

If patient has diabetes please see  
DIABETES GUIDELINES

Chronic Kidney Disease (CKD) is staged according to the estimated Glomerular Filtration Rate (eGFR). eGFR is calculated from the age, sex and serum creatinine level and will be reported alongside any creatinine measurement by the chemical pathology laboratory. The stages of CKD are as follows:-

## CLASSIFICATION OF CKD ACCORDING TO eGFR

Stage	eGFR	Description	} Stage 1-2 must have haematuria or proteinuria or structural abnormalities to be classified as CKD
1	≥ 90	Normal or increased GFR, with other evidence of kidney damage	
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	
3B	30-44		
4	15-29	Severe decrease in GFR with or without other evidence of kidney damage	
5	<15	Established renal failure	

2 readings >90 days apart required to diagnose CKD

### WHO SHOULD BE TESTED FOR CKD

- Monitor renal function at least annually in people with prescribed drugs known to be nephrotoxic (eg NSAIDs)
- Offer people testing for CKD if they have any of the following risk factors:
  - diabetes
  - hypertension
  - cardiovascular disease (ischaemic heart disease, chronic heart failure, peripheral vascular disease and cerebral vascular disease)
  - structural renal tract disease, renal calculi or prostatic hypertrophy
  - multisystem disease with potential kidney involvement, e.g. systemic lupus erythematosus (SLE)
  - family history of stage 5 CKD or hereditary kidney disease
  - opportunistic detection of haematuria or proteinuria

### RENAL ANAEMIA

Patients with progressive CKD can develop renal anaemia which may require treatment with erythropoietin. Renal anaemia should only be diagnosed after other causes of anaemia - for instance iron deficiency, folate or B12 deficiency, haemolysis - have been excluded, with further investigation of the underlying cause (eg of iron deficiency) according to standard medical practice. Renal anaemia is unusual in CKD3 but if suspected nephrology advice should be sought.

### TESTING FOR PROTEINURIA

- Measure albumin:creatinine ration on a spot urine sample (preferably early morning)
- If the initial ACR is >30 and <70 mg/mmol, confirm by a subsequent early morning sample. If the initial ACR is >70mg/mmol a repeat sample need not be tested
- In people without diabetes, clinically significant proteinuria is present when ACR >30mg/mmol. In people with diabetes microalbuminuria (ACR >2.5mg/mmol in men and ACR >3.5mg/mmol in women) is clinically significant

#### Testing for haematuria

- Use reagent strips rather than urine microscopy
- Evaluate further if there is a result of 1+ or more
- Do not use urine microscopy to confirm a positive result

### INFORMATION REQUIRED FOR REFERRAL OR LETTER OF ADVICE

As a **minimum**, the following information is required with any referral:

