Top 10 Takeaways on Evaluation for Primary Care Physicians from the KDIGO 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease

Promote participation in high-quality research in CKD across the lifespan

1 CKD definition

CKD is defined as abnormalities of kidney structure or function, present for >3 months, with implications for health. Usually, damage is assessed by the urine albumin (ACR) and function by GFR, but there are also other markers of kidney damage (Figure 1).

2 CKD categorization

CKD is categorized based on 2 dimensions (i.e., GFR and ACR), however, CKD is classified based on Cause, GFR category (G1–G5), and Albuminuria category (A1–A3).

3 Diagnosis of CKD after acute kidney injury (AKI)

In patients who have recovered from AKI, the diagnosis of CKD should wait for 3 months after discharge.

4 Diagnosis of CKD in older adults

The threshold for CKD should be GFR <60 ml/min/1.73 m² in older adults, even if they do not have significant albuminuria (ACR <30 mg/g). Epidemiologic data demonstrate that there are higher risks for myriad adverse outcomes below a GFR <60 (Figure 2).

5 Improving accuracy of GFR assessment

Estimating GFR from a combination of creatinine and cystatin C (eGFRcr-cys) improves accuracy and strengthens risk relationships. When you are uncertain about creatinine, obtain eGFRcr-cys or eGFRcys in your patients.

6 Fluctuations in eGFR and urine albumin

Both eGFR and urinary albumin have random fluctuations that can cause changes that have no clinical importance. However, changes in eGFR beyond ±20% are likely to be caused by actual changes in kidney function. For urine albumin, reductions beyond 50% or elevations beyond 100% are probably beyond the random fluctuations.

7 Use a validated GFR estimating equation

Use a validated GFR estimating equation to derive GFR (eGFR) from the serum filtration markers, creatinine and/or cystatin C. Different equations may be required for adults and children.

8 Kidney failure risk

Your patient's risk of kidney failure can be calculated from validated equations that incorporate eGFR and urine albumin, such as the kidney failure risk equation (kidneyfailurerisk.com). Estimation of kidney failure risk can be used to facilitate treatment decisions, such as referral to nephrology, placement of fistula, and referral for transplant evaluation.

9 Use validated risk assessment tools

People with CKD have elevated risks for cardiovascular outcomes including heart failure, myocardial infarction and stroke. Estimated 10-year cardiovascular risk should be assessed using a validated risk tool that incorporates kidney tests to guide treatment for prevention of cardiovascular disease. One example is the PREVENT equation that was derived from large populations in the United States.

10 CKD care across the lifespan

Special considerations should be given for CKD care across the lifespan (Figure 3). Use a personalized approach, considering age, sex, and gender for diagnosis, risk assessment, and treatment. At the extremes of age - the very young and the very old - diagnostic procedures, treatment aims, treatment modalities, and decision-making may differ due to differences in prognosis, treatment options, and prioritization.

Figure 1

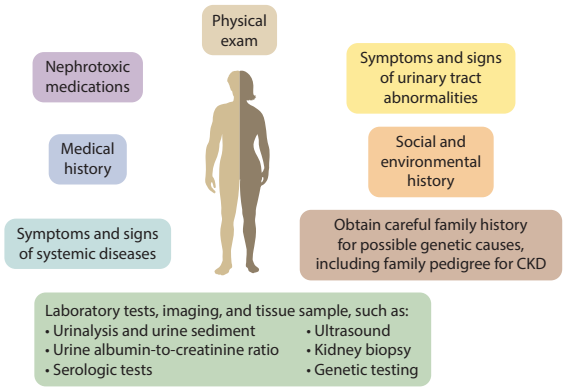
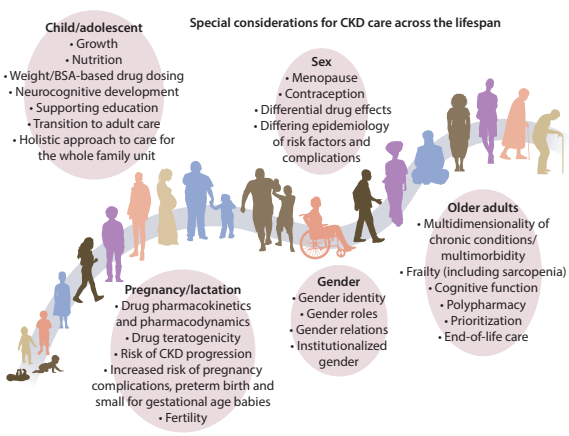


Figure 2

Age 65+	ACR, mg/g				ACR, mg/g			
eGFRcr-cys	<10	10–29	30–299	300+	<10	10–29	30–299	300+
	All-cause mortality				Myocardial infarction			
105+	1.2	1.4	1.9	3.5	0.97	1.4	2.0	19
90–104	ref	1.2	1.4	2.0	ref	1.2	1.1	1.9
60–89	1.2	1.5	1.8	2.3	1.1	1.4	1.5	1.9
45–59	1.6	2.0	2.4	2.9	1.6	1.9	2.3	3.4
30–44	2.0	2.4	3.2	4.1	2.1	2.6	3.1	3.8
<30	3.4	4.1	5.1	6.5	4.9	3.0	5.1	5.0
	Cardiovascular mortality				Stroke			
105+	1.1	1.5	2.0	12	1.2	1.3	1.5	3.3
90–104	ref	1.4	1.4	3.4	ref	1.3	1.3	2.8
60–89	1.2	1.7	2.2	3.1	1.1	1.4	1.8	2.5
45–59	1.7	2.4	3.0	4.3	1.5	1.7	2.0	2.3
30–44	2.4	3.1	4.5	5.8	1.5	2.0	2.1	2.3
<30	5.7	5.2	5.1	7.8	1.7	2.0	2.4	4.8
	Kidney failure replacement therapy				Heart failure			
105+	2.0	1.0	2.1		0.99	1.5	1.7	7.0
90–104	ref	1.9	4.7	10	ref	1.3	1.5	2.2
60–89	1.4	2.6	6.2	19	1.2	1.5	2.0	3.2
45–59	3.7	7.9	16	42	1.6	2.0	2.9	4.1
30–44	14	14	46	137	2.3	2.9	3.5	6.1
<30	87	364	241	406	4.4	4.1	5.5	7.2
	Acute kidney injury				Atrial fibrillation			
105+	0.91	1.1	1.3	1.9	0.95	1.1	1.0	3.7
90–104	ref	1.3	1.4	3.9	ref	1.2	1.3	2.4
60–89	1.5	2.1	2.7	4.7	1.1	1.2	1.5	2.0
45–59	3.6	4.3	5.1	7.3	1.2	1.4	1.7	1.9
30–44	5.7	5.9	7.2	9.8	1.5	1.8	2.0	2.2
<30	10	11	11	22	1.8	1.8	2.2	3.2
	Hospitalization				Peripheral artery disease			
105+	1.0	1.1	1.2	2.2	1.1	2.3	2.9	4.9
90–104	ref	1.1	1.3	1.4	ref	1.3	2.0	4.8
60–89	1.1	1.2	1.3	1.5	1.3	1.6	2.0	3.2
45–59	1.2	1.2	1.4	1.6	2.0	2.8	3.1	3.1
30–44	1.5	1.4	1.6	2.0	3.5	2.8	3.8	5.9
<30	1.9	1.9	2.0	2.6	8.4	4.1	5.9	10

Figure 3



ACR, albumin-creatinine ratio; CKD, chronic kidney disease; cr, creatinine; cys, cystatin C; (e)GFR, (estimated) glomerular filtration rate