2025 Focused Update of the 2019 ESC/EAS Guidelines for the management of dyslipidaemias

Official slide set

ESC Guidelines for the management of dyslipidaemias

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ESC Guidelines for the management of dyslipidaemias

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ESC subspecialty communities having participated in the development of this document:

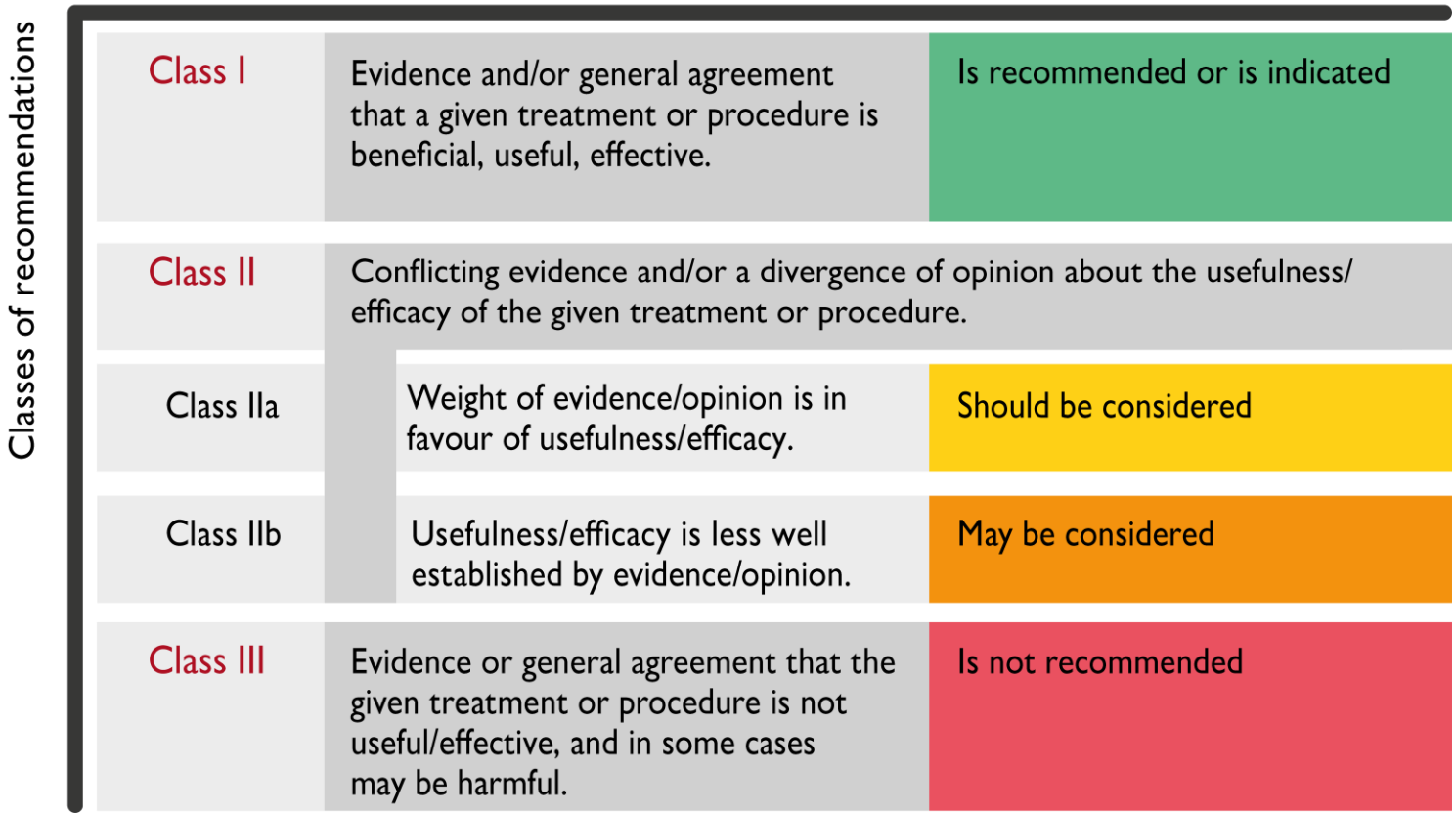
Associations: Association of Cardiovascular Nursing & Allied Professions (ACNAP), Association for Acute CardioVascular Care (ACVC), European Association of Cardiovascular Imaging (EACVI), European Association of Preventive Cardiology (EAPC), European Association of Percutaneous Cardiovascular Interventions (EAPCI), European Heart Rhythm Association (EHRA), Heart Failure Association (HFA).

