Identification and Holistic Management of Chronic Kidney Disease in Primary Care

Medscape Primary Care Hacks

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Prevention of ESRD matters, as it has lower survival rates than colorectal, prostate, and breast cancer.[1] **Microalbuminuria and eGFR <60 mL/min/1.73 m² are independent and amplifying predictors of mortality risk.**[2]

1. Identify Individuals at Risk of CKD[3–6]

Key Clinical Risk Factors:[3–6]

- Hypertension
- CVD
- Diabetes
- Obesity

Other Groups at Risk of CKD:[3][4][6]

- Previous history of AKI
- Family history of kidney failure
- Structural renal tract disease
- Recurrent nephrolithiasis
- Prostatic hypertrophy
- Gout
- Multisystem disease
- Hereditary kidney disease
- Long-term treatment with nephrotoxins (e.g. NSAIDs, lithium, CNIs)
- Older people

2. Test At-risk Adults for CKD[3][4][6]

Evaluate kidney function—eGFR (calculated based on sCr)
AND
Evaluate kidney damage—albuminuria (uACR[A])
AND
Document urine dipstick to exclude NVH

If uACR ≥3 mg/mmol (≥30 mg/g) **OR** eGFR <60 mL/min/1.73 m²

Retest in 3 months[B]

If low eGFR or high uACR is present for >3 months, **diagnose CKD**

If uACR <3 mg/mmol (<30 mg/g) **AND** eGFR ≥60 mL/min/1.73 m²

Retest at least once per year

3. Diagnose CKD[3][6]

4. Classify and Code CKD[3][4][7]

CKD prognosis is depicted in the RAG/heatmap table (Figure 1); the recommended frequency for monitoring eGFR is represented by the numbers in the boxes (e.g. test once per year if uACR <3 mg/mmol and GFR ≥60 mL/min/1.73 m²)

Code CKD as priority 1, documenting eGFR + ACR + cause

CKD is classified based on:
- **Cause (C)**
- **GFR (G)**
- **Albuminuria (A)**

GFR categories (ml/min/1.73 m²) Description and range			Albuminuria categories Description and range: A1 Normal to mildly increased <30 mg/g <3 mg/mmol	A2 Moderately increased 30–299 mg/g 3–29 mg/mmol	A3 Severely increased ≥300 mg/g ≥30 mg/mmol
G1	Normal or high	≥90	Screen 1	Treat 1	Treat 3
G2	Mildly decreased	60–89	Screen 1	Treat 1	Treat 3
G3a	Mildly to moderately decreased	45–59	Treat 1	Treat 2	Treat 3
G3b	Moderately to severely decreased	30–44	Treat 2	Treat 3	Treat 3
G4	Severely decreased	15–29	Treat* 3	Treat* 3	Treat 4+
G5	Kidney failure	<15	Treat 4+	Treat 4+	Treat 4+

Low risk (if no other markers of kidney disease, no CKD)[C]
Moderately increased risk
High risk
Very high risk

Figure 1: Frequency of Monitoring Glomerular Filtration Rate and Albuminuria in People with CKD

5. Refer to Specialist Care When Appropriate

Refer to Renal if:[3][4][8]

- **KFRE**: 5-year risk of ESRD of >5% in CKD G3 or 2-year risk exceeds 10% if eGFR <30 mL/min/1.73 m² (G4)
  - KDpredict is useful for older patients with eGFR 15–45 mL/min/1.73 m², as it contextualises the comparative risks of all-cause death (typically higher) and kidney failure within 5 years, enhancing shared decision-making about the need for RRT at the point of referral
- a sustained decrease in eGFR of ≥25% and a change in eGFR category within 12 months
- a sustained decrease in eGFR of ≥15 mL/min/1.73 m² per year
- uACR ≥70 mg/mmol, unless known to be secondary to diabetes
- uACR >30 mg/mmol **AND** hematuria
- poorly controlled hypertension, despite the use of **at least four** antihypertensives
- suspected genetic causation, e.g. PKD
- suspected renal artery stenosis
- recurrent nephrolithiasis
- persistent anemia (Hb <10 g/dL) in G4, as EPO and intravenous iron may help QoL
- any previous episode in which serum potassium has breached 6 mmol/L.

In patients with persistent NVH and no evidence of UTI, refer to Urology using a **suspected cancer pathway referral** if age ≥60 years (do not assume secondary to CKD).[11]

Urgent/immediate referral to/discussion with specialist services may be warranted if:[9][10]

- eGFR <15 mL/min/1.73 m²
- AKI (sCr increase ≥50% from baseline)[10]
- heavy proteinuria (uPCR >300 mg/mmol [>2655 mg/g] or typically uACR >220 mg/mmol [>1770 mg/g])
- suspected systemic illness with renal involvement (e.g. sarcoidosis, myeloma).

1. Lipids and Aspirin[3][4][15–18]

- For primary prevention, offer **atorvastatin 20 mg OD** for all people with CKD stages G3–5
- For secondary prevention, do not stop or attenuate statin dose if eGFR <30 mL/min/1.73 m²
- Offer **aspirin** for **secondary prevention** of CVD
- See also the Primary Care Hack on lipid management.

