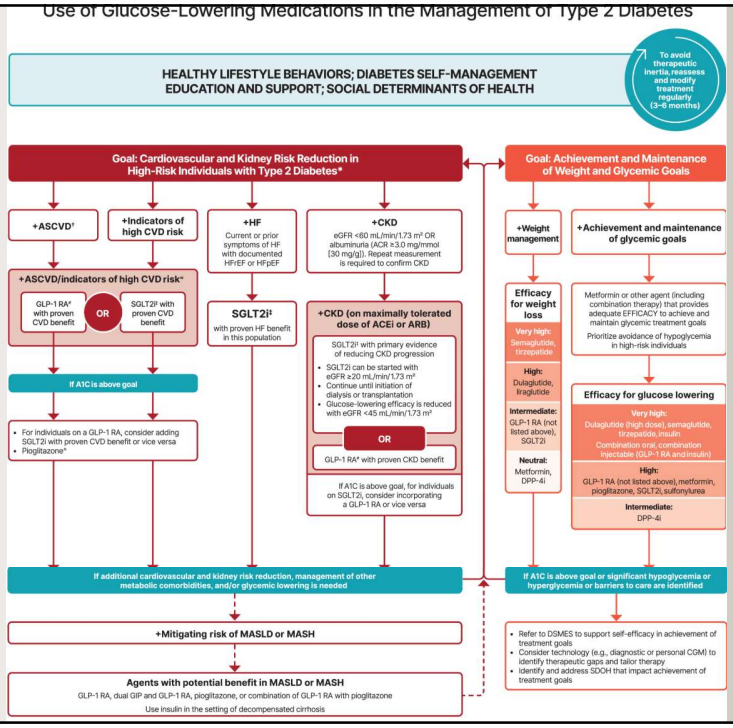
Recommendation 9.15: In adults with type 2 diabetes, **metabolic dysfunction–associated steatotic liver disease (MASLD), and overweight or obesity, consider using a GLP-1 RA or a GIP/GLP-1 RA** with potential benefits in metabolic dysfunction–associated steatohepatitis (MASH) **for glycemic management and as an adjunctive to healthy interventions for weight loss. B**

Recommendation 9.16a: In adults with type 2 diabetes and **biopsy-proven MASH or those at high risk for liver fibrosis (based on noninvasive tests), pioglitazone, a GLP-1 RA, or a dual GIP and GLP-1 RA is preferred** for glycemic management due to potential beneficial effects on MASH. **B**

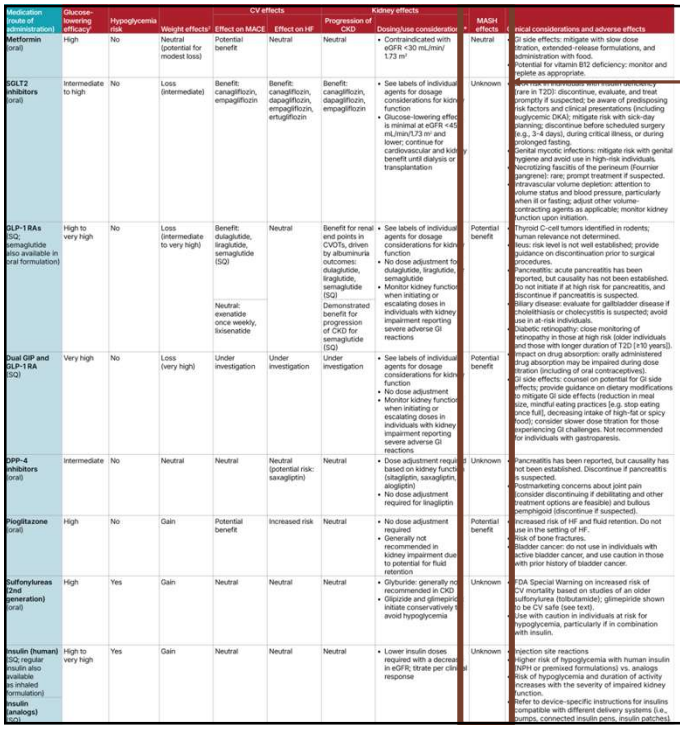
Recommendation 9.16b: Combination therapy **with pioglitazone plus a GLP-1 RA can be considered** for the treatment of hyperglycemia in adults with type 2 diabetes **with biopsy-proven MASH or those at high risk of liver fibrosis** (identified with noninvasive tests) due to potential beneficial effects on MASH. **B**

American Diabetes Association Professional Practice Committee. 9. Pharmacologic approaches to glycemic treatment: Standards of Care in Diabetes—2025. Diabetes Care 2025;48 (Suppl. 1):S181–S206

Figure 9.3



American Diabetes Association Professional Practice Committee. 9. Pharmacologic approaches to glycemic treatment: Standards of Care in Diabetes—2025. Diabetes Care 2025;48 (Suppl. 1):S181–S206



