



Proposal for a European Cardiovascular Health Check Protocol

Submitted by the European Alliance for Cardiovascular Health (EACH)

1. Purpose and Context

Cardiovascular diseases (CVD), including stroke¹, remain the leading cause of mortality in the European Union and represent a major and largely preventable burden² on health systems and societies. In the context of the Commission Communication on an EU cardiovascular health plan: [the Safe Hearts Plan](#)³ adopted in December 2025, and the forthcoming Council Recommendation on cardiovascular health checks (expected to be adopted in 2026), there is a clear need for a coordinated, evidence-based European approach to early detection and prevention.

The EU Cardiovascular Health Plan sets the objective to reduce by 25% (with 2022 as the baseline year) premature cardiovascular mortality by 2035, and recognises prevention, early detection and diagnosis as well as improved access to referral, treatment and care, as underused levers to reduce premature cardiovascular mortality and morbidity. The EU Cardiovascular Health Plan identifies the need for a more preventive, life course- approach to cardiovascular health, improved early detection and control of key risk factors, stronger focus on patient pathways, and greater consistency across Member States through common frameworks, targets, and data comparability. The present proposal seeks to operationalise these objectives by outlining a pragmatic EU framework for cardiovascular health checks, to be supported through a forthcoming Council Recommendation.

This proposal reflects consolidated inputs from the European Alliance for Cardiovascular Health (EACH) and its Partners, and acknowledges the proposals supported by several EACH partners and medical communities for a Cardiovascular-Renal-Metabolic (CVRM) Health Check Protocol.

It aims to support the European Commission in developing a pragmatic, scalable, and impactful EU framework for cardiovascular health checks, aligned with Member State realities while maximising long-term prevention outcomes.

2. Guiding Principles

The proposed framework is based on the following principles:

¹ Owolabi M, Thrift A, Mahal A et al. (2021). Primary stroke prevention worldwide: translating evidence into action. *The Lancet Public Health*, 2021; 7, e74-e85

² Luengo-Fernandez et al., "Economic burden of cardiovascular diseases in the European Union: a population-based cost study," 2023. [Online]. Available: doi: 10.1093/eurheartj/ehad583.

³ European Commission, "Safe Hearts Plan," 2025. [Online]. Available: https://health.ec.europa.eu/document/download/dfb60cde-21a5-426d-8616-e394a326abc2_en?filename=ncd_com-2025-1024_act_en.pdf.

- **Life-course prevention:** Cardiovascular and cerebrovascular risk develops over time and should be addressed from early life through to older age, recognising the interconnected nature of cardiovascular, kidney and metabolic conditions⁴ and promoting the prevention of stroke and vascular diseases (including peripheral arterial disease⁵ and aortic disease)
- **Risk-based approach with tailored approaches according to age:** Ensure strong focus on high-risk groups as well as age threshold for the health checks to ensure impact on the EU Cardiovascular Health Plan target of 25% reduction in premature mortality.
- **Combination screening model:** Combining systematic health checks, including childhood universal screening where relevant, cascade and reverse cascade screening and opportunistic case-finding to maximise reach and efficiency.⁶
- **Outcome oriented approach:** ensuring that early detection leads to personalised prevention with timely referral, treatment, and follow-up, evidence based- intervention, and measurable health gains, in line with clinical guidelines.
- **Equity and feasibility:** Ensuring accessibility for underrepresented populations with explicit focus on children, as well as on women – who represent over 50% of the population yet experience persistent under-detection and inequities in CVD prevention, diagnosis and outcomes - and adaptability across Member States⁷.

