Prevent The Event

Sanofi

Welcome to the **Prevent The Event** patient identification resource. This resource has been designed to help you:

- Recognise people at very high risk of a first or recurrent CV event
- Understand the ESC guideline recommendations for management of very-high-risk patients

Now, let's meet some patients and explore their CV risk

How to use

Button

Click the interactive buttons to answer questions or learn more

Click to go forward

Click to go back

Click home to select a new patient

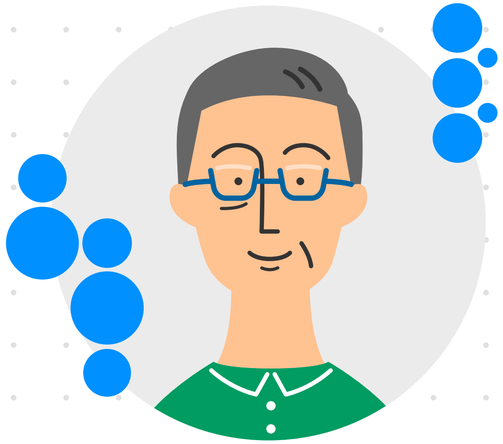
MAT-GLB-2407330-v1.0-01/2025

Adverse events should be reported.
Reporting forms and information can be found at [placeholder for AE website]. Adverse events should also be reported to the Sanofi drug safety department on [placeholder for AE number]. Alternatively, send via email to [placeholder for AE email].

This promotional interactive tool has been organised and funded by Sanofi for healthcare professionals.

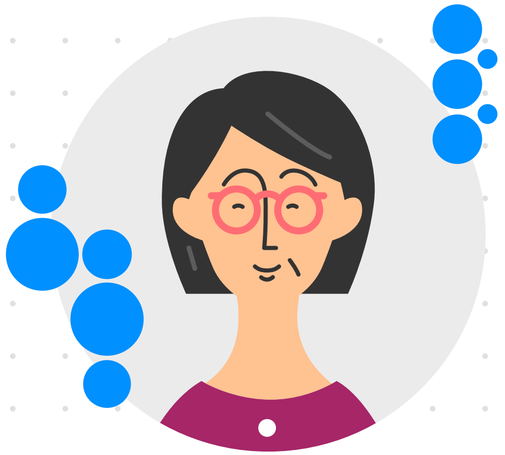
Prevent The Event

Click on a patient below to learn more about their CV risk



John
PAD+T2DM

Susan
CAD+T2DM



Gabby
ACS patient

Eric
CAD

Meet John
(he/him)

PAD+T2DM

60 years old
Smoker since the age of 20
Diagnosed with T2DM when he was 50

LDL-C: 2.5 mmol/L (98 mg/dL)
HbA1c: 7.1%
BMI: 27 kg/m^2
TGs: 2.3 mmol/L (205 mg/dL)

Complains of moderate pain in calves on exertion, which is relieved by rest

Medications:
Lipid-lowering: atorvastatin 80 mg, ezetimibe 10 mg
Anticoagulant: rivaroxaban 5 mg
Glucose-lowering: insulin glargine 300 units/mL, metformin 2,000 mg, liraglutide 1.2 mg
Other: ASA 80 mg

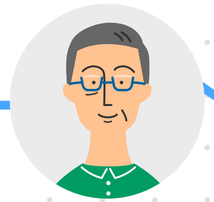
What's John's level of cardiovascular risk?

Based on John's patient profile, click the options below to see if he is considered to be at moderate, high, or very high CV risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias, the 2023 ESC Guidelines for the management of CVD in patients with diabetes, and the 2024 ESC Guidelines for the management of peripheral arterial and aortic disease.[1-3]

Moderate risk

High risk

Very high risk



PAD+T2DM

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Based on John's patient profile, click the options below to see if he is considered to be at moderate, high, or very high cardiovascular risk based on the ESC Guidelines.[1–3]

SCORE2-Diabetes

*Documented ASCVD includes previous ACS (MI or unstable angina), stable angina, coronary revascularisation (PCI, CABG, and other arterial revascularisation procedures), stroke and TIA, and peripheral arterial disease. Unequivocally documented ASCVD on imaging includes those findings that are known to be predictive of clinical events, such as significant plaque on coronary angiography or CT scan (multivessel coronary disease with two major epicardial arteries having >50% stenosis), or on carotid ultrasound.[1]

Moderate risk	High risk	Very high risk

This patient is at very high CV risk according to ESC Guidelines.[1-3]

Very-high-CV-risk criteria across relevant ESC Guidelines:

2019 ESC/EAS Guidelines for the management of dyslipidaemias[1]	Patients with: - Documented ASCVD, either clinical or unequivocal on imaging* - DM with target organ damage (microalbuminuria, retinopathy, or neuropathy), or at least three major risk factors, or early onset of T1DM of long duration (>20 years) - Severe CKD (eGFR <30 mL/min/1.73m^2) - A calculated SCORE ≥10% for 10-year risk of fatal CV disease - FH with ASCVD or with another major risk factor
2023 ESC Guidelines for the management of CVD in patients with diabetes[2]	Patients with T2DM with: - Clinically established ASCVD, or - Severe target organ damage, or - 10-year CVD risk ≥20% using SCORE2-Diabetes are considered at very high CV risk
2024 ESC Guidelines for the management of peripheral arterial and aortic disease[3]	- Patients with symptomatic PAAD are at very high CV risk - Patients with T2DM and PAAD are in the very-high-risk group for stroke, MI, and CV death

This patient would be classed as moderate CV risk if he did not fulfil the very-high-risk criteria and had a 10-year CVD risk of 5 to <10% using SCORE2-Diabetes.[2]

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This patient would be classed as high CV risk if he did not fulfil the very-high-risk criteria and had a 10-year CVD risk of 10 to <20% using SCORE2-Diabetes.[2]

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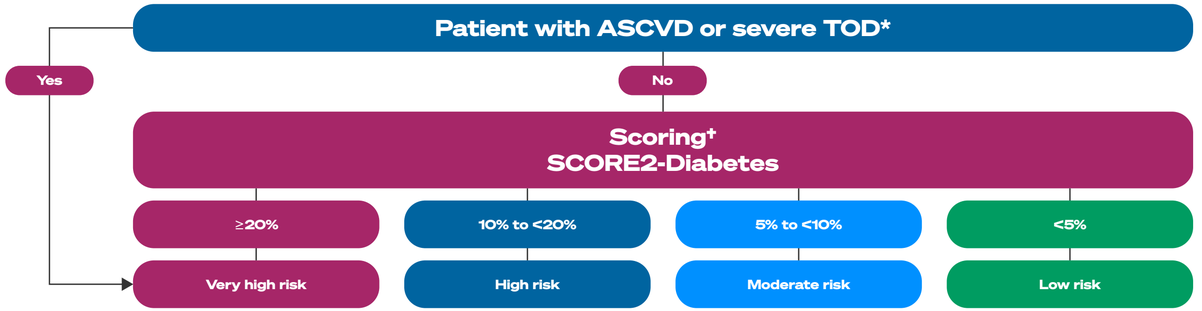
SCORE2-Diabetes

In patients aged ≥40 years with T2DM without ASCVD or severe TOD, it is recommended to estimate 10-year CVD risk using the SCORE2-Diabetes algorithm. In these patients, risk factors for ASCVD should be evaluated on an individual basis.[2]

SCORE2-Diabetes integrates information on conventional CVD risk factors (i.e. age, smoking status, systolic blood pressure, and total and HDL-C with diabetes-specific information (e.g. age at diabetes diagnosis, HbA_{1c}, and eGFR).[2]



Adapted from ESC 2023.[2]

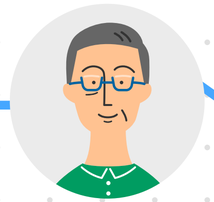
*Severe TOD defined as eGFR <45 mL/min/1.73 m^2, irrespective of albuminuria; or eGFR 45–59 mL/min/1.73 m^2 and microalbuminuria (UACR 30–300 mg/g; stage A2); or proteinuria (UACR >300 mg/g; stage A3); or presence of microvascular disease in at least three different sites (e.g. microalbuminuria [stage A2] plus retinopathy plus neuropathy).[2]

†The thresholds (10-year CVD risk) suggested are not definitive but rather designed to prompt joint decision-making conversations with patients about intensity of treatment, as well as additional interventions. SCORE2-Diabetes refers to patients aged ≥40 years.[2]

A holistic approach for John

A holistic multifactorial approach is paramount for patients like John who have ASCVD, and pharmacological interventions and lifestyle modifications should be delivered at a population and individual level by:

- Identifying the most suitable LLT for his level of risk and individual factors[1]
- Promoting healthy lifestyle behaviours such as smoking cessation, regular exercise, and maintaining a healthy weight and diet[1–3]
- Reducing increased levels of causal CV risk factors such as BP, LDL-C, and HbA1c[1–3]



PAD+T2DM

What's John's recommended LDL-C goal?

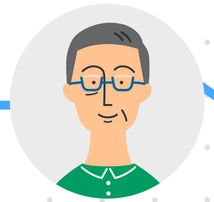
After categorising the patient into a CV risk group, you should assess his LDL-C level and outline recommended LDL-C targets.