Medication (route of administration)	Glucose-lowering efficacy[a]	Hypoglycemia risk	Weight effects[b]	CV effects: Effect on MACE	CV effects: Effect on HF	Kidney effects: Progression of CKD	Dosing/use considerations	MASH effects	Clinical considerations and adverse effects
Metformin (oral)	High	No	Neutral (potential for modest loss)	Potential benefit	Neutral	Neutral	• Contraindicated with eGFR <30 mL/min/1.73 m²	Neutral	GI side effects: mitigate with slow dose titration, extended-release formulations, and administration with food. Potential for vitamin B12 deficiency; monitor and replete as appropriate.
SGLT2 inhibitors (oral)	Intermediate to high	No	Loss (intermediate)	Benefit: canagliflozin, empagliflozin	Benefit: canagliflozin, dapagliflozin, empagliflozin, ertugliflozin	Benefit: canagliflozin, dapagliflozin, empagliflozin	• See labels of individual agents for dosage considerations for kidney function • Glucose-lowering effect is minimal at eGFR <45 mL/min/1.73 m² and lower; continue for cardiovascular and kidney benefit until dialysis or transplantation	Unknown	Risk in individuals with insulin deficiency (rare in T2D): discontinue, evaluate, and treat promptly if suspected; be aware of predisposing risk factors and clinical presentations (including euglycemic DKA); mitigate risk with sick-day planning; discontinue before scheduled surgery (e.g., 3-4 days), during critical illness, or during prolonged fasting. Genital mycotic infections: mitigate risk with genital hygiene and avoid use in high-risk individuals. Necrotizing fasciitis of the perineum (Fournier gangrene): rare; prompt treatment if suspected. Intravascular volume depletion: attention to volume status and blood pressure, particularly when ill or fasting; adjust other volume-contracting agents as applicable; monitor kidney function upon initiation.
GLP-1 RAs (SQ; semaglutide also available in oral formulation)	High to very high	No	Loss (intermediate to very high)	Benefit: dulaglutide, liraglutide, semaglutide (SQ) Neutral: exenatide once weekly, lixisenatide	Neutral	Benefit for renal end points in CVOTs, driven by albuminuria outcomes: dulaglutide, liraglutide, semaglutide (SQ) Demonstrated benefit for progression of CKD for semaglutide (SQ)	• See labels of individual agents for dosage considerations for kidney function • No dose adjustment for dulaglutide, liraglutide, semaglutide • Monitor kidney function when initiating or escalating doses in individuals with kidney impairment reporting severe adverse GI reactions	Potential benefit	Thyroid C-cell tumors identified in rodents; human relevance not determined. Ileus: risk level is not well established; provide guidance on discontinuation prior to surgical procedures. Pancreatitis: acute pancreatitis has been reported, but causality has not been established. Do not initiate if at high risk for pancreatitis, and discontinue if pancreatitis is suspected. Biliary disease: evaluate for gallbladder disease if cholelithiasis or cholecystitis is suspected; avoid use in at-risk individuals. Diabetic retinopathy: close monitoring of retinopathy in those at high risk (older individuals and those with longer duration of T2D [>10 years]). Impact on drug absorption: orally administered drug absorption may be impaired during dose titration (including of oral contraceptives). GI side effects: counsel on potential for GI side effects; provide guidance on dietary modifications to mitigate GI side effects (reduction in meal size, mindful eating practices [e.g. stop eating once full], decreasing intake of high-fat or spicy food); consider slower dose titration for those experiencing GI challenges. Not recommended for individuals with gastroparesis.
Dual GIP and GLP-1 RA (SQ)	Very high	No	Loss (very high)	Under investigation	Under investigation	Under investigation	• See labels of individual agents for dosage considerations for kidney function • No dose adjustment • Monitor kidney function when initiating or escalating doses in individuals with kidney impairment reporting severe adverse GI reactions	Potential benefit	
DPP-4 inhibitors (oral)	Intermediate	No	Neutral	Neutral	Neutral (potential risk: saxagliptin)	Neutral	• Dose adjustment required based on kidney function (sitagliptin, saxagliptin, alogliptin) • No dose adjustment required for linagliptin	Unknown	Pancreatitis has been reported, but causality has not been established. Discontinue if pancreatitis is suspected. Postmarketing concerns about joint pain (consider discontinuing if debilitating and other treatment options are feasible) and bullous pemphigoid (discontinue if suspected).
Pioglitazone (oral)	High	No	Gain	Potential benefit	Increased risk	Neutral	• No dose adjustment required • Generally not recommended in kidney impairment due to potential for fluid retention	Potential benefit	Increased risk of HF and fluid retention. Do not use in the setting of HF. Risk of bone fractures. Bladder cancer: do not use in individuals with active bladder cancer, and use caution in those with prior history of bladder cancer.
Sulfonylureas (2nd generation) (oral)	High	Yes	Gain	Neutral	Neutral	Neutral	• Glyburide: generally not recommended in CKD • Glipizide and glimepiride initiate conservatively to avoid hypoglycemia	Unknown	FDA Special Warning on increased risk of CV mortality based on studies of an older sulfonylurea (tolbutamide); glimepiride shown to be CV safe (see text). Use with caution in individuals at risk for hypoglycemia, particularly if in combination with insulin.
Insulin (human) (SQ; regular insulin also available as inhaled formulation) Insulin (analogs) (SQ)	High to very high	Yes	Gain	Neutral	Neutral	Neutral	• Lower insulin doses required with a decrease in eGFR; titrate per clinical response	Unknown	Injection site reactions Higher risk of hypoglycemia with human insulin (NPH or premixed formulations) vs. analogs Risk of hypoglycemia and duration of activity increases with the severity of impaired kidney function. Refer to device-specific instructions for insulins compatible with different delivery systems (i.e., pumps, connected insulin pens, insulin patches)

Table 9.2

Call out on MASH effects

American Diabetes Association Professional Practice Committee. 9. Pharmacologic approaches to glycemic treatment: Standards of Care in Diabetes—2025. Diabetes Care 2025;48 (Suppl. 1):S181–S206

Table 9.2 Features of medications for... | American Diabetes Association

PHARMACOLOGIC APPROACHES

A1c ≥10% or blood glucoses ≥ 300 mg/dL

- Insulin should be considered as any part medication plan when hyperglycemia is severe, especially if catabolic features are present

