

Promoting kidney health in people with type 2 diabetes: part 2

Fiona Murphy and Gobnait Byrne

ABSTRACT

The incidence of chronic kidney disease is increasing internationally with many risk factors for chronic kidney disease also being risk factors for type 2 diabetes. Nurses should use primary, secondary and tertiary prevention to minimise the incidence of chronic kidney disease when caring for individuals with type 2 diabetes. This article is the second in a two-part series on the interrelationship between these long-term conditions. Part 1 addressed the significance of using primary prevention to promote kidney health in adults living with type 2 diabetes; part 2 will discuss the use of secondary and tertiary prevention relevant to these long-term conditions.

Key words: Health promotion ■ Secondary prevention ■ Type 2 diabetes ■ Tertiary prevention ■ Chronic kidney disease ■ Cardiovascular disease ■ Nursing ■ Education ■ Screening ■ Self-management

This article will address the relevance of promoting kidney health using secondary and tertiary preventive measures. It will provide examples to assist nurses and other multidisciplinary team members who work in primary or community care or secondary or hospital care settings to promote kidney health with adults who have type 2 diabetes. It will continue to recognise the triple threat of chronic kidney disease (CKD), type 2 diabetes and cardiovascular disease (CVD) described in part 1 (Murphy and Byrne, 2023).

The Kidney Disease: Improving Global Outcomes (KDIGO) 2022 clinical practice guideline for diabetes management in CKD states that individuals should be managed using a comprehensive approach to maximise both kidney and cardiovascular (CV) outcomes. This should incorporate a combination of lifestyle modification and self-management along with first-line drug therapies depending on patients' clinical characteristics. Additional medications with established kidney and cardiac protection should be incorporated as determined by assessments of remaining risk, and further interventions provided as required to manage additional risk factors (Rossing et al, 2022).

Fiona Murphy, Assistant Professor, Renal Educational Facilitator, School of Nursing & Midwifery, Trinity College Dublin, Ireland, fiona.murphy@tcd.ie

Gobnait Byrne, Assistant Professor, School of Nursing and Midwifery, Trinity College Dublin, Ireland

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A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD) asserts that the overall aims in the management of type 2 diabetes are to sustain quality of life and prevent complications while promoting healthy behaviours pivotal to holistic management. Initial assessment of healthy behaviours such as a healthy diet, routine physical activity and sufficient sleep along with emotional support should be promoted as routine at diagnosis and throughout the lifespan of the person with type 2 diabetes. Reassessment is especially important when glycaemic targets are not reached and or when new interventions, for example pharmacotherapy, are started (Davies et al, 2022).

Secondary prevention

Secondary prevention aims to minimise the effect of the disease by timely diagnosis using screening before any serious and long-lasting damage has occurred (Karunathilake and Ganegoda, 2018). The use of screening may be opportunistic or part of a planned national screening programme (George et al, 2022).

Screening for CKD in people with diabetes is usually sporadic in low- and middle-income countries. These countries are poorly equipped to manage diabetes-related CKD, particularly at advanced stages wherein kidney replacement therapy or conservative care may be needed (George et al, 2022).

A considerable amount of diabetes-related CKD can be averted through primary and secondary interventions targeted at disease management such as early referral to nephrology services for individuals with diabetes, which can reduce the rate of estimated glomerular filtration rate (eGFR) decline (George et al, 2022).

Screening

The most common causes of CKD are type 2 diabetes, hypertension and CVD; however, screening for lesser-known causes such as infections, genetic conditions and side-effects of drug therapy should also be conducted in individuals with CKD (Vanholder et al, 2021).

The ADA 2023 standards recommend that individuals with diabetes have regular screening for CKD, using eGFR and spot urinary albumin:creatinine ratio (ACR) at least annually from time of diagnosis. Screening of individuals with established diabetic kidney disease using spot urinary ACR and eGFR is recommended more frequently (1–4 times per year) depending on the stage of the disease (ElSayed et al, 2023a). The National

Institute for Health and Care Excellence (NICE) (2021) guideline on the assessment and management of CKD advocates that ACR monitoring should be individualised; for example, ACR may be monitored more regularly in adults with a high ACR (categories A2 or A3) and if a change in ACR is expected to lead to an adjustment in management.

