



Managing Diabetes in Older Populations: Targets, Challenges, and Medications

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Older adults with diabetes require tailored care plans that include appropriate target ranges, solutions to address challenges faced by the patient, and considerations for medications.



Therapeutic Targets in Older Individuals with Diabetes Mellitus

Choosing an appropriate target range for glycemia (A1C level), blood pressure (BP), and lipids for older patients with diabetes can be complicated due to conflicting priorities and a limited evidence base. Management must be individualized, taking into account individual comorbidities, functional ability, home care situation, life expectancy, culture and health beliefs, and individual health decisions (e.g., quantity versus quality of life, side effects, and risks versus long-term benefits).¹

Preventing symptoms of hyperglycemia, most notably polyuria and nocturia, can usually be achieved by maintaining an A1C level of <9%. More intensive glycemic control can reduce microvascular complications (~5 years from onset of disease) and, to a lesser extent, macrovascular disease (~10 years). An individual with <5 years life expectancy and new-onset diabetes will not benefit from tight glycemic control (A1C <7%) because benefits only accrue over a longer period of time. Moreover, more intensive glycemic control is usually associated with more hypoglycemia (which can cause falls and fractures), as well as polypharmacy.¹

Few specialty societies and governmental agencies are explicit beyond general targets. The American Diabetes Association¹ states that an A1C goal of <7% is appropriate for many nonpregnant adults without significant hypoglycemia. Less stringent A1C goals (such as <8%) may be appropriate for patients with limited life expectancy, or where the harms are greater than the benefits. Reliance on A1C measurements becomes less significant as a patient’s health status lessens. The U.S. Department of Veterans Affairs/Department of Defense (VA/DoD) diabetes clinical practice guidelines² and the Endocrine Society guidelines³ suggest targets that are similarly specifically related to life expectancy and comorbidities.

Table 1. Goals for Older Adults by Health Status

Health Status	Comorbidities	A1C	Fasting Goal (mg/dL)	HS Goal (mg/dL)	BP Goal (mmHg)	Lipids
Healthy	Few	<7.0-7.5	80-130	80-180	<140/90	Statin unless contraindicated or not tolerated
Complex/Intermediate	<ul style="list-style-type: none"> ▪ Multiple (3+) comorbidities ▪ Mild-Moderate cognitive impairment ▪ 2+ instrumental activities of daily living (ADL) impairment 	<8.0	90-150	100-180	<140/90	Statin unless contraindicated or not tolerated
Very Complex/Poor Health	<ul style="list-style-type: none"> ▪ Long-term care ▪ End-stage chronic illness ▪ Moderate-Severe cognitive impairment ▪ 2+ ADL impairment 	Avoid reliance on A1C, avoid hypoglycemia, symptomatic hyperglycemia	100-180	110-200	<150/90	Consider likelihood of benefit with statin

Categories provide a general framework only and should take patient and caregiver preferences into consideration. *Lower goal may be considered if achievable without recurrent or severe hypoglycemia or undue treatment burden. Adapted from American Diabetes Association Standards of Medical Care in Diabetes-2021¹

Recommendations for BP control are inconsistent in the literature:

- American Diabetes Association 2021 Standards of Medical Care in Diabetes – Older Adults¹
 - BP target for those with very complex/poor health: <150/90 mmHg
 - BP targets for healthy and complex/intermediate health levels: <140/90 mmHg
- American College of Cardiology/American Heart Association (ACC/AHA) 2017 and 2019 Guidelines^{4,5} on the Primary Prevention of Cardiovascular Disease⁵
 - BP target of <130/80 mmHg
- International Society of Hypertension⁶
 - BP target for older DM patients: <140/80 mmHg
 - Blood pressure should actively be lowered if ≥140/90 mmHg, leaving the diastolic BP range of 80-90 mmHg in a gray zone

For more information on BP targets, access Cardi-OH’s resource on [Talking with Your Team about Blood Pressure Targets](#).

Challenges and Solutions to Diabetes Self-Management

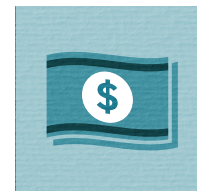
Older adults with diabetes experience external and internal challenges and may require additional support from their primary care providers to navigate these barriers to quality care.