Est. or high risk of ASCVD, CHF, and/or CKD

- MACE:
  - SGLT2i: canagliflozin, empagliflozin
  - GLP1-RA: dulaglutide, liraglutide, semaglutide
- CHF:
  - SGLT2i: canagliflozin, dapagliflozin, empagliflozin, ertugliflozin
- Progression of CKD:
  - SGLT2i: Canagliflozin, dapagliflozin, empagliflozin
  - GLP-1RA: semaglutide (SQ)

Weight Management

- Dual GIP/GLP-1RA: very high
- GLP1-RA: intermediate to very high
- SGLT2i: intermediate
- Metformin: potential for modest loss

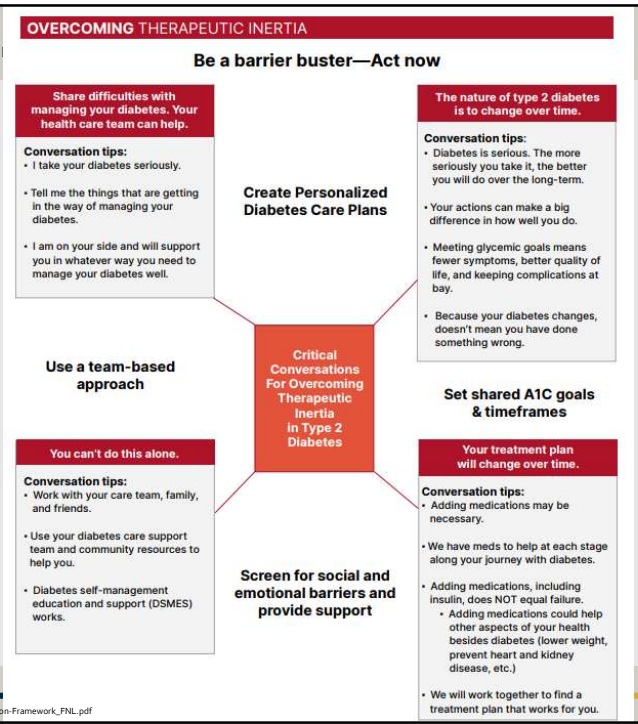
American Diabetes Association Professional Practice Committee. 9. Pharmacologic approaches to glycemic treatment: Standards of Care in Diabetes—2025. Diabetes Care 2025;48 (Suppl. 1):S181–S206

PREVENTING THERAPEUTIC INERTIA

What is therapeutic inertia?

- Delay in starting or adjusting treatment with objective targets are not met

Pharmacotherapy should be started at the time type 2 diabetes is diagnosed, **without delay**, unless there are contraindications. **Medication plans should have adequate efficacy to achieve and maintain individualized treatment goals with respect to glucose lowering,** reduction of cardiovascular and kidney disease risks, weight management, and impacts on other health conditions and treatment burden.



REALITY OF DIABETES MEDICATIONS

GLP1-RA, GLP1-RA/GIP, SGLT2i

- Costly
- Accessibility difficult
- Tolerability
- Secondary benefits

Insulin*, sulfonylureas, TZD

- Affordable*
- Accessible
- Without secondary benefits

IN THE PIPELINE…

ADJUnct Semaglutide Treatment in Type 1 Diabetes (ADJUST-T1D)

- P: patients with T1 DM
- I: assess the use of once weekly semaglutide injection in inadequately controlled obese adults with type 1 diabetes (T1D) using FDA-approved hybrid closed-loop therapies
- C: placebo
- O: completed 8/6/2024

Type 1 Diabetes Impacts of Semaglutide on Cardiovascular Outcomes (T1-DISCO)

- P: patients with T1 DM
- I: learn more about the effects of a medication, semaglutide, on cardiovascular function, kidney function, and insulin sensitivity in adults with type 1 diabetes
- C: placebo
- O: expected 12/1/2027

https://clinicaltrials.gov/study/NCT05537233
https://clinicaltrials.gov/study/NCT05819138

IN THE PIPELINE CONTINUED…

A Study of Tirzepatide Versus Dulaglutide on Major Cardiovascular Events in Patients with Type 2 Diabetes (SURPASS-CVOT)

- P: patients with T2 DM
- I: assess efficacy and safety of tirzepatide to dulaglutide in participants with type 2 diabetes and increased cardiovascular risk
- C: Dulaglutide
- O: completed 6/12/25

A Heart Disease Study of Semaglutide in Patients with Type 2 Diabetes (SOUL)

- P: patients with T2 DM in patients with heart disease
- I: oral semaglutide tablets once daily
- C: placebo
- O: completed 6/29/2024

https://clinicaltrials.gov/study/NCT04255433
https://clinicaltrials.gov/study/NCT03914326

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10. CARDIOVASCULAR DISEASE AND RISK MANAGEMENT

American Diabetes Association Professional Practice Committee; 10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S207–S238.

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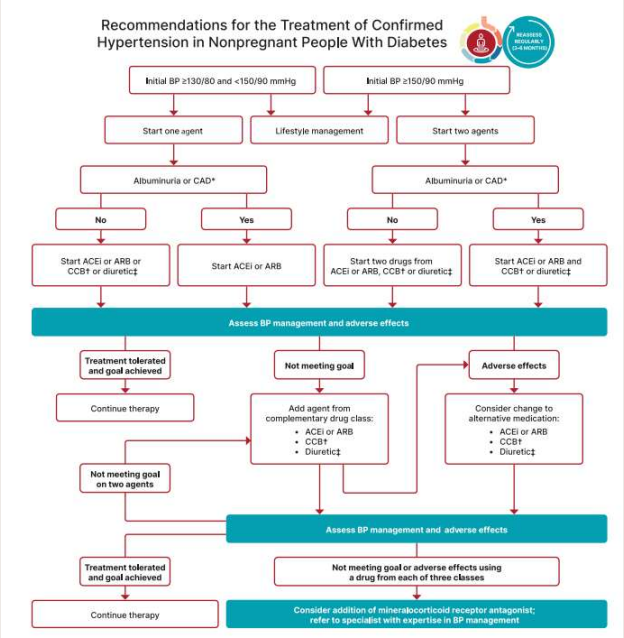
FIGURE 10.2



American Diabetes Association Professional Practice Committee; 10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S207–S228.

