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# COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

on an EU cardiovascular health plan: the Safe Hearts Plan

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The EU cardiovascular health plan (Safe Hearts Plan) is a strategic response to the EU's leading health challenge. Its aim is to deliver tangible benefits for citizens, health systems and society through a focused set of ambitious, high-impact actions. The Safe Hearts Plan is centred on three pillars – prevention, early detection and screening, and treatment and care (including rehabilitation) – and supported by three cross-cutting themes on digital innovation, research and knowledge, and tackling inequalities. It seeks to strengthen national policies while adding clear EU value.

#### 1. IMPROVING CARDIOVASCULAR HEALTH IN THE EU: THE CHALLENGES AHEAD

### Introduction

Cardiovascular diseases remain the **biggest public health challenge in the EU** despite advances in their prevention and management<sup>1</sup>. They are the leading cause of death and disability in the EU, claiming 1.7 million lives every year<sup>2</sup> and affecting around **62 million people** in many ways that go beyond just physical symptoms. The economic cost exceeds **EUR 282 billion per year**, including EUR 47 billion in lost productivity<sup>3</sup>.

Besides this heavy societal and economic burden, there are significant geographical, gender, disability-related and socio-economic inequalities that reinforce the need to intervene decisively at EU and national level for the benefit of present and future generations. Cardiovascular death rates are nearly 6.3 times higher in some Member States than in others<sup>4</sup>. Within Member States, there is a higher prevalence of cardiovascular diseases and related mortality in lower income and education population groups. Cardiovascular diseases occur frequently together with conditions like diabetes and obesity, significantly impacting people's quality of life. It is necessary to pool resources, knowledge and experience, as well as to maximise synergies and economies of scale at EU level.

Without decisive and coordinated EU action, the burden of cardiovascular diseases will continue to rise, undermining the health and well-being of future generations, straining health systems and weakening the EU's economic resilience. Between 2025 and 2050, the prevalence of cardiovascular diseases is projected to rise by 90%, with deaths increasing by 73.4% to reach an estimated 35.6 million in 2050 (up from 20.5 million in 2025)<sup>5</sup>. Ischaemic heart disease<sup>6</sup> is expected to remain the leading cause of cardiovascular deaths and high blood pressure will remain the main risk factor.

<sup>&</sup>lt;sup>1</sup> Cardiovascular diseases affect the heart and blood vessels. They include heart attacks, stroke, heart failure, ischaemic heart diseases, abnormal heart rhythms, structural heart diseases, cardiomyopathy and congenital heart diseases.

<sup>&</sup>lt;sup>2</sup> Unless stated otherwise, the source of the figures is the OECD report (2025) 'The state of cardiovascular health in the EU' - Full Report: The State of Cardiovascular Health in the European Union | OECD.

<sup>&</sup>lt;sup>3</sup> In 2021 alone, 256 million working days and 1.3 million working years were lost due to illness and disability, and premature deaths, respectively.

<sup>&</sup>lt;sup>4</sup> <u>Cardiovascular diseases statistics – Statistics Explained – Eurostat.</u>

<sup>&</sup>lt;sup>5</sup> Global burden of cardiovascular diseases: projections from 2025 to 2050 - PubMed.

<sup>&</sup>lt;sup>6</sup> Ischaemic heart disease is also known as coronary heart disease or coronary artery disease.

The **Safe Hearts Plan** responds directly to the calls from the Member States<sup>7</sup> and the European Parliament<sup>8</sup> for stronger action at EU level and is based on contributions received through various consultation activities<sup>9</sup>. It focuses on targeted impactful actions, with evidence-based EU added value for citizens, governments and stakeholders, to support the Member States to tackle one of the biggest collective health challenges.