3. Proposed EU Cardiovascular Health Check Protocol

3.1 Life-Course Structure

a) Early Life (Childhood)

Introduce targeted or systematic screening approaches in the first decade of life to identify:

- inherited cardiovascular risk factors, including familial hypercholesterolaemia (FH) and elevated lipoprotein(a) Lp(a)⁸;
- congenital heart disease, including through prenatal screening and neonatal detection⁹ (e.g. pulse oximetry)¹⁰;

⁴ European Commission. (2022). *Healthier Together: EU Non-Communicable Diseases Initiative*. Available on: https://health.ec.europa.eu/document/download/d843d53e-c1c1-4664-b31e-febf618d011a_en?filename=eu-ncd-initiative_publication_en_0.pdf.

⁵ Nordanstig, J., Behrendt, C. A., Baumgartner, I., et al. (2024). Editor's Choice -- European Society for Vascular Surgery (ESVS) 2024 Clinical Practice Guidelines on the Management of Asymptomatic Lower Limb Peripheral Arterial Disease and Intermittent Claudication. *European journal of vascular and endovascular surgery : the official journal of the European Society for Vascular Surgery*, 67(1), 9–96. <https://doi.org/10.1016/j.ejvs.2023.08.067>

⁶ WHO Europe, "What is the effectiveness of systematic population-level screening programmes for reducing the burden of cardiovascular diseases?," 2021. [Online]. Available: <https://iris.who.int/server/api/core/bitstreams/38320ccd-17e2-4c08-a962-e81eef19d4c3/content>

⁷ Vogel B, Acevedo M, Appelman Y et al. (2021). The Lancet women and cardiovascular disease Commission: reducing the global burden by 2030. *The Lancet*; 397, 2385-2438

⁸ Bedlington et al., "The Time is Now: Achieving FH Paediatric Screening Across Europe," 2022. [Online]. Available: https://fhcf.org/wp-content/uploads/Prague-Declaration_Web_A5_final.pdf

⁹ Plana MN, Zamora J, Suresh G, Fernandez-Pineda L, Thangaratinam S, Ewer AK. Pulse oximetry screening for critical congenital heart defects. *Cochrane Database of Systematic Reviews* 2018, Issue 3. Art. No.: CD011912. DOI: 10.1002/14651858.CD011912.pub2. Accessed 30 April 2026.

¹⁰ Manzoni P, Martin G, Sanchez Luna M et al. Pulse oximetry screening for critical congenital heart defects: a European consensus statement. *The Lancet Child & Adolescent Health*, 2017; 1, 88-90

Screening could be integrated into existing health system touchpoints, including vaccination and child health programmes. Importantly, early-life screening also enables the detection of additional conditions such as type 1 diabetes (T1D)¹¹ and certain rare cardiovascular diseases¹², thereby increasing the overall effectiveness and cost-efficiency of preventive health strategies through shared infrastructure and early intervention.

b) Early Adulthood (18–35 years)

Ensure a baseline comprehensive cardiometabolic health assessment in early adulthood, to be completed no later than age 35, forming the foundation for risk awareness ('knowing one's numbers') and life course- prevention.

- awareness and health literacy
- behavioural risk factors
- early biological risk detection

For women, early adulthood health checks should incorporate women-specific cardiovascular risk checkpoints, including:

- **Age at menarche**, recognising that both early and late menarche are associated with a higher risk of adverse cardiovascular outcomes and can serve as a simple screening tool to identify women at elevated long-term risk¹³.
- **History of pregnancy complications** such as gestational diabetes and preeclampsia, which are associated with increased lifetime risk of type 2 diabetes, hypertension and cardiovascular disease and therefore warrant intensified follow-up and prevention¹⁴.

c) Adults (35–65 years)

Implement **systematic health checks at least every five years**, with frequency adapted according to individual risk profiles and with focus on auscultation, pulse check and ECG where appropriate. In women, health checks in this age group should include a structured review of reproductive and menopausal history, with particular attention to:

- **Peri- and post-menopausal status**¹⁵, given adverse changes in lipid and cardiometabolic profiles around the menopause transition and the associated increase in cardiovascular risk. Cumulative impact of prior adverse pregnancy outcomes, infertility treatment, and other reproductive factors that signal elevated future cardiovascular risk and provide opportunities for earlier intervention

d) Older Adults (>65 years)

