

In January 2025, the American Diabetes Association released an annual update to the “Standards of Care in Diabetes” guidelines, with changes including CGM monitoring, new screening for Type 1 diabetes, and potential GLP-1 cardiovascular and kidney protection.<sup>1</sup> Like the June 2013 ADA/EASD statement advocating for a patient-centered approach to management of hyperglycemia in patients with type 2 diabetes, the 2025 ADA update continues to support and expand on the importance of patient-centered, individualized, and risk-based care.<sup>2</sup> The latest update also addresses routine mental health screening, guidance on medication shortages, affordability, and lifestyle recommendations related to nutrition, sleep, and resistance training. The following guidance is summarized and slightly edited for clarity

## Diabetes Technology & Screening

- Continuous Glucose Monitoring (CGM) & Automated Insulin Delivery (AID):
  - Recommended for all patients with diabetes type 1, appropriate patients with diabetes type 2, and at high-risk patients with pre-diabetes, as early as the time of diagnosis.
  - Especially beneficial for pregnant patients with type 1 or other pregnancy-associated diabetes.
  - At least once daily glucose checks are still recommended for insulin users to reduce hypoglycemia risk.
- Autoantibody-based Screening:
  - Recommended for presymptomatic type 1 diabetes patients with a family history.
  - Enables early interventions like immunotherapy, close monitoring, reducing life-threatening diabetic ketoacidosis, and early education.

## Atherosclerotic Cardiovascular Disease (ASCVD)

- GLP-1 RA and SGLT2i:
  - Recommended as initial or add-on therapy regardless of A1C in patients with type 2 diabetes and established/high-risk ASCVD.
  - Aids in glycemic control and cardiovascular risk reduction.

## Heart Failure (HF)

- SGLT2 inhibitors:
  - Recommended for type 2 diabetes patients with HFrEF or HFpEF.
  - Helps glycemic control and prevents HF hospitalizations.
- GLP-1 receptor agonists (GLP-1 RA):
  - Recommended for type 2 diabetes patients with symptomatic HFpEF and obesity.
  - Helps glycemic control and reduces HF symptoms.

## Chronic Kidney Disease (CKD)

- GLP-1 RA and SGLT2i:
  - Recommended for glycemic control, slowing the progression of kidney disease, and CV risk reduction in type 2 diabetes with CKD.
  - GLP-1 RA preferred in advanced CKD (eGFR <30 mL/min/1.73 m<sup>2</sup>).

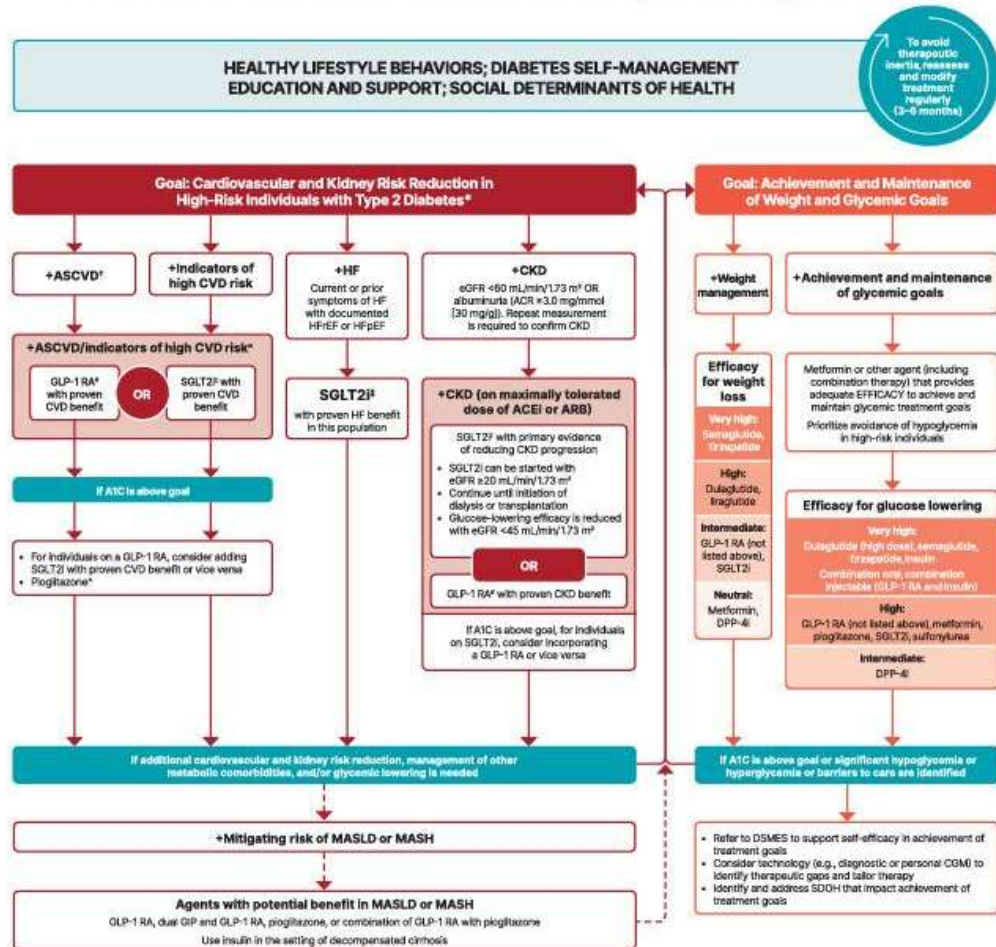
## Metabolic Dysfunction-associated Steatotic Liver Disease (MASLD)