Click to see the recommended LDL-C target for each risk group according to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias, the 2023 ESC Guidelines for the management of CVD in patients with diabetes, and the 2024 ESC Guidelines for the management of peripheral arterial and aortic disease.[1–3]

<2.6 mmol/L (<100 mg/dL)

<1.8 mmol/L (<70 mg/dL)

<1.4 mmol/L (<55 mg/dL)



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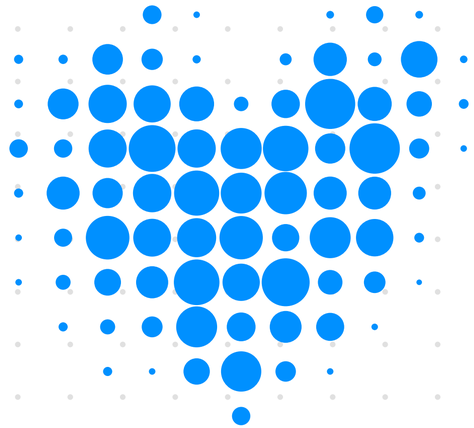
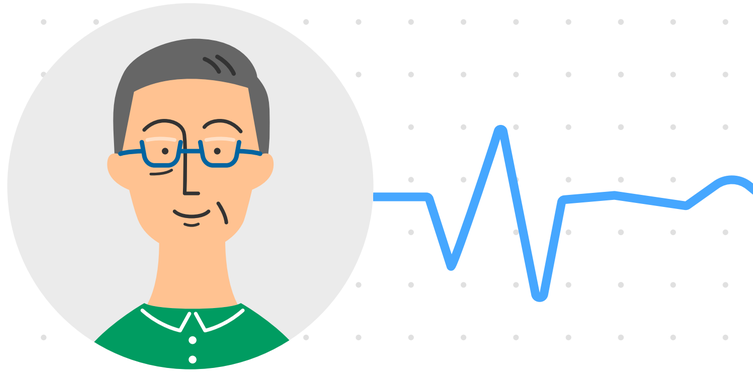
<2.6 mmol/L (<100 mg/dL) | **<1.8 mmol/L (<70 mg/dL)** | **<1.4 mmol/L (<55 mg/dL)**

In patients with T2DM at **moderate CV risk**, an LDL-C target of <2.6 mmol/L (<100 mg/dL) is recommended.[1,2]

However, as John is considered very high risk, his LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1–3]





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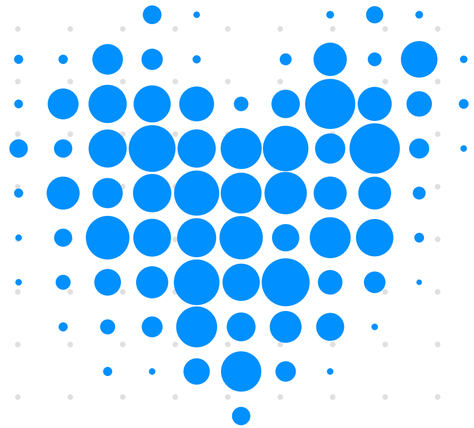

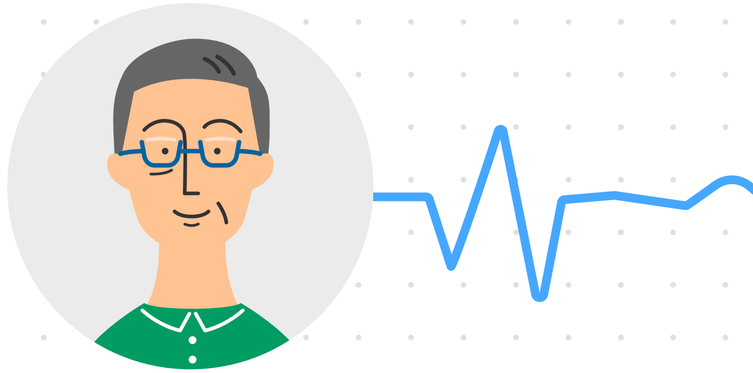

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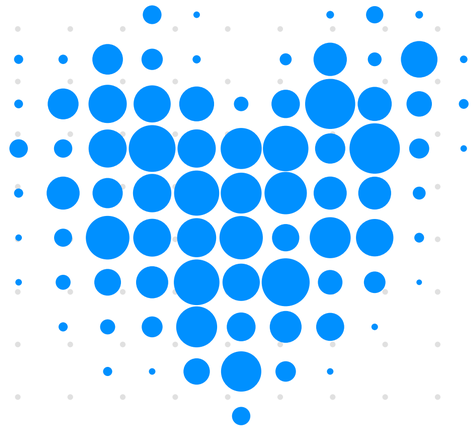
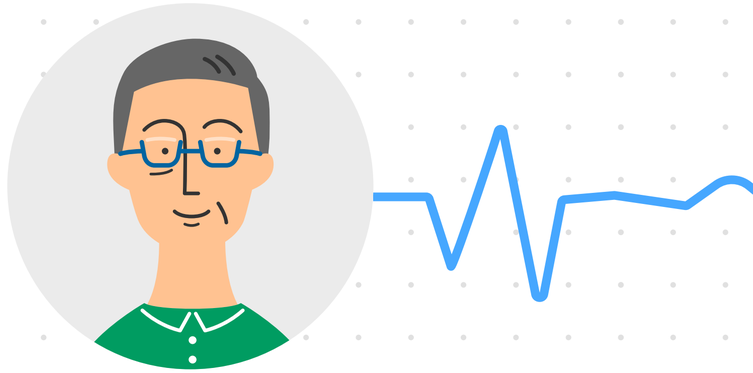




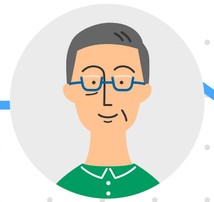
What could be the next steps in lipid-lowering treatment for John?

Considering John's baseline LDL-C levels are 2.5 mmol/L (98 mg/dL) while treated with atorvastatin 80 mg plus ezetimibe 10 mg, assess the treatment options below and review the next course of action for John.

Remember, as John is at very high CV risk, his LDL-C goal is <1.4 mmol/L (<55 mg/dL).[1-3]

Continue with current treatment regimen

Add PCSK9i



PAD+T2DM

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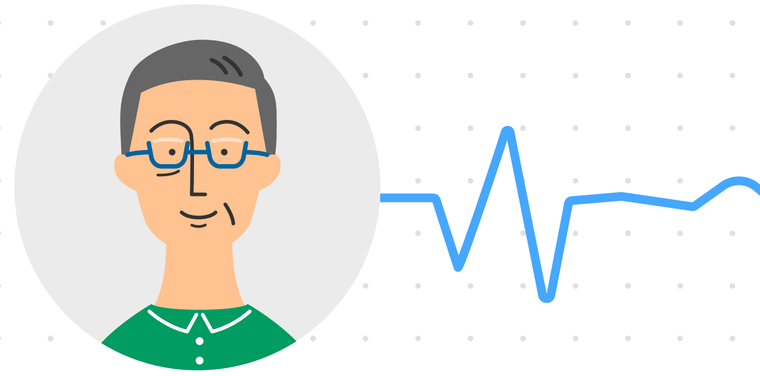
Continue with current treatment regimen	Add PCSK9i
While continuing with the same treatment regimen may maintain patient adherence, the addition of a PCSK9i is recommended at this stage.[2,3]	The ESC Guidelines recommend the addition of a PCSK9i in patients at very high CV risk, with persistently high LDL-C levels above target despite treatment with a maximally tolerated statin dose, in combination with ezetimibe, or in patients with statin intolerance.[2]



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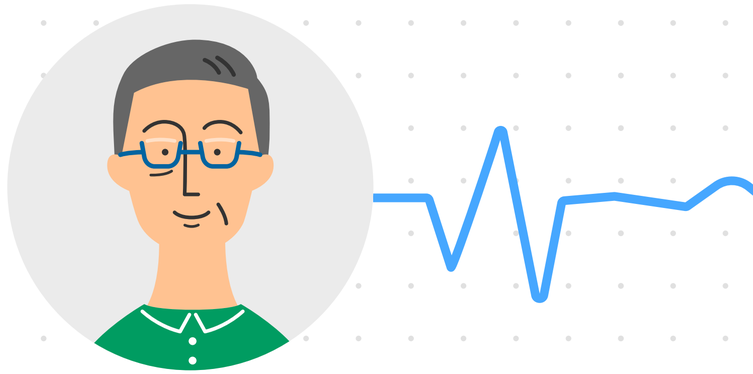
Continue with current treatment regimen

Add PCSK9i

The ESC Guidelines recommend the addition of a PCSK9i in patients at very high CV risk, with persistently high LDL-C levels above target, despite treatment with a maximally tolerated statin dose, in combination with ezetimibe, or in patients with statin intolerance.[2]



When should you **follow up** with John?

Now that you have reviewed the treatment options for John, take a look below to see when you should assess his response to therapy.

Patients with PAD+T2DM are at **very high CV risk** and their response to lipid-lowering therapy should be monitored **6–8 weeks from initiation of therapy**, to ensure their LDL-C levels are at or lower than target (<1.4 mmol/L [<55 mg/dL]).[1,2]

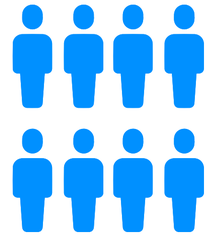
Overview

Let's learn more about why recognising very-high-risk patients is important...

- Patients with **PAD+T2DM** are at **very high CV risk**[1-3]
- Their **LDL-C target is <1.4 mmol/L** (<55 mg/dL) and an LDL-C reduction of at least 50% is recommended[1-3]
- Response to therapy can be assessed at **6–8 weeks** from initiation of therapy[1]
- **A PCSK9i is recommended** in patients at very high CV risk, with persistently high LDL-C levels above target, despite treatment with a maximally tolerated statin dose, in combination with ezetimibe, or in patients with statin intolerance[2]

4.4 million deaths
a year are attributed
to elevated LDL-C[4]

That's 8 deaths per minute[4]*



It's time to ACT EARLY!
It's time to Prevent The 1st Event for your ASCVD patients.

[QR code placeholder to link to PTE website or local unbranded Campus page]

Learn more at preventtheevent.com

*Deaths per minute calculated according to the 4.4 million (95% CI, 3.3–5.7) deaths attributed to high LDL-C in 2019. Figure based on the assumption of 365 days per year and the total number of deaths attributed to high LDL-C, according to a secondary analysis using data from the Global Burden of Disease Results Tool, which examined the global impact of high LDL-C from 1990–2019. Analysis included age, sex, and metric across 26 regions and 204 countries. Age-standardised rates of deaths and DALYs were expressed as the number per 100,000 persons. Statistical analysis involved comparative risk assessment, with results significant at $P<0.05$.[4]

References and abbreviations

ACS = acute coronary syndrome; **ASA** = acetylsalicylic acid; **ASCVD** = atherosclerotic cardiovascular disease; **BMI** = body mass index; **BP** = blood pressure; **CABG** = coronary artery bypass grafting; **CAD** = coronary artery disease; **CI** = confidence interval; **CKD** = chronic kidney disease; **CT** = computed tomography; **CV** = cardiovascular; **CVD** = cardiovascular disease; **DALY** = disability-adjusted life year; **DM** = diabetes mellitus; **EAS** = European Atherosclerotic Society; **eGFR** = estimated glomerular filtration rate; **ESC** = European Society of Cardiology; **FH** = familial hypercholesterolaemia; **HbA1c** = glycated haemoglobin; **HDL-C** = high-density lipoprotein cholesterol; **LDL-C** = low-density lipoprotein cholesterol; **LLT** = lipid-lowering therapy; **MI** = myocardial infarction; **PCI** = percutaneous coronary intervention; **PAAD** = peripheral arterial and aortic diseases; **PAD** = peripheral artery disease; **PCSK9i** = proprotein convertase subtilisin/kexin type 9 inhibitor; **SCORE2-Diabetes** = Systematic Coronary Risk Evaluation 2-Diabetes; **T1DM** = type 1 diabetes mellitus; **T2DM** = type 2 diabetes mellitus; **TG** = triglyceride; **TIA** = transient ischaemic attack; **TOD** = target-organ damage; **UACR** = urine albumin-creatinine ratio.

