

Type 2 Diabetes Cardiovascular Renal Metabolic Review Checklist

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Consider the following during T2D CVRM shared decision making:

Lifestyle Considerations

- Assess weight (e.g. BMI or WHR) and discuss individualised weight loss goals as appropriate. Remember to ethnically adjust these goals where indicated^[1]
- Discuss the importance of [24-hour physical behaviours](#) for T2D^[2]
 - o sitting/breaking up prolonged sitting
 - o sweating
 - o strengthening
 - o sleep
 - o stepping
- Strive for remission of T2D if possible,^[3] irrespective of weight.^[4] 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^[2]

Individualised HbA_{1c} Goals

- Review the person's current HbA_{1c} and trend, and consider other [factors when individualising HbA_{1c} goals](#), e.g.:
 - o risks potentially associated with hypoglycaemia and other drug adverse effects
 - o life expectancy
 - o comorbidities
 - o established vascular complications
 - o patient preference, resources, and support systems^[5]
- See the [expert consensus statement on diabetes and frailty](#) for individualising management in older adults and/or adults with frailty and T2D

Kidneys

- Individualise [HbA_{1c} targets](#) in people with diabetic kidney disease
 - o be aware that all SGLT2is have negligible glucose-lowering effect once eGFR falls below 45 ml/min, so consider adding in an additional glucose-lowering medication such as a GLP-1 RA
- If eGFR <60 ml/min/1.73 m² **or** clinically significant proteinuria (ACR ≥3 mg/mmol) **and** on maximally tolerated dose of ACEi/ARB: consider adding SGLT2i with renal protective benefits,^[2] irrespective of HbA_{1c}
 - o see the Primary Care Hack, [Extra-Glycaemic Indications of SGLT2 Inhibitors](#)
- If CKD present, offer atorvastatin 20 mg for primary or secondary prevention of CVD^[6]
- Offer aspirin or clopidogrel to adults with CKD for the secondary prevention of CVD,^[7] 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 Kidney Failure Risk Equation](#))

Blood Pressure

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

- First instance:** aim for a HBPM average target of <135/85 mmHg (<140/90 mmHg clinic target) in all people^[8]
- Provided treatment is well tolerated:** then aim for HBPM average of 125/75 mmHg (130/80 mmHg clinic target) or lower in most people^[8]
- For adults aged >80 years:** consider a clinic BP target of <150/90 mmHg^[9]
- For people living with T2D:** start drug treatment with an ACEi/ARB,^[9] irrespective of age or ethnic background
- Measure sitting and standing BP in people with hypertension and T2D.^[9] In those with a significant postural drop in BP (i.e., ≥20 mmHg systolic and/or ≥10 mmHg diastolic that occurs on standing^[10]), 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^[11]

Lipids

- LDL-C targets for people living with T2D:^[12]
 - 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^[6]^[13]
- If LDL-C targets are not achieved on maximally tolerated dose statin, consider combination lipid-lowering therapy e.g., add in ezetimibe, bempedoic acid, or PCSK9 inhibitor^[12]
- For secondary prevention of CVD, offer atorvastatin 80 mg^[12]

Continued overleaf...

NAFLD

- Noninvasive tests for liver fibrosis risk may be advisable due to the strong association of T2D with NAFLD^{[14][15][16]}
- Consider [FIB-4 test](#) to assess for underlying fibrosis risk in people aged 35–65 years
- If identified as 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 NASH, and ≥10% improves hepatic fibrosis^[17]
- There is emerging evidence for the benefits of metabolic surgery and GLP-1 RAs, and pioglitazone^[2] for NAFLD

Comorbidities and Life Story

- Consider presence of:
 - CVD or high risk of CVD:^{[2][118]}
 - ASCVD (i.e. IHD/TIA/stroke/PVD): if present, offer early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c}^[18]
 - [all subtypes of HF](#): if present, offer early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c}^[18]
 - QRISK3 ≥10% and age >40 years, or presence of hypertension, dyslipidaemia, smoking, obesity, or family history (in a first-degree relative) of premature cardiovascular disease: consider early combination therapy with metformin and an SGLT2i, irrespective of HbA_{1c}^[18]
 - CKD and proteinuria^{[2][118]} (see Kidney section)
 - [obesity](#):^{[2][17]} both SGLT2i and GLP-1 RA can facilitate weight loss in people living with T2D
 - retinopathy:^[18] be aware of the possibility of worsening of pre-existing retinopathy if HbA_{1c} is rapidly lowered
 - OSAHS; these conditions are commonly associated with T2D.^{[2][19]} Consider using the [Epworth sleepiness scale](#) and the [STOP-BANG questionnaire](#) to exclude underlying OSAHS
- Educate women of childbearing age that many medications (e.g. ACEis, ARBs, statins, SGLT2is, and GLP-1 RAs) are contraindicated in pregnancy, and counsel them regarding contraception.^{[20][21]} If planning pregnancy, refer to pre-pregnancy services
- Consider age, functional and frailty status, occupation, literacy level, and other social determinants of health during shared decision making^{[2][17][118]}

Prescribing Considerations

- Discuss adherence and if necessary explore barriers/preferences^{[2][118][21]}
- Review history of hypoglycaemia/hypoglycaemia awareness, [DVLA adherence](#), and CBG monitoring where appropriate, and consider CGM in all people with T2D on insulin^{[2][118]}
- Sick-day guidance^{[20][21]}
 - [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
- [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^{[17][22][23]}
 - consider adjustment of any dose of diuretic when introducing an SGLT2i^{[20][24][25]}
- Ensure appropriate/optimal prescribing; consider de-intensifying in the context of functional dependence and frailty^[26]

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 as required, e.g., [diagnostic uncertainty](#) or treatment option advice
- Consider dietician referral, and psychological counselling for [diabetes distress](#)

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).

Abbreviations: ACEi=angiotensin-converting enzyme inhibitor; ACR=albumin to creatinine ratio; ARB=angiotensin receptor blockers; ASCVD=atherosclerotic cardiovascular disease; 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 metabolism; 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; eGFR=estimated glomerular filtration rate; FIB-4=Fibrosis-4; GLP-1 RA=glucagon-like peptide-1 receptor agonist; 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; LDL-C=low-density lipoprotein cholesterol; MDT=multidisciplinary team; NAFLD=nonalcoholic fatty liver disease; OSAHS=obstructive sleep apnoea hypopnoea syndrome; PARS=Physical Activity Referral Service; PVD=peripheral vascular disease; QRISK3=Cardiovascular Risk Score 3; SGLT2i=sodium–glucose cotransporter-2 inhibitor; STOP-BANG=snoring history, tired during the day, observed stop breathing while sleep, high blood pressure, BMI >35 kg/m², age >50 years, neck circumference >40 cm, and male gender; SU=sulfonylurea; TIA=transient ischaemic attack; T2D=type 2 diabetes; WHR=waist to hip ratio.

For references, view the webpage for this Primary Care Hack at bit.ly/407CT9G