# Age Friendly Approach to the Management of Diabetes

## Best Practices 2026

**Naushira Pandya, MD CMD FACP FPALTC**
**Professor and Chair**
**Department of Geriatrics**
**Nova Southeastern University**
**Kiran C Patel College of Osteopathic Medicine**

# Disclosures

- Naushira Pandya is a speaker for Shionogi

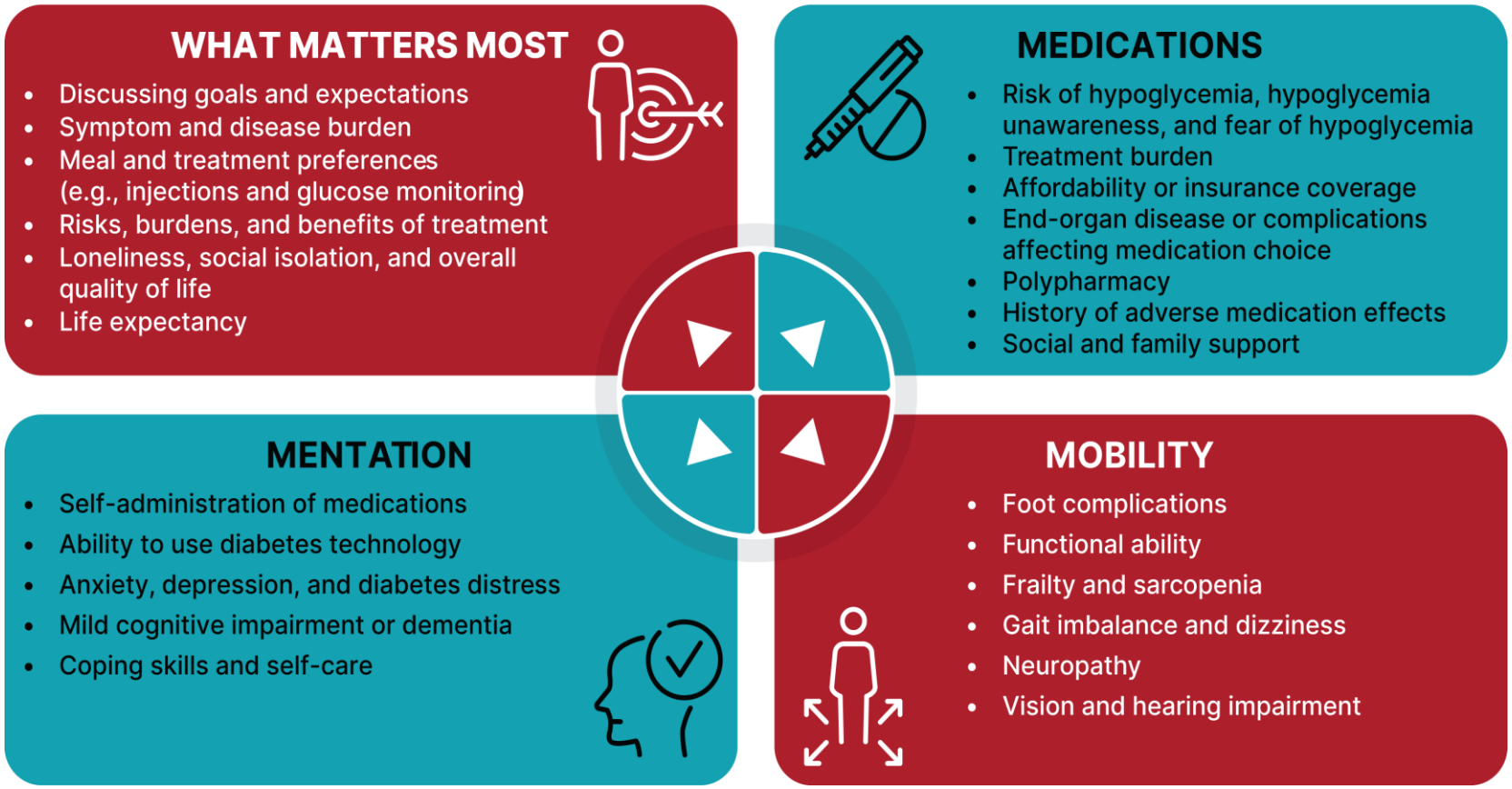
# Learning objectives

- A holistic approach rather than glycemic control; the 4M approach
- Optimal pharmacological management
- Preventing and managing cardiometabolic conditions
- Minimizing hypoglycemia
- The important role of technology

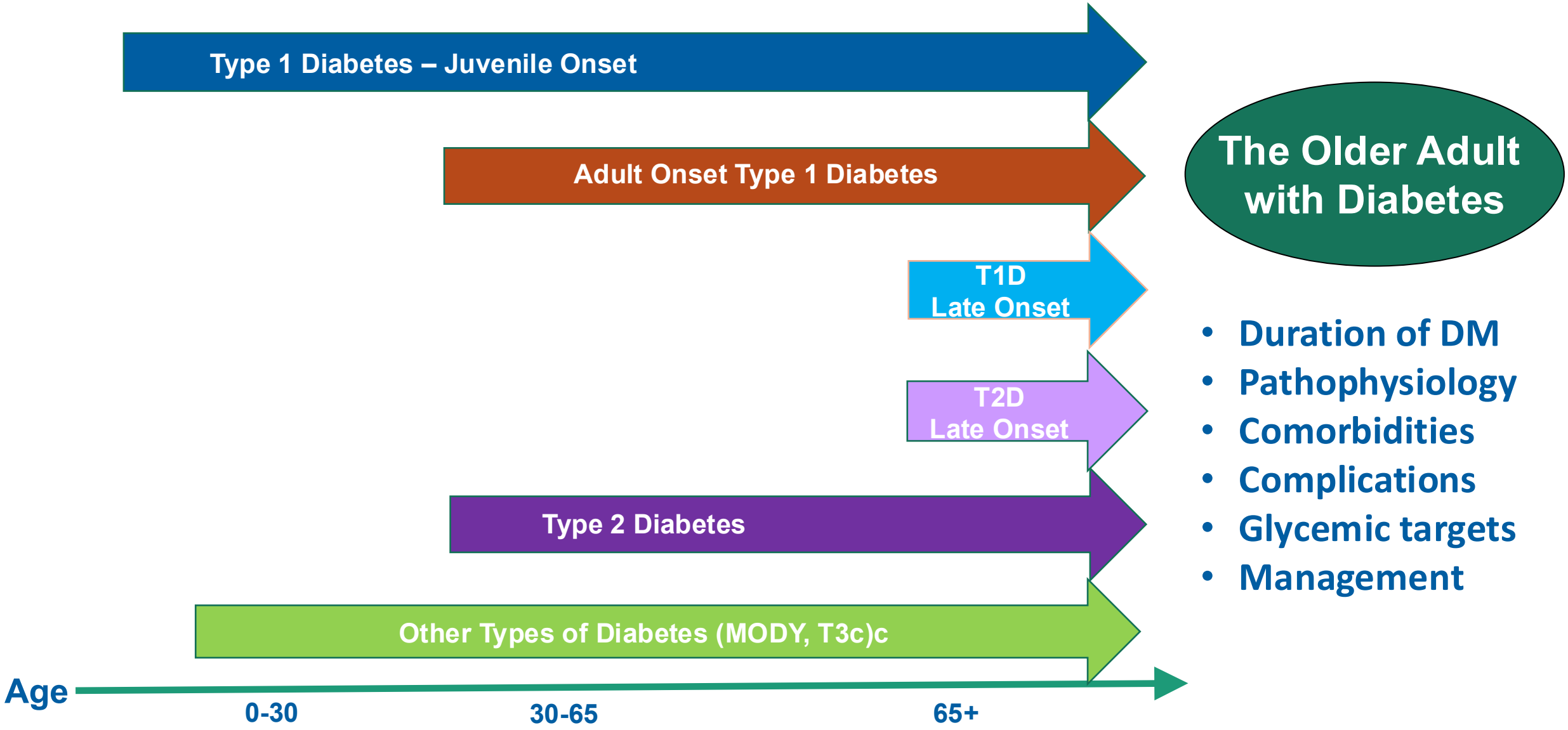
From: **13. Older Adults: Standards of Care in Diabetes—2026**

*Diabetes Care* 1 January 2026; 49 (Supplement_1): S277–S296. https://doi.org/10.2337/dc26-S013

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



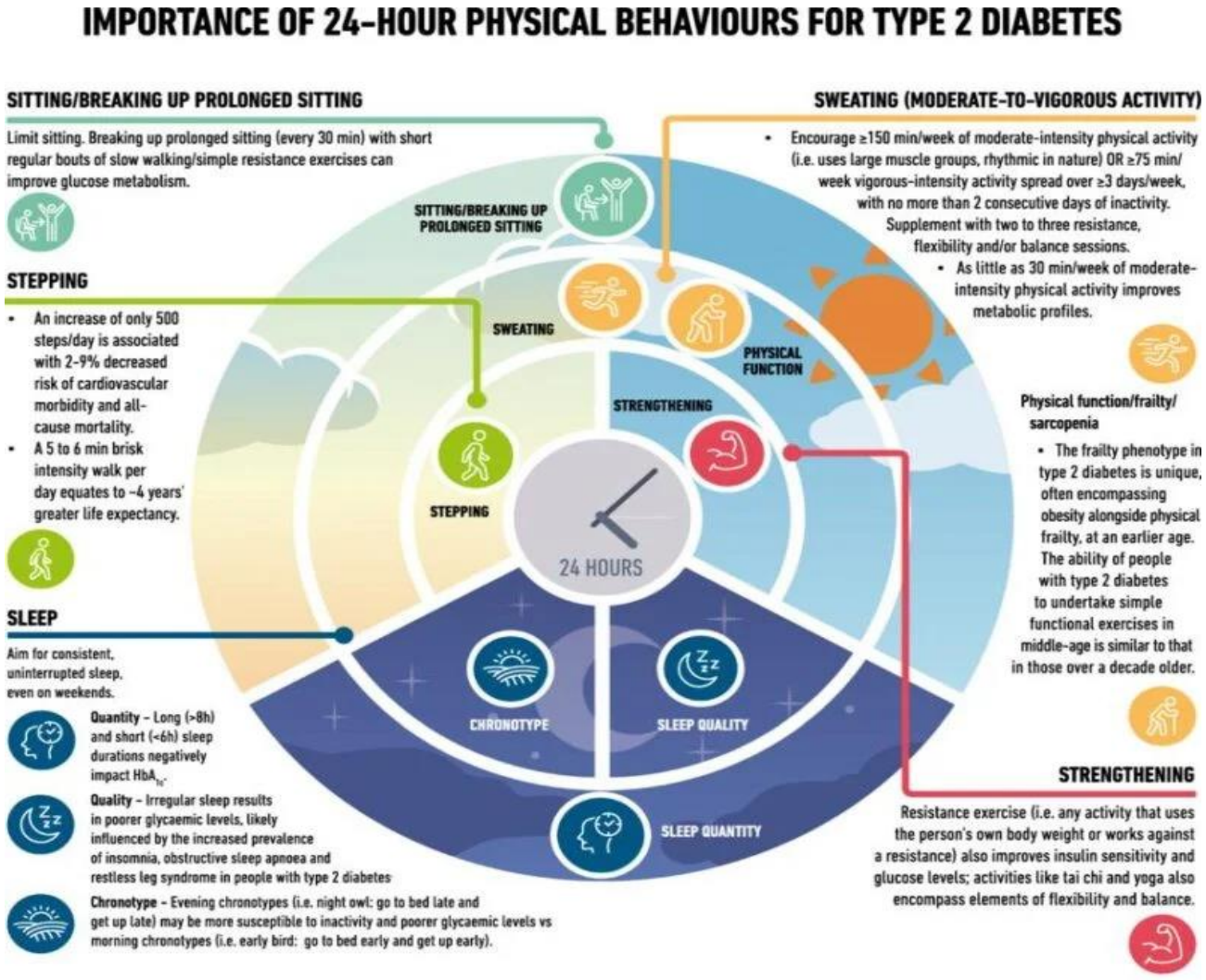
# Diabetes is Heterogeneous in Older Adults



# The importance of combined 24-hour behaviors in those living with type 2 diabetes

## The 5 S's

STANDING
STEPPING
SWEATING
SLEEPING
STRENGTHENING




| | Glucose/insulin | Blood pressure | $HbA_{1c}$ | 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 | ↓ | ? | ↓ | ? | ? | ↓ | ? |

# Consideration for Treating Diabetes in Older Adults

- Diabetes in older adults is highly heterogeneous (affects 30-35% of PALTC residents
- Hypoglycemia is a critical consideration when managing older adults with T1D
- Older adults with T1D do well with technology (CGM, HCL) that decrease hypoglycemia and improve overall control
- Complications such as CVD, CKD, neuropathy and retinopathy increase morbidity and mortality and can impair function and independence
- Diabetes can lead to or worsen cognitive function
- Geriatric syndromes (polypharmacy, depression, impaired vision, cognitive decline/dementia, fall risk, urinary incontinence, chronic pain, and various physiological changes) make diabetes in older adults more complicated to manage that in younger patients

**Need to personalize goals and therapy!**

IDF Diabetes Atlas, 10th Edition. 2021.
Munshi M, Kahkoska AR, Neumiller JJ, et al. *Lancet Diabetes Endocrinol* 2025 Feb 17; PMID: 39978368.