Councils: Council for Cardiology Practice, Council on Basic Cardiovascular Science.

Working Groups: Adult Congenital Heart Disease, Aorta and Peripheral Vascular Diseases, Atherosclerosis and Vascular Biology, Cardiovascular Pharmacotherapy, Cardiovascular Surgery, Cellular Biology of the Heart, Coronary Pathophysiology and Microcirculation, Development Anatomy and Pathology, Thrombosis.

Patient Forum

ESC Classes of recommendations



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ESC Levels of evidence

Level of evidence A	Data derived from multiple randomized clinical trials or meta-analyses.
Level of evidence B	Data derived from a single randomized clinical trial or large non-randomized studies.
Level of evidence C	Consensus of opinion of the experts and/or small studies, retrospective studies, registries.

Cardiovascular risk categories (1)

Very high risk	People with any of the following: • Documented ASCVD, either clinical or unequivocal on imaging. Documented ASCVD includes previous ACS (MI or unstable angina), chronic coronary syndromes, coronary revascularization (PCI, CABG, and other arterial revascularization 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 or on carotid or femoral ultrasound or markedly elevated CAC score by CT. • DM with target organ damage, or at least three major risk factors, or early onset of T1DM of long duration (>20 years). • Severe CKD (eGFR <30 mL/min/1.73 m^2). • A calculated SCORE2 or SCORE2-OP ≥20% for 10-year risk of fatal or non-fatal CVD. • FH with ASCVD or with another major risk factor.

Cardiovascular risk categories (2)

High risk	People with any of the following: • 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, with DM duration ≥10 years or another additional risk factor. • Moderate CKD (eGFR 30–59 mL/min/1.73 m^2). • A calculated SCORE2 or SCORE2-OP ≥10% and <20% for 10-year risk of fatal or non-fatal CVD.
Moderate risk	People with any of the following: • Young patients (T1DM <35 years; T2DM <50 years) with DM duration <10 years, without other risk factors. • Calculated SCORE2 or SCORE2-OP ≥2% and <10% for 10-year risk of fatal or non-fatal CVD.
Low risk	• Calculated SCORE2 or SCORE2-OP <2% for 10-year risk of fatal or non-fatal CVD.

Risk modifiers for consideration beyond the risk estimation based on the SCORE2 and SCORE2-OP algorithms

