
Diabetes Management in Older Adults: Recommendations for Comprehensive Care

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Learning Outcomes



Explain key recommendations for diabetes care in older adults with diabetes based on from ADA guidance.



Gain practical strategies to apply current evidence-based recommendations in clinical practice.

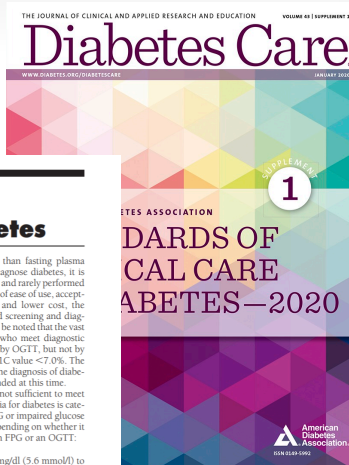


Identify resources and evidence-based guidance to provide optimal care for PWD.



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Standards of Medical Care in Diabetes



POSITION STATEMENT

Standards of Medical Care in Diabetes

AMERICAN DIABETES ASSOCIATION

Diabetes is a chronic illness that requires continuing medical care and patient self-management education to prevent acute complications and to reduce the risk of long-term complications. Diabetes care is complex and requires that many issues, beyond glycemic control, be addressed. A large body of evidence exists that supports a range of interventions to improve diabetes outcomes.

These standards of care are intended to provide clinicians, patients, researchers, payors, and other interested persons with the components of diabetes care, treatment goals, and tools to evaluate the quality of care. While individual preferences, comorbidities, and other patient factors may require modification of goals, targets that are desirable for most patients with diabetes are provided. These standards are not intended to preclude more extensive evaluation and management of

each recommendation is listed after each recommendation using the letters A, B, C, or E.

CLASSIFICATION, DIAGNOSIS, AND SCREENING

Classification

In 1997, the ADA issued new diagnostic and classification criteria (4). In 2003, modifications were made regarding the diagnosis of impaired fasting glucose (IFG) (5). The classification of diabetes includes four clinical classes:

- Type 1 diabetes (results from β -cell destruction, usually leading to absolute insulin deficiency).
- Type 2 diabetes (results from a progressive insulin secretory defect on the background of insulin resistance).

Recently, IFG and IGT have been officially termed "pre-diabetes." Both categories

estly more specific than fasting plasma glucose (FPG) to diagnose diabetes, it is poorly reproducible and rarely performed in practice. Because of ease of use, acceptability to patients, and lower cost, the FPG is the preferred screening and diagnostic test. It should be noted that the vast majority of people who meet diagnostic criteria for diabetes by OGTT, but not by FPG, will have an A1C value $<7.0\%$. The use of the A1C for the diagnosis of diabetes is not recommended at this time.

Hyperglycemia not sufficient to meet the diagnostic criteria for diabetes is categorized as either IFG or impaired glucose tolerance (IGT), depending on whether it is identified through FPG or an OGTT.

- IFG = FPG 100 mg/dl (5.6 mmol/l) to 125 mg/dl (6.9 mmol/l)
- IGT = 2-h plasma glucose 140 mg/dl (7.8 mmol/l) to 199 mg/dl (11.0 mmol/l)



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“Approximately one-quarter of people over the age of 65 years have diabetes and one-half of older adults have prediabetes.”

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Overall

- 12.1** Consider the assessment of medical, psychological, functional (self management abilities), and social geriatric domains in older adults to provide a framework to determine targets and therapeutic approaches for diabetes management. **B**
- 12.2** Screen for geriatric syndromes (i.e., polypharmacy, cognitive impairment, depression, urinary incontinence, falls, and persistent pain) in older adults as they may affect diabetes self-management and diminish quality of life. **B**

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**Neurocognitive
Function**




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Implications for Diabetes Care

- Difficult for patients to perform complex self-care tasks
- Difficulty recognizing, preventing, or treating hypoglycemia
- Challenges monitoring glucose and adjusting insulin doses
- Errors in calculating insulin dose, counting carbohydrates, skipped meals, etc.