## TABLE 12. Clinical Care Considerations Across the PALTC Continuum

| LONG-TERM CARE | | | ALF |
|---|---|---|---|
| SKILLED REHAB | LTC | HOSPICE/PALLIATIVE | |
| Avoid reliance on A1C<br>BG target 100–200 mg/dL (5.5–11.1 mmol/L)<br>Potential for discharge<br>Cognitive impairment<br>Expressed wishes of patient<br>Self care and function<br>Community support | Avoid reliance on A1C<br>Avoid hypoglycemia and symptomatic hyperglycemia<br>Goals of care<br>Cognitive impairment<br>Glycemic goals<br>Complications and comorbidities | Avoid hypoglycemia and symptomatic hyperglycemia<br>Goals of care<br>Clinical complexity<br>Comfort<br>Wishes of patient and family | Avoid hypoglycemia<br>A1C below 8% if feasible<br>Complications and comorbidities<br>Cognition<br>Functional ability<br>Staffing capability<br>BG monitoring/injections |

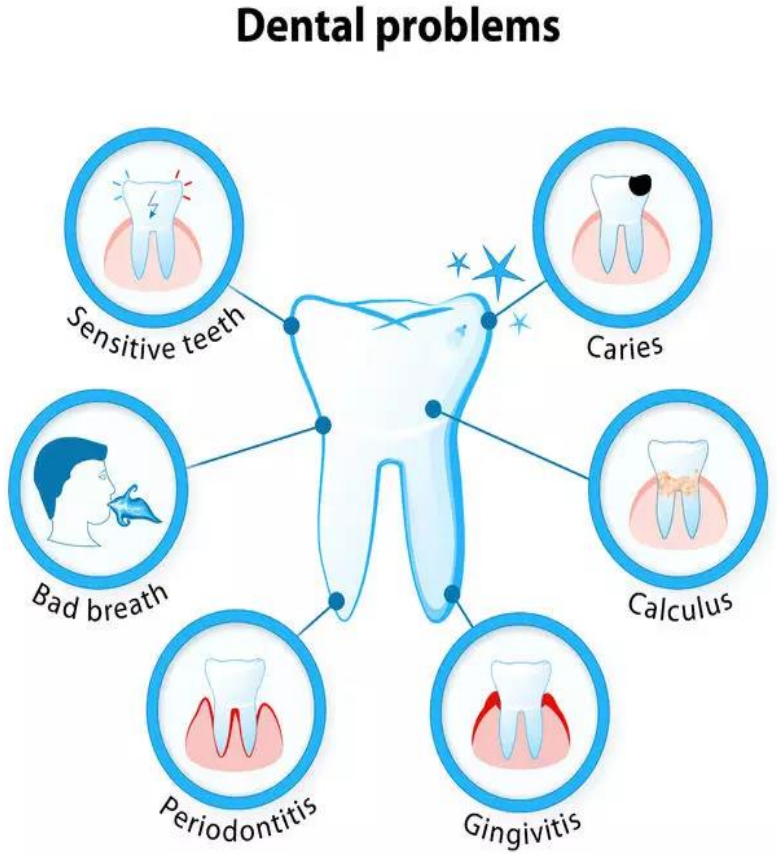
**ASSESS ALL PATIENTS FOR THE FOLLOWING:**

- Hypoglycemic risk
- Renal function
- CV risks and complications
- Weight loss
- Frailty
- Prognosis

Davidson, H. E., Pandya, N et al (2024). Clinical practice guideline for diabetes management in the post-acute and long-term care setting. *Journal of the American Medical Directors Association*, *25*(11), 105342.

# Dental Care

- People with diabetes should be referred for a dental exam at least once per year. **E**
- Bidirectional relationship between type 2 diabetes and periodontaldisease
- Coordinate efforts between the medical and dental teams to appropriately adjust glucose-lowering medication and treatment plans prior to and in the post-dental procedure period as needed. **B**




https://professional.diabetes.org/standards-of-care

# End-of-Life Care

**13.18** When palliative care is needed, health care professionals should initiate conversations with people with diabetes and their care partners regarding the goals and intensity of care. Strict glucose and blood pressure management are not necessary, and simplification of medication plans can be considered, and withdrawal of lipid-lowering therapy may be appropriate. **E**

**1319** Prioritize the overall comfort, prevention of distressing symptoms, and preservation of quality of life and dignity as primary goals for diabetes management at the end of life. **C**

- **IN people with type 1 diabetes, there is no consensus, but a small amount of basal insulin may prevent acute hyperglycemic complications**

American Diabetes Association Professional Practice Committee for Diabetes*; 13. Older Adults: Standards of Care in Diabetes—2026. *Diabetes Care* 1 January 2026; 49 (Supplement_1): S277–S296

# Diabetes and increased risk of falls

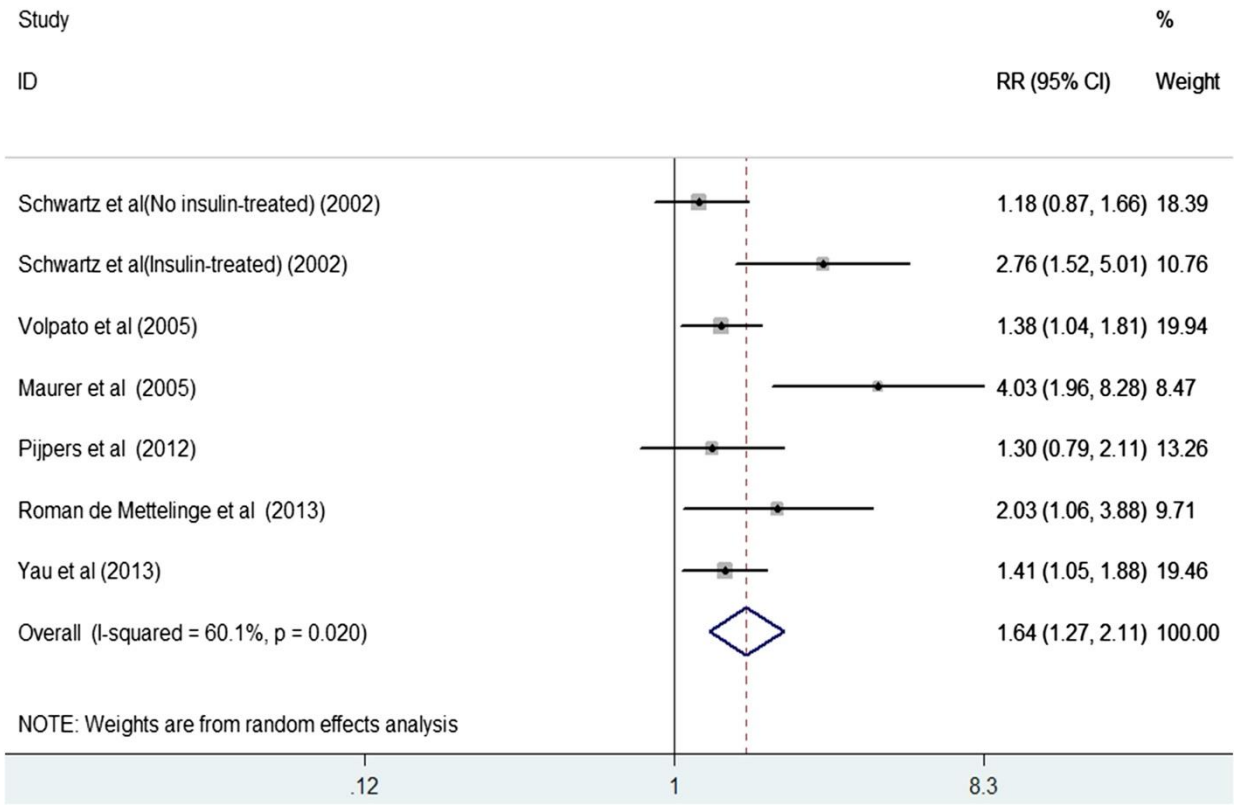
- Diabetes mellitus is an independent fall risk factor among elderly nursing home residents
- Gait problem (OR = 1.8), balance difficulties (OR = 2.1), hypotension (OR = 1.7), and above three medications (OR = 1.55) were significantly associated with a greater odd of having recurrent falls in a diabetes center study
- Peripheral neuropathy, decreased physical performance, decreased cognitive performance, poor vision, and increased use of antidepressant medication are also risk factors for falls

Maurer, M. S., Burcham, J., & Cheng, H. (2005). *The journals of gerontology series A: biological sciences and medical sciences*, *60*(9), 1157-1162

Rashedi, V., Iranpour, A., Mohseni, M., & Borhaninejad, V. (2019). *Diabetes & metabolic syndrome: clinical research & reviews*, *13*(4), 2347-2351.

# Forest plots showing RR and 95% CI of falls comparing the diabetic individuals to non-diabetes

- Six studies involving 14,685 participants
- The number of falls in diabetic and non-diabetic individuals was 423 of 1,692 (25.0%) and 2,368 of 13,011 (18.2%), respectively.
- Diabetes was associated with an increased risk of falls (risk ratio [RR] = 1.64; 95% confidence intervals [CI] 1.27–2.11)
- .

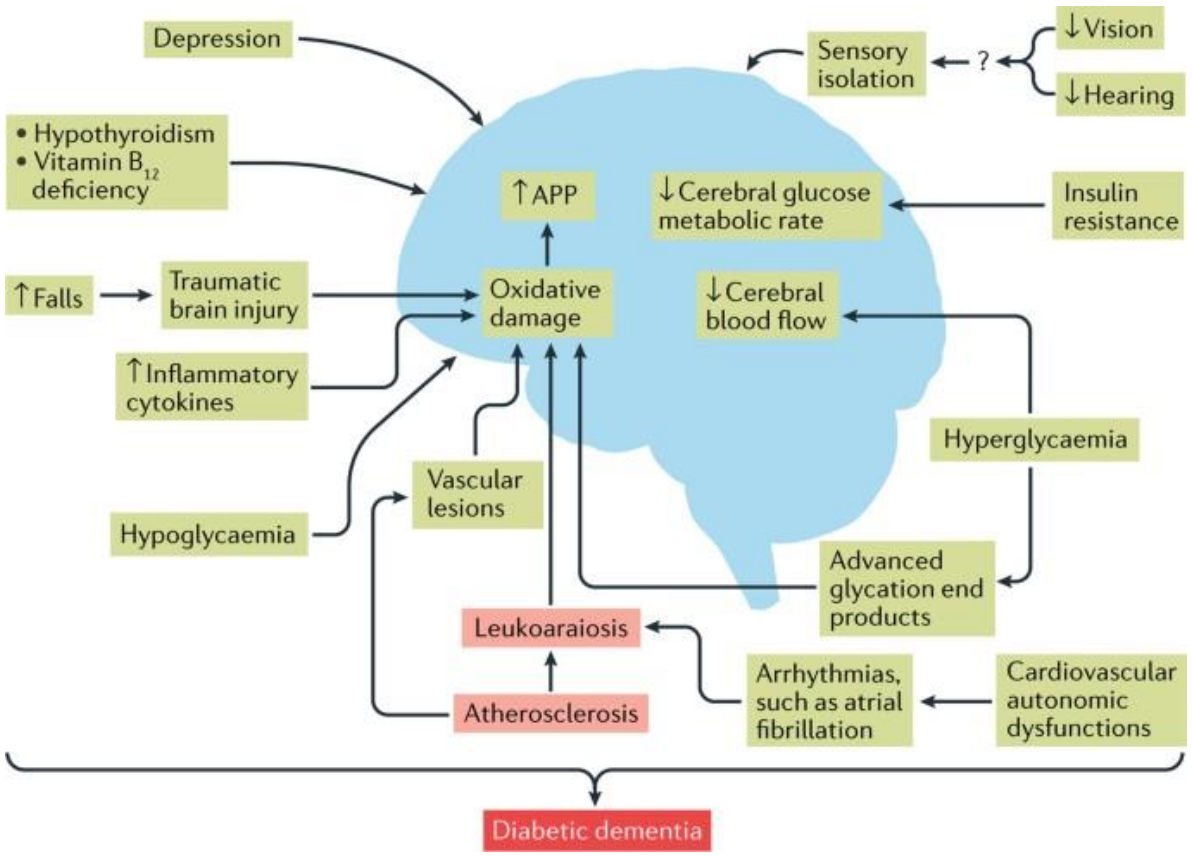



*Age Ageing*, Volume 45, Issue 6, 2 November 2016, Pages 761–767,
https://doi.org/10.1093/ageing/afw140

OXFORD UNIVERSITY PRESS

# Diabetes and the brain

Morley, J. The diabetic brain. *Nat Rev Endocrinol* **13**, 570–571 (2017). https://doi.org/10.1038/nrendo.

