American Diabetes Association 2022 Standards of Care

Summary of Key Updates to Therapy Recommendations in Type 2 Diabetes

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This booklet summarizes some notable updates in the American Diabetes Association's *Standards of Medical Care in Diabetes—2022.*

Selected takeaways:

- Continued emphasis on the importance of weight reduction, comorbid diseases, and earlier treatment/screening
- In some scenarios, changes to treatment intensification options that suggest switching medication, rather than sequential add-on, may be appropriate if patients are not well managed by their current therapy
- GLP-1 RA or SGLT-2i with proven CVD benefit (label indication) are options for first-line/initial therapy in patients with T2D and select comorbidities as outlined on page 5
  - GLP-1 RA and/or SGLT-2i with proven CVD benefit are recommended as part of the glucose-lowering regimen and comprehensive CV risk reduction in patients with T2D and established CVD
- GLP-1 RA is recommended as an add-on to insulin for greater efficacy and durability of the combination over insulin alone

ASCVD=atherosclerotic cardiovascular disease; BMI=body mass index; CKD=chronic kidney disease; Cr=creatinine; CV=cardiovascular; CVD=cardiovascular disease; CVOTs=cardiovascular outcomes trial; DPP-4i=dipeptidyl peptidase-4 inhibitor; eAG=estimated average glucose; eGFR=estimated glomerular filtration rate; FPG=preprandial capillary plasma glucose (fasting plasma glucose); GLP-1 RA=glucagon-like peptide-1 receptor agonist; HF=heart failure; LDL=low-density lipoprotein; PPG=Peak postprandial capillary plasma glucose; SGLT-2i=sodium-glucose cotransporter 2 inhibitor; SU=sulfonylurea; T2D=type 2 diabetes; TBR=time below range; TIR=time in range; TZD=thiazolidinedione.

American Diabetes Association 2022 Standards of Medical Care in Diabetes

The most recent glycemic recommendations are:

Glycemic recommendations for many nonpregnant adults with diabetes[a]

FPG 80-130 mg/dL	A1C <7.0%	Assess glycemic status (A1C or other glycemic measure) at least every 3 months if change in therapy and/or not at goal, or at least every 6 months if meeting treatment goals
PPG[b] <180 mg/dL	TIR >70% (70-180 mg/dL) with TBR <4% (<70 mg/dL)[c]	

ASCVD risk management

Assess CV risk factors at least annually in all patients with diabetes (duration of diabetes, dyslipidemia, hypertension, overweight/obesity, chronic kidney disease, smoking, albuminuria, and a family history of premature coronary disease)

Dyslipidemia:	Statins should be initiated for lipid management with varying intensity depending on ASCVD risk factors, 10-year ASCVD risk percent, and age in addition to lifestyle therapy			
Hypertension:	Goal of <130/80 mmHg for patients at higher CV risk (existing ASCVD or 10-year ASCVD risk ≥15%); 140/90 mmHg for patients at lower risk			
Overweight and Obesity in T2D:	Treatment may be indicated for select motivated patients	BMI category (kg/m²) ≥25[d]	≥27[e]	≥30[f]
	Diet, physical activity, and behavioral counseling	✓	✓	✓
	Pharmacotherapy		✓	✓
	Metabolic surgery			✓
Chronic Kidney Disease (CKD):	Annually assess[g] eGFR and urinary albumin, or twice annually when ≥300 mg/g Cr and/or eGFR 30-60 mL/min/1.73 m²			
Smoking:	Advise all patients not to use cigarettes and other tobacco products or e-cigarettes; provide smoking cessation counseling and other forms of treatment as needed			

Microvascular risk management

Diabetic Retinopathy:	Comprehensive dilated eye exam at diagnosis of T2D[h], at least annually if retinopathy is present, more frequently if progressing or sight- threatening, and every 1-2 years if there is no evidence of retinopathy and glycemia is well controlled
Neuropathy:	All patients should be assessed for diabetic peripheral neuropathy starting at diagnosis of T2D[h] and at least annually thereafter
Foot Care:	Comprehensive foot evaluation at least annually to identify risk factors for ulcerations and amputations

[a] Goals should be individualized based on patient characteristics;
[b] Peak postprandial capillary plasma glucose measured 1-2 hours after the start of a meal;
[c] For use with CGM;
[d] 25.0-26.9 (cut point is 23.0 to 24.9 for Asian American individuals);
[e] Range 27.0-29.9 (cut point is 25.0 to 27.4 for Asian American individuals);
[f] Cut point is ≥27.5 for Asian American individuals;
[g] In all patients with type 2 diabetes, in patients with type 1 diabetes with duration of ≥5 years;
[h] Within 5 years after the onset of type 1 diabetes.