Provide health checks every **2-5 years**, with additional focus on:

- Auscultation, pulse check, and ECG where appropriate

¹¹ Simmons, K. M., & Sims, E. K. (2023). Screening and prevention of type 1 diabetes: Where are we? *The Journal of Clinical Endocrinology & Metabolism*, 108(12), 3067–3079. <https://doi.org/10.1210/clinem/dgad328>

¹² World Heart Federation (2025) Taking action on homozygous Familial Hypercholesterolemia <https://world-heart-federation.org/news/taking-action-on-homozygous-familial-hypercholesterolemia/> Accessed 30 April 2026.

¹³ O'Kelly A, Michos E, Shufelt C, et al. (2022). Pregnancy and Reproductive Risk Factors for Cardiovascular Disease in Women. *Circulation Research* 130(4): 652-72

¹⁴ The Journal of the American College of Cardiology. (2026). Women's Cardiovascular Health infographic. <https://www.jacc.org/pb-assets/images/infographics/Womens-CV-Health-JACC-infographic-lg-1771014800343.jpg>

¹⁵ ESC. (2024). *Menopause potentially linked to adverse cardiovascular health through blood fat profile changes*. Available on: <https://www.escardio.org/news/press/press-releases/Menopause-potentially-linked-to-adverse-cardiovascular-health-through-blood-fat-profile-changes/>

- peripheral arterial disease (including structured assessment, e.g. ankle–brachial index¹⁶ where appropriate)
- early detection of heart failure and arrhythmia

In older women, assessments should explicitly consider the **long-term cardiovascular impact of earlier reproductive events** (including gestational diabetes, preeclampsia and age at menopause) and ensure that secondary prevention and risk factor control are optimised.

Across all life stages, women’s cardiovascular risk should be systematically assessed and managed through a structured, life-course approach that recognises sex-specific biology and reproductive events as integral components of cardiovascular risk stratification and follow-up.

3.2 Minimum Core Dataset

A minimum common cardiometabolic dataset should be implemented across Member States, aligned with the EU Cardiovascular Health Plan objective of improving detection and control of major cardiovascular risk factors across the life course. In addition, the use of validated **risk stratification** tools should be used to guide prevention strategies.

Biological parameters:

- Blood pressure¹⁷
- Full lipid profile¹⁸
- Lipoprotein(a) (at least once in life)¹⁹
- Glucose or HbA1c²⁰
- Kidney function (creatinine for eGFR and albuminuria)²¹
- Heart rhythm

¹⁶ Nordanstig J, Behrendt C, Baumgartner I et al. (2023). Editor's Choice: European Society for Vascular Surgery (ESVS) 2024 Clinical Practice Guidelines on the Management of Asymptomatic Lower Limb Peripheral Arterial Disease and Intermittent Claudication. *European Journal of Vascular and Endovascular Surgery*, 2023; 67, 9-96

¹⁷ Ettehad et al., "Blood pressure lowering for prevention of cardiovascular disease and death: a systematic review and meta-analysis," 2016. [Online]. Available: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(15\)01225-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)01225-8/fulltext).

¹⁸ Wang et al., "Intensive LDL cholesterol-lowering treatment beyond current recommendations for the prevention of major vascular events: a systematic review and meta-analysis of randomised trials including 327 037 participants," 2020. [Online]. Available: [https://www.thelancet.com/journals/landia/article/PIIS2213-8587\(19\)30388-2/abstract](https://www.thelancet.com/journals/landia/article/PIIS2213-8587(19)30388-2/abstract)

¹⁹ Mach et al., "2025 Focused Update of the 2019 ESC/EAS Guidelines for the management of dyslipidaemias: Developed by the task force for the management of dyslipidaemias of the European Society of Cardiology (ESC) and the European Atherosclerosis Society (EAS)," 2025. [Online]. Available: <https://academic.oup.com/eurheartj/article/46/42/4359/8234482?login=true>