2. RAASis and BP[3][4][12][18–25]

- Aim for **SBP <130 mmHg**, or **as low as reasonably achievable**[D]
- Follow NG136[19] and NG203[3] when choosing medications
- When RAASi is first line, choose an **ARB**[E]
- Independent of BP:[E]
  - if uACR >30 mg/mmol: start **ARB** and titrate to maximum tolerated dose
  - if uACR >3 mg/mmol in people with diabetes: start **ARB** and titrate to maximum tolerated dose
    - additional agents may be required
- If eGFR <60 mL/min/1.73 m² when starting or increasing RAASi, check U&E within **28 days**; if eGFR ≥60 mL/min/1.73 m², there is no need to routinely recheck U&E
  - **if K⁺ ≥5.5 mmol/L or sCr rise ≥50% encountered, follow Figure 2**; otherwise, continue to optimize RAASi dose.

3. SGLT2 Inhibitors[18][20][21][26]

- Start an **SGLT2i** in eligible groups as per Figure 3, unless contraindicated (e.g. in people living with type 1 diabetes)[E,F,G]
- Continue the SGLT2i until dialysis or transplant[18][20][26]
- See also the Primary Care Hack on extra-glycemic indications of SGLT2is.

4. Specific Considerations in Type 2 Diabetes

If type 2 diabetes, eGFR ≥25 mL/min/1.73 m², and uACR ≥3 mg/mmol (≥30 mg/g), consider adding:

- **finerenone**[E]—add this nonsteroidal MRA if serum K⁺ <5.0 mmol/L to reduce adverse kidney and CV outcomes[5][6][18][20][27][28]
  - avoid if already on a steroidal MRA
  - may be initiated concurrently with an SGLT2i if treatment naïve[5][6][27][28]
- **semaglutide**[E]—the FLOW study demonstrated that weekly SC semaglutide 1 mg reduced the risk of adverse kidney and CV outcomes in type 2 diabetes and CKD[29]
  - consider if glycemic and weight management goals are not met and/or K⁺ >5.0 mmol/L[4][18][21]
  - deprescribe any DPP4 inhibitor if initiating semaglutide[18]
  - do not switch to semaglutide if an existing GLP-1 RA with proven CV benefit is achieving goals (e.g. liraglutide, tirzepatide, or dulaglutide).

5. Holistic Care

- Opportunistically check FBC/HbA_{1c}/lipids/LBTs/weight/WtHR/BP at the same time as checking U&E and ACR, to support holistic interventions (see the Primary Care Hacks CKM checklist, as well as the Primary Care Hacks on lipid management and LBTs)
  - also see the 2026 ACC/AHA/ADA/ASN guideline on CKM syndrome and this review of CKD in CKM syndrome
- Offer vaccinations according to national/local guidance (e.g. the Green Book).[30][31]

Lifestyle and Dietary Modification

- Encourage **weight loss** and **smoking cessation**[3–5][7]
- Advise on **salt restriction** (ideally <2 g of sodium per day, equating to <5 g of sodium chloride)[3][4][7][12]
- If gastric protection is required, consider **H_2RAs** over PPIs, as PPI use has been associated with increased risk of nephritis and progression of CKD[13][14]
- Avoid **NSAIDs**[3][4]
- Promote **exercise** of at least 150 minutes per week[3–5][7]
- Kidney Care UK has produced a helpful patient information leaflet to support people living with CKD.

Figure 2: Managing Acute Changes in Kidney Function Related to RAASis[3][22–25]

	Serum K⁺ (mmol/L)		
	5.5–6.1	**6.2–6.4**	**≥6.5**
Unwell and/or ≥50% sCr rise	**Consider hospital referral** according to clinical circumstances, likely cause, and risk of deterioration **Suspend RAASi[1,2]**	**Urgent hospital referral** **Suspend RAASi[1,2]**	**Urgent hospital referral**
Well and <50% sCr rise	**Maintain RAASi[1,2] dose** **Repeat K⁺ within 14 days** If repeat K⁺ is: • **≤5.5**: optimize RAASi[1,2] dose • **5.6–5.9**: maintain RAASi[1,2] dose • **6.0–6.4**: suspend RAASi[1,2] and discuss initiation of K⁺ binders with Renal team[3,4] • **≥6.5**: **consider hospital referral**	**Halve RAASi[1,2] dose** **Repeat K⁺ within 7 days** If repeat K⁺ is: • **≤5.5**: optimize RAASi[1,2] dose • **5.6–5.9**: maintain RAASi[1,2] dose • **6.0–6.4**: suspend RAASi[1,2] and discuss initiation of K⁺ binders with Renal team[3,4] • **≥6.5**: **consider hospital referral**	**Consider hospital referral**

1. Note: RAASis include ACEis, ARBs, K⁺-sparing diuretics, and MRAs.
2. Suspend finerenone if K⁺ ≥5.5 mmol/L, restarting at 10 mg when K⁺ is <5.0 mmol/L.
3. NICE endorses K⁺ binders, as they enable RAASi use in those not on dialysis.
4. See NICE TA1148 and TA623. Note: K⁺ binders are contraindicated in people with a history of bowel obstruction, major GI surgery, or a swallowing disorder.

