Standards of Care in Diabetes—2025 Abridged for Primary Care

*American Diabetes Association Primary Care Advisory Group**

The American Diabetes Association's (ADA's) Standards of Care in Diabetes is updated and published annually in a supplement to the January issue of *Diabetes Care*. The Standards are developed by the ADA's multidisciplinary Professional Practice Committee, which comprises expert diabetes health care professionals. The Standards include the most current evidence-based recommendations for diagnosing and treating adults and children with all forms of diabetes.

On the following 44 pages, we provide an abridged version of the 2025 Standards of Care containing the evidence-based recommendations most pertinent to primary care—all presented in a user-friendly graphical format. The recommendations included here are substantively the same as in the complete Standards; the abridged version does not include references. The complete 2025 Standards of Care, including all supporting references, is available at professional.diabetes.org/standards-of-care. The abridged graphical versions of each Standards of Care section are also available at https://diabetesjournals.org/collection/2720/2025-Abridged-Standards-of-Care.

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Readers who wish to comment on the abridged or complete Standards of Care are invited to do so at https://professional.diabetes.org/SOC.

This article and each section of the 2025 Abridged Standards of Care are part of a special article collection available at https://diabetesjournals.org/collection/2720/2025-Abridged-Standards-of-Care.

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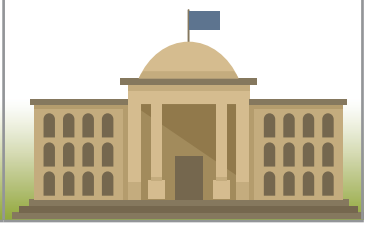
Section 1:

Improving Care and Promoting Health in Populations

Population health is defined as "the health outcomes of a group of individuals, including the distribution of health outcomes within the group." A multifaceted approach encompassing patient-level, system-level, and policy-level interventions is crucial for enhancing population health in the context of diabetes. This approach may include the following key elements.

Patient-Level	System-Level	Policy-Level
• Minimize therapeutic inertia in diagnosis and treatment. • Align care with evidence-based treatment guidelines. • Assess for and address social determinants of health (SDOH). • Implement shared decision-making that considers individual preferences, prognoses, comorbidities, and financial factors.	• Foster a quality-oriented culture to improve safety, timeliness, effectiveness, equity, and person-centeredness through system-based approaches. • Adopt an evidence-based care model that has been shown to improve aspects of diabetes care delivery and health outcomes. • Leverage patient registries, electronic health records, and population health tools to enhance care quality. • Use quality improvement initiatives and interprofessional teams to improve care delivery. • Incorporate telehealth alongside in-person visits to expand access to quality diabetes care. • Provide diabetes self-management education and support, using both professional and community-based resources. • Evaluate socioeconomic and linguistic barriers to diabetes management and care, and facilitate referrals to local community resources when needed.	• Ensure access to health insurance with adequate coverage for all aspects of diabetes management, including medications, supplies/equipment, technology, and medical care. • Expand availability of health care professionals with expertise in diabetes management. • Identify and ameliorate disparities in alignment with health equity policies, engaging interprofessional teams and community partners. • Enact measures to reduce costs, alleviate the impacts of SDOH, and support equitable care delivery.

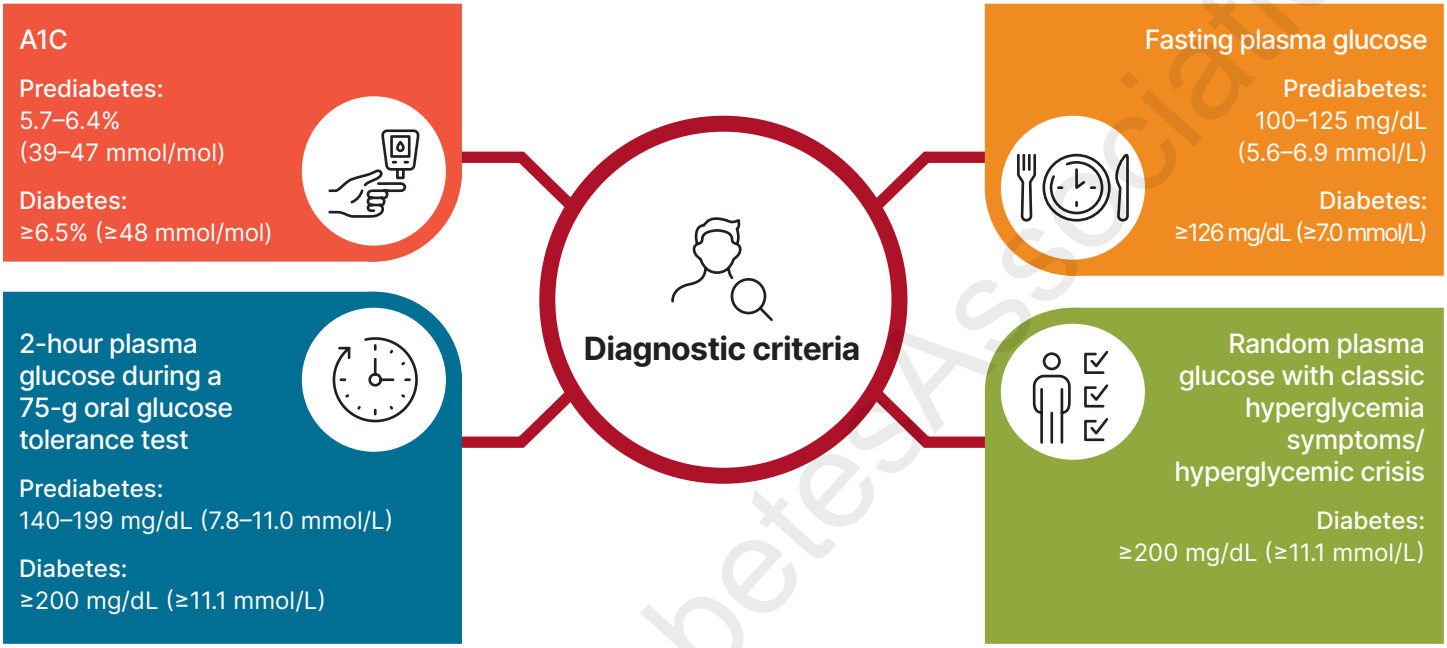


Suggested citation: American Diabetes Association Primary Care Advisory Group. 1. Improving care and promoting health in populations: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:183 (doi: 10.2337/cd25-a001). ©2025 by the American Diabetes Association.

Section 2:

Diagnosis and Classification of Diabetes

Diagnostic Tests for Diabetes

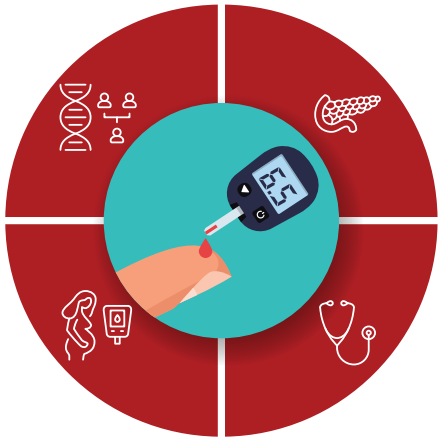


- There is insufficient evidence to support the use of continuous glucose monitoring for screening or diagnosing prediabetes or diabetes.
- In the absence of unequivocal hyperglycemia (e.g., hyperglycemic crisis), diagnosis of type 2 diabetes requires confirmatory testing, which can be a different test on the same day or the same test on a different day.
- Marked discordance between A1C and repeated blood glucose measurements should raise the possibility of a problem or interference with either test.

Classification

Classification of diabetes type is not always straightforward at presentation, and misdiagnosis is common.

Type 1 diabetes (autoimmune β-cell destruction or idiopathic etiology)



Type 2 diabetes (nonautoimmune progressive loss of adequate β-cell insulin secretion frequently on the background of insulin resistance)

Gestational diabetes mellitus (GDM; detected at 24–28 weeks of gestation in individuals without previously identified diabetes or high-risk glucose metabolism)

Diabetes from other causes (e.g., monogenic diabetes syndromes, diseases of the exocrine pancreas, and drug- or chemical-induced diabetes)

Suggested citation: American Diabetes Association Primary Care Advisory Group. 2. Diagnosis and classification of diabetes: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:184–186 (doi: 10.2337/cd25-a002).

Screening Criteria for Prediabetes and Type 2 Diabetes

Screening for prediabetes and type 2 diabetes should be performed in asymptomatic adults with an assessment of risk factors or a validated risk calculator.

Risk Factor Assessment for Prediabetes and Type 2 Diabetes

Adults with overweight or obesity (BMI ≥25 kg/m² or ≥23 kg/m² 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, and Asian American)
- ☐ History of cardiovascular disease
- ☐ Hypertension (≥130/80 mmHg or on therapy for hypertension)
- ☐ HDL cholesterol <35 mg/dL (<0.9 mmol/L) and/or triglyceride level >250 mg/dL (>2.8 mmol/L)
- ☐ Polycystic ovary syndrome
- ☐ Physical inactivity
- ☐ Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans, and metabolic dysfunction–associated steatotic liver disease)

Clinical Notes

- If results are normal, repeat screening at least every 3 years (annually for those with prediabetes), or sooner with symptoms or changes in risk factors for diabetes.

Additional Screening Guidelines

Condition	Clinical Tips	Best Test
An altered relationship between A1C and glycemia	A mismatch between A1C and glycemia could be caused by some hemoglobin variants, pregnancy (second and third trimesters and the postpartum period), glucose-6-phosphate dehydrogenase deficiency, HIV, hemodialysis, recent blood loss or transfusion, anemia, hemolysis, or erythropoietin therapy.	Fasting plasma glucose
HIV	Screen for diabetes and prediabetes before and 3–6 months after starting or changing antiretroviral therapy and annually if initial results are normal.	Fasting plasma glucose
Acute pancreatitis	Screen for diabetes 3–6 months after an episode of acute pancreatitis and annually thereafter.	Any standard test for diagnosing diabetes
Cystic fibrosis	Annual screening should begin by the age of 10 years in all people with cystic fibrosis not previously diagnosed with cystic fibrosis–related diabetes.	Oral glucose tolerance test
Posttransplantation status	Screen for hyperglycemia after organ transplantation. Posttransplantation diabetes mellitus should be diagnosed when the individual is stable on immunosuppressive therapy and free of acute infections.	Oral glucose tolerance test
Possible monogenic diabetes	Suspect monogenic diabetes in people diagnosed with diabetes in the first 6 months of life and in children and young adults with atypical characteristics of type 1 or type 2 diabetes, who often have a family history of diabetes in successive generations (suggestive of an autosomal dominant pattern of inheritance).	Any standard test for diagnosing diabetes plus appropriate genetic testing
Therapy with certain medications	Consider screening people for prediabetes or diabetes if they are on certain medications known to increase diabetes risk, such as glucocorticoids, statins, thiazide diuretics, some HIV medications, and second-generation antipsychotic medications.	Any standard test test for diagnosing diabetes

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Section 3:

Prevention or Delay of Diabetes and Associated Comorbidities

Screening for Type 2 Diabetes

1. Why Screen?

- Lab testing is safe and cost-effective.
- Screening presents an opportunity to address cardiovascular risk factors (e.g., hypertension and dyslipidemia).

2. How to Screen

- Conduct an assessment of risk factors.

–or–

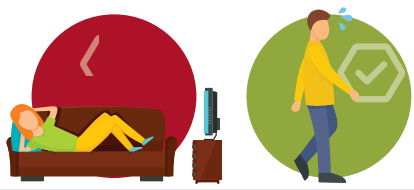
- Use an assessment tool such as the American Diabetes Association risk test.
- Consider diagnostic testing based on assessment results.

3. When to Screen

- Monitor people with prediabetes at least annually.
- In those without prediabetes who have normal results, repeat screening at least every 3 years.
- Screen after the onset of puberty or after the age of 10 years in children and adolescents with overweight (BMI ≥85th percentile) or obesity (BMI ≥95th percentile) who have at least one risk factor.
- Screen whenever there are symptoms suggestive of diabetes or changes in risk.

Nutrition and Physical Activity Recommendations for Adults at Risk for Type 2 Diabetes

Follow a Healthy Eating Pattern	Get Regular Physical Activity
• Emphasize whole grains, legumes, nuts, fruits, and vegetables and minimize refined and processed foods • A variety of healthy eating patterns include: » Mediterranean-style » Low-carbohydrate » Vegetarian or plant-based » DASH (Dietary Approaches to Stop Hypertension)	• ≥150 min/week of moderate-intensity physical activity, such as brisk walking • May include resistance or strength training • Break up prolonged sedentary time



Suggested citation: American Diabetes Association Primary Care Advisory Group. 3. Prevention or delay of diabetes and associated comorbidities: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:187–189 (doi: 10.2337/cd25-a003). ©2025 by the American Diabetes Association.

Weight Management for Type 2 Diabetes Prevention

Where to Refer

- Refer adults with overweight or obesity who are at high risk for type 2 diabetes to a recognized diabetes prevention lifestyle change program (www.cdc.gov/diabetes-prevention/lifestyle-change-program/find-a-program.html).

What is the Diabetes Prevention Program?

- The Diabetes Prevention Program (DPP) study demonstrated that intensive lifestyle intervention could reduce the risk of type 2 diabetes by 58% over 3 years. The two major goals of the DPP intensive lifestyle intervention were to achieve and maintain ≥7% weight loss and ≥150 min/week of moderate-intensity physical activity, such as brisk walking.
- Technology-assisted programs using smartphones, web apps, and telehealth platforms can effectively deliver the DPP lifestyle change program, overcoming barriers, especially for people with low income and/or in rural locations.
- DPP lifestyle change programs are covered by Medicare, Medicaid in certain states, and some commercial payors.

Person-Centered Care Goals for Individuals at Risk of Type 2 Diabetes

It is important to weigh the individualized risks and benefits of interventions.		
 Facilitate weight management in those with overweight/obesity.	 Minimize progression of hyperglycemia.	 Reduce cardiovascular risk.

Consider more intensive approaches for individuals at high risk of progression to diabetes.		
 BMI ≥35 kg/m²	 Higher glucose levels (e.g., fasting plasma glucose [FPG] 110–125 mg/dL [6.1–6.9 mmol/L], 2–h postchallenge glucose 173–199 mg/dL [9.6–11 mmol/L], and A1C ≥6.0% [42 mmol/mol])	 History of gestational diabetes mellitus (GDM)

What medications can be prescribed to adults to prevent type 2 diabetes?

The U.S. Food and Drug Administration has not approved any drugs for diabetes prevention.

Metformin has the strongest evidence base for diabetes prevention.

Who should be considered for metformin therapy to prevent type 2 diabetes?

- Adults aged 25–59 years with a BMI ≥35 kg/m^2
- Individuals with higher FPG (e.g., ≥110 mg/dL [≥6 mmol/L])
- Those with higher A1C (e.g., ≥6.0% [≥42 mmol/mol])
- Individuals with a history of GDM

What parameters should be monitored in people on metformin therapy?

Vitamin B12 should be measured periodically, especially in those with anemia or peripheral neuropathy.

Does statin therapy increase the risk of developing type 2 diabetes?

- Statin therapy may elevate type 2 diabetes risk in high-risk individuals.
- In primary and secondary prevention of cardiovascular disease, statin benefits outweigh diabetes risk.
- Discontinuing statins based on concerns about increased diabetes risk is not advised.

Does pioglitazone have a role in secondary cardiovascular prevention in people at risk for type 2 diabetes?

Pioglitazone could reduce stroke and myocardial infarction risks in people with a history of stroke and evidence of insulin resistance or prediabetes. However, the benefit must be weighed against potential weight gain, edema, and increased fracture risk. Lower doses may lessen these adverse effects.

Prevention of Type 1 Diabetes

What is recommended to screen for type 1 diabetes in high-risk individuals?

1. Screen for autoantibodies to insulin, glutamic acid decarboxylase (GAD), islet antigen 2 (IA-2), or zinc transporter 8 (ZnT8).
2. In people with presymptomatic type 1 diabetes, monitor for disease progression using A1C approximately every 6 months and 75-g oral glucose tolerance test (i.e., fasting and 2-h plasma glucose) annually; modify frequency of monitoring based on individual risk assessment based on age, number and type of autoantibodies, and glycemic metrics.

Medication to delay the onset of type 1 diabetes

Teplizumab-mzwv infusion to delay the onset of symptomatic type 1 diabetes (stage 3) should be discussed in selected individuals who are ≥8 years of age and have stage 2 type 1 diabetes.