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Neurocognitive Function

12.3 Screening for early detection of mild cognitive impairment or dementia should be performed for adults 65 years of age or older at the initial visit and annually as appropriate. **B**



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Treatment Goals



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GLYCEMIC TARGETS

Approach to Individualization of Glycemic Targets

Patient / Disease Features More stringent ← A1C 7% → Less stringent

Risks potentially associated with hypoglycemia and other drug adverse effects: low to high

Disease duration: newly diagnosed to long-standing

Life expectancy: long to short

Important comorbidities: absent to few / mild to severe

Established vascular complications: absent to few / mild to severe

Patient preference: highly motivated, excellent self-care capabilities to preference for less burdensome therapy

Resources and support system: readily available to limited

Usually not modifiable

Potentially modifiable

Glycemic Targets:
Standards of Medical Care in Diabetes - 2020. Diabetes Care 2020;43(Suppl. 1): S66-S76

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Patient characteristics/health status	Rationale	Reasonable A1C goal†	Fasting or preprandial glucose	Bedtime glucose	Blood pressure	Lipids
Healthy (few coexisting chronic illnesses, intact cognitive and functional status)	Longer remaining life expectancy	<7.5% (58 mmol/mol)	90–130 mg/dL (5.0–7.2 mmol/L)	90–150 mg/dL (5.0–8.3 mmol/L)	<140/90 mmHg	Statin unless contraindicated or not tolerated
Complex/intermediate (multiple coexisting chronic illnesses* or 2+ instrumental ADL impairments or mild-to-moderate cognitive impairment)	Intermediate remaining life expectancy, high treatment burden, hypoglycemia vulnerability, fall risk	<8.0% (64 mmol/mol)	90–150 mg/dL (5.0–8.3 mmol/L)	100–180 mg/dL (5.6–10.0 mmol/L)	<140/90 mmHg	Statin unless contraindicated or not tolerated
Very complex/poor health (LTC or end-stage chronic illnesses** or moderate-to-severe cognitive impairment or 2+ ADL dependencies)	Limited remaining life expectancy makes benefit uncertain	<8.5%† (69 mmol/mol)	100–180 mg/dL (5.6–10.0 mmol/L)	110–200 mg/dL (6.1–11.1 mmol/L)	<150/90 mmHg	Consider likelihood of benefit with statin (secondary prevention more so than primary)

This table represents a consensus framework for considering treatment goals for glycemia, blood pressure, and dyslipidemia in older adults with diabetes. The patient characteristic categories are general concepts. Not every patient will clearly fall into a particular category. Consideration of patient and caregiver preferences is an important aspect of treatment individualization. Additionally, a patient's health status and preferences may change over time. ADL, activities of daily living; LTC, long-term care. †A lower A1C goal may be set for an individual if achievable without recurrent or severe hypoglycemia or undue treatment burden. *Coexisting chronic illnesses are conditions serious enough to require medications or lifestyle management and may include arthritis, cancer, congestive heart failure, depression, emphysema, falls, hypertension, incontinence, stage 3 or worse chronic kidney disease, myocardial infarction, and stroke. "Multiple" means at least three, but many patients may have five or more (54). **The presence of a single end-stage chronic illness, such as stage 3–4 congestive heart failure or oxygen-dependent lung disease, chronic kidney disease requiring dialysis, or uncontrolled metastatic cancer, may cause significant symptoms or impairment of functional status and significantly reduce life expectancy. †A1C of 8.5% (69 mmol/mol) equates to an estimated average glucose of ~200 mg/dL (11.1 mmol/L). Looser A1C targets above 8.5% (69 mmol/mol) are not recommended, as they may expose patients to more frequent higher glucose values and acute risks from glycosuria, dehydration, hyperglycemic hyperosmolar syndrome, and poor wound healing. Adapted from Kirkman et al. (2).