2022 ADA Pharmacologic Treatment of Hyperglycemia in Adults with T2D on next page

Updates:

- In addition to comprehensive lifestyle modification, initial treatment with metformin or alternative initial treatments as acceptable, will depend on comorbidities, patient-centered treatment factors, and glycemic and comorbidity management needs
- The intensification recommendation now involves switching therapy or weaning current therapy, when appropriate, to accommodate therapeutic changes rather than sequential add-on therapy
- Recommends GLP-1 RA and/or SGLT2i with proven CVD benefit as part of the glucose lowering regimen and comprehensive CV risk reduction in patients with T2D and established CVD
  - Emerging data suggest that use of both classes of drugs may provide additive, thus, complementary outcomes benefits associated with these classes of medications.

Pharmacologic treatment of hyperglycemia in adults with type 2 diabetes

FIRST-LINE THERAPY depends on comorbidities, patient-centered treatment factors, including cost and access considerations, and management needs and generally includes metformin and comprehensive lifestyle modification[a]

TO AVOID THERAPEUTIC INERTIA REASSESS AND MODIFY TREATMENT REGULARLY (3-6 MONTHS)

ASCVD/INDICATORS OF HIGH-RISK, HF, CKD[b]

NONE

Recommend independently of baseline A1C, individualized A1C target, or metformin use[c]

+ASCVD/Indicators of high risk

EITHER/OR

- GLP-1 RA with proven CVD benefit[d]
- SGLT-2i with proven CVD benefit[d]

If A1C above target

- For patients on a GLP-1 RA, consider incorporating SGLT-2i with proven CVD benefit and vice versa[d]
- TZD[e]

+HF

SGLT-2i with proven benefit in this population[d]

+CKD

- CKD and albuminuria (eg, ≥200 mg/g creatinine)
- CKD without albuminuria (eg, eGFR <60 mL/min/1.73 kg/m²)

PREFERABLY

SGLT-2i with primary evidence of reducing CKD progression

OR

SGLT-2i with evidence of reducing CKD progression in CVOTs

OR

GLP-1 RA with proven CVD benefit[d] if SGLT-2i not tolerated or contraindicated

For patients with CKD (eg, eGFR <60 mL/min/1.73 m²) without albuminuria, recommend the following to decrease CV risk

EITHER/OR

- GLP-1 RA with proven CVD benefit[d]
- SGLT-2i with proven CVD benefit[d]

If A1C above target, for patients on SGLT-2i, consider incorporating GLP-1 RA and vice versa

For full 2022 ADA Standards of Medical Care in Diabetes, please visit https://diabetesjournals.org/care/issue/45/Supplement_1

If A1C remains above target, consider treatment intensification based on comorbidities, patient-centered treatment factors, and management needs

Incorporate agents that provide adequate EFFICACY to achieve and maintain glycemic goals

Higher glycemic efficacy therapy: GLP-1 RA; insulin; combination approaches

- Consider additional comorbidities, patient-centered treatment factors, and management needs in choice of therapy, as below:

Minimize hypoglycemia

No/low inherent risk of hypoglycemia: DPP-4i, GLP-1 RA, SGLT-2i, TZD

For SU or basal insulin, consider agents with lower risk of hypoglycemia[f]

If A1C above target

Incorporate additional agents based on comorbidities, patient-centered treatment factors, and management needs

Minimize weight gain/promote weight reduction

PREFERABLY

GLP-1 RA with good efficacy for weight loss

OR

SGLT-2i

If A1C above target

For patients on a GLP-1 RA, consider incorporating SGLT-2i and vice versa

- If GLP-1 RA not tolerated or indicated, consider DPP-4i (weight neutral)

Incorporate additional agents based on comorbidities, patient-centered treatment factors, and management needs

Consider cost and access

Available in generic form at lower cost:

- Certain insulins: consider insulin available at lowest acquisition cost
- SU
- TZD

If A1C above target

Incorporate additional agents based on comorbidities, patient-centered treatment factors, and management needs

[a] For adults with overweight or obesity, lifestyle modification to achieve ≥5% weight loss and ≥150 min/week of moderate- to vigorous-intensity physical activity is recommended.
[b] Actioned whenever these become new clinical considerations regardless of background glucose-lowering medications.
[c] Most patients enrolled in the relevant trials were on metformin at baseline as glucose-lowering therapy.
[d] Proven benefit refers to label indication.
[e] Low dose may be better tolerated though less well studied for CVD effects.
[f] Choose later generation SU to lower risk of hypoglycemia.

