Evaluation and Management of CKD

Staging, risk prediction, specialist referral, the four progression-delay pillars, metabolic complications, cardiovascular risk reduction, and medication stewardship.

2024 KDIGO Clinical Practice Guideline
Evaluation and Management of CKD
KDIGO CKD Work Group · Kidney Int 2024;105(4S):S117–S314

FORMAT *Condensed from recommendations + practice points. RASi/BP titration detail is covered in the BP Management in CKD card; CKD-MBD detail in its own card.*

1 CKD Definition & Testing

–	GUIDANCE
Initial GFR test	eGFRcr; combine with cystatin C (eGFRcr-cys) if available (1B). Use eGFRcr-cys when eGFRcr likely inaccurate and GFR affects decisions (1C)
Chronicity	Requires ≥3 mo duration — do not assume from a single abnormal eGFR/ACR (could be AKI/AKD); confirm with repeat testing
Albuminuria	First-morning urine ACR preferred; confirm ACR ≥30 mg/g on a repeat first-morning sample
Biopsy	Safe, acceptable diagnostic test to evaluate cause and guide treatment when clinically appropriate (2D)
POCT	May be used for creatinine/albuminuria where lab access is limited or it facilitates the care pathway (2C)

2 Risk Prediction & Specialist Referral

–	GUIDANCE
Risk equation	Use an externally validated kidney failure risk equation in CKD G3–G5 (1A); not validated for G1–G2. Use disease-specific equations for IgAN and ADPKD
5-y risk 3–5%	Consider nephrology referral (with eGFR/ACR criteria and clinical judgment)
2-y risk >10%	Consider timing of multidisciplinary care
2-y risk >40%	Modality education, KRT preparation (access planning), or transplant referral
Refer if	Uncertain cause/hereditary disease/recurrent nephrolithiasis; eGFR <30; sustained eGFR fall >20% (or >30% after starting hemodynamically active therapy); ACR ≥300 mg/g + hematuria; ACR >700 mg/g; refractory HTN (≥4 agents); persistent K^+/acidosis/anemia/bone disease/malnutrition
Monitoring	eGFR + ACR at least annually; more often if progression risk is high and result will change management

3 Lifestyle & Diet

–	GUIDANCE
Physical activity	Moderate-intensity activity ≥150 min/wk cumulative, or to cardiovascular tolerance (1D); avoid sedentary behavior
Diet pattern	Plant-based, diverse diet with less ultraprocessed food; individualize sodium/phosphorus/potassium/protein with a renal dietitian
Protein (G3–G5)	~0.8 g/kg/d (2C); avoid >1.3 g/kg/d if progression risk. Very-low-protein diet (0.3–0.4 g/kg/d + keto-acid analogs) only under close supervision — not in metabolically unstable patients. No restriction in children (growth risk)
Sodium	<2 g/d (<90 mmol/d, <5 g NaCl/d) (2C) — not appropriate in salt-wasting nephropathy

4 Progression-Delay Pharmacotherapy — 4 Pillars

–	GUIDANCE
RASi	ACEi/ARB for A3 albuminuria without diabetes (1B); A2 without diabetes (2C); A2/A3 with diabetes (1B). Avoid ACEi+ARB+direct renin inhibitor combinations (1B) — see BP card for titration/monitoring
SGLT2i	T2D + CKD + eGFR ≥20: treat (1A). Any CKD with eGFR ≥20 + ACR ≥200 mg/g, or heart failure regardless of albuminuria: treat (1A). eGFR 20–45 + ACR <200 mg/g: treat (2B). Continue below eGFR 20 unless intolerant or KRT started; hold during prolonged fasting/surgery/critical illness
Nonsteroidal MRA	T2D + eGFR >25 + normal K^+ + albuminuria >30 mg/g despite maximal RASi: add finerenone or similar agent (2A). K^+ ≤4.8: initiate/continue; 4.9–5.5: continue, monitor q4mo; >5.5: hold
GLP-1 RA	T2D + CKD not at glycemic target despite metformin + SGLT2i, or unable to use those agents: add a long-acting GLP-1 RA (1B), prioritizing agents with proven CV benefit

5 Metabolic Complications

–	GUIDANCE
Acidosis	Treat (diet ± pharmacologic) if serum bicarbonate <18 mmol/L; avoid overcorrection above the upper limit of normal
Hyperkalemia	Individualized dietary + pharmacologic approach in G3–G5 with emergent hyperkalemia; limit high-bioavailable-potassium/processed foods
Hyperuricemia/gout	Urate-lowering therapy for symptomatic disease (1C); consider after first gout flare. Xanthine oxidase inhibitors preferred over uricosurics; colchicine or intra-articular/oral steroids preferred over NSAIDs for flares. Do NOT treat asymptomatic hyperuricemia to slow CKD progression (2D)
CKD-MBD	See dedicated CKD-MBD card for monitoring/phosphate/PTH management

6 Cardiovascular Risk Reduction

–	GUIDANCE
Statins, age ≥50	eGFR <60: statin or statin/ezetimibe (1A). eGFR ≥60: statin (1B)
Statins, age 18–49	Treat if known coronary disease, diabetes, prior ischemic stroke, or 10-y coronary event risk >10% (2A)
Antiplatelet	Low-dose aspirin for secondary prevention of ischemic CVD (1C); P2Y12 inhibitor alternative if aspirin-intolerant
Stable ischemic disease	Initial conservative approach (intensive medical therapy) is a reasonable alternative to invasive strategy (2D); prefer invasive for acute/unstable disease, refractory angina, ischemic LV dysfunction, or left main disease

7 Atrial Fibrillation & Anticoagulation

–	GUIDANCE
Screening	Opportunistic pulse-based screening (e.g., at BP checks) → wearable device or Holter ECG if irregular
Anticoagulation	NOACs preferred over vitamin K antagonists for thromboprophylaxis in CKD G1–G4 (1C); dose-adjust for GFR, caution in G4–G5
Rate control	Target resting ventricular rate <~90 bpm; consider rhythm control (cardioversion, antiarrhythmics, ablation) if persistently symptomatic

8 Medication Stewardship & Imaging

–	GUIDANCE
Monitoring	Monitor eGFR, electrolytes, and drug levels for nephrotoxic or narrow-therapeutic-window medications; review OTC/herbal remedies
Perioperative/sick-day	Consider holding metformin, ACEi/ARB, and SGLT2i 48–72 h before elective surgery or during acute illness — document a clear restart plan
Dosing	Base drug dosing on validated eGFR; use eGFRcr-cys or mGFR when greater accuracy is needed (narrow therapeutic range, extremes of body weight)
Contrast	Use validated AKI risk tools before intra-arterial contrast. For eGFR <30 needing gadolinium, prefer ACR group II/III agents

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