The European Cardiovascular Society recommends that ‘ideally, all adults should be screened for the presence of hypertension, but most countries lack the required resources and infrastructure’ (Visseren et al, 2021: 3283). All individuals in Ireland who have a diagnosis of type 2 diabetes are screened by their GPs twice a year for hypertension (Health Service Executive, 2023). NICE (2022a) recommends at least yearly blood pressure measurements in adults with type 2 diabetes with no previous diagnosis of hypertension or kidney disease. The ADA Standards of Care in Diabetes–2023 recommend that blood pressure should be targeted at <130/80 mmHg in individuals with diabetes, hypertension and a low CV risk (ElSayed et al, 2023b). This blood pressure target is similarly advocated by the UK Kidney Association and should be aimed for to maximise CV outcomes (Fish et al, 2022).

To assist in early identification and minimisation of the risk of complications, nine key care processes should be completed as recommended by NICE (2023a) every 12 months in adults with type 2 diabetes. They include urine ACR, HbA1c, blood pressure, body mass index, serum creatinine and lipid measurements, foot surveillance, retinal screening and smoking status assessment. All involved, including service providers, health professionals, integrated care systems and adults with type 2 diabetes, must be made aware of these key care processes and ensure that systems – for example, laboratory provision for analysing blood and urine tests and access to eye screening,

foot protection and care services – are available. Primary and secondary care services, providers of diabetic eye screening, services for foot protection and community health services should also be available. When complications or changes in results are identified, this will require onward referral to an appropriate service (NICE, 2023a).

Glycaemic control

Individuals living with diabetes need to maximise glucose control to decrease the risk or slow the progression of CKD and CVD (Hahr and Molitch, 2021; Rossing et al, 2022; ElSayed et al, 2023a). The Association of British Clinical Diabetologists and the Renal Association (ABCD-RA, 2021) alliance highlighted that there are difficulties with respect to increased risk of hypoglycaemia and dependability of HbA1c monitoring, which is necessary to accomplish intensive glycaemic control in individuals with moderate-to-advanced CKD. The ABCD-RA (2021) therefore provides glycaemic targets ranked by age, CKD stage and diabetic therapy with the aim of safely achieving tight glycaemic control targets in individuals with diabetic kidney disease. The UK Kidney Association has adapted these glycaemic recommendations (Herrington et al, 2021) (Table 1).

Obesity

Screening by nurses using the Making Every Contact Count initiative for individuals who are overweight or obese would enable delivery of appropriate brief intervention to assist them to modify their lifestyles (Health Service Executive, 2016; Public Health England et al, 2016; Daly et al, 2019).

The prevalence of obesity is increasing globally and is a major contributory risk factor for type 2 diabetes, hypertension, CVD and, ultimately, CKD (Luyckx et al, 2020). Obesity is a risk factor for developing kidney stones and is also a major risk factor for developing pre-eclampsia (Mayrink et al, 2019). Pre-eclampsia is strongly associated with an increased risk of CKD during the 5 years after the woman’s last pregnancy (Kristensen et al, 2019), and gestational diabetes is independently associated with pre-eclampsia (Yang and Wu, 2022).

Psychosocial health

There are many challenges for individuals living with the burden of CKD as they experience not only physical but also emotional and social difficulties, even if they do not yet require kidney replacement therapy, are receiving dialysis or have had a transplant. This can include doubts about their future, emotional stress, mental health concerns and various symptom burdens, along with the significant impact on quality of life for themselves, their families and care givers (Vanholder et al, 2021; 2023).

Kidney Care UK and the National Psychosocial Working Group (2022) recommend that the psychosocial care needs of every individual living with kidney disease should be assessed by renal specialists using validated processes. These should be conducted when individuals are first diagnosed, as treatment alters, as patients progress through the stages of CKD, throughout times of distress and during annual screening.

The same emotional challenges can affect those living with type 2 diabetes, which presents an abundance of extra tasks and

Table 1. Summary of glycaemic recommendations for individuals with type 2 diabetes and chronic kidney disease adapted from the ABCD-RA Clinical Practice Guidelines for the Management of Hyperglycaemia in Adults with Diabetic Kidney Disease: 2021 Update		
Glycaemic target mmol/mol (% HbA1c)	Chronic kidney disease stage	Age and anti-diabetic regimen
Glycaemic targets should be individualised		
48–58 mmol/mol (6.5–7.5%) Aim for <52 mmol/mol (6.9%)	1–2	■ <40 years ■ Any age if diet controlled*
52–58 mmol/mol (6.9–7.5%)	3–4	■ Any age treated with a predominately oral hypoglycaemic regimen (ie, non-insulin dominant)
58–68 mmol/mol (7.5–8.5%)	3–4	■ Any age on an insulin-dominant regimen (aim 58 mmol/mol) ■ Age >75 years with stage 4 chronic kidney disease on any regimen
58–68 mmol/mol (7.5–8.5%)	5, including dialysis	■ Any age or any regimen

*Aim for HbA1c 58 mmol/mol if hyperglycaemia and/or anaemia occurs and consider blood glucose or flash glucose monitoring.
Source: Herrington et al, 2021 (adapted from Association of British Clinical Diabetologists and Renal Association, 2021)

anxieties including those around dietary changes, medication burden and blood glucose monitoring. These can negatively influence overall diabetes management and increase risks of additional comorbidities.