External (Environmental) Challenges

Finances

Challenges. Diabetes is a costly burden for older people. Medicare enrollees are vulnerable to cost-related medication non-adherence due to the significant burden of chronic illness, substantial medication needs, and relatively modest financial resources.⁷ In addition, the high cost of diabetes supplies such as test strips and insulin pens/pumps and limited eligibility for discounted medications can make therapies cost-prohibitive.⁸

Solutions. Prioritizing lower-cost medications can be helpful. Ohio Medicaid utilizes a **Preferred Diabetic Supply List** and a **Unified Preferred Drug List** for all of its managed care plans. For more information, access Cardi-OH's resource on **simplified prescriptions for diabetes**



Polypharmacy

Challenges. The older a person gets, the more medications are prescribed. Over 15% of older adults in 2010-2011 were deemed to be at risk for a major drug-drug interaction compared to 8.4% in 2005-2006.⁹ Polypharmacy in these patients may lead to drug errors, inappropriate use, and unnecessary hospital admissions.¹⁰

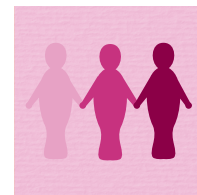
Solutions. Deintensification strategies (**Figure 1**) could help address this issue. Pharmacists can perform comprehensive medication reviews to ensure patients are on guideline-directed therapy and that drug interactions can be identified and resolved. With limited access to a pharmacist, staff can use electronic medical records' outside reconciliation options with patients during rooming or pre-visit planning.



Social Support

Challenges. There are fewer non-familial support systems with aging. Changes to the nuclear family, including adult children and same-age spouses who frequently have their own health conditions, lead to a greater need to assess social support.

Solutions. Social support networks can mediate the impact of economic and environmental disadvantages. Families are often the primary source of social support and can facilitate patients' self-management of diabetes,¹¹ highlighting the importance of including families in diabetes education.



Access to Care

Challenges. Older adults need to access primary care every 3 to 6 months and often more frequently. However, transportation and communication issues can be challenging.

Solutions. Some studies show that a phone call with their provider's office can be very impactful. When patients feel connected to their health care system, they have a greater sense of security and confidence in their care.¹²

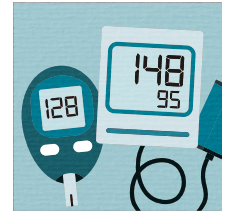


Internal (Individual) Barriers

Chronic Comorbidities

Challenges. Excess body weight, hypertension, and dyslipidemia are common in older patients with diabetes, increasing the risk of a catastrophic cardiovascular event or stroke. Delayed routine care can compound these problems. Geriatric syndromes, such as dementia, incontinence, or movement disorders, can impact quality of life and the patient's self-care abilities.¹³

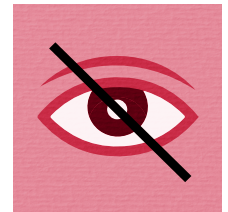
Solutions. Primary care providers are well-positioned to address this complex care.



Functional

Challenges. Chronic diabetes in older people results in end-organ damage that subsequently makes daily management of diabetes more difficult. Vision loss from retinopathy and macular degeneration is higher in people with diabetes than the general population.⁹

Solutions. Recognize and address visual barriers in education materials, prescription instructions, and self-management tools.



Cognitive

Challenges. Older adults with diabetes are at increased risk for cognitive impairment.¹⁴ Cognitive impairment may also present as poor diabetes control, which could signal the need for a cognitive assessment.¹²

Solutions. Higher levels of social support for diabetes care may ameliorate poor glycemic control.¹⁵ Including caregivers in diabetes education can be essential in successfully managing the patient's diabetes.¹⁴



Emotional

Challenges. The mental stress of having diabetes and other chronic conditions is a formidable challenge for older patients on Medicaid. Aging does not increase depression, but increased disease burden and social isolation can increase depression rates.¹⁶ Patients with diabetes and depression have increased risk for hyperglycemia or hypoglycemia and have more frequent healthcare utilization, higher risk of complications, increased functional impairment and mortality, and poorer quality of life.¹⁷

Solutions. Routinely screen for depression and make linkages to mental health providers.



Medication Considerations

Treatment goals for older adults with diabetes include preferring medication classes with low risk of hypoglycemia, avoidance of overtreatment, and regimen simplification to reduce hypoglycemia and polypharmacy, while achieving the individualized A1C target.¹ Unfortunately, no single deintensification regimen is proven to be the ideal.¹⁹

A significant gap exists in the literature regarding therapy minimizing strategies in older populations. However, strategies exist to identify patients who could benefit from simplified therapy (Figure 1).¹⁹

The ADA guidelines¹ for medication management of diabetes provide specific, stepwise recommendations (Figure 2). For most patients, including older adults, first-line therapy continues to be metformin. If glycemic targets are not met, second- and third-line therapy options typically depend on the presence of complications or comorbidities. In particular, therapies that increase the risk of hypoglycemia should be minimized in older adults. Second-line therapies include glucagon-like peptide receptor agonists (GLP-1 RA), sodium-glucose cotransporter-2 inhibitors (SGLT2i), thiazolidinediones (TZD), sulfonylureas, and dipeptidyl peptidase 4 inhibitors (DPP4i). Third-line therapies include adding any of the second-line drugs not already prescribed or insulin therapy, based upon target goals and shared decision making. Renal insufficiency must be considered as a common comorbidity in older adults.

