

Diabetes Management in CKD

Comprehensive kidney-heart care framework, RAS blockade, SGLT2i, ns-MRA, glycemic monitoring, glucose-lowering therapy, lifestyle, and self-management support.

FORMAT Condensed from recommendations + practice points across Chapters 1–5.

1 Comprehensive Care Framework

–	GUIDANCE
Foundation	Lifestyle + self-management for all, layered with first-line drug therapy, then additional kidney/heart-protective drugs guided by residual risk, then further risk-factor control
First-Line	SGLT2i (T2D, eGFR ≥20, continue to dialysis/transplant); metformin (T2D, eGFR ≥30); RASi at max tolerated dose if albuminuria + HTN; statin for all T1D/T2D + CKD
Reassessment	Glycemia, albuminuria, BP, CVD risk, and lipids reassessed every 3–6 months

2 RAS Blockade (ACEi/ARB)

–	GUIDANCE
Initiate	Diabetes + HTN + albuminuria: initiate and titrate to highest tolerated dose (1B); consider if albuminuria with normal BP
Monitoring	Check BP, creatinine, potassium 2–4wk after start/dose change; continue unless creatinine rises >30%
Hyperkalemia	Manage with dietary/medical measures (review drugs, moderate K ⁺ intake, diuretics, bicarbonate, K ⁺ binders) rather than stopping immediately
Reduce/stop if	Symptomatic hypotension, uncontrolled hyperkalemia despite measures, or to reduce uremic symptoms at eGFR <15
Pregnancy / combos	Advise contraception; discontinue if pregnancy considered/occurs. Use only one RAS-blocking agent — avoid ACEi+ARB or +direct renin inhibitor

3 SGLT2 Inhibitors

–	GUIDANCE
Indication	T2D + CKD + eGFR ≥20: treat (1A) — kidney/CV protective benefit also shown without T2D
Continuation	Continue even if eGFR falls <20 unless intolerant or KRT initiated; reversible eGFR dip at initiation is not a reason to stop
Hold for	Prolonged fasting, surgery, or critical illness (ketosis risk) — sick-day protocol
Volume depletion risk	Consider reducing diuretic dose before starting; educate on hypovolemia symptoms; follow up volume status
Transplant recipients	Not adequately studied — recommendation does not apply to kidney transplant recipients

4 ns-MRA & Additional Risk-Factor Control

–	GUIDANCE
Nonsteroidal MRA	Suggested for T2D + eGFR ≥25 + normal K ⁺ + albuminuria ≥30 mg/g despite maximal RASi (2A); can add to RASi + SGLT2i; monitor K ⁺ regularly
Steroidal MRA	Reserve for heart failure, hyperaldosteronism, or resistant HTN — risk of hyperkalemia/reversible GFR decline, particularly at low GFR
Smoking	Advise all tobacco users with diabetes + CKD to quit (1D); counsel on secondhand smoke exposure
Lipids / antiplatelet	Statin for all patients; low-dose aspirin for secondary prevention with established ASCVD, consider for high primary-prevention risk

5 Glycemic Monitoring & Targets

–	GUIDANCE
Monitor with	HbA1c (1C) — twice yearly routine, up to 4×/y if off-target or after therapy change
Reliability	HbA1c accuracy declines in CKD G4–G5, particularly dialysis; consider CGM-derived glucose management indicator if discordant with symptoms
Target	Individualized HbA1c <6.5% to <8.0% (1C) — based on CKD severity, comorbidities, life expectancy, hypoglycemia awareness/resources
CGM/SMBG	Facilitates safe lower targets and helps prevent hypoglycemia with agents that carry hypoglycemia risk

6 Lifestyle & Nutrition

–	GUIDANCE
Diet	Individualized, high in vegetables/fruits/whole grains/fiber/legumes/plant protein/unsaturated fats/nuts; lower processed meat, refined carbs, sweetened beverages
Protein	0.8 g/kg/d if not on dialysis (2C); 1.0–1.2 g/kg/d on hemodialysis or peritoneal dialysis
Sodium	<2 g/d (<90 mmol/d, <5 g NaCl/d) (2C)
Activity	≥150 min/wk moderate-intensity, or to cardiovascular tolerance (1D); avoid sedentary behavior; consider weight loss if obese and eGFR ≥30

7 Glucose-Lowering Therapy Algorithm

–	GUIDANCE
Metformin	eGFR ≥30: treat (1B); reduce dose 30–44; discontinue <30 or on dialysis. Monitor eGFR (more often if <60) and B12 if used >4y
SGLT2i	Initiate at eGFR ≥20; do not initiate <20 or on dialysis — but continue if already started (see Section 3)
GLP-1 RA	Not at target on metformin + SGLT2i, or unable to use them: add a long-acting GLP-1 RA (1B) — prioritize agents with proven CV benefit; do not combine with DPP-4i
Other agents	DPP-4i, insulin, sulfonylurea, TZD, or alpha-glucosidase inhibitor guided by patient preference, comorbidities, eGFR, and cost

8 Self-Management & Team-Based Care

–	GUIDANCE
Education program	Structured self-management education recommended for all (1C) — improve knowledge, self-efficacy, lifestyle, vascular risk factors, engagement, quality of life
Team-based care	Suggested integrated, risk-focused team care (2B) — physicians plus nurses, dietitians, pharmacists, community/peer workers, ideally with CKD knowledge
Cycle	Register → risk assessment → goal-setting → treat to multiple targets (glycemia, BP, lipids) → review → relay/reinforce/recall