²⁰ Martens, F. M. A. C., Visseren, F. L. J., Westerink, J., Spee, R. F., et al. (2025). 2023 European Society of Cardiology guidelines for the management of cardiovascular disease in patients with diabetes : Statement of endorsement by the NVVC. *Netherlands heart journal : monthly journal of the Netherlands Society of Cardiology and the Netherlands Heart Foundation*, 33(7-8), 216–225. <https://doi.org/10.1007/s12471-025-01967-y>

²¹ Cebrian, A., Escobar, C., Aranda, U., et al. (2022). The 2021 European Society of Cardiology cardiovascular disease prevention guidelines: Adding albuminuria to the SCORE scale increases the prevalence of very high/high cardiovascular risk among patients with chronic kidney disease. *Clinical Kidney Journal*, 15(6), 1204–1208. <https://doi.org/10.1093/ckj/sfac019>

- Peripheral circulation assessment (e.g. pulse examination and/or ankle–brachial index in at-risk populations²²)
- Hypertension²³
- Measures of obesity and adiposity, including body mass index (BMI) and assessment of waist circumference or waist-to-height ratio²⁴

Behavioural and clinical assessment:

- Smoking and tobacco use
- Alcohol consumption
- Diet and physical activity
- Sleep and mental health
- Family and reproductive history
- Vaccination status against relevant respiratory infections, where available, as part of the individual cardiovascular risk profile²⁵.
- Support the use of validated **risk stratification tools** to guide prevention strategies;

Within the core dataset, collection of reproductive history in women²⁶ (including age at menarche, parity, adverse pregnancy outcomes, fertility treatment and age at menopause) should be standardised to support sex-specific cardiovascular risk assessment and longitudinal monitoring.

3.4 Additional Risk-Based Modules

The protocol should allow additional modules based on risk:

- Atrial fibrillation and structural heart disease detection (auscultation, pulse, ECG)
- Peripheral artery disease assessment (including ankle–brachial index and appropriate referral pathways²⁷)

²² Nordanstig J, Behrendt C, Baumgartner I et al. (2023). Editor's Choice -- European Society for Vascular Surgery (ESVS) 2024 Clinical Practice Guidelines on the Management of Asymptomatic Lower Limb Peripheral Arterial Disease and Intermittent Claudication. *European Journal of Vascular and Endovascular Surgery*, 2023; 67, 9-96

²³ McEvoy, J. W., McCarthy, C. P., Bruno, R. M., et al. & ESC Scientific Document Group. (2024). *2024 ESC guidelines for the management of elevated blood pressure and hypertension: Developed by the task force on the management of elevated blood pressure and hypertension of the European Society of Cardiology (ESC) and endorsed by the European Society of Endocrinology (ESE) and the European Stroke Organisation (ESO)*. *European Heart Journal*, 45(38), 3912–4018.

²⁴ Visseren FLJ, Mach F, Smulders YM, Carballo D, Koskinas KC, Böck M, Benetos A, Biffi A, Boavida JM, Capodanno D, Cosyns B, Crawford C, Davos CH, Desormais I, Di Angelantonio E, Franco OH, Halvorsen S, Hobbs FDR, Hollander M, Jankowska EA, Michal M, Sacco S, Sattar N, Tokgozoglu L, Tonstad S, Tsioufis KP, van Dis I, van Gelder IC, Wannan C, Williams B; ESC National Cardiac Societies; ESC Scientific Document Group. 2021 ESC Guidelines on cardiovascular disease prevention in clinical practice. *Eur Heart J*. 2021 Sep 7;42(34):3227-3337. doi: 10.1093/eurheartj/ehab484. Erratum in: *Eur Heart J*. 2022 Nov 7;43(42):4468. doi: 10.1093/eurheartj/ehac458. PMID: 34458905.