The Safe Hearts Plan is part of the European Health Union<sup>10</sup> and thus exploits synergies with strategic initiatives and builds on actions linked to non-communicable diseases (NCDs), such as the 'Healthier Together' – NCDs initiative<sup>11</sup>, the Europe's Beating Cancer Plan<sup>12</sup>, the EU Cancer Mission<sup>13</sup>, the comprehensive approach on mental health<sup>14</sup>, the Zero Pollution Action Plan<sup>15</sup> and the Strategy for European Life Sciences<sup>16</sup>, as well as the legislative frameworks on the European Health Data Space<sup>17</sup> and on substances of human origin<sup>18</sup>, the proposed revision of the legislation on pharmaceuticals and medical devices, the proposed Critical Medicines Act and the proposal for a European Biotech Act<sup>19</sup>. It also builds on and strengthens the EU's ongoing support to Member States<sup>20</sup> and stakeholders to improve cardiovascular health.

The Safe Hearts Plan will support Member States' progress towards Sustainable Development Goal 3.4 (to reduce premature mortality from cardiovascular diseases, diabetes and other key NCDs through prevention and treatment, by one third by 2030).

The Safe Hearts Plan is supported by the evidence provided in the recently published report on 'The State of Cardiovascular Health in the EU'<sup>21</sup>. This OECD report, which is co-funded by the EU4Health programme<sup>22</sup>, builds on a longstanding collaboration between the OECD and the Commission to monitor and improve population health, including through the State of

<sup>&</sup>lt;sup>7</sup> Council of the European Union, <u>Council Conclusions on the Improvement of Cardiovascular Health in the European Union</u>, ST 15315/24 INIT. al x.

<sup>&</sup>lt;sup>8</sup> MEP Cardiovascular Health Group and European Parliament, Report <u>on non-communicable diseases (NCDs),</u> A9-0366/2023, adopted 13 December 2023.

<sup>&</sup>lt;sup>9</sup> See for instance, the Have your say.

<sup>&</sup>lt;sup>10</sup> European Health Union: https://commission.europa.eu/topics/public-health/european-health-union en.

<sup>&</sup>lt;sup>11</sup> <u>Healthier together – EU non-communicable diseases initiative - Public Health.</u>

<sup>&</sup>lt;sup>12</sup> Communication from the Commission to the European Parliament and the Council, <u>Europe's Beating Cancer</u> Plan, COM(2021) 44 final.

<sup>13</sup> EU Mission: Cancer - Research and innovation - European Commission.

<sup>&</sup>lt;sup>14</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, <u>A comprehensive approach to mental health</u>, COM(2023) 298 final

<sup>&</sup>lt;sup>15</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, <u>Pathway to a Healthy Planet for All EU Action Plan:</u> 'Towards Zero Pollution for Air, Water and Soil' COM (2021)400.

<sup>&</sup>lt;sup>16</sup> Strategy for European Life Sciences - Research and innovation.

<sup>&</sup>lt;sup>17</sup> Regulation (EU) 2025/327 on the European Health Data Space and amending Directive 2011/24/EU and Regulation (EU) 2024/2847.

Reform of the pharmaceutical legislation and measures addressing antimicrobial resistance, COM(2023) 190 final; Medical Devices - Public Health - European Commission; Critical medicines act - Public Health - European Commission; and New EU rules on substances of human origin - Public Health.

<sup>&</sup>lt;sup>19</sup> Biotech Act.

<sup>&</sup>lt;sup>20</sup> For instance through the Joint Actions: JACARDI, PreventNCD and JARED.

<sup>&</sup>lt;sup>21</sup> OECD report (2025) 'The state of cardiovascular health in the EU' - <u>Full Report: The State of Cardiovascular Health in the European Union | OECD.</u>

<sup>&</sup>lt;sup>22</sup> EU4Health programme 2021-2027 – a vision for a healthier European Union - Public Health.

Health in the EU<sup>23</sup> initiative, which includes the Health at a Glance: Europe series and the EU Country Health Profiles. By providing a comprehensive assessment of cardiovascular health across the EU, the report aims to inform future EU and national policy efforts. Leveraging digital health technologies, promoting people-centred care, and aligning policies and cross-sectoral actions can enhance progress, reduce inequalities, with a specific focus on women, and make cardiovascular care more efficient.

