UK Kidney Association

Proteinuria quick reference

Proteinuria at a glance	
Detection	Laboratory ACR or PCR on a spot urine sample. Do not screen with a dipstick; if one done for another reason shows protein, follow up with a laboratory test
Quantification	Laboratory test only: ACR if <70 mg/mmol; PCR at higher levels, or if dipstick protein ++ or more
Severe proteinuria	ACR ≥70 mg/mmol or PCR ≥100 mg/mmol – investigate and refer
Same-day phone referral	**Severe proteinuria with new-onset renal impairment and non-visible haematuria**
Nephrotic syndrome	**PCR >300 mg/mmol with low serum albumin and oedema – urgent referral**

Detection and quantification

Proteinuria is detected using a laboratory albumin:creatinine ratio (ACR)* or protein:creatinine ratio (PCR) on a spot urine sample. Do not use urine dipsticks to screen for proteinuria: they cannot confirm, quantify or rule it out. If a dipstick done for another reason shows protein, follow it up with a laboratory ACR or PCR.

For quantification, an ACR may be sufficient when ACR<70mg/mmol, but at higher levels, a PCR can be used as an alternative and may be more accurate. A PCR is the best test for quantifying proteinuria when a urine dipstick is positive (protein ++ or more).

24-hour collections to measure urinary protein are no longer necessary (24-hour urinary protein is approximately equal to PCR in mg/mmol divided by 100, in g/24h).

Investigating severe proteinuria

Proteinuria is a non-specific marker of renal damage. It may accompany chronic diseases, but can also be the **first sign of a rapidly-progressive kidney disease where delay in diagnosis and treatment may lead to preventable harm.**

Newly detected severe proteinuria (ACR≥70mg/mmol or PCR≥100mg/mmol) requires further investigation. Initial tests (prior to referral) should include:

1. Assessment of renal excretory function (eGFR)
2. Serum albumin
3. Dipstick to check for non-visible haematuria
4. Renal ultrasound

The patient should then be referred for specialist assessment.

> **Urgent:** When newly diagnosed severe proteinuria is accompanied by new-onset renal impairment and non-visible haematuria, immediate referral (by telephone that day) to the local renal department is mandatory without waiting for an ultrasound result.

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Proteinuria in diabetes

Diabetes is the commonest cause of proteinuria. In a person with diabetes, factors which suggest a cause for proteinuria other than diabetic nephropathy include:

1. Onset of severe proteinuria (ACR≥70mg/mmol or PCR≥100mg/mmol) within five years of developing diabetes
2. Rapid increase in proteinuria or decline in eGFR over weeks
3. Urine dipstick positive for blood (++ or more)
4. Abnormal kidneys on ultrasound (pelvicalyceal abnormalities, scarring, asymmetry)

In people with diabetes who do not have these features, it is reasonable to attribute the proteinuria to diabetic nephropathy in the first instance, but the diagnosis should be reassessed if these features change.

Treatment

People with proteinuria are at increased risk of both kidney failure and cardiovascular disease, so treatment aims for **kidney and cardiovascular protection**. This includes lipid-lowering therapy in line with NICE NG238.

In kidney diseases associated with proteinuria, an ACE inhibitor or ARB at the highest tolerated licensed dose reduces proteinuria and slows progression of CKD.

An SGLT2 inhibitor (dapagliflozin or empagliflozin) should be added to an ACE inhibitor or ARB for kidney and cardiovascular protection in adults with CKD and type 2 diabetes, or CKD without diabetes under the following circumstances:

- **CKD with type 2 diabetes:** eGFR ≥20ml/min/1.73m², at any level of ACR (NICE NG28, 2026)
- **CKD without diabetes:** eGFR 20 to <45ml/min/1.73m², or eGFR 45-90ml/min/1.73m² with ACR ≥22.6mg/mmol (NICE TA1075, TA942)

In type 2 diabetes with CKD stage 3-4, persistent ACR ≥3mg/mmol and eGFR ≥25ml/min/1.73m², finerenone (NICE TA877) can be added to optimised ACE inhibitor/ARB and SGLT2 inhibitor treatment for further kidney and cardiovascular protection.

Nephrotic syndrome

Heavy proteinuria (PCR>300mg/mmol) sufficient to cause an abnormally low serum albumin level and peripheral oedema is called nephrotic syndrome. **This requires urgent referral to a specialist.** There is an increased risk of thromboembolic disease.

** For guidance on proteinuria with ACR<70mg/mmol, see module on ACR*

More on this topic and other CKD information

Explore The UK CKD Guide for further resources on this and other areas of chronic kidney disease: The UK CKD Guide – UK Kidney Association

Scan the QR code to open it on your phone.