HYPERTENSION:

- **Recommendation 10.13** (added): ACE inhibitors, angiotensin receptor blockers, MRAs, direct renin inhibitors, and neprilysin inhibitors should be avoided in sexually active individuals of childbearing potential who are not using reliable contraception and are contraindicated in pregnancy. **A**

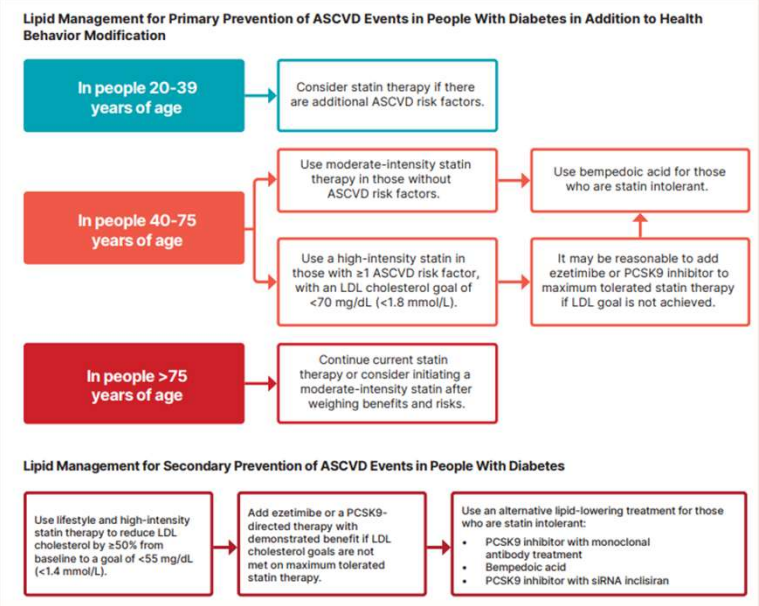
American Diabetes Association Professional Practice Committee; 10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S207–S228.

HYPERLIPIDEMIA:

- **Recommendation 10.26** (added): In most circumstances, **lipid lowering agents should be stopped** prior to conception and avoided in sexually active individuals of childbearing potential who are not using reliable contraception. **B** In some circumstances (e.g., for individuals with familial hypercholesterolemia or prior ASCVD event), statin therapy may be continued when the benefits outweigh risks. **E**

American Diabetes Association Professional Practice Committee; 10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S207–S238.

HYPERLIPIDEMIA:
Figures 10.3 and 10.4 were added



American Diabetes Association Primary Care Advisory Group. 10. Cardiovascular disease and risk management: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:212–214

RECOMMENDATIONS:

- **10.31:** In adults with hypertriglyceridemia (fasting triglycerides >150 mg/dL [>1.7 mmol/L] or nonfasting triglycerides >175 mg/dL [>2.0 mmol/L]), clinicians should address and treat lifestyle factors (obesity and metabolic syndrome), secondary factors (diabetes, chronic liver or kidney disease and/or nephrotic syndrome, and hypothyroidism), and medications that raise triglycerides. **C**
- **10.32:** In individuals with ASCVD or other cardiovascular risk factors on a statin with managed LDL cholesterol but elevated triglycerides (150–499 mg/dL [1.7–5.6 mmol/L]), the addition of icosapent ethyl can be considered to reduce cardiovascular risk. **B**

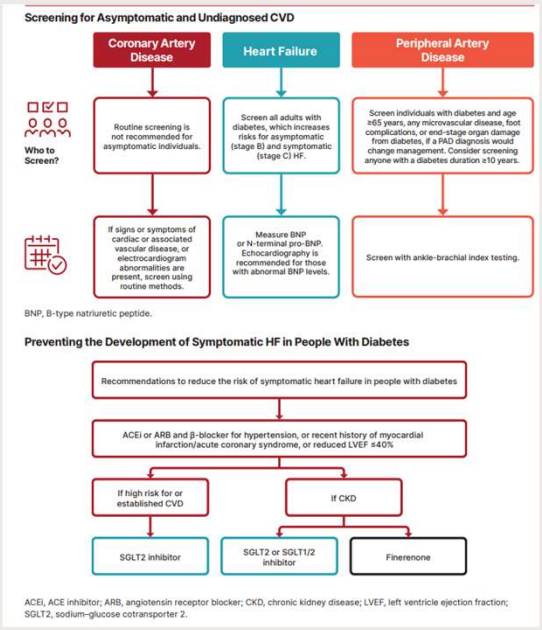
American Diabetes Association Professional Practice Committee; 10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S207–S238.

RECOMMENDATIONS:

- **10.41:** In asymptomatic individuals with diabetes and age ≥65 years, microvascular disease in any location, or foot complications or any end-organ damage from diabetes, **screening for PAD** with ankle-brachial index testing is recommended if a PAD diagnosis would change management. **B** In individuals with diabetes duration ≥10 years and high cardiovascular risk, screening for PAD should be considered. **E**
- **10.46d:** In individuals with type 2 diabetes, obesity, and symptomatic heart failure with preserved ejection fraction, therapy with a GLP-1 RA with demonstrated **benefit for reduction of heart failure**–related symptoms, physical limitations, and exercise function is recommended. **A**

American Diabetes Association Professional Practice Committee; 10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S207–S238.