- GLP-1 RA or dual GIP/GLP-1 RA
  - Consider for type 2 diabetes patients with MASLD and obesity/overweight
  - Potential benefit for glycemic control and weight loss in conjunction with lifestyle modifications.

## Additional Clinical Considerations

- Metformin:
  - Remains a first-line pharmacologic therapy for type 2 diabetes.
- Insulin Therapy:
  - Recommended for patients with hyperglycemia, A1C >10%, or blood glucose >300 mg/dL, regardless of existing glucose-lowering agents already in use.
  - Combination with GLP-1 RA may enhance glucose lowering.

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



**Figure 9.3.** Pharmacologic approaches to glycemic treatment—including agent selection based on glycemic efficacy, weight impact, and cardiovascular/renal risk. Adapted from 9. *Pharmacologic Approaches to Glycemic Treatment: Standards of Care in Diabetes—2025*. *Diabetes Care*. 2025;48(Suppl 1):S181–S206.<sup>1A</sup>

Selection of therapy should be guided by patient preference/characteristics, desired A1C goals, and the side effect profiles of available pharmacological agents.<sup>1</sup> If patients are not achieving glycemic or weight goals, intensification of pharmacological, lifestyle modifications, and weight management programs should not be delayed.

## Summary of Pharmacological Agents 1, 3-20

| Medication                       | Place in Therapy                                                              | MOA                                                                          | Dosing                                                                     | Key Differences                                                                           |
|----------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Metformin (oral)                 | First-line unless contraindicated                                             | Lower hepatic glucose, increase insulin sensitivity                          | 500 mg daily/BID;<br>Max 2000 mg daily                                     | IR vs ER<br><br>GI side effects common<br><br>Potential B12 deficiency with long-term use |
| GLP-1 RA (subcutaneous or oral)  | Preferred in ASCVD, CKD, and T2DM w/ concurrent symptomatic HFpEF and obesity | Incretin mimetic; increases insulin, decreases glucagon                      | Dulaglutide inj 0.75 mg to 4.5 mg weekly                                   | CV benefit with injectables                                                               |
|                                  |                                                                               |                                                                              | Liraglutide inj 0.6 mg to 1.8 mg daily                                     | Visual impairment                                                                         |
|                                  |                                                                               |                                                                              | Semaglutide inj 0.25 mg to 2 mg weekly                                     | Lean muscle loss                                                                          |
|                                  |                                                                               |                                                                              | Semaglutide oral 3 mg to 14 mg daily                                       | Gastrointestinal AE's<br>Acute kidney injury<br>Pancreatitis                              |
| Dual GIP/GLP-1 RA (subcutaneous) | Type 2 diabetes with obesity/ metabolic syndrome                              | Activates GIP and GLP-1 receptors                                            | Tirzepatide 2.5 mg to 15 mg weekly                                         | Potentially highest weight loss                                                           |
| SGLT2-i (oral)                   | First-line in ASCVD, HF, CKD                                                  | Blocks renal glucose reabsorption                                            | Empagliflozin 10 mg to 25 mg daily                                         | Variable eGFR cutoffs                                                                     |
|                                  |                                                                               |                                                                              | Dapagliflozin 5 mg to 10 mg daily                                          | CV and renal benefits differ                                                              |
|                                  |                                                                               |                                                                              | Canagliflozin 100 mg to 300 mg daily                                       | Genital mycotic infections                                                                |
|                                  |                                                                               |                                                                              | Ertugliflozin 5 mg to 15 mg daily                                          | Intravascular volume depletion                                                            |
