2023 ESC Guidelines for the management of cardiovascular disease in patients with diabetes

Official ESC Guidelines slide set

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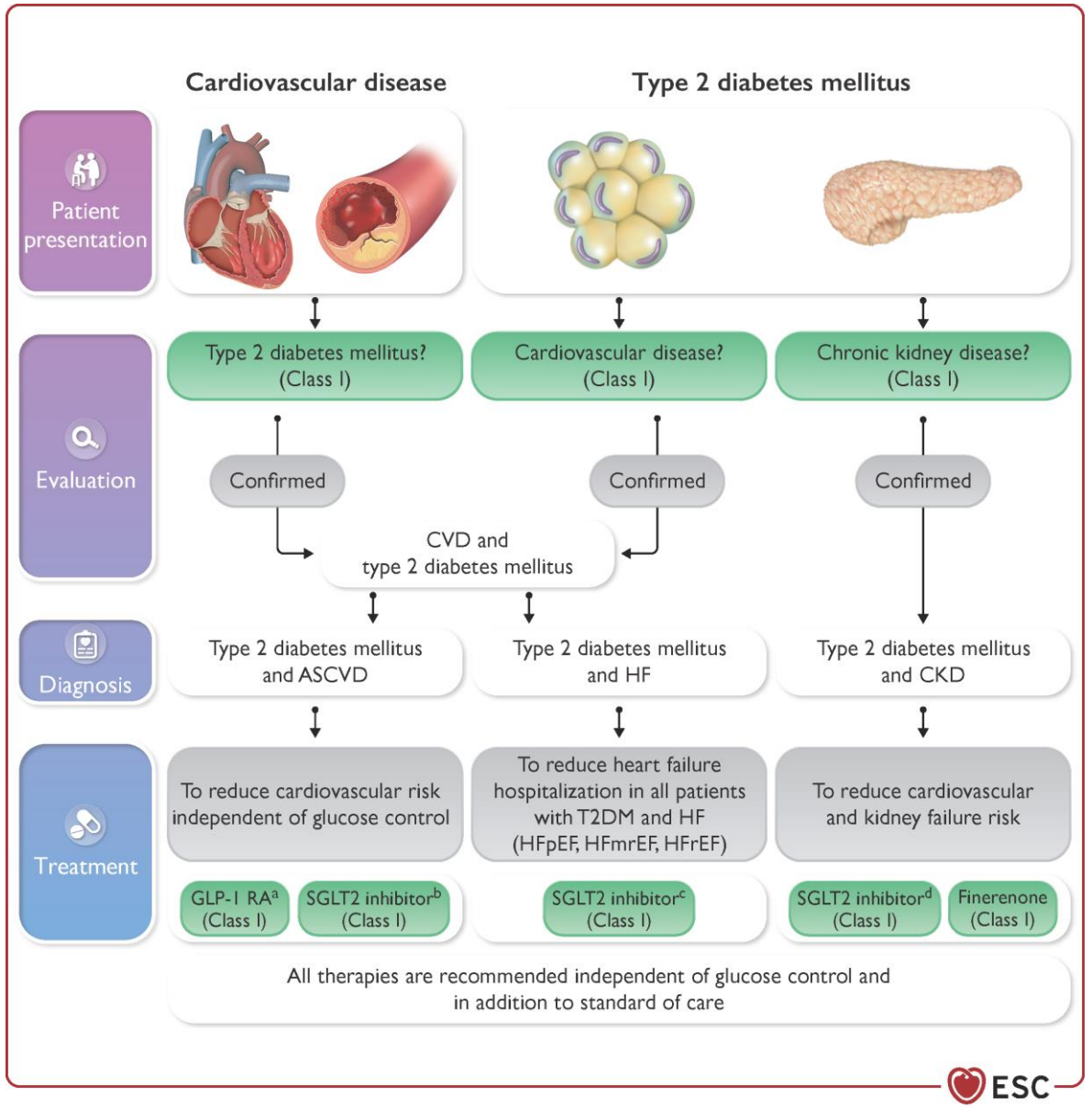
ESC
European Society of Cardiology

Figure 1

Management of cardiovascular disease in patients with type 2 diabetes: clinical approach and key recommendations



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SCORE2-Diabetes: a new risk prediction tool

Development process

Original SCORE2 algorithms:
Predictors: age, sex, smoking, diabetes, SBP, total and HDL cholesterol

Calibrated to predict CVD risk in:
low, moderate, high and very high risk regions of Europe

Adaptation of SCORE2 for individuals with type-2 diabetes:
Added predictors: age at diabetes diagnosis, HbA1c and eGFR