Staging of type 1 diabetes

	Stage 1	Stage 2	Stage 3
Characteristics	• Autoimmunity • Normoglycemia • Presymptomatic	• Autoimmunity • Dysglycemia • Presymptomatic	• Autoimmunity • Overt hyperglycemia • Symptomatic
Diagnostic criteria	• Multiple islet autoantibodies • No IGT or IFG, normal A1C	• Islet autoantibodies (usually multiple) • Dysglycemia: - IFG: FPG 100–125 mg/dL (5.6–6.9 mmol/L) or - IGT: 2-h PG 140–199 mg/dL (7.8–11.0 mmol/L) or - A1C 5.7–6.4% (39–47 mmol/mol) or ≥10% increase in A1C	• Autoantibodies may become absent • Diabetes by standard criteria

Adapted from Skyler JS, Bakris GL, Bonifacio E, et al. Differentiation of diabetes by pathophysiology, natural history, and prognosis. Diabetes 2017;66:241–255. IFG, impaired fasting glucose; IGT, impaired glucose tolerance; 2-h PG, 2-h plasma glucose. Alternative additional stage 2 diagnostic criteria of 30-, 60-, or 90-min plasma glucose on oral glucose tolerance test ≥200 mg/dL (≥11.1 mmol/L) and confirmatory testing in those aged ≥18 years have been used in clinical trials (Herold KC, Bundy BN, Long SA, et al.; Type 1 Diabetes TrialNet Study Group. An anti-CD3 antibody, teplizumab, in relatives at risk for type 1 diabetes. N Engl JMed 2019;381:603–613).

Section 4:

Comprehensive Medical Evaluation and Assessment of Comorbidities

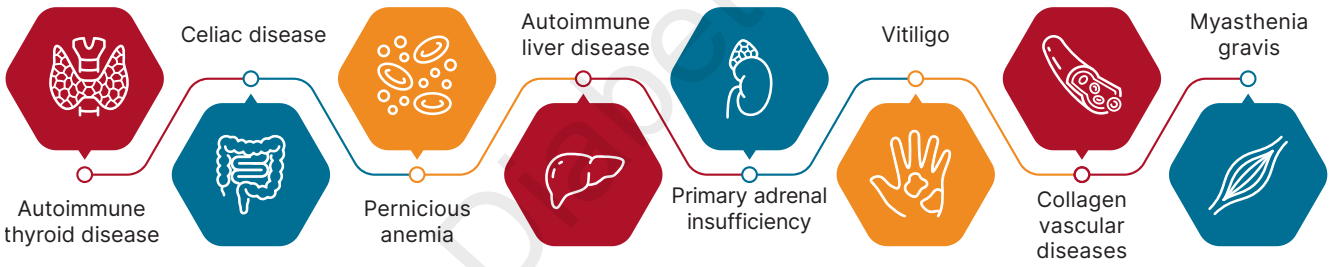
Diabetes treatment goals are to prevent or delay complications and optimize quality of life. These goals should be developed collaboratively with people with diabetes to honor their preferences and values. Comprehensive diabetes care should be provided by an interprofessional team that may include but is not limited to diabetes care and education specialists, primary care and subspecialty clinicians, nurses, registered dietitian nutritionists, exercise specialists, pharmacists, dentists, podiatrists, behavioral health professionals, and community partners such as community health workers and community paramedics. Ongoing treatment necessitates regular follow-up and the active engagement of people with diabetes and their care partners. Comprehensive medical evaluations (described in the table on the last 2 pages of this document) and the provision of all recommended vaccinations (cdc.gov/vaccines) are essential components of ongoing diabetes care.

Assessment of Comorbidities

What autoimmune conditions should people with type 1 diabetes be screened for?

People with type 1 diabetes should be screened soon after diagnosis and periodically thereafter for:

- Autoimmune thyroid disease
- Other autoimmune conditions, if suggestive signs and symptoms are present, such as:



How does diabetes affect bone health?

- People with type 1 or type 2 diabetes have a higher fracture risk than those without diabetes.
- This risk escalates with longer diabetes duration and poor glycemic management.
- People with type 2 diabetes on a thiazolidinedione, insulin, or a sulfonylurea have an even higher fracture risk.

Optimizing Bone Health in People With Diabetes

Screening

- In older adults (≥65 years of age) and high-risk young adults
- Dual-energy X-ray absorptiometry every 2–3 years

Nutrition and Activity

Counsel on:

- Calcium and vitamin D
- Aerobic and weight-bearing physical activity
- Fall precautions

Pharmacotherapy

- Choose glucose-lowering medications with safe profiles for bone health and low hypoglycemia risk to prevent falls.
- Consider antiresorptive and osteoanabolic agents for those with a T-score ≤-2, previous fragility fractures, or elevated Fracture Risk Assessment Tool score.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 4. Comprehensive medical evaluation and assessment of comorbidities: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:190–193 (doi: 10.2337/cd25-a004).

Are people with diabetes at increased risk for cancer?

Diabetes is associated with increased risks of cancers of the liver, pancreas, endometrium, colon and rectum, breast, and bladder. Nevertheless, cancer screening recommendations are the same for people with diabetes as for those without diabetes.

How prevalent is metabolic dysfunction–associated steatotic liver disease (MASLD)? Who should be screened for it and how?

Prevalence

- More than 70% of people with type 2 diabetes have MASLD.

Screening Goals

- To identify individuals at risk for complications from metabolic dysfunction–associated steatohepatitis (MASH), such as cirrhosis and hepatocellular carcinoma
- To prevent death from liver disease

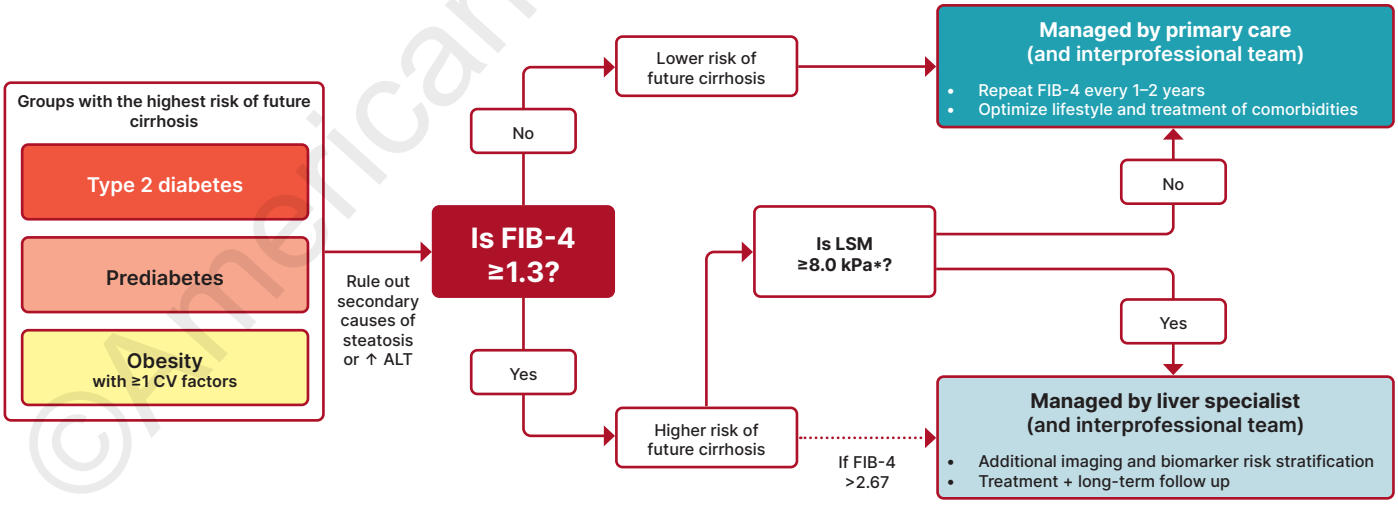
High-Risk Individuals

- People with central obesity and cardiometabolic risks or insulin resistance
- Individuals >50 years of age
- Those with persistent high plasma aminotransferase levels (AST/ALT >30 units/L for >6 months)

Screening Tool

- Calculate the fibrosis-4 (FIB-4) index score, which is based on a person's age, ALT and AST levels, and platelet count
- Screen with the FIB-4 index even if liver enzymes are normal
- A FIB-4 index calculation tool is available online at mdcalc.com/calc/2200/fibrosis-4-fib-4-index-liver-fibrosis

Diagnostic Algorithm for the Prevention of Cirrhosis in People With MASLD



CV, cardiovascular; ELF, enhanced liver fibrosis test; 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 MASLD with advanced liver fibrosis (≥F3–F4) and should be referred to a liver specialist.

Components of the Comprehensive Diabetes Medical Evaluation at Initial, Follow-Up, and Annual Visits

		Initial Visit	Every Follow-Up Visit	Annual Visit
PAST MEDICAL AND FAMILY HISTORY	**DIABETES HISTORY**			
	• Characteristics at onset (e.g., age and symptoms and/or signs)	✓		
	• Review of previous treatment plans and response	✓		
	• Assess frequency/cause/severity of past hospitalizations	✓		
	FAMILY HISTORY			
	• Family history of diabetes in a first-degree relative	✓		
	• Family history of autoimmune disorders	✓		
	PERSONAL HISTORY OF COMPLICATIONS AND COMMON COMORBIDITIES			
	• Common comorbidities (e.g., obesity, OSA, MASLD)	✓		✓
	• High blood pressure or abnormal lipids	✓		✓
	• Macrovascular and microvascular complications	✓		✓
	• Hypoglycemia: awareness, frequency, causes, and timing of episodes	✓	✓	✓
	• Presence of hemoglobinopathies or anemias	✓		✓
	• Last dental visit	✓		✓
	• Last dilated eye exam	✓		✓
	• Visits to specialists			✓
	• Disability assessment and use of assistive devices (e.g., physical, cognitive, vision and auditory, history of fractures, and podiatry)	✓	✓	✓
	• Personal history of autoimmune disease	✓		
	SURGICAL AND PROCEDURE HISTORY			
	• Surgeries (e.g., metabolic surgery and transplantation)	✓	✓	✓
	INTERVAL HISTORY			
	• Changes in medical or family history since last visit		✓	✓
BEHAVIORAL FACTORS	• Eating patterns and weight history	✓	✓	✓
	• Assess familiarity with carbohydrate counting (e.g., type 1 diabetes or type 2 diabetes treated with MDI)	✓		✓
	• Physical activity and sleep behaviors; screen for OSA	✓	✓	✓
	• Tobacco, alcohol, and substance use	✓		✓
MEDICATIONS AND VACCINATIONS	• Current medication plan	✓	✓	✓
	• Medication-taking behavior, including rationing of medications and/or medical equipment	✓	✓	✓
	• Medication intolerance or side effects	✓	✓	✓
	• Complementary and alternative medicine use	✓	✓	✓
	• Vaccination history and needs	✓		✓
TECHNOLOGY USE	• Assess use of health apps, online education, patient portals, etc.	✓	✓	✓
	• Glucose monitoring (meter/CGM): results and data use	✓	✓	✓
	• Review insulin pump settings and use and connected pen and glucose data	✓	✓	✓

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		Initial Visit	Every Follow-Up Visit	Annual Visit
SOCIAL LIFE ASSESSMENT	SOCIAL NETWORK			
	• Identify existing social supports	✓		✓
	• Identify surrogate decision maker, advanced care plan	✓		✓
	• Identify social determinants of health (e.g., food security, housing stability and homelessness, transportation access, financial security, and community safety)	✓		✓
	• Assess daily routine and environment, including school or work schedules and ability to engage in diabetes self-management	✓	✓	✓
PHYSICAL EXAMINATION	• Height, weight, and BMI; growth and pubertal development in children and adolescents	✓	✓	✓
	• Blood pressure determination	✓	✓	✓
	• Orthostatic blood pressure measures (when indicated)	✓		✓
	• Fundoscopic examination (refer to eye specialist)	✓		✓
	• Thyroid palpation	✓		✓
	• Skin examination (e.g., acanthosis nigricans, insulin injection or insertion sites, and lipodystrophy)	✓	✓	✓
	• Comprehensive foot examination	✓		✓
	• Visual inspection (e.g., skin integrity, callous formation, foot deformity or ulcer, and toenails)*	✓	✓	✓
	• Check pedal pulses and screen for PAD with ABI testing if a PAD diagnosis would change management	✓		✓
	• Determination of temperature, vibration or pinprick sensation, and 10-g monofilament exam	✓		✓
	• Screen for depression, anxiety, diabetes distress, fear of hypoglycemia, and disordered eating	✓		✓
	• Assessment for cognitive performance if indicated†	✓		✓
	• Assessment for functional performance if indicated†	✓		✓
	• Consider assessment for bone health (e.g., loss of height and kyphosis)	✓		✓
LABORATORY EVALUATION	• A1C, if the results are not available within the past 3 months	✓	✓	✓
	• Lipid profile, including total, LDL, and HDL cholesterol and triglycerides‡	✓		✓^
	• Liver function tests (i.e., FIB-4)‡	✓		✓
	• Spot urinary albumin-to-creatinine ratio	✓		✓
	• Serum creatinine and estimated glomerular filtration rate§	✓		✓
	• Thyroid-stimulating hormone in people with type 1 diabetes‡	✓		✓
	• Celiac disease in people with type 1 diabetes‖	✓		
	• Vitamin B12 if taking metformin for >5 years	✓		✓
	• CBC with platelets	✓		✓
	• Serum potassium levels in people with diabetes on ACE inhibitors, ARBs, or diuretics§	✓		✓
	• Calcium, vitamin D, phosphorus for appropriate people with diabetes	✓		✓

ABI, ankle-brachial index; ARBs, angiotensin receptor blockers; CBC, complete blood count; CGM, continuous glucose monitor; FIB-4, fibrosis-4 index; MASLD, metabolic-associated steatotic liver disease; MDI, multiple daily injections; OSA, obstructive sleep apnea; PAD, peripheral arterial disease.

*Should be performed at every visit in people with diabetes with sensory loss, previous foot ulcers, or amputations.

†At 65 years of age or older.

‡May also need to be checked after initiation or dose changes of medications that affect these laboratory values (i.e., diabetes medications, blood pressure medications, cholesterol medications, or thyroid medications).

^In people without dyslipidemia and not on cholesterol-lowering therapy, testing may be less frequent.

§May be needed more frequently in people with diabetes with known chronic kidney disease or with changes in medications that affect kidney function and serum potassium.

‖In people with presence of gastrointestinal symptoms, signs, laboratory manifestations, or clinical suspicion suggestive of celiac disease.

Section 5:

Facilitating Positive Health Behaviors and Well-Being to Improve Health Outcomes

Building positive health behaviors and maintaining psychological well-being are foundational for achieving diabetes management goals and maximizing quality of life.

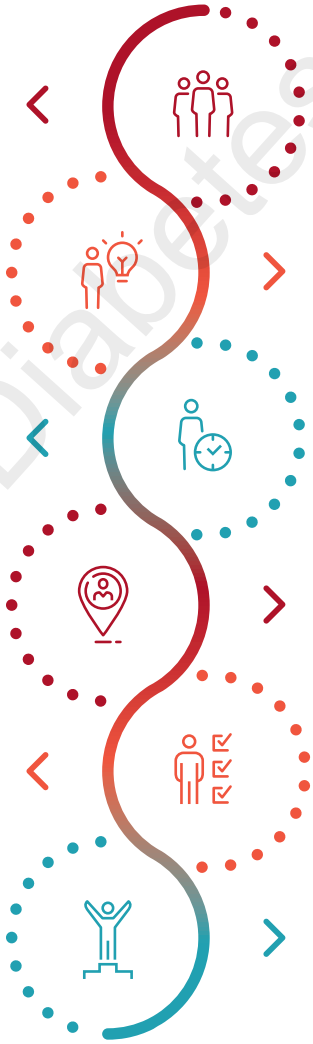
Essential tasks to help people with diabetes achieve their health goals:			
	Refer for diabetes self-management education and support (DSMES)		Counsel on and support cessation of tobacco products and vaping
	Refer for medical nutrition therapy (MNT)		Counsel on health behaviors and sleep quality
	Counsel on routine physical activity		Support and refer to behavioral health professionals for psychosocial care

DSMES Is Critical

People Who Benefit
- All people with diabetes

Times to Refer
- At diagnosis
- Annually and/or when not meeting treatment goals
- When complicating factors develop
- When transitions in life and care occur

Essential Components
- Provide culturally appropriate content
- Be responsive to individual preferences, needs, and values
- Use positive, strength-based language that puts people first
- Consider social determinants of health with a focus on health equity



Advantages
- Supports informed decision-making
- Promotes self-care behaviors
- Facilitates problem-solving
- Improves collaboration with the health care team
- Imparts knowledge and self-care skills
- Incorporates needs, goals, and life experiences

Appropriate Settings
- Group or individual visits
- In-person, telehealth, or digital platforms

Proven Outcomes
- Improved diabetes knowledge, self-care, and quality of life
- Lower A1C and self-reported weight reductions
- Reduced all-cause mortality risk, acute care and hospital services utilization, and lower health care costs
- Increased use of primary care and preventive services
- Positive coping behavior

Suggested citation: American Diabetes Association Primary Care Advisory Group. 5. Facilitating positive health behaviors and well-being to improve health outcomes: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:194–197 (doi: 10.2337/cd25-a005). ©2025 by the American Diabetes Association.