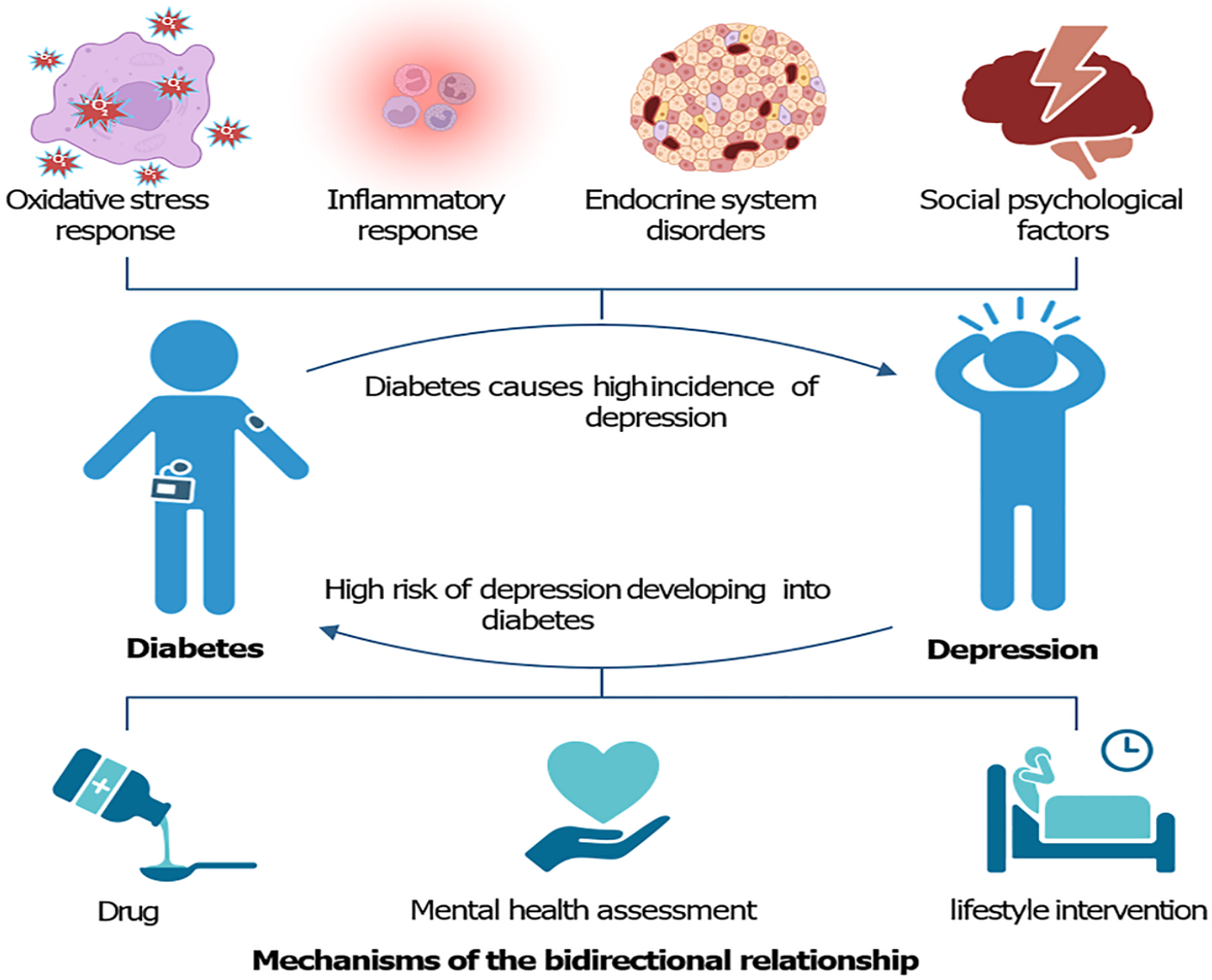



- Diabetes can affect brain structure and function and lead to significant changes in cognition and behavior
- Stroke risk is increased 2-fold
- Depression increases by 60%
- Anxiety increased due to fear of hypoglycemia, management stress, fear of long-term complications

# Diabetes and depression; a bidirectional relationship

World J Psychiatry. Oct 19, 2024; 14(10): 1429-1436

Liu Y, Huang SY, Liu DL, Zeng XX, Pan XR, Peng J. *World J Psychiatry* 2024; 14(10): 1429-1436 [PMID: 39474387 DOI: 10.5498/wjp.v14.i10.1429]




**Mechanisms of the bidirectional relationship**

# Bone Health

**4.11** To reduce the risk of falls and fractures, glycemic management goals should be individualized for people with diabetes at a higher risk of fracture. **C** Prioritize use of glucose-lowering medications that are associated with low risk for hypoglycemia to avoid falls. **B**

**4.12** Advise people with diabetes on their intake of calcium (1,000–1,200 mg/day) and vitamin D to ensure it meets the recommended daily allowance for those at risk for fracture, either through their diet or supplemental means. **B**

**4.13a** Antiresorptive medications and osteoanabolic agents should be recommended for older adults with diabetes who are at higher risk of fracture, including those with low bone mineral density with a T-score ≤ -2.5, history of fragility fracture, or elevated Fracture Risk Assessment Tool score (≥3% for hip fracture or ≥20% for major osteoporotic fracture). **B**

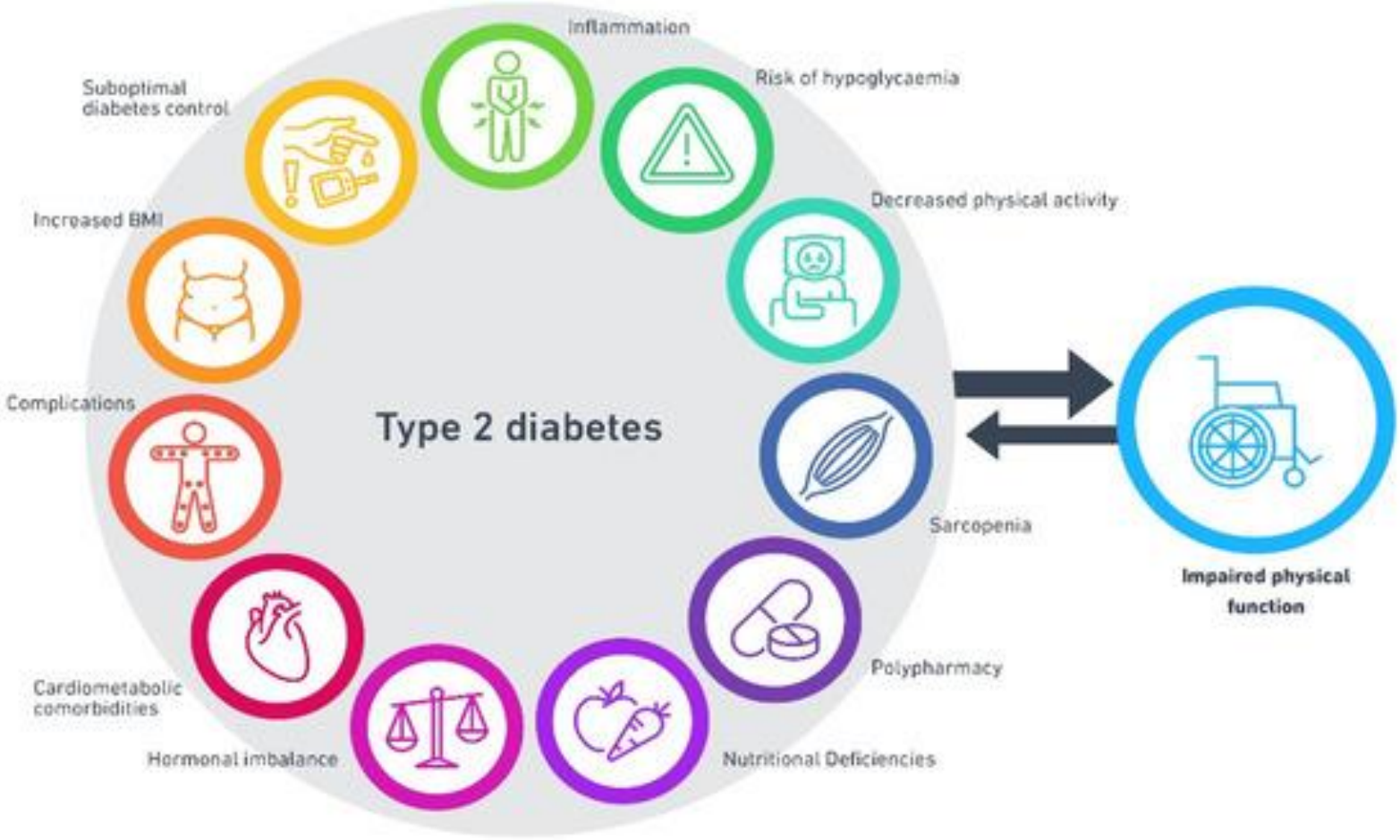
**4.13b** Treatment may be considered for adults with diabetes with a T-score between −2.0 and −2.5 in the presence of additional risk factors for fracture. **C**

## Table 4.4—Diagnostic assessment

| Individuals who should receive BMD testing |
| --- |
| People aged ≥65 years |
| Postmenopausal women and men aged ≥50 years with history of adult-age fracture or with diabetes–specific risk factors:<br>• Frequent hypoglycemic events<br>• Diabetes duration >10 years<br>• Diabetes medications: insulin, thiazolidinediones, sulfonylureas<br>• A1C >8%<br>• Peripheral or autonomic neuropathy, retinopathy, nephropathy<br>• Frequent falls<br>• Glucocorticoid use |

Comprehensive Medical Evaluation and Assessment of Comorbidities:
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S61-S88

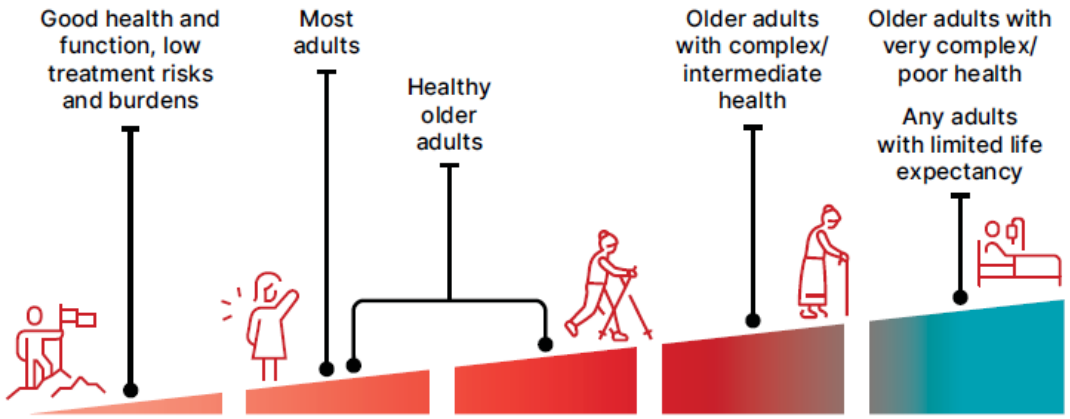
# Mechanisms underpinning impaired physical function in T2D.




*Ahmad, Seargent etal. Diabetology* **2022**, *3*(1), 30-45; **https://doi.org/10.3390/diabetology3010003**

# Learning objectives

- A holistic approach rather than glycemic control; the 4M approach
- Optimal pharmacological management
- Preventing and managing cardiometabolic conditions
- Minimizing hypoglycemia
- The important role of technology




| A1C goals | <6.5% | <7.0% | <7.5% | <8.0% | No A1C goal |
|---|---|---|---|---|---|
| CGM goals TIR: | — | >70% | — | >50% | — |
| • TBR <70 | — | <4% | — | <1% | <1% |
| • TBR <54 | — | <1% | — | <1% | <1% |
| • TAR >180 | — | <25% | — | <50% | Avoid symptomatic hyperglycemia |
| • TAR >250 | — | <5% | — | <10% | |

**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 |

- **Recommendations based on expert consensus**
- **Little evidence in T1D**
- **Prioritize avoidance of hypoglycemia**
- **Don’t consider shared decision making**

**Figure 6.1**
Glycemic Goals, Hypoglycemia, and Hyperglycemic Crises
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S132-S149

# Pharmacologic Therapy

**13.14** Select medications with low risk of hypoglycemia specifically for those with hypoglycemia risk factors. **B**

**13.15** Overtreatment of diabetes is common in older adults and should be avoided. **B**

**13.16a** Deintensify hypoglycemia-causing medications (e.g., insulin, sulfonylureas, or meglitinides) or switch to a medication class with low hypoglycemia risk for individuals who are at high risk for hypoglycemia, using individualized glycemic goals. **B**

**13.16b** Deintensify diabetes medications for individuals for whom the harms and/or burdens of treatment may be greater than the benefits, within individualized glycemic goals. **E**

Older Adults: Standards of Care in Diabetes—2026.
*Diabetes Care* 1 January 2026; 49 (Supplement_1): S277–S296

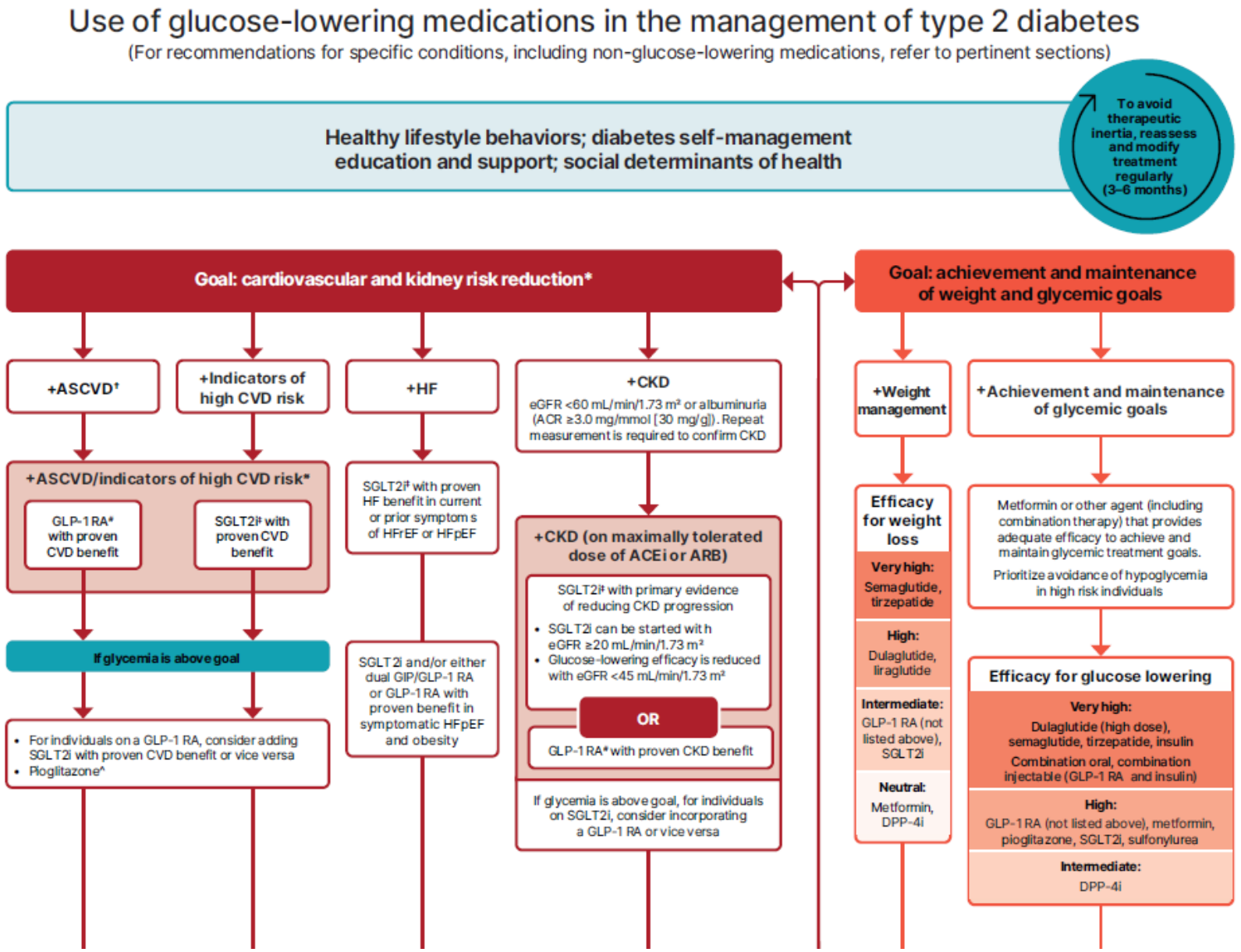
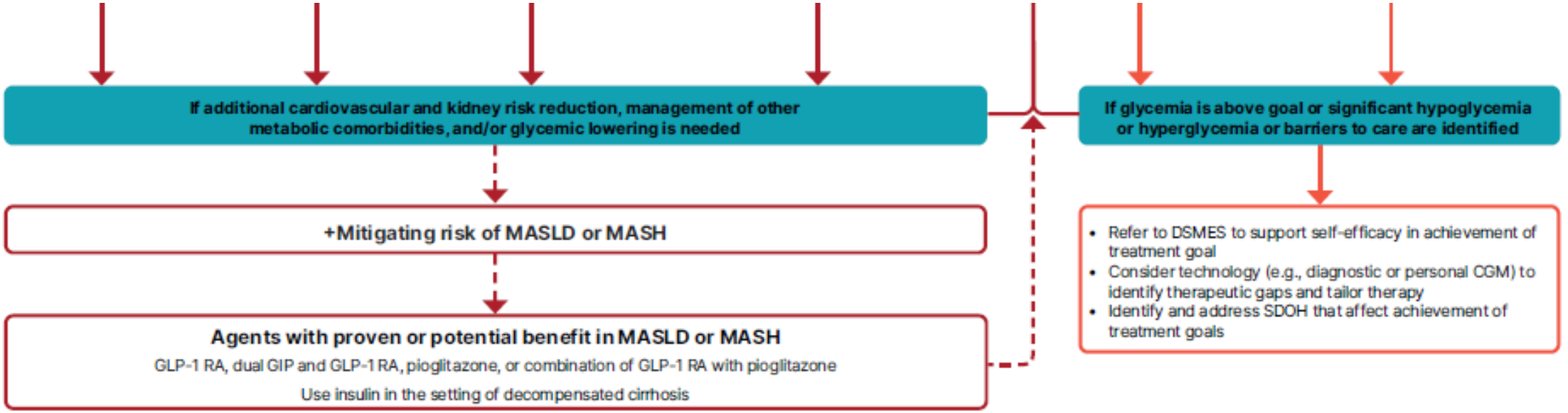



