

THE PATHCARE NEWS

CKD ASSESSMENT BEYOND CREATININE

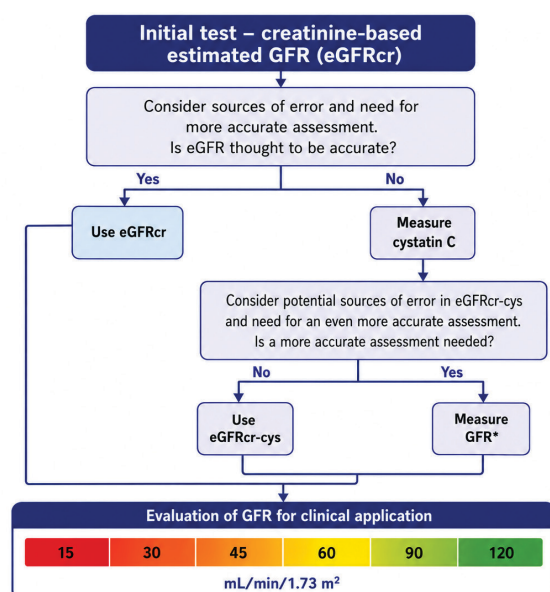
THE ROLE OF CYSTATIN C IN THE KDIGO CKD 2024 PATHWAY

What is Cystatin C, and why is it useful?

Cystatin C is a low-molecular-weight protein produced at a relatively constant rate by all nucleated cells. It is freely filtered by the glomeruli and then metabolised in the proximal tubules. Unlike creatinine, it is much less dependent on muscle mass or dietary meat intake. Combining both markers partly offsets their separate non-GFR determinants and generally provides a more accurate eGFR. However, inflammation, adiposity, smoking, thyroid dysfunction and glucocorticoids may influence cystatin C.

Creatinine and Cystatin C: advantages and limitations

Marker	Advantages	Limitations
Creatinine (eGFRcr)	Low cost, rapid, standardised and widely available; established initial test.	May mislead with altered muscle mass, extremes of BMI, meat or creatine intake, or medicines affecting tubular secretion.
Cystatin C (eGFRcys)	Less affected by muscle mass and diet; useful when eGFRcr is unreliable or clinically discordant; adds prognostic value.	Affected by inflammation, adiposity, smoking, thyroid dysfunction and glucocorticoids; higher cost and slightly longer TAT than creatinine.
Combined (eGFRcr-cys)	Most accurate estimate; useful near clinical thresholds, for high-stakes decisions, or when single-marker estimates disagree.	Still an estimate; may be inaccurate when both markers have non-GFR influences; requires both assays.



Remember uACR: CKD classification and risk assessment require both GFR and albuminuria categories. Request uACR alongside eGFR. Persistent uACR ≥ 3 mg/mmol indicates albuminuria and may establish CKD even when eGFR is ≥ 60 mL/min/1.73 m².

Key message: Start with creatinine. Add cystatin C when eGFRcr may be inaccurate or when greater accuracy will change care; when both markers are available, eGFRcr-cys is generally preferred.

KDIGO 2024 approach to GFR evaluation using initial and supportive tests. Reproduced from 2024 KDIGO CKD Guideline.

*In the absence of direct measuring methods such as iothexol clearance, a carefully timed 24h urine creatinine clearance may be of value

PathCare requesting details

Test name	Test code	Cost	Sample type
Creatinine (eGFRcr)	BCRE	R82	Blood (serum)
Cystatin C (eGFRcys)	BCYSC	R396	Blood (serum)
Combined (eGFRcr-cys)	BCRCYSC	R478	Blood (serum)
Urine Albumin:Creatinine Ratio	BUMALB	R362	Spot Urine
KDIGO test group (eGFRcr + uACR)	BKDIGOC	R446	Blood (serum) + Spot Urine

Please note: Prices are approximate and may vary depending on medical aid.