Psychosocial Care for People With Diabetes: Considerations and Recommendations

Screening

- Clinically significant mental health diagnoses are considerably more prevalent in people with diabetes than in those without.
- Clinicians should implement psychosocial screening protocols, including for diabetes distress.
- People with diabetes, caregivers, and family members should be screened at least annually or when changes in disease, treatment, or life circumstances occur.
- Address both clinical and subclinical psychological symptoms, which can affect the ability to carry out self-management, short-term glycemic stability, and mortality risk.

Interventions

- Interventions should be collaborative, person-centered, and culturally informed.
- Refer to behavioral health professionals or other trained health care professionals, ideally with experience in diabetes.

Resources are available to help health care professionals support behavioral and mental health in people with diabetes. Find them at https://professional.diabetes.org/meetings/behavioral-health-toolkit.

Diabetes Distress

The ongoing demands of diabetes self-care and the potential or actual disease progression are directly linked to reports of diabetes distress.

High levels of distress:

- Significantly affect medication-taking behavior
- Are linked to higher A1C, lower self-efficacy, and less optimal eating and exercise behaviors

Support positive health behavior through:
Motivational interviewing
Activation
Goal-setting and action-planning
Problem-solving
Encouragement of health behavior self-monitoring, with or without clinician feedback
Identification of social support resources

MNT

There is a no one-size-fits-all eating pattern. Successful MNT programs are:

- Flexible, realistic, and sustainable
- Provided by a registered dietitian nutritionist
- Offered to all people with type 1 or type 2 diabetes, prediabetes, or gestational diabetes mellitus

Screen for:

- Disordered eating
- Food insecurity
- History of dieting

Key Nutrition Principles

Include

- Nonstarchy vegetables
- Lean proteins
- Whole grains
- Nuts/seeds
- Low-fat dairy products or nondairy alternatives
- Whole fruits
- Legumes

Minimize

- Red meat
- Sugar-sweetened beverages
- Sweets
- Refined grains
- Processed and ultraprocessed foods

Data do not support a specific distribution of macronutrients. People with diabetes may choose from a variety of healthy eating patterns to fit their needs and preferences.

Importance of 24-Hour Physical Behaviors for Type 2 Diabetes

SITTING/BREAKING UP PROLONGED SITTING

- Limit sitting. Breaking up prolonged sitting (at least every 30 min) with short regular bouts of slow walking or simple resistance exercises can improve glucose metabolism.

STEPPING

- An increase of only 500 steps/day is associated with 2-9% decreased risk of cardiovascular morbidity and all-cause mortality.
- A 5-to 6-min brisk- intensity walk per day equates to ~4 years' greater life expectancy.

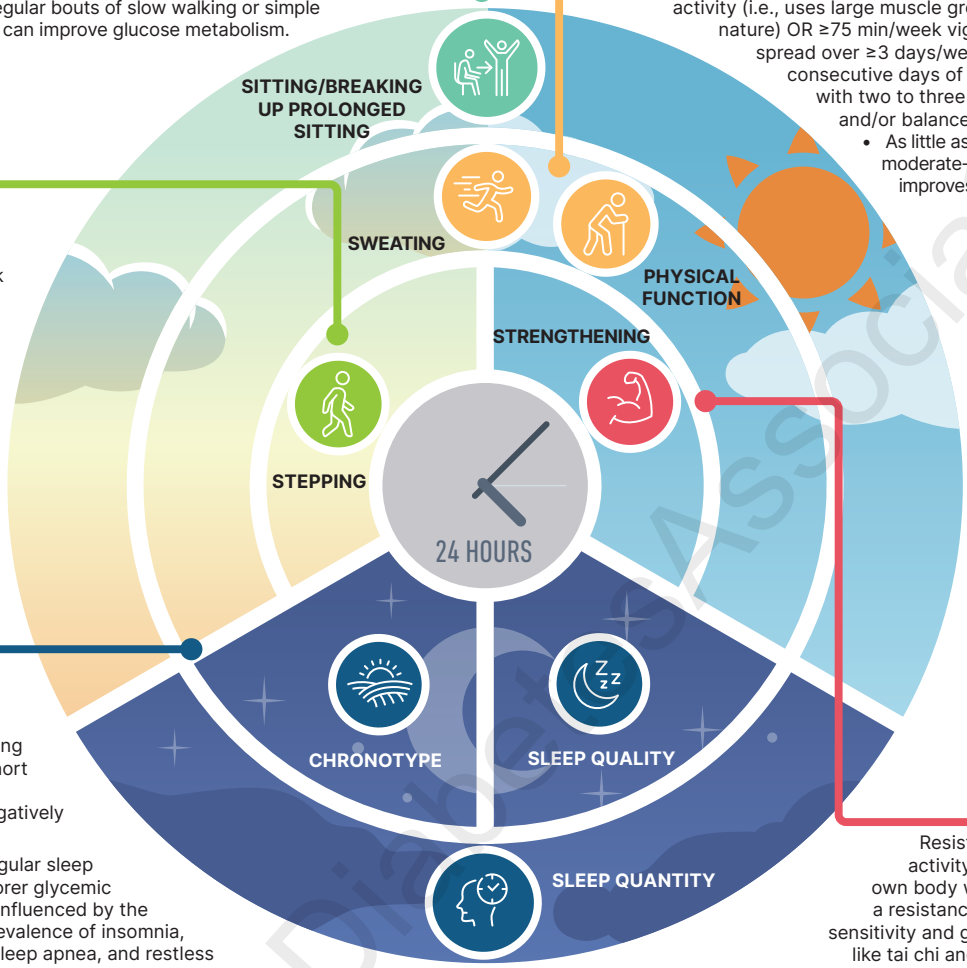
SLEEP

Aim for consistent, uninterrupted sleep, even on weekends.

Quantity - Long (>8 h) and short (<6 h) sleep durations negatively impact A1C.

Quality - Irregular sleep results in poorer glycemic levels, likely influenced by the increased prevalence of insomnia, obstructive sleep apnea, and restless leg syndrome in people with type 2 diabetes.

Chronotype - Evening chronotypes (i.e., night owl: go to bed late and get up late) may be more susceptible to inactivity and poorer glycemic levels than morning chronotypes (i.e., early bird: go to bed early and get up early).



SWEATING (MODERATE-TO-VIGOROUS ACTIVITY)

- Encourage ≥150 min/week of moderate-intensity physical activity (i.e., uses large muscle groups, rhythmic in nature) OR ≥75 min/week vigorous-intensity activity spread over ≥3 days/week, with no more than 2 consecutive days of inactivity. Supplement with two to three resistance, flexibility, and/or balance sessions.
  - As little as 30 min/week of moderate-intensity physical activity improves metabolic profiles.

Physical function/ frailty/sarcopenia

- The frailty phenotype in type 2 diabetes is unique, often encompassing obesity alongside physical frailty, at an earlier age. The ability of people with type 2 diabetes to undertake simple functional exercises in middle- age is similar to that in those over a decade older.

STRENGTHENING

Resistance exercise (i.e., any activity that uses the person's own body weight or works against a resistance) also improves insulin sensitivity and glucose levels; activities like tai chi and yoga also encompass elements of flexibility and balance.

	Glucose/ insulin	Blood pressure	A1C	Lipids	Physical function	Depression	Quality of life
SITTING/BREAKING UP PROLONGED SITTING	◯↓	◯↓	◯↓	◯↓	◯↑	◯↓	◯↑
STEPPING	◯↓	◯↓	◯↓	◯↓	◯↑	◯↓	◯↑
SWEATING (MODERATE-TO-VIGOROUS ACTIVITY)	◯↓	◯↓	◯↓	◯↓	◯↑	◯↓	◯↑
STRENGTHENING	◯↓	◯↓	◯↓	◯↓	◯↑	◯↓	◯↑
ADEQUATE SLEEP DURATION	◯↓	◯↓	◯↓	◯↓	◯?	◯↓	◯↑
GOOD SLEEP QUALITY	◯↓	◯↓	◯↓	◯↓	◯?	◯↓	◯↑
CHRONOTYPE/CONSISTENT TIMING	◯↓	◯?	◯↓	◯?	◯?	◯↓	◯?

IMPACT OF PHYSICAL BEHAVIORS ON CARDIOMETABOLIC HEALTH IN PEOPLE WITH TYPE 2 DIABETES

◯↑ **Higher levels of improvement** (physical function, quality of life) ◯↓ **Lower levels of improvement** (glucose/insulin, blood pressure, A1C, lipids, depression)
◯? No data available
◯↑ Green arrows = strong evidence ◯↑ Yellow arrows = medium-strength evidence ◯↑ Red arrows = limited evidence

Adapted from Davies MJ, Aroda VR, Collins BS, et al. Management of hyperglycemia in type 2 diabetes, 2022. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). Diabetes Care 2022;45:2753–2786.

Section 6:

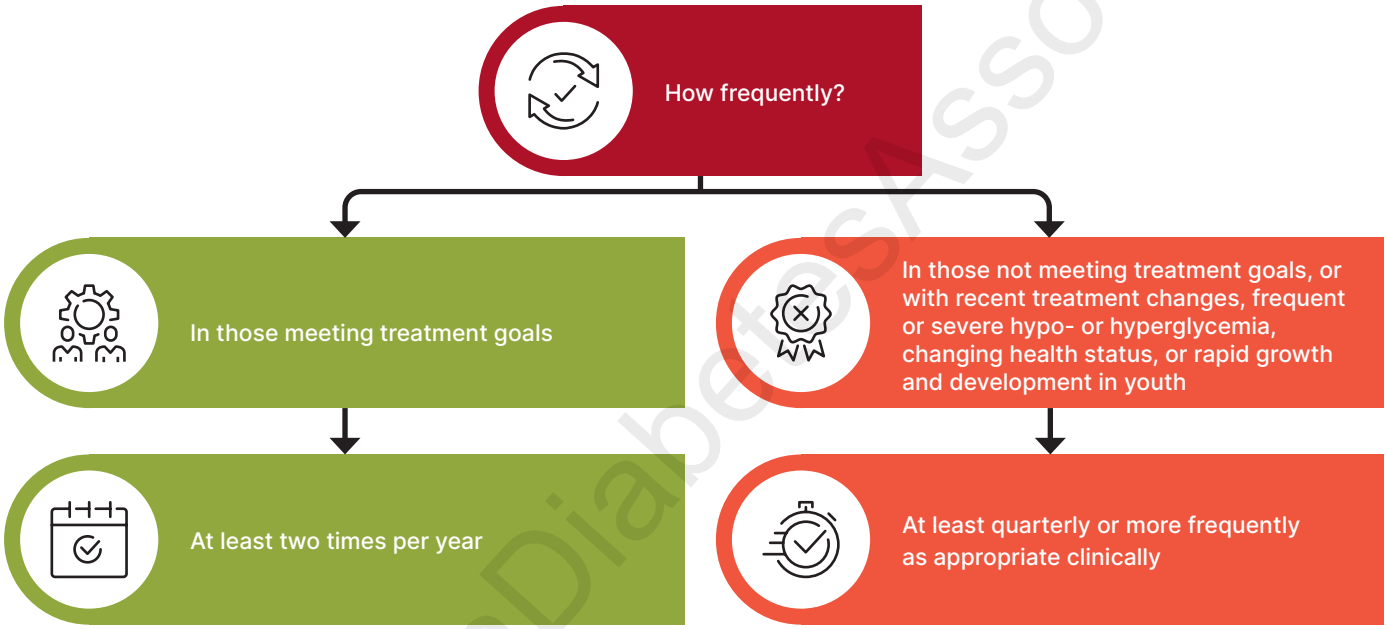
Glycemic Goals and Hypoglycemia

Assessment of Glycemic Status

How to Assess

- A1C measurement
- Continuous glucose monitoring (CGM) using appropriate metrics (e.g., time in range [TIR], time above range [TAR], and time below range [TBR])

When to Assess Glycemic Status With an A1C Test



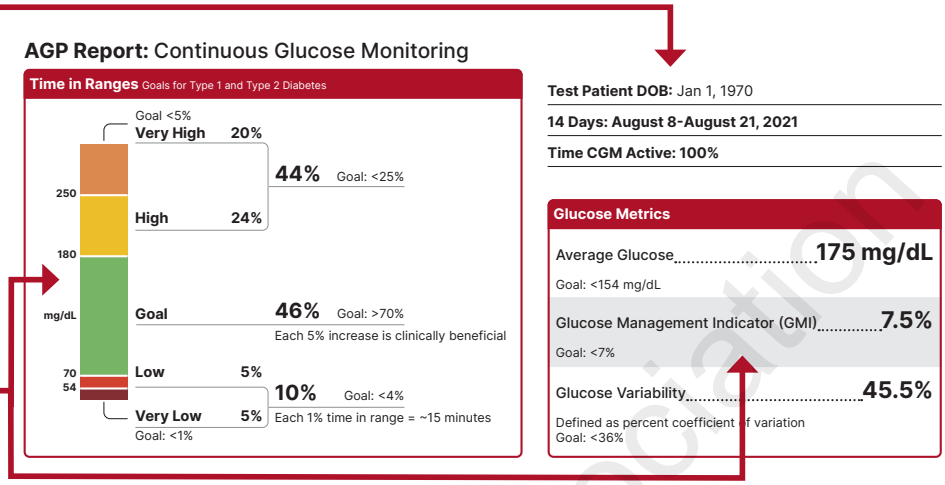
Clinical Notes

- Limitations of A1C testing:
  - Accuracy can be affected by conditions that affect red blood cell turnover (e.g., hemolytic and other anemias, glucose-6-phosphate dehydrogenase deficiency, recent blood transfusion, use of drugs that stimulate erythropoiesis, end-stage kidney disease, and pregnancy).
  - Some hemoglobin variants can interfere with some A1C assays, although this problem has been minimized with newer assays.
  - A1C cannot be used for people with sickle cell disease or other homozygous hemoglobin variants.
  - A1C does not assess glycemic variability or hypoglycemia.
- Consider alternative measures, such as fructosamine and glycated albumin, when necessary.
- Assess glycemic variability using blood glucose monitoring/CGM and A1C values.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 6. Glycemic goals and hypoglycemia: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:198–203 (doi: 10.2337/cd25-a006). ©2025 by the American Diabetes Association.

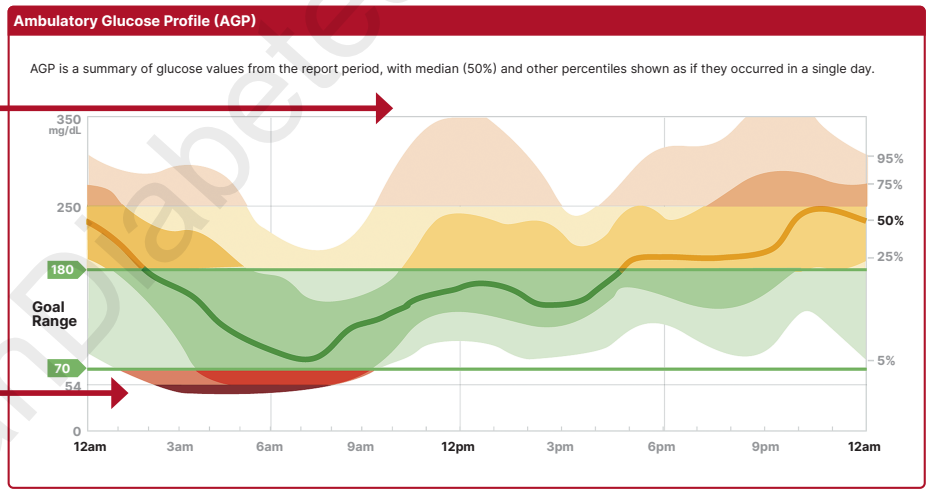
Glucose Assessment via CGM: The Ambulatory Glucose Profile (AGP) Report

1. Ensure sufficient data for analysis; CGM active at least 70% of the time over 14 days is recommended.
2. Discuss individuals' daily self-management routine.
3. Ask individuals to identify and explain what they observe on the report.
4. Check overall CGM metrics:

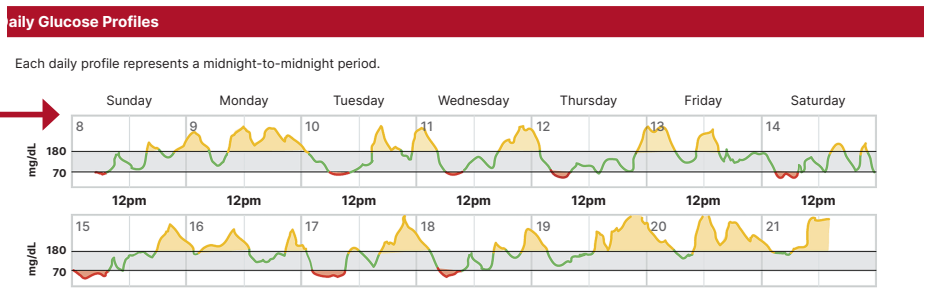


- TBR: percentage of readings and time with glucose <70 mg/dL (<3.9 mmol/L)
- TIR: percentage of readings and time with glucose 70–180 mg/dL (3.9–10.0 mmol/L)
- TAR: percentage of reading and time with glucose >180 mg/dL (>10.0 mmol/L)
- Average glucose
- Glucose management indicator: an estimate of A1C
- Glycemic variability: expressed as percent coefficient of variation; target ≤36%

5. Identify any hypoglycemia first, and then look for hyperglycemia patterns. Review the time spent in these patterns on the overall profile and daily graphs.