**Figure 9.4**
Pharmacologic Approaches to Glycemic Treatment:
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S183-215




* 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 attainment of glycemic goal.

† 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.

**Figure 9.4 (continued)**
Pharmacologic Approaches to Glycemic Treatment:
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S183-215

# Guidance on Optimal Medication Selection by Clinical Criteria

| | eGFR <30 OR ESRD ON DIALYSIS | | eGFR >30 | | HIGH HYPOGLYCEMIA RISK | END OF LIFE |
|---|---|---|---|---|---|---|
| **Patient Characteristics** | Normal appetite, no weight loss | Frail, anorexia, low body weight | Normal appetite, no weight loss | Frail, anorexia, low body weight | Multiple comorbidities. Tight glycemic control. Hypoglycemia or lack of awareness. Sulfonylurea or insulin. Cognitive impairment.<br>Inconsistent meal intake. | Goals of comfort. Avoidance of hypoglycemia and hyperglycemia |
| **Preferred Medications** | DPP4 inhibitor (linagliptin) GLP1-RA<br>Basal insulin* | DPP4 inhibitor<br>Basal insulin* | Metformin ER<br>DPP4 inhibitors<br>SGLT2 inhibitors<br>GLP1-RA Basal insulin* | DPP4 inhibitors<br>Metfor-min<br>ER basal insulin* | Metformin ER<br>DPP4 inhibitors<br>SGLT2 inhibitors<br>GLP1-RA | DPP4 inhibitors<br>Linagliptin<br>Basal insulin** |

* Use basal insulin if additional glucose lowering or long-term use of basal insulin is needed

** Use basal insulin with caution if patient has symptomatic hypoglycemia

DPP-4, dipeptyl peptidase 4; eGFR, estimated glomerular filtration rate; ER, extended release; ESRD, end-stage kidney disease; GLP1-RA, glucagon-like peptide-1 receptor agonist; SGLT2, sodium glucose transporter 2

Davidson, H. E., Pandya, N et al (2024). Clinical practice guideline for diabetes management in the post-acute and long-term care setting. *Journal of the American Medical Directors Association*, *25*(11), 105342.

# USE OF GLUCOSE-LOWERING MEDICATIONS EARLY IN CARE GOAL: TO MODIFY DISEASE AND PREVENT LONGITUDINAL COMPLICATIONS ASSOCIATED WITH T2D ADA EASD Consensus Oct 2026

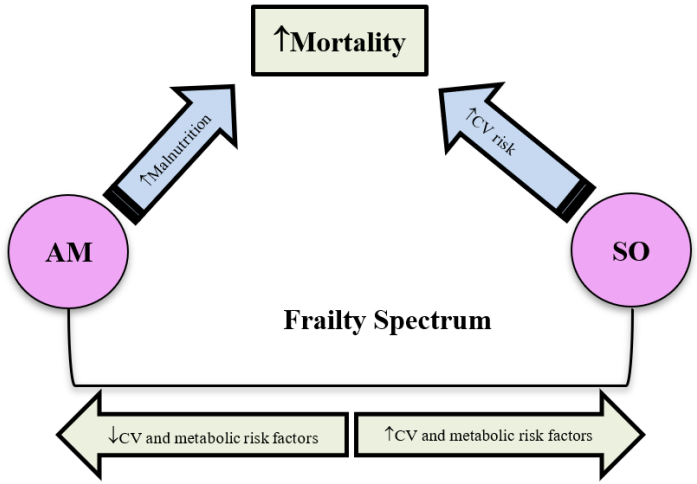
| Phenotype | SGLT2i | GLP1-based therapy |
|---|---|---|
| Glucose-lowering efficacy | + | ++ |
| Weight-lowering efficacy | + | ++ |
| | | |
| ASCVD/high-risk ASCVD | ** | ** |
| CKD | ** | ** |
| HF | | |
| HFrEF | ** | |
| HFpEF | ** | ** |
| MASH/MASLD | * | ** |

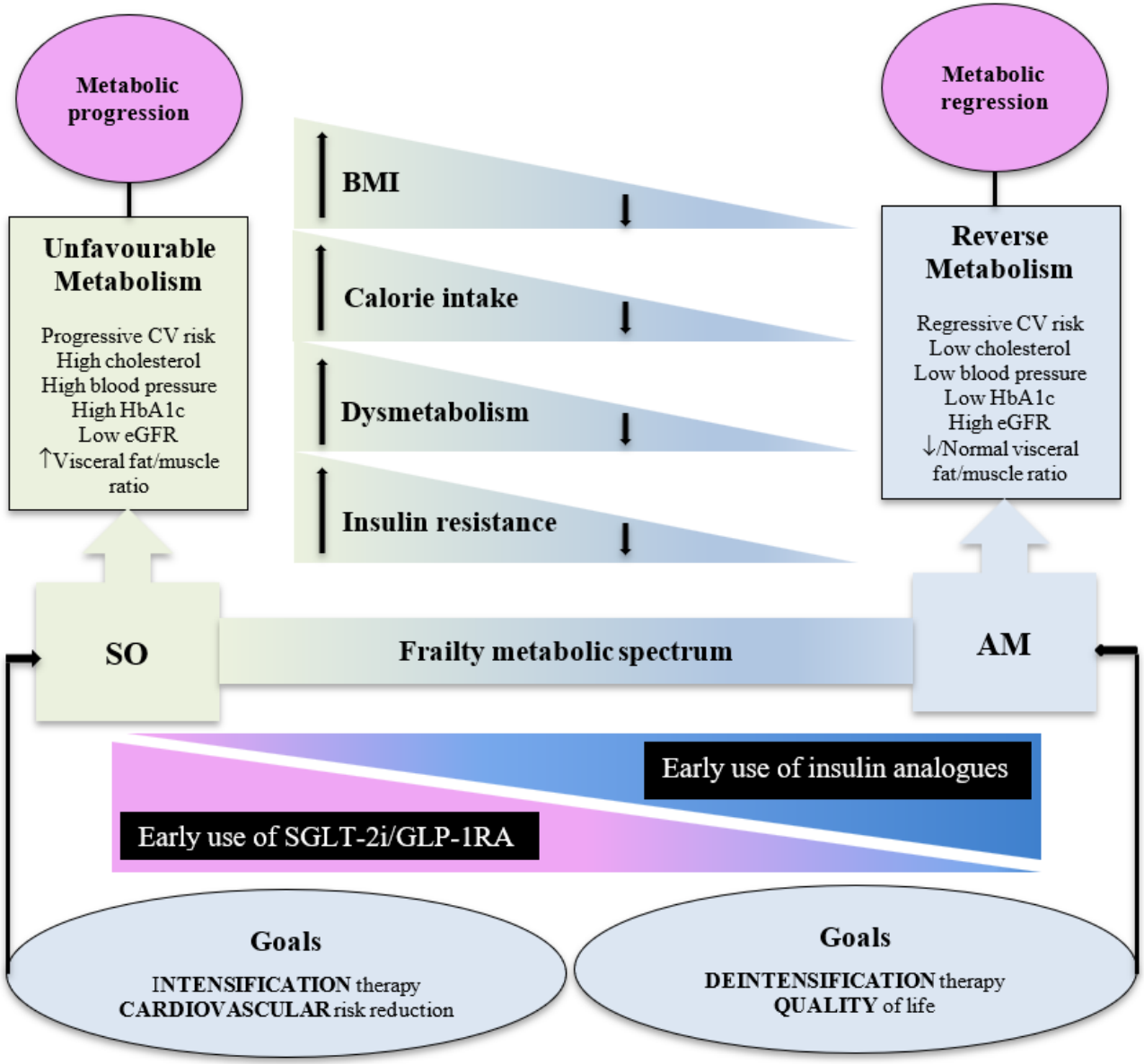
++ Highest efficacy
+ High efficacy
** Outcomes evidence
* Improvement in markers

# The Use of SGLT-2 Inhibitors and GLP-1RA in Frail Older People with Diabetes:

Suggested criteria of frail older people with diabetes who should benefit from the early initiation of the new therapies

Frailty is likely to span across a metabolic spectrum that ranges from a **sarcopenic obesity** (SO) phenotype on the one side (exaggerated CV risk factors) to an **anorexic malnourished** (AM) on the other.



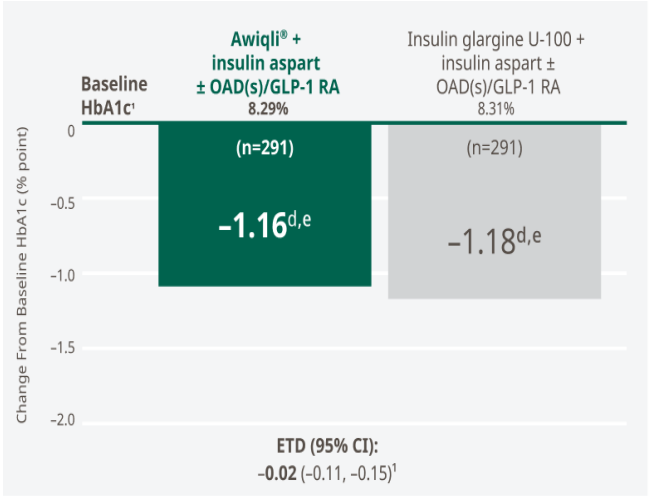

Sinclair, A. J., & Abdelhafiz, A. H. (2025). The use of SGLT-2 inhibitors and *Metabolites*, *15*(1), 49.