→ SCORE2-Diabetes

Data used: 229,460 individuals with type-2 diabetes from electronic health records, diabetes registry, cohort studies

Validation of SCORE2-Diabetes:
External validation in 217,036 individuals with type-2 diabetes from Sweden, Spain, Malta and Croatia

Key features

- **Estimates** 10-year risk of CVD events in individuals with type-2 diabetes
- **Discriminates risk** in individuals with type-2 diabetes using conventional CVD risk factors and those specifically related to diabetes
- **Calibrated** to predict CVD risk in:
  low, moderate, high and very high risk regions of Europe
- **Aligned** with SCORE2 risk predictions for individuals without diabetes
- **Separate** risk scores for men and women with type-2 diabetes

Pennells L et al, *Eur Heart J* 2023

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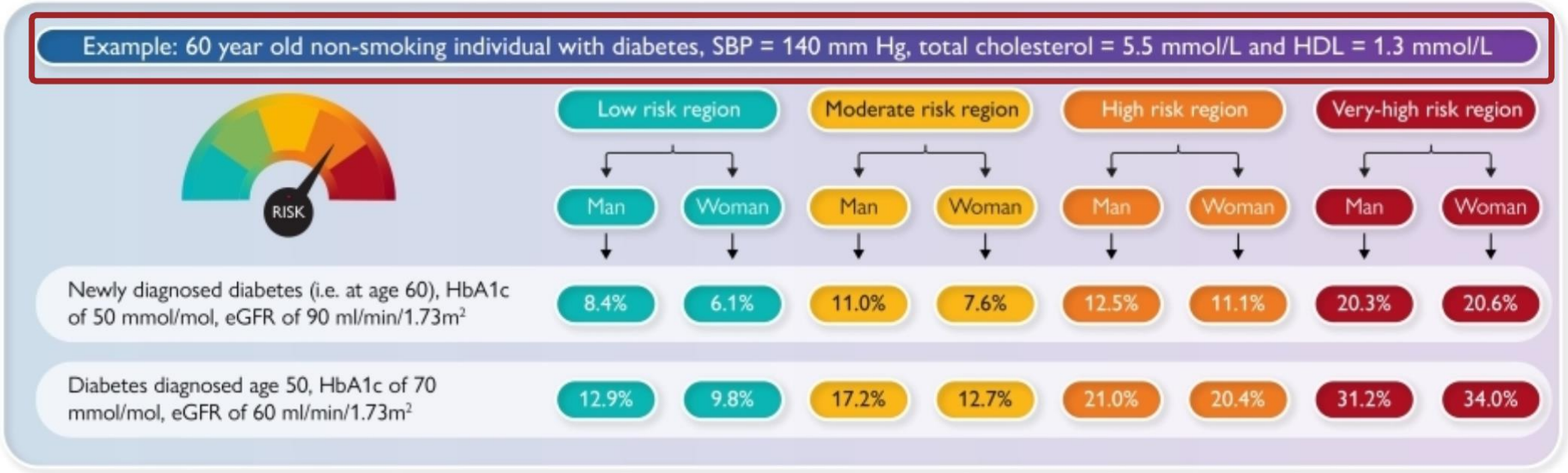
SCORE2-Diabetes: example of risk estimation



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More details and implementation

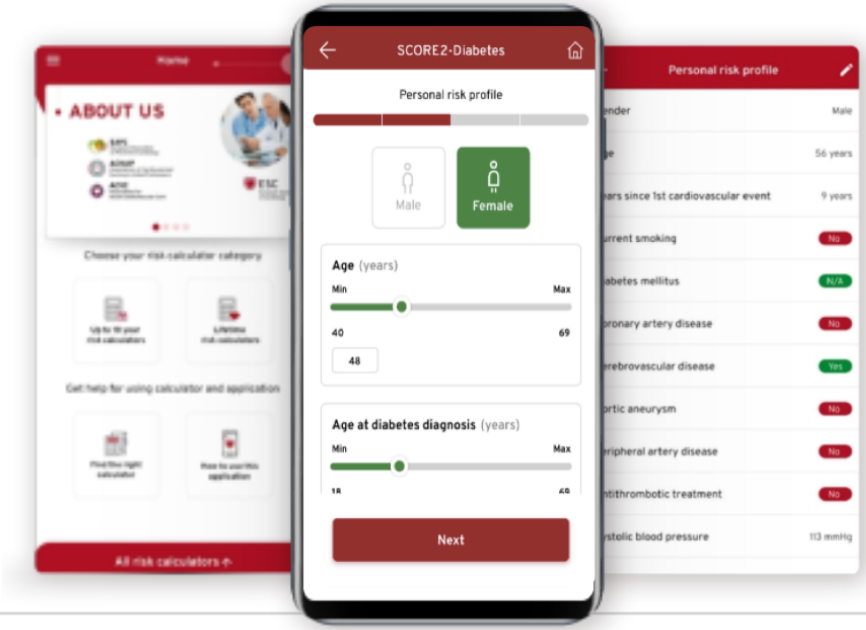
ESC European Society of Cardiology
European Heart Journal (2023) **44**, 2544–2556
https://doi.org/10.1093/eurheartj/ehad260