High levels of stress influence individuals' quality of life and that of their families and caregivers (Stewart, 2023). The ADA Standards of Care in Diabetes–2023 outline the concept of screening aimed at diabetes-associated concerns or worries. Following screening, nurses and other members of the multidisciplinary team can discuss any concerns raised by the individual and, with their permission, refer to suitably qualified psychosocial care practitioners for additional assessment and management; potentially, anxiety symptoms suggest there may be impediments to diabetes self-management behaviours or quality of life (Kidney Care UK and the National Psychosocial Working Group, 2022; ElSayed et al, 2023c).

Screening should be carried out periodically and when there is a change in disease, therapy or life situation (ElSayed et al, 2023c). The World Health Organization (Five) Well-being Index (WHO-5) measures general wellbeing (<https://www.psykiatri-regionh.dk/who-5/who-5-questionnaires/Pages/default.aspx>) and asks respondents to rate their interest, engagement and mood. Frequently used screening tools for anxiety and depression for people with type 2 diabetes include the Patient Health Questionnaire-9 and the Diabetes Distress Scale (Owens et al, 2019).

Individuals who have a fear of hypoglycaemia should obtain evidence-based interventions to assist them to improve recognition of hypoglycaemia symptoms and minimise their fear of same (ElSayed et al, 2023c). Fear of hypoglycaemia affects one in seven adults with diabetes in addition to their family members; people also fear diabetes-related complications as well as injections and needles (Hendrieckx et al, 2019). Adults with type 2 diabetes should actively participate in a person-centred approach to care for their psychosocial health and any difficulties that may arise (Hendrieckx et al, 2019).

Tertiary prevention

Tertiary prevention aims to reduce the effects of established disease (Naidoo and Wills, 2016). Diabetes self-management education and support (DSMES) programmes are a key component of tertiary prevention.

The consensus report on the management of hyperglycaemia in type 2 diabetes by the ADA and the EASD advocates that patients need to be encouraged to self-manage their condition to prevent the development of CVD and/or CKD and prevent other complications such as diabetic retinopathy, neuropathy and peripheral arterial disease (Davies et al, 2022). It is important that individuals with type 2 diabetes live well with their long-term condition through a shared decision-making approach and remain at the centre of any decisions concerning their care and management, with extensive support provided to empower them and their partners/family members/caregivers to self-manage their conditions (Murphy and Byrne, 2022a; 2022b).

NICE (2022b; 2023b) also recommends the use of a structured education programme for adults with type 2 diabetes (Table 2).

DSMES programmes need to be evidence based and delivered by experts in diabetes care using a person-centred approach to enhance engagement in self-care activities. These programmes considerably enhance knowledge, glycaemic levels, clinical and emotional outcomes, and minimise hospital admissions and mortality as well as being cost-effective (Davies et al, 2022).

DSMES programmes should be provided on an ongoing basis. Every individual living with type 2 diabetes should be offered them when newly diagnosed, annually or when complications develop or when transitioning to insulin therapy. These programmes need to be flexible to meet individual cultural and literacy needs and should be delivered in a one-to-one or a group format (Davies et al, 2022).

To enhance quality of life and avoid complications, a decision cycle for person-centred glycaemic management in type 2 diabetes was devised by the ADA and the EASD. This involves the following key collaborative processes with the individual living with type 2 diabetes (Davies et al, 2018; 2022):

- Assessment of: key individual characteristics, including the patient's main concerns, prevailing lifestyles and health behaviours, comorbidities such as CKD, CVD or heart failure; clinical attributes, for example age, HbA1c and weight; and