1. Mach F, Baigent C, Catapano AL, et al. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk. Eur Heart J. 2020;41(1):111–188.

2. Marx N, Federici M, Schütt K, et al. 2023 ESC Guidelines for the management of cardiovascular disease in patients with diabetes. Eur Heart J. 2023;44(39):4043–4140.

3. Mazzolai L, Teixido-Tura G, Lanzi S, et al. 2024 ESC Guidelines for the management of peripheral arterial and aortic diseases. Eur Heart J. 2024;45(36):3538–3700.

4. Zheng J, Wang J, Zhang Y, et al. The Global Burden of Diseases attributed to high low-density lipoprotein cholesterol from 1990 to 2019. Front Public Health. 2022;10:891929.

Meet Susan
(she/her)

CAD+T2DM

65 years old
Diagnosed with T2DM at age 50

LDL-C: 2.8 mmol/L (108 mg/dL)
BP: 130/80 mmHg
HbA1c: 6.5%
BMI: 31 kg/m^2
TGs: 1.9 mmol/L (165 mg/dL)

Complained of transient chest pain and dyspnoea when climbing stairs

Medications:
Lipid-lowering: rosuvastatin 40 mg, ezetemibe 10 mg
Antihypertensive: telmisartan 80 mg, amlodipine 10 mg
Glucose-lowering: insulin glargine 300 units/mL, metformin 2,000 mg, liraglutide 1.2 mg
Other: ASA 80 mg

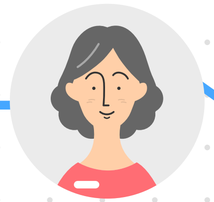
What's Susan's level of cardiovascular risk?

Based on Susan's patient profile, click the options below to see if she is considered to be at moderate, high, or very high cardiovascular risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias, the 2023 ESC Guidelines for the management of CV disease in patients with diabetes, and the 2024 ESC Guidelines for the management of CCS.[1–3]

Moderate risk

High risk

Very high risk



CAD+T2DM

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Moderate risk | **High risk** | **Very high risk**

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2024 ESC Guidelines for the management of chronic coronary syndromes[3]	Patients with CCS are considered at very high CV risk

This patient would be classed as moderate CV risk if she did not fulfil the very-high-risk criteria and had a 10-year CVD risk of 5 to <10% using SCORE2-Diabetes.[2]

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This patient is at very high CV risk according to ESC Guidelines.[1-3]

Very-high-CV-risk criteria across relevant ESC Guidelines:

2019 ESC/EAS Guidelines for the management of dyslipidaemias[1]	Patients with: - Documented ASCVD, either clinical or unequivocal on imaging* - DM with target organ damage (microalbuminuria, retinopathy, or neuropathy), or at least three major risk factors, or early onset of T1DM of long duration (>20 years) - Severe CKD (eGFR <30 mL/min/1.73m^2) - A calculated SCORE ≥10% for 10-year risk of fatal CV disease - FH with ASCVD or with another major risk factor
2023 ESC Guidelines for the management of CVD in patients with diabetes[2]	Patients with T2DM with: - Clinically established ASCVD, or - Severe target organ damage, or - 10-year CVD risk ≥20% using SCORE2-Diabetes are considered at very high CV risk
2024 ESC Guidelines for the management of chronic coronary syndromes[3]	Patients with CCS are considered at very high CV risk

This patient would be classed as high CV risk if she did not fulfil the very-high-risk criteria and had a 10-year CVD risk of 10 to <20% using SCORE2-Diabetes.[2]

What's Susan's level of cardiovascular risk?

Based on Susan's patient profile, click the options below to see if she is considered to be at moderate, high, or very high cardiovascular risk based on the ESC Guidelines.[1–3]

SCORE2-Diabetes

*Documented ASCVD includes previous ACS (MI or unstable angina), stable angina, coronary revascularisation (PCI, CABG, and other arterial revascularisation procedures), stroke and TIA, and peripheral arterial disease. Unequivocally documented ASCVD on imaging includes those findings that are known to be predictive of clinical events, such as significant plaque on coronary angiography or CT scan (multivessel coronary disease with two major epicardial arteries having >50% stenosis), or on carotid ultrasound.[1]

Moderate risk	High risk	**Very high risk**

This patient is at very high CV risk according to ESC Guidelines.[1-3]

Very-high-CV-risk criteria across relevant ESC Guidelines:

2019 ESC/EAS Guidelines for the management of dyslipidaemias[1]	Patients with: - Documented ASCVD, either clinical or unequivocal on imaging* - DM with target organ damage (microalbuminuria, retinopathy, or neuropathy), or at least three major risk factors, or early onset of T1DM of long duration (>20 years) - Severe CKD (eGFR <30 mL/min/1.73m^2) - A calculated SCORE ≥10% for 10-year risk of fatal CV disease - FH with ASCVD or with another major risk factor
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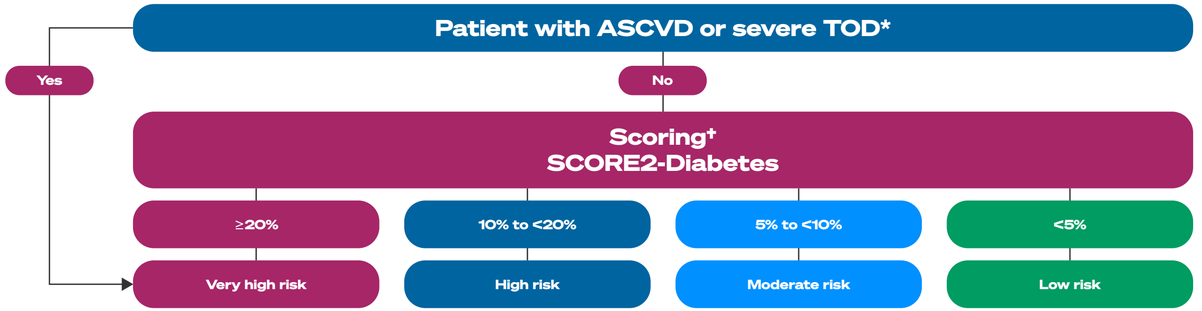
SCORE2-Diabetes

In patients aged ≥40 years with T2DM without ASCVD or severe TOD, it is recommended to estimate 10-year CVD risk using the SCORE2-Diabetes algorithm. In these patients, risk factors for ASCVD should be evaluated on an individual basis.[2]

SCORE2-Diabetes integrates information on conventional CVD risk factors (i.e. age, smoking status, systolic blood pressure, and total and HDL-C with diabetes-specific information (e.g. age at diabetes diagnosis, HbA1c, and eGFR).[2]



Adapted from ESC 2023.[2]

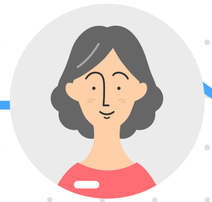
*Severe TOD defined as eGFR <45 mL/min/1.73 m^2, irrespective of albuminuria; or eGFR 45–59 mL/min/1.73 m^2 and microalbuminuria (UACR 30–300 mg/g; stage A2); or proteinuria (UACR >300 mg/g; stage A3); or presence of microvascular disease in at least three different sites (e.g. microalbuminuria [stage A2] plus retinopathy plus neuropathy).[2]

†The thresholds (10-year CVD risk) suggested are not definitive but rather designed to prompt joint decision-making conversations with patients about intensity of treatment, as well as additional interventions. SCORE2-Diabetes refers to patients aged ≥40 years.[2]

A holistic approach for Susan

A holistic multifactorial approach is paramount for patients like Susan who have ASCVD, and pharmacological interventions and lifestyle modifications should be delivered at a population and individual level, by:

- Identifying the most suitable LLT for her level of risk and individual factors[1]
- Promoting healthy lifestyle behaviours such as regular exercise and maintaining a healthy weight and diet[1]
- Reducing increased levels of causal CV risk factors such as BP, LDL-C and HbA1c[1]



CAD+T2DM

What's Susan's recommended LDL-C goal?

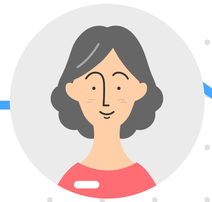
After categorising the patient into a CV risk group, you should assess her LDL-C level and outline recommended LDL-C targets.

Click to see the recommended LDL-C target for each risk group according to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias, the 2023 ESC Guidelines for the management of CVD in patients with diabetes, and the 2024 ESC Guidelines for the management of chronic coronary syndromes.[1-3]

<2.6 mmol/L (<100 mg/dL)

<1.8 mmol/L (<70 mg/dL)

<1.4 mmol/L (<55 mg/dL)



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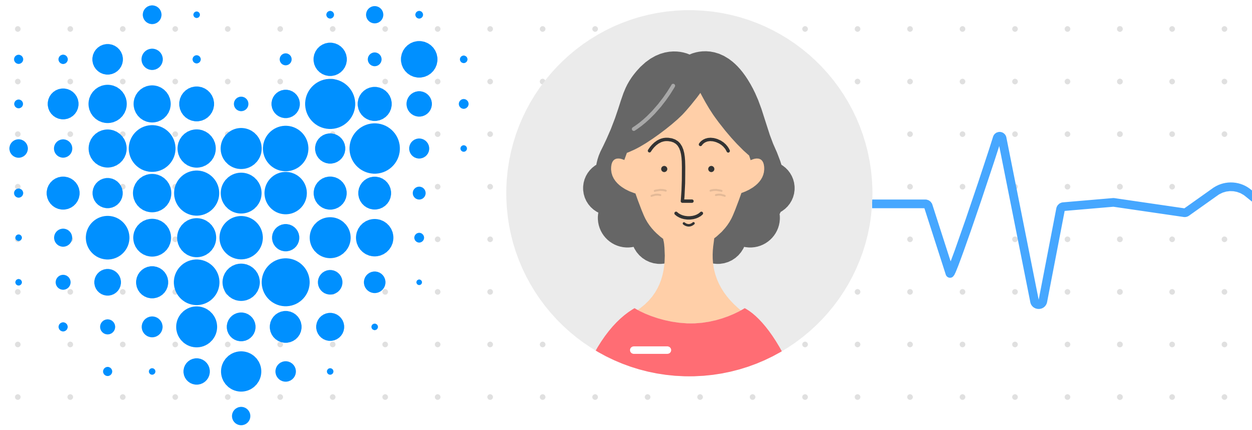
After categorising the patient into a CV risk group, you should assess her LDL-C level and outline recommended LDL-C targets.