²⁵ Heidecker et al., "Vaccination as a new form of cardiovascular prevention: a European Society of Cardiology clinical consensus statement: With the contribution of the European Association of Preventive Cardiology (EAPC), the Association for Acute CardioVascular Care (ACVC),," 2025. [Online]. Available: <https://doi.org/10.1093/eurheartj/ehaf384>

²⁶ O'Kelly A, Michos E, Shufelt C, et al. (2022). Pregnancy and Reproductive Risk Factors for Cardiovascular Disease in Women. *Circulation Research* 130(4): 652-72

²⁷ Nordanstig J, Behrendt C, Baumgartner I et al. (2023). Editor's Choice -- European Society for Vascular Surgery (ESVS) 2024 Clinical Practice Guidelines on the Management of Asymptomatic Lower Limb Peripheral Arterial Disease and Intermittent Claudication. *European Journal of Vascular and Endovascular Surgery*, 2023; 67, 9-96

- Abdominal aortic aneurysm screening in at-risk populations²⁸ (e.g. targeted ultrasound screening)
- Heart failure detection (natriuretic peptides)²⁹
- Coronary artery calcium scoring³⁰
- Women-specific cardiovascular risk checkpoints^{31,32,33} (early or late menarche, history of gestational diabetes, preeclampsia and other hypertensive disorders of pregnancy, timing and characteristic of menopause transition)

3.5 High-Risk and Inherited Conditions

The protocol should support:

- identification of high-risk individuals
- more frequent monitoring
- combination of screening approaches, based on evidence, from universal paediatric screening to cascade, reverse cascade and opportunistic screening for inherited conditions³⁴

3.6 Follow-Up and Care Pathways

Health Checks must be linked to:

- clear intervention thresholds
- guideline-based treatment³⁵
- structured referral pathways including access to relevant specialties

Health checks must be systematically linked to clear follow-up and care pathways, ensuring that abnormal findings trigger timely diagnostic confirmation, appropriate referral and

²⁸ Wanhainen, A., Van Herzele, I., Bastos Goncalves, F., Bellmunt Montoya, S., et al. (2024). Editor's Choice -- European Society for Vascular Surgery (ESVS) 2024 Clinical Practice Guidelines on the Management of Abdominal Aorto-Iliac Artery Aneurysms. *European journal of vascular and endovascular surgery: the official journal of the European Society for Vascular Surgery*, 67(2), 192–331.

<https://doi.org/10.1016/j.ejvs.2023.11.002>

²⁹ Vrints et al., "2024 ESC Guidelines for the management of chronic coronary syndromes: Developed by the task force for the management of chronic coronary syndromes of the European Society of Cardiology (ESC) Endorsed by the European Association for Cardio-Thoracic Surgery," 2024. [Online]. Available: <https://academic.oup.com/eurheartj/article/45/36/3415/7743115>.

³⁰ Heart Foundation, "Coronary artery calcium scoring," Heart Foundation, 2024. [Online]. Available: <https://www.heartfoundation.org.au/your-heart/medical-tests-coronary-artery-calcium-score>

³¹ O'Kelly A, Michos E, Shufelt C, et al. (2022). Pregnancy and Reproductive Risk Factors for Cardiovascular Disease in Women. *Circulation Research* 130(4): 652-72

³² The Journal of the American College of Cardiology. (2026). Women's Cardiovascular Health infographic. <https://www.jacc.org/pb-assets/images/infographics/Womens-CV-Health-JACC-infographic-lg-1771014800343.jpg>

³³ ESC. (2024). *Menopause potentially linked to adverse cardiovascular health through blood fat profile changes*. Available on: <https://www.escardio.org/news/press/press-releases/Menopause-potentially-linked-to-adverse-cardiovascular-health-through-blood-fat-profile-changes/>

³⁴ Gidding et al. (2022). Paediatric familial hypercholesterolaemia screening in Europe: public policy background and recommendations. Available on: <https://academic.oup.com/eurjpc/article/29/18/2301/6691825>

