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EDITORIAL COMMENT

Inconsistent risk stratification thresholds across European guidelines: A call for harmonization

Inconsistências na estratificação do risco cardiovascular nas recomendações da Sociedade Europeia de Cardiologia: um apelo à harmonização

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The recently published 2025 European Society of Cardiology/European Atherosclerosis Society (ESC/EAS) dyslipidemia-focused update by Mach et al. introduces important advances in cardiovascular risk and lipid management.[1] However, it also perpetuates a concerning issue: the lack of harmonization in SCORE2/SCORE2-OP thresholds across ESC guidelines, creating confusion for clinicians implementing risk-based prevention strategies (Table 1). Consistent guidelines are a prerequisite for effective implementation, as conflicting advice undermines clinical confidence and complicates the integration of decision-support tools.

These discrepancies likely stem from distinct guideline priorities. The 2021 ESC Prevention Guidelines introduced age-specific thresholds for 10-year total cardiovascular disease risk.[2] This approach acknowledged rising absolute risk with age while avoiding overtreatment in older adults.

In contrast, the 2024 ESC Hypertension Guidelines adopted a strategy of simplification, using a single ≥10% threshold to define ''sufficiently high risk'' for treatment, regardless of age. This age-agnostic simplification deliberately avoided risk labels to mitigate confusion with the 2021 framework.[3]

Now, the 2025 dyslipidemia-focused update from the ESC/EAS introduces another scheme with fixed cut-offs: low <2%, moderate 2 to <10%, high 10 to <20%, and very high ≥20%.[1] While derived from prior SCORE fatal-only values, this system diverges fundamentally from the 2021 age-specific model. Moreover, the guidelines disagree on the number of categories: three in the 2021 Prevention guidelines versus four in the 2025 dyslipidemia guidelines. Such inconsistency in taxonomy compounds confusion beyond the numerical thresholds.

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Table 1 Comparison of SCORE2/SCORE2-OP risk category thresholds across ESC guidelines.

Guideline	Risk categories	10-Year CVD risk thresholds	Approach
2021 ESC Prevention	Low–moderate	<2.5% (<50 yrs); <5% (50–69 yrs); <7.5% (≥70 yrs)	Age-specific; three categories
	High	2.5–<7.5% (<50 yrs); 5–<10% (50–69 yrs); 7.5–<15% (≥70 yrs)	
	Very high	≥7.5% (<50 yrs); ≥10% (50–69 yrs); ≥15% (≥70 yrs)	
2024 ESC Hypertension	Below threshold	<10% (all ages)	Single threshold; no categories
	''Sufficiently high risk''	≥10% (all ages)	
2025 ESC/EAS Dyslipidaemia	Low	<2% (all ages)	Age-agnostic; four categories
	Moderate	2–<10% (all ages)	
	High	10–<20% (all ages)	
	Very high	≥20% (all ages)	

Abbreviations: CVD: cardiovascular disease (fatal and non-fatal events); SCORE2 applies to ages 40–69 years; SCORE2-OP applies to ages ≥70 years.

Clinical implications are substantial. Let us consider three scenarios:

- A 48-year-old with SCORE2 of 6% is ''high risk'' in 2021 (≥2.5% for age <50), favoring lipid-lowering therapy, yet ''moderate risk'' in 2025 (2 to <10%), suggesting less intensive intervention.
- A 65-year-old with SCORE2 of 14% is ''very high risk'' in 2021 (≥10% for age 50–69) but only ''high risk'' in 2025 (10 to <20%).
- A 75-year-old with SCORE2-OP of 11% is ''high risk'' in both 2021 and 2025, though by different cut-offs, and above the 2024 hypertension threshold. Three frameworks apply to the same patient.

The 2025 update systematically downgrades risk, most strikingly in the young. Patients <50 require four-fold higher SCORE2 values to reach ''high risk'' compared with 2021. Middle-aged patients need double the threshold, while older adults also require higher scores. Paradoxically, although equal atherogenic-lipid reductions have a larger impact in younger individuals, the 2025 Guidelines use more lenient cut-off points for this group, the 2025 Guidelines use more lenient cut-off points for the young, precisely the group with the greatest cumulative exposure, resulting in risk stratification that may defer timely lipid lowering.[4]

All three documents remain active, but this inconsistency is beyond an academic discussion. Clinicians struggle when patients are simultaneously ''moderate risk'' in lipid management and ''high risk'' in prevention. Electronic records must reconcile conflicting systems, and quality metrics risk ambiguity.

We respectfully suggest that ESC, of which the Portuguese Society of Cardiology is a member, convene a unified task force to harmonize risk stratification across prevention guidelines. A single, consistent framework – ideally an age-specific – model would enhance implementation, strengthen clinician confidence, and ultimately benefit patients. We favor the age-specific approach, as seen in the 2021 Guidelines, because it balances the need for early intervention in younger individuals with high relative risk best against the avoidance of overtreatment in older adults. In the meantime, guidelines should explicitly acknowledge these discrepancies and advise which thresholds to use in practice, which is consistent with the ESC's emphasis on implementation science.

Conflicts of interest

The authors have no conflicts of interest to declare.

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