Figures 10.5 and 10.6 were added



American Diabetes Association Primary Care Advisory Group. 10. Cardiovascular disease and risk management: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:212–214

11. CHRONIC KIDNEY DISEASE AND RISK MANAGEMENT

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

RECOMMENDATION CHANGES:

- *Recommendation 11.4a was revised*
- *Recommendation 11.4b was modified*
- *Recommendation 11.5b was updated*
- *Recommendation 11.6 was added*
- *Recommendation 11.7 and 11.8 were updated*
- *Table 11.1 and 11.3 were added*

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

RECOMMENDATION 11.4A

- Nonpregnant patients with DM and hypertension
  - Goal: prevent kidney disease progression and reduce CV events

Kidney Function	Recommendation
UACR 30-299 mg/g creatinine	ACE-I or ARB is recommended
UACR ≥ 300 mg/g creatinine and/or eGFR <60 mL/min/1.73m²	maximally tolerated dose of ACE-I or ARB is strongly recommended

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

TABLE 11.3

Table 11.3—Interventions that lower albuminuria

- Blood glucose management
- Blood pressure management
- Treatment with ACE inhibitors or ARBs
- Smoking cessation
- Weight loss
- Changes in eating patterns (decreased salt intake and/or protein intake)
- Treatment with SGLT2 inhibitors, MRAs, or GLP-1 RAs

ARB, angiotensin receptor blocker; GLP-1 RA, glucagon-like peptide 1 receptor agonist; MRA, mineralocorticoid receptor antagonist.

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

RECOMMENDATION 11.4B

- When and ACE-I, ARB or MRA is used monitor for:
  - Increase in serum creatinine or potassium
- When diuretics are used monitor for:
  - Hypokalemia
- Monitor: 7-14 days after initiation or titration

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

RECOMMENDATION 11.5B

- GLP-1 RA with benefit in T2DM and CKD should be initiated to reduce CV risk and progression of kidney disease **A**

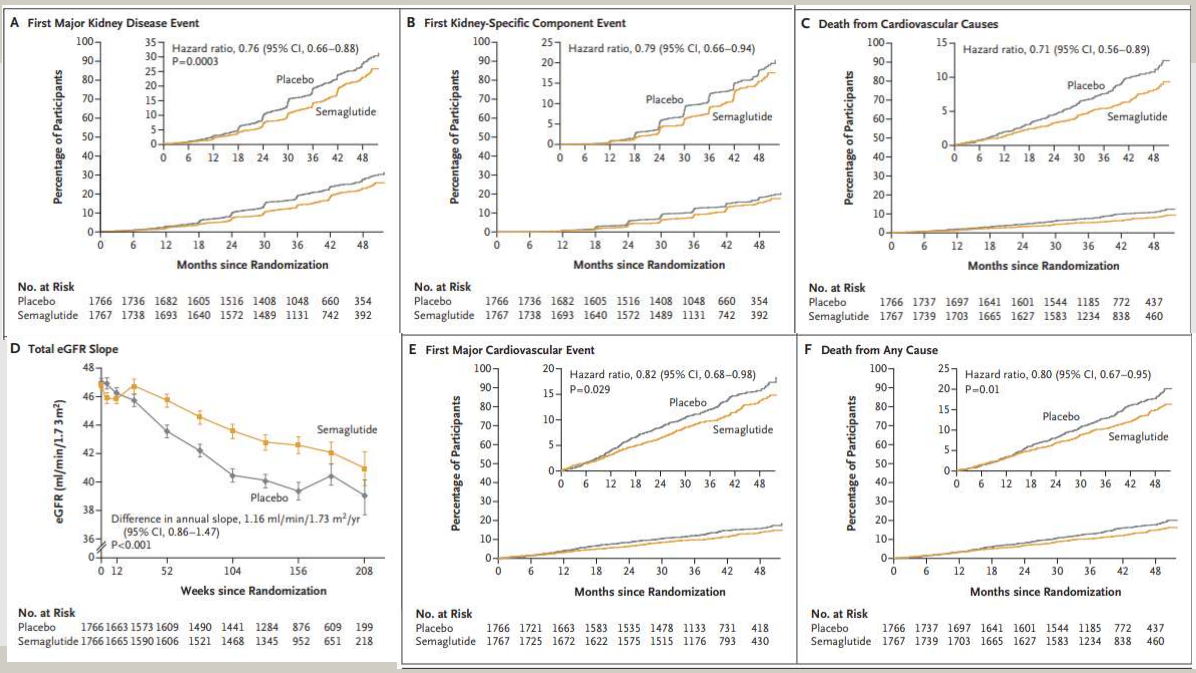
American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

FLOW TRIAL

Effects of Semaglutide on Chronic Kidney Disease in Patients with Type 2 Diabetes

- 3,533 adults with T2 DM and CKD (eGFR 50-75 ml/min/1.73^2 and UACR 300-4,999 or eGFR 25-49 ml/min/1.73^2 and UACR 100-4,999 received once weekly semaglutide (SQ) 1 mg (n=1767) or placebo (n=1,766) for median follow-up 3.4 years (trial finished early).
- **Primary outcome:** major kidney disease events, a composite of the onset of kidney failure (dialysis, transplantation, or an eGFR of <15 ml per minute per 1.73 m^2), at least a 50% reduction in the eGFR from baseline, or death from kidney-related or cardiovascular causes.
- **Patient demographics:** Age 66.6±9.0, Female 30.3%, White 65.8%, Asian 23.9%, Black 4.5%, Hispanic or Latinx 15.7%, a1c 7.8%±1.3, CHF 19.2%, eGFR 47±15.2 (38.4% 31-44 ml/min/1.732), median UACR 567.6

Perkovic V, Tuttle KR, Rossing P, et al. Effects of Semaglutide on Chronic Kidney Disease in Patients with Type 2 Diabetes. *N Engl J Med*. 2024;391(2):109-121.