Demographic/clinical conditions

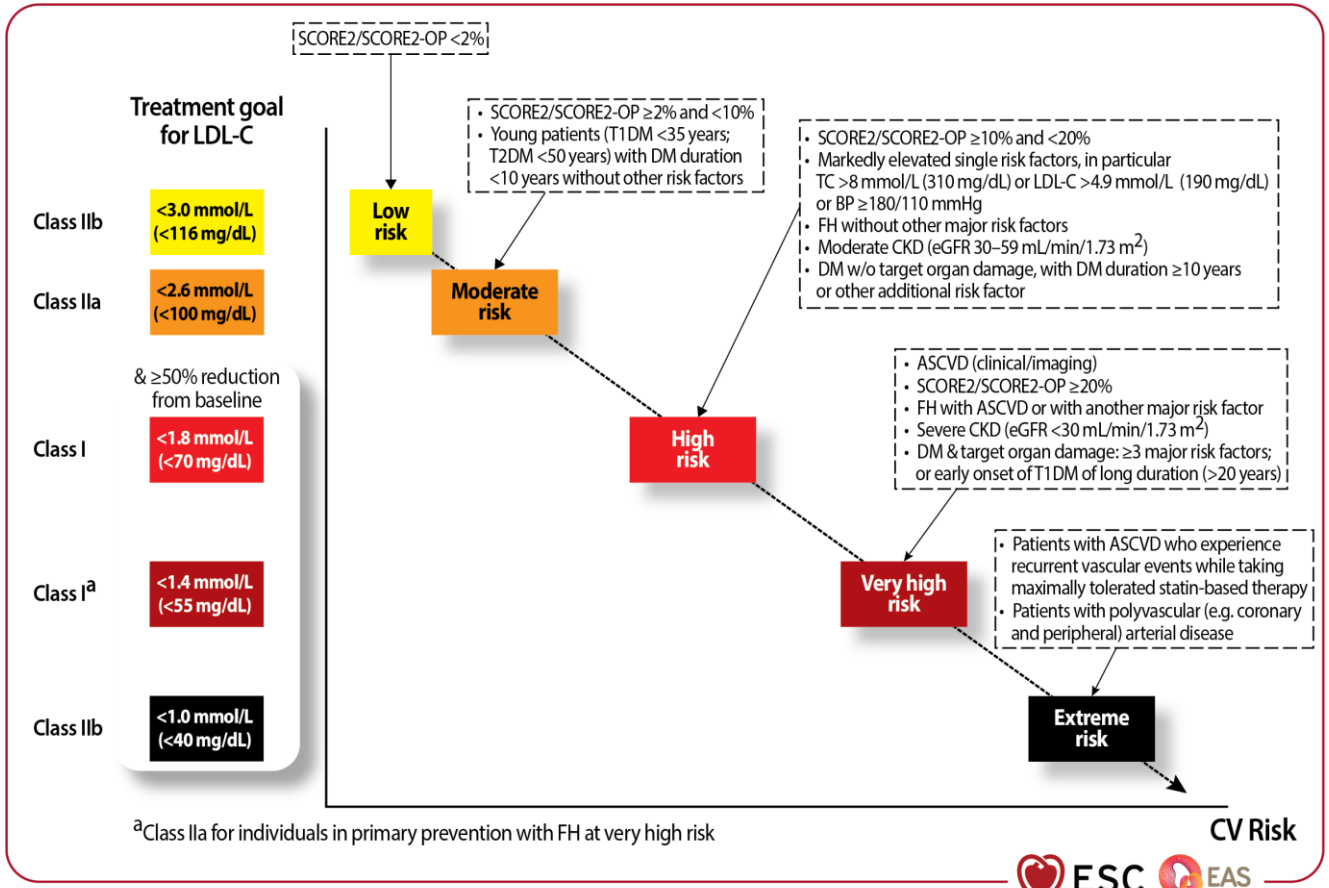
- Family history of premature CVD (men: <55 years; women: <60 years)
- High-risk (e.g. Southern Asian) ethnicity
- Stress symptoms and psychosocial stressors
- Social deprivation
- Obesity
- Physical inactivity
- Chronic immune-mediated/inflammatory disorders
- Major psychiatric disorders
- History of premature menopause
- Pre-eclampsia or other hypertensive disorders of pregnancy
- Human immunodeficiency virus infection
- Obstructive sleep apnoea syndrome.

Biomarkers

- Persistently elevated hs-CRP (>2 mg/L)
- Elevated Lp(a) [>50 mg/dL (>105 nmol/L)]

Figure 1

Treatment goals for low-density lipoprotein cholesterol across categories of total cardiovascular risk.



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Intervention strategies as a function of total cardiovascular risk and untreated low-density lipoprotein cholesterol levels

Total CV Risk	Untreated LDL-C levels					
	<1.4 mmol/L (<55 mg/dL)	1.4 to <1.8 mmol/L (55 to <70 mg/dL)	1.8 to <2.6 mmol/L (70 to <100 mg/dL)	2.6 to <3.0 mmol/L (100 to <116 mg/dL)	3.0 to <4.9 mmol/L (116 to <190 mg/dL	≥4.9 mmol/L (≥190 mg/dL)
Low	Lifestyle advice	Lifestyle advice	Lifestyle advice	Lifestyle advice	Lifestyle modification, consider adding drug if uncontrolled	N/A
Moderate	Lifestyle advice	Lifestyle advice	Lifestyle advice	Lifestyle modification, consider adding drug if uncontrolled	Lifestyle modification, consider adding drug if uncontrolled	N/A
High	Lifestyle advice	Lifestyle advice	Lifestyle modification, consider adding drug if uncontrolled	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention
Very high: primary prevention	Lifestyle modification, consider adding drug	Lifestyle modification, consider adding drug	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention
Very high: secondary prevention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention	Lifestyle modification and concomitant drug intervention

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New Recommendations (1)

