

# Glucose Management in Type 2 Diabetes

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**Please Note:** This algorithm is **not** intended for treatment and target selection in children or in women who are or could become pregnant.

**Step 1: Determine Individualized A1C Target Range**  
 Select based on age, duration of diabetes, patient preference, comorbidities, hypoglycemia risk, and other factors.

Major Comorbidity	Microvascular Complications		
	Absent or Mild	Moderate	Advanced
Absent (and/or >10-15 years of life expectancy)	6.0-7.0%	7.0-8.0%	7.5-8.5%
Present (and/or 5-10 years of life expectancy)	7.0-8.0%	7.5-8.5%	7.5-8.5%
Marked (and/or <5 years of life expectancy)	8.0-9.0%	8.0-9.0%	8.0-9.0%

**Major comorbidity** includes but is not limited to significant CVD; recent stroke; life-threatening malignancy; or severe CKD, COPD, or chronic liver disease.  
**Microvascular disease:** retinopathy, neuropathy, or CKD.  
 Adapted from the [VA/DoD Management of Diabetes Mellitus Guideline](#)

↓ If A1C not within individualized target range

**Step 2: Initiate Medication Therapy**  
 If significant weight loss or ketonuria, use insulin (hospitalize if acidotic).  
 Otherwise:  
**Start metformin** if A1C above patient's target but <9%.  
**Start metformin and** a second medication if A1C ≥9% (see Step 3).

↓ If A1C not within individualized target range

**Step 3: Increase Dosage(s) and/or Add Another Medication**  
 Select additional medication(s) based on formulary options, side effects, cost, comorbidities (e.g., CVD), medication regimen complexity, and patient preference.

Medication	Weight	A1C	Risk of Hypoglycemia	Cost
Metformin	- to ↓	↓↓	-	\$
DPP-4 Inhibitor	-	↓	-	\$\$
GLP-1 Receptor Agonist	↓↓	↓↓	-	\$\$\$
Insulin	↑↑ to ↑↑↑	↓↓↓	↑↑↑	\$\$ to \$\$\$
SGLT2 Inhibitor	↓	↓	-	\$\$\$
Sulfonylurea	↑↑	↓↓	↑↑	\$
Thiazolidinedione	↑	↓↓	-	\$

Do not use GLP-1 Receptor Agonists and DPP-4 inhibitors together as no A1C benefit

## Metformin

Monitor and supplement vitamin B12 as needed with long term use.  
 Discontinue if eGFR <30mL/min/1.73m<sup>2</sup>.  
 Warning: May cause lactic acidosis (rare).  
 Start 500mg daily with meals and increase no faster than 500mg/day each week.  
 If GI symptoms occur, may increase more slowly.  
 Max dose: Regular release tablets: 2,550mg divided BID or TID.  
 XR tablets: 2,000mg daily or divided BID.

## Dipeptidyl Peptidase-4 (DPP-4) Inhibitors\*

**Alogliptin (Nesina®)** Start 25mg daily. May increase risk of heart failure.  
**Sitagliptin (Januvia®)** Start 100mg daily.  
**Linagliptin (Tradjenta®)** Start 5mg daily.  
**Saxagliptin (Onglyza®)** Start 2.5-5mg daily. May increase risk of heart failure.

## Glucagon-Like Peptide-1 (GLP-1) Receptor Agonists

GI side effects common.  
 Warning: May increase risk of thyroid tumor.  
**Dulaglutide (Trulicity®)** Start 0.75mg SC weekly. May increase to 1.5mg/week.  
**Exenatide ER (Bydureon®)** Start 2mg SC weekly.\*  
**Liraglutide (Victoza®)** Start 0.6mg SC daily.  
 Increase to 1.2mg daily in 1 week. May increase to 1.8mg daily.  
*Indicated to reduce the risk of CV events in patients with established CVD.*  
**Semaglutide (Ozempic®)** Start 0.25mg SC weekly for 4 weeks, then increase to 0.5mg weekly for 4 weeks. May increase to 1mg weekly.

**Insulin** - [See Insulin Therapy Algorithm.](#)

## Sodium-Glucose Co-Transporter 2 (SGLT2) Inhibitors\*

May cause volume depletion, orthostatic hypotension, genital fungal infections, DKA, acute kidney injury, and UTI.  
**Canagliflozin (Invokana®)** Start 100mg daily before first meal. May increase to 300mg daily.  
 Warning: May increase risk of lower limb amputations.  
*Indicated to reduce the risk of CV events in patients with established CVD.*  
**Empagliflozin (Jardiance®)** Start 10mg daily. May increase to 25mg daily.  
*Indicated to reduce the risk of CV death in patients with established CVD.*

## Sulfonylureas

May cause hypoglycemia, weight gain.  
**Glipizide** Start 2.5-5mg daily - max 20mg BID. ER formulation dosed 5-20mg daily.  
**Glimepiride** Start 1-2mg daily - max 8mg daily.

## Thiazolidinedione (TZD)

May increase risk of bone fracture. Do not use in patients with bladder cancer.  
 Check LFTs before starting. May cause weight gain.  
 Warning: Increased risk of heart failure.

**Pioglitazone (Actos®)** Start 15mg daily; may increase to 30-45mg daily.  
 Max A1C changes may take up to 12 weeks to occur.

\* See prescribing reference when eGFR <60ml/min/1.73m<sup>2</sup>.

Medications on the IHS National Core Formulary are in **BOLD** above.

Please consult a complete prescribing reference for more detailed information. This is a summary of the most commonly ordered non-insulin diabetes medications and drug classes from the IHS National Supply Service Center. No endorsement of specific products is implied.