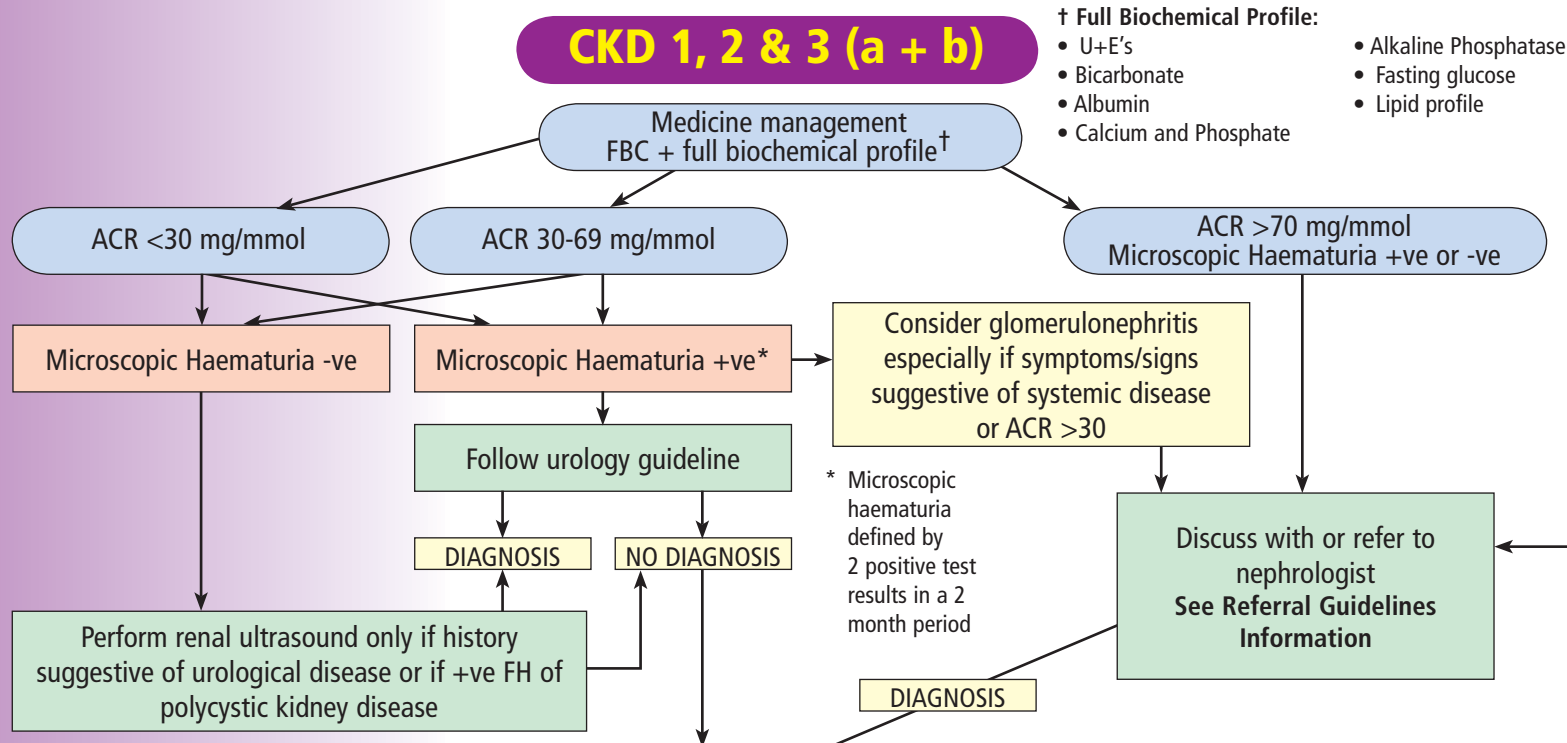
- List of previous renal function results with dates to assess stability
- Past medical and drug history
- Blood pressure
- ACR results
- FBC, Bicarbonate, Calcium, Phosphate, Albumin
- Renal ultrasound (if performed).

### STARTING ACE INHIBITOR OR ARB THERAPY

- Check renal function and electrolytes 1-2 weeks after starting/dose change
- A fall in eGFR of <25% is acceptable. If >25% stop ACEi or ARB and consider seeking specialist advice
- If potassium >6mmol/l and not on Spironolactone. Stop ACEi or ARB. Consider arranging low potassium diet and re-instituting ACEi or ARB once potassium normalised
- If eGFR falls by 5-25% recheck in 2-3 weeks to ensure decline is not progressive.

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## CKD 1, 2 & 3 (a + b)



† Full Biochemical Profile:

- U+E's
- Bicarbonate
- Albumin
- Calcium and Phosphate
- Alkaline Phosphatase
- Fasting glucose
- Lipid profile

## CKD 4

- Medicine management - no NSAIDs. Discuss with or refer to nephrologist if clinically indicated. (See box overleaf).

## CKD 5

- Urgent referral to nephrologist if clinically appropriate.

### Manage in Primary Care

- Patient Information leaflets and advice including lifestyle information, stopping smoking, exercise, weight management
- Treat hypertension according to guidelines:
  - Threshold for treatment 140/90
  - Target 120-139/90 if ACR <70 mg/mmol
  - Target 120-129/80 if ACR >70 mg/mmol
  - ACEi or ARB as first line if ACR >30 (must be hypertensive)
- In non diabetics consider ACEi/ARB if ACR >70 irrespective of the presence of hypertension or cardiovascular disease
- See Diabetes Guidelines for treatment of hypertension and use of ACEi/ARB in diabetics
- Treat hyperlipidaemia according to guidelines
- Aspirin if indicated
- Influenza/pneumococcal vaccination
- Review medications. Avoid NSAIDs.

### CKD 1 & 2

Annual  
eGFR and  
ACR

- Fall in eGFR >5ml/min/1.73m<sup>2</sup> in 1 year or >10ml/min/1.73m<sup>2</sup> within 5 years\*
- ACR > 70
- Fall in eGFR of >25% after starting ACEi or ARB

### CKD 3

6/12  
eGFR and  
ACR

- Fall in eGFR > 10ml/min/1.73m<sup>2</sup> in 12 months
- ACR > 70
- Fall in eGFR of >25% after starting ACEi or ARB

\* At least 3 eGFRs >90 days apart are required to determine progression. Acute kidney injury (acute renal failure) should be excluded. Also consider whether the progression continuing at the observed rate would mean renal replacement therapy within the person's lifetime.