SCREENING AND DIAGNOSIS

of Patients With CKD Associated With T2D

GFR and Albuminuria Provide Prognosis of CKD Progression[1,2]

Prognosis of CKD by GFR and Albuminuria Categories: KDIGO 2012[1]

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			

A2 = microalbuminuria[2] (older classification system). **A3** = macroalbuminuria or proteinuria[2] (older classification system)

Risk of CKD Progression[1]:

Low risk (if no other markers of kidney disease, no CKD) Moderately increased risk High risk Very high risk

Figure reprinted with permission of The International Society of Nephrology: Kidney Disease Improving Global Outcomes. *Kidney Int.* 2021;99(3S):S1-S87.

& GUIDELINES SCREENING

ADA and KDIGO Guidelines[2,3]

eGFR measures kidney function[2] + **UACR** measures kidney damage[2]

When used together...

can indicate risk of CKD progression in patients with CKD[3]

- **Recommend using both eGFR and UACR to monitor kidney health in patients with diabetes[2,3]**
- **Suggest CKD can be detected earlier with routine testing in patients with diabetes[2,3]**

UACR in a random spot urine sample is the preferred method of screening for albuminuria[3]

Limitations exist when using other methods for detection of albuminuria, such as **urine dipstick tests** (**less sensitive**) and **timed ACR collection** (**burdensome**)[2,3]

eGFR and Albuminuria Screening

	WHEN TO SCREEN FOR CKD	SCREENING TESTS	DIAGNOSIS
ADA (2022)	Patients with **T1D duration ≥5 years** and **all patients with T2D** regardless of treatment should be screened **at least annually** for CKD[3] Patients with diabetes and **UACR ≥300 mg/g** and/or **eGFR 30-60 mL/min/1.73 m²** should be **monitored twice annually**[3]	**eGFR and UACR**[3]	eGFR <60 mL/min/1.73 m²[a]: present for **>3 months**[2,3] **AND/OR** UACR ≥30 mg/g[b]: **2 of 3 specimens abnormal** within **3 to 6 months**[3]
KDIGO (2021)	Patients with **diabetes** should be screened for CKD[4] **Initiation and frequency** of CKD screening should be individualized **based on kidney and CV risk profiles and individual preferences**[4]	**eGFR and UACR**[4]	Any of the following for **≥3 months**[4]: • eGFR <60 mL/min/1.73 m²[c] • UACR ≥30 mg/g[d]

ADA and KDIGO Support eGFR and Albuminuria Screening in All Patients With Diabetes[2-4]

Potential benefits of early screening

- **Earlier detection and management to reduce/slow progression to ESRD[2]**
- **Reduce risk of CVD morbidity/mortality[2]**
- **Reduce health care costs[4,5]**

[a]Calculated from serum creatinine (CKD-EPI). [b]With random spot urine sample.
[c]Accurate eGFR estimation includes both creatinine and cystatin C for diagnosis and staging. [d]Early morning urine sample is preferred.

ADA 2022 Guideline Recommendations[6]

eGFR and Albuminuria Screening at the Initial Visit and Annually in Patients With Diabetes[6]

Urinary albumin excretion and eGFR each vary within people over time, and abnormal results should be confirmed to stage CKD[3,7,8]

Diabetes laboratory evaluation	Visits: Initial	Follow-up	Annual
A1C, if the results are not available within the past 3 months	✓	✓	✓
If not performed/available within the past year	✓		✓
• Lipid profile, including total, LDL, and HDL cholesterol, and triglycerides	✓		✓
• Liver function tests	✓		✓
• **Spot UACR**	✓		✓
• **Serum creatinine and eGFR[a]**	✓		✓
• Thyroid-stimulating hormone in patients with type 1 diabetes	✓		✓
• Vitamin B12 if on metformin	✓		✓
• Serum potassium levels in patients on ACE inhibitors, ARBs, or diuretics[a]	✓		✓

[a]May be needed more frequently in patients with known CKD or with changes in medications that affect kidney function and serum potassium.

Kidney Health Evaluation HEDIS® Measure

Aims to Improve Kidney Disease Testing in Patients With Diabetes[9]

MEASURE: Kidney Health Evaluation for Patients With Diabetes (KED)[10]

Tracks the percentage of patients 18-85 years of age with diabetes (type 1 and type 2) who received a kidney health evaluation defined by **eGFR *and* UACR** during the measurement year

Claims-based measure can do the following[9]:

- Reveal gaps in care
- Recognize the importance of coding
- Provide a focal point for improvement for providers and health plans

HEDIS® is a registered trademark of the National Committee for Quality Assurance (NCQA).

[a]Representatives of several important stakeholders groups participated in the development of this measure, including the American Diabetes Association, American Medical Group Association, Centers for Disease Control and Prevention, Indian Health Service, and the National Institute of Diabetes and Digestive and Kidney Diseases.

NKF and NCQA Partnered to Develop the New Kidney Health Evaluation Measure[9,a]

Currently included in HEDIS® Measurement Year 2022[10]

ABBREVIATIONS

ACE, angiotensin-converting enzyme; **ACR**, albumin-to-creatinine ratio; **ADA**, American Diabetes Association; **ARB**, angiotensin II receptor blocker; **CKD**, chronic kidney disease; **CKD-EPI**, Chronic Kidney Disease Epidemiology Collaboration; **CV**, cardiovascular; **CVD**, cardiovascular disease; **eGFR**, estimated glomerular filtration rate; **ESRD**, end-stage renal disease; **GFR**, glomerular filtration rate; **HDL**, high-density lipoprotein; **HEDIS®**, Healthcare Effectiveness Data and Information Set; **KDIGO**, Kidney Disease Improving Global Outcomes; **LDL**, low-density lipoprotein; **NCQA**, National Committee for Quality Assurance; **NKF**, National Kidney Foundation; **T1D**, type 1 diabetes; **T2D**, type 2 diabetes; **UACR**, urine albumin-to-creatinine ratio.

REFERENCES

1. Kidney Disease Improving Global Outcomes. *Kidney Int.* 2021;99(3S):S1-S87. **2.** Kidney Disease Improving Global Outcomes. *Kidney Int Suppl.* 2013;3(1):1-150. **3.** American Diabetes Association. Section 11. *Diabetes Care.* 2022;45(Suppl 1):S175-S184. **4.** Shlipak MG, et al. *Kidney Int.* 2021;99(1):34-47. **5.** Yarnoff BO, et al. *BMC Nephrol.* 2017;18(1):85. doi: 10.1186/s12882-017-0497-6. **6.** American Diabetes Association. Section 4. *Diabetes Care.* 2022;45(Suppl 1):S46-S59. **7.** Levey AS, et al. *JAMA.* 2015;313(8):837-846. **8.** Ellam TJ. *Nephron Clin Pract.* 2011;118(4):c324-c330. **9.** National Committee for Quality Assurance. Kidney health: a new HEDIS measure. 2020. https://blog.ncqa.org/kidneyhealth/. Accessed March 15, 2022. **10.** Healthcare Effectiveness Data and Information Set. HEDIS MY 2022 measure descriptions. 2022. https://www.ncqa.org/wp-content/uploads/2021/12/HEDIS-MY-2022-Measure-Descriptions.pdf. Accessed March 15, 2022.

MA-UN-CAR-US-0084-1