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# Stepwise Treatment of Type 2 Diabetes

*Modified February 2026*

Also see our resources, *Drugs for Type 2 Diabetes* and *Diabetes Medications: Cardiovascular and Kidney impact*.

---Information pertains to **ADULTS** unless otherwise specified.---

**Interactive Note**: Additional information is available when hovering over text containing the magnify icon. Best viewed in Adobe Acrobat.

## STEP 1

**Diagnosis of type 2 diabetes in nonpregnant patients**
(in adults, A1C ≥6.5% is diagnostic; A1C 5.7% to 6.4% indicates prediabetes.[1,5]):

Lifestyle changes to improve glycemia
**AND**
Pharmacotherapy based on hyperglycemia and comorbidities.[2]
Consider combination therapy if A1C is >1.5% to 2% above goal.[2]

**Is hyperglycemia severe or symptomatic?**

YES

Include insulin, at least initially. In pediatrics, insulin is the initial treatment of choice if A1C ≥8.5% or if ketosis is present.[7]

**Does the patient have heart failure history, chronic kidney disease, CV disease, or high CV risk?**

YES

Give priority to:

- **CV disease or high CV risk:** evidence-based GLP-1 agonist (dulaglutide, liraglutide, semaglutide) or SGLT2 inhibitor (canagliflozin, empagliflozin)[2,12,13]
- **Heart failure history**: evidence-based SGLT2 inhibitor (canagliflozin, dapagliflozin, empagliflozin, ertugliflozin)[2]
- **Chronic kidney disease**: evidence-based SGLT2 inhibitor (canagliflozin, dapagliflozin, empagliflozin)[2]

THEN

NO

Other comorbidities

**Weight management focus**:[2,12]
- highest efficacy: semaglutide, tirzepatide
- high efficacy: dulaglutide, liraglutide
- moderate efficacy: exenatide, SGLT2 inhibitors
- weight neutral: metformin, DPP-4 inhibitor

**Glycemic efficacy focus**:[2]
- highest efficacy: dulaglutide (high dose), semaglutide, tirzepatide, combination therapy
- high efficacy: exenatide, liraglutide, metformin, pioglitazone, SGLT2, sulfonylurea
- moderate efficacy: DPP-4 inhibitor. Not first-line.

**Metabolic liver disease**:[2]
- See our resource, *Comparison of Medications for Metabolic Dysfunction-Associated Steatotic Liver Disease*

**Pediatrics**:
- Metformin is the first-line oral agent.[7,10] Add to insulin if no acidosis or ketosis.[10]

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## STEP 2

**Assess and adjust treatment every three to six months (three months in pediatrics) based on efficacy, side effects, and new comorbidities.[2,10]**

- Goal: A1C (A1C ≤7% for many adult patients; A1C ≤6.5% for pediatrics).[4,6,10] Individualize.

  **A higher goal** may be appropriate for some patients.[4]

  **A lower goal,** if it can be achieved without adverse effects (e.g., problematic hypoglycemia), may be appropriate for some patients.[4]

  » A tool for individualizing your patient's A1C target is available from Diabetes Canada at https://www.diabetes.ca/managing-my-diabetes/tools---resources/individualizing-your-patient%E2%80%99s-a1c-target.

**De-escalate medications as appropriate.[2,4]**

- Give preference to deprescribing agents that cause hypoglycemia or that do not improve outcomes.[2]
- Attempt to transition youth to metformin over two to six weeks (once labs have stabilized) by decreasing insulin each time metformin is increased.[7]
- Discontinue DPP-4 inhibitors if a GLP-1 agonist or intensive insulin regimen is started.[4]
- Discontinue sulfonylurea or meglitinide when intensive insulin regimen is started.[4] Also assess need for dose reduction as the patient ages and circumstances change.

**Add medications as appropriate.**

For help choosing, see options in Step 1 above, and our chart, *Drugs for Type 2 Diabetes* for med details.

- If escalating treatment in **pediatrics**:
  - » Add-ons to metformin and/or insulin in youth ≥10 years of age: canagliflozin, empagliflozin, liraglutide, or once-weekly exenatide.[8-11]
  - » Pioglitazone could be considered if metformin is not tolerated and cardiac function is normal, given that youth tend to have severe insulin resistance. However, pioglitazone is **not preferred** due to weight gain (especially with insulin).[7]

**Abbreviations**: CV = cardiovascular; GLP-1 = glucagon-like peptide-1; SGLT2 = sodium-glucose co-transporter 2; DPP-4 = dipeptidyl peptidase-4

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