Perkovic V, Tuttle KR, Rossing P, et al. Effects of Semaglutide on Chronic Kidney Disease in Patients with Type 2 Diabetes. *N Engl J Med*. 2024;391(2):109-121.

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RECOMMENDATION 11.6

- Potentially harmful antihypertensive medications in pregnancy should be **avoided** in sexually active individuals of childbearing potential not using reliable contraception and to **switch** to options considered safer prior to conception and during pregnancy **B**

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

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RECOMMENDATION 11.7 AND 11.8

- Patients with CKD and albuminuria ≥ 300 mg/g
  - Goal: reduce urinary albumin by > 30% to slow CKD progression **B**
- Non-dialysis-dependent stage G3 or higher CKD
  - Goal protein intake: 0.8 g/kg body weight per day **A**
- Dialysis-dependent
  - Goal protein intake: 1-1.2 g/kg/day **B**

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

TABLE 11.1

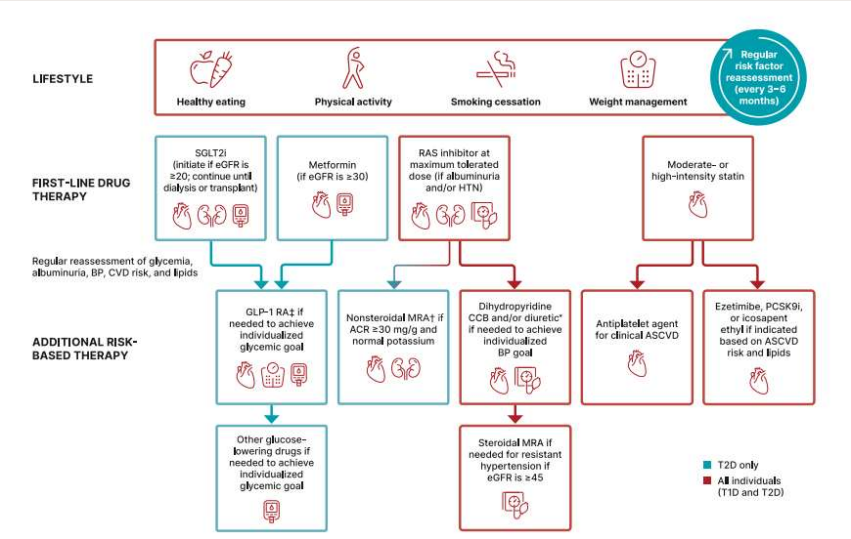
Table 11.1—Reasons to consider nondiabetic kidney diseases in a person with chronic kidney disease and diabetes

- Type 1 diabetes duration <5 years
- Active urine sediment (e.g., containing red blood cells or cellular casts)
- Chronically well-managed blood glucose
- Rapidly declining eGFR
- Rapidly increasing or very high UACR or urine protein/creatinine level
- No retinopathy in a person with type 1 diabetes

Information adapted from Liang et al. (129). eGFR, estimated glomerular filtration rate; UACR, urine albumin-to-creatinine ratio.

American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

SUMMARY: FIGURE 11.2



American Diabetes Association Professional Practice Committee; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S239–S251.

12. RETINOPATHY, NEUROPATHY AND FOOT CARE

American Diabetes Association Professional Practice Committee; 12. Retinopathy, Neuropathy, and Foot Care: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S252–S265.

DIABETIC RETINOPATHY (12.5 UPDATE)

Diabetic Retinopathy (DR)

Screening

Recommended DR screenings with an ophthalmologist or optometrist can allow for timely treatment to prevent or reverse vision loss.

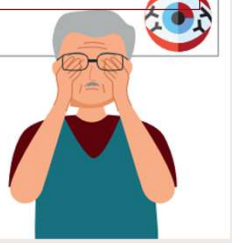
How?	When?	Follow-Up Eye Exam Schedule
Dilated and comprehensive eye exam Retinal photography*	For people with type 1 diabetes: within 5 years after the onset of diabetes NOW For people with type 2 diabetes: at the time of diabetes diagnosis	• At least annually for people with any level of retinopathy • Every 1–2 years for those with no retinopathy for one or more annual exams and well-managed glycemia • More frequently for those with progressing or sight-threatening retinopathy

*Retinal photography with remote reading or use of an authorized artificial intelligence tool can expand access to screening where qualified eye care professionals are not available. When abnormalities are detected, in-person exams will be needed.

Treatment

Promptly refer to an ophthalmologist who is knowledgeable and experienced in managing DR any individuals with:

- Any level of diabetic macular edema
- Moderate or worse nonproliferative DR (a precursor of proliferative DR)
- Any proliferative DR



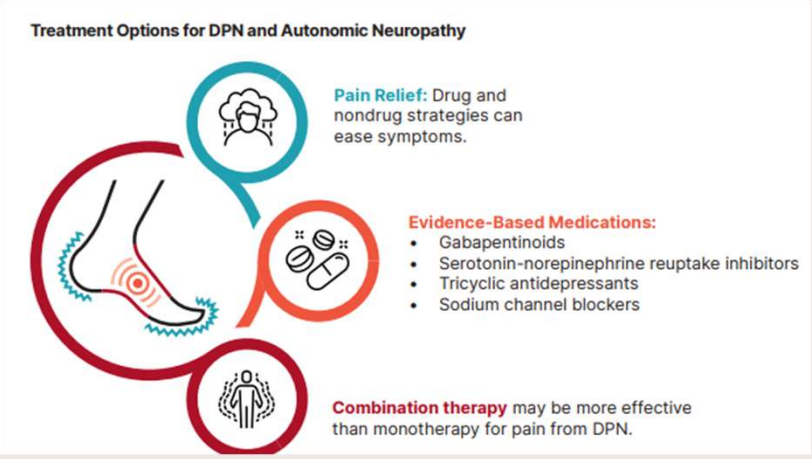
American Diabetes Association Primary Care Advisory Group. 12. Retinopathy, neuropathy, and foot care: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:217–218

