

Significance of Chronic Kidney Disease in 2015

There is still a requirement within QOF to keep a register of people with CKD stages 3-5. The other CKD QOF targets have been retired. **This is because CKD care should now be embedded within daily practice**; it is **not** because CKD is now felt to be less important, or “overdiagnosed”.

A small, although important, minority of people with CKD will develop more advanced renal failure where dialysis or transplantation may be required.

However, for the overwhelming majority, CKD is of greater significance for other reasons:

- for **safe prescribing** and **medicines management** (including over the counter medications such as NSAIDs)
- as a **powerful and modifiable risk factor for cardiovascular disease**; current NICE Guidance on Lipid Modification (CG181, 2014) is that:
 - CV risk scores (eg QRISK2) are **not** used in people with CKD, and that
 - Atorvastatin 20 mg od is offered to **all** people with CKD
- as a **risk factor for Acute Kidney Injury (AKI)**, a major cause of avoidable harm:
 - minor impairment in eGFR **at any age** dramatically increases the risk of AKI
 - ACE inhibitors, angiotensin receptor blockers, and metformin should - subject to an individual risk assessment - be temporarily stopped during acute intercurrent illnesses (e.g. significant febrile illness, diarrhoea and vomiting) to reduce the risk of AKI (“**sick day rules**”)

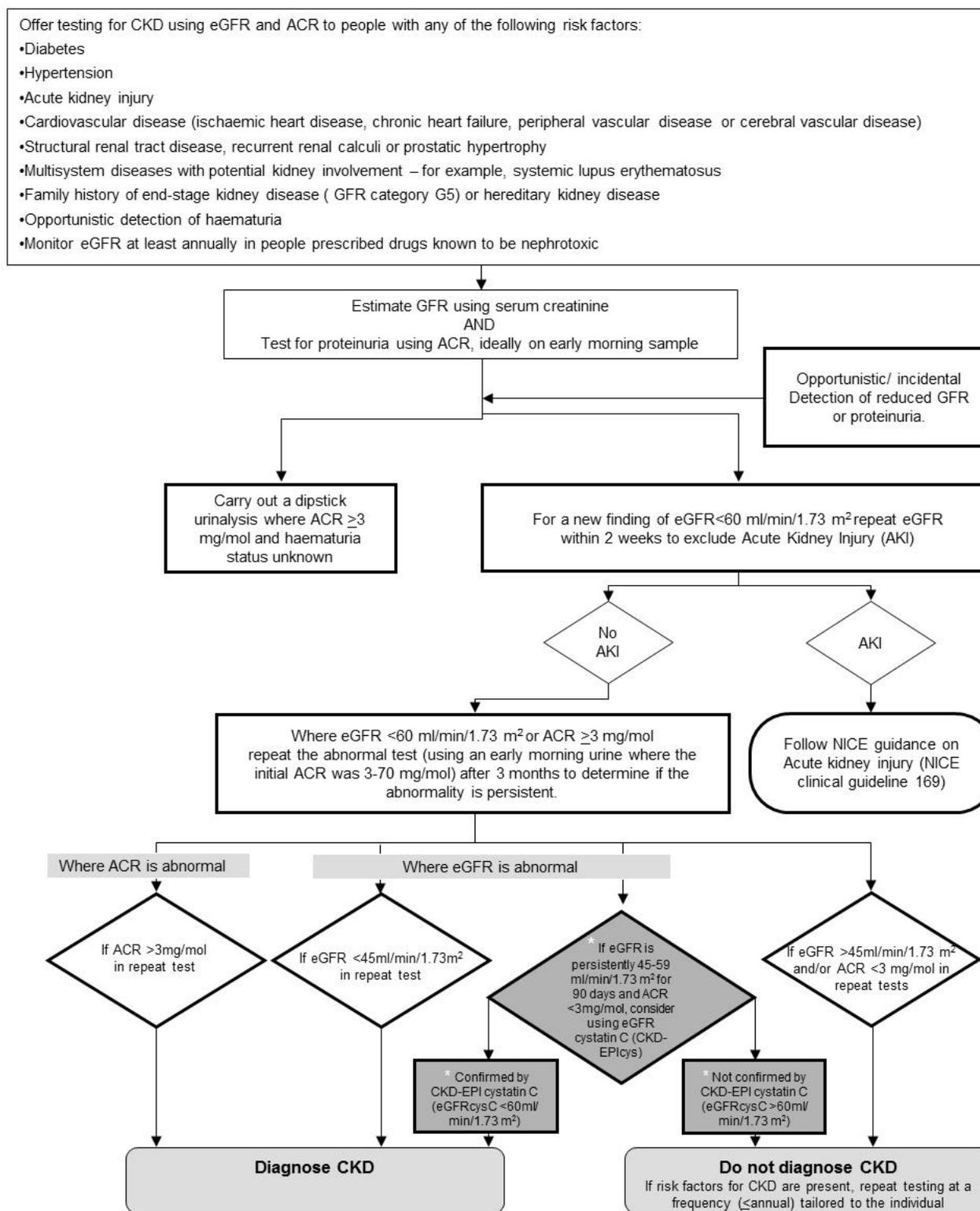
Revised NICE Guidance on CKD was published in 2014. This guideline was developed in September 2015 and will be reviewed in September 2018

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Identification of CKD

Source: Chronic Kidney disease: early identification and management of chronic kidney disease in adults in primary and secondary care NICE clinical guideline 182 (July 2014)



NICE guidance is that an additional blood test, Cystatin C, is considered to confirm a CKD diagnosis where the eGFR is between 45 and 59 ml/min/1.73m² and the ACR is normal. Those where the Cystatin C-based eGFR is >60ml/min/1.73m² should be regarded as NOT having CKD. Also note that the cystatin C test is (as at September 2015) not in widespread use in the UK, and you may therefore not have access to the test unless your local lab is Epsom/St Helier.