Click to see the recommended LDL-C target for each risk group according to relevant ESC guidelines.

<2.6 mmol/L (<100 mg/dL)	<1.8 mmol/L (<70 mg/dL)	<1.4 mmol/L (<55 mg/dL)

In patients with T2DM at **moderate CV risk**, an LDL-C target of <2.6 mmol/L (<100 mg/dL) is recommended.[2]

However, as Susan is considered very high risk, her LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1-3]



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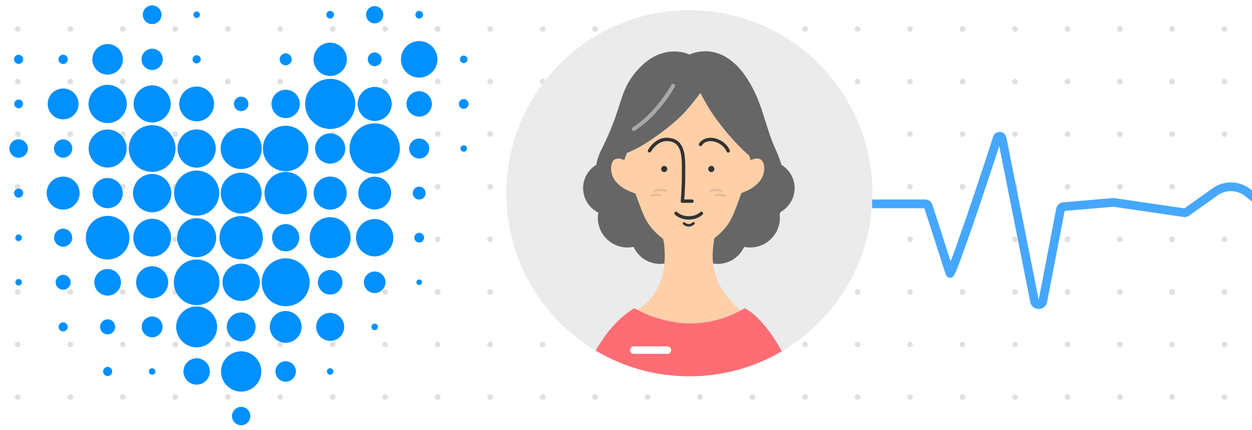

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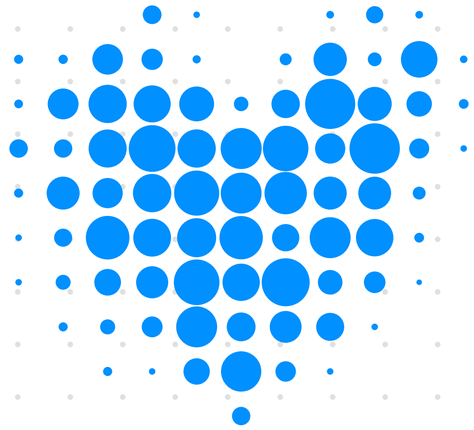


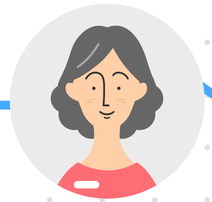
What could be the next steps in lipid-lowering treatment for Susan?

Considering Susan's baseline LDL-C level is 2.8 mmol/L (108 mg/dL) while treated with rosuvastatin 40 mg, assess the treatment options below and review the next course of action for Susan.

Remember, as Susan is at very high CV risk, her LDL-C goal is <1.4 mmol/L (<55 mg/dL).[1-3]

Continue with current treatment regiment

Add ezetimibe



CAD+T2DM

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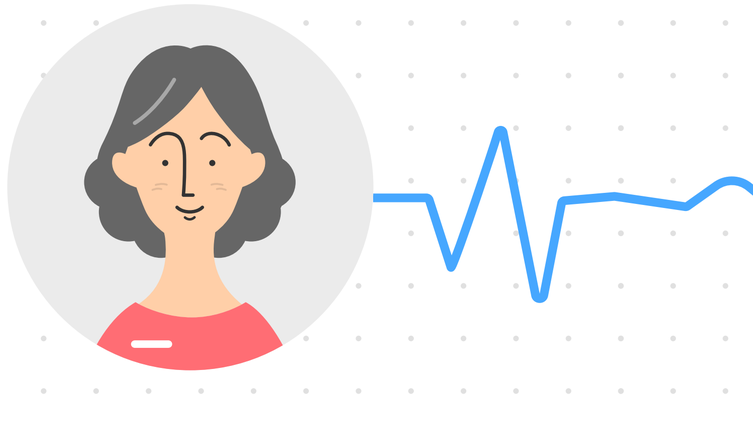
Considering Susan's baseline LDL-C level is 2.8 mmol/L (108 mg/dL) while treated with rosuvastatin 40 mg, assess the treatment options below and review the next course of action for Susan.

Remember, as Susan is at very high CV risk, her LDL-C goal is <1.4 mmol/L (<55 mg/dL).[1-3]

Continue with current treatment regimen	Add ezetimibe
Continuing with the same treatment regimen could maintain patient adherence, but it may not be the best option if LDL-C target levels are not being reached.[1,2]	If high-intensity statins could not lower LDL-C levels to goal, ezetimibe is recommended to be used as an adjunct to statin therapy, or alone in cases of intolerance to statins.[1-3]



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Continue with current treatment regimen	Add ezetimibe
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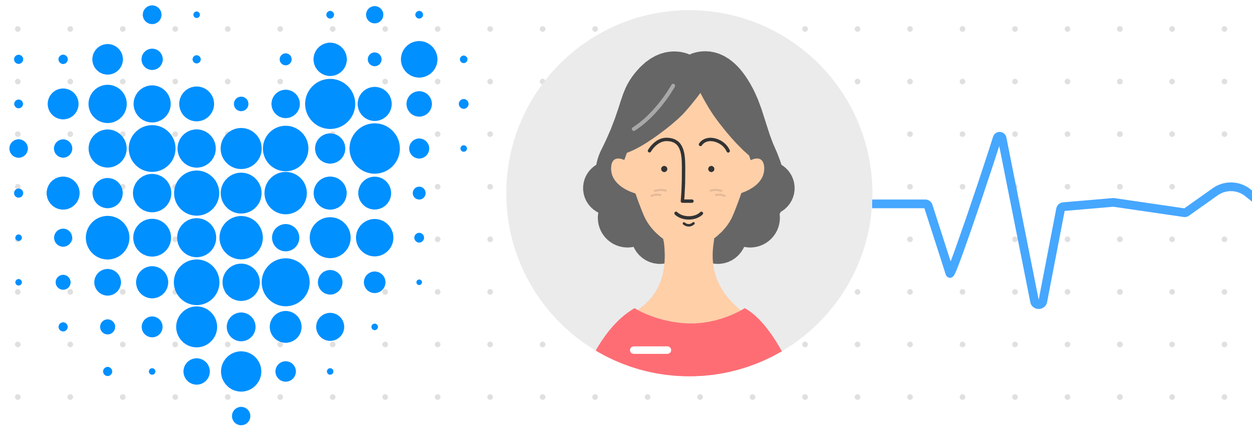


When should you **follow up** with Susan?

Now that you have reviewed the treatment options for Susan, take a look below to see when you should assess her response to therapy.

Patients with CAD+T2DM are at **very high CV risk** and their response to lipid-lowering therapy should be monitored **6–8 weeks from initiation of therapy**, to ensure their LDL-C levels are at or lower than target (<1.4 mmol/L [<55 mg/dL]).[1,2]

Susan’s follow-up

During Susan’s follow-up, you assess her LDL-C levels. As a reminder, Susan’s LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1–3]

Reminder: You chose to initiate treatment with a high-intensity statin plus ezetimibe

High-intensity statin

Susan has reached her LDL-C goal of <1.4 mmol/L

Continue current treatment regimen, regularly monitor lipid levels.[1,2]

Susan has not reached her LDL-C goal of <1.4 mmol/L

Add PCSK9i

If Susan does not reach LDL-C target with maximally tolerated statin + ezetimibe, the ESC Guidelines recommend the addition of a PCSK9i for very-high-risk patients.[1–3]

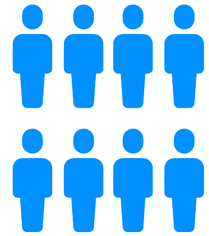
Overview

Let's learn more about why recognising very-high-risk patients is important...

- Patients with **CAD+T2DM** are at **very high CV risk**[1-3]
- Their **LDL-C target is <1.4 mmol/L** (<55 mg/dL) and an LDL-C reduction of at least 50% is recommended[1-3]
- Response to therapy can be assessed at **6–8 weeks** from initiation of therapy[1]
- **A PCSK9i is recommended** in patients at very high CV risk, with persistently high LDL-C levels above target, despite treatment with a maximally tolerated statin dose, in combination with ezetimibe, or in patients with statin intolerance[1,2]

4.4 million deaths
a year are attributed
to elevated LDL-C[4]

That's 8 deaths per minute[4]*



It's time to ACT EARLY!
It's time to Prevent The 1st Event
for your ASCVD patients.

[QR code placeholder to link to PTE website or local unbranded Campus page]

Learn more at preventtheevent.com

*Deaths per minute calculated according to the 4.4 million (95% CI, 3.3–5.7) deaths attributed to high LDL-C in 2019. Figure based on the assumption of 365 days per year and the total number of deaths attributed to high LDL-C, according to a secondary analysis using data from the Global Burden of Disease Results Tool, which examined the global impact of high LDL-C from 1990–2019. Analysis included age, sex, and metric across 26 regions and 204 countries. Age-standardised rates of deaths and DALYs were expressed as the number per 100,000 persons. Statistical analysis involved comparative risk assessment, with results significant at $P<0.05$.[4]

References and abbreviations

ACS = acute coronary syndrome; **ASA** = acetylsalicylic acid; **ASCVD** = atherosclerotic cardiovascular disease; **BMI** = body mass index; **BP** = blood pressure; **CABG** = coronary artery bypass grafting; **CAD** = coronary artery disease; **CCS** = chronic coronary syndrome; **CI** = confidence interval; **CKD** = chronic kidney disease; **CT** = computed tomography; **CV** = cardiovascular; **CVD** = cardiovascular disease; **DALY** = disability-adjusted life year; **DM** = diabetes mellitus; **EAS** = European Atherosclerotic Society; **eGFR** = estimated glomerular filtration rate; **ESC** = European Society of Cardiology; **FH** = familial hypercholesterolaemia; **HbA1c** = glycated haemoglobin; **HDL-C** = high-density lipoprotein cholesterol; **LDL-C** = low-density lipoprotein cholesterol; **LLT** = lipid-lowering therapy; **MI** = myocardial infarction; **PAD** = peripheral artery disease; **PCI** = percutaneous coronary intervention; **PCSK9i** = proprotein convertase subtilisin/kexin type 9 inhibitor; **SCORE2-Diabetes** = Systematic Coronary Risk Evaluation 2-Diabetes; **T1DM** = type 1 diabetes mellitus; **T2DM** = type 2 diabetes mellitus; **TG** = triglyceride; **TIA** = transient ischaemic attack; **TOD** = target-organ damage; **UACR** = urine albumin-creatinine ratio.