# Strategies to Replace SSI in PA LTC Munshi MN, et al. *Diabetes Care*. 2016;39(2)

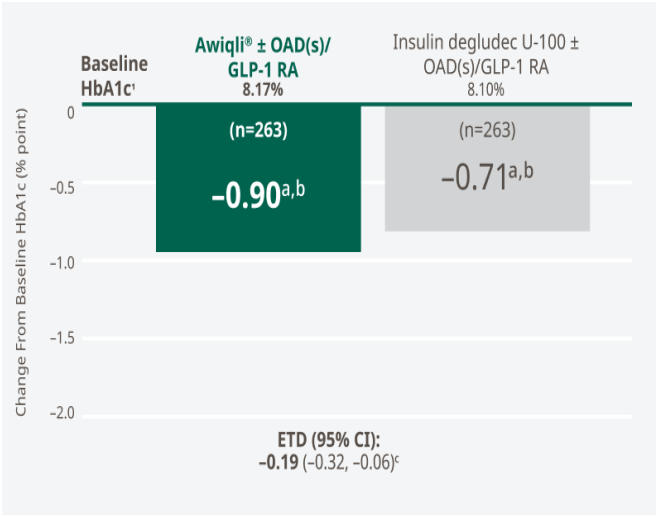
| Current regimen | Suggested steps |
|---|---|
| SSI is the sole mode of insulin treatment | • Give 50-75% of the av. daily insulin requirement over 5-7d as basal insulin<br>• Stop SSI<br>• Use non-insulin agents or fixed dose meal-time insulin for PPG as needed<br>• Give basal insulin in AM to impact post PPG and reduce hypoglycemia. |
| SSI is utilized in addition to scheduled basal insulin | • Add 50-75% of the av. insulin requirement used as SSI to the existing basal dose<br>• Use non-insulin agents or fixed dose meal-time insulin for PPG as needed |
| SSI is utilized in addition to basal and scheduled meal-time insulin (i.e. Correction Dose insulin ) | • If correction dose is required frequently, the average correction dose before a meal may be added to the scheduled meal-time insulin dose at the ***preceding*** meal.<br>• Similarly, if BG is consistently elevated before breakfast requiring correction doses, the **scheduled basal inulin dose could be increased** by the av. correction dose used |
| SSI is used in short term due to irregular intake or illness | • Short term use is generally needed for acute illness and irregular dietary intake<br>• As health and BG stabilize, stop SSI, return to previous regimen as tolerated, and reduce frequency of monitoring |
| Wide fluctuations in BG levels in patients with cognitive decline and/or irregular dietary intake | • Use scheduled basal and meal-time insulin based on individual needs with goal of avoiding low glucose<br>• May use simple scale such as “give 4 units prandial insulin of glucose >300 mg/dl”<br>• Keep patients hydrated when glucose levels are high ( approximately>300 mg/dl) |

# Once weekly basal insulin icodec-abae (Awiqli)700U/mL approved by FDA

- Indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus.
- Mean half-life approximately 1 wk (mean half-life of 196 hours)
- Steady state reached after 2-3 wks with the one-time 50% additional first dose, or 3-4 wks without on-time additional dose[2]




***noninferiority in mean change in HbA1c from baseline as compared with insulin glargine U-100, both in combination with insulin aspart before meals***




***statistically significant reduction in HbA1c compared with once-daily insulin degludec U-100 at week 26***

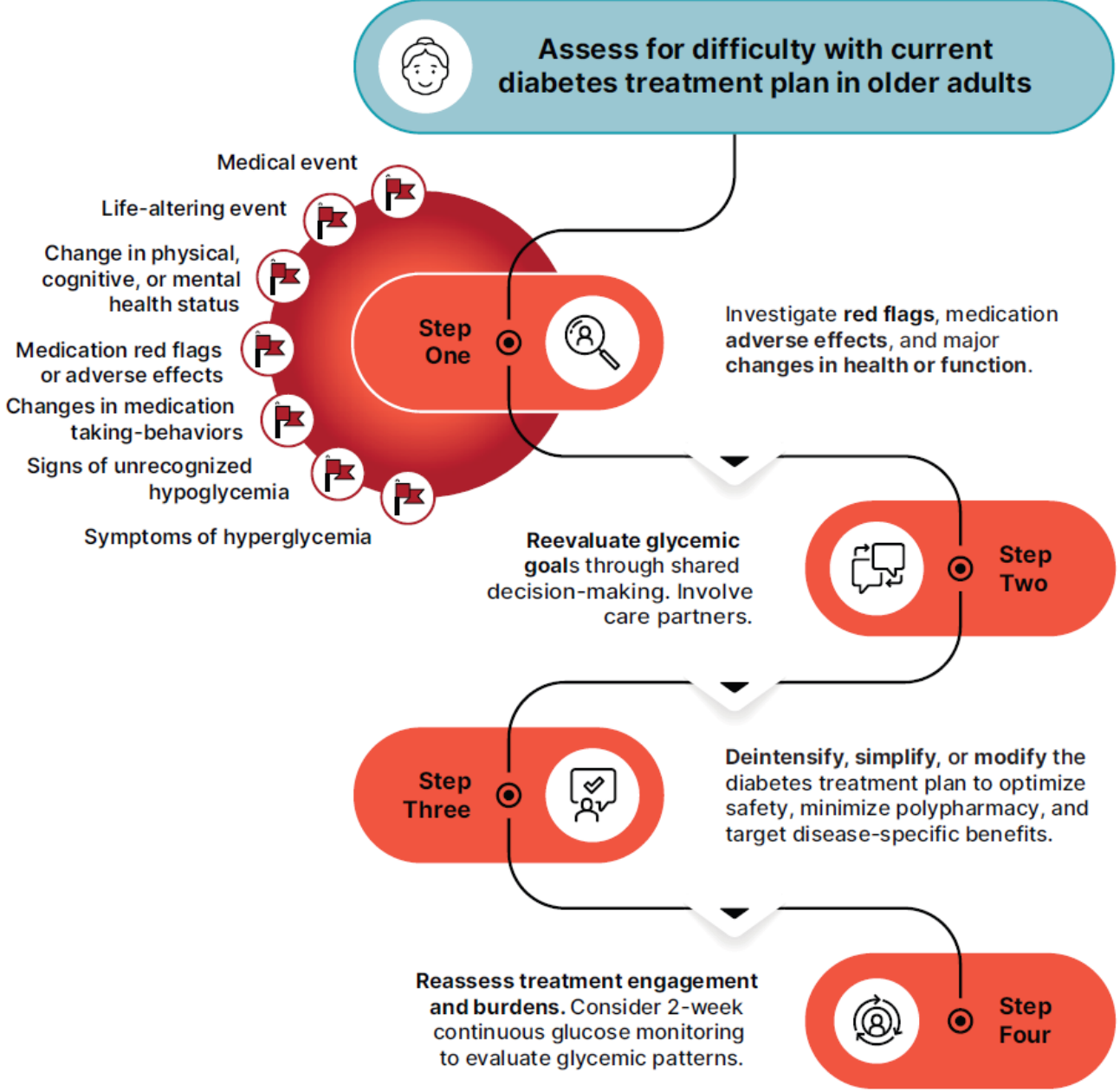



**Figure 13.2**—Stepwise approach for assessing difficulties in the diabetes treatment plan; reevaluating glycemic goals through shared decision-making; deintensifying, simplifying, or modifying the treatment plan; and reassessing the safety and burdens of any interventions. Created using recommendations from Munshi et al. (41).

**Figure 13.2**
Older Adults:
*Standards of Care in Diabetes - 2026 Diabetes Care* 2026;49(Suppl. 1):S277-S296

# Learning objectives

- A holistic approach rather than glycemic control; the 4M approach
- Optimal pharmacological management
- **Preventing and managing cardiometabolic conditions**
- Minimizing hypoglycemia
- The important role of technology

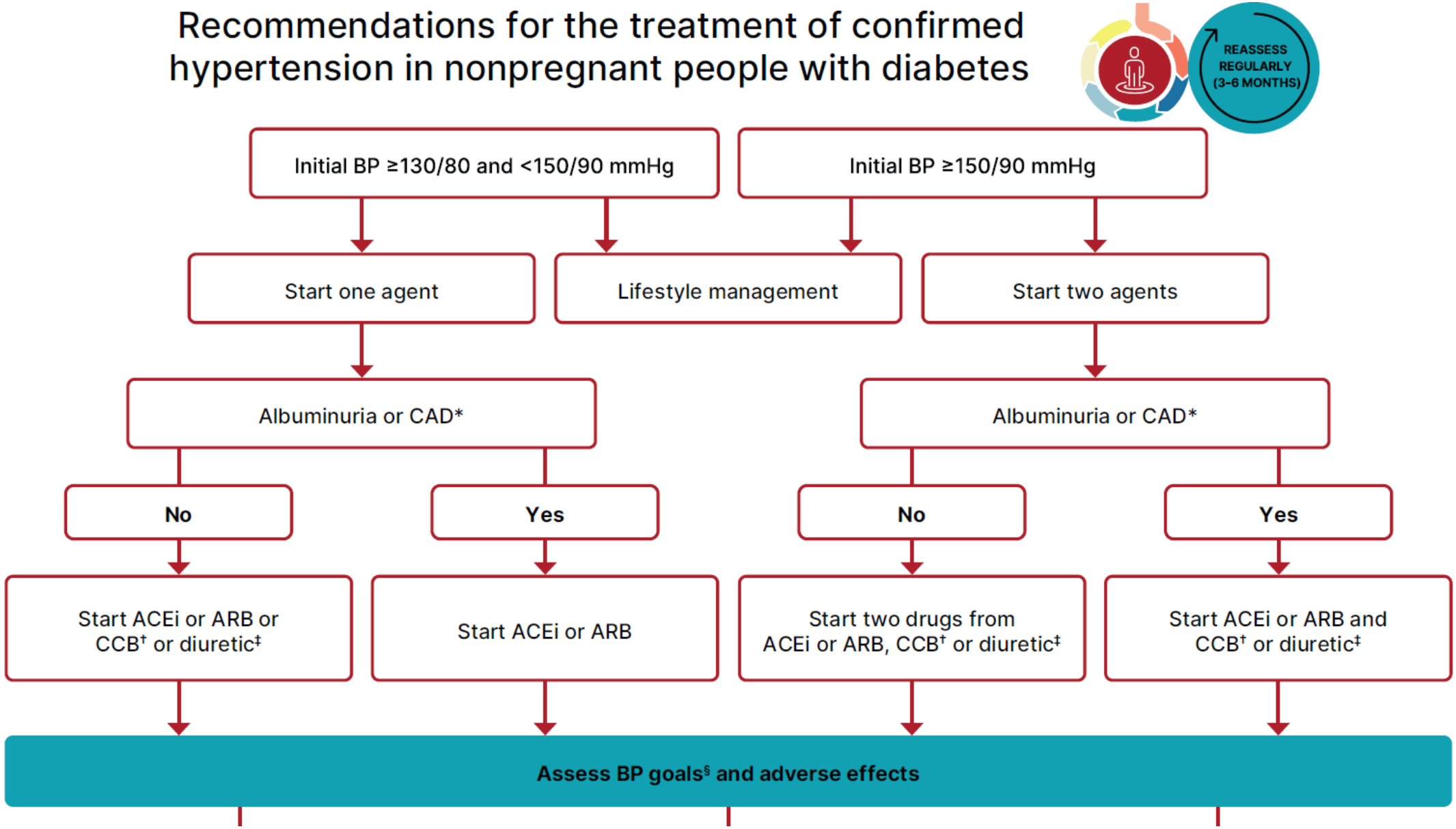



**Figure 10.2**
Cardiovascular Disease and Risk Management:
*Standards of Care in Diabetes - 2026 Diabetes Care* 2026;49(Suppl. 1):S216-S245

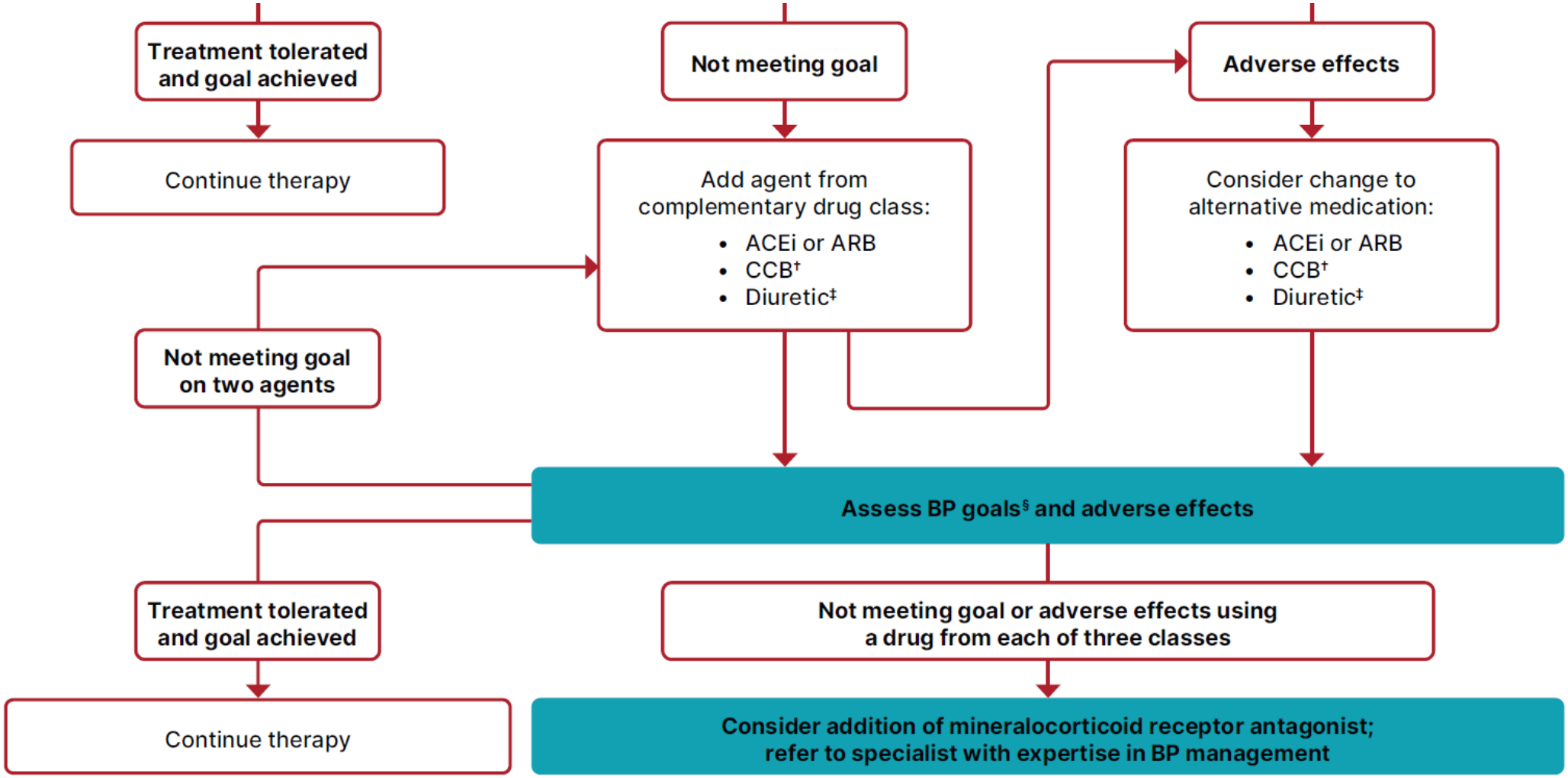



**Figure 10.2 (continued)**
Cardiovascular Disease and Risk Management:
*Standards of Care in Diabetes - 2026 Diabetes Care* 2026;49(Suppl. 1):S216-S245

