

## Type 2 Diabetes – Treatment Strategy Overview

**Treatment Objectives** Primary goal: Achieve and maintain individualized glycemic targets to minimize microvascular complications while avoiding hypoglycemia. A1C <7% for most non-pregnant adults; adjust to <6.5% for younger patients at low hypo risk or <8% for those with comorbidities/limited life expectancy. Secondary goals: Mitigate CVD/CKD progression, promote weight management, and enhance well-being through holistic care.

**Role of Lifestyle Modification** Lifestyle is foundational, applicable at diagnosis and ongoing. Key components:

- Nutrition: Personalized plans (e.g., Mediterranean, plant-based) reducing calories by 500-750 kcal/day for weight loss; focus on fiber-rich foods, limit sugars.
- Physical activity: ≥150 min/week moderate aerobic (brisk walking) + resistance training 2-3x/week.
- Behavioral: Diabetes self-management education (DSMES) to address barriers; aim for 5-15% weight reduction in overweight patients, yielding 0.5-2% A1C drop.

**Overview of Main Drug Classes** Initiate pharmacotherapy alongside lifestyle if A1C ≥6.5% (or ≥1.5% above target).

- **Biguanides (e.g., metformin)**: First-line; reduces hepatic glucose output; low hypo risk, modest weight loss.
- **GLP-1 receptor agonists**: Injectable; enhance insulin secretion, slow gastric emptying; CV/renal protection, significant weight loss.
- **SGLT2 inhibitors**: Oral; promote glucosuria; CV/renal/HF benefits, weight loss, low hypo.
- Others: DPP-4 inhibitors (glucose-dependent insulin augmentation), sulfonylureas/TZDs (insulin sensitizers, higher hypo/weight gain risk), insulin (for symptomatic hyperglycemia or A1C >10%).

## Considerations

- **Comorbidities**: Prefer GLP-1 RAs/SGLT2i for ASCVD/HF/CKD; avoid metformin in eGFR <30 mL/min.
- **Hypoglycemia risk**: Minimize with sulfonylureas/insulin; monitor in elderly.
- **Weight**: Favor GLP-1 RAs/SGLT2i for obesity; avoid insulin early if possible. Cost, preferences, and adherence guide selection.

## Follow-up and Treatment Intensification Principles

- Monitor: A1C q3-6 months, SMBG/CGM as needed, annual eye/kidney/foot exams.
- Intensify: If A1C >target, add agents sequentially (e.g., metformin + GLP-1 RA); use treat-to-target with shared decision-making. De-intensify in stable patients to reduce polypharmacy.

## References

- American Diabetes Association. Standards of Medical Care in Diabetes—2025. Diabetes Care. 2025;48(Suppl 1).

- Davies MJ, et al. Management of hyperglycemia in type 2 diabetes, 2024. Diabetes Care. 2024.