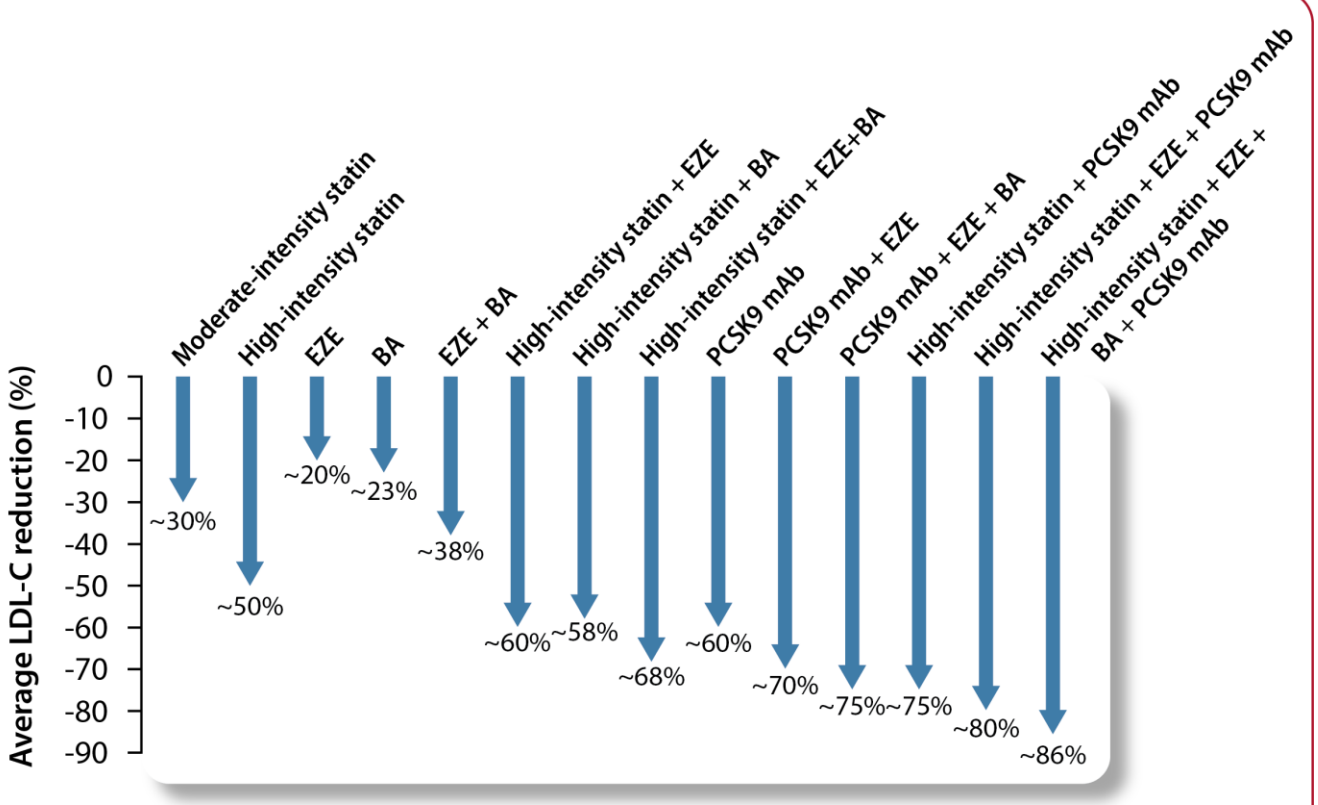
Recommendations	Class	Level
Recommendations for cardiovascular risk estimation in persons without known cardiovascular disease		
SCORE2 is recommended in apparently healthy people <70 years of age without established ASCVD, DM, CKD, genetic/rare lipid or BP disorders for estimation of 10-year fatal and non-fatal CVD risk.	I	B
SCORE2-OP is recommended in apparently healthy people ≥70 years of age without established ASCVD, DM, CKD, genetic/rare lipid or BP disorders for estimation of 10-year fatal and non-fatal CVD risk.	I	B
Presence of subclinical coronary atherosclerosis by imaging or increased CAC score by CT should be considered as risk modifiers in individuals at moderate risk or individuals around treatment decision thresholds to improve risk classification.	IIa	B
Risk modifiers should be considered in individuals at moderate risk or individuals around treatment decision thresholds to improve risk classification.	IIa	B

New Recommendations (2)

Recommendations	Class	Level
Recommendations for cardiovascular risk estimation in persons without known cardiovascular disease (Continued)		
In primary prevention, pharmacological LDL-C-lowering therapy is recommended in persons: • at very high risk and LDL-C ≥1.8 mmol/L (70 mg/dL), or • at high risk and LDL-C ≥2.6 mmol/L (100 mg/dL) despite optimization of non-pharmacological measures, to lower CVD risk.	I	A
In primary prevention, pharmacological LDL-C-lowering therapy should be considered in persons: • at very high risk and LDL-C ≥1.4 mmol/L (55 mg/dL) but <1.8 mmol/L (70 mg/dL), or • at high risk and LDL-C ≥1.8 mmol/L (70 mg/dL) but <2.6 mmol/L (100 mg/dL), or • at moderate risk and LDL-C ≥2.6 mmol/L (100 mg/dL) but <4.9 mmol/L (190 mg/dL), or • at low risk and LDL-C ≥3.0 mmol/L (116 mg/dL) but <4.9 mmol/L (190 mg/dL) despite optimization of non-pharmacological measures, to lower CVD risk.	IIa	A

Figure 2

Average reduction in low-density lipoprotein cholesterol levels with different pharmacological therapies with proven cardiovascular benefit.