Table 2. Examples of diabetes educational programmes

Name of group educational programme	Details of programme	Internet address
Community Orientated Diabetes Education (CODE)	Free online group education programme for people with type 2 diabetes, run by Diabetes Ireland (a national charity). The programme aims to support participants to help each other with the tools for self-management Four sessions of 2 hours each and a follow-up phone call with a diabetic nurse or a dietitian Topics covered ■ Diabetes explained ■ Signs and symptoms/risk factors ■ Blood glucose management ■ Healthy eating with type 2 diabetes and advice on carbohydrates and serving sizes ■ Physical activity and its benefits ■ Planning behaviour change ■ Complications relating to diabetes— importance of a regular annual review, and what the tests mean ■ Supports available	https://www.diabetes.ie/living-with-diabetes/living-with-type-2/diabetes-ireland-education-programme/
Diabetes Education Self-Management for Ongoing and Newly Diagnosed Diabetes (DESMOND)	Group educational group support	https://www.desmond.nhs.uk
Discover Diabetes (formerly known as XPERT)	Group educational support	https://www.xperthealth.org.uk/

social determinants of health and matters, such as motivation, depression and cognition

- Consideration of specific aspects that influence choice of therapy: personalised glycaemic and weight goals, effect on weight, hypoglycaemia and cardiorenal fortification, fundamental physiological aspects, side-effect summaries of medication, intricacy of therapy (for example, how often an individual receives a treatment) or manner of administration), therapy choice to improve medication use and minimise discontinuation of therapy, and access to, price and accessibility of medication
- The use of shared decision-making to establish a management plan: encourage entry to DSMES programmes, include an educated and knowledgeable adult (such as a family member or caregiver) with the individual's consent, examine personalised preferences, note that language counts (incorporate person-first, strengths-based and empowering language), and use motivational interviewing, goal setting and shared decision-making
- Agreement on a management plan: identify SMART goals – specific, measurable, achievable, realistic and time limited
- Implementation of a management plan: assure there is a standard review; reviewing more frequently at the onset is usually beneficial for DSMES programmes
- Delivery of screening and continuing support for emotional wellbeing, lifestyle and health behaviours, acceptability of medications and biofeedback, comprising blood glucose monitoring/continuous glucose monitoring, weight, step count, HbA1c, blood pressure and lipid
- Appraisal and decision-making on a management plan: appraise a management plan, jointly agree on modifications, confirm agreed changes of treatment are instigated in a timely manner to avert therapeutic inactivity, assess decision cycle routinely (at a minimum of once or twice per year) and function in an integrated scheme of care (Davies et al, 2018; 2022).

The NHS diabetes programme accepts that face-to-face interventions do not always work for every adult and digital technologies afford novel opportunities to enhance an individual's experience and outcomes and provide services in a more efficient manner, diminishing the burden on healthcare staff and the public. The digital workstream aims to ascertain the evidence base for innovative methods and encourage uptake to benefit people living with diabetes (NHS England, 2023) (Table 3). PROTECT NOW is a learning resource (Box 1) generated by the Insights for Diabetes Excellence Access and Learning (iDEAL) group of multidisciplinary diabetes specialists (Phillips, 2021). PROTECT NOW provides simple-to-understand information and evidence concentrating on kidney disease and diabetes for individuals with diabetes, their families and healthcare teams. It can assist in the sharing of information between different healthcare teams, especially during episodes of sickness and ill health (Phillips, 2021).

Pharmacological therapies

When assessing or considering a change in therapy for adults with type 2 diabetes, the following should be discussed: how to enhance current therapy regimen taking on board issues

such as the necessity to re-examine dietary and lifestyle advice; any adverse impacts of current therapy; adherence to current medications; prescribed dosages; and formulations. The discontinuation of medications that have had no effect on glycaemic control or weight unless there is a further clinical benefit for continuing therapy such as CV or renal protection should be considered, as well as whether swapping instead of adding medications might be effective (Nottingham Area Prescribing Committee, 2022).

A consensus report from the ADA and KDIGO on the Standards of Care in Diabetes – 2022 (de Boer et al, 2022) recommends pharmacological therapies targeted at preserving organ function and other therapies chosen to achieve intermediate goals regarding glycaemia, blood pressure and lipid. First-line medication therapy includes the use of renin-angiotensin system (RAS) inhibitors such as an angiotensin-converting enzyme inhibitor or an angiotensin-receptor blocker for people with type 2 diabetes who have hypertension and albuminuria (ACR ≥ 30 mg/mmol), which should be adjusted to the highest antihypertensive or maximum tolerated dosage. Multiple medications are often needed to regulate blood pressure, and a RAS inhibitor, dihydropyridine calcium channel blockers and diuretics can be combined to achieve personalised blood pressure targets (de Boer et al, 2022).

