Type 2 Diabetes Cardiovascular Renal Metabolic Review Checklist

Medscape UK x Guidelines
Primary Care Hacks

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Consider the following during T2D CVRM shared decision making:

Life Story and Lifestyle Considerations

- ☐ Consider age, functional and frailty status (consider using the Rockwood frailty scale), occupation, literacy level, and other social determinants of health during shared decision making[1] [2] [3]
  - o be aware that early-onset T2D (<40 years) is rapidly increasing globally and carries an excess risk of microvascular and cardiometabolic complications as well as premature death; aggressive risk factor modification in these individuals is imperative to mitigate this risk[4] [5]
- ☐ Assess BMI and WtHR; EASO now recommends WtHR (instead of WC) in addition to BMI for the diagnostic process of obesity due to its superiority as a cardiometabolic disease risk marker.[6] Remember to adjust according to ethnicity and discuss individualised weight loss goals as appropriate[7]
- ☐ Discuss the importance of 24-hour physical behaviours for T2D (the 5 S's):[1] sitting/breaking up prolonged sitting, sweating, strengthening, sleep, stepping (Kevin's patient-facing videos may be a useful reference)
- ☐ Strive for remission of T2D if possible,[8] irrespective of weight.[9] Weight loss of 5–10% confers metabolic improvement; weight loss of 10–15% or more can have a disease-modifying effect and lead to remission of T2D[1]

Individualised HbA_{1c} Goals

- ☐ Review the person's current HbA_{1c} and trend, and consider other factors when individualising HbA_{1c} goals, e.g.: risks potentially associated with hypoglycaemia and other drug adverse effects; life expectancy; multiple long-term conditions; established vascular complications; and patient preference, resources, and support systems[10]
- ☐ See the expert consensus statement on diabetes and frailty for individualising management in older adults and/or adults with frailty and T2D

Kidneys (see also the Primary Care Hack, *Identification and Holistic Management of Chronic Kidney Disease*)

- ☐ Individualise HbA_{1c} targets in people with diabetic kidney disease. Be aware that all SGLT2is have negligible glucose-lowering effect once eGFR falls below 45 ml/min/1.73 m^2, so consider adding in an additional glucose-lowering medication such as a GLP-1 RA
- ☐ If eGFR <60 ml/min/1.73 m^2 **or** clinically significant proteinuria (uACR ≥3 mg/mmol) **and** on maximally tolerated dose of ARB: consider adding SGLT2i with renal protective benefits,[1] irrespective of HbA_{1c}
  - o see the Primary Care Hack, *Extra-Glycaemic Indications of SGLT2 Inhibitors*
- ☐ To reduce the risk of adverse kidney and CV outcomes, consider adding finerenone as third line to an RAASi and an SGLT2i (or second line if SGLT2i is inappropriate or not tolerated) in those with T2D and CKD if eGFR ≥25 ml/min/1.73 m^2, uACR ≥3 mg/mmol, and normal potassium concentration[11] [12] [13]
- ☐ If CKD present, offer atorvastatin 20 mg for primary or secondary prevention of CVD[14]
- ☐ Offer aspirin to adults with CKD for the secondary prevention of CVD,[2] but be aware of the risk of bleeding
- ☐ Consider referral as per NICE criteria, or if 5-year risk of requiring renal replacement therapy is >5% (measured using the Four-Variable KFRE)

Blood Pressure

There is considerable debate around optimal BP targets for people living with diabetes, with several conflicting guidelines published

- ☐ For grade 1 hypertension (people with a clinic SBP 140–159 mmHg and/or a clinic DBP 90–99 mmHg), effective lifestyle changes may delay or prevent the need for pharmacological treatment
  - o for information on effective lifestyle changes, see the Primary Care Hack, *Lifestyle Changes for Managing Hypertension*
- ☐ **First instance:** aim for a HBPM average target of <135/85 mmHg (<140/90 mmHg clinic target) in all people[15]
- ☐ **Provided treatment is well tolerated:** then aim for HBPM average of 125/75 mmHg (130/80 mmHg clinic target) or lower in most people[15]
- ☐ **For adults aged >80 years:** consider a clinic BP target of <150/90 mmHg; consider frailty status (possibly using the Rockwood frailty scale)[16]
- ☐ **For people living with T2D:** start drug treatment with an ARB,[16] irrespective of age or ethnic background
- ☐ Measure sitting and standing BP in people with hypertension and T2D.[16] In those with a significant postural drop in BP (i.e., ≥20 mmHg SBP and/or ≥10 mmHg DBP that occurs on standing[17]), treat to a BP target based on the standing BP

Note: SGLT2is have a modest impact on BP, lowering it by around 4/2 mmHg[18]

