

CYCTATIN C

Superior Biomarker of Renal function



Cystatin C in diagnosis and therapeutic assessment of renal function

Cystatin C is an established marker for estimating glomerular filtration rate (GFR). GFR calculations performed using cystatin C are independent of protein intake, ethnicity and muscle mass. Equations that include cystatin C predict GFR more accurately than serum creatinine in children, adults, and older adults. Clinical use of cystatin C is recommended in guidelines published by KDIGO and NICE.



The Cystatin C Immunoassay - Advantages

Turbidimetric test
Faster throughput



Can be applied on most automated platforms



Process time normally less than 10 minutes



Avian antibodies



Clinical value of cystatin C

Avoiding the creatinine blind area

Independent of Muscle mass

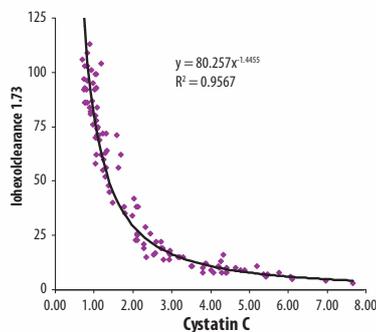
Cystatin C equations do not need to adjust for ethnicity

Improved accuracy when selecting the dose of important drugs

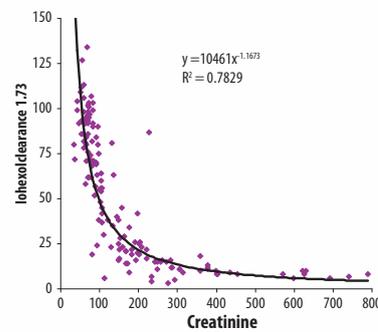
Cystatin C in addition to creatinine

GFR can be estimated with greater accuracy if both cystatin C and creatinine are used. Cystatin C based GFR-estimating equations are superior to creatinine-based equations in predicting end-stage renal disease, cardiovascular manifestations, hospitalisation and death.

Cystatin C with stronger correlation with mGFR:



Correlation between cystatin C and iohexol clearance in 160 patient samples



Correlation between creatinine and iohexol clearance in 160 patient samples

The graphs above illustrate the stronger correlation observed between cystatin C serum concentrations and iohexol clearance rates relative to that which is seen with creatinine. This improved correlation can be of clinical significance and lead to improved patient care.

GFR - Kidney Disease Classification

NKF-KDIGO Guideline; GFR Categories in Chronic Kidney Disease

Normal	Healthy kidneys - normal GFR	GFR > 90 mL/min/1.73m ²
G1	Kidney damage with normal or elevated GFR	GFR > 90 mL/min/1.73m ²
G2 ¹	Kidney damage and mild decrease in GFR	GFR of 60 - 89 mL/min/1.73m ²
G3a	Mild to moderate decrease in GFR	GFR of 45 - 59 mL/min/1.73m ²
G3b	Moderate to severe decrease in GFR	GFR 30 - 44 mL/min/1.73m ²
G4	Severe decrease in GFR	GFR 15 - 29 mL/min/1.73m ²
G5	Kidney failure - End Stage Renal Disease (ESRD)	GFR < 15 mL/min/1.73m ²

1. In the absence of evidence of kidney damage, neither Stage 1 nor Stage 2 fulfill the criteria for Chronic Kidney Disease, CKD
2. Relative to young adult level