Comparison of Non-Insulin Medications for Adults with Type 2 Diabetes Mellitus

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Recommended by the American Diabetes Association (ADA) for the treatment of Type 2 diabetes mellitus (T2DM), metformin is effective, safe, and inexpensive, and may reduce the risk of cardiovascular events. Patients unable to take metformin or who require combination therapy have options. The following table may be used to assist in comparing non-insulin pharmacological therapies.

Medication	Efficacy/ Expected Decrease in A1C%	Cost/30 Days*	Advantages	Disadvantages
Metformin	High efficacy 1% decrease	Low cost less than $10 to $20	Low risk of hypoglycemia as monotherapy. May reduce CV events and mortality. Weight neutral to modest weight loss.	GI side effects (e.g., diarrhea, nausea, abdominal discomfort). Slow titration of an extended-release formulation taken with food can manage GI side effects. Contraindicated with renal insufficiency (eGFR less than 30 mL/min/1.73 m2).
Thiazolidinedione (TZD) e.g., pioglitazone	High efficacy 0.7% to 0.9% decrease	Low cost approx. $10	Improved lipid profile.	Fluid retention, heart failure, weight gain, bone fractures and bladder cancer.
Sulfonylureas (2nd generation) e.g., glimepiride, glipizide, glyburide	High efficacy 0.6% to 1.2% decrease	Low cost approximately less than $10 to $25	Rapidly effective.	Weight gain and hypoglycemia.
GLP-1 RAs e.g., dulaglutide (Trulicity), liraglutide (Victoza), semaglutide (Ozempic)	High efficacy 0.5% to 2.3% decrease	High cost $803.35 to $1117	Weight loss, reduction in major adverse CV events in patients with established CVD and potentially for those at high risk for CVD.	Most products require injection, frequent GI side effects and expensive.
Dual GLP-1 and GIP RA tirzepatide (Mounjaro)	High efficacy 2.3% decrease	High cost $1,023.04	Weight loss.	Requires injection, frequent GI side effects and expensive.
SGLT2 Inhibitors e.g., dapagliflozin (Farxiga), ertugliflozin (Steglatro)	Intermediate efficacy 0.5% to 0.7% decrease	High cost $340.80 to $598.56	Weight loss and reduced cardiovascular mortality in patients with established CVD.	Vulvovaginal candidiasis, urinary tract infections, bone fractures lower limb amputations and DKA risk.
DPP-4 e.g., alogliptin (Nesina), saxagliptin (Onglyza), sitagliptin (Januvia)	Intermediate efficacy 0.5% to 0.7% decrease	High cost $195 to $525.08	Weight neutral.	Possible increased risk of heart failure (saxagliptin alogliptin) and expensive.

CV, cardiovascular: CVD, cardiovascular disease; DPP-4, dipeptidyl peptidase; DKA, diabetic ketoacidosis; eGFR, estimated glomerular filtration rate; GI, gastrointestinal; GIP RA, glucose-dependent insulinotropic polypeptide receptor agonist; GLP-1 RA, glucagon-like peptide 1 receptor agonist; SGLT2, sodium-glucose cotransporter 2

* Unless otherwise specified, pricing (for generic when available) is based on wholesale acquisition cost