CLINICAL RESEARCH
Epidemiology, prevention, and health care policies

SCORE2-Diabetes: 10-year cardiovascular risk estimation in type 2 diabetes in Europe

SCORE2-Diabetes Working Group and the ESC Cardiovascular Risk Collaboration[*†]

ESC CVD Risk Calculation Mobile App



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New recommendations (1)

Recommendations IMPLEMENTATION BY PCP AND DIABETES CLINICS_ZI	Class	Level
Cardiovascular risk assessment in diabetes		
In patients with T2DM without symptomatic ASCVD or severe TOD, it is recommended to estimate 10-year CVD risk via SCORE2-Diabetes.	I	B
Weight reduction in patients with diabetes		
It is recommended that individuals living with overweight or obesity aim to reduce weight and increase physical exercise to improve metabolic control and overall CVD risk profile.	I	A
Glucose-lowering medications with effects on weight loss (e.g. GLP-1 RAs) should be considered in patients with overweight or obesity to reduce weight.	IIa	B
Bariatric surgery should be considered for high and very high risk patients with BMI ≥35 kg/m^2 (≥Class II) when repetitive and structured efforts of lifestyle changes combined with weight-reducing medications do not result in maintained weight loss.	IIa	B

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New recommendations (3)

Recommendations	Class	Level
Smoking cessation in patients with diabetes		
Nicotine replacement therapy, varenicline, and bupropion, as well as individual or telephone counselling, should be considered to improve smoking cessation success rate.	IIa	B
Glycaemic targets		
Tight glycaemic control should be considered for reducing CAD in the long term, preferably using agents with proven CV benefit.	IIa	B
Atherosclerotic cardiovascular disease risk reduction by glucose-lowering medications in diabetes		
It is recommended to prioritize the use of glucose-lowering agents with proven CV benefits followed by agents with proven CV safety over agents without proven CV benefit or proven CV safety.	I	C
If additional glucose control is needed, metformin should be considered in patients with T2DM and ASCVD.	IIa	C

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New recommendations (4)

Recommendations	Class	Level
Atherosclerotic cardiovascular disease risk reduction by glucose-lowering medications in diabetes (continued)		
If additional glucose control is needed, pioglitazone may be considered in patients with T2DM and ASCVD without HF.	IIb	B
Blood pressure and diabetes		
Regular BP measurements are recommended in all patients with diabetes to detect and treat hypertension to reduce CV risk.	I	A
Lipids and diabetes		
A PCSK9 inhibitor is recommended in patients at very high CV risk, with persistently high LDL-C levels above target despite treatment with a maximum tolerated statin dose, in combination with ezetimibe, or in patients with statin intolerance.	I	A
If a statin-based regimen is not tolerated at any dosage (even after re-challenge), a PCSK9 inhibitor added to ezetimibe should be considered.	IIa	B

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New recommendations (5)

Recommendations	Class	Level
Lipids and diabetes (continued)		
If a statin-based regimen is not tolerated at any dosage (even after re-challenge), ezetimibe should be considered.	IIa	C
High-dose icosapent ethyl (2 g b.i.d.) may be considered in combination with a statin in patients with hypertriglyceridaemia.	IIb	B
antithrombotic therapy in patients with diabetes		
Clopidogrel 75 mg o.d. following appropriate loading (e.g. 600 mg or at least 5 days already on maintenance therapy) is recommended in addition to ASA for 6 months following coronary stenting in patients with CCS, irrespective of stent type, unless a shorter duration is indicated due to the risk or occurrence of life-threatening bleeding.	I	A
In patients with diabetes and ACS treated with DAPT who are undergoing CABG and do not require long-term OAC therapy, resuming a $P2Y_{12}$ receptor inhibitor as soon as deemed safe after surgery and continuing it up to 12 months is recommended.	I	C

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New recommendations (6)