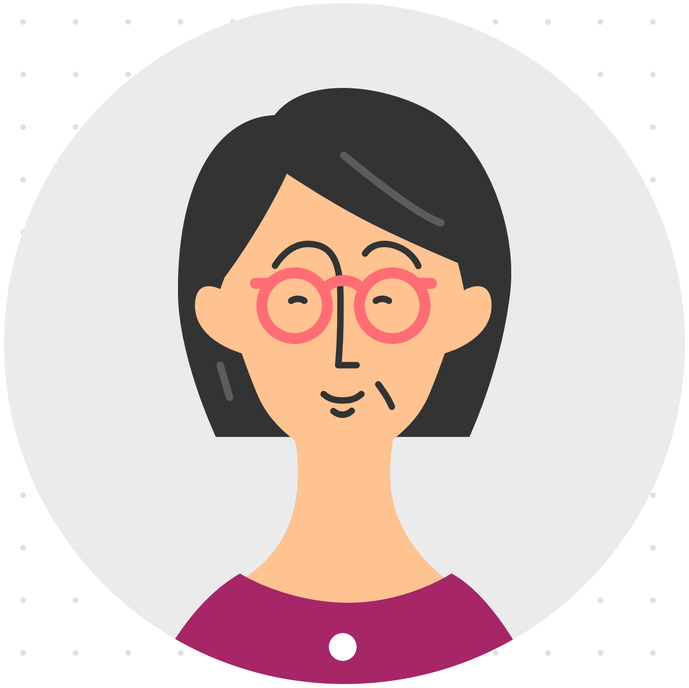
1. Mach F, Baigent C, Catapano AL, et al. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk. Eur Heart J. 2020;41(1):111–188.

2. Marx N, Federici M, Schütt K, et al. 2023 ESC Guidelines for the management of cardiovascular disease in patients with diabetes. Eur Heart J. 2023;44(39):4043–4140.

3. Vrints C, Andreotti F, Koskinas K, et al. 2024 ESC Guidelines for the management of chronic coronary syndromes. Eur Heart J. 2024;45:3415–3537.

4. Zheng J, Wang J, Zhang Y, et al. The Global Burden of Diseases attributed to high low-density lipoprotein cholesterol from 1990 to 2019. Front Public Health. 2022;10:891929.

Meet Gabby
(she/her)



ACS patient

63 years old

Smoking history:
Smoker since the age of 25

Current medical event:
Diagnosis: First myocardial infarction (STEMI)
Current status: Admitted to inpatient care

Clinical details:
Procedure: During cardiac catheterisation, a nearly complete obstruction of the LAD was found. The patient underwent a successful primary PCI

Vital statistics and laboratory results:
LDL-C: 4.5 mmol/L (174 mg/dL)
BMI: 26 kg/m^2
HbA1c: 5.0%
BP: 120/70 mmHg

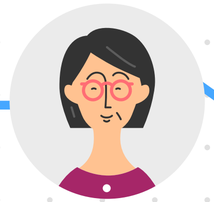
What's Gabby's level of cardiovascular risk?

Based on Gabby's patient profile, click the options below to see if she is considered to be at moderate, high, or very high cardiovascular risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias.[1]

Moderate risk

High risk

Very high risk



ACS patient

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SCORE

Moderate risk | High risk | Very high risk

According to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias, any ACS means a patient is at very high CV risk, regardless of comorbidities.[1]

The 2019 ESC/EAS Guidelines for the management of dyslipidaemias define **moderate risk** as people with any of the following:[1]

- Young patients (T1DM <35 years; T2DM <50 years) with DM duration <10 years, without other risk factors
- Calculated SCORE ≥1 % and <5% for 10-year risk of fatal CVD

What's Gabby's level of cardiovascular risk?

Based on Gabby's patient profile, click the options below to see if she is considered to be at moderate, high, or very high cardiovascular risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias.[1]

SCORE

Moderate risk | High risk | Very high risk

According to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias, any ACS means a patient is at very high CV risk, regardless of comorbidities.[1]

The 2019 ESC/EAS Guidelines for the management of dyslipidaemias define **high risk** as people with any of the following:[1]

- Markedly elevated single risk factors, in particular TC >8 mmol/L (>310 mg/dL), LDL-C >4.9 mmol/L (>190 mg/dL), or BP ≥180/110 mmHg
- Patients with FH without other major risk factors
- Patients with DM without target organ damage (microalbuminuria, retinopathy, or neuropathy), with DM duration ≥10 years, or another additional risk factor
- Moderate CKD (eGFR 30–59 mL/min/1.73 m^2)
- A calculated SCORE ≥5% and <10% for 10-year risk of fatal CVD

What's Gabby's level of cardiovascular risk?

Based on Gabby's patient profile, click the options below to see if she is considered to be at moderate, high, or very high cardiovascular risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias.[1]

SCORE

Moderate risk | High risk | Very high risk

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The 2019 ESC/EAS Guidelines for the management of dyslipidaemias define **very high risk** as people with any of the following:[1]

- Documented ASCVD, either clinical or unequivocal on imaging*
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- Severe CKD (eGFR <30 mL/min/1.73m^2)
- A calculated SCORE ≥10% for 10-year risk of fatal CV disease
- FH with ASCVD or with another major risk factor

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Systematic Coronary Risk Estimation (SCORE)

SCORE estimates the 10-year cumulative risk of a first fatal atherosclerotic event.[1]

The 10-year risk of fatal cardiovascular disease is based on the following risk factors:[1]

- Age
- Gender
- Smoking
- Systolic blood pressure
- Total cholesterol

The SCORE system can be recalibrated for use in different populations by adjusting for secular changes in CVD mortality and risk factor prevalence. Calibrated country-specific versions are available for many European countries.[1]

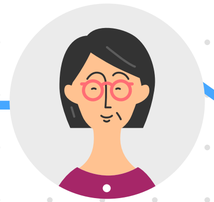
What's Gabby's recommended LDL-C goal?

After categorising the patient into a CV risk group, you should assess her LDL-C level and outline recommended LDL-C targets. Click to see the recommended LDL-C target for each risk group according to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias.

<2.6 mmol/L (<100 mg/dL)

<1.8 mmol/L (<70 mg/dL)

<1.4 mmol/L (<55 mg/dL)



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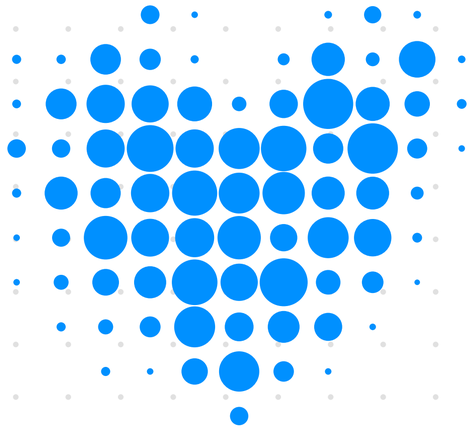
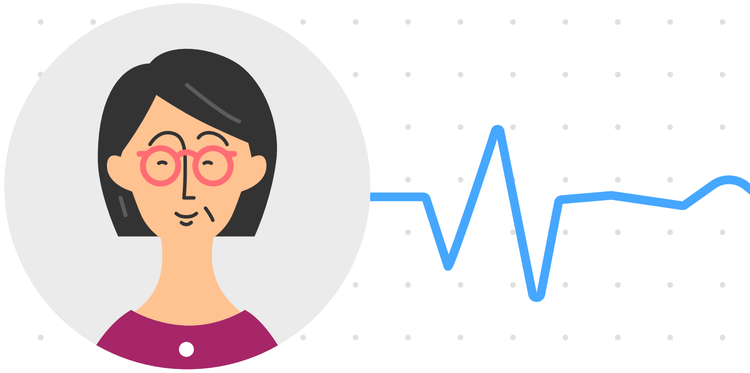
In patients at **moderate risk**, an LDL-C goal of <2.6 mmol/L (<100 mg/dL) should be considered.[1]

However, as Gabby is considered very high risk, her LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1]





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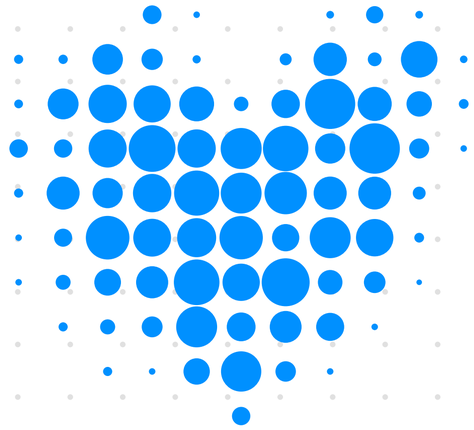
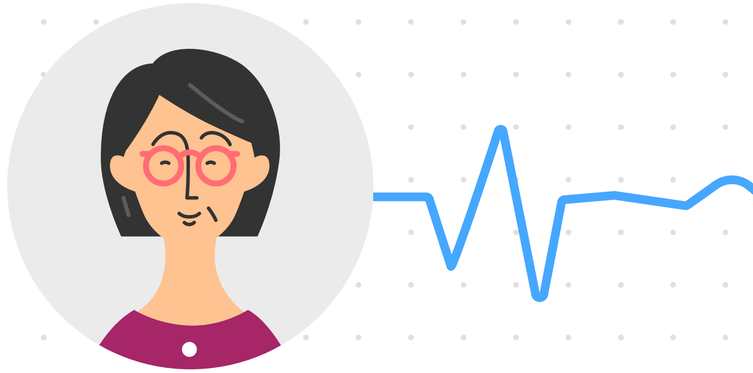
<2.6 mmol/L (<100 mg/dL)	<1.8 mmol/L (<70 mg/dL)	<1.4 mmol/L (<55 mg/dL)

In patients at **high risk**, an LDL-C reduction of ≥50% from baseline and an LDL-C goal of <1.8 mmol/L (<70 mg/dL) are recommended.[1]

However, as Gabby is classed as very high risk, her LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1]