Table 12.1—Framework for considering treatment goals for glycemia, blood pressure, and dyslipidemia in older adults with diabetes

Older Adults:
Standards of Medical Care in Diabetes - 2020. Diabetes Care 2020;43(Suppl. 1):S152-S162

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Treatment Goals

- 12.5** Older adults who are otherwise healthy with few coexisting chronic illnesses and intact cognitive function and functional status should have lower glycemic goals (such as A1C <7.5% [58 mmol/mol]), while those with multiple coexisting chronic illnesses, cognitive impairment, or functional dependence should have less-stringent glycemic goals (such as A1C <8.0–8.5% [64–69 mmol/mol]). **C**
- 12.6** Glycemic goals for some older adults might reasonably be relaxed as part of individualized care, but hyperglycemia leading to symptoms or risk of acute hyperglycemia complications should be avoided in all patients. **C**

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Treatment Goals (continued)

- 12.7** Screening for diabetes complications should be individualized in older adults. Particular attention should be paid to complications that would lead to functional impairment. **C**
- 12.8** Treatment of hypertension to individualized target levels is indicated in most older adults. **C**
- 12.9** Treatment of other cardiovascular risk factors should be individualized in older adults considering the time frame of benefit. Lipid-lowering therapy and aspirin therapy may benefit those with life expectancies at least equal to the time frame of primary prevention or secondary intervention trials. **E**

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Lifestyle Management




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Lifestyle Management

12.10 Optimal nutrition and protein intake is recommended for older adults; regular exercise, including aerobic activity and resistance training, should be encouraged in all older adults who can safely engage in such activities. **B**



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Pharmacologic Therapy

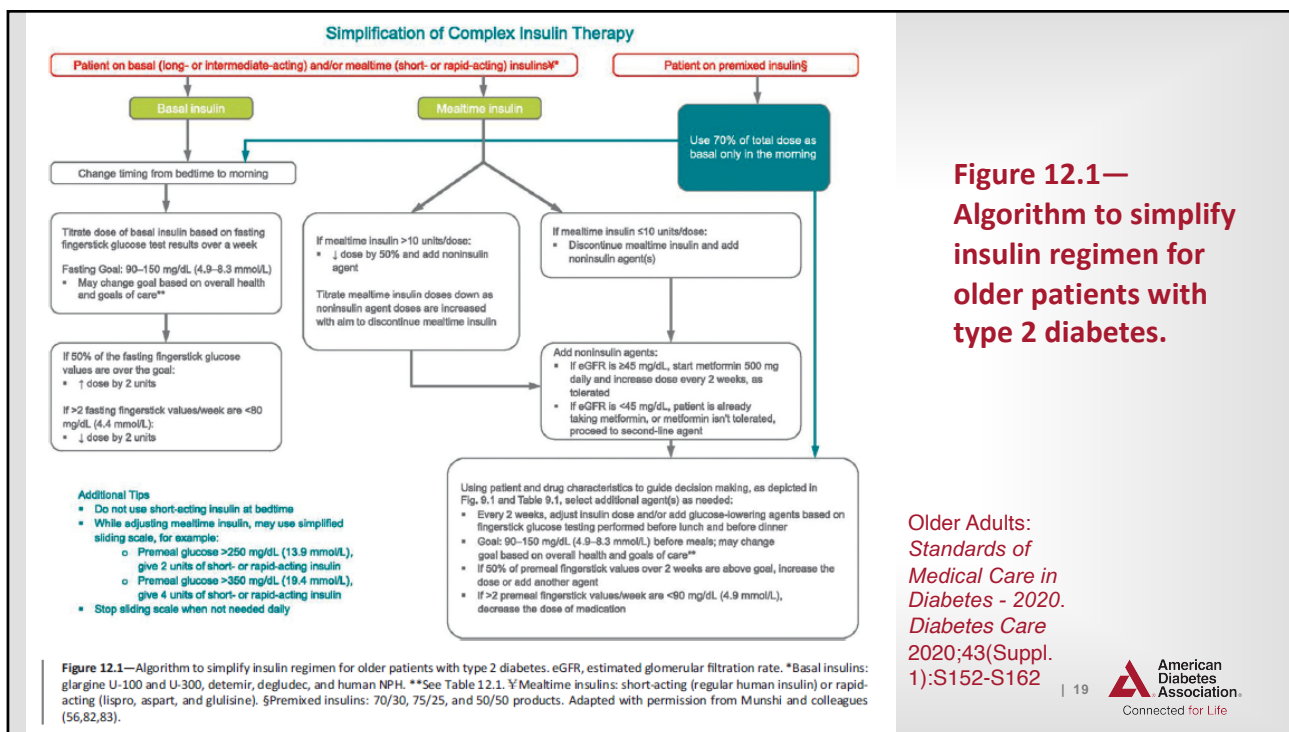
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Pharmacologic Therapy