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New Recommendations (3)

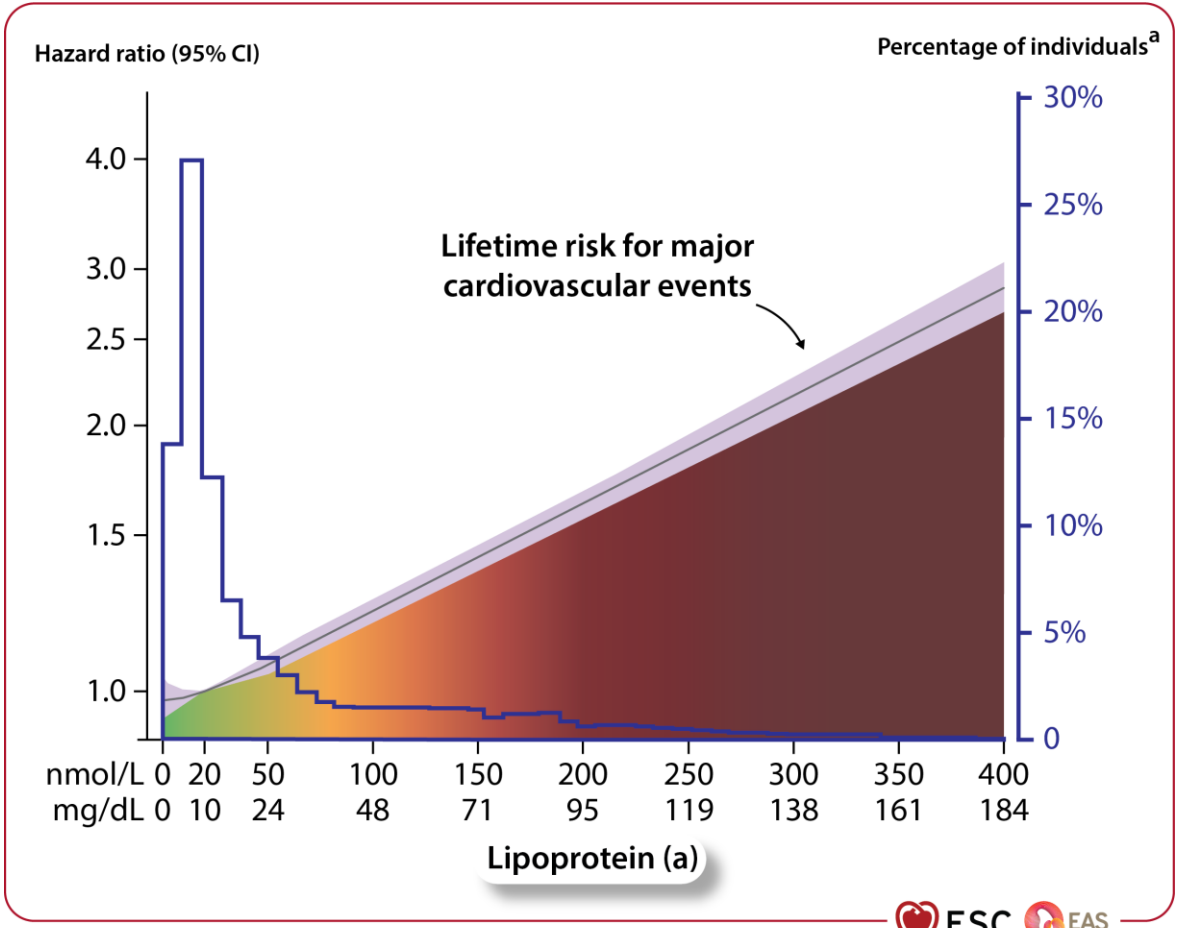
Recommendations	Class	Level
Recommendations for pharmacological low-density lipoprotein cholesterol lowering		
Non-statin therapies with proven cardiovascular benefit, taken alone or in combination, are recommended for patients who are unable to take statin therapy to lower LDL-C levels and reduce the risk of CV events. The choice should be based on the magnitude of additional LDL-C lowering needed.	I	A
Bempedoic acid is recommended in patients who are unable to take statin therapy to achieve the LDL-C goal.	I	B
The addition of bempedoic acid to the maximally tolerated dose of statin with or without ezetimibe should be considered in patients at high or very high risk in order to achieve the LDL-C goal.	IIa	C
Evinacumab should be considered in patients with homozygous familial hypercholesterolaemia aged 5 years or older who are not at LDL-C goal despite receiving maximum doses of lipid-lowering therapy to lower LDL-C levels.	IIa	B