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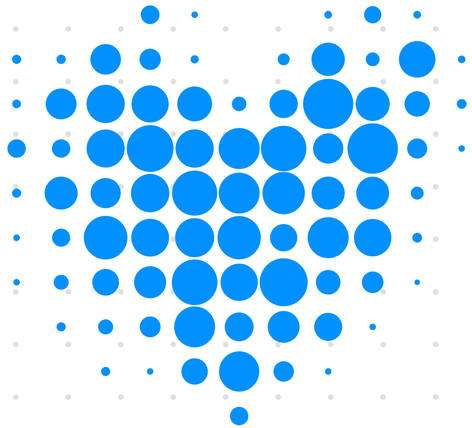
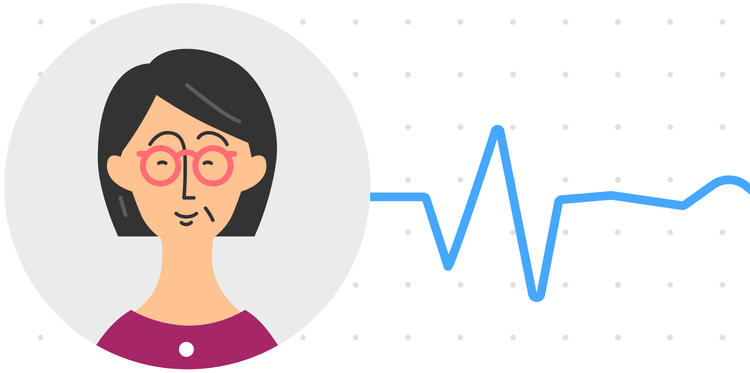




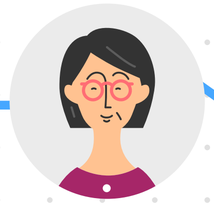
What could be the next steps in lipid-lowering treatment for Gabby?

Considering that Gabby is treatment-naïve and has a baseline LDL-C level of 4.5 mmol/L (174 mg/dL), assess the options below and review the next course of action for Gabby.

Initiate treatment with a moderate-intensity statin

Initiate treatment with a high-intensity statin

Initiate combination therapy (statin plus ezetimibe)



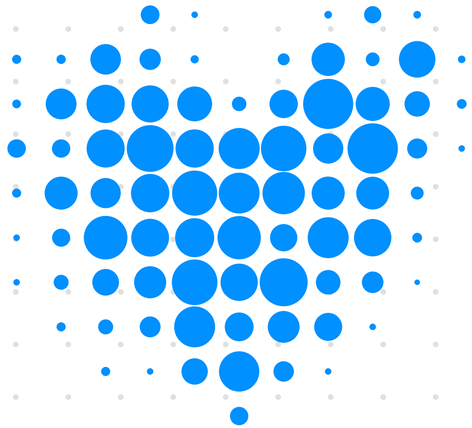
ACS patient

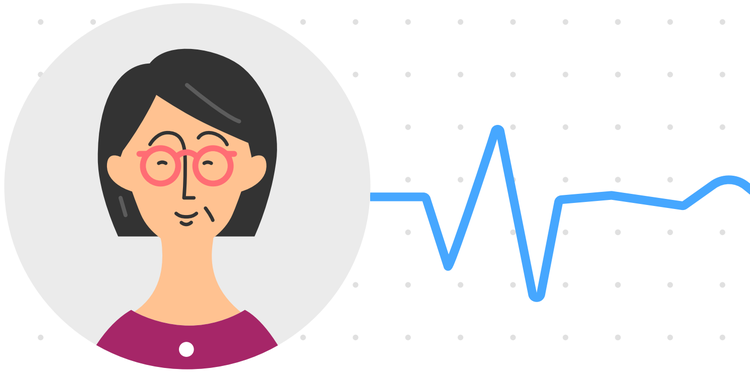
What could be the next steps in lipid-lowering treatment for Gabby?

Considering that Gabby is treatment-naïve and has a baseline LDL-C level of 4.5 mmol/L (174 mg/dL), assess the options below and review the next course of action for Gabby.

Initiate treatment with a moderate-intensity statin	Initiate treatment with a high-intensity statin	Initiate combination therapy (statin plus ezetimibe)

In fact, the 2023 ESC Guidelines for the management of acute coronary syndromes recommend initiating a high-potency, high-dose statin to reach the goals set for the specific level of risk.[2]





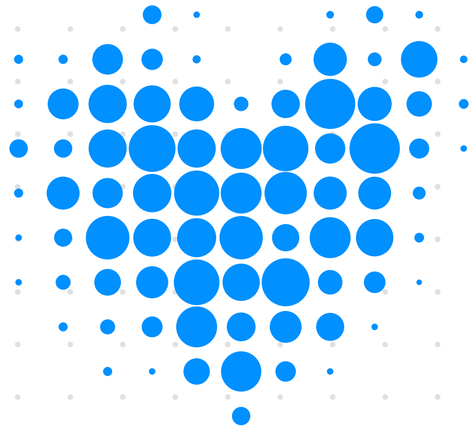
What could be the next steps in lipid-lowering treatment for Gabby?

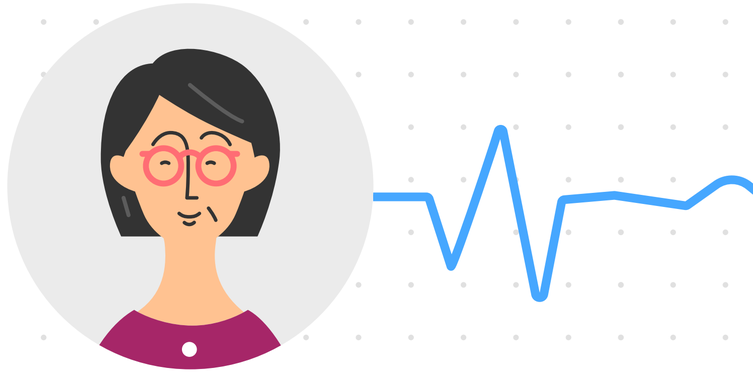
Considering that Gabby is treatment-naïve and has a baseline LDL-C level of 4.5 mmol/L (174 mg/dL), assess the options below and review the next course of action for Gabby.

Initiate treatment with a moderate-intensity statin	**Initiate treatment with a high-intensity statin**	Initiate combination therapy (statin plus ezetimibe)

It is recommended that a high-intensity statin is prescribed up to the highest tolerated dose to reach the goals set for the specific level of risk.[1,2]

For patients who were on lipid-lowering therapy before admission, it is recommended to intensify lipid-lowering therapy during the index ACS hospitalisation.[2]





What could be the next steps in lipid-lowering treatment for Gabby?

Considering that Gabby is treatment-naïve and has a baseline LDL-C level of 4.5 mmol/L (174 mg/dL), assess the options below and review the next course of action for Gabby.

Initiate treatment with a moderate-intensity statin	Initiate treatment with a high-intensity statin	Initiate combination therapy (statin plus ezetimibe)

To reach the <1.4 mmol/L LDL-C goal the ACVC/EAPC/ESC Working Group on Cardiovascular Pharmacotherapy proposes a "strike early and strong" approach to post-ACS LDL-C lowering.[3]*

Initiate combination LLT with a statin + ezetimibe immediately after ACS, preferably before coronary angiography, irrespective of LDL-C levels or pre-existing statin therapy.[3]

*Based on clinical trial and observational study evidence supporting early and strong LDL-C reduction, the ACVC in collaboration with the EAPC and ESC proposed the following lipid-lowering algorithm in a clinical consensus statement: combination therapy consisting of a high-intensity statin and ezetimibe, preferably as a combination pill, should be initiated as soon as possible, preferably before coronary angiography, irrespective of LDL-C levels or pre-existing statin therapy. A lipid panel should be obtained as early as possible. Treatment with a PCSK9i in the acute phase may be discussed, especially in patients exhibiting additional high-risk features such as multivessel coronary disease, polyvascular disease or FH. In patients experiencing a second major vascular event while treated with a high-intensity statin, current ESC dyslipidaemia guidelines suggest an LDL-C goal of <40 mg/dL, for which a PCSK9i would be necessary in most patients. All patients, particularly those with very high untreated LDL-C of >190 mg/dL or >160 mg/dL in the presence of premature AMI or family history of premature AMI, should be screened for FH. All patients should be discharged with a clear lipid improvement plan and be re-evaluated after 4–6 weeks in a specialised secondary prevention clinic and achieved LDL-C, treatment tolerability, compliance and knowledge about disease and therapies should be assessed. LLT should be escalated if goals are not met. In patients with known statin intolerance, statin treatment should be re-initiated at the maximally tolerated dose in combination with ezetimibe and a PCSK9i. If a PCSK9i is not available, bempedoic acid may represent an alternative. In case of a recurrence of symptoms suggestive of recurrent statin intolerance, re-challenge with an alternative statin should be attempted. In patients prescribed a PCSK9i in the acute phase for fast LDL-C goal achievement and/or stabilisation of the remaining coronary vasculature, de-escalation of triple therapy (high-intensity statin, ezetimibe, and PCSK9i) should be discussed during follow-up.[3]

When should you **follow up** with Gabby?

Now that you have reviewed the treatment options for Gabby, take a look below to see when you should assess her response to therapy.

Lipid levels should be re-evaluated 4–6 weeks after each treatment or dose adjustment to determine whether treatment goals have been achieved and to check for any safety issues; the therapeutic regimen can then be adapted accordingly.[1]

Think 146: reach an LDL-C goal of **<1.4 mmol/L** (<55 mg/dL) and a ≥50% reduction from baseline and re-check and adjust LLT if needed within **4–6 weeks**.[1]

Gabby's follow-up, 4–6 weeks after treatment initiation

During Gabby's follow-up, you assess her LDL-C levels. As a reminder, Gabby's LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1]

Reminder: You chose to initiate treatment with a high-intensity statin

High-intensity statin

Gabby has reached her LDL-C goal of <1.4 mmol/L

Continue current treatment regimen.[2]

Gabby has not reached her LDL-C goal of <1.4 mmol/L

LLT intensification required – addition of ezetimibe[2]
If the LDL-C goal is not achieved despite maximally tolerated statin therapy after 4–6 weeks, the addition of ezetimibe is recommended.[2]

Gabby's follow-up, 4–6 weeks after treatment initiation

During Gabby's follow-up, you assess her LDL-C levels. As a reminder, Gabby's LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1]

Reminder: You chose to initiate treatment with a high-intensity statin plus ezetimibe

High-intensity statin plus ezetimibe

Gabby has reached her LDL-C goal of <1.4 mmol/L

Continue current treatment regimen.[2]

Gabby has not reached her LDL-C goal of <1.4 mmol/L

LLT intensification required – addition of a PCSK9i

A PCSK9i is recommended by the 2023 ESC Guidelines for management of acute coronary syndromes for patients whose LDL-C goal is not achieved despite maximally tolerated statin therapy and ezetimibe after 4–6 weeks.[2]

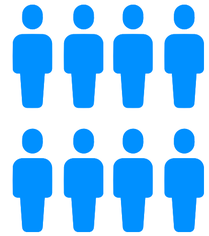
Overview

Let's learn more about why recognising very-high-risk patients is important...