Recommendations	Class	Level
antithrombotic therapy in patients with diabetes (continued)		
Adding very low-dose rivaroxaban to low-dose ASA for long-term prevention of serious vascular events should be considered in patients with diabetes and CCS or symptomatic PAD without high bleeding risk.	IIa	B
In patients with ACS or CCS and diabetes undergoing coronary stent implantation and having an indication for anticoagulation, prolonging triple therapy with low-dose ASA, clopidogrel, and an OAC should be considered up to 1 month if the thrombotic risk outweighs the bleeding risk in the individual patient.	IIa	C
In patients with ACS or CCS and diabetes undergoing coronary stent implantation and having an indication for anticoagulation, prolonging triple therapy with low-dose ASA, clopidogrel, and an OAC up to 3 months may be considered if the thrombotic risk outweighs the bleeding risk in the individual patient.	IIb	C
When clopidogrel is used, omeprazole and esomeprazole are not recommended for gastric protection.	III	B

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Rabeprazole (pariat) may be the better option than omeprazole, lansoprazole, pantoprazole, esomeprazole -zi

New recommendations (8)

Recommendations	Class	Level
Management of coronary artery disease in patients with diabetes (continued)		
It is recommended to assess glycaemic status at initial evaluation in all patients with ACS.	I	B
Complete revascularization should be considered in patients with NSTE-ACS without cardiogenic shock and with multi-vessel CAD.	IIa	C
Glucose-lowering therapy should be considered in patients with ACS with persistent hyperglycaemia, while episodes of hypoglycaemia should be avoided.	IIa	C
Routine immediate revascularization of non-culprit lesions in patients with MI and multi-vessel disease presenting with cardiogenic shock is not recommended.	III	B

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New recommendations (9)

Recommendations	Class	Level
Heart failure and diabetes		
Evaluation for heart failure in diabetes		
If HF is suspected, it is recommended to measure BNP/NT-proBNP.	I	B
Systematic survey for HF symptoms and/or signs of HF is recommended at each clinical encounter in all patients with diabetes.	I	C
Diagnostic tests in all patients with suspected heart failure		
12-lead ECG is recommended.	I	C
Transthoracic echocardiography is recommended.	I	C
Chest radiography (X-ray) is recommended.	I	C
Routine blood tests for comorbidities are recommended, including full blood count, urea, creatinine and electrolytes, thyroid function, lipids, and iron status (ferritin and TSAT).	I	C

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New recommendations (10)

Recommendations	Class	Level
Pharmacological treatment indicated in patients with HFrEF (NYHA class II–IV) and diabetes		
SGLT2 inhibitors (dapagliflozin, empagliflozin, or sotagliflozin) are recommended in all patients with HFrEF and T2DM to reduce the risk of HF hospitalization and CV death.	I	A
An intensive strategy of early initiation of evidence-based treatment (SGLT2 inhibitors, ARNI/ACE-Is, beta-blockers, and MRAs), with rapid up-titration to trial-defined target doses starting before discharge and with frequent follow-up visits in the first 6 weeks following a HF hospitalization is recommended to reduce re-admissions or mortality.	I	B

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New recommendations (11)

Recommendations	Class	Level
Other treatments indicated in selected patients with HFrEF (NYHA class II–IV) and diabetes		
Hydralazine and isosorbide dinitrate should be considered in self-identified Black patients with diabetes and LVEF ≤35% or with an LVEF <45% combined with a dilated LV in NYHA class III–IV despite treatment with an ACE-I (or ARNI), a beta-blocker, and an MRA, to reduce the risk of HF hospitalization and death.	IIa	B
Digoxin may be considered in patients with symptomatic HFrEF in sinus rhythm despite treatment with sacubitril/valsartan or an ACE-I, a beta-blocker, and an MRA, to reduce the risk of hospitalization.	IIb	B
Heart failure treatments in patients with diabetes and LVEF >40%		
Empagliflozin or dapagliflozin are recommended in patients with T2DM and LVEF >40% (HFmrEF and HFpEF) to reduce the risk of HF hospitalization or CV death.	I	A

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New recommendations (12)

Recommendations	Class	Level
Special considerations for glucose-lowering medications in patients with T2DM with and without HF		
It is recommended to switch glucose-lowering treatment from agents without proven CV benefit or proven safety to agents with proven CV benefit.	I	C
Atrial fibrillation and diabetes		
Opportunistic screening for AF by pulse taking or ECG is recommended in patients with diabetes <65 years of age (particularly when other risk factors are present) because patients with diabetes exhibit a higher AF frequency at a younger age.	I	C
Systematic ECG screening should be considered to detect AF in patients aged ≥75 years, or those at high risk of stroke.	IIa	B

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Revised recommendations (8)