12.19 UPDATE: ASSESS FOR SIGNS AND SYMPTOMS OF AUTONOMIC NEUROPATHY

- At diagnosis of T2DM
- 5 years after diagnosis of T1DM
- At least annually after intial assessment
- Evidence of microvascular complications
  - Kidney Disease
  - Diabetic peripheral neuropathy

American Diabetes Association Primary Care Advisory Group. 12. Retinopathy, neuropathy, and foot care: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:217–218

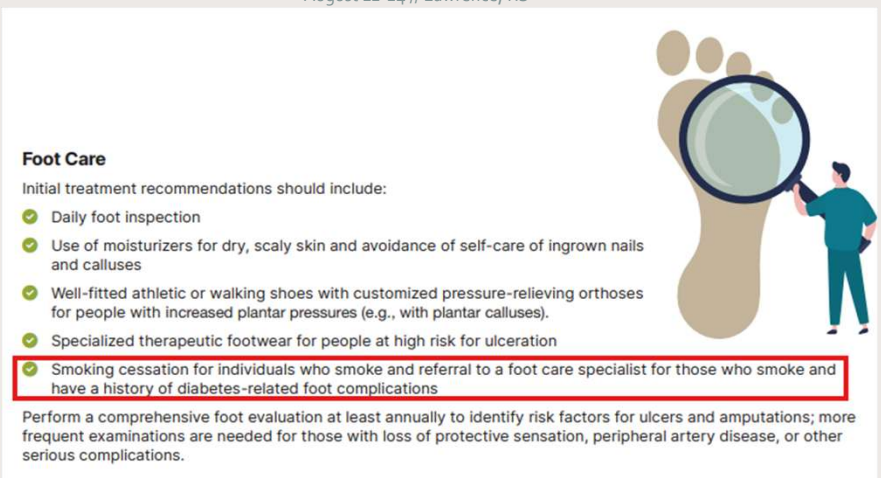
12.22 UPDATE: TREATMENT OF NEUROPATHIC PAIN



- Opioids should NOT be used
  - I.e. Tramadol or tapentadol

American Diabetes Association Primary Care Advisory Group. 12. Retinopathy, neuropathy, and foot care: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:217–218

FOOT CARE: 12.24 AND 12.29 UPDATE



- Addition: Ipswich touch test
  - Additional neurological assessment option

American Diabetes Association Primary Care Advisory Group. 12. Retinopathy, neuropathy, and foot care: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:217–218

13. OLDER ADULTS

American Diabetes Association Professional Practice Committee; 13. Older Adults: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S266–S282.

FIGURE 13.1

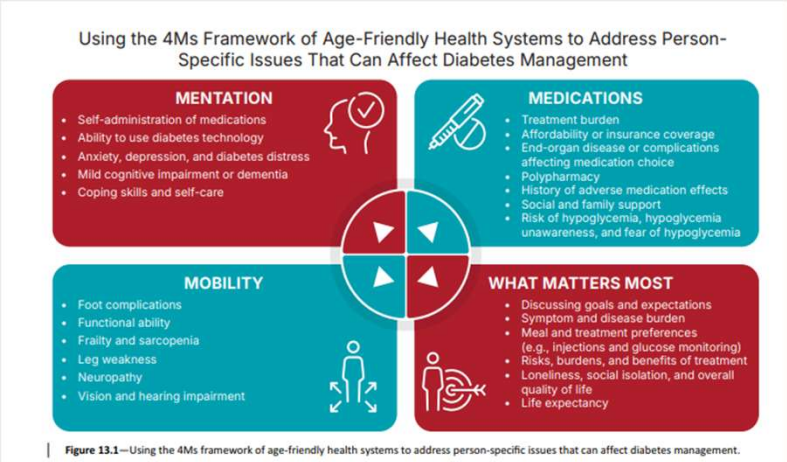
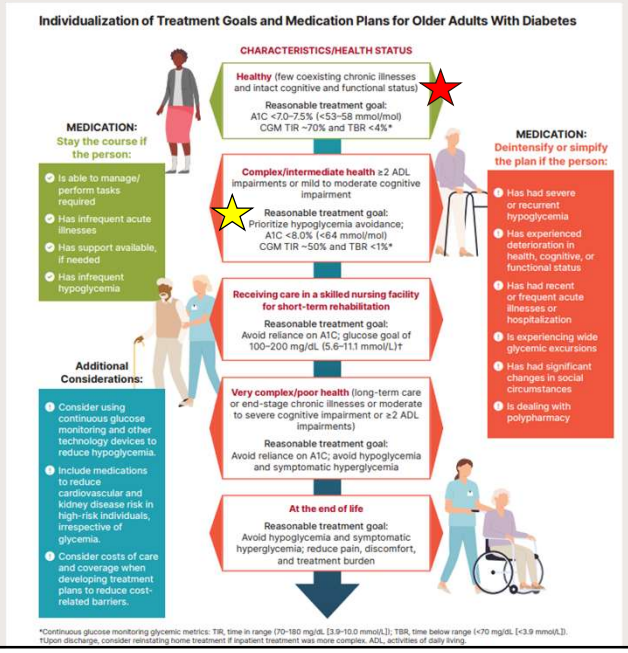


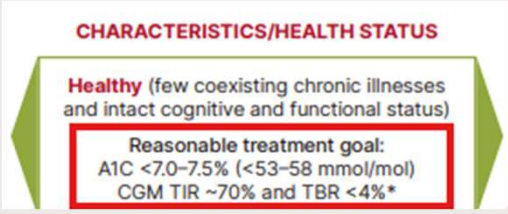
Figure 13.1—Using the 4Ms framework of age-friendly health systems to address person-specific issues that can affect diabetes management.