- ACS patients are at **very high CV risk**[1]
- Their **LDL-C target is <1.4 mmol/L** (<55 mg/dL) and an LDL-C reduction of at least 50% is recommended[1]
- **Think 146:** reach an LDL-C goal of <1.4 mmol/L (<55 mg/dL) and a ≥50% reduction from baseline and re-check and adjust LLT if needed within 4–6 weeks[1]
- To reach the <1.4 mmol/L LDL-C goal the ACVC/EAPC/ESC Working Group on Cardiovascular Pharmacotherapy proposes a "strike early and strong" approach to post-ACS LDL-C lowering:[3]
  - Initiate combination LLT with a statin + ezetimibe immediately after ACS, preferably before coronary angiography, irrespective of LDL-C levels or pre-existing statin therapy[3]

4.4 million deaths
a year are attributed
to elevated LDL-C[4]

That's 8 deaths per minute[4]*



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*Deaths per minute calculated according to the 4.4 million (95% CI, 3.3–5.7) deaths attributed to high LDL-C in 2019. Figure based on the assumption of 365 days per year and the total number of deaths attributed to high LDL-C, according to a secondary analysis using data from the Global Burden of Disease Results Tool, which examined the global impact of high LDL-C from 1990–2019. Analysis included age, sex, and metric across 26 regions and 204 countries. Age-standardised rates of deaths and DALYs were expressed as the number per 100,000 persons. Statistical analysis involved comparative risk assessment, with results significant at $P<0.05$.[4]

References and abbreviations

ACS = acute coronary syndrome; **ACVC** = Association for Acute CardioVascular Care; **AMI** = acute myocardial infarction; **ASCVD** = atherosclerotic cardiovascular disease; **BMI** = body mass index; **BP** = blood pressure; **CABG** = coronary artery bypass graft; **CAD** = coronary artery disease; **CI** = confidence interval; **CKD** = chronic kidney disease; **CT** = computed tomography; **CV** = cardiovascular; **CVD** = cardiovascular disease; **DALY** = disability adjusted life year; **DM** = diabetes mellitus; **EAPC** = European Association of Preventive Cardiology; **EAS** = European Atherosclerotic Society; **eGFR** = estimated glomerular filtration rate; **ESC** = European Society of Cardiology; **FH** = familial hypercholesterolaemia; **HbA1c** = glycated haemoglobin; **LAD** = left anterior descending artery; **LDL-C** = low-density lipoprotein cholesterol; **LLT** = lipid-lowering therapy; **MI** = myocardial infarction; **PAD** = peripheral artery disease; **PCI** = percutaneous coronary intervention; **PCSK9i** = proprotein convertase subtilisin/kexin type 9 inhibitor; **SCORE** = Systematic Coronary Risk Estimation; **STEMI** = ST-elevation myocardial infarction; **T1DM** = type 1 diabetes mellitus; **T2DM** = type 2 diabetes mellitus; **TC** = total cholesterol; **TIA** = transient ischaemic attack.

1. Mach F, Baigent C, Catapano AL, et al. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk. Eur Heart J. 2020;41(1):111–188.
2. Byrne RA, Rossello X, Coughlan JJ, et al. 2023 ESC Guidelines for the management of acute coronary syndromes. Eur Heart J. 2023; 44(38):3720–3826.
3. Krychtiuk KA, Ahrens I, Drexel H, et al. Acute LDL-C reduction post ACS: strike early and strike strong: from evidence to clinical practice. A clinical consensus statement of the Association for Acute CardioVascular Care (ACVC), in collaboration with the European Association of Preventive Cardiology (EAPC) and the European Society of Cardiology Working Group on Cardiovascular Pharmacotherapy. Eur Heart J Acute Cardiovasc Care. 2022;11(12):939–949.
4. Zheng J, Wang J, Zhang Y, et al. The Global Burden of Diseases attributed to high low-density lipoprotein cholesterol from 1990 to 2019. Front Public Health. 2022;10:891929.

Meet Eric
(he/him)

CAD

63 years old
Smoker
LDL-C: 2.9 mmol/L (112 mg/dL)
HbA1c: 5.0%
BP: 140/80 mmHg
TGs: 1.6 mmol/L (140 mg/dL)
BMI: 27 kg/m^2

Complained of progressive persistent anginal symptoms 6 months ago; CTA was performed, 55% obstruction of left anterior descending artery was found. Subsequently, severe stenosis was confirmed during a cardiac catheterisation, and elective PCI was performed

Medications:
Lipid-lowering: rosuvastatin 40 mg, ezetimibe 10 mg
Antiplatelet: clopidogrel 75 mg
Other: ASA 80 mg

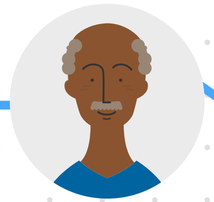
What's Eric's level of cardiovascular risk?

Based on Eric's patient profile, click the options below to see if he is considered to be at moderate, high or very high cardiovascular risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias and the 2024 ESC Guidelines for the management of chronic coronary syndromes.[1,2]

Moderate risk

High risk

Very high risk



CAD

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SCORE

Moderate risk | High risk | Very high risk

According to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias and the 2024 ESC Guidelines for the management of chronic coronary syndromes, Eric is at very high CV risk.[1,2]

The 2019 ESC/EAS Guidelines for the management of dyslipidaemias define **moderate risk** as people with any of the following:[1]

- Young patients (T1DM <35 years; T2DM <50 years) with DM duration <10 years, without other risk factors
- Calculated SCORE ≥1 % and <5% for 10-year risk of fatal CVD

What's Eric's level of cardiovascular risk?

Based on Eric's patient profile, click the options below to see if he is considered to be at moderate, high, or very high cardiovascular risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias and the 2024 ESC Guidelines for the management of chronic coronary syndromes.[1,2]

SCORE

Moderate risk | High risk | Very high risk

According to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias and the 2024 ESC Guidelines for the management of chronic coronary syndromes, Eric is at very high CV risk.[1,2]

The 2019 ESC/EAS Guidelines for the management of dyslipidaemias define **high risk** as people with any of the following:[1]

- Markedly elevated single risk factors; in particular: TC >8 mmol/L (>310 mg/dL), LDL-C >4.9 mmol/L (>190 mg/dL), or BP ≥180/110 mmHg
- Patients with FH without other major risk factors
- Patients with DM without target organ damage (microalbuminuria, retinopathy, or neuropathy), with DM duration ≥10 years, or another additional risk factor
- Moderate CKD (eGFR 30–59 mL/min/1.73 m^2)
- A calculated SCORE ≥5% and <10% for 10-year risk of fatal CVD

What's Eric's level of cardiovascular risk?

Based on Eric's patient profile, click the options below to see if he is considered to be at moderate, high, or very high cardiovascular risk based on the 2019 ESC/EAS Guidelines for the management of dyslipidaemias and the 2024 ESC Guidelines for the management of chronic coronary syndromes.[1,2]

SCORE

*Documented ASCVD includes previous ACS (MI or unstable angina), stable angina, coronary revascularisation (PCI, CABG, and other arterial revascularisation procedures), stroke and TIA, and peripheral arterial disease. Unequivocally documented ASCVD on imaging includes those findings that are known to be predictive of clinical events, such as significant plaque on coronary angiography or CT scan (multivessel coronary disease with two major epicardial arteries having >50% stenosis), or on carotid ultrasound.[1]

Moderate risk | High risk | Very high risk

According to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias and the 2024 ESC Guidelines for the management of chronic coronary syndromes, Eric is at very high CV risk.[1,2]

The 2019 ESC/EAS Guidelines for the management of dyslipidaemias categorise as **very high risk** people with any of the following:[1]

- Documented ASCVD, either clinical or unequivocal on imaging*
- DM with target organ damage (microalbuminuria, retinopathy, or neuropathy), or at least three major risk factors, or early onset of T1DM of long duration (>20 years)
- Severe CKD (eGFR <30 mL/min/1.73m^2)
- A calculated SCORE ≥10% for 10-year risk of fatal CV disease
- FH with ASCVD or with another major risk factor

The 2024 ESC Guidelines for the management of chronic coronary syndromes also state that patients with CCS, including people with symptomatic CAD like Eric, are at **very high CV risk.**[2]

Systematic Coronary Risk Estimation (SCORE)

SCORE estimates the 10-year cumulative risk of a first fatal atherosclerotic event.[1]

The 10-year risk of fatal cardiovascular disease is based on the following risk factors:[1]

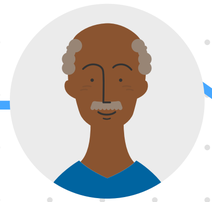
- Age
- Gender
- Smoking
- Systolic blood pressure
- Total cholesterol

The SCORE system can be recalibrated for use in different populations by adjusting for secular changes in CVD mortality and risk factor prevalence. Calibrated country-specific versions are available for many European countries.[1]

A holistic approach for Eric

A holistic multifactorial approach is paramount for patients like Eric who have ASCVD, and pharmacological interventions and lifestyle modifications should be delivered at a population and individual level, by:

- Identifying the most suitable LLT for his level of risk and individual factors[1]
- Promoting healthy lifestyle behaviours such as smoking cessation, regular exercise, and maintaining a healthy weight and diet[1]
- Reducing increased levels of causal CV risk factors such as BP and LDL-C[1]



CAD

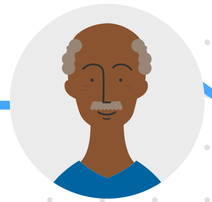
What's Eric's recommended LDL-C goal?