6. Discuss identified patterns and ask individuals to reflect on potential causes and possible solutions.
7. If you use CGM metrics to assess glycemia, goals for nonpregnant adults or those with frailty will vary; set glycemic goals based on the general guidelines on the next page.
8. Use shared decision-making to develop an action plan.



Correlation Between A1C and Estimated Average Glucose (eAG)

A1C (%)	mg/dL	mmol/L
5	97 (76–120)	5.4 (4.2–6.7)
6	126 (100–152)	7.0 (5.5–8.5)
7	154 (123–185)	8.6 (6.8–10.3)
8	183 (147–217)	10.2 (8.1–12.1)
9	212 (170–249)	11.8 (9.4–13.9)
10	240 (193–282)	13.4 (10.7–15.7)
11	269 (217–314)	14.9 (12.0–17.5)
12	298 (240–347)	16.5 (13.3–19.3)

A calculator for converting A1C results into eAG, in either mg/dL or mmol/L, is available at professional.diabetes.org/eAG. Data in parentheses are a 95% CI. Adapted from Nathan DM, Kuenen J, Borg R, Zheng H, Schoenfeld D; A1c-Derived Average Glucose Study Group. Translating the A1C assay into estimated average glucose values. Diabetes Care 2008;31:1473–1478.

Setting and Modifying Glycemic Goals

Glycemic goals should be individualized and periodically reevaluated.

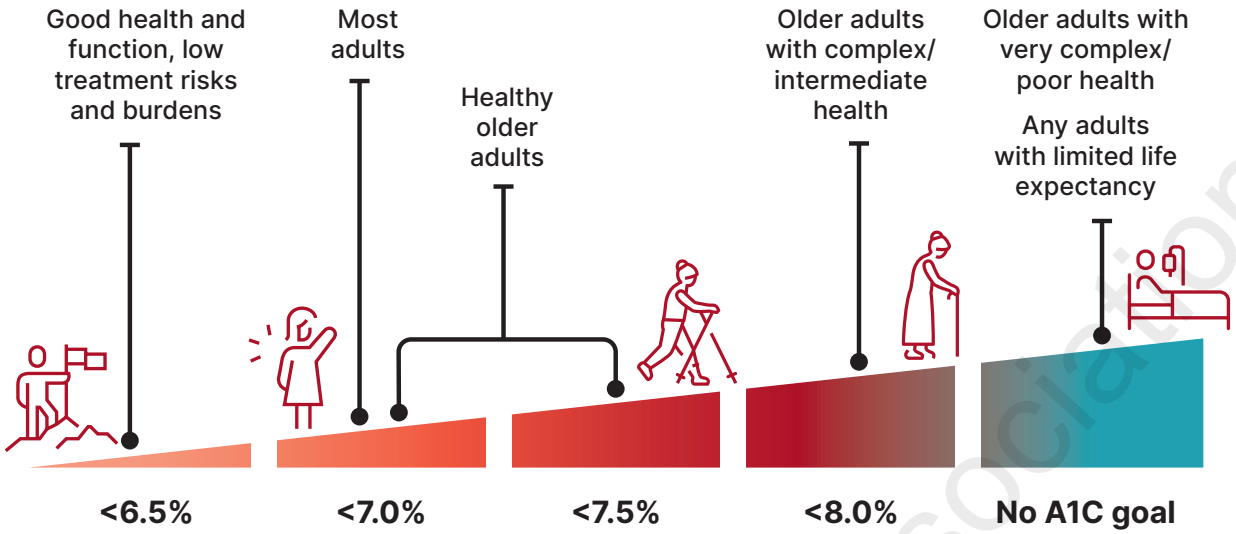
1. Individualize based on key characteristics of the person with diabetes.

2. Individualize using shared decision-making to address needs and preferences.

3. Follow these general guidelines:

- Recommended glycemic goals for many nonpregnant adults with diabetes without significant hypoglycemia:
  - A1C <7% (<53 mmol/mol)
  - Preprandial capillary plasma glucose: 80–130 mg/dL (4.4–7.2 mmol/L)
  - Peak postprandial capillary plasma glucose: <180 mg/dL (<10.0 mmol/L)
  - CGM metrics: TIR >70% with TBR <4% and <1% of time with glucose <54 mg/dL (<3.0 mmol/L)
- A lower A1C goal may be acceptable and even beneficial if it can be achieved safely without significant hypoglycemia or other adverse effects of treatment.
- A higher A1C goal (such as <8% [64 mmol/mol]) may be appropriate for individuals with limited life expectancy or where the harms of treatment are greater than the benefits.
- TIR >50% with <1% TBR is appropriate in older adults or those at high risk of hypoglycemia.
- Deintensify hypoglycemia-causing medications for those at high risk or any diabetes medication when treatment risks or burdens outweigh the benefits.

Individualized A1C Goals for Nonpregnant Adults



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

Select the glycemic goal based on individual health and function as described at the top of the figure.

Consider modifying to a more or less stringent goal according to the factors listed in the table. Older adults are classified as healthy (few coexisting chronic illnesses, intact cognitive and functional status), as having complex/ intermediate health (multiple coexisting chronic illnesses, two or more instrumental impairments to activities of daily living, or mild to moderate cognitive impairment), or as having very complex/poor health (long-term care or end-stage chronic illnesses, moderate to severe cognitive impairment, or two or more impairments to activities of daily living). Select glycemic goals that avoid symptomatic hypoglycemia and hyperglycemia in all individuals. Consider individuals' resources and support systems to safely achieve glycemic goals. Incorporate the preferences and goals of people with diabetes through shared decision-making.

Hyperglycemic Crises: Diagnosis, Management, and Prevention

Diabetic ketoacidosis (DKA) and the hyperglycemic hyperosmolar state (HHS) are serious, acute, and life-threatening hyperglycemic emergencies in individuals with diabetes that incur substantial morbidity, mortality, and costs.

Clinicians should review history of hyperglycemic crises (e.g., DKA and HHS) at every clinical encounter for all individuals with diabetes at risk for these events.

Provide structured education on the recognition, prevention, and management of hyperglycemic crisis. Individuals who have experienced DKA or HHS should be screened for social determinants of health and referred to appropriate health care and/or community services to mitigate these barriers to care.

Individuals at risk for DKA should be counseled on its early signs and symptoms and educated on timely self-management of hyperglycemia and ketonemia ("sick day advice"). Clinicians should provide detailed instructions on insulin dose adjustments in the setting of illness or fasting to prevent DKA occurrence and worsening.

Risk Factors for Hyperglycemic Crises

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

Data are from McCoy RG, Galindo RJ, Swarna KS, et al. Sociodemographic, clinical, and treatment-related factors associated with hyperglycemic crises among adults with type 1 or type 2 diabetes in the US From 2014 to 2020. JAMA Netw Open 2021;4:e2123471; Gibb FW, Teoh WL, Graham J, Lockman KA. Risk of death following admission to a UK hospital with diabetic ketoacidosis. Diabetologia 2016;59:2082–2087; Randall L, Begovic J, Hudson M, et al. Recurrent mental ketoacidosis in inner-city minority patients: behavioral, socioeconomic, and psychosocial factors. Diabetes Care 2011;34: 1891–1896; and Thomas M, Harjutsalo V, Feodoroff M, Forsblom C, Gordin D, Groop P-H. The long-term incidence of hospitalization for ketoacidosis in adults with established T1D—a prospective cohort study. J Clin Endocrinol Metab 2020;105:dgz003

Diagnostic Criteria for DKA and HHS

Hyperglycemic crisis should be considered in all individuals presenting with polyuria, polydipsia, weight loss, vomiting, dehydration, and change in cognitive state. All criteria must be met to establish these diagnoses. One-third of hyperglycemic emergencies have a hybrid DKA-HHS presentation.

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 GE, Davis GM, ElSayed NA, et al. Hyperglycemic crises in adults with diabetes: a consensus report. Diabetes Care 2024;47:1257–1275

Hypoglycemia Assessment, Prevention, and Treatment

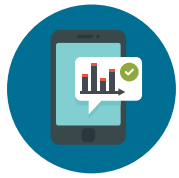
Hypoglycemia is categorized into three levels based on blood glucose concentrations and symptom severity. Level 1 is glucose <70 mg/dL (<3.9 mmol/L) but ≥54 mg/dL (≥3.0 mmol/L). Level 2 is glucose <54 mg/dL (<3.0 mmol/L). Level 3 is a severe event characterized by altered mental and/or physical status requiring assistance for treatment of hypoglycemia, irrespective of glucose level.

Assessment and medication selection	
	Review hypoglycemia history at every clinical encounter in all at-risk individuals.
	Screen for impaired hypoglycemia awareness at least annually and when clinically appropriate in all at-risk individuals.
	Consider hypoglycemia risk when selecting diabetes medications and setting glycemic goals.
Prevention and management of hypoglycemia	
	Use CGM for individuals at high risk for hypoglycemia.
	Glucose is the preferred treatment for hypoglycemia in conscious individuals with glucose levels <70 mg/dL (<3.9 mmol/L), although any form of glucose-containing carbohydrate can be used. Avoid using foods or beverages high in fat and/or protein for initial treatment. Re-test and re-treat, if needed, after 15 minutes.
	Prescribe glucagon for all individuals taking insulin or at high risk for hypoglycemia and provide caregivers with education on its use and proper storage.
	Offer structured education on hypoglycemia prevention and treatment to all individuals taking insulin or at high risk for hypoglycemia.
	Upon occurrence of one or more episodes of level 2 or level 3 hypoglycemia, promptly reevaluate the treatment plan, including considering whether to deintensify or switch medications.
	Refer individuals with impaired hypoglycemia awareness to a trained health care professional for evidence-based intervention to improve hypoglycemia awareness.
	Conduct ongoing assessments of cognitive function, ensuring extra caution and support for hypoglycemia if impaired or declining cognition is identified.

Section 7:

Diabetes Technology

Diabetes technology includes:

				
Insulin pumps (also called continuous subcutaneous insulin infusion [CSII] systems) are insulin delivery devices that are worn on the body.	**Connected insulin pens and pen caps** are insulin delivery pens or related devices that can record and/or send insulin dose data and may also calculate doses.	**Continuous glucose monitoring (CGM) systems** and **glucose meters** are devices to monitoring glucose levels.	**Automated insulin delivery (AID) systems** connect a CGM system and an insulin pump with a control algorithm to deliver insulin automatically.	**Diabetes self-management support software** includes apps or online platforms that are intended to treat a medical or psychological condition or assist with data management or lifestyle modification.

Students should be supported at school in the use of diabetes technologies recommended by their health care team. School nurses and designees should complete training to stay up to date on diabetes technologies.

General Diabetes Technology Principles

Recommendations	
	Diabetes devices should be offered to people with diabetes.
	The type(s) and selection of devices should be individualized based on specific needs, circumstances, preferences, and skill level. For individuals whose diabetes is partially or wholly managed by someone else (e.g., for young children or people with cognitive impairment or dexterity, psychosocial, and/or physical limitations), caregivers' preferences and skills should be taken into consideration.
	When prescribing diabetes technology, provide people with diabetes and caregivers with initial and ongoing education and training, in person or remotely, on using the devices and using, managing, and sharing the data they provide.
	People with diabetes who have been using CGM, CSII, and/or AID for diabetes management should have continued access to these technologies across insurance payors, regardless their age or A1C level.
	Starting CGM, CSII, or AID early in the treatment of diabetes, even at the time of diagnosis, can be beneficial depending on individuals' or caregivers' needs and preferences.
	Many diabetes-related digital apps and online platforms are available. These options vary widely in terms of quality and regulatory oversight. However, some people with diabetes or prediabetes may find such programs to be helpful sources of support, especially when combined with online coaching.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 7. Diabetes technology: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:204–206 (doi: 10.2337/cd25-a007).

Blood Glucose Monitoring (BGM) Recommendations

BGM refers to fingerstick glucose checks done with a blood glucose meter. Encourage people who take insulin and use BGM to check their glucose when appropriate based on their insulin therapy. This may include:

BGM for noninsulin therapies:

ℹ May be helpful for adjusting meal plans, physical activity plans, and/or medications (particularly those that can cause hypoglycemia).

CGM Recommendations

There are different types of CGM systems, including:

- Real-time CGM systems, which are owned by individuals and measure and display glucose levels continuously.
- Intermittently scanned CGM systems, which are owned by individuals and measure glucose levels continuously but require scanning for visualization and storage of glucose values.
- Professional CGM systems, which are owned by clinics and intended to be used temporarily for 7–14 days to assess glycemic patterns and trends, with data either blinded or visible to the person wearing the device.
- Over-the-counter CGM systems (biosensors), 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.

Who can benefit from CGM?

- CGM should be offered to youth and adults with diabetes on any type of insulin therapy.
- CGM should be considered in adults with type 2 diabetes treated with glucose-lowering medications other than insulin to achieve and maintain individualized glycemic goals.
- CGM can help achieve glycemic goals and A1C goals in type 1 diabetes and pregnancy and may be beneficial for other types of diabetes in pregnancy.
- Periodic use of personal or professional CGM can be helpful to adjust medication and/or lifestyle when consistent use is not desired or available.

Personal Diabetes Technology Use in the Hospital

Recommendations	
	Continue CGM use during hospitalization when clinically appropriate.
	Use confirmatory point-of-care glucose tests for insulin dosing and hypoglycemia management.
	Implement and follow institutional protocols.
	Ensure that technology use is supervised properly.

Learn More

Section 7 of the complete ADA Standards of Care in Diabetes—2025 includes a wealth of additional information on blood glucose meters, evidence supporting the use of CGM, various insulin delivery systems, and digital health apps and online programs.

The American Diabetes Association's Diabetes Technology Guide (https://consumerguide.diabetes.org/) can help health care professionals and people with diabetes choose the right devices to meet individuals' needs and preferences.

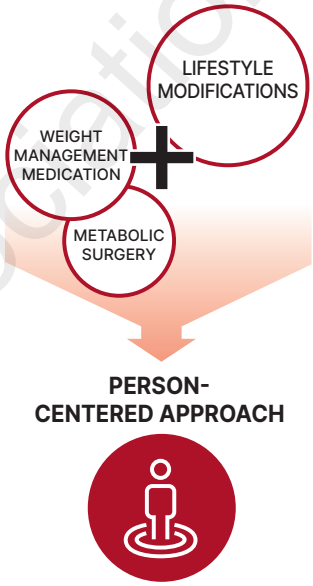
When difficulties in technology use arise, people with diabetes can turn to their care team and device manufacturers for troubleshooting help.

Section 8:

Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes

A holistic approach to weight management is essential. Individualized strategies may include nutrition and exercise interventions, behavioral counseling, pharmacotherapy, and metabolic surgery.

In people with type 2 diabetes and overweight or obesity, weight management should represent a primary goal of treatment along with glycemic management.



Weight management is crucial because it:

- Delays progression from prediabetes to type 2 diabetes
- Is highly beneficial in treating type 2 diabetes
- Improves glycemia and reduces the need for glucose-lowering medications
- Reduces cardiovascular risk factors, lowering long-term cardiovascular and mortality risks
- Reduces other obesity-related health risks

When addressing weight management:

- Use person-centered, nonjudgmental, person-first language (e.g., "person with obesity" rather than "obese person" and "person with diabetes" rather than "diabetic person").
- Calculate BMI and measure body fat distribution (e.g., waist circumference, waist-to-hip ratio, and/or waist-to-height ratio) if BMI is indeterminant. Monitor these parameters at least annually.
- Identify and overcome any implicit and explicit weight-based attitudes to improve care for people with obesity.