|                                  |                                                                               |                                                                              | Bexagliflozin 20 mg daily                                                  | Euglycemic ketoacidosis<br>Acute kidney injury within 1st month of use                    |
| DPP4-i (oral)                    | Second-line Oral option                                                       | Blocks incretin degradation                                                  | Sitagliptin 100 mg daily                                                   | Variable renal dose adjustments                                                           |
|                                  |                                                                               |                                                                              | Saxagliptin 2.5 mg to 5 mg daily                                           | Saxagliptin: HF risk                                                                      |
|                                  |                                                                               |                                                                              | Linagliptin 5 mg daily                                                     | Pancreatitis                                                                              |
|                                  |                                                                               |                                                                              | Alogliptin 25 mg daily                                                     | Post-marketing joint pain                                                                 |
| Pioglitazone (oral)              | Add-on<br>Avoid in HF                                                         | Increases insulin sensitivity by PPAR-γ                                      | 15 mg to 30 mg daily;<br>MAX 45 mg/day                                     | HF contraindication<br><br>Bone fracture risk<br><br>Bladder cancer                       |
| Sulfonylureas (oral)             | Add-on<br>Cost effective                                                      | Stimulates pancreatic B-cell insulin secretion                               | Glipizide 2.5 mg to 40 mg/day                                              | Caution in patients at risk of hypoglycemia                                               |
|                                  |                                                                               |                                                                              | Glimepiride 1 mg to 8 mg/day                                               | Weight gain                                                                               |
|                                  |                                                                               |                                                                              | Glyburide 1.25 mg to 20 mg daily/BID;<br>MAX 20 mg/day                     | Low durability over time                                                                  |
| Insulin (subcutaneous)           | For A1C >10% or blood glucose ≥300 mg/dL                                      | Stimulates peripheral glucose uptake and inhibits hepatic glucose production | Rapid-acting, short- acting, intermediate- acting, long-acting, pre-mixed: | Risk of hypoglycemia<br><br>Lower insulin doses with a                                    |

|  |  |  |                                 |                                                     |
|--|--|--|---------------------------------|-----------------------------------------------------|
|  |  |  | Individualize per patient needs | decrease in eGFR<br>Variable time/duration of onset |
|--|--|--|---------------------------------|-----------------------------------------------------|

## Key Takeaway Points<sup>1</sup>

- CGM and AID should be utilized in all types of patients with diabetes type 1 and should be considered in appropriate patients with diabetes type 2, and at high-risk patients with pre-diabetes, as early as the time of diagnosis.
- Autoantibody-based screening should be offered to patients with presymptomatic type 1 diabetes (with a family history of type 1 diabetes or high genetic risk).
- GLP-1 RA is preferred in patients with ASCVD, CKD, and T2DM w/ concurrent symptomatic HFpEF and obesity.
- SGLT2i is preferred in patients with ASCVD, HF, and CKD.
- Selection of therapy and management of glycemic goals should utilize a patient-centered approach.
- There are key differences between the classes of pharmacological agents, as well as in-class differences that should guide selection.

## Questions?

- For information on how to incorporate these guidelines into your practice, reach out for a free pharmacist consultant: <https://illinoisadvance.uic.edu/>

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