After categorising the patient into a CV risk group, you should assess his LDL-C level and outline recommended LDL-C targets. Click to see the recommended LDL-C target for each risk group according to the 2019 ESC/EAS Guidelines for the management of dyslipidaemias, and the 2024 ESC Guidelines for the management of chronic coronary syndromes.[2]

<2.6 mmol/L (<100 mg/dL)

<1.8 mmol/L (<70 mg/dL)

<1.4 mmol/L (<55 mg/dL)



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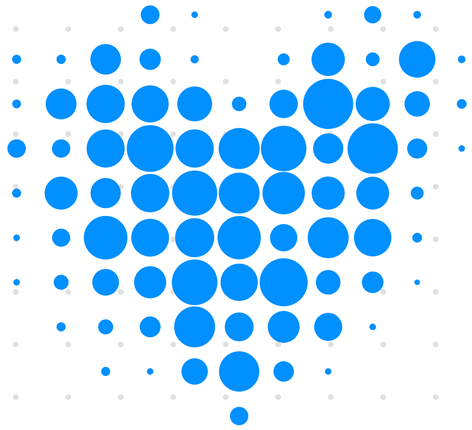
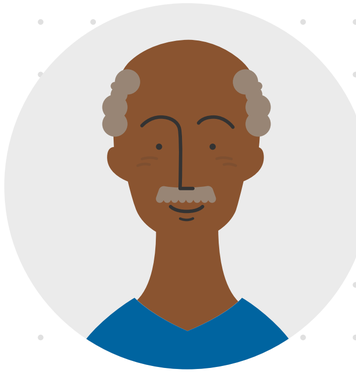
<2.6 mmol/L (<100 mg/dL)	<1.8 mmol/L (<70 mg/dL)	<1.4 mmol/L (<55 mg/dL)

In patients at **moderate risk**, an LDL-C goal of <2.6 mmol/L (<100 mg/dL) should be considered.[1]

However, as Eric is classed as very high risk, his LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1,2]





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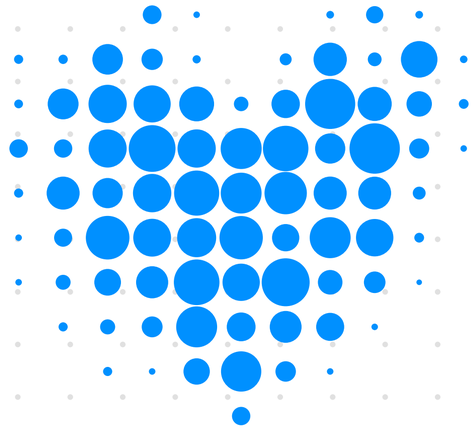
<2.6 mmol/L (<100 mg/dL)	<1.8 mmol/L (<70 mg/dL)	<1.4 mmol/L (<55 mg/dL)

In patients at **high risk**, an LDL-C reduction of ≥50% from baseline and an LDL-C goal of <1.8 mmol/L (<70 mg/dL) are recommended.[1]

However, as Eric is classed as very high risk, his LDL-C target is <1.4 mmol/L (<55 mg/dL) and an LDL-C reduction of at least 50% from baseline is recommended.[1,2]



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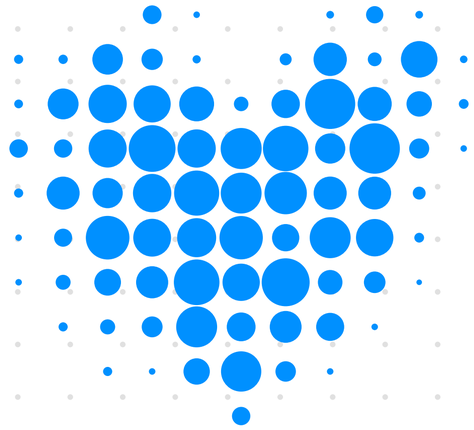
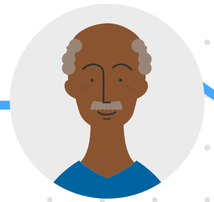


What could be the next steps in lipid-lowering treatment for Eric?

Considering Eric's baseline LDL-C level is 2.9 mmol/L (112 mg/dL) while treated with rosuvastatin 40 mg plus ezetimibe 10 mg, assess the treatment options below and review the next course of action for Eric. Remember, as Eric is at very high CV risk, his LDL-C goal is <1.4 mmol/L (<55 mg/dL).[1,2]

Continue with current treatment regiment

Add PCSK9i (alirocumab, evolocumab)



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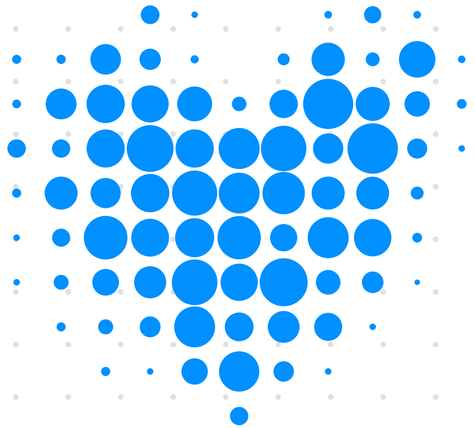
Remember, as Eric is at very high CV risk, his LDL-C goal is <1.4 mmol/L (<55 mg/dL).[1,2]

Continue with current treatment regimen	**Add PCSK9i** (alirocumab, evolocumab)
Continuing with the same treatment regimen could maintain patient adherence but it may not be the best option if LDL-C target levels are not being reached.[1]	If the patient does not reach their LDL-C target with maximally tolerated statin + ezetimibe, the 2019 ESC/EAS Guidelines for the management of dyslipidaemias and the 2024 ESC Guidelines for the management of chronic coronary syndromes recommend the addition of a PCSK9i for very-high-risk patients.[1,2]



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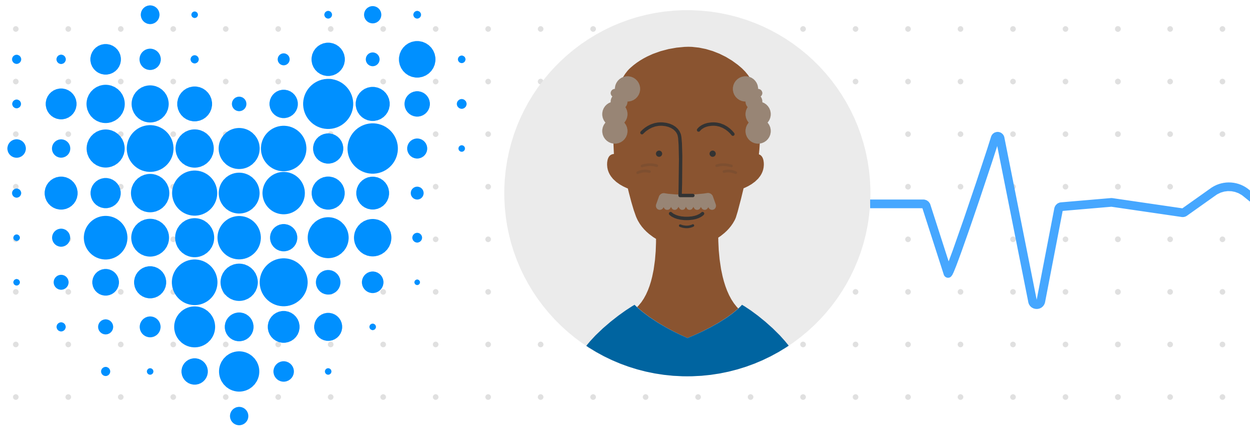


When should you **follow up** with Eric?

Now that you have reviewed the treatment options for Eric, take a look below to see when you should assess his response to therapy.

Patients with CAD are at **very high CV risk** and their response to lipid-lowering therapy should be monitored **6–8 weeks from initiation of therapy**, to ensure their LDL-C levels are at or lower than the target (<1.4 mmol/L [<55 mg/dL]).[1]

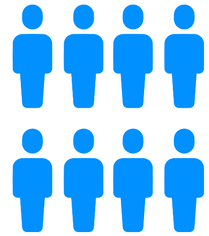
Overview

Let's learn more about why recognising very-high-risk patients is important...

- Patients with **CAD** are at **very high CV risk**[1,2]
- Their **LDL-C target is <1.4 mmol/L** (<55 mg/dL) and an LDL-C reduction of at least 50% is recommended[1,2]
- Response to therapy can be assessed at **6–8 weeks** from initiation of therapy[1]
- For secondary prevention, patients at very high risk not achieving their goal on a maximally tolerated dose of a statin and ezetimibe, **a combination with a PCSK9i is recommended**[1,2]

4.4 million deaths
a year are attributed
to elevated LDL-C[3]

That's 8 deaths per minute[3*]



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*Deaths per minute calculated according to the 4.4 million (95% CI, 3.3–5.7) deaths attributed to high LDL-C in 2019. Figure based on the assumption of 365 days per year and the total number of deaths attributed to high LDL-C, according to a secondary analysis using data from the Global Burden of Disease Results Tool, which examined the global impact of high LDL-C from 1990–2019. Analysis included age, sex, and metric across 26 regions and 204 countries. Age-standardised rates of deaths and DALYs were expressed as the number per 100,000 persons. Statistical analysis involved comparative risk assessment, with results significant at $P<0.05$.[3]

References and abbreviations

ACS = acute coronary syndrome; **ASA** = acetylsalicylic acid; **ASCVD** = atherosclerotic cardiovascular disease; **BMI** = body mass index; **BP** = blood pressure; **CABG** = coronary artery bypass graft; **CAD** = coronary artery disease; **CCS** = chronic coronary syndrome(s); **CI** = confidence interval; **CKD** = chronic kidney disease; **CT** = computed tomography; **CTA** = computed tomography angiography; **CV** = cardiovascular; **CVD** = cardiovascular disease; **DALY** = disability-adjusted life year; **DM** = diabetes mellitus; **EAS** = European Atherosclerotic Society; **eGFR** = estimated glomerular filtration rate; **ESC** = European Society of Cardiology; **FH** = familial hypercholesterolaemia; **HbA1c** = glycated haemoglobin; **LDL-C** = low-density lipoprotein cholesterol; **LLT** = lipid-lowering therapy; **MI** = myocardial infarction; **PAD** = peripheral arterial disease; **PCI** = percutaneous coronary intervention; **PCSK9i** = proprotein convertase subtilisin/kexin type 9 inhibitor; **SCORE** = Systematic Coronary Risk Estimation; **T1DM** = type 1 diabetes mellitus; **T2DM** = type 2 diabetes mellitus; **TC** = total cholesterol; **TGs** = triglycerides; **TIA** = transient ischaemic attack.

1. Mach F, Baigent C, Catapano AL, et al. 2019 ESC/EAS Guidelines for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk. Eur Heart J. 2020;41(1):111–188.

2. Vrints C, Andreotti F, Koskinas K, et al. 2024 ESC Guidelines for the management of chronic coronary syndromes. Eur Heart J. 2024;45(36):3415–3537.

3. Zheng J, Wang J, Zhang Y, et al. The Global Burden of Diseases attributed to high low-density lipoprotein cholesterol from 1990 to 2019. Front Public Health. 2022;10:891929.