Person-Centered Treatment Options for Overweight and Obesity in Type 2 Diabetes

	BMI (kg/m²)		
	25.0–26.9 (or 23.0–24.9*)	27.0–29.9 (or 25.0–27.4*)	≥30.0 (or ≥27.5*)
Intensive behavioral counseling	✓	✓	✓
Weight management pharmacotherapy		✓	✓
Metabolic surgery			✓

*Recommended cut points for Asian American individuals.

Nutrition, Physical Activity, and Behavioral Therapy for People With Overweight and Obesity

Recommendations
Nutrition, physical activity, and behavioral therapy are recommended for people with type 2 diabetes and overweight or obesity to achieve both weight and health outcome goals.
Frequent counseling (≥16 sessions in 6 months) focusing on nutrition, exercise, and behavioral strategies to achieve a 500–750 kcal/day energy deficit, is beneficial for weight loss and recommended if available.
Long-term (≥1 year) weight maintenance programs are advised for those meeting weight loss goals, offering monthly support, at least weekly body weight monitoring, self-monitoring strategies, and regular physical activity (200–300 min/week).
Short-term, structured very-low-calorie diets (800–1,000 kcal/day) should be reserved for carefully selected individuals, be prescribed by trained practitioners in medical settings with close monitoring, and include counseling for long-term weight maintenance.
When developing a care plan, consider systemic, structural, cultural, and socioeconomic factors that may affect nutrition patterns and food choices, such as food insecurity and hunger, access to healthful food options, and other social determinants of health.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 8. Obesity and weight management for the prevention and treatment of type 2 diabetes: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:207–208 (doi: 10.2337/cd25-a008).

Weight Management Pharmacotherapy

Medication	Common side effects	Possible safety concerns/considerations
Short-term treatment (12 weeks)		
Sympathomimetic amine anorectic		
Phentermine	Dry mouth, insomnia, dizziness, irritability, increased blood pressure, and 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
Long-term treatment (52–72 weeks)*		
Lipase inhibitor		
Orlistat	Abdominal pain, flatulence, and fecal urgency	• Potential malabsorption of fat-soluble vitamins (A, D, E, and K) and of certain medications (e.g., cyclosporine, thyroid hormone, and anticonvulsants) • Rare cases of severe liver injury reported • Cholelithiasis • Nephrolithiasis
Sympathomimetic amine anorectic/antiepileptic combination		
Phentermine/ topiramate ER	Constipation, paresthesia, insomnia, nasopharyngitis, xerostomia, increased blood pressure, and 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	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 <24 years of age who have depression
Glucagon-like peptide 1 (GLP-1) receptor agonists (RAs)		
Liraglutide Semaglutide	Gastrointestinal side effects (nausea, vomiting, diarrhea, and esophageal reflux)	• Hypoglycemia (with concominant use of insulin or sulfonylurea) • Pancreeatitis 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 dose due to increased risk of gastrointestinal side effects and potential risk of acute kidney injury from dehydration • May cause cholelithiasis and gallstone-related complications • Gastrointestinal disorders (severe constipation and small-bowel obstruction/ileus progression) • Monitor for potential consequences of delayed absorption of oral medications • May cause injection site reactions • May cause elevated heart rate • **BLACK BOX WARNING:** Risk of thyroid C-cell tumors in rodents; human relevance not determined; do not use in individuals with a personal or family history of medullary thyroid cancer or multiple endocrine neoplasia type 2
Dual glucose-dependent insulinotropic polypeptide and GLP-1 RA		
Tirzepatide	Gastrointestinal side effects (nausea, vomiting, diarrhea, and esophageal reflux)	• Same as for GLP-1 RAs • Monitor effects of oral medications with narrow therapeutic index (warfarin) or whose efficacy is dependent on threshold concentration • Advise females using oral contraceptives to switch to a nonoral contraceptive or add a barrier method of contraception for 4 weeks after initiation and for 4 weeks after each dose escalation • **BLACK BOX WARNING:** Risk of thyroid C-cell tumors in rodents; human relevance not determined; do not use in individuals with a personal or family history of medullary thyroid cancer or multiple endocrine neoplasia type 2

*Medications approved for long-term use should be continued as indicated beyond reaching weight loss goals. ER, extended release.

Weight Loss Efficacy of Glucose-Lowering Medications

VERY HIGH	Semaglutide (injectable), tirzepatide
HIGH	Dulaglutide, liraglutide
INTERMEDIATE	Exenatide, sodium–glucose cotransporter 2 inhibitors
NEUTRAL	Dipeptidyl peptidase 4 inhibitors, metformin

Glucose-Lowering Medications

- Consider weight when choosing glucose-lowering medications for individuals with type 2 diabetes and overweight or obesity.
- When possible, avoid prescribing medications that cause weight gain to treat comorbid conditions.
- Weight management pharmacotherapy should be considered for people with diabetes and overweight or obesity along with lifestyle changes. Potential benefits and risks must be considered.
- Continue weight management pharmacotherapy if it is effective (>5% weight loss after 3 months).
- Consider changing or stopping treatment if weight loss is <5% after 3 months or if significant safety/ tolerability issues arise.

American Diabetes Association®

Section 9:

Pharmacologic Approaches to Glycemic Treatment

Ways to Address or Prevent Therapeutic Inertia for People With Type 1 or Type 2 Diabetes

EMPOWER PATIENTS
Build Engagement and Trust

BE A BARRIER BUSTER

- Schedule diabetes-only visits.
- Set and track shared goals and time frames.
- Integrate screening for social/emotional barriers and identify support.
- Prescribed thoughtfully.
- Refer to diabetes self-management education and support (DSMES).

Do your patients know you are their champion?

OPTIMIZE CARE AND TREATMENT
Person-Centered and Evidence-Based

ACT NOW

- Conduct practice-based screening for likely therapeutic inertia.
- Make personalized diabetes care plans.
- Implement a team-based approach to increase the frequency and quality of engagement.
- Utilize A1C and glucose data to drive rapid-cycle treatment intensification.
- Stratify follow-up based on A1C/glucose data and changes in therapy.

Have you done everything in your control to optimize therapy and support during, after, and in between visits?

LEVERAGE TOOLS AND TECHNOLOGY
for Enhanced Decision Support

IMPROVE DECISION-MAKING

- Follow a diabetes treatment algorithm.
- Create and use a patient registry.
- Integrate decision support into the workflow.
- Utilize technology to enhance communication with people with diabetes.
- Disseminate unblinded quality metrics.

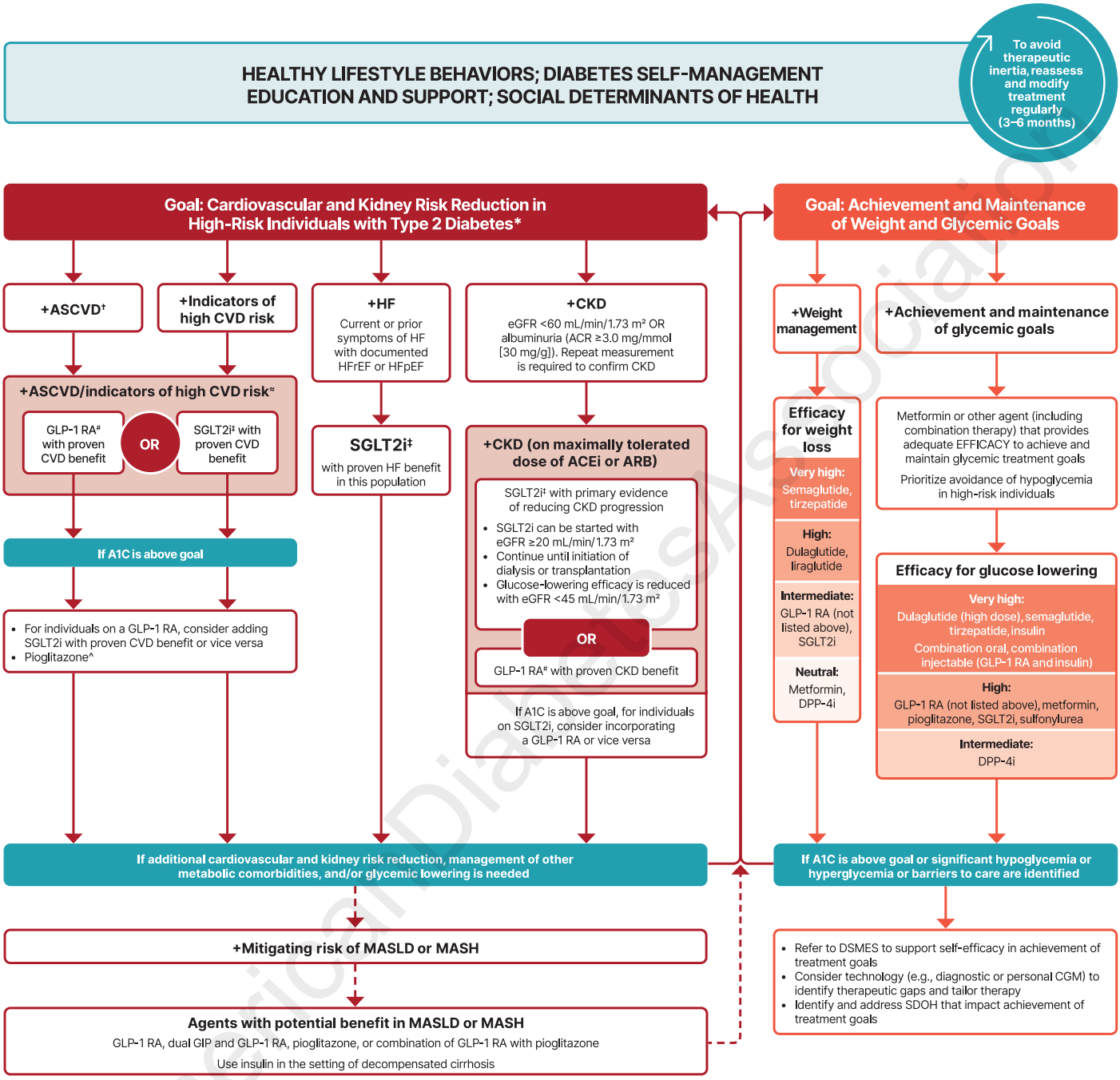
Have you enabled everyone in your practice to make high-quality treatment decisions quickly and consistently?

When to Use Injectable Therapy in Type 2 Diabetes

Which therapy should I start first?	When should I start insulin first?	Can I use combination insulin and noninsulin injectable therapy?	When would I use combination insulin and noninsulin injectable therapy?	When should I modify a patient's injectable therapy?
Treatment with a glucagon-like peptide 1 (GLP-1) receptor agonist (RA) or a dual glucose-dependent insulinotropic polypeptide (GIP)/GLP-1 RA is preferred before insulin therapy because of its ability to achieve both glycemic and weight management goals. Some GLP-1 RAs also provide cardiovascular benefit.	If there are symptoms of hyperglycemia (polyuria or polydipsia) or there is evidence of catabolism (unexpected weight loss). When A1C or blood glucose levels are very high (A1C >10% [>86 mmol/mol] or blood glucose ≥300 mg/dL [≥16.7 mmol/L]).	Yes; combination therapy with insulin and a noninsulin injectable is recommended for greater glycemic effectiveness and beneficial effects on weight and hypoglycemia risk. If insulin is already being used, insulin dosing should be reassessed upon addition or dose escalation of a GLP-1 or dual GIP/GLP-1 RA.	Consider combination insulin and GLP-1 or dual GIP/GLP-1 RA therapy when individualized goals are not met using either one separately.	Intensify or deintensify therapy when an individual is not meeting treatment goals, including management of hyperglycemia and weight and avoidance of hypoglycemia.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 9. Pharmacologic approaches to glycemic treatment: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:209–211 (doi: 10.2337/cd25-a009).

Use of Glucose-Lowering Medications in the Management of Type 2 Diabetes



* In people with HF, CKD, established CVD, or multiple risk factors for CVD, the decision to use a GLP-1 RA or SGLT2i with proven benefit should be made irrespective of background use of metformin or A1C.

† ASCVD: Defined differently across CVOTs but all included individuals with established CVD (e.g., MI, stroke, and arterial revascularization procedure) and variably included conditions such as transient ischemic attack, unstable angina, amputation, and symptomatic or asymptomatic coronary artery disease. Indicators of high risk: While definitions vary, most comprise ≥55 years of age with two or more additional risk factors (including obesity, hypertension, smoking, dyslipidemia, or albuminuria).

≈ A strong recommendation is warranted for people with CVD and a weaker recommendation for those with indicators of high-risk CVD. Moreover, a higher absolute risk reduction and thus lower numbers needed to treat are seen at higher levels of baseline risk and should be factored into the shared decision-making process. See text for details.

For GLP-1 RAs, CVOTs demonstrate their efficacy in reducing composite MACE, CV death, all-cause mortality, MI, stroke, and kidney end points in individuals with T2D with established or high risk of CVD. One kidney outcome trial demonstrated benefit in reducing persistent eGFR reduction and CV death for a GLP-1 RA in individuals with CKD and T2D.

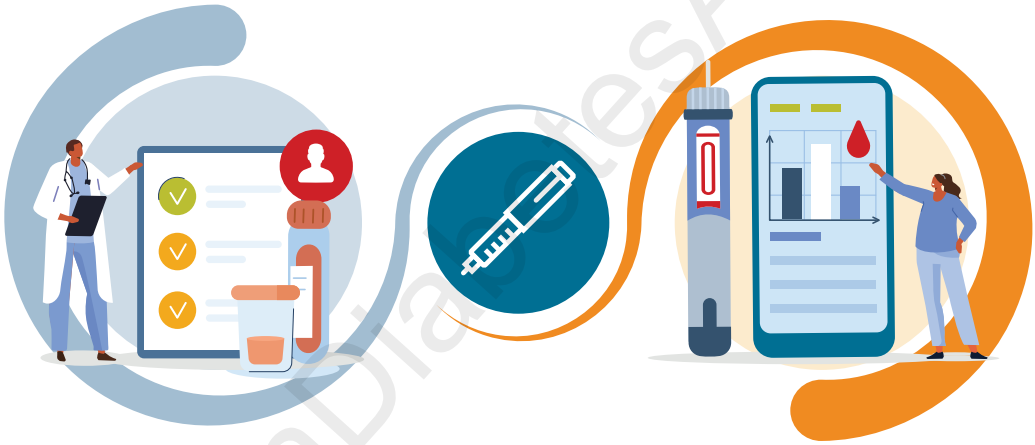
‡ For SGLT2is, CV and kidney outcomes trials demonstrate their efficacy in reducing the risks of composite MACE, CV death, all-cause mortality, MI, HHF, and kidney outcomes in individuals with T2D and established or high risk of CVD.

^ Low-dose pioglitazone may be better tolerated and similarly effective as higher doses.

The left side of the algorithm prioritizes mitigation of diabetes-related complications and end-organ effects, while the right side addresses weight and glucose management goals. ACEi, angiotensin-converting enzyme inhibitor; ACR, albumin-to-creatinine ratio; ARB, angiotensin receptor blocker; ASCVD, atherosclerotic cardiovascular disease; CGM, continuous glucose monitoring; CKD, chronic kidney disease; CV, cardiovascular; CVD, cardiovascular disease; CVOT, cardiovascular outcomes trial; DPP-4i, dipeptidyl peptidase 4 inhibitor; eGFR, estimated glomerular filtration rate; GIP, glucose-dependent insulinotropic polypeptide; GLP-1 RA, glucagon-like peptide 1 receptor agonist; dual GIP/GLP-1 RA, dual glucose-dependent insulinotropic polypeptide and glucagon-like peptide 1 receptor agonist; HF, heart failure; HFpEF, heart failure with preserved ejection fraction; HFrEF, heart failure with reduced ejection fraction; HHF, hospitalization for heart failure; MACE, major adverse cardiovascular events; MI, myocardial infarction; SDOH, social determinants of health; SGLT2i, sodium-glucose cotransporter 2 inhibitor; T2D, type 2 diabetes; TZD, thiazolidinedione. Adapted from Davies MJ, Aroda VR, Collins BS, et al. Management of hyperglycemia in type 2 diabetes, 2022. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). Diabetes Care 2022;45:2753–2786.

To-Do List for Clinicians Treating People With Insulin Therapy

- Provide or refer people with diabetes and caregivers for education about injection technique and timing and problem-solving for issues related to insulin therapy (e.g., hypoglycemia, missed or incorrect doses, and dose adjustments).
- Ensure that individuals have all supplies necessary for injections (e.g., pen needles for insulin pens or appropriate syringes for insulin dose size or concentration when using insulin in vials) and glucose monitoring.
- Evaluate individuals with type 2 diabetes to determine whether they are candidates for GLP-1 or dual GIP/GLP-1 RA therapy.
- Evaluate all people on insulin therapy to determine whether they could benefit from continuous glucose monitoring.
- Ensure that people on insulin therapy have the education and supplies needed to prevent and treat hypoglycemia, including glucagon, glucose monitoring supplies, and appropriate sources of carbohydrates to treat low glucose levels.
- Schedule timely and routine follow-up visits to reassess therapy and adjust care plans to avoid therapeutic inertia.