Follow up of people with known CKD

All people with CKD need long-term monitoring of their kidney function

NICE 2015 recommend that **CKD is classified using a combination of eGFR and ACR** as these two measures are independently associated with increased risk.

The **frequency of monitoring of eGFR** (i.e. number of measures per year) is then guided by the following Table (from NICE CG182, 2014):

		ACR categories (mg/mmol), description and range		
		A1 <3 Normal to mildly increased	A2 3–30 Moderately increased	A3 >30 Severely increased
GFR categories (ml/min/1.73 m ²), description and range	G1 ≥90 Normal and high	≤1	1	≥1
	G2 60–89 Mild reduction related to normal range for a young adult	≤1	1	≥1
	G3a 45–59 Mild–moderate reduction	1	1	2
	G3b 30–44 Moderate–severe reduction	≤2	2	≥2
	G4 15–29 Severe reduction	2	2	3
	G5 <15 Kidney failure	4	≥4	≥4



Increasing risk



Increasing risk

Abbreviations: GFR, glomerular filtration rate, ACR, albumin creatinine ratio

NB: ACR is an important indicator of cardiovascular risk and progression.

Adapted with permission from Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group (2013) KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease. Kidney International (Suppl. 3): 1–150

The frequency of monitoring of ACR (or PCR) will vary according to individual circumstances. **In many cases the ACR (PCR) will need to be measured less frequently than the eGFR**

Selected Management Issues in CKD

Cardiovascular Risk Reduction

- **lifestyle measures** (as in the general population)
- **blood pressure control**
 - 130-139/<80 mmHg standard
 - If diabetes or heavy proteinuria (ACR>70 mg/mmol or PCR>100 mg/mmol) aim 120-129/<80 mmHg
- **lipid lowering** (offer Atorvastatin 20mg od to all people with CKD)
- aspirin only for secondary prevention of CVD

Use of ACE Inhibitors and Angiotensin Receptor Blockers

Indications ACR>30 mg/mmol (PCR>50 mg/mmol) if no diabetes if hypertension present
 ACR>70 mg/mmol (PCR>100 mg/mmol) if no diabetes regardless of BP
 ACR>3 mg/mmol in diabetes regardless of BP
 Otherwise follow NICE standard "ACD" guidance

Practicalities Do not start if K>5 mmol/l
 Stop if K>6 mmol/l
 Repeat eGFR and K after 1-2/52 of treatment or dose change
 If eGFR falls by >25% stop and refer renal unit
 If eGFR falls by <25% repeat after further 1-2/52 to ensure stable
Do not use combination blockade (i.e. more than one of ACEi, ARB, Aliskerin)
NB discuss sick day rules (see under Significance of CKD in 2015) **with patient**

Indications for Renal Ultrasound

- accelerated progression of CKD
 - a sustained decrease in GFR of 25% or more and a change in GFR category within 12 months, or
 - a sustained decrease in GFR of 15 mL/min/1.73 m² per year
- visible or persistent invisible haematuria
- symptoms of urinary tract obstruction
- a family history of polycystic kidney disease and are aged over 20 years
- a GFR of less than 30 mL/min/1.73 m² (GFR category G4 or G5)
- considered by a nephrologist to require a renal biopsy

Microscopic (non-visible, invisible) haematuria

- Use reagent strips (dipsticks) not urine microscopy to detect non-visible haematuria
- Regard 2 out of 3 positive (1+ or more) dipsticks as confirmation of persistent invisible haematuria (ie regard "trace" as negative)
- Persistent invisible haematuria, with or without proteinuria, should prompt investigation for urinary tract malignancy in appropriate age groups (age>40, Renal Association/British Association of Urological Surgeons 2008)
- Persistent invisible haematuria in the absence of proteinuria should be followed up annually with repeat testing for haematuria, proteinuria or albuminuria, eGFR and blood pressure as long as the haematuria persists

Referral Indications in CKD

From NICE CG182:

- GFR <30 mL/min/1.73 m² (GFR category G4 or G5), with or without diabetes
- ACR 70 mg/mmol or more, unless known to be caused by diabetes and already appropriately treated
- ACR 30 mg/mmol or more (ACR category A3), together with haematuria
- sustained decrease in GFR of 25% or more, and a change in GFR category or sustained decrease in GFR of 15 mL/min/1.73 m² or more within 12 months
- hypertension that remains poorly controlled despite the use of at least 4 antihypertensive drugs at therapeutic doses
- known or suspected rare or genetic causes of CKD
- suspected renal artery stenosis

Renal referral may also be indicated for **suspected renal anaemia**, typically where Hb <11 g/L and eGFR <45mL/min/1.73m²