American Diabetes Association Professional Practice Committee; 13. Older Adults: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S266–S282.



American Diabetes Association Primary Care Advisory Group. 13. Older adults: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:219–220

RECOMMENDATION 13.8A



American Diabetes Association Primary Care Advisory Group. 13. Older adults: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:219–220

RECOMMENDATION 13.8B

Complex/intermediate health ≥2 ADL impairments or mild to moderate cognitive impairment

Reasonable treatment goal:
Prioritize hypoglycemia avoidance;
A1C <8.0% (<64 mmol/mol)
CGM TIR ~50% and TBR <1%*

American Diabetes Association Primary Care Advisory Group. 13. Older adults: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:219–220

TABLE 13.1

Table 13.1—Framework for considering treatment goals for glycemia, blood pressure, and dyslipidemia in older adults with diabetes

Characteristics and health status of person with diabetes	Rationale	Reasonable A1C goal*	Reasonable CGM goals	Fasting or preprandial glucose	Bedtime glucose	Blood pressure	Lipids
Healthy (few coexisting chronic illnesses, intact cognitive and functional status)	Longer remaining life expectancy	<7.0–7.5% (<53–58 mmol/mol)	TIR 70–180 mg/dL (3.9–10.0 mmol) of ~70%, and TBR <70 mg/dL (3.9 mmol/L) of <4%)	80–130 mg/dL (4.4–7.2 mmol/L)	80–180 mg/dL (4.4–10.0 mmol/L)	<130/80 mmHg	Statin, unless contraindicated or not tolerated
Complex/intermediate (multiple coexisting chronic illnesses† or two or more ADL impairments or mild to moderate cognitive impairment)	Variable life expectancy. Individualize goals, considering: • Severity of comorbidities • Cognitive and functional limitations • Frailty • Risk-to-benefit ratio of diabetes medications • Individual preference	<8.0% (<64 mmol/mol)	TIR 70–180 mg/dL (3.9–10.0 mmol) of ~50% and TBR <70 mg/dL (3.9 mmol/L) of <1%	90–150 mg/dL (5.0–8.3 mmol/L)	100–180 mg/dL (5.6–10.0 mmol/L)	<130/80 mmHg	Statin, unless contraindicated or not tolerated
Very complex/poor health (LTC or end-stage chronic illnesses† or moderate to severe cognitive impairment or two or more ADL impairments)	Limited remaining life expectancy makes benefit minimal	Avoid reliance on A1C; glucose management decisions should be based on avoiding hypoglycemia and symptomatic hyperglycemia		100–180 mg/dL (5.6–10.0 mmol/L)	110–200 mg/dL (6.1–11.1 mmol/L)	<140/90 mmHg	Consider likelihood of benefit with statin

American Diabetes Association Professional Practice Committee; 13. Older Adults: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S266–S282.

SGLT2 INHIBITORS: PMH CONSIDERATIONS

- Frail/Prone to orthostasis
- Genital mycotic infections
- Urinary tract infections
- Urinary inconticnence
- Euglycemia diabetic ketoacidosis (rare)
- Higher fracture risk

American Diabetes Association Professional Practice Committee; 13. Older Adults: Standards of Care in Diabetes—2025. *Diabetes Care* 1 January 2025; 48 (Suppl. 1): S266–S282.

2025 ADA STANDARDS OF CARE TAKEAWAYS

- Whole care of patient matters
- Use person first language to prevent stigma
- Optimize therapy based on additional co-morbidities with additional indications
- Use of technology in managing diabetes
- New emerging data and ongoing data

POST-TEST

1. True or false: Type 1 diabetes is due to complete beta cell deficiency versus type 2 diabetes is due to progressive loss of beta cell insulin secretion.

- True
- False

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POST-TEST

Which medication would be preferred in a patient who is 78 years old with PMH of type 2 diabetes, chronic kidney disease Stage 3a, hypertension, vitamin B-12 deficiency, and hypothyroidism with no known drug allergies. Current therapy is Jardiance 10 mg by mouth daily.

Pertinent Labs

SCr: 1.67 mg/dL
eGFR: 41 ml/min/1.73^2
A1c 8.7%
UACR: 35 mg/dL
TSH: 3.87 mcu/mL

A. Metformin ER 1,000 mg by mouth daily with meals
B. Glipizide IR 5 mg by mouth twice daily with meals
C. Ozempic 0.25 mg subcutaneously weekly
D. Farxiga 10 mg by mouth once daily

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POST-TEST

At what stage should a pharmacist utilize A1c and glucose data to make treatment intensification?

A. Be a Barrier Buster

B. Act Now

C. Improve Decision Making

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23. American Diabetes Association Primary Care Advisory Group. 12. Retinopathy, neuropathy, and foot care: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:217–218.
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25. American Diabetes Association Primary Care Advisory Group. 13. Older adults: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:219–220.

THANK YOU!

Questions?

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Email: mkoverman@kumc.edu

Name: Kristen Thompson
Email: kthompson31@kumc.edu

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