Lipids

- ☐ LDL-C targets for people living with T2D:[19]
  - o moderate risk: <2.6 mmol/l
  - o high risk: ≥50% reduction from baseline **and** <1.8 mmol/l
  - o very high risk: ≥50% reduction from baseline **and** <1.4 mmol/l
- ☐ Patient's QRISK3 is ≥10%: offer atorvastatin 20 mg for primary prevention of CVD.[14] [20] Consider using QRISK3-lifetime for younger individuals, particularly under the age of 40 years
- ☐ If LDL-C targets are not achieved on maximally tolerated dose statin, consider combination lipid-lowering therapy e.g., add in ezetimibe, bempedoic acid, PCSK9 inhibitor,[19] or inclisiran
- ☐ Consider icosapent ethyl if the individual has established CVD (secondary prevention) and is on statins, with fasting TG ≥1.7 mmol/l and LDL-C between 1.04 and ≤2.60 mmol/l[20] [21]
- ☐ For secondary prevention of CVD, offer atorvastatin 80 mg[19]

Heart

- ☐ Check pulse; if irregular, consider ECG to identify AF
- ☐ Consider presence of CVD or high risk of CVD:[1] [3]
  - o **QRISK3 ≥10%** and age >40 years, or **age <40 years with an elevated lifetime risk of CVD** (i.e. the presence of one or more of hypertension, dyslipidaemia, smoking, obesity, or family history [in a first-degree relative] of premature CVD): consider early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c}[3]
  - o **ASCVD** (i.e. IHD/TIA/stroke/PVD): offer early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c}[3]
  - o all subtypes of HF (**HFrEF** and **HFpEF**): offer early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c}[3]

Continued overleaf...

Obesity

- Obesity is an LTC with multiple pathophysiological aspects; treatment involves more than just "eating less and moving more". Like other LTCs, obesity is relapsing in nature and can lead to a range of complications, including cardiometabolic disease and malignancy
- Remember that language matters: seek permission to discuss weight, and use language that is person-centred, collaborative, and nonjudgemental[22] [23]
- Offer a brief intervention to people living with overweight or obesity: ASK, ASSESS, ADVISE, AGREE, and ASSIST.[22] [24] [25] **Be aware of weight bias and stigma**
- Consider referral to an evidence-based weight management programme for multicomponent interventions[24]
  - consider referral from a lower BMI for people from high-risk ethnic backgrounds
- Consider the use of a GLP-1 RA or a GLP-1/GIP RA as an adjunct to behavioural change strategies and lifestyle interventions for weight management in people living with overweight or obesity and ≥1 weight-related condition[3] [24] [26] [27] [28]
  - note: the SELECT trial has shown that semaglutide improves CV outcomes in people living with obesity and CVD[28]

Liver (see the Primary Care Hack, *Identification and Management of People with MASLD and MASH*)

- Noninvasive tests for liver fibrosis risk may be advisable, due to the strong association of T2D with MASLD[29] [30] [31]
- Consider a FIB-4 test to assess for underlying fibrosis risk in people aged <65 years
- If identified as at intermediate or high risk, consider referral to secondary care gastroenterology for transient elastography (FibroScan®)
- Strongly encourage and facilitate weight loss where possible: weight loss 3–5% reduces hepatic steatosis, ≥5–7% can lead to resolution of MASH, and ≥10% improves hepatic fibrosis[32]

There is emerging evidence for pioglitazone, SGLTis, GLP-1 RAs, and the dual GLP-1/GIP RA tirzepatide for MASLD[1]

Airways

- Assess smoking status and offer brief intervention to stop smoking.[3] [33] Signpost to smoking cessation services
- Consider sleep health, which is an important and modifiable risk factor for improving glycaemic control in people living with T2D[34]
- Consider sleep disorders: these conditions (affecting both quality and/or quantity of sleep) have adverse cardiometabolic effects[35]
- Consider OSAHS: these conditions are commonly associated with T2D.[1] [36] Consider using the Epworth sleepiness scale and the STOP–BANG questionnaire to exclude underlying OSAHS
- Be aware of possible glucocorticoid-induced hyperglycaemia and diabetes in people with asthma and/or COPD and manage appropriately[37] [38]

Prescribing Considerations (for medicines information, see the Primary Care Hack, *What Next After Metformin?*)

