

# ADA Clinical Practice Guideline: Type 2 Diabetes Management (2025)

## Overview

GLP-1 receptor agonists (GLP-1 RAs) are a class of medications for type 2 diabetes that offer glucose-lowering benefits along with significant cardiovascular and renal protection. Recent studies have demonstrated that these agents reduce major adverse cardiovascular events (MACE), hospitalization for heart failure, and kidney disease progression.

## Key GLP-1 RA Agents

- Liraglutide
- Semaglutide
- Dulaglutide
- Exenatide (extended-release)

## Cardiovascular Outcomes

- GLP-1 RAs reduce the risk of MACE (CV death, non-fatal MI, and non-fatal stroke) by approximately 14-20%.
- Liraglutide, semaglutide, and dulaglutide showed statistically significant CV benefits in large RCTs.
- These agents are preferred in patients with type 2 diabetes and established ASCVD.

## Renal Benefits

- GLP-1 RAs reduce progression of albuminuria and decline in eGFR.
- Semaglutide and dulaglutide have shown renal protective effects in secondary outcomes of major trials.
- Beneficial for patients with early-stage CKD, especially when SGLT2 inhibitors are contraindicated.

## Additional Benefits

- Promote weight loss (average 5-10% of baseline body weight).
- Low risk of hypoglycemia when used alone.
- May improve hepatic steatosis and reduce inflammatory markers.

## Clinical Application

- Recommended as a second-line or first-line agent in patients with ASCVD.

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- Can be used in combination with metformin, SGLT2 inhibitors, or basal insulin.
- Should be considered in patients needing weight loss and CV risk reduction.

### **Safety and Monitoring**

- Common side effects: nausea, vomiting, diarrhea.
- Contraindicated in patients with personal/family history of medullary thyroid carcinoma.
- Monitor renal function, particularly in patients with CKD or on concomitant nephrotoxic medications.