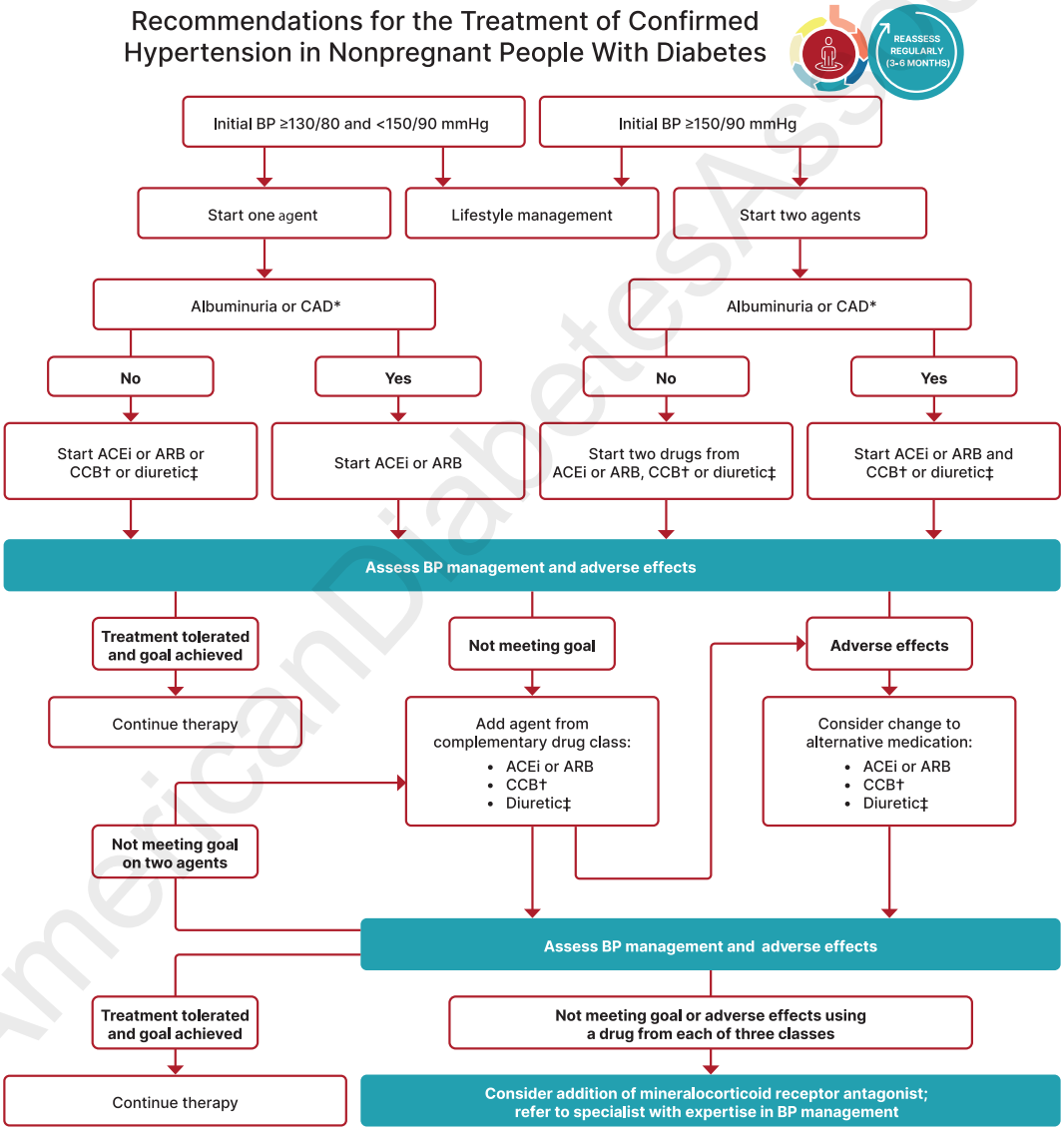


Section 10:

Cardiovascular Disease and Risk Management

Atherosclerotic cardiovascular disease (ASCVD), defined as a history of acute coronary syndrome, myocardial infarction, stable or unstable angina or coronary or other arterial revascularization, stroke, transient ischemic attack, or peripheral artery disease (PAD) including aortic aneurysm and is the primary cause of morbidity and mortality in individuals with diabetes. Managing multiple risk factors simultaneously can prevent or slow the progression of ASCVD. Heart failure (HF) is another major cause of morbidity and mortality from cardiovascular disease. (CVD). Hypertension is a major risk factor for ASCVD, heart failure, and microvascular complications.

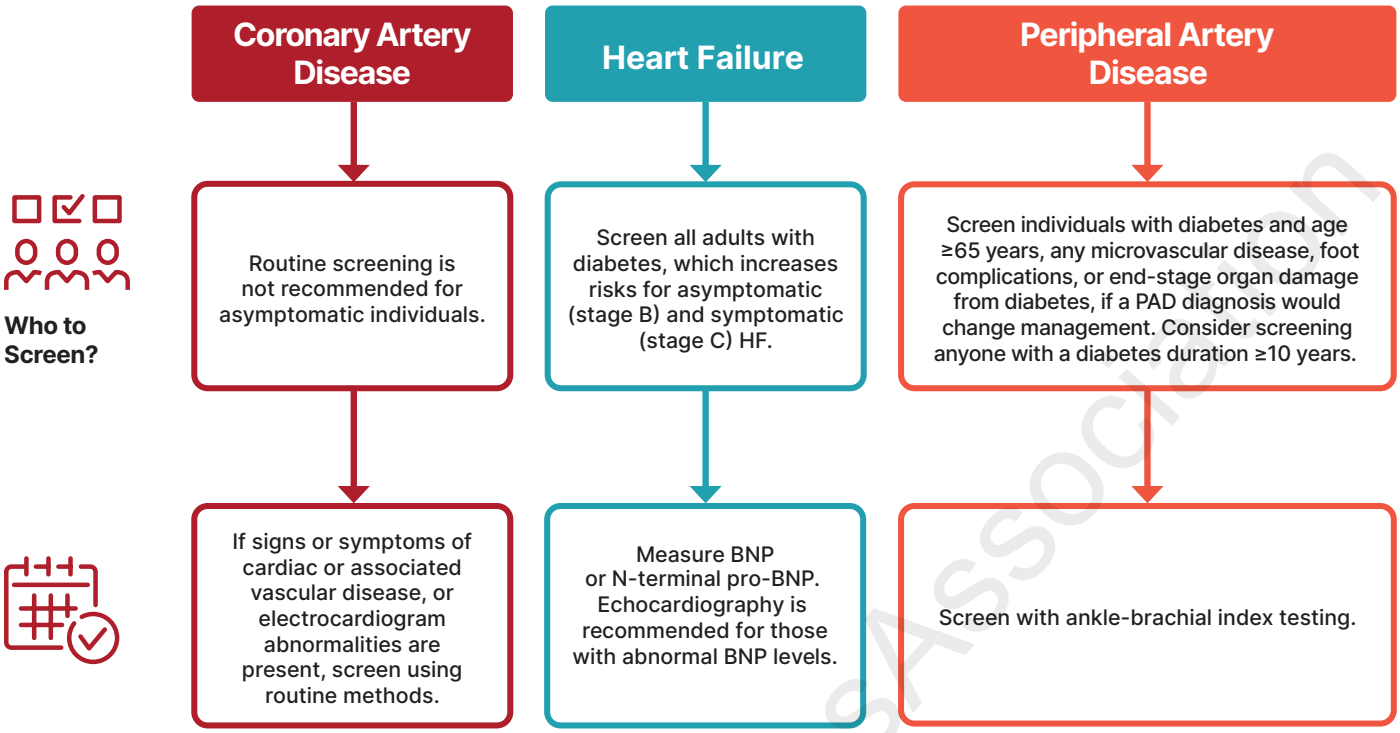
Recommendations for the Treatment of Confirmed Hypertension in Nonpregnant People With Diabetes



*An ACE inhibitor (ACEi) or angiotensin receptor blocker (ARB) is suggested for treatment of hypertension in people with coronary artery disease (CAD) or urine albumin-to-creatinine ratio 30–299 mg/g creatinine and is strongly recommended for individuals with urine albumin-to-creatinine ratio ≥300 mg/g creatinine. †Dihydropyridine calcium channel blocker (CCB). ‡Thiazide-like diuretic; long-acting agents shown to reduce cardiovascular events, such as chlorthalidone and indapamide, are preferred. BP, blood pressure. Adapted from de Boer IH, Bangalore S, Benetos A, et al. Diabetes and hypertension: a position statement by the American Diabetes Association. Diabetes Care 2017;40:1273–1284.

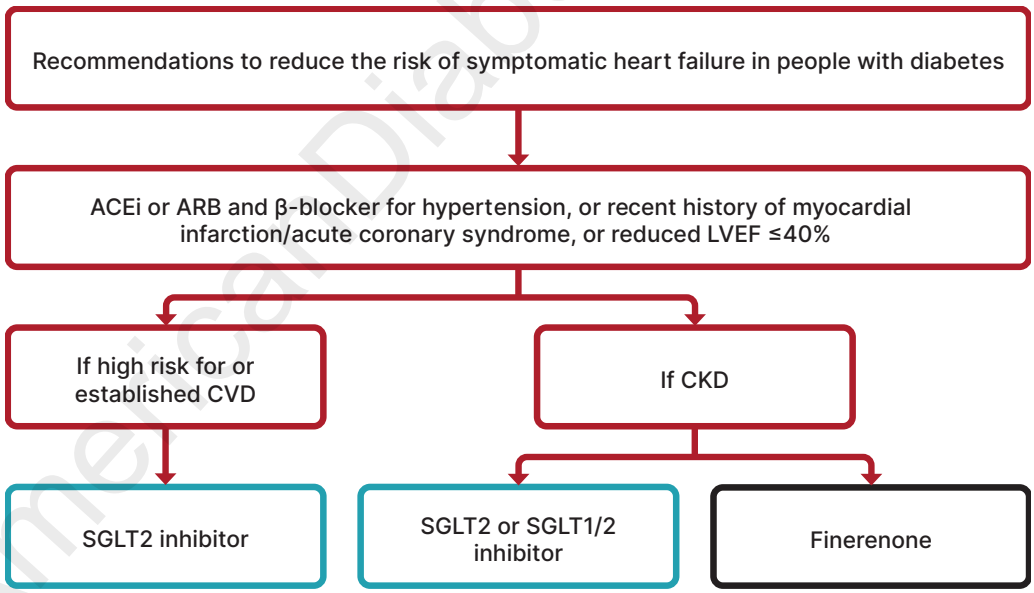
Suggested citation: American Diabetes Association Primary Care Advisory Group. 10. Cardiovascular disease and risk management: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:212–214 (doi: 10.2337/cd25-a010).

Screening for Asymptomatic and Undiagnosed CVD



BNP, B-type natriuretic peptide.

Preventing the Development of Symptomatic HF in People With Diabetes



ACEi, ACE inhibitor; ARB, angiotensin receptor blocker; CKD, chronic kidney disease; LVEF, left ventricle ejection fraction; SGLT2, sodium–glucose cotransporter 2.

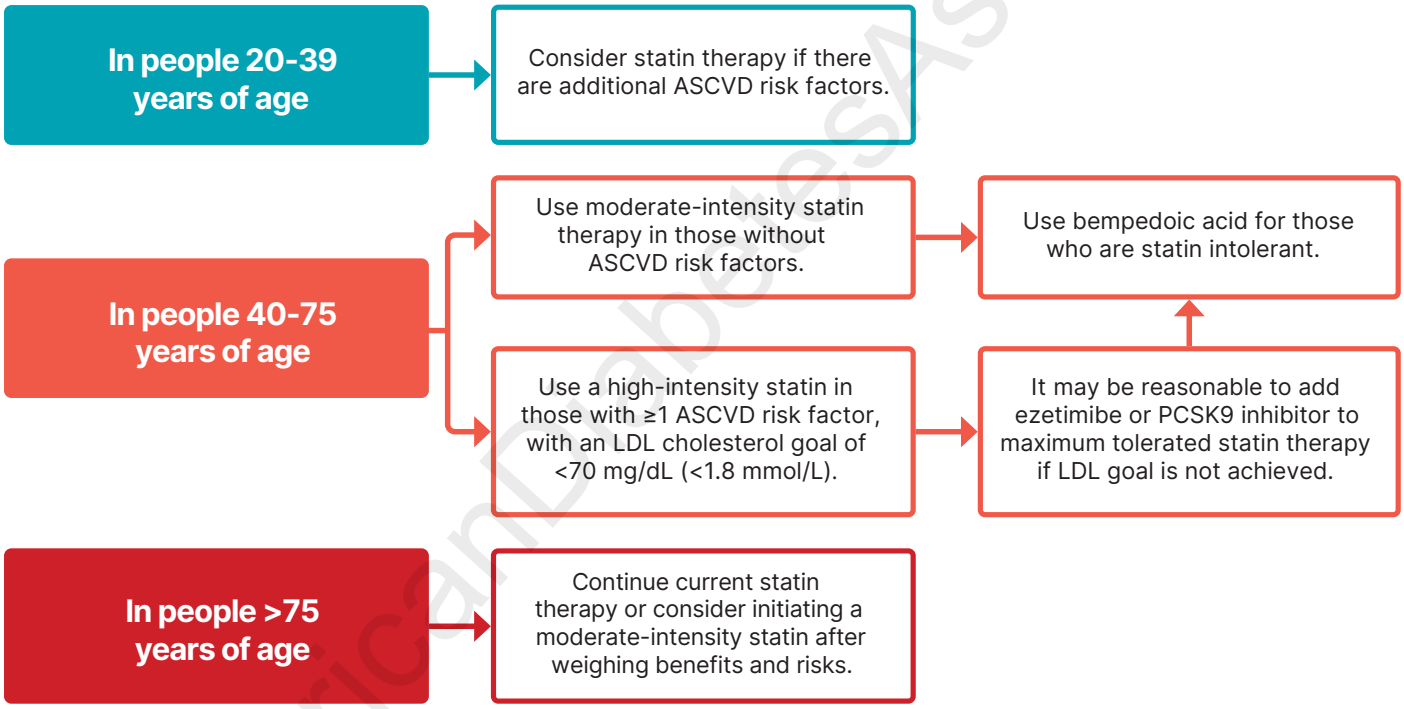
How often should you check lipids?

- For people with prediabetes or diabetes not on lipid-lowering therapy, check at diagnosis and at least annually thereafter.
- Check lipids at initiation of lipid-lowering therapy, 4–12 weeks after initiation or dose changes, and annually thereafter.

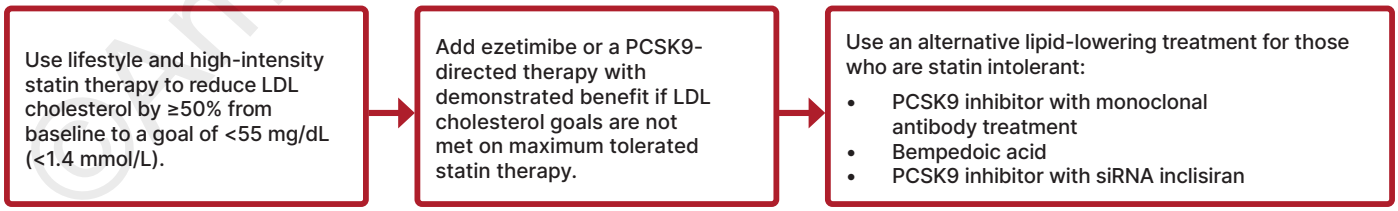
Statin Therapy Potency Chart

High-intensity statin therapy (lowers LDL cholesterol by ≥50%)	Moderate-intensity statin therapy (lowers LDL cholesterol by 30-49%)
Atorvastatin (40–80 mg)	Atorvastatin (10–20 mg)
Rosuvastatin (20–40 mg)	Rosuvastatin (5–10 mg)
	Simvastatin (20–40 mg)
	Pravastatin (40–80 mg)
	Lovastatin (40 mg)
	Fluvastatin XL (80 mg)
	Pitavastatin (1–4 mg)
Once-daily dosing. XL, extended release.	

Lipid Management for Primary Prevention of ASCVD Events in People With Diabetes in Addition to Health Behavior Modification



Lipid Management for Secondary Prevention of ASCVD Events in People With Diabetes



Section 11:

Chronic Kidney Disease and Risk Management

Screening for Chronic Kidney Disease (CKD)

Who?