2019	Class	Level	2023	Class	Level
Atrial fibrillation and diabetes					
Screening for AF by pulse palpation should be considered in patients aged >65 years with diabetes and confirmed by ECG, if any suspicion of AF, as AF in patients with diabetes increases morbidity and mortality.	**IIa**	**C**	Opportunistic screening for AF by pulse taking or ECG is recommended in patients ≥65 years of age.	**I**	**B**

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New recommendations (13)

Recommendations	Class	Level
Chronic kidney disease and diabetes		
Intensive LDL-C lowering with statins or a statin/ezetimibe combination is recommended.	I	A
A SGLT2 inhibitor (canagliflozin, empagliflozin, or dapagliflozin) is recommended in patients with T2DM and CKD with an eGFR ≥20 mL/min/1.73 m^2 to reduce the risk of CVD and kidney failure.	I	A
Finerenone is recommended in addition to an ACE-I or ARB in patients with T2DM and eGFR >60 mL/min/1.73 m^2 with a UACR ≥30 mg/mmol (≥300 mg/g), or eGFR 25–60 mL/min/1.73 m^2 and UACR ≥3 mg/mmol (≥30 mg/g) to reduce CV events and kidney failure.	I	A
Low-dose ASA (75–100 mg o.d.) is recommended in patients with CKD and ASCVD.	I	A

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Revised recommendations (1)

2019	Class	Level	2023	Class	Level
Change in diet and nutrition in patients with diabetes					
A Mediterranean diet, rich in polyunsaturated and monounsaturated fats, should be considered to reduce CV events.	IIa	B	It is recommended to adopt a Mediterranean or plant-based diet with high unsaturated fat content to lower CV risk.	I	A

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Revised recommendations (2)

2019	Class	Level	2023	Class	Level
ASCVD risk reduction by glucose-lowering medications in diabetes					
Empagliflozin, canagliflozin, or dapagliflozin are recommended in patients with T2DM and CVD, or at very high/high CV risk to reduce CV events.	I	A	SGLT2 inhibitors with proven CV benefit are recommended in patients with T2DM and ASCVD to reduce CV events, independent of baseline or target HbA1c and independent of concomitant glucose-lowering medication	I	A
			In patients with T2DM without ASCVD or severe TOD but with a calculated 10-year CVD risk ≥10%, treatment with a SGLT2 inhibitor or GLP-1 RA may be considered to reduce CV risk.	IIb	C

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Revised recommendations (3)

2019	Class	Level	2023	Class	Level
ASCVD risk reduction by glucose-lowering medications in diabetes (continued)					
Liraglutide, semaglutide, or dulaglutide are recommended in patients with T2DM and CVD, or at very high/high CV risk to reduce CV events.	I	A	GLP-1 RAs with proven CV benefit are recommended in patients with T2DM and ASCVD to reduce CV events, independent of baseline or target HbA1c and independent of concomitant glucose-lowering medication.	I	A
			In patients with T2DM without ASCVD or severe TOD but with a calculated 10-year CVD risk ≥10%, treatment with a SGLT2 inhibitor or GLP-1 RA may be considered to reduce CV risk.	IIb	C

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Revised recommendations (6)

2019	Class	Level	2023	Class	Level
Heart failure and diabetes					
GLP-1 RAs (lixisenatide, liraglutide, semaglutide, exenatide, dulaglutide) have a neutral effect on the risk of HF hospitalization, and may be considered for diabetes treatment in patients with HF.	IIb	A	GLP-1 RAs (lixisenatide, liraglutide, semaglutide, exenatide ER, dulaglutide, efpeglenatide) have a neutral effect on the risk of HF hospitalization, and should be considered for glucose-lowering treatment in patients with T2DM at risk of or with HF.	IIa	A

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Revised recommendations (9)

2019	Class	Level	2023	Class	Level
Chronic kidney disease and diabetes					
Treatment with the GLP-1 RAs liraglutide and semaglutide is associated with a lower risk of renal endpoints, and should be considered for diabetes treatment if eGFR is >30 mL/min/1.73 m^2.	**IIa**	**B**	A GLP-1 RA is recommended at an eGFR >15 mL/min/1.73 m^2 to achieve adequate glycaemic control, due to low risk of hypoglycaemia and beneficial effects on weight, CV risk, and albuminuria.	**I**	**A**

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SUMMARY

Use and advice to use SCORE2-Diabetes for better risk stratification of asymptomatic patients
Look for HF at every accounter with DM patients
SGLT2i and GLP1-RA - for all diabetic patients (w/o contraindications) independently of HBA1C
Weight reduction and comprehensive risk factor modification is of paramount importance
Clopidogrel and PPI – needs attention
Look for atrial fibrillation in your patients (pulse-taking, wearables, etc)