Section 11:

Chronic Kidney Disease and Risk Management

Screening for Chronic Kidney Disease (CKD)

Who?

- Everyone with type 2 diabetes
- Everyone with type 1 diabetes for ≥5 years

How?

- Urinary albumin-to-creatinine ratio (UACR)
- Estimated glomerular filtration rate (eGFR)

How often?

Annually

Monitoring Established CKD

How? UACR and eGFR. Use the CKD Epidemiology Collaboration's CKD-EPI Refit equation, which eliminates race as a variable, for all individuals.

How often? One to four times per year, depending on the stage of the disease

Classification of CKD

CKD is classified based on:

- Cause (C)
- GFR (G)
- Albuminuria (A)

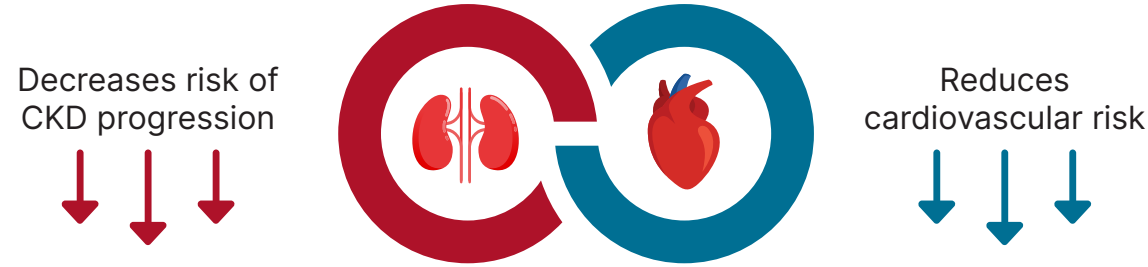
GFR categories (mL/min/1.73 m²) Description and range				Albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30–299 mg/g 3–29 mg/mmol	≥300 mg/g ≥30 mg/mmol
	G1	Normal or high	≥90	Screen 1	Treat 1	Treat and refer 3
	G2	Mildly decreased	60–89	Screen 1	Treat 1	Treat and refer 3
	G3a	Mildly to moderately decreased	45–59	Treat 1	Treat 2	Treat and refer 3
	G3b	Moderately to severely decreased	30–44	Treat 2	Treat and refer 3	Treat and refer 3
	G4	Severely decreased	15–29	Treat and refer 3	Treat and refer 3	**Treat and refer 4+**
	G5	Kidney failure	<15	**Treat and refer 4+**	**Treat and refer 4+**	**Treat and refer 4+**