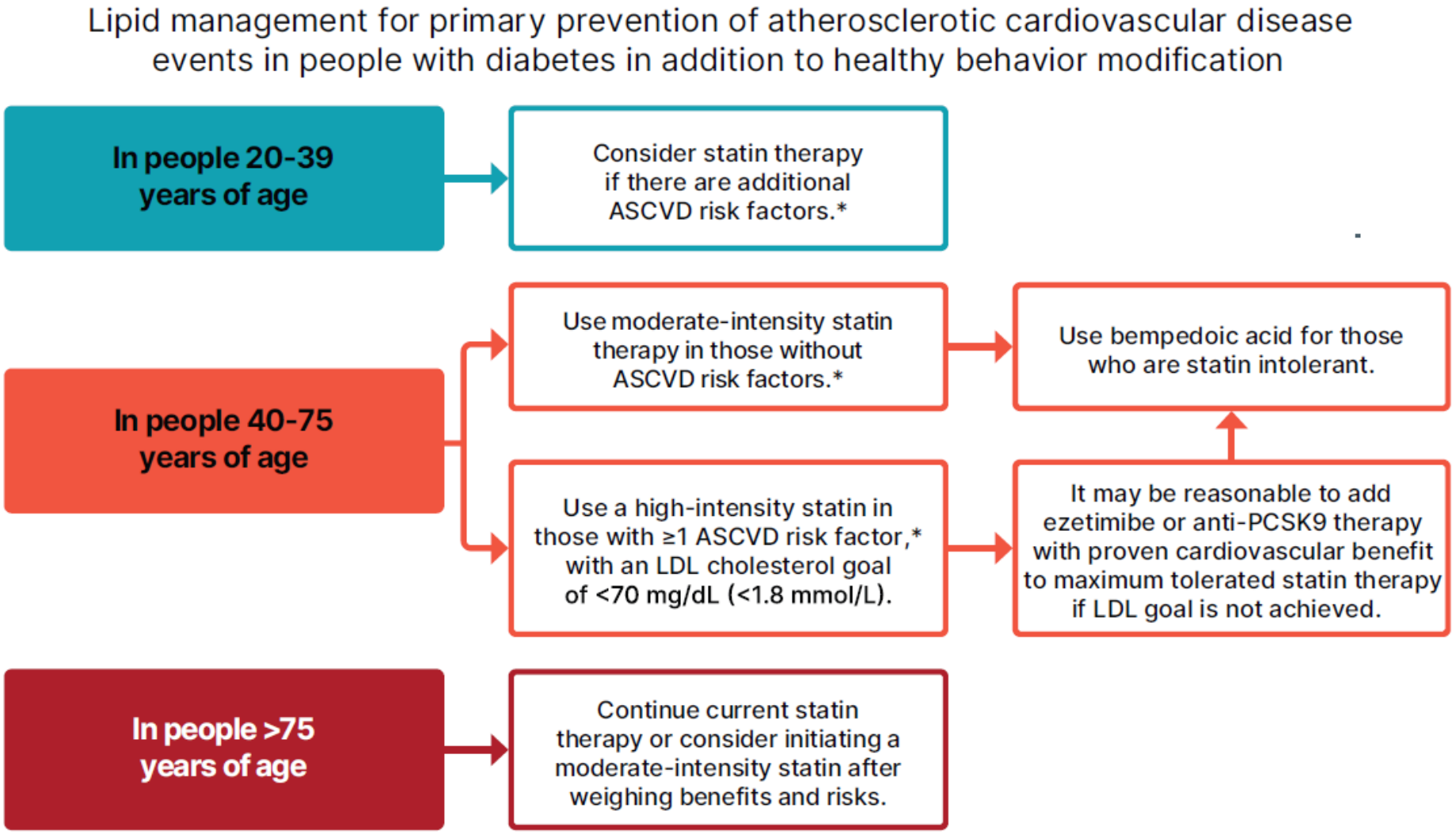



**Figure 10.3**—Recommendations for primary prevention of atherosclerotic cardiovascular disease (ASCVD) in people with diabetes using cholesterol-lowering therapy. *ASCVD risk factors include older age, hypertension, dyslipidemia, smoking, chronic kidney disease, or obesity. Adapted from "Standards of Care in Diabetes—2024 Abridged for Primary Care Professionals" (315).

**Figure 10.3**
Cardiovascular Disease and Risk Management:
*Standards of Care in Diabetes - 2026 Diabetes Care* 2026;49(Suppl. 1):S216-S245

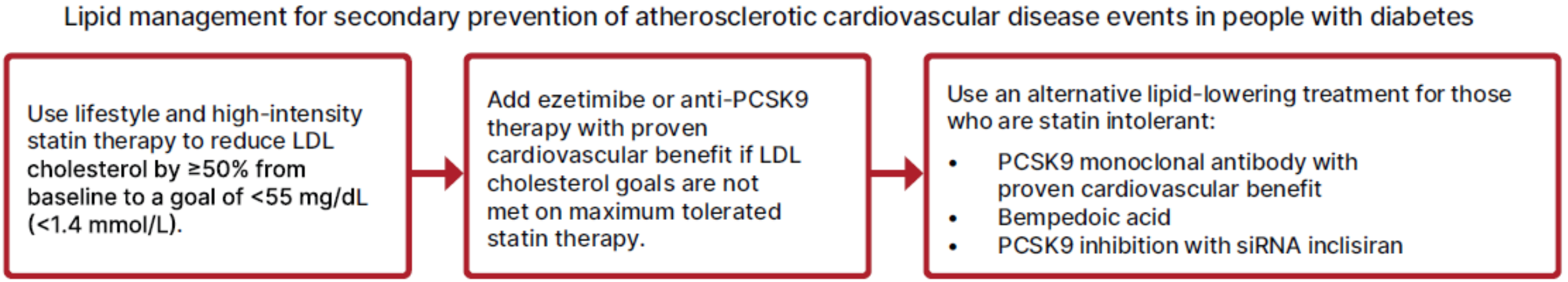



**Figure 10.4**—Recommendations for secondary prevention of atherosclerotic cardiovascular disease (ASCVD) in people with diabetes using cholesterol-lowering therapy. Adapted from "Standards of Care in Diabetes—2024 Abridged for Primary Care Professionals" (315).

**Figure 10.4**
Cardiovascular Disease and Risk Management:
*Standards of Care in Diabetes - 2026 Diabetes Care* 2026;49(Suppl. 1):S216-S245

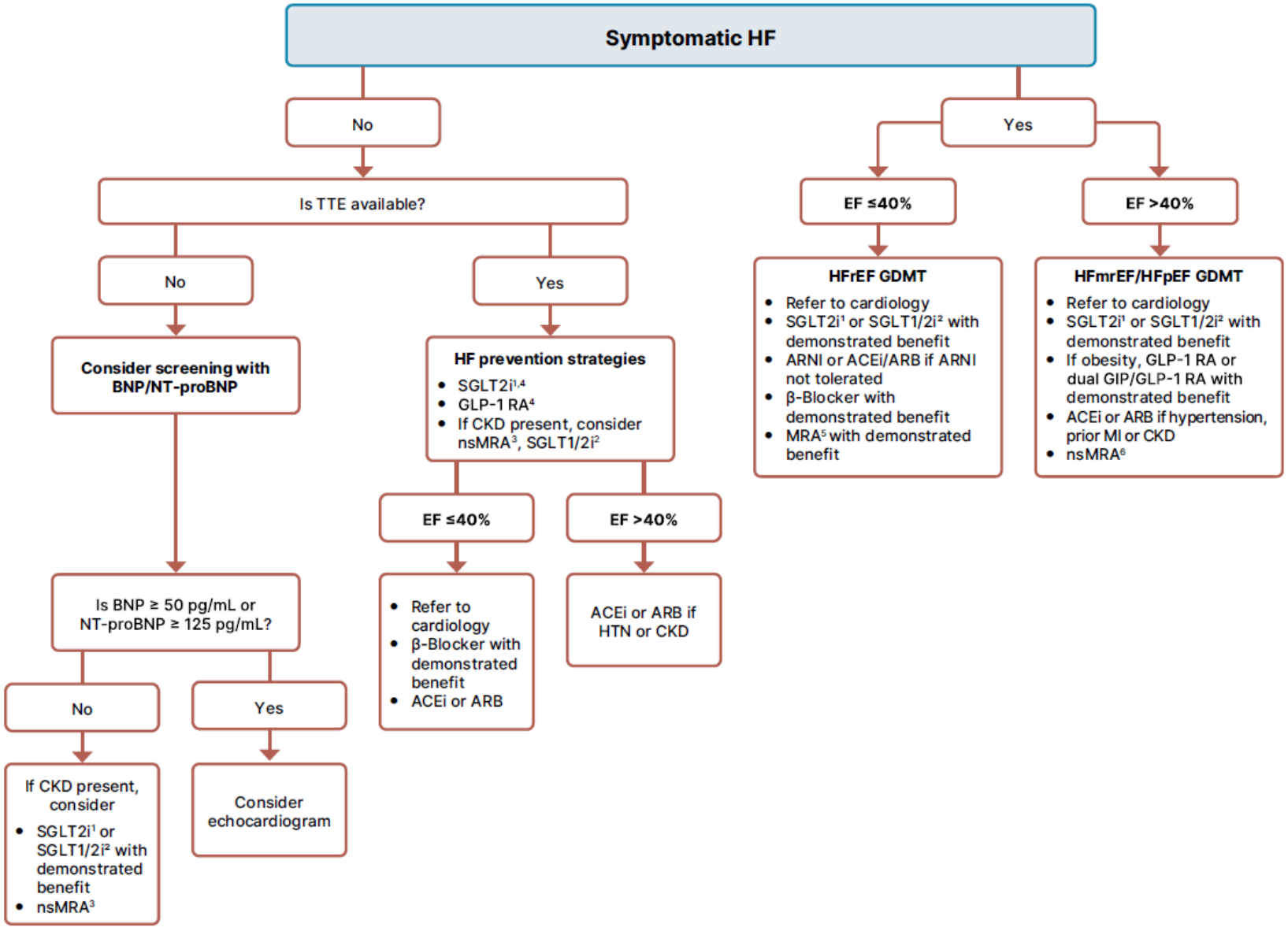



**Figure 10.5**
Cardiovascular Disease and Risk Management:
*Standards of Care in Diabetes - 2026 Diabetes Care* 2026;49(Suppl. 1):S216-S245

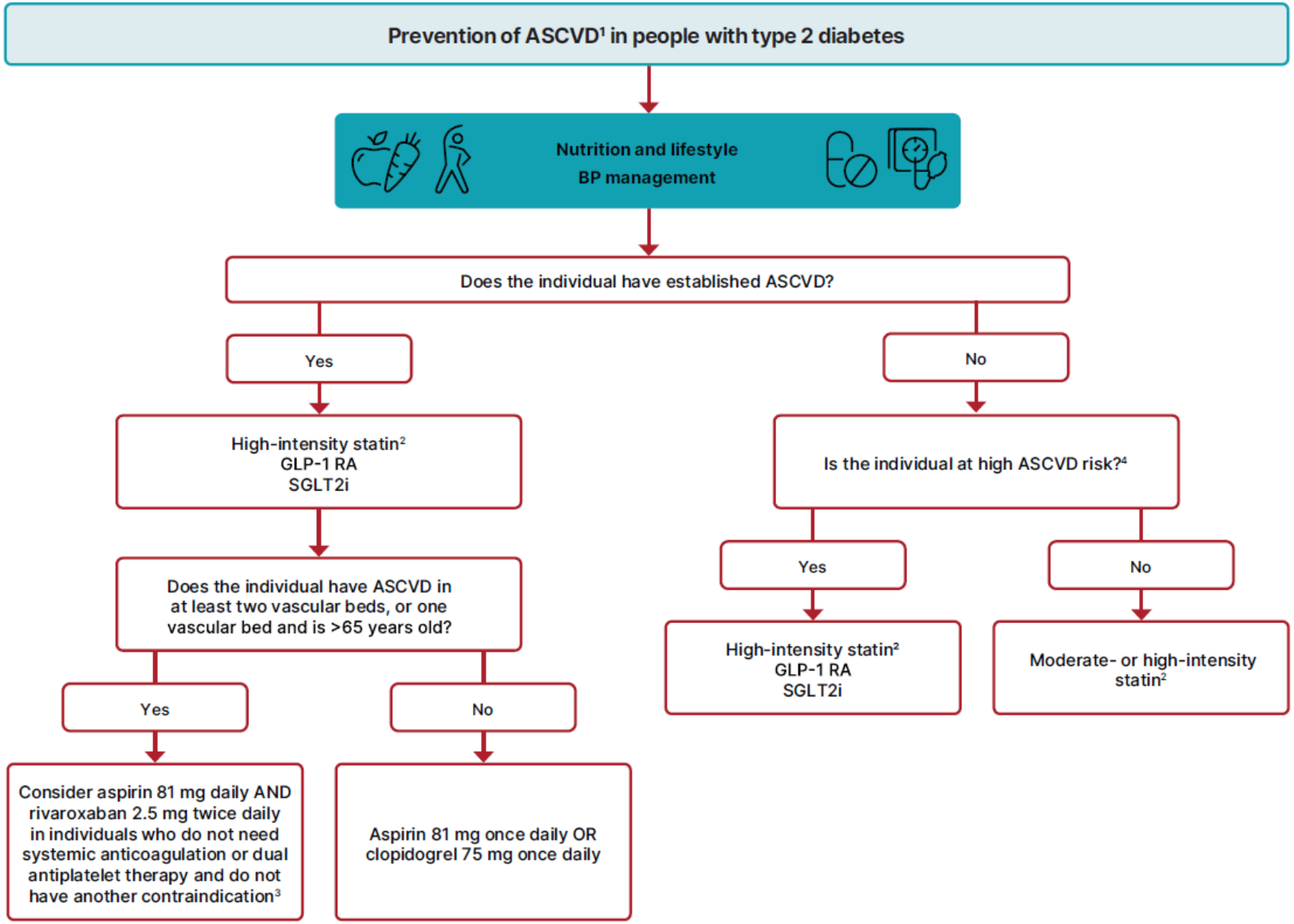



**Figure 10.6**
Cardiovascular Disease and Risk Management:
*Standards of Care in Diabetes - 2026 Diabetes Care* 2026;49(Suppl. 1):S216-S245