Advanced CKD is a risk factor for hypoglycaemia in type 2 diabetes and, where feasible, medications that control glycaemia without escalating the risk of this are selected. Metformin is recommended for individuals with type 2 diabetes, CKD and an eGFR ≥ 30 ml/min/1.73 m², with a lower dosage needed for individuals who are at elevated risk of lactic acidosis. Another first-line medication therapy is sodium glucose co-transporter-2 (SGLT-2) inhibitors with established kidney or CV benefit, which should be provided to individuals with type 2 diabetes and CKD (de Boer et al, 2022). The UK Kidney Association clinical practice guideline update on SGLT-2 inhibition in adults with kidney disease suggest it should be initiated in any of the four following clinical scenarios: eGFR of 20–45 ml/min/1.73 m²; eGFR of >45 ml/min/1.73 m² and a urinary ACR of ≥ 25 mg/mmol; symptomatic heart failure, irrespective of ejection fraction; and established coronary disease. This guideline proposes starting SGLT-2 inhibition to adjust CV risk and reduce the degree of kidney function decline in adults with an eGFR >45 –60 ml/min/1.73 m² and a urinary ACR of <25 mg/mmol, while acknowledging impacts on glycaemic control will be limited. SGLT-2 inhibition should be considered for adults with an eGFR below 20 ml/min/1.73 m² to slow the advancement of kidney disease. A single-agent RAS inhibitor is recommended for use together with SGLT-2 inhibition where the RAS inhibitor is specified and tolerated. The use of SGLT-2 inhibition can be maintained until kidney replacement therapy is required (Herrington et al, 2023).

The use of a moderate statin is recommended for all individuals with type 2 diabetes and CKD for the primary prevention of CVD or a high-intensity statin for adults with known CVD and those with multiple CVD risk factors (de Boer et al, 2022). Additional risk-based therapies – alternatively known as second-line agents – include the use of a glucagon-

Table 3. Digital resources for patients with type 2 diabetes

Title of resource	Information programme	Internet address
Healthy Living for people with type 2 diabetes	Free online educational programme available for people with type 2 diabetes in England	https://www.healthyliving.nhs.uk/
iDEAL (Insights for diabetes excellence access and learning)	iDEAL diabetes ■ ACT NOW: foot issues ■ PROTECT NOW: protecting kidneys when living with diabetes ■ LET'S CHECK NOW: dental health ■ SCREEN NOW: diabetic retinal screening ■ LET'S TALK NOW: getting most out of consultations and diabetic care ■ LET'S TREAT NOW: learn about signs of hypoglycaemia and how to recognise and treat it	https://idealdiabetes.com
DIABETES SMART for patients with type 2 diabetes Free interactive online education course Accessed by laptop, tablet or phone	Six sections ■ What is diabetes? ■ Healthy eating ■ Getting active ■ Understanding blood glucose levels and medications ■ Diabetes and illness ■ Complications, screening and prevention	https://www.diabeteseducation.ie
Diabetes Digital App used for education, tracking and support	■ Provides support 24 hours a day ■ Diet and physical activity tracking ■ Mood and sleep tracking ■ Health results tracking ■ Access to education on diabetes ■ Access to individual health coaches	https://www.xperthealth.org.uk/digital-programmes/
myDesmond Online version of the award-winning DESMOND self-management diabetes education	■ Different programmes available ■ Newly diagnosed and foundation course for type 2 diabetes ■ Three digital programmes available on the MyDESMOND platform: ● Type 2 Diabetes: suitable for anyone with a type 2 diabetes diagnosis ● Let's Prevent Diabetes: for individuals who find themselves at risk of developing type 2 diabetes ● Babysteps: a prevention programme specifically designed for women who have had a previous diagnosis of gestational diabetes	https://www.mydesmond.com/home/

like peptide 1 (GLP-1) receptor agonist with established CV benefit approved for individuals with type 2 diabetes and CKD who do not meet their personalised glycaemic target with metformin and/or an SGLT-2 inhibitor or who cannot use these medications (Triozi et al, 2021; de Boer et al, 2022).

A further recommended medication with established kidney and CV benefits is a nonsteroidal mineralocorticoid receptor antagonist (MRA) (finerenone) if urinary ACR ≥ 30 mg/mmol and potassium levels are normal (de Boer et al, 2022). A co-prescription of SGLT-2 inhibition can be considered with an MRA where each is individually indicated (Herrington et al, 2023).

