Prognosis of CKD by GFR and albuminuria categories: KDIGO 2012

GFR categories (ml/min/1.73 m²) description and range			Persistent albuminuria categories description and range		
			A1	A2	A3
			Normal to mildly increased	Moderately increased	Severely increased
			<30 mg/g <3 mg/mmol	30–300 mg/g 3–30 mg/mmol	>300 mg/g >30 mg/mmol
G1	Normal or high	≥90			
G2	Mildly decreased	60–89			
G3a	Mildly to moderately decreased	45–59			
G3b	Moderately to severely decreased	30–44			
G4	Severely decreased	15–29			
G5	Kidney failure	<15			

FIGURE 335-1 **Kidney Disease Improving Global Outcome (KDIGO) classification of chronic kidney disease (CKD).** Gradation of color from green to red corresponds to increasing risk and progression of CKD. GFR, glomerular filtration rate. *(Reproduced with permission from Kidney Int Suppl 3:5-14, 2013.)*

with a heritable component, an environmental trigger (such as a viral pathogen) is required to transform genetic risk into disease.

To stage CKD, it is necessary to estimate the GFR rather than relying on serum creatinine concentration (Table 335-1). Many laboratories now report an estimated GFR, or eGFR, using one of these equations.

The normal annual mean decline in GFR with age from the peak GFR (~120 mL/min per 1.73 m²) attained during the third decade of life is ~1 mL/min per year per 1.73 m², reaching a mean value of 70 mL/min per 1.73 m² at age 70. Although reduced GFR occurs with human aging, the lower GFR signifies a true loss of kidney function, with all of the implications that apply to the corresponding stage of CKD. The mean GFR is lower in women than in men. For example, a woman in her 80s with a normal serum creatinine may have a GFR of just 50 mL/min per 1.73 m². Thus, even a mild elevation in serum creatinine concentration (e.g., 130 μmol/L [1.5 mg/dL]) often signifies a substantial reduction in GFR in most individuals.

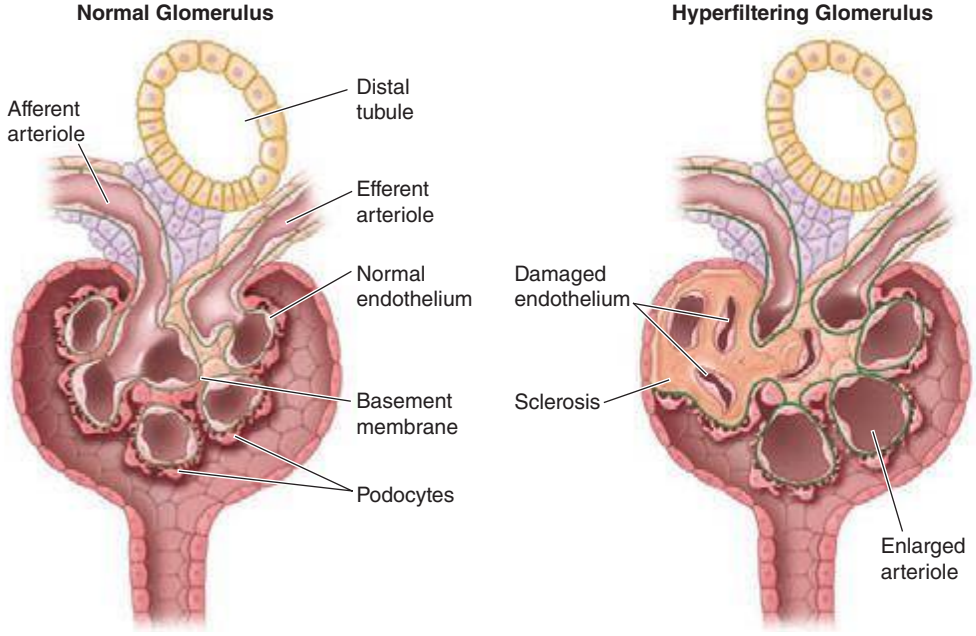

FIGURE 335-2 ***Left:*** Schema of the normal glomerular architecture. ***Right:*** Secondary glomerular changes associated with a reduction in nephron number, including enlargement of capillary lumens and focal adhesions, which are thought to occur consequent to compensatory hyperfiltration and hypertrophy in the remaining nephrons. *(Modified from JR Ingelfinger: N Engl J Med 348:99, 2003.)*