For more information, access Cardi-OH's resources on [Medication Algorithms](#).

Figure 1. Summary of Patient Characteristics to DEINTENSIFY Hypoglycemic Medications

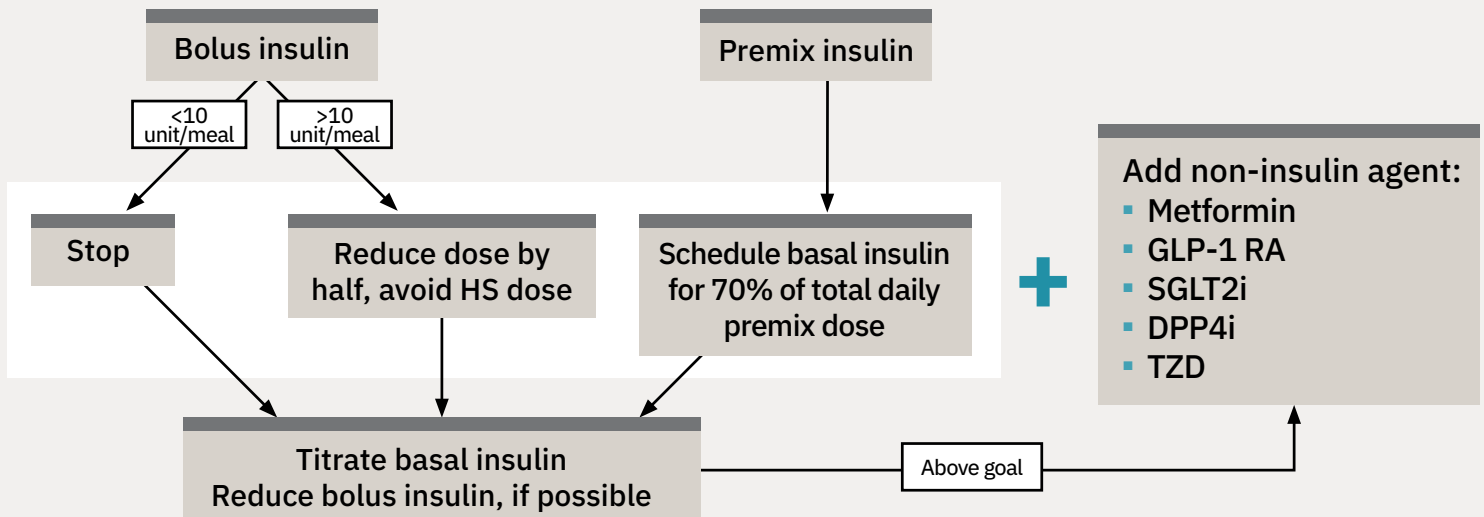
- D** Dementia, especially those with erratic eating pattern and abnormal behavior
- E** Elderly, especially those ≥80 years old
- I** Impaired renal function, especially those with end-stage renal disease
- N** Numerous comorbidities, especially those with ≥5 comorbidities
- T** Tight glycemic control, especially those with A1C <7% (<53 mmol/mol)
- E** End of life phase, especially those with less than or equal to one-year life expectancy
- N** Nursing home residents, especially those with multiple comorbidities
- S** Significant weight loss, especially unintentional indicating frailty
- I** Inappropriate medications, especially insulin or sulfonylureas
- F** Frequent hypoglycemia, especially serious episodes needing assistance
- Y** Years of long diabetes, especially those >20 years duration

Adapted from Deintensification of hypoglycemic medications—Use of a systematic review approach to highlight safety concerns in older people with type 2 diabetes¹⁹

Figure 2. Primary Deintensification Steps:

1. Simplify regimens (for example, changing from multiple daily insulin injections to once daily basal insulin + non-insulin therapy)

Deintensifying Complex Insulin Regimens



- Lifestyle changes remain the cornerstone of management.
- In the presence of insulin, consistent carbohydrate intake recommended.
- Add non-insulin therapy, reduce/stop mealtime insulin where possible (success more likely with lower doses, better glucose control, shorter duration of DM; insulin requirements may decrease with advanced chronic kidney disease).

Adapted from American Diabetes Association Standards of Medical Care in Diabetes-2021¹

2. Discontinue or reduce medications that promote hypoglycemia (insulin or sulfonylureas) and substitute therapies with lower hypoglycemia risk
3. Emphasize lifestyle modification
4. Adjust dosage, as needed, for adverse reactions and renal integrity
5. Decrease cost of care
6. Monitor the patient's response to deintensification, including glycemic control and quality of life

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