Certain dipeptidyl peptidase 4 (DPP-4) inhibitors can be used where eGFR is <30 ml/min/1.73 m² and in haemodialysis or peritoneal dialysis for individuals who are not managed with GLP-1 receptor agonists.

The use of thiazolidinediones enhance insulin sensitivity, a frequent anomaly in advanced CKD, and maintains antihyperglycemic influences in these patients. Fluid retention and heart failure are concerns with low eGFR and cautious monitoring is needed. Insulin and short-acting sulfonylureas are usually required to regulate glucose when medications with less tendency to produce hypoglycaemia are contraindicated, not tolerated, unobtainable or inadequate (de Boer et al, 2022).

Conclusion

This article discussed the relevance of promoting kidney health in individuals living with type 2 diabetes using secondary and tertiary preventive measures. Nurses need to be aware of the major causes of CKD including diabetes, hypertension, CVD and obesity so should screen these individuals for the presence of CKD. They should use Making Every Contact Count to provide

Box 1. PROTECT NOW

- P: provide education on what the kidneys do and what can occur when things go wrong
- R: regular checks and timely referral where applicable
- O: optimising glucose, blood pressure and cholesterol management
- T: tests for estimated glomerular filtration rate and urine albumin:creatinine ratio—what they do and why they are important
- E: delivering education and support
- C: coding and understanding the different stages of chronic kidney disease
- T: choosing treatment options that protect the kidneys
- N: not being anxious about looking for information or support
- O: omitting certain medications during dehydrating illness using sick-day guidance
- W: promoting individual health and wellbeing advice using person-centred care approaches

Source: Phillips, 2021

KEY POINTS

- Individuals with type 2 diabetes, cardiovascular disease and hypertension should be screened for chronic kidney disease
- There are many emotional challenges from living with the burden of type 2 diabetes and chronic kidney disease; therefore psychosocial screening and appropriate interventions are vital
- Diabetes self-management programmes are a key component of tertiary prevention
- Pharmacological therapies play a significant role in type 2 diabetes and chronic kidney disease management.

brief interventions to promote healthy lifestyles including those to address obesity along with monitoring glycaemic control and using screening tools to assess psychosocial care needs.

The aim of tertiary prevention is to enable individuals to live well with these long-term conditions using DSMES programmes and pharmacological therapies to enhance individuals' quality of life and prevent complications.

The importance of promoting kidney health in type 2 diabetes should be recognised in both primary and secondary care settings especially with the triple threat of CVD. **BJN**

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- Association of British Clinical Diabetologists, Renal Association. Clinical practice guidelines for management of hyperglycaemia in adults with diabetic kidney disease. 2021 update. <https://tinyurl.com/54z3vavy> (accessed 10 October 2023)
- Daly L, Byrne G, Keogh B. Contemporary considerations relating to health promotion and older people. *Br J Nurs*. 2019;28(21):1414–1419. <https://doi.org/10.12968/bjon.2019.28.21.1414>
- Davies MJ, D'Alessio DA, Fradkin J et al. Management of hyperglycaemia in type 2 diabetes, 2018. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetologia*. 2018;61(12):2461–2498. <https://doi.org/10.1007/s00125-018-4729-5>. Erratum in: *Diabetologia*. 2019;62(5):873
- Davies MJ, Aroda VR, Collins BS et al. Management of hyperglycaemia in type 2 diabetes, 2022. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD). *Diabetes Care*. 2022;45(11):2753–2786. <https://doi.org/10.2337/dci22-0034>
- 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(12):3075–3090. <https://doi.org/10.2337/dci22-0027>