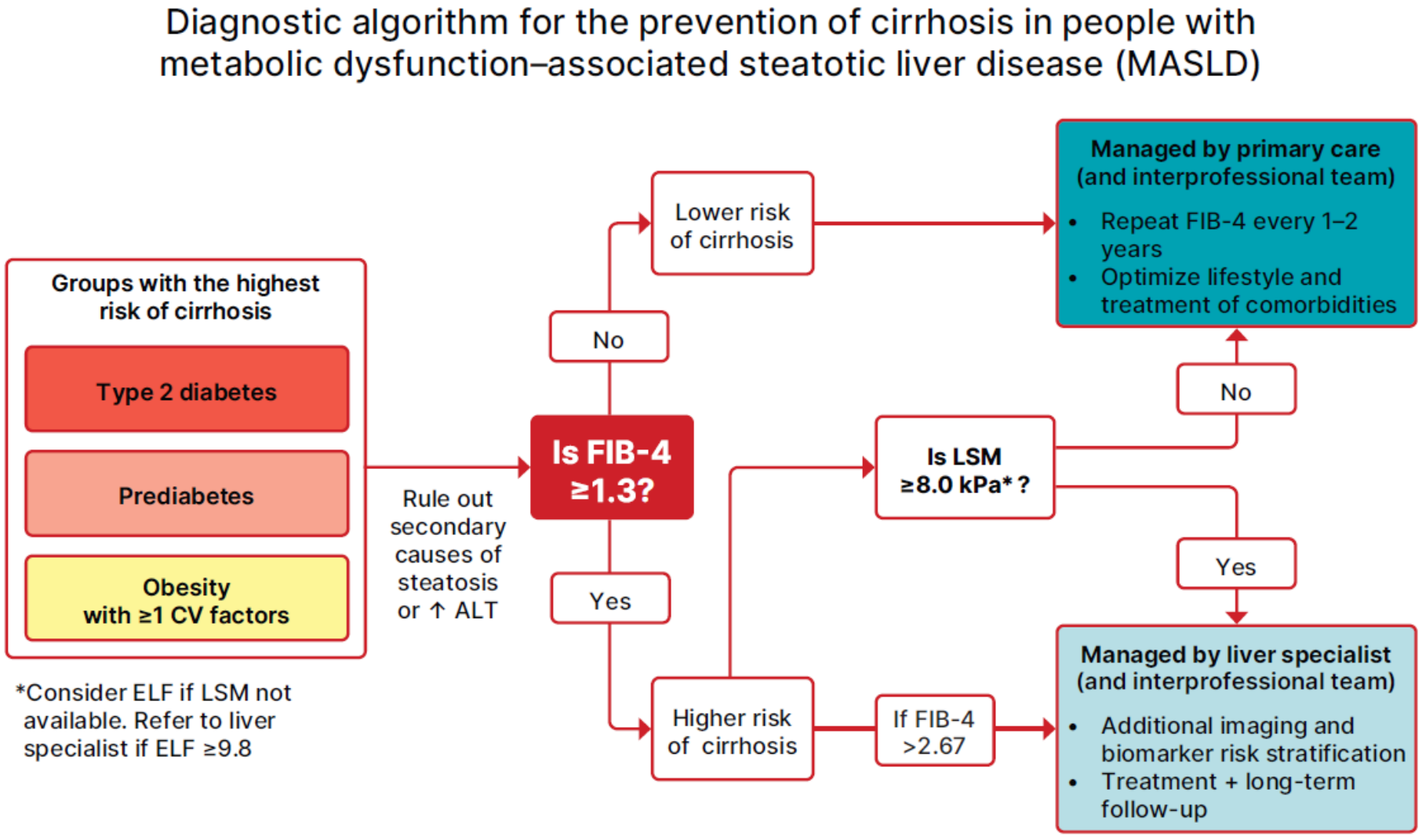
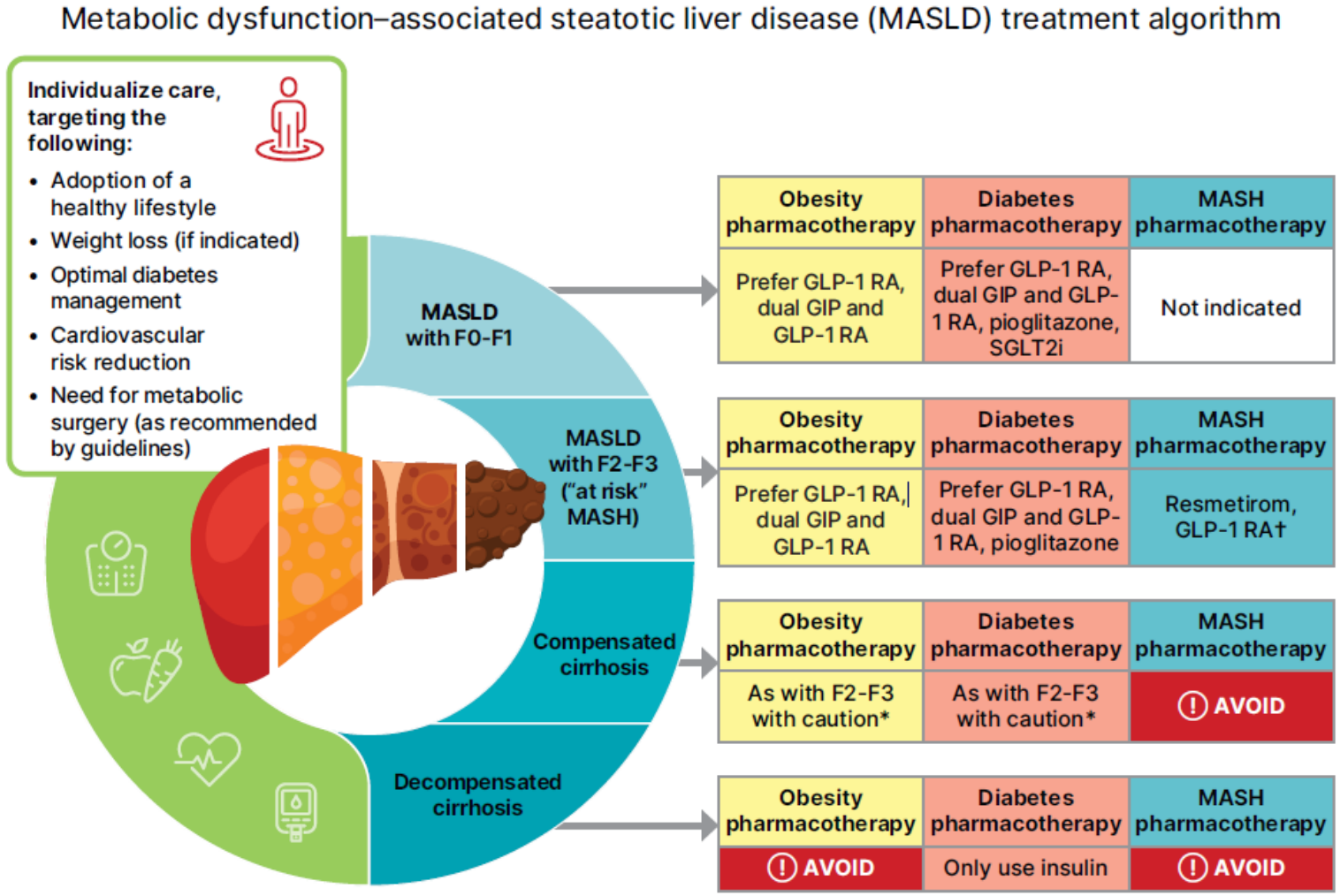



**Figure 4.2**—Diagnostic algorithm for risk stratification and the prevention of cirrhosis in individuals with metabolic dysfunction-associated steatotic liver disease (MASLD). CV, cardiovascular; ELF, enhanced liver fibrosis test; FIB-4, fibrosis-4 index; LSM, liver stiffness measurement, as measured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

**Figure 4.2**
Comprehensive Medical Evaluation and Assessment of Comorbidities:
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S61-S88




† Only semaglutide among GLP-1 RAs has been approved by the FDA for treatment of MASH.
* Individualized care and close monitoring needed in compensated cirrhosis given limited safety data available.

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

**Figure 4.3**
Comprehensive Medical Evaluation and Assessment of Comorbidities:
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S61-S88

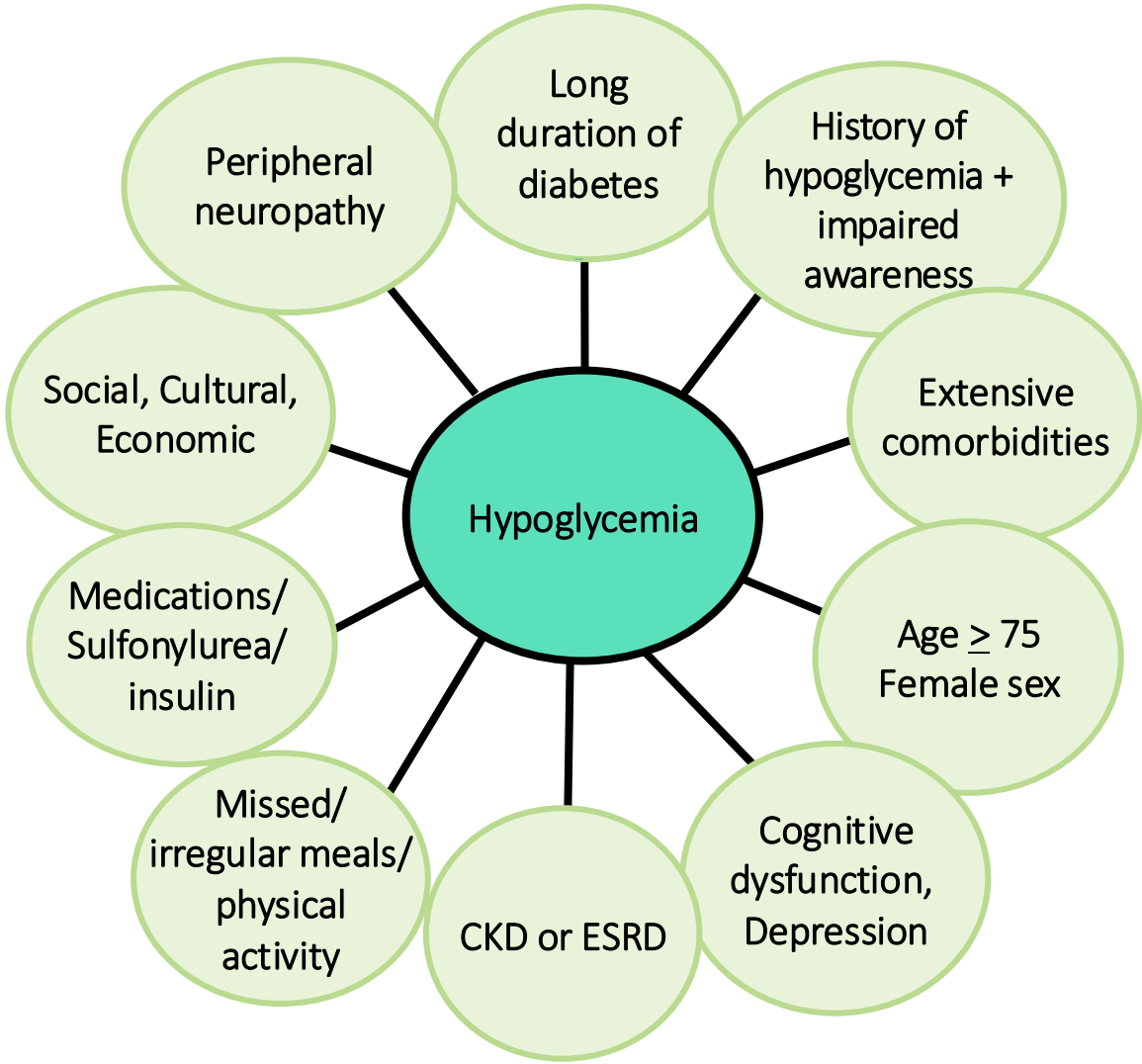
# Learning objectives

- A holistic approach rather than glycemic control; the 4M approach
- Optimal pharmacological management
- Preventing and managing cardiometabolic conditions
- **Minimizing hypoglycemia**
- The important role of technology

# Risk factors for hypoglycemia

Presenting symptoms may be neuroglycopenic rather than adrenergic

**Hypoglycemia ⟺ Cognitive Impairment**





Abdelhafiz AH, et al. Aging Dis.,2015;6(2):156–67.
Munshi M, Kahkoska AR, Neumiller JJ, et al. *Lancet Diabetes Endocrinol* 2025 Feb 17;
ADA Professional Practice Committee. *Diabetes Care* 2025;48(Suppl. 1):S266-S282.
McCoy RG, et al. *BMJ Open Diabetes Res Care* 2020;8(1):e001007.

## Table 6.4—Classification of hypoglycemia

| | Glycemic criteria/description |
|---|---|
| Level 1 | Glucose <70 mg/dL (<3.9 mmol/L) and ≥54 mg/dL (≥3.0 mmol/L) |
| Level 2 | Glucose <54 mg/dL (<3.0 mmol/L) |
| Level 3 | A severe event characterized by altered mental and/or physical status requiring assistance for treatment of hypoglycemia, irrespective of glucose level |

Adapted from Agiostratidou et al. (71).

**Table 6.4**
Glycemic Goals, Hypoglycemia, and Hyperglycemic Crises
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S132-S149

# Hypoglycemia-stronger recommendations for CGM

**13.4** Ascertain and address episodes of hypoglycemia at routine visits because older adults with diabetes have a greater risk of hypoglycemia, especially when treated with hypoglycemic agents (e.g., sulfonylureas, meglitinides, and insulin). **B**

**13.5** Recommend continuous glucose monitoring (CGM) for older adults with type 1 diabetes **A** and type 2 diabetes on insulin therapy **B** to improve glycemic outcomes, reduce hypoglycemia, and reduce treatment burden.