Table based on the authors' clinical experience and interpretation of clinical guidance.

Figure 3: SGLT2i Initiation in CKD

eGFR (mL/min/1.73 m²)	uACR (mg/mmol) <20	uACR (mg/mmol) ≥20
≥60	Suggested in type 2 diabetes	Recommended
45–60	Suggested in type 2 diabetes	Recommended
20–45	Recommended	Recommended
<20	Suggested[H]	Suggested[H]
Dialysis	Not recommended[H]	

Footnotes

[A]**A spot uACR is acceptable.**[3][5]

[B]NICE suggests repeating the eGFR within 2 weeks if eGFR <60 mL/min/1.73 m²[3]—this is at the discretion of the ordering clinician, based on the acuity of the presenting cause. If there is persistent invisible hematuria, also consider referring for investigation for urinary tract malignancy.[3]

[C]Key markers of kidney disease include urine sediment abnormalities, tubular disorders, histology-proven abnormalities, imaging-proven structural abnormalities, and kidney transplantation.[4]

[D]BP target can be relaxed and individualized if the patient cannot tolerate SBP <130 mmHg or because of other factors, e.g. frailty, reduced life expectancy, syncope.[3][4][12] NICE recommends targets of 120–139 mmHg (SBP) and <90 mmHg (DBP) if ACR <70 mg/mmol, and targets of 120–129 mmHg and <80 mmHg if ACR ≥70 mg/mmol.[3] However, in various studies, intense SBP control has not resulted in compromise.[3][5][12]

[E]Provide advice on **SICK day rules** and review the **SADMANS mnemonic** (to include finerenone and GLP-1 RAs).[18][32]

[F]Counsel patient on the main side effects of SGLT2i use, including risk of UTIs, mycotic genital infections, Fournier's gangrene, DKA, foot disease, and dehydration.[26][33] Provide **SICK day guidance**, including a leaflet.[26][32] **DO NOT** routinely check renal function after commencing an SGLT2i.[3][26] Consider the patient's hydration status and adjust/reduce diuretic or anti-BP doses if high risk of hypovolemia.[26] As eGFR drops below 45 mL/min/1.73 m², SGLT2is' glycemic efficacy reduces.[26] However, SGLT2is can be continued if tolerated until RRT.[18][20][26]

[G]Relative contraindications to SGLT2i use include immunosuppression (e.g. kidney transplantation, lupus, vasculitis) and ADPKD.[26]

[H]Do not discontinue SGLT2i if renal function deteriorates (eGFR <20 mL/min/1.73 m²), as long as the SGLT2i was initiated prior to this.[26]

ACC=American College of Cardiology; **ACEi**=angiotensin-converting enzyme inhibitor; **ACR**=albumin to creatinine ratio; **ADA**=American Diabetes Association; **ADPKD**=autosomal dominant polycystic kidney disease; **AHA**=American Heart Association; **AKI**=acute kidney injury; **ARB**=angiotensin II receptor blocker; **ASN**=American Society of Nephrology; **BP**=blood pressure; **CKD**=chronic kidney disease; **CKM**=cardiovascular–kidney–metabolic; **CNI**=calcineurin inhibitor; **CV**=cardiovascular; **CVD**=cardiovascular disease; **DBP**=diastolic blood pressure; **DKA**=diabetic ketoacidosis; **DPP4**=dipeptidyl peptidase-4; **eGFR**=estimated glomerular filtration rate; **EPO**=erythropoietin; **ESRD**=end-stage renal disease; **FBC**=full blood count; **GFR**=glomerular filtration rate; **GI**=gastrointestinal; **GLP-1 RA**=glucagon-like peptide-1 receptor agonist; **GP**=general practitioner; **H_2RA**=histamine-2 receptor antagonist; **Hb**=hemoglobin; **HbA_{1c}**=glycated hemoglobin; **KFRE**=Kidney Failure Risk Equation; **LBT**=liver blood test; **MRA**=mineralocorticoid receptor antagonist; **NG**=NICE Guideline; **NICE**=National Institute for Health and Care Excellence; **NSAID**=nonsteroidal anti-inflammatory drug; **NVH**=nonvisible hematuria; **OD**=once daily; **PKD**=polycystic kidney disease; **PPI**=proton-pump inhibitor; **QoL**=quality of life; **RAASi**=renin–angiotensin–aldosterone system inhibitor; **RAG**=red, amber, green; **RRT**=renal replacement therapy; **SADMANS**=sulfonylureas, ACEis, diuretics, metformin, ARBs, NSAIDs, SGLT2is; **SBP**=systolic blood pressure; **SC**=subcutaneous; **sCr**=serum creatinine; **SGLT2i**=sodium–glucose co-transporter-2 inhibitor; **SICK**=sugar, insulin, carbohydrate, ketones; **TA**=Technology Appraisal; **U&E**=urea and electrolytes; **uACR**=urine albumin to creatinine ratio; **uPCR**=urine protein:creatinine ratio; **UTI**=urinary tract infection; **WtHR**=waist-to-height ratio.