- ElSayed NA, Aleppo G, Aroda VR, et al; on behalf of the American Diabetes Association. 11. Chronic kidney disease and risk management: Standards of Care in Diabetes—2023. *Diabetes Care*. 2023a;46(suppl 1):S191–S202. <https://doi.org/10.2337/dc23-S011>
- ElSayed NA, Aleppo G, Aroda VR, et al; on behalf of the American Diabetes Association. Summary of revisions: Standards of Care in Diabetes—2023. *Diabetes Care*. 2023b;46(suppl 1):S5–S9. <https://doi.org/10.2337/dc23-Srev>
- ElSayed NA, Aleppo G, Aroda VR, et al; on behalf of the American Diabetes Association. 5. Facilitating positive health behaviors and well-being to improve health outcomes: Standards of Care in Diabetes—2023. *Diabetes Care*. 2023c; 46(supplement_1): S68–S96. <https://doi.org/10.2337/dc23-S005>
- Fish R, Ratcliffe L, Chitalia N et al; on behalf of the UK Kidney Association. Updated commentary on NICE guidelines (NG136). Hypertension in adults: diagnosis and management including proposals for blood pressure management in patients with chronic kidney disease, with a brief commentary on KDIGO clinical practice guideline for the management of blood pressure in CKD 2021. 2022. <https://tinyurl.com/yc5pkn6t> (accessed 10 October 2023)
- George C, Echouffo-Tcheugui JB, Jaar BG, Okpechi IG, Kengne AP. The need for screening, early diagnosis, and prediction of chronic kidney disease in people with diabetes in low- and middle-income countries—a review of the current literature. *BMC Med*. 2022;20(1):247. <https://doi.org/10.1186/s12916-022-02438-6>
- Hahr AJ, Molitch ME. Management of diabetes mellitus in patients with CKD: core curriculum 2022. *Am J Kidney Dis*. 2022;79(5):728–736. <https://doi.org/10.1053/j.ajkd.2021.05.023>
- Health Service Executive. Making every contact count: a health behaviour change framework and implementation plan for health professionals in the Irish health service. 2016. <https://tinyurl.com/y86day5v> (accessed 10 October 2023)
- Health Service Executive. The second report of the structured chronic disease management treatment programme in general practice. 2023. <https://tinyurl.com/2p8s37y4> (accessed 10 October 2023)
- Hendrieckx C, Halliday JA, Beeney LJ, et al. Diabetes and emotional health. A practical guide for healthcare professionals supporting adults with type 1 and type 2 diabetes. 2nd edn (UK). London: Diabetes UK; 2019. <https://tinyurl.com/3u2mtwv8> (accessed 10 October 2023)
- Herrington WG, Frankel AH, Wonnacott A et al; on behalf of the UK Kidney Association. UKKA clinical practice guideline: sodium-glucose co-transporter-2 (SGLT-2) inhibition in adults with kidney disease. 28 September 2021. <https://tinyurl.com/4pjpcwja> (accessed 10 October 2023)
- Herrington WG, Frankel AH, Staplin N et al; on behalf of the UK Kidney Association. UKKA clinical practice guideline: sodium-glucose co-transporter-2 (SGLT-2) inhibition in adults with kidney disease. 2023, Update. <https://guidelines.ukkidney.org> (accessed 10 October 2023)
- Karunathilake SP, Ganegoda GU. Secondary prevention of cardiovascular diseases and application of technology for early diagnosis. *Biomed Res Int*. 2018;2018:5767864. <https://doi.org/10.1155/2018/5767864>
- Kidney Care UK, National Psychosocial Working Group. Psychosocial health—a manifesto for action. Alton: KCUK; 2033. <https://tinyurl.com/yn37rk27> (accessed 10 October 2023)
- Kristensen JH, Basit S, Wohlfahrt J, Damholt MB, Boyd HA. Pre-eclampsia and risk of later kidney disease: nationwide cohort study. *BMJ*. 2019;365:l1516. <https://doi.org/10.1136/bmj.l1516>
- Luyckx VA, Cherney DZI, Bello AK. Preventing CKD in developed countries. *Kidney Int Rep*. 2020;5(3):263–277. <https://doi.org/10.1016/j.ekir.2019.12.003>. Erratum in: *Kidney Int Rep*. 2020;5(5):758
- Mayrinsk J, Souza RT, Feitosa FE, et al; Preterm SAMBA study group. Incidence and risk factors for preeclampsia in a cohort of healthy nulliparous pregnant women: a nested case-control study. *Sci Rep*. 2019;9(1):9517. <https://doi.org/10.1038/s41598-019-46011-3>
- Murphy F, Byrne G. Promoting kidney health in cardiovascular disease: part one. *British Journal of Cardiac Nursing*. 2022a;17(10):1–12. <https://doi.org/10.12968/bjca.2022.0083>
- Murphy F, Byrne G. Promoting kidney health in cardiovascular disease: part two. *British Journal of Cardiac Nursing*. 2022b;17(12):1–11. <https://doi.org/10.12968/bjca.2022.0111>
- Murphy F, Byrne G. Promoting kidney health in type 2 diabetes: part 1. *Br J Nurs*. 2023;32(18):874–880. <https://doi.org/10.12968/bjon.2023.32.18.874>
- Naidoo J, Wills J. Foundations for health promotion. Edinburgh: Elsevier Health Sciences; 2016
- NHS England. Digital innovations in diabetes. 2023. <https://www.england.nhs.uk/diabetes/digital-innovations-to-support-diabetes-outcomes> (accessed 11 October 2023)
- National Institute for Health and Care Excellence. Chronic kidney disease: assessment and management. NICE guideline NG203. 2021. <https://www.nice.org.uk/guidance/ng203>
- National Institute for Health and Care Excellence. Hypertension in adults: diagnosis and management. NICE guideline NG136. 2022a (updated from