- Everyone with type 2 diabetes
- Everyone with type 1 diabetes for ≥5 years

How?

- Urinary albumin-to-creatinine ratio (UACR)
- Estimated glomerular filtration rate (eGFR)

How often?

Annually

Monitoring Established CKD

How? UACR and eGFR. Use the CKD Epidemiology Collaboration's CKD-EPI Refit equation, which eliminates race as a variable, as the eGFR formula for all individuals.

How often? One to four times per year, depending on the stage of the disease.

Classification of CKD

CKD is classified based on:

- **GFR (G)**
- **Albuminuria (A)**

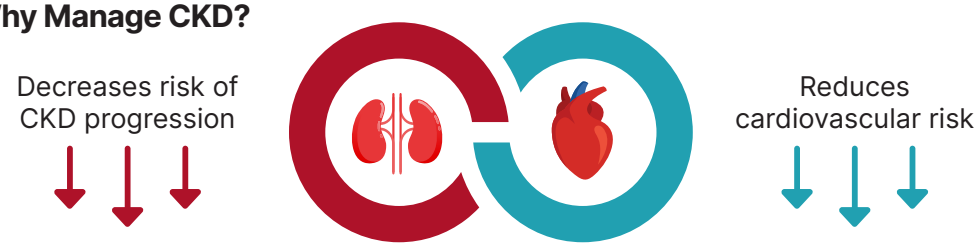
GFR categories (mL/min/1.73 m²) Description and range				Albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mmol	≥300 mg/g ≥30 mg/mmol
	G1	Normal or high	≥90	Screen 1	Treat 1	Treat and refer 2
	G2	Mildly decreased	60-89	Screen 1	Treat 1	Treat and refer 2
	G3a	Mildly to moderately decreased	45-59	Treat 1	Treat 2	Treat and refer 3
	G3b	Moderately to severely decreased	30-44	Treat 2	Treat and refer 3	Treat and refer 3
	G4	Severely decreased	15-29	Treat and refer 3	Treat and refer 3	**Treat and refer 4+**
	G5	Kidney failure	<15	**Treat and refer 4+**	**Treat and refer 4+**	**Treat and refer 4+**

■ Low risk (if no other markers of kidney disease, no CKD) ■ Moderately increased risk ■ High risk ■■ Very high risk

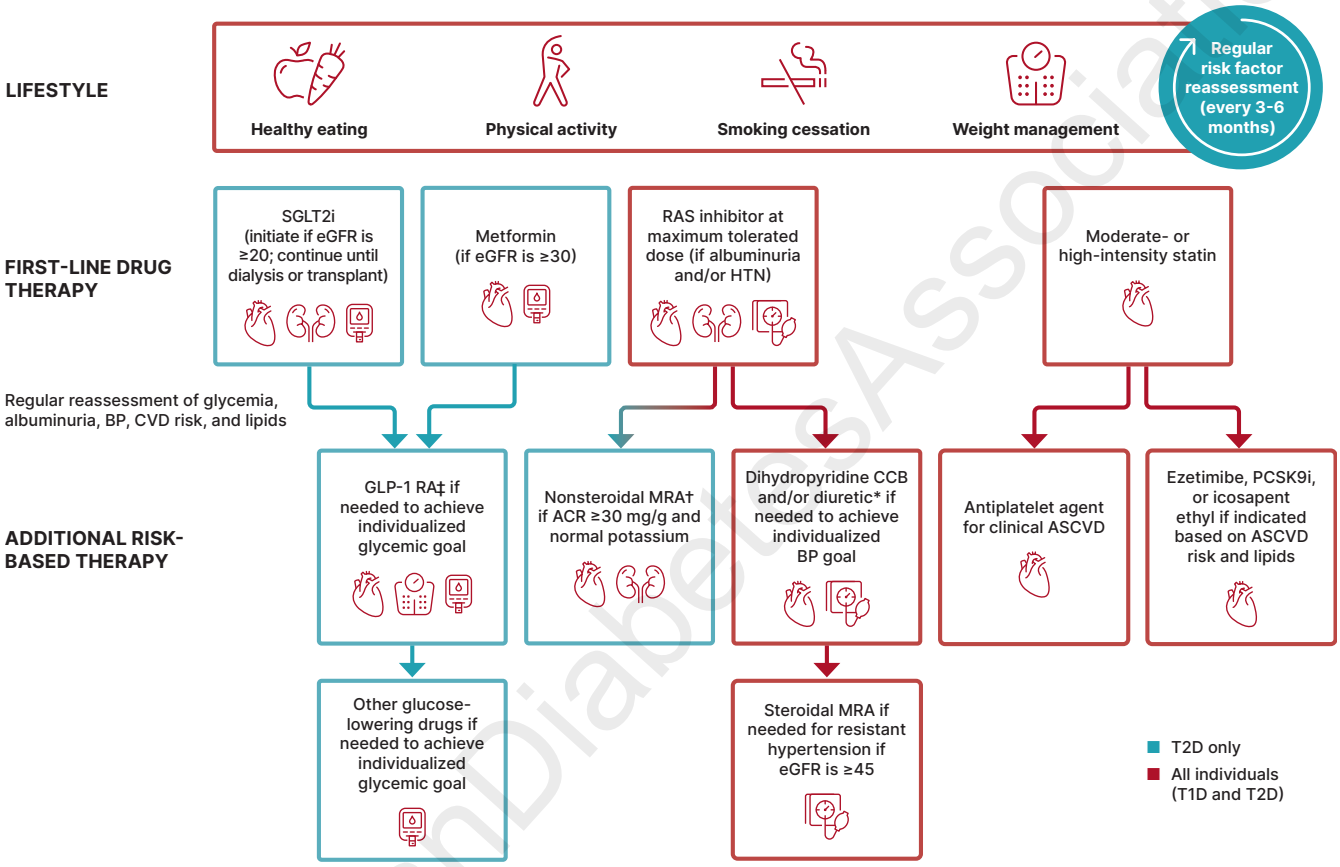
Risk of CKD progression, CVD risk, and mortality; frequency of visits; and referral to nephrology according to GFR and albuminuria. Numbers in the boxes are the number of times per year to screen or monitor. Green reflects no evidence of CKD, with screening indicated once per year. Suggested monitoring of prevalent CKD varies from once (yellow) to four or more times (deep red) per year. Adapted from de Boer IH, Khunti K, Sadusky T, et al. Diabetes management in chronic kidney disease: a consensus report by the American Diabetes Association (ADA) and Kidney Disease: Improving Global Outcomes (KDIGO). Diabetes Care 2022;45:3075–3090.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 11. Chronic kidney disease and risk management: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:215–216 (doi: 10.2337/cd25-a011).

Why Manage CKD?



Holistic Approach for Improving Outcomes in People With Diabetes and CKD



Icons presented indicate the following benefits: BP cuff, BP lowering; glucose meter, glucose lowering; heart, cardioprotection; kidney, kidney protection; scale, weight management. eGFR is presented in units of mL/min/1.73 m². *ACEi or ARB (at maximal tolerated doses) should be first-line therapy for hypertension when albuminuria is present. Otherwise, dihydropyridine CCB or diuretic can also be considered; all three classes are often needed to attain BP targets. †Finerenone is currently the only ns-MRA with proven clinical kidney and cardiovascular bene!ts. ‡Semaglutide can be used as another first-line agent for people with CKD. ACEi, angiotensin-converting enzyme inhibitor; ACR, albumin-to creatinine ratio; ARB, angiotensin receptor blocker; ASCVD, atherosclerotic cardiovascular disease; BP, blood pressure; CCB, calcium channel blocker; CVD, cardiovascular disease; eGFR, estimated glomerular filtration rate; GLP-1 RA, glucagon-like peptide 1 receptor agonist; HTN, hypertension; MRA, mineralocorticoid receptor antagonist; ns-MRA, nonsteroidal mineralocorticoid receptor antagonist; PCSK9i, proprotein convertase subtilisin/kexin type 9 inhibitor; RAS, renin-angiotensin system; SGLT2i, sodium–glucose cotransporter 2 inhibitor; T1D, type 1 diabetes; T2D, type 2 diabetes. Adapted from de Boer IH, Khunti K, Sadusky T, et al. Diabetes management in chronic kidney disease: a consensus report by the American Diabetes Association (ADA) and Kidney Disease: Improving Global Outcomes (KDIGO). Diabetes Care 2022;45:3075–3090.

Clinical Tips

- Monitor for ↑serum creatinine and for ↑serum K+ levels when ACEi, ARBs, and MRAs are used, or for ↓K+ levels when diuretics are used at routine visits and 7–14 days after initiation or after a dose change.
- Continue ACE inhibitor or ARB therapy for ≤30% increases in serum creatinine in the absence of volume depletion.
- Aim for a urinary albumin reduction ≥30% in people with CKD and urinary albumin ≥300 mg/g to slow CKD progression.
- Optimize blood pressure management (aim for <130/80 mmHg).
- Women of childbearing age not using reliable contraceptives should be on a safe antihypertensive medication before conception and during pregnancy.

Section 12:

Retinopathy, Neuropathy, and Foot Care

Optimizing the management of glycemia, blood pressure, and lipids can reduce or slow the progression of microvascular complications of diabetes.

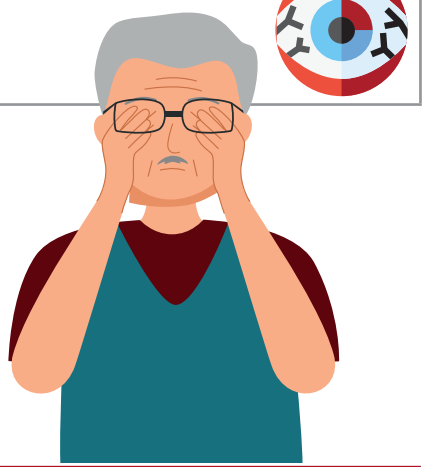
Diabetic Retinopathy (DR)

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 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

Suggested citation: 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 (doi: 10.2337/cd25-a012).

Neuropathy

Screening

All people with diabetes should be assessed for diabetic peripheral neuropathy (DPN):

- Starting at the diagnosis of type 2 diabetes
- 5 years after the diagnosis of type 1 diabetes
- At least annually thereafter

Symptoms and signs of autonomic neuropathy should be assessed:

- Starting at the diagnosis of type 2 diabetes
- 5 years after the diagnosis of type 1 diabetes
- At least annually thereafter
- With evidence of other microvascular complications, particularly kidney disease and DPN

Treatment Options for DPN and Autonomic Neuropathy

Pain Relief: Drug and nondrug strategies can ease symptoms.

Evidence-Based Medications:

- Gabapentinoids
- Serotonin-norepinephrine reuptake inhibitors
- Tricyclic antidepressants
- Sodium channel blockers

Combination therapy may be more effective than monotherapy for pain from DPN.

Foot Care

Initial treatment recommendations should include:

- Daily foot inspection
- Use of moisturizers for dry, scaly skin and avoidance of self-care of ingrown nails and calluses
- Well-fitted athletic or walking shoes with customized pressure-relieving orthoses for people with increased plantar pressures (e.g., with plantar calluses).
- Specialized therapeutic footwear for people at high risk for ulceration
- Smoking cessation for individuals who smoke and referral to a foot care specialist for those who smoke and have a history of diabetes-related foot complications

Perform a comprehensive foot evaluation at least annually to identify risk factors for ulcers and amputations; more frequent examinations are needed for those with loss of protective sensation, peripheral artery disease, or other serious complications.

Older Adults

Individualization of Treatment Goals and Medication Plans for Older Adults With Diabetes

CHARACTERISTICS/HEALTH STATUS

Healthy (few coexisting chronic illnesses and intact cognitive and functional status)

Reasonable treatment goal:
A1C <7.0–7.5% (<53–58 mmol/mol)
CGM TIR ~70% and TBR <4%*

MEDICATION:
Stay the course if the person:

- Is able to manage/ perform tasks required
- Has infrequent acute illnesses
- Has support available, if needed
- Has infrequent hypoglycemia

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%*

MEDICATION:
Deintensify or simpify the plan if the person:

- Has had severe or recurrent hypoglycemia
- Has experienced deterioration in health, cognitive, or functional status
- Has had recent or frequent acute illnesses or hospitalization
- Is experiencing wide glycemic excursions
- Has had significant changes in social circumstances
- Is dealing with polypharmacy

Receiving care in a skilled nursing facility for short-term rehabilitation

Reasonable treatment goal:
Avoid reliance on A1C; glucose goal of 100–200 mg/dL (5.6–11.1 mmol/L)†

Additional Considerations:

- Consider using continuous glucose monitoring and other technology devices to reduce hypoglycemia.
- Include medications to reduce cardiovascular and kidney disease risk in high-risk individuals, irrespective of glycemia.
- Consider costs of care and coverage when developing treatment plans to reduce cost-related barriers.

Very complex/poor health (long-term care or end-stage chronic illnesses or moderate to severe cognitive impairment or ≥2 ADL impairments)

Reasonable treatment goal:
Avoid reliance on A1C; avoid hypoglycemia and symptomatic hyperglycemia

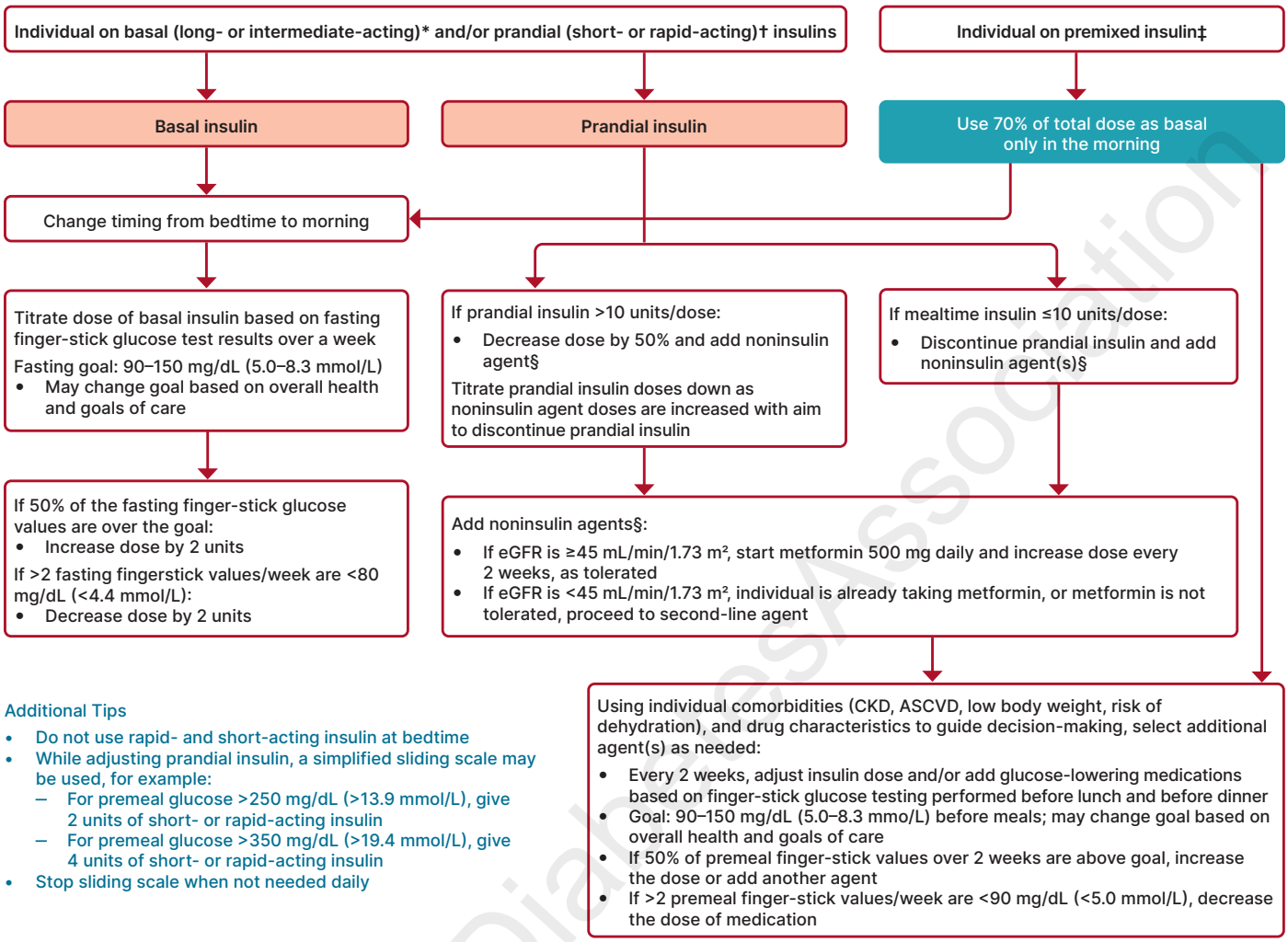
At the end of life

Reasonable treatment goal:
Avoid hypoglycemia and symptomatic hyperglycemia; reduce pain, discomfort, and treatment burden

*Continuous glucose monitoring glycemic metrics: TIR, time in range (70–180 mg/dL [3.9–10.0 mmol/L]); TBR, time below range (<70 mg/dL [<3.9 mmol/L]).
†Upon discharge, consider reinstating home treatment if inpatient treatment was more complex. ADL, activities of daily living.

