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## Comprehensive care

Patients with diabetes and CKD have multisystem disease that requires treatment including a foundation of lifestyle intervention (healthy diet, exercise, weight management, no smoking) and drug therapy that improves kidney and cardiovascular outcomes (glucose, lipids, blood pressure).

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## Nutrition intake

Patients should consume a balanced, healthy diet that is high in vegetables, fruits, whole grains, fiber, legumes, plant-based proteins, unsaturated fats, and nuts; and lower in processed meats, refined carbohydrates, and sweetened beverages. Sodium (<2 g/day) and protein intake (0.8 g/kg/day) in accordance with recommendations for the general population.

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## SGLT2i

SGLT2i should be initiated for patients with T2D and CKD when eGFR is  $\geq 20$  mL/min/1.73 m<sup>2</sup> and can be continued after initiation at lower levels of eGFR. SGLT2i markedly reduce risks of CKD progression, heart failure, and atherosclerotic cardiovascular diseases, even when blood glucose is already controlled.

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## Metformin

Metformin should be used for patients with T2D and CKD when eGFR is  $\geq 30$  mL/min/1.73 m<sup>2</sup>. For such patients, metformin is a safe, effective, and inexpensive drug to control blood glucose and reduce diabetes complications.

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## Glycemic monitoring and targets

HbA1c should be measured regularly. Reliability decreases with advanced CKD, particularly for patients treated with dialysis, and results should be interpreted with caution. CGM or SMBG may also be useful, especially for treatment associated with risk of hypoglycemia. Targets for glycemic control should be individualized, ranging from <6.5% to <8.0%.

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## GLP-1 RA

In patients with T2D and CKD who have not achieved individualized glycemic targets despite use of metformin and SGLT2i, or who are unable to use those medications, a long-acting GLP-1 RA is recommended as part of the treatment.

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## RAS blockade

Patients with T1D or T2D, hypertension, and albuminuria (persistent ACR  $\geq 30$  mg/g) should be treated with a RAS inhibitor (ACEi or ARB), titrated to the maximum approved or highest tolerated dose. Serum potassium and creatinine should be monitored.

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## Non-steroidal mineralocorticoid antagonists (ns-MRA)

ns-MRA reduce risks of CKD progression and cardiovascular events for people with T2D and residual albuminuria. They are suggested for patients with T2D, urine ACR  $\geq 30$  mg/g, and normal serum potassium on other standard of care therapies. Serum potassium and creatinine should be monitored.

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## Approaches to management

A team-based and integrated approach to manage these patients should focus on regular assessment, control of multiple risk factors, and structured education in self-management to protect kidney function and reduce risk of complications.

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## Research recommendations

There is a paucity of data on optimal management of diabetes in kidney failure, including dialysis and transplantation, which should be one important focus for future studies.