- 2019). <https://www.nice.org.uk/guidance/ng136> (accessed 29 July 2023)
- National Institute for Health and Care Excellence. Type 2 diabetes in adults: management. NICE guideline NG28 2022b (updated from 2015). <https://www.nice.org.uk/guidance/ng28>
- National Institute for Health and Care Excellence. Type 2 diabetes in adults. Quality standard QS209. 2023a. <https://www.nice.org.uk/guidance/qs209> (accessed 10 October 2023)
- National Institute for Health and Care Excellence. Diabetes – type 2. Clinical knowledge summary. 2023b. <https://cks.nice.org.uk/topics/diabetes-type-2> (accessed 10 October 2023)
- Nottingham Area Prescribing Committee. Nottinghamshire health community treatment guideline for the management of type 2 diabetes (T2D) in adults. V5.2. 2022. <https://tinyurl.com/2p83pf39> (accessed 10 October 2023)
- Owens-Gary MD, Zhang X, Jawanda S, Bullard KM, Allweiss P, Smith BD. The importance of addressing depression and diabetes distress in adults with type 2 diabetes. *J Gen Intern Med.* 2019;34(2):320–324. <https://doi.org/10.1007/s11606-018-4705-2>
- Phillips A. PROTECT NOW: a new resource for diabetes and kidney health. *Practice Nursing.* 2021;32(11):449–450. <https://doi.org/10.12968/pnur.2021.32.11.449>
- Public Health England, NHS England, Health Education England et al. Making Every Contact Count (MECC): consensus statement. 2016. <https://tinyurl.com/u3bwkmht> (accessed 10 October 2023)
- Rossing P, Caramori ML, Chan JCN et al. Executive summary of the KDIGO 2022 Clinical Practice Guideline for Diabetes Management in Chronic Kidney Disease: an update based on rapidly emerging new evidence. *Kidney Int.* 2022;102(5):990–999. <https://doi.org/10.1016/j.kint.2022.06.013>
- Stewart R. Lifestyle discussions: stress and type 2 diabetes. *Diabetes and Primary Care* 2023; 25: 7–8. <https://diabetesonthenet.com/wp-content/uploads/7-8-Stress-factsheet.pdf> (accessed 10 October 2023)
- Trionzi JL, Parker Gregg L, Virani SS, Navaneethan SD. Management of type 2 diabetes in chronic kidney disease. *BMJ Open Diabetes Res Care.* 2021;9(1):e002300. <https://doi.org/10.1136/bmjdr-2021-002300>
- Vanholder R, Annemans L, Bello AK et al. Fighting the unbearable lightness of neglecting kidney health: the decade of the kidney. *Clin Kidney J.* 2021;14(7):1719–1730. <https://doi.org/10.1093/ckj/sfab070>
- Vanholder R, Paul T Conway PT, Daniel Gallego D et al. The European Kidney Health Alliance (EKHA) and the Decade of the Kidney™. *Nephrol Dial Transplant.* 2023;38(5):1113–1122. <https://doi.org/10.1093/ndt/gfac211>
- Visseren FL, Mach F, Smulders YM, et al; ESC National Cardiac Societies; ESC Scientific Document Group. ESC guidelines on cardiovascular disease prevention in clinical practice. *Eur Heart J.* 2021;42(34):3227–3337. <https://doi.org/10.1093/eurheartj/ehab484>. Erratum in: *Eur Heart J.* 2022;43(42):4468
- Yang Y, Wu N. Gestational diabetes mellitus and preeclampsia: correlation and influencing factors. *Front Cardiovasc Med.* 2022; <https://doi.org/10.3389/fcvm.2022.831297>

CPD reflective questions

- How do you screen for chronic kidney disease among individuals living with type 2 diabetes?
- How do you screen for psychosocial concerns for individuals living with type 2 diabetes and chronic kidney disease?
- What diabetes self-management education and support programmes do you provide to individuals with type 2 diabetes?

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