UK Kidney Association

Albuminuria quick reference

Albuminuria is the presence of albumin in the urine. Testing for albumin in the urine is the most accurate way to determine if people have proteinuria. Albuminuria is present in up to 9% of the adult population.

Albuminuria is measured by **albumin:creatinine ratio (ACR)** done on a **spot urine test**.

High ACR is independently associated with risk of end-stage kidney disease, cardiovascular disease, and all-cause mortality, and is used to identify patients who need tighter blood pressure control, ACEi/ARB, SGLT2 inhibitors and referral.

ACR testing should be regarded as of equal importance to eGFR. Both should be done annually in people at risk of kidney disease and more frequently in some patients with established chronic kidney disease (CKD).

How to interpret ACR

ACR of 3-30 mg/mmol is clinically important proteinuria and is referred to as 'high albuminuria' or 'moderately increased'

ACR of 30 mg/mmol or more is referred to as 'very high albuminuria' or 'severely increased'

An ACR between 3 mg/mmol and 70 mg/mmol should be repeated using the first urine of the morning to confirm the result.

A repeat sample is not needed if the ACR is 70 mg/mmol or more. This result alone confirms very high proteinuria.

ACR and eGFR should be done at least annually in patients with

- Diabetes
- Hypertension
- Previous acute kidney injury (AKI)
- Cardiovascular disease (ischaemic heart disease, chronic heart failure, peripheral vascular disease, or cerebral vascular disease)
- Structural kidney disease, e.g. kidney stones or prostatic hypertrophy,
- Multisystem diseases with potential kidney involvement (e.g. systemic lupus erythematosus [SLE]).
- Family history of end-stage kidney disease or proteinuria.
- Incidental findings of haematuria or proteinuria on urine diptest.

Recommended frequency of ACR and eGFR testing per year in patients with or at risk of CKD

		ACR categories (mg/mmol) description and range		
		<3 (A1)	**3-30 (A2)**	**>30 (A3)**
GFR category (ml/min/1.73m²)	**≥90**	**≤1**	**1**	**≥1**
	60-89	**≤1**	**1**	**≥1**
	45-59	**1**	**1**	**2**
	30-44	**≤2**	**2**	**≥2**
	15-29	**2**	**2**	**3**
	<15	**4**	**≥4**	**≥4**

When should a patient with a high ACR be discussed with a kidney specialist?

- ACR>70 mg/mmol, unless known to be caused by diabetes and already treated
- ACR>30 mg/mmol and haematuria

Use the ACR together with eGFR by the *Kidney Failure Risk Equation* to calculate the 5-year risk of end-stage kidney disease and refer if the risk is >5% at 5 years.

Further information: All guidance NICE recommended. Most accurate ACR is from a first morning void. Significant changes are 30% or more. If using a PCR test x0.7 for ACR.