

# Glucose Management in Type 2 Diabetes

**Please Note:** This algorithm is **not** intended for use in treating children or women who are, or could become, pregnant.

## Set glycemic goals

Optimal goals for most patients are:

- A1C <7%
- Blood glucose monitoring (BGM) targets:
  - Fasting and premeal: 80 to 130 mg/dL
  - Postmeal: <180 mg/dL (1-2 hours after the start of a meal)
- Continuous glucose monitoring (CGM) target:
  - Time in range (TIR): >70% of values between 70 to 180 mg/dL

Consider more or less stringent goals based on a person-centered approach.

## Step 1: Provide education, lifestyle coaching, and metformin therapy

- Refer patients for diabetes self-management education and support (DSMES) and assess social determinants of health (SDOH).
- Refer to a registered dietitian for nutrition assessment and individualized meal planning, when available.
- Promote 5% or more weight loss from baseline and 150 minutes or more of moderate intensity exercise per week, as applicable.
- Initiate metformin treatment.\*
  - Consider a second agent with metformin if A1C >9% (if targeted intervention from **Step 2** is not selected, see **Step 4** for guidance).

## Step 2: Identify patients with atherosclerotic cardiovascular disease (ASCVD)<sup>1</sup> or high risk<sup>2</sup> of ASCVD, heart failure (HF)<sup>3</sup>, or chronic kidney disease (CKD)<sup>4</sup> and offer targeted interventions

Consider glucagon-like peptide-1 receptor agonists (GLP-1 RA) and sodium glucose cotransporter 2 inhibitors (SGLT2i) independent of baseline or target A1C and metformin use to reduce ASCVD outcomes and mortality, HF hospitalization, and CKD progression to renal failure.

- **GLP-1 RA** or **SGLT2i** in patients with ASCVD or at high risk for ASCVD.
- **SGLT2i** in patients with HF and/or CKD on maximally-tolerated ACEi or ARB and consider GLP-1 RA if SGLT2i is contraindicated or not tolerated.

1. ASCVD is atherosclerosis affecting the vasculature that results in diseases of any of the following: heart (e.g. myocardial infarction, angina), the brain (e.g., stroke, transient ischemic attack), and the lower extremities (e.g. peripheral artery disease, limb ischemia).
2. High risk for ASCVD in people with type 2 diabetes: >55 years of age with two or more additional risk factors (including obesity, hypertension, smoking, dyslipidemia, or albuminuria).
3. HF is a clinical syndrome in which symptoms result from impairment of ventricular filling or ejection of blood from the heart. Common causes of HF are coronary artery disease, hypertension, and diabetes.
4. CKD is defined by albuminuria, reduced eGFR, or both.

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## Step 3: Reassess glycemic control to guide treatment plan

- Measure A1C level every 3-6 months.
- Monitor glycemic control with BGM or CGM before 3 month A1C.
- Consider patient's individual needs and preferences to guide the treatment plan, particularly when advancing medication therapy.

## Step 4: Provide additional medications to achieve glycemic and weight management goals, minimize hypoglycemia, and treat cardiorenal disease

- Add another agent to **metformin** if not at glycemic target.
  - Prescribe dipeptidyl peptidase-4 inhibitor (DPP-4i), GLP-1 RA, tirzepatide, SGLT2i, or thiazolidinedione if hypoglycemia is a concern.
  - Prescribe GLP-1 RA, tirzepatide, or SGLT2i for patients who may benefit from weight loss.
  - Consider sulfonylurea or thiazolidinedione but note risk of weight gain.
- Consider combination medications to reduce pill burden and increase adherence.
- Consider combining cardiorenal protective agents (GLP-1 RA or SGLT2i) if needed to achieve glycemic targets.

**Note:** Combining DPP-4i with GLP-1 RA or tirzepatide is not recommended due to ineffectiveness.

## Step 5: Reevaluate treatment plan for patients not at glycemic goal on two or more anti-diabetes medications

- Utilize a person-centered approach when considering factors such as pill burden, cost, side effects, and intensification of self-management.
- Refer for DSMES and reassess patient needs and preferences.
- Advance therapy by combining agents from different medication classes or consider initiating basal insulin therapy (see [Insulin Therapy in Type 2 Diabetes](#)).
- Consider non-insulin injectable agents GLP-1 RA or tirzepatide before advancing to insulin.

### References:

1. 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*. doi.org/10.2337/dci22-0034
2. American Diabetes Association. 9. Pharmacologic approaches to glycemic treatment; 10. Cardiovascular Disease and Risk Management; 11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes. *Diabetes Care (Suppl. 1)*

\* See [Glucose Management in Type 2 Diabetes Medications](#) for dosing and prescribing information for metformin and other medications referenced in this algorithm.