- Discuss adherence and, if necessary, explore barriers/preferences[1] [3] [39]
- Review history of hypoglycaemia/hypoglycaemia awareness, DVLA adherence, and CBG monitoring where appropriate, and consider CGM in all people with T2D on insulin[1] [3]
- Sick-day guidance[39] [40]
  - for people with T2D on insulin
  - review the SADMANS mnemonic. Consider temporarily pausing these drugs during any significant intercurrent illness, but remind individuals to restart once they are eating and drinking normally and recovered from their illness
  - Kevin's patient-facing YouTube videos on SGLT2 inhibitors may be a useful reference for patients
- Educate women of childbearing age that many medications (e.g. ACEis, ARBs, statins, SGLT2is, GLP-1 RAs, and GLP-1/GIP RAs) are contraindicated in pregnancy, and counsel them regarding contraception.[39] [40] If planning pregnancy, refer to pre-pregnancy services
- SGLT2i or GLP-1 RA commenced:
  - consider reduction in SU or insulin dose. If on insulin, consider cautiously reducing insulin dose, increase CBG monitoring, and contact DSN as required[3] [41] [42]
  - consider adjustment of any dose of diuretic when introducing an SGLT2i[40] [43] [44]
  - retinopathy:[3] be aware of the possibility of worsening of pre-existing retinopathy if HbA_{1c} is rapidly lowered
- Ensure appropriate/optimal prescribing; consider de-intensifying in the context of functional dependence and frailty[45]

MDT Referrals

- DSMES (e.g. DESMOND or X-Pert)
- Consider any locally available physical activity referral pathway
- Regular retinopathy screening
- Regular foot screening
- Consider secondary care referral as required, e.g., diagnostic uncertainty or treatment option advice
- Consider dietitian referral, and psychological counselling for diabetes distress
- Consider referral to an evidence-based weight management programme for multicomponent interventions. Consider referral from a lower BMI for people from high-risk ethnic backgrounds

Coding

- Code identified conditions as 'priority 1'
- Do not code 'diabetes resolved'; instead, code 'diabetes in remission'

Follow Up

- Goal setting—Diabetes UK information prescriptions can help to facilitate goal setting, information sharing, and care planning
- Set a defined timescale for follow up and consider regular monitoring as clinically indicated
- Regular monitoring of weight, BP, HbA_{1c}, renal function (both eGFR and urinary ACR), and lipid profile as clinically indicated (at least annually).

ACEi=angiotensin-converting enzyme inhibitor; **ACR**=albumin to creatinine ratio; **ARB**=angiotensin receptor blockers; **ASCVD**=atherosclerotic cardiovascular disease; **BMI**=body mass index; **BP**=blood pressure; **CBG**=capillary blood glucose; **CGM**=continuous glucose monitoring; **CHF**=congestive heart failure; **CKD**=chronic kidney disease; **CVD**=cardiovascular disease; **CVRM**=cardiovascular, renal, and metabolic; **DBP**=diastolic blood pressure; **DESMOND**=diabetes education and self-management for ongoing and newly diagnosed; **DSMES**=diabetes self-management, education, and support; **DSN**=diabetes specialist nurse; **DVLA**=Driver and Vehicle Licensing Agency; **EASO**=European Association for the Study of Obesity; **ECG**=electrocardiogram; **eGFR**=estimated glomerular filtration rate; **FIB-4**=Fibrosis-4; **GIP**=glucose-dependent insulinotropic peptide; **GLP-1**=glucagon-like peptide-1; **HbA_{1c}**=haemoglobin A_{1c}; **HBPM**=home blood pressure monitoring; **HDL-C**=high-density lipoprotein cholesterol; **HF**=heart failure; **HFpEF**=heart failure with preserved ejection fraction; **HFrEF**=heart failure with reduced ejection fraction; **IHD**=ischaemic heart disease; **KFRE**=Kidney Failure Risk Equation; **LDL-C**=low-density lipoprotein cholesterol; **LTC**=long-term condition; **MASH**=metabolic dysfunction-associated steatohepatitis; **MASLD**=metabolic dysfunction-associated steatotic liver disease; **MDT**=multidisciplinary team; **OSAHS**=obstructive sleep apnoea/hypopnoea syndrome; **PARS**=Physical Activity Referral Service; **PVD**=peripheral vascular disease; **QRISK3**=Cardiovascular Risk Score 3; **RA**=receptor agonist; **SADMANS**=sulfonylureas, ACEis, diuretics, direct renin inhibitors, metformin, ARBs, nonsteroidal anti-inflammatory drugs, SGLT2 inhibitors; **SGLT2i**=sodium–glucose cotransporter-2 inhibitor; **SBP**=systolic blood pressure; **STOP–BANG**=snoring history, tired during the day, observed stop breathing while sleep, high BP, BMI >35 kg/m^2, age >50 years, neck circumference >40 cm, and male gender; **SU**=sulfonylurea; **TIA**=transient ischaemic attack; **TG**=triglyceride; **T2D**=type 2 diabetes; **uACR**=urinary albumin to creatinine ratio; **WC**=waist circumference; **WtHR**=waist-to-height ratio

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For references, view this Primary Care Hack online at: **medscape-uk.co/Hack-CVRM**

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