



NICE CKD Guidelines

A Summary

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Remit of NICE CKD Guidelines

“Early identification and management of chronic kidney disease in adults in primary and secondary care”



Testing renal function

- Allow for biological and analytical variability of serum creatinine ($\pm 5\%$) when interpreting changes in eGFR.
- Advise not to eat meat for at least 12 hours before eGFR blood test.
- If eGFR < 60 ml/min/1.73 m² in first test
 - Re-test within 2 weeks
 - Quantify urinary albumin/protein excretion, and confirm first abnormal result on an early morning sample (if not previously obtained)
- If eGFR ≥ 60 ml/min/1.73 m²
 - Quantify urinary albumin/protein excretion if there is strong suspicion of CKD
 - Report as simply ≥ 60 ml/min/1.73 m²
 - Consider significant reduction in renal function if serum creatinine rise $>20\%$.



Testing for proteinuria (non-diabetics)

- To detect and identify proteinuria, use urine ACR in preference, as it has greater sensitivity than PCR for low levels of proteinuria.
- For quantification and monitoring of proteinuria, PCR can be used as an alternative.
- Do not use reagent strips to identify proteinuria

Proteinuria	PCR (mg/mmol)	ACR (mg/mmol)
0.5g/24hrs	50	30
1.0g/24hrs	100	70



Proteinuria testing (II)

- In people without diabetes clinically significant proteinuria is:
 - ACR ≥ 30 mg/mmol
 - PCR ≥ 50 mg/mmol
- If the initial ACR is 30-70 (PCR 50-100), confirm with early morning sample
- If the initial ACR is ≥ 70 (PCR ≥ 100) repeat sample need not be tested

Revised classification system for CKD

Stage ^b	eGFR (ml/min/1.73 m ²)	Description	Typical testing frequency ^c
1	≥ 90	Normal or increased GFR, with other evidence of kidney damage	12 monthly
2	60–89	Slight decrease in GFR, with other evidence of kidney damage	
3A	45–59	Moderate decrease in GFR, with or without other evidence of kidney damage	6 monthly
3B	30–44		
4	15–29	Severe decrease in GFR, with or without other evidence of kidney damage	3 monthly
5	< 15	Established renal failure	6 weekly

- Use the suffix (p) to denote the presence of proteinuria when staging CKD
- Define proteinuria as urinary ACR ≥ 30 mg/mmol, or PCR ≥ 50 mg/mmol.



Testing for haematuria

- Use reagent strips rather than urine microscopy
- 1+ or more is significant
- Confirm with 2/3 positive results
- No need for MSU to confirm positive result
- Investigate for urinary tract malignancy in appropriate age groups (regardless of proteinuria)
- If no proteinuria, annual follow up of:
 - ACR/PCR
 - GFR
 - BP



Definition of progressive CKD

- Decline in eGFR of >5 ml/min within 1 year, or > 10 ml/min/1.73 m² within 5 years.
- Take at least 3 eGFRs over at least 90 days.
- For a new finding of reduced eGFR, repeat test within 2 weeks to exclude acute kidney injury (acute renal failure)



Indications for specialist referral

- Take into account the individual's wishes and co-morbidities when considering referral.
- Stage 4 and 5 CKD (with or without diabetes)
- Proteinuria ≥ 1.0 g/day unless known to be due to diabetes
- Proteinuria ≥ 0.5 g/day with haematuria
- Rapidly declining eGFR: > 5 ml/min in 1 year, or > 10 ml/min within 5 years
- Hypertension that remains poorly controlled despite the use of at least four antihypertensive drugs at therapeutic doses
- People with, or suspected of having, rare or genetic causes of CKD
- Suspected renal artery stenosis
- Consider discussing management issues with a specialist in cases where it may not be necessary for the person with CKD to be seen by the specialist
- Once a referral has been made and a plan jointly agreed, consider routine follow-up at the patient's GP surgery rather than in a specialist clinic and specify criteria for future referral or re-referral.