Suggested citation: 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 (doi: 10.2337/cd25-a013).

Simplification of Complex Insulin Therapy



Additional Tips

- Do not use rapid- and short-acting insulin at bedtime
- While adjusting prandial insulin, a simplified sliding scale may be used, for example:
  - For premeal glucose >250 mg/dL (>13.9 mmol/L), give 2 units of short- or rapid-acting insulin
  - For premeal glucose >350 mg/dL (>19.4 mmol/L), give 4 units of short- or rapid-acting insulin
- Stop sliding scale when not needed daily

ASCVD, atherosclerotic cardiovascular disease; CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate. *Basal insulins: glargine U-100 and U-300, detemir, degludec, and human NPH. †Prandial insulins: short-acting (regular human insulin) or rapid-acting (lispro, aspart, and glulisine). ‡Premixed insulins: 70/30, 75/25, and 50/50 products. §Examples of noninsulin agents include metformin, sodium–glucose cotransporter 2 inhibitors, dipeptidyl peptidase 4 inhibitors, and glucagon-like peptide 1 receptor agonists. Adapted with permission from Munshi MN, Slyne C, Segal AR, Saul N, Lyons C, Weinger K. Simplification of insulin regimen in older adults and risk of hypoglycemia. JAMA Intern Med 2016;176:1023–1025

American Diabetes Association

Section 14:

Children and Adolescents

Children and adolescents with diabetes and their parents and caregivers should receive culturally sensitive and developmentally appropriate individualized diabetes self-management education and support (DSMES) according to national standards at diagnosis and routinely thereafter. Recommendations for managing type 1 diabetes are comprehensively addressed in the complete American Diabetes Association (ADA) Standards of Care in Diabetes—2025.

School and Child Care

Youth spend significant time in school/daycare, necessitating personnel training for optimal diabetes care.

Proper care ensures optimal diabetes management and safe access to all school- or daycare-sponsored opportunities.

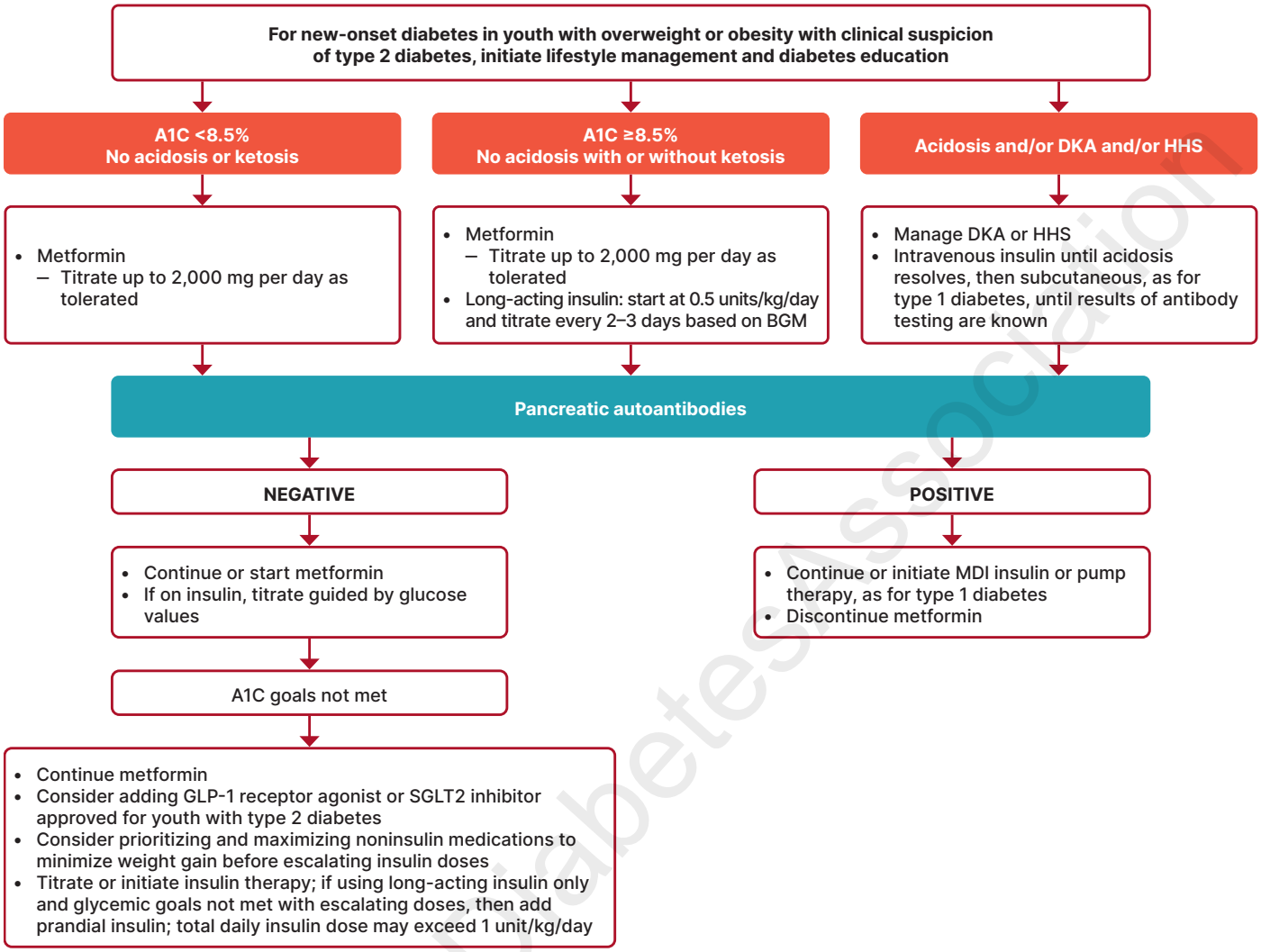
Federal and state laws require schools, daycare facilities, and other entities to provide needed diabetes care to enable children to safely access the school or daycare environment.

Refer to the ADA position statements "Diabetes Care in the School Setting" and "Care of Young Children With Diabetes in the Childcare and Community Setting" and the ADA's Safe at School website (https://diabetes.org/advocacy/safe-at-school-state-laws/position-statements) for additional details.

Type 2 Diabetes in Youth and Adolescents	
Screening	• Consider screening for diabetes after puberty onset or ≥10 years of age, whichever occurs first, in youth with overweight (BMI ≥85th percentile) or obesity (BMI ≥95th percentile) and at least one other risk factor; if results are normal, recheck at least every 2 years.
Diagnosis	• Fasting plasma glucose, 2-hour plasma glucose during a 75-g oral glucose tolerance test, and A1C can be used to diagnose prediabetes or diabetes in children and adolescents. • Those in whom a diagnosis of type 2 diabetes is being considered should have a panel of pancreatic autoantibodies tested to exclude the possibility of autoimmune type 1 diabetes.
Treatment	• Lifestyle management includes comprehensive DSMES and lifestyle programs, along with physical activity and nutrition recommendations similar to those for adults with diabetes. • Pharmacological treatment of type 2 diabetes in youth may include: metformin, insulin, and a glucagon-like peptide 1 (GLP-1) receptor agonist and/or a sodium–glucose cotransporter 2 (SGLT2) inhibitor approved for use in youth. (See figure on the next page.)
Complications	• Blood pressure should be measured at every clinic visit and treated if found to be elevated on three separate measurements. • Urine albumin-to-creatinine ratio and estimated glomerular filtration rate should be obtained at diagnosis and annually thereafter. • Neuropathy screening by foot exam should be done at diagnosis and annually thereafter. • Retinopathy screening by dilated fundoscopy should be done at diagnosis and annually thereafter. • Evaluation for metabolic dysfunction–associated steatotic liver disease by measuring AST and ALT should be done at diagnosis and annually thereafter. • Screening for symptoms of obstructive sleep apnea should be done at each visit. • Evaluation for polycystic ovary syndrome in female adolescents should be done when indicated. • Lipid screening should be done after optimizing glycemia and annually thereafter.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 14. Children and adolescents: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:221–222 (doi: 10.2337/cd25-a014).

Addressing Probable New Cases of Type 2 Diabetes in Youth



A1C 8.5% = 69 mmol/mol. BGM, blood glucose monitoring; DKA, diabetic ketoacidosis; GLP-1, glucagon-like peptide 1; HHS, hyperosmolar hyperglycemic state; MDI, multiple daily injection; SGLT2, sodium–glucose cotransporter 2. Adapted from Arslanian S, Bacha F, Grey M, Marcus MD, White NH, Zeitler P. Evaluation and management of youth-onset type 2 diabetes: a position statement by the American Diabetes Association. Diabetes Care 2018;41:2648–2668

Section 15:

Management of Diabetes in Pregnancy

Preconception Counseling and Care

- Incorporate preconception counseling into diabetes care starting at puberty and continuing in all people with diabetes and childbearing potential.
- Discuss family planning and prescribe effective contraception to be used until an individual's treatment plan and A1C are optimized for pregnancy.
- Address the importance of achieving glucose levels as close to normal as is safely possible, ideally A1C <6.5% (<48 mmol/mol) to reduce the risk of congenital anomalies, preeclampsia, macrosomia, preterm birth, and other complications.
- Focus on nutrition, physical activity, diabetes education, and screening for diabetes comorbidities and complications, in addition to achieving glycemic goals.
- Counsel those with preexisting diabetes on the risk of development and/or progression of diabetic retinopathy. Ideally, a dilated eye examination should occur before pregnancy as well as in the first trimester, with continued monitoring every trimester and for 1 year postpartum based on findings.

The preconception care of people with diabetes is detailed in Table 15.1 of the complete American Diabetes Association Standards of Care in Diabetes—2025.

Glycemic Management and Goals in Pregnancy

- Perform fasting, preprandial, and postprandial blood glucose monitoring (BGM).
- Glucose goals are fasting plasma glucose <95 mg/dL (<5.3 mmol/L) and either 1-hour postprandial glucose <140 mg/dL (<7.8 mmol/L) or 2-hour postprandial glucose <120 mg/dL (<6.7 mmol/L).
- Ideally, the A1C goal in pregnancy is <6% (<42 mmol/mol) if this can be achieved without significant hypoglycemia; the goal may be relaxed to <7% (<53 mmol/mol) to prevent hypoglycemia.
- When used in addition to pre- and postprandial BGM, continuous glucose monitoring (CGM) can help to achieve glycemic goals and the A1C goal in type 1 diabetes and may be beneficial for other types of diabetes in pregnancy.

CGM metrics and goals during pregnancy:

Time below range, level 2 (<54 mg/dL [<3.0 mmol/L])	Time below range, level 1 (<63 mg/dL [<3.5 mmol/L])	Time in range (63–140 mg/dL [3.5–7.8 mmol/L])	Time above range (>140 mg/dL [>7.8 mmol/L])
			
Goal <1%	**Goal <4%**	**Goal >70%**	**Goal <25%**

Suggested citation: American Diabetes Association Primary Care Advisory Group. 15. Management of diabetes in pregnancy: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:223–224 (doi: 10.2337/cd25-a015).

Management of Gestational Diabetes Mellitus (GDM)

GDM refers specifically to diabetes diagnosed after the first trimester of pregnancy in individuals who did not have diabetes before pregnancy. Diabetes detected before or in early pregnancy is usually considered to be preexisting type 2 diabetes. Individuals without diabetes before or early in pregnancy should be screened for GDM at 24–28 weeks of pregnancy.

- Lifestyle behavior change is an essential component of GDM management and may suffice as treatment.
- Insulin is the preferred medication for treating hyperglycemia in GDM.
- Metformin and glyburide should not be used as first-line agents for diabetes in pregnancy. Other oral and noninsulin injectable glucose-lowering medications lack long-term safety data and are not recommended.

Additional Drug Considerations During Pregnancy

- Initiate or titrate blood pressure medication at a threshold of 140/90 mmHg. A goal of 110–135/85 mmHg is suggested. Therapy should be reduced if blood pressure is <90/60 mmHg.
- Stop potentially harmful medications in pregnancy (i.e., ACE inhibitors, angiotensin receptor blockers, and mineralcorticoid receptor antagonists) prior to conception and avoid in sexually active individuals of childbearing potential who are not using reliable contraception.
- In most cases, lipid lowering agents (PCSK9 inhibitor, bempedoic acid, fibrates, and statins should be stopped before conception and avoided in sexually active individuals of child-bearing potential with diabetes who are not using reliable conception). In some circumstances, statin therapy may be continued when benefits outweigh risks.

Postpartum Care

- Postpartum care should include psychosocial assessment and support for self-care.

Contraception

Discuss and implement a contraception plan with all individuals with diabetes of childbearing potential.

Postpartum Care of Individuals With GDM

- Screen for diabetes at 4–12 weeks postpartum with a 75-g oral glucose tolerance test using nonpregnancy criteria.
- Lifelong diabetes screening should occur every 1–3 years.
- For those with overweight/obesity and prediabetes, implement intensive lifestyle interventions and/or metformin therapy.

Lactation

Breastfeeding is recommended for all individuals with diabetes or a history of GDM for multiple benefits, including a reduced risk of type 2 diabetes later in life.

Postpartum Care for Individuals With Preexisting Diabetes

Insulin resistance decreases dramatically immediately after delivery. Evaluate insulin requirements, adjust doses, and monitor for hypoglycemia.

Section 16:

Diabetes Care in the Hospital

Glycemic Management During Hospitalization

Carefully managing people with diabetes during hospitalization can reduce the risk of hyperglycemia, hypoglycemia, or glucose variability, which all lead to adverse outcomes, including death. Consult with a specialized diabetes or glucose management team when possible.

Hospital Care Delivery Standards

- Institute validated order sets for management of dysglycemia in the hospital.
- State the type of diabetes on the initial evaluation when it is known.
- Perform an A1C test on all hospitalized people with diabetes or hyperglycemia (random blood glucose >140 mg/dL [7.8 mmol/L]) if no A1C result is available from the prior 3 months.
- Assess diabetes self-management knowledge and behaviors on admission and provide self-management education when needed.
- If feasible, continue use of personal continuous glucose monitoring and/or insulin pump therapy when clinically appropriate, with confirmatory point-of-care blood glucose monitoring for insulin dosing decisions and hypoglycemia assessment and treatment.
- Initiate or intensify insulin and/or other glucose-lowering therapies for persistent hyperglycemia at a threshold of ≥180 mg/dL.

Perioperative Care

A1C and glucose goals	• Elective surgery A1C goal: <8% (<64.0 mmol/L) • Blood glucose goal within 4 hours of surgery: 100–180 mg/dL (5.6–10.0 mmol/L) • CGM alone should not be used for glucose monitoring during surgery.
Medication adjustments	• Hold metformin on the day of surgery. • Discontinue sodium–glucose cotransporter 2 inhibitors 3–4 days before surgery. • Hold other oral glucose-lowering agents the morning of the surgery or procedure. • Consider holding glucagon-like peptide 1 receptor agonists on the day of the procedure or surgery for daily-dose agents and for at least 7 days before the procedure or surgery for once-weekly agents. • Individualize plan based on type of procedure or surgery.
Insulin therapy adjustments	• Give half of NPH dose or 75–80% of long-acting analog insulin dose or adjust insulin pump basal rates based on diabetes type and clinical judgment.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 16. Diabetes care in the hospital: Standards of Care in Diabetes—2025 Abridged for Primary Care. Clin Diabetes 2025;43:225–226 (doi: 10.2337/cd25-a016). ©2025 by the American Diabetes Association.

Transition From the Hospital to the Ambulatory Setting

Tailor a structured discharge plan to the individual with diabetes:

- Transmit discharge summaries to the primary care clinician as soon as possible after discharge.
- Provide diabetes self-management education before discharge.
- Ensure medication reconciliation and access.
- Arrange virtual or in-person follow-up visits post-discharge:
  - » Schedule a visit with the primary care clinician, endocrinologist, or a diabetes care and education specialist within 1 month of discharge.
  - » Schedule earlier follow-up (1–2 weeks) if medications change or glucose goals are not met at discharge.

Strategies to Reduce Readmissions