³⁵ Visseren et al., "2021 ESC Guidelines on cardiovascular disease prevention in clinical practice: Developed by the Task Force for cardiovascular disease prevention in clinical practice with representatives of the European Society of Cardiology and 12 medical societies With," *European Heart Journal*, 2021. [Online]. Available: <https://academic.oup.com/eurheartj/article/42/34/3227/6358713>.

guideline-based intervention. A risk-based treat-to-target approach³⁶ should be adopted, with follow-up intensity adapted to individual risk profiles in line with European clinical guidelines. To address current fragmentation and variability across Member States – which leads to treatment delays, poorer outcomes and healthcare inefficiencies – the EU cardiovascular health check framework must establish coordinated referral systems, standardised EU guidance and integrated care models that connect screening directly to specialist care and personalised treatment. This should link explicitly to the forthcoming 2027 **EU**

Recommendation on integrated, and personalized CVD pathways, ensuring health checks deliver measurable improvements in outcomes rather than isolated detection.

4. Implementation Considerations

- Integration into primary care and community settings
- Quality assurance and professional training
- Compliance with IVDR, MDR and GDPR
- Equity-focused outreach
- Monitoring and evaluation frameworks
- Blended delivery models combining systematic health checks with opportunistic detection during routine care³⁷ in line with the EU Cardiovascular Health Plan
- Integration and adoption of Digital and AI innovative solutions to catalyst accuracy, speed and capacity of health checks.

5. Strengthening the Current Framework

- The framework may be further enhanced through a stronger life-course perspective, improved identification of inherited and rare conditions, reinforced attention to stroke and vascular disease prevention, greater integration of health-economic considerations, and clearer EU-level monitoring approaches which, in line with the EU Cardiovascular Health Plan, could support comparability across Member States and tracking of coverage, detection and follow-up outcomes while respecting national competence for health system organisation

6. Co-design and participation:

Cardiovascular health check programmes should be co-designed with all relevant stakeholders – including patient organisations – to ensure that pathways, tools and communication are acceptable, person-centred and feasible in real-world settings. This is aligned with emerging

³⁶ Visseren et al., "2021 ESC Guidelines on cardiovascular disease prevention in clinical practice: Developed by the Task Force for cardiovascular disease prevention in clinical practice with representatives of the European Society of Cardiology and 12 medical societies With," *European Heart Journal*, 2021. [Online]. Available: <https://academic.oup.com/eurheartj/article/42/34/3227/6358713>.

³⁷ S. e. a. Si, "Effectiveness of general practice-based health checks: a systematic review and meta-analysis," *Br J Gen Pract*, , 2014. [Online]. Available: <https://pubmed.ncbi.nlm.nih.gov/24567582/>

evidence and WHO frameworks³⁸ showing that meaningful engagement and co-design with people living with NCDs improves relevance, uptake and equity of programmes.

7. Conclusion

This proposal provides a **coherent and implementable EU framework** for cardiovascular health checks. By integrating life-course prevention, robust risk detection, and targeted interventions — including for stroke — it supports the objectives of the **European Cardiovascular Health Plan** and offers a pathway to operationalise the EU Cardiovascular Health Plan objectives and support Member States in delivering effective, equitable and outcome-oriented cardiovascular health checks across the EU.

To fully operationalise cardiovascular health checks in practice, Member States will need to reform and align health education and health communication strategies (including curricula for health professionals and public-facing campaigns), strengthen primary care and community-based prevention infrastructures, and adapt health system organisation, digital systems and financing models so that cardiovascular health checks are embedded as a routine, systematic component of care rather than a one-off programme.

<https://www.cardiovascular-alliance.eu/>

³⁸ World Health Organization. (2023). *WHO framework for meaningful engagement of people living with noncommunicable diseases, and mental health and neurological conditions*. Available on: <https://www.who.int/publications/i/item/9789240073074>