Renal ultrasound

- Indications:
 - progressive CKD
 - visible or persistent invisible haematuria
 - symptoms of urinary tract obstruction
 - family history of polycystic kidney disease (and aged over 20)
 - stage 4 or 5 CKD
 - require a renal biopsy.
- Advise people with a family history of inherited kidney disease about the implications of an abnormal result before arranging the scan.



Information and education

- Offer high quality education at appropriate stages of the patient's condition to enable understanding and informed choices about treatment.
- Tailor information to their stage and cause of CKD, any complications and the risk of progression.
- Involve people with CKD in the development of information/education programmes
- Healthcare professionals providing information and education programmes should ensure they have specialist knowledge about CKD and skills to facilitate learning.
- Take account of the psychological aspects of the condition and offer support.



Blood pressure targets

Patients without diabetes	
Proteinuria <1.0 gram/day (PCR <50, ACR<30)	120-139/<90
Proteinuria ≥1.0g/day (PCR 100+, ACR 70+)	120-129/<80
Patients with diabetes	
With albuminuria or reduced eGFR	120-129/<80



Choice of anti-hypertensive

Condition	First line anti-hypertensives
CKD with proteinuria <0.5g/day (PCR <50, ACR <30)	Choice of anti-hypertensive treatment
Proteinuria ≥0.5g/day (PCR ≥ 50, ACR ≥ 30)	ACEI (or ARB)
Diabetes with microalbuminuria	ACEIs (or ARB)



Use of ACE Inhibitors

- Increase to maximum tolerated dose before adding second agent
- Test eGFR and K⁺ before treatment starts, and 1-2 weeks after initiation or any dose increase
- Avoid use if K⁺ >5.0. Check for other drugs contributing to hyperkalaemia
- Stop ACEI if K⁺ ≥6.0 mmol/L and no other reversible cause
- Allow eGFR decrease of up to 25% (or plasma creatinine increase of up to 30%) without stopping or modifying dose
- If eGFR/plasma creatinine rises more than this, look for identifiable cause first before stopping



Summary of proteinuria thresholds

Parameter	PCR	ACR
Increased risk of progression of CKD	≥ 50	≥ 30
'p' suffix in CKD staging system	≥ 50	≥ 30
Indication for ACEs (ARBs)	≥ 50	≥ 30
Indication for lower BP target (120-129/<80)	≥ 100	≥ 70



Testing for anaemia

- Check haemoglobin if eGFR <45 (if not already measured)
- If Hb < 11.0 g/dL, refer to NICE clinical guideline on anaemia of CKD



Bone metabolism testing and management

- Measure calcium, phosphate and PTH if eGFR<30 (stage 4 and 5 CKD) but not routinely in stages 1–3B.
- When vitamin D supplementation is indicated in people with CKD offer:
 - cholecalciferol or ergocalciferol to people with stage 1, 2, 3A or 3B CKD
 - alfacalcidol or calcitriol to people with stage 4 or 5 CKD.



Other cardiovascular prevention treatments

- Encourage the person to take **exercise**, achieve a healthy **weight** and **stop smoking**.
- **Statins** for primary and secondary prevention: as for people without CKD
- **Aspirin** for primary and secondary prevention: as for people without CKD



Dietary Intervention in CKD

- An appropriately trained professional should discuss the risks and benefits of dietary protein restriction.
- It should occur within the context of education, detailed dietary assessment and supervision.
- Offer dietary advice concerning potassium, phosphate, protein, calorie and salt intake to people with progressive CKD.



SKU: Next Steps

- SKU review of guidelines (consultants, relevant non-medical clinical staff)
- Discussion with pathology/Sussex renal networks
- Modify our Sussex CKD guidelines where required
- Develop educational and communication strategy for primary and secondary care in Sussex



<http://www.nice.org.uk/CG073>