

KISS: Chronic Kidney Disease

Based on [NICE NG203, 2021](#) & [NICE TA775, 2022](#) & [TA942 2023](#)

Classification:

- CKD is classified according to estimated GFR and proteinuria using albumin-creatinine ratio (ACR):
 - G is used to denote the GFR category, G1-G5
 - A for the ACR category, A1-A3
- Increased ACR and decreased GFR are associated with adverse outcomes.
- Increased ACR and decreased GFR multiply these risks e.g. G2A1 = low risk of adverse outcomes, but G3bA2 = high risk and G3bA3 = very high risk (see [heat map](#) for risk according to GFR and A category).

GFR Category	GFR	Terms
G1	>90	Normal or high
G2	60-89	Mildly decreased relative to young adult level (NB: there is NO CKD for G1&2 in the absence of markers of kidney damage e.g. proteinuria)
G3a	45-59	Mild to moderate decrease
G3b	30-44	Moderate to severe decrease
G4	15-29	Severely decrease
G5	<15	Kidney Failure
CKD: urine Albumin Creatinine Ratio (ACR) categories		
ACR category	ACR (mg/mmol)	Terms
A1	<3	Normal
A2	3-30	Moderate increase; clinically important with increased risk of adverse outcomes
A3	>30	Severely increased

Investigation:

- eGFR testing:
 - If the first discovery of low eGFR/raised creatinine, clinically assess carefully and if well repeat the test within 14 days to exclude acute kidney injury. If eGFR is stable, repeat again at 3 months to see if it is sustained.
 - If low eGFR is sustained >90 days, CKD is diagnosed.**
 - Interpret eGFR with caution in those with extremes of muscle mass e.g. reduced muscle mass will lead to over-estimation of eGFR this has implications when interpreting levels of frailty.
- Proteinuria Testing:**
 - Do not use reagent strips to identify proteinuria, test for CKD with eGFR and ACR.
 - If the initial ACR is between 3 and 70, this should be confirmed with an early morning sample:
 - Confirmed ACR > 3 is considered clinically important.
 - If the initial level is over 70, a repeat is not needed.
- Indications for renal ultrasound:**
 - Accelerated progression of CKD.
 - Persistent invisible haematuria.
 - Symptoms of urinary tract obstruction.
 - Family history of polycystic kidney disease.
 - GFR category G4 or G5.

KISS: Chronic Kidney Disease Management

[NICE NG203, 2021](#) [Cochrane 2023](#) [BJGP2018;68:356](#) [NICE TA775, 2022](#) [TA942 2023](#) [BMJ 2023;383:e074216](#)

Inform:

- Optimise risk factors e.g. lifestyle, hypertension, diabetes etc & direct patients to [Information Sources](#).

Monitor for progression:

- Regular monitoring of eGFR:
 - G1-3a at least annually, G3b-G4 at least 6 monthly, G5 3 monthly.
- Check for accelerated progression:
 - = a change in G category & a sustained decrease in eGFR of >25%, or a decrease in eGFR of 15 per year.
- Assess the 5-year risk of needing renal replacement [Kidney Failure Risk Equation](#).

Reducing cardiovascular risk, anaemia and bones:

- Lifestyle advice; avoid NSAIDs.
- **Lower BP: Target BP < 140/90; lower target <130/80 if ACR> 70.**
 - Follow usual hypertension guidelines if ACR < 30 (i.e. groups A1 and A2).
 - Offer ACEi or ARB if ACR > 30 (A3).
 - ACEi and ARBs may be associated with a temporary fall in eGFR after starting ACEi or ARBs of up to 25% or rise in Cr of 30% - if so repeat after 1-2 weeks but don't change dose and accept a drop in eGFR <25% or a rise in Cr <30%.
 - Seek specialist advice if sustained and significant change.
 - Do not start if serum K >5, and stop if serum K >6.
- **Proteinuria:**
 - If CKD and diabetes ([NG28 Nov 2021](#)) offer **ACEi or ARB** if ACR > 3.
 - If CKD without diabetes, refer for nephrology assessment if ACR > 70.
- **SGLT inhibitors** dapagliflozin and empagliflozin are now an option as **add on to max tolerated ACEi/ARB:**
 - **Dapagliflozin** if eGFR of 25-75 ml/min/1.73 m² AND type 2 diabetes OR have a urine ACR of ≥ 22.6 mg/mmol.
 - **Empagliflozin** if eGFR of 20-45 ml/min/1.73 m² OR
 - eGFR 45-90 ml/min/1.73 m² AND either a urine ACR of ≥22.6 mg/mmol or type 2 diabetes.
- **Statins:** offer atorvastatin 20mg to patients with CKD not requiring dialysis for 10 and 20 prevention of CVD [NICE 2023](#)
 - if the target is not met, and eGFR is > 30 then increase the dose; if eGFR is < 30 get specialist renal advice.
- **Antiplatelets** - offer only for secondary prevention of CVD.
- **Anaemia: Consider investigating and managing anaemia in adults with CKD** if Hb ≤ 110 g/L:
 - If eGFR is > 60 ml/min investigate other causes of anaemia as it is unlikely to be due to CKD.
 - If eGFR is 30 - 60 ml/min investigate other causes of anaemia, but use clinical judgement to decide how extensive those investigations should be as the anaemia may be caused by CKD.
 - If eGFR is < 30 ml/min think about other causes, but note anaemia is often caused by CKD.
- **Bones**
 - Serum calcium, phosphate and PTH levels need to be measured in patients with category G4 or G5 (i.e. eGFR<30) and obtain specialist advice. Offer cholecalciferol to treat Vit D deficiency if found.

Referral criteria

- 5-year risk of needing renal replacement therapy > 5% using the [Kidney Failure Risk Equation](#).
- Stage A3 (ACR>30) plus haematuria OR ACR >70, unless secondary to diabetes and on treatment.
- Accelerated progression (see monitoring above).
- Hypertension is poorly controlled despite at least 4 drugs at therapeutic doses.
- Suspected renal artery stenosis, or suspected rare or genetic cause.