- 12.11** In older adults with type 2 diabetes at increased risk of hypoglycemia, medication classes with low risk of hypoglycemia are preferred. **B**
- 12.12** Overtreatment of diabetes is common in older adults and should be avoided. **B**
- 12.13** Deintensification (or simplification) of complex regimens is recommended to reduce the risk of hypoglycemia and polypharmacy, if it can be achieved within the individualized A1C target. **B**
- 12.14** Consider costs of care and insurance coverage rules when developing treatment plans in order to reduce risk of cost related nonadherence. **B**

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Table 12.2—Considerations for treatment regimen simplification and deintensification/deprescribing in older adults with diabetes (56,82)

Patient characteristics/health status	Reasonable A1C/treatment goal	Rationale/considerations	When may regimen simplification be required?	When may treatment deintensification/deprescribing be required?
Healthy (few coexisting chronic illnesses, intact cognitive and functional status)	A1C <7.5% (58 mmol/mol)	<ul style="list-style-type: none"> Patients can generally perform complex tasks to maintain good glycemic control when health is stable During acute illness, patients may be more at risk for administration or dosing errors that can result in hypoglycemia, falls, fractures, etc. 	<ul style="list-style-type: none"> If severe or recurrent hypoglycemia occurs in patients on insulin therapy (even if A1C is appropriate) If wide glucose excursions are observed If cognitive or functional decline occurs following acute illness 	<ul style="list-style-type: none"> If severe or recurrent hypoglycemia occurs in patients on noninsulin therapies with high risk of hypoglycemia (even if A1C is appropriate) If wide glucose excursions are observed In the presence of polypharmacy
Complex/intermediate (multiple coexisting chronic illnesses or 2+ instrumental ADL impairments or mild-to-moderate cognitive impairment)	A1C <8.0% (64 mmol/mol)	<ul style="list-style-type: none"> Comorbidities may affect self-management abilities and capacity to avoid hypoglycemia Long-acting medication formulations may decrease pill burden and complexity of medication regimen 	<ul style="list-style-type: none"> If severe or recurrent hypoglycemia occurs in patients on insulin therapy (even if A1C is appropriate) If unable to manage complexity of an insulin regimen If there is a significant change in social circumstances, such as loss of caregiver, change in living situation, or financial difficulties 	<ul style="list-style-type: none"> If severe or recurrent hypoglycemia occurs in patients on noninsulin therapies with high risk of hypoglycemia (even if A1C is appropriate) If wide glucose excursions are observed In the presence of polypharmacy

Table 12.2—Considerations for treatment regimen simplification and deintensification/deprescribing in older adults with diabetes. (1 of 2)

Older Adults: Standards of Medical Care in Diabetes - 2020. Diabetes Care 2020;43(Suppl. 1):S152-S162

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Community-dwelling patients receiving care in a skilled nursing facility for short-term rehabilitation	Avoid reliance on A1C Glucose target: 100–200 mg/dL (5.55–11.1 mmol/L)	<ul style="list-style-type: none"> Glycemic control is important for recovery, wound healing, hydration, and avoidance of infections Patients recovering from illness may not have returned to baseline cognitive function at the time of discharge Consider the type of support the patient will receive at home 	<ul style="list-style-type: none"> If treatment regimen increased in complexity during hospitalization, it is reasonable, in many cases, to reinstate the prehospitalization medication regimen during the rehabilitation 	<ul style="list-style-type: none"> If the hospitalization for acute illness resulted in weight loss, anorexia, short-term cognitive decline, and/or loss of physical functioning
Very complex/poor health (long-term care or end-stage chronic illnesses or moderate-to-severe cognitive impairment or 2+ ADL dependencies)	A1C <8.5% (69 mmol/l)*	<ul style="list-style-type: none"> No benefits of tight glycemic control in this population Hypoglycemia should be avoided Most important outcomes are maintenance of cognitive and functional status 	<ul style="list-style-type: none"> If on an insulin regimen and the patient would like to decrease the number of injections and fingerstick blood glucose monitoring events each day If the patient has an inconsistent eating pattern 	<ul style="list-style-type: none"> If on noninsulin agents with a high hypoglycemia risk in the context of cognitive dysfunction, depression, anorexia, or inconsistent eating pattern If taking any medications without clear benefits
Patients at end of life	Avoid hypoglycemia and symptomatic hyperglycemia	<ul style="list-style-type: none"> Goal is to provide comfort and avoid tasks or interventions that cause pain or discomfort Caregivers are important in providing medical care and maintaining quality of life 	<ul style="list-style-type: none"> If there is pain or discomfort caused by treatment (e.g., injections or fingersticks) If there is excessive caregiver stress due to treatment complexity 	<ul style="list-style-type: none"> If taking any medications without clear benefits in improving symptoms and/or comfort