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

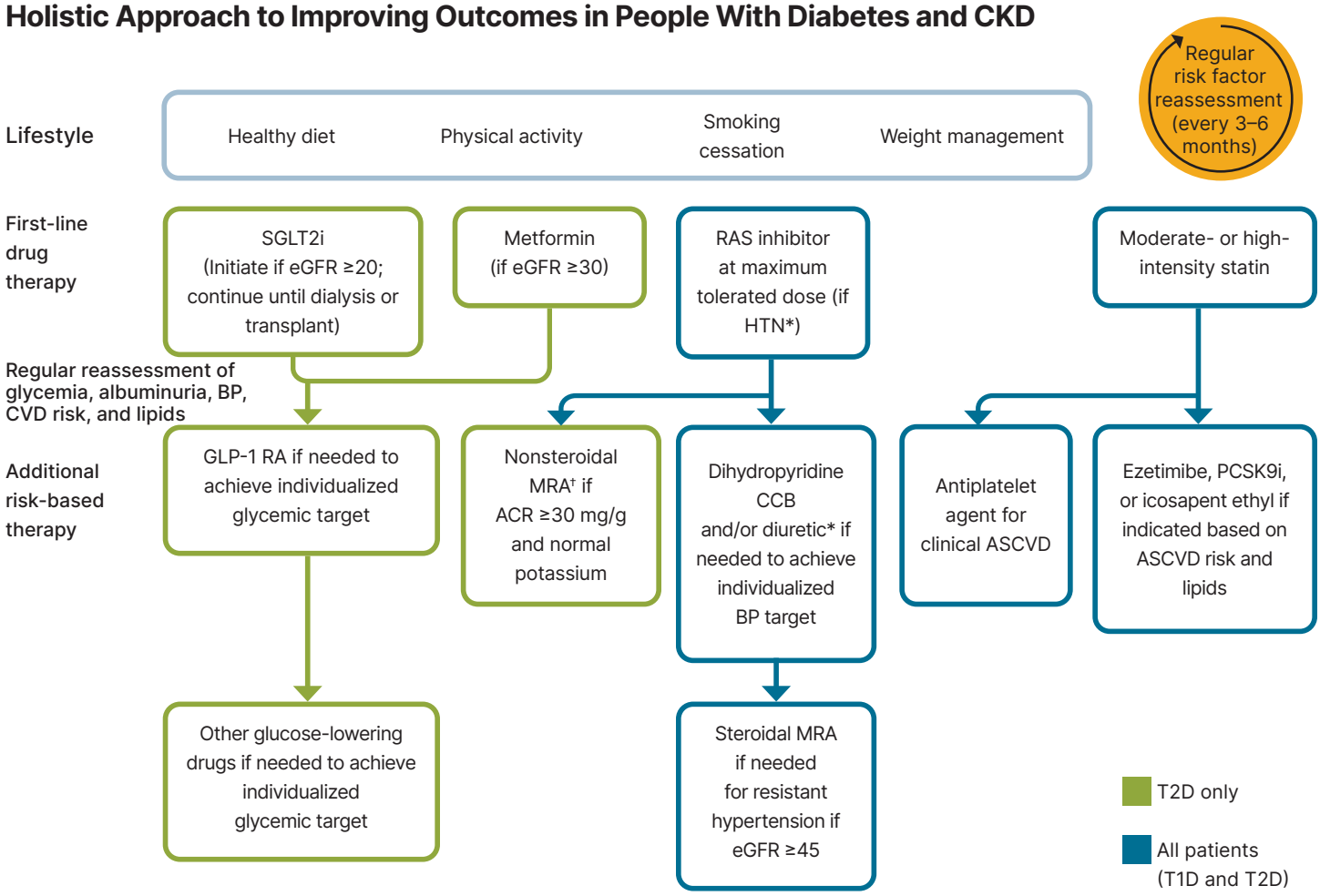
Risk of CKD progression, frequency of visits, and referral to nephrology according to glomerular filtration rate (GFR) and albuminuria. Numbers in the boxes are the number of times per year to screen or monitor. Green reflects no evidence of CKD by eGFR or albuminuria. Suggested monitoring of prevalent CKD varies from once (yellow) to four or more times (deep red) per year. Adapted from de Boer IH, Khunti K, Sadusky T, et al. Diabetes management in chronic kidney disease: a consensus report by the American Diabetes Association (ADA) and Kidney Disease: Improving Global Outcomes (KDIGO). Diabetes Care 2022;45:3075–3090.

Suggested citation: American Diabetes Association Primary Care Advisory Group. 11. Chronic kidney disease and risk management: *Standards of Care in Diabetes—2024* abridged for primary care professionals. Clin Diabetes 2024;42:212–213 (doi: 10.2337/cd24-a011).

Why Manage CKD?



Holistic Approach to Improving Outcomes in People With Diabetes and CKD



eGFR is presented in units of mL/min/1.73 m^2. *ACEi or ARB (at maximal tolerated doses) should be first-line therapy for hypertension when albuminuria is present. Otherwise, dihydropyridine CCB or diuretic can also be considered; all three classes are often needed to attain BP targets. †Finerenone is currently the only nonsteroidal MRA with proven clinical kidney and cardiovascular benefits. ACEi, ACE inhibitor; ACR, albumin-to creatinine ratio; ARB, angiotensin receptor blocker; ASCVD, atherosclerotic cardiovascular disease; BP, blood pressure; CCB, calcium channel blocker; CVD, cardiovascular disease; GLP-1 RA, glucagon-like peptide 1 receptor agonist; HTN, hypertension; MRA, mineralocorticoid receptor antagonist; PCSK9i, proprotein convertase subtilisin/kexin type 9 inhibitor; RAS, renin- angiotensin system; SGLT2i, sodium–glucose cotransporter 2 inhibitor; T1D, type 1 diabetes; T2D, type 2 diabetes. Adapted from de Boer IH, Khunti K, Sadusky T, et al. Diabetes management in chronic kidney disease: a consensus report by the American Diabetes Association (ADA) and Kidney Disease: Improving Global Outcomes (KDIGO). Diabetes Care 2022;45:3075–3090.

Clinical Tips

- Periodically check serum creatinine and potassium levels when ACE inhibitor, angiotensin receptor blocker (ARB), or nonsteroidal mineralcorticoid receptor antagonist is used.
- Do not discontinue ACE inhibitor or ARB therapy for increases ≤30% increases in serum creatinine in the absence of volume depletion.
- Aim for a urinary albumin reduction ≥30% in people with CKD and urinary albumin ≥300 mg/g to slow CKD progression.