CGM should be considered in people living with type 2 diabetes, especially those on insulin (ADA , EASD consensus 2026)

**13.6** Consider the use of automated insulin delivery systems **B** and other advanced insulin delivery devices such as connected pens **E** to reduce risk of hypoglycemia for older adults, based on individual ability and support system.

| Table 6.8—Risk factors for hyperglycemic crises |
| --- |
| Type 1 diabetes/absolute insulin deficiency |
| Younger age |
| Prior history of hyperglycemic crises |
| Prior history of hypoglycemic crises |
| Presence of other diabetes complications |
| Presence of other chronic health conditions (particularly in people with type 2 diabetes) |
| Presence of behavioral health conditions (e.g., depression, bipolar disorder, and eating disorders) |
| Alcohol and/or substance use |
| High A1C level |
| Insulin rationing |
| SGLT2 (SGLT1/2) inhibitor use |
| Social determinants of health |

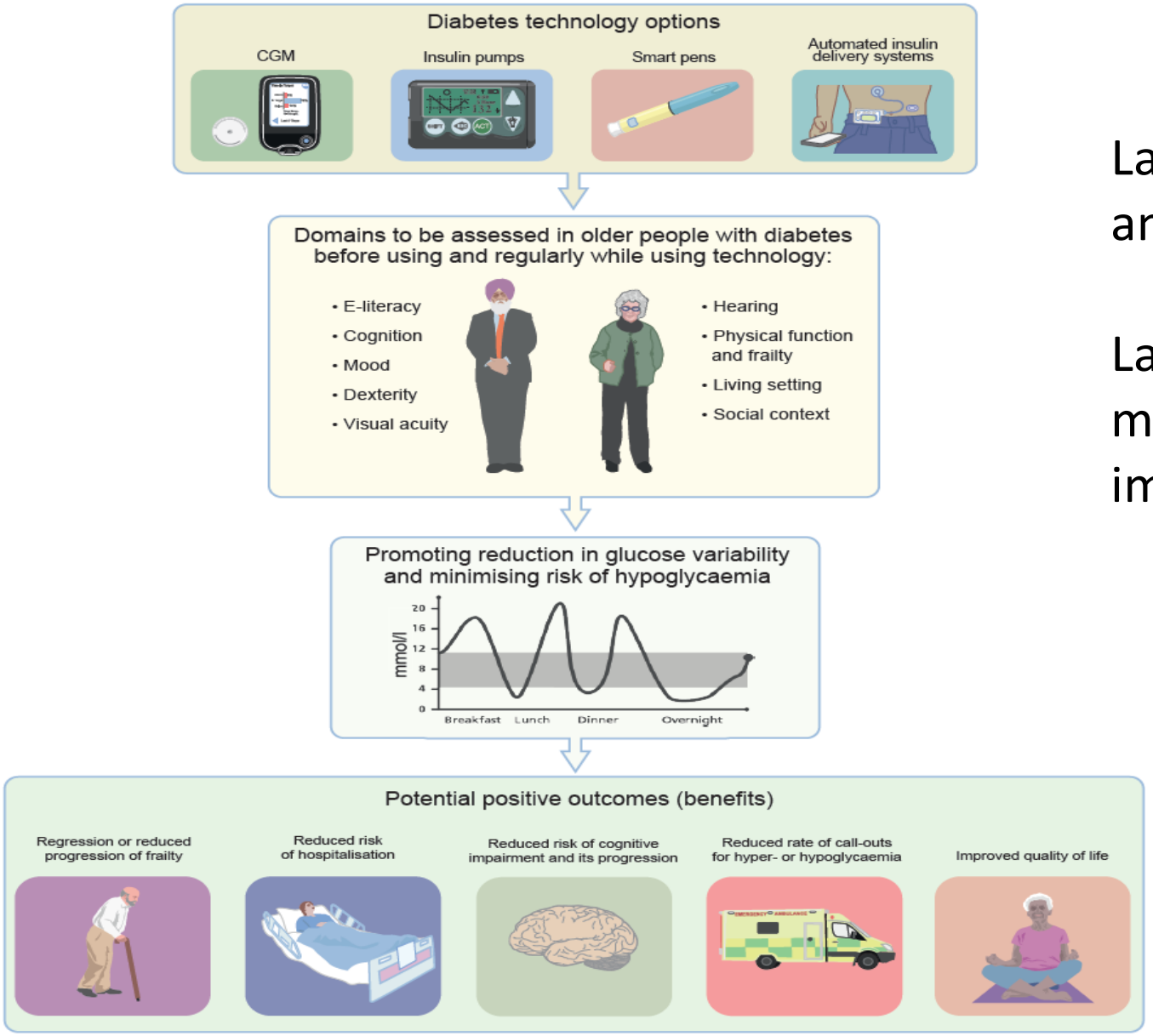
SGLT, sodium–glucose cotransporter. Data are from McCoy et al. (194), Gibb et al. (195), Randall et al. (196), Thomas et al. (197), and Borden et al. (198).

**Table 6.8**
Glycemic Goals, Hypoglycemia, and Hyperglycemic Crises
*Standards of Care in Diabetes - 2026. Diabetes Care* 2026;49(Suppl. 1):S132-S149

# Learning objectives

- A holistic approach rather than glycemic control; the 4M approach
- Optimal pharmacological management
- Preventing and managing cardiometabolic conditions
- Minimizing hypoglycemia
- The important role of technology

# Benefits of technology in older people with diabetes




Lack of studies in adults aged 70 and older

Lack of many studies in complex multimorbid, functionally impaired people (and PALTC

Maltese et al (2024) Diabetologia DOI 10.1007/s00125-024-06240-2

# Education and Evaluation for use of Diabetes Technology in PALTC

**13.18 Recommend diabetes education/training (including that for CGM devices, insulin pumps, and advanced insulin delivery systems) for the staff of long-term care and rehabilitation facilities to improve the management of older adults with diabetes. E**

**13.19 People with diabetes residing in long-term care facilities need careful assessment of mobility, mentation, medications, and management preferences to establish individualized glycemic goals and to make appropriate choices of glucose-lowering agents and devices (including CGM devices**, insulin pumps, and advanced insulin delivery systems) based on their clinical and functional status. **E**

**Practitioners and nursing leadership need training in interpretating CGM reports, responding to alarms and glucose trends, and documenting in the medical record**

Older Adults: Standards of Care in Diabetes—2026.

*Diabetes Care* 1 January 2026; 49 (Supplement_1): S277–S296

## Key barriers to the use of technology in older people.

Maltese, G., McAuley, S. A., Trawley, S., & Sinclair, A. J. (2024). *Diabetologia*, *67*(10), 2085-2102.

# What do we know already about CGM?

- **DIAMOND trial** (T1 and T2 D)- 0.4% reduction in $HbA_{1c}$, a reduction in glycemic variability and time spent >250 mg/dL, and an increase in TIR compared with the BGM arm
- **WISDM trial** (T1D)- 90% reduction in incident severe hypoglycemic events; reduction in the incidence of BG values < 70 mg/dL and < 54 mg/dL as well as a reduction in BG values > 300 mg/dL and an increase in TIR.
- CGM can detect hypoglycemia, <70 mg/dL (40.2% vs 14%), and <54 mg/d (21% vs 1%) and hyperglycemia >250 mg/dL (77% vs 56%) more frequently that POC monitoring CGM-Guided Insulin Administration in LTC, Thaer et al. JAMDA, Volume 25,Issue 5, 884 - 888
- CGM is acceptable in dementia patients (usability, comfort, and helpful for care partners (N=12) Mattishent, K., Lane, K., Salter, C., Dhatariya, K. et al (2019). CGM in older people with diabetes and memory problems: a mixed-methods feasibility study in the UK. *BMJ open*, *9*(11)
- The use of rtCGM is safe and effective in guiding insulin therapy in patients with T2D in LTCF resulting in a similar improvement in glycemic control compared to POC-guided insulin adjustment. Continuous Glucose Monitoring-Guided Insulin Administration in LTC, Thaer et al. JAMDA, Volume 25, Issue 5, 884 - 888

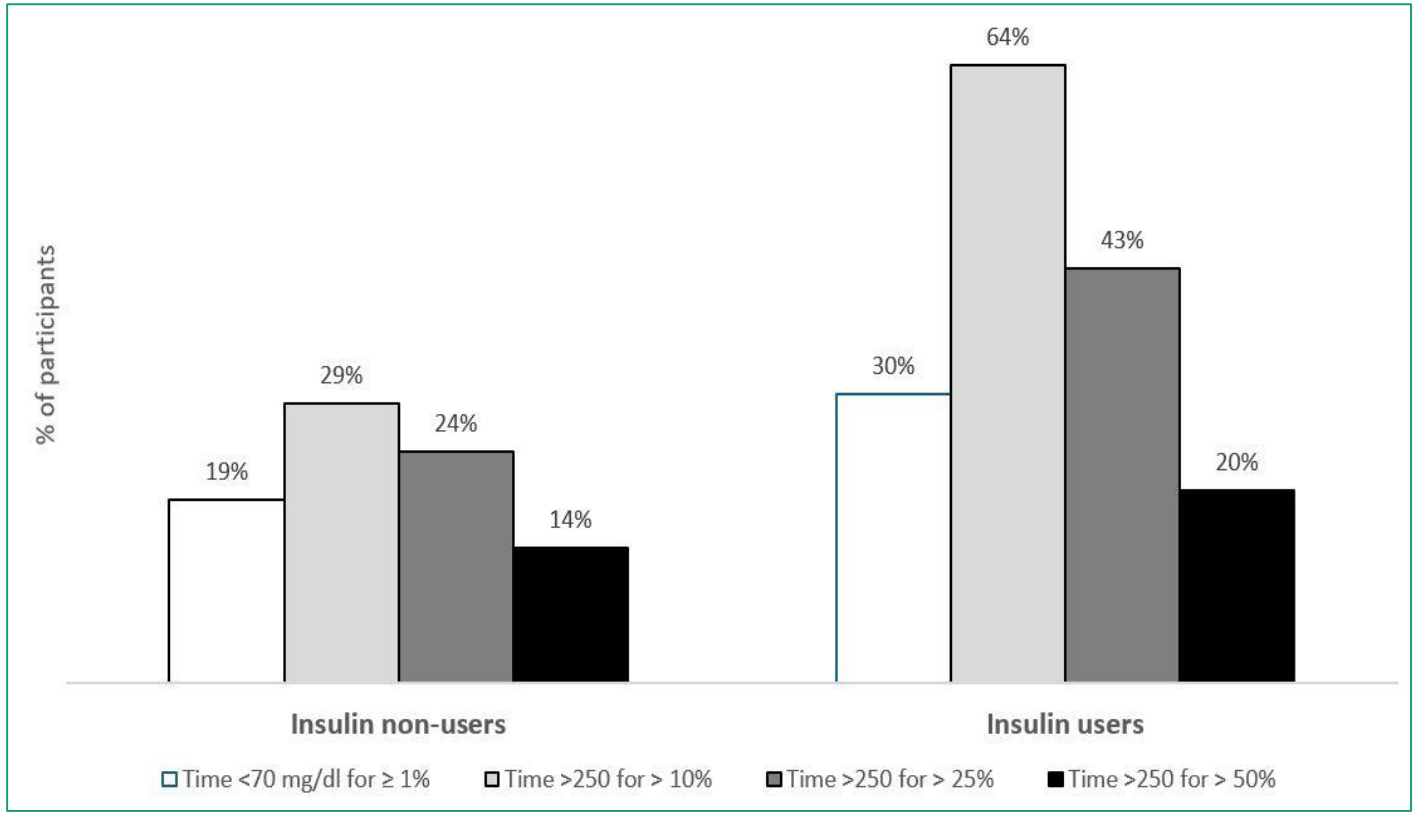
# Benefits, use, and barriers to use of CGM and AID in older adults with T1D

AR Kahkoska, JN Neumiller. et al. Diabetes Care 2026;49(4):559–570 |

| Diabetes technology | Benefits | Use | Potential barriers |
|---|---|---|---|
| CGM | Reduced time spent hyperglycemia and hypoglycemia<br><br>Patient-reported benefits sense of safety and confidence | Less frequent in older adults relative to younger adults | Variability in amount of training required and challenges learning to integrate technology<br><br>Other barriers: cognitive barriers, functional impairments, dexterity/mobility, care partner support, technologic literacy, personal preferences |
| AID | Reduced hypoglycemia<br><br>Reduced hyperglycemia, glycemic variability, and A1C (including for MCI patients)<br><br>Reduced diabetes distress | Limited published data on prevalence of use in different age-groups | Key barriers: cost, usability, sensor accuracy, alarms<br><br>Lack of familiarity in acute care and PALTC settings |

# Excessive burden of hyperglycemia along with hypoglycemia in long term care facilities identified by continuous glucose monitoring

Masked CGM study in 8 midwestern nursing homes in 65 residents
Mean age 65y
68% of the cohort used insulin
64% was on non-insulin agents (11% on sulfonylurea).




Munshi, M. N., Slyne, C., Adam, A., Krakoff, N., Brabant, H., Savory, M., ... & Toschi, E. (2025). *Journal of the American Medical Directors Association*, *26*(6), 105590.

# Operationalizing Health Status–Based Glycemic Targets

## *Simplification: recommendations and strategies*

| Recommendations | Strategies |
|---|---|
| Avoid problem-solving | **Avoid** carbohydrate counting, sliding scales, or correction factor calculations.<br><br>**Provide:** fixed doses for small or large meals and fixed correction dose only at mealtime.<br><br>Pattern management done by clinicians or caregivers instead of patients. |
| Decrease treatment burden | **No correction doses between meals**, for snacks, or at bedtime.<br><br>Check availability of caregivers for assisting with monitoring, injections, or reminders for meals and insulin doses |
| Emphasize “non-reactive behavior” | CGM high alarm: very high or OFF to avoid reactive insulin dosing.<br><br>CGM low alarm: increase threshold of low alarm to ***avoid even mild hypoglycemia*** and reactive eating. |

Modified from Toschi et al. Diabetes Technol Ther 2026

# Discussion

pandya@nova.edu