New Recommendations (4)

Recommendations	Class	Level
Recommendations for lipid-lowering therapy in patients with acute coronary syndromes		
Intensification of lipid-lowering therapy during the index ACS hospitalization is recommended for patients who were on any lipid-lowering therapy before admission in order to further lower LDL-C levels.	I	C
Initiating combination therapy with high-intensity statin plus ezetimibe during index hospitalization for ACS should be considered in patients who were treatment-naïve and are not expected to achieve the LDL-C goal with statin therapy alone.	IIa	B

Figure 3

Association between Lp(a) levels and lifetime risk of major cardiovascular events.



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New Recommendations (5)

Recommendations	Class	Level
Recommendation for measurement of lipoprotein(a)		
Lp(a) levels above 50 mg/dL (105 nmol/L) should be considered in all adults as a CV risk-enhancing factor, with higher Lp(a) levels associated with a greater increase in risk.	IIa	B

New Recommendations (6)

Recommendations	Class	Level
Recommendations for drug treatment of patients with hypertriglyceridaemia		
High-dose icosapent ethyl (2 x 2 g/day) should be considered in combination with a statin in high-risk or very high-risk patients with elevated triglyceride levels (fasting triglyceride levels 135–499 mg/dL or 1.52–5.63 mmol/L) to reduce the risk of cardiovascular events.	**IIa**	**B**
Volanesorsen (300 mg/week) should be considered in patients with severe hypertriglyceridaemia (>750 mg/dL or >8.5 mmol/L) due to familial chylomicronaemia syndrome, to lower triglyceride levels and reduce the risk of pancreatitis.	**IIa**	**B**

New Recommendations (7)

Recommendations	Class	Level
Recommendation for statin therapy in primary prevention for people with human immunodeficiency virus infection		
Statin therapy is recommended for people in primary prevention aged ≥40 years with HIV, irrespective of estimated cardiovascular risk and LDL-C levels, to reduce the risk of cardiovascular events; the choice of statin should be based on potential drug interactions.	I	B

New Recommendations (8)

Recommendations	Class	Level
Recommendation for statin therapy in patients receiving cancer therapy		
Statins should be considered in adult patients at high or very high risk of developing chemotherapy-related cardiovascular toxicity to reduce the risk of anthracycline-induced cardiac dysfunction.	IIa	B

New Recommendations (9)

Recommendations	Class	Level
Recommendation for dietary supplements		
Dietary supplements or vitamins without documented safety and significant LDL-C-lowering efficacy are not recommended to lower the risk of ASCVD.	III	B

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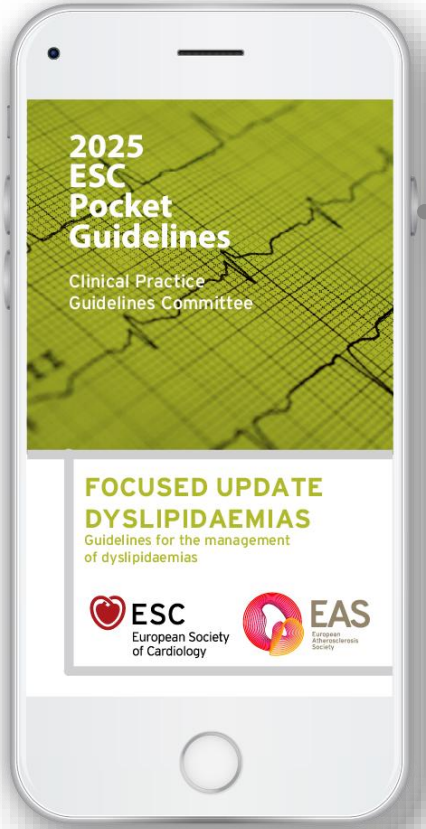

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