

Albumin:Creatinine Ratio (Urine) - ACR

Description	Albumin:Creatinine measurement (ACR) is the recommended first line test for proteinuria detection (NICE CG182, 2014)
Indication	Detecting and monitoring CKD and its progression
Additional Info	<p><u>Why measure ACR?</u> Proteinuria is an important indicator of underlying kidney disease and its presence is a strong prognostic indicator of the likelihood of kidney disease progression.</p> <p>In conjunction with eGFR, urine protein measurement is utilised to diagnose, stage and monitor chronic kidney disease (CKD).</p> <p>NICE guidance has recommended that urinary albumin:creatinine ratio (ACR) should be used in preference to other tests of proteinuria, including protein:creatinine ratio (PCR), 24hr urinary protein and 'dipstick' tests. This is because ACR offers greater sensitivity for the detection of lower, but clinically significant levels of proteinuria.</p> <p>Patients should be tested for proteinuria if they have any of the following risk factors:</p> <ul style="list-style-type: none"> • GFR <60 ml/min/1.73m² • Diabetes • Hypertension • Cardiovascular disease(ischaemic heart disease, chronic heart failure, peripheral vascular disease or cerebral vascular disease) • Structural renal tract disease, multiple renal calculi or prostatic hypertrophy • Multisystem diseases with potential kidney involvement, e.g. systemic lupus erythematosus • Family history of end stage renal disease (GFR category G5) or hereditary kidney disease • Opportunistic detection of haematuria
Concurrent Tests	N/A
Dietary Requirements	N/A
Interpretation	<p><u>Diabetics</u> ACR >2.5 mg/mmol in men and >3.5 mg/mmol in women is considered clinically significant</p> <p><u>Non-diabetics</u> ACR >3.0 mg/mmol is considered clinically significant.</p> <p><u>Heavy proteinuria</u> ACR >70 mg/mmol (approx equivalent to PCR of >100 mg/mmol, 1g/day)</p> <p><u>Initial detection of proteinuria</u> If ACR >3.0 mg/mmol but <70 mg/mmol this should be confirmed by a subsequent early morning sample.</p>

	<p>If initial ACR is >70 mg/mmol (or PCR >100 mg/mmol) a repeat sample is not required.</p> <p>Additional information:</p> <p>Mersey Renal Units http://www.merseyrenalunits.nhs.uk/index.asp</p> <p>NICE CKD Guidance – July 2014. Chronic kidney disease in adults: assessment and management https://www.nice.org.uk/guidance/cg182</p>
Collection Conditions	Random urine – an early morning “first pass” urine sample is ideal
Frequency of testing	N/A