Treatment regimen simplification refers to changing strategy to decrease the complexity of a medication regimen, e.g., fewer administration times, fewer fingerstick readings, decreasing the need for calculations (such as sliding scale insulin calculations or insulin-carbohydrate ratio calculations). Deintensification/deprescribing refers to decreasing the dose or frequency of administration of a treatment or discontinuing a treatment altogether. ADL, activities of daily living. *Consider adjustment of A1C goal if the patient has a condition that may interfere with erythrocyte life span/turnover.

**Table 12.2—
Considerations
for treatment
regimen
simplification and
deintensification/
deprescribing in
older adults with
diabetes.
(2 of 2)**

Older Adults:
*Standards of Medical
Care in Diabetes - 2020.
Diabetes Care
2020;43(Suppl. 1):S152-
S162*



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Skilled Nursing Facilities and Nursing Homes

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Treatment in Skilled Nursing Facilities and Nursing Homes

- 12.15** Consider diabetes education for the staff of long-term care and rehabilitation facilities to improve the management of older adults with diabetes. **E**
- 12.16** Patients with diabetes residing in long-term care facilities need careful assessment to establish individualized glycemic goals and to make appropriate choices of glucose-lowering agents based on their clinical and functional status. **E**

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The following alert strategy could be considered for blood glucose management:

1. Call provider immediately in cases of low blood glucose levels (<70 mg/dL [3.9 mmol/L]).
2. Call as soon as possible when
 - a) glucose values are 70–100 mg/dL (3.9 and 5.6 mmol/L) (regimen may need to be adjusted),
 - b) glucose values are >250 mg/dL (13.9mmol/L) within a 24-h period,
 - c) glucose values are >300 mg/dL (16.7 mmol/L) over 2 consecutive days,
 - d) any reading is too high for the glucometer, or
 - e) the patient is sick, with vomiting, symptomatic hyperglycemia, or poor oral intake.

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End-of-Life Care



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End-of-Life Care

12.17 When palliative care is needed in older adults with diabetes, providers should initiate conversations regarding the goals and intensity of care. Strict glucose and blood pressure control may not be necessary **E**, and reduction of therapy may be appropriate. Similarly, the intensity of lipid management can be relaxed, and withdrawal of lipid-lowering therapy may be appropriate. **A**

12.18 Overall comfort, prevention of distressing symptoms, and preservation of quality of life and dignity are primary goals for diabetes management at the end of life. **C**



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Different patient categories have been proposed for diabetes management in those with advanced disease:

1. **A stable patient:** Continue with the patient's previous regimen, with a focus on the prevention of hypoglycemia and the management of hyperglycemia using blood glucose testing, keeping levels below the renal threshold of glucose. There is very little role for A1C monitoring and lowering.
2. **A patient with organ failure:** Preventing hypoglycemia is of greater significance. Dehydration must be prevented and treated. In people with type 1 diabetes, insulin administration may be reduced as the oral intake of food decreases but should not be stopped. For those with type 2 diabetes, agents that may cause hypoglycemia should be reduced in dose. The main goal is to avoid hypoglycemia, allowing for glucose values in the upper level of the desired target range.

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Different patient categories have been proposed for diabetes management in those with advanced disease (continued):

3. **A dying patient:** For patients with type 2 diabetes, the discontinuation of all medications may be a reasonable approach, as patients are unlikely to have any oral intake. In patients with type 1 diabetes, there is no consensus, but a small amount of basal insulin may maintain glucose levels and prevent acute hyperglycemic complications.

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