Intensifying to injectable therapies

TO AVOID THERAPEUTIC INERTIA REASSESS AND MODIFY TREATMENT REGULARLY (3-6 MONTHS)

Use principles for glucose-lowering medication in type 2 diabetes including reinforcement of behavioral interventions (weight management and physical activity) and provision of DSMES to meet individualized treatment goals

If injectable therapy is needed to reduce A1C[a]

Consider GLP-1 RA in most patients prior to insulin[b]

INITIATION: Initiate appropriate starting dose for agent selected (varies within class)

TITRATION: Titrate to maintenance does (varies within class)

If already on GLP-1 RA or if GLP-1 RA not appropriate OR insulin preferred

If A1C above target

Add basal insulin[a]

Choice of basal insulin should be based on patient-specific considerations, including cost

Add basal analog or bedtime NPH insulin

INITIATION: Start 10 U a day **OR** 0.1-0.2 U/kg a day

TITRATION:

- Set FPG target
- Choose evidence-based titration algorithm (eg, increase 2 units every 3 days to reach FPG target without hypo)
- For hypoglycemia determine cause, if no clear reason lower dose by 10-20%

Consider GLP-1 RA if not already in regimen

For addition of GLP-1 RA, consider lowering insulin dose dependent on current glycemic assessment and patient factors

If on bedtime NPH, consider converting to twice-daily NPH regimen[a]

Conversion based on individual needs and current glycemic control

Assess adequacy of basal insulin dose

Consider clinical signals to evaluate for overbasalization and need to consider adjunctive therapies[a]

If A1C above target

Add prandial insulin[a]

Usually one dose with the largest meal or meal with greatest PPG excursion; prandial insulin can be dosed individually or mixed with NPH as appropriate

If A1C above target

If A1C above target

Stepwise additional injections of prandial insulin

(ie, 2, then 3 additional injections)

Consider self-mixed/split insulin regimen[a]

Can adjust NPH and short/rapid-acting insulins separately

Consider twice daily premixed insulin[a]

Proceed to full basal-bolus regimen

(ie, basal insulin and prandial insulin with each meal)

[a]Refer to complete algorithm in the ADA Standards of Care for additional information;
[b]When selecting GLP-1 RA, consider: patient preference, A1C-lowering, weight-reduction effect, or frequency of injection. If CVD, consider GLP-1 RA with proven CVD benefit.

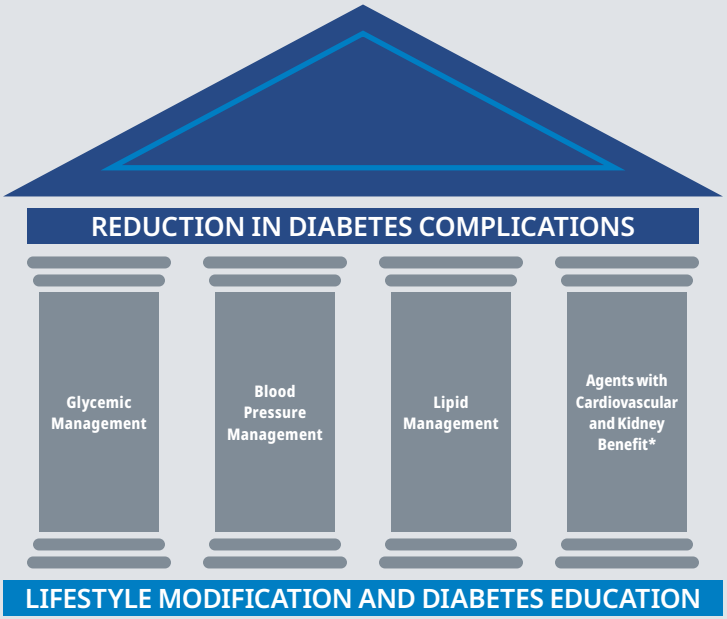
CVD=cardiovascular disease; DSMES=diabetes self-management education and support; FPG=fasting plasma glucose; GLP-1 RA=glucagon-like peptide-1 receptor agonist; hypo=hypoglycemia; NPH=Neutral Protamine Hagedorn; PPG=postprandial glucose.

Adapted with permission from the American Diabetes Association.

Updated 2022 Guidelines

If insulin is used, combination therapy with a GLP-1 RA is recommended for greater efficacy and durability of treatment effect.

Multifactorial approach to reduction in risk of diabetes complications.



*Risk reduction interventions to be applied as individually appropriate.

Reference:

1. American Diabetes Association. Standards of medical care in diabetes—2022. *Diabetes Care*. 2022;45(suppl 1):S1-S264.

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