### **Challenges across the EU**

Tackling cardiovascular diseases and their main risk factors, involves several significant challenges.

**Insufficient focus on prevention**: nearly 80% of cardiovascular diseases can be prevented through lifestyle changes<sup>24</sup>. However, in the EU, prevention receives only 3% of total healthcare spending despite being the most cost-effective investment in an overall context of increasingly challenging budgetary outlooks. The scale of the problem is clear.

- Between 2012 and 2022, diabetes prevalence rose by 22% and has doubled since 1990 to reach 7.8% of the population. Hypertension affects almost 25% of adults, and its prevalence is rising.
- Obesity is widespread, with 15% of adults and 9% of children living with obesity<sup>25</sup>. 75% of obesity-related excess deaths are attributable to cardiovascular diseases<sup>26</sup>. In addition, over half of adults are overweight in the EU and overweight rates among adolescents have increased to 21% in 2022, up from 17% in 2014<sup>27</sup>.
- Almost a third of cardiovascular-related morbidity and mortality in Europe is due to uncontrolled cholesterol<sup>28</sup> with the prevalence of elevated/uncontrolled cholesterol levels over 50% in Europe<sup>29</sup>. In addition, inherited risk factors such as elevated lipoprotein-a, familial hypercholesterolemia or cardiomyopathy also contribute to cardiovascular disease burden. In addition, evidence shows that sleep disorders also represent cardiovascular risk factors<sup>30</sup>.

<sup>24</sup> World Heart Federation – nearly 80% of deaths from cardiovascular diseases are due to modifiable risk factors (e.g. an unhealthy diet and a sedentary lifestyle).

<sup>&</sup>lt;sup>23</sup> State of Health in the EU - Public Health - European Commission.

<sup>&</sup>lt;sup>25</sup> OECD report (2025) 'The state of cardiovascular health in the EU' - <u>Full Report: The State of Cardiovascular</u> Health in the European Union | OECD.

<sup>&</sup>lt;sup>26</sup> Koskinas, K. C., Van Craenenbroeck, E. M., Antoniades, C., et al. (2024). Obesity and cardiovascular disease: An ESC clinical consensus statement. *European Heart Journal*, 45(38), 4063–4098. <a href="https://doi.org/10.1093/eurheartj/ehae508">https://doi.org/10.1093/eurheartj/ehae508</a>.

https://cancer-inequalities.jrc.ec.europa.eu/sites/default/files/docs/ccp2025/ec-oecd-synthesis-report-250124-1422.pdf.

<sup>&</sup>lt;sup>28</sup> Gill, J., Miracolo, A., Politopoulou, K., Jayawardana, S., Carter, A., Apostolou, E., & Kanavos, P. (2024). *How can we improve secondary prevention of cardiovascular disease?* London School of Economics and Political Science.

<sup>&</sup>lt;sup>29</sup> Timmis, A., Vardas, P., Townsend, N., Torbica, A., Katus, H., De Smedt, D., et al. (2022). European Society of Cardiology: Cardiovascular disease statistics 2021. *European Heart Journal*, *43*(8), 716–799. https://doi.org/10.1093/eurheartj/ehab892.

<sup>&</sup>lt;sup>30</sup> Kwon, Y., Tzeng, W.S., Seo, J. et al (2024). Obstructive sleep apnea and hypertension; critical overview. *Clin Hypertension 30* (1), 19. <a href="https://doi.org/10.1186/s40885-024-00276-7">https://doi.org/10.1186/s40885-024-00276-7</a>.

- Prevalence of lifestyle risk factors shows mixed progress<sup>31</sup>. Tobacco use has declined in the last decade, but the 45% increase in vaping raises concerns about emerging nicotine habits. Over 25% of the population has an insufficient level of physical activity, and only about 60% of adults consume fresh fruit and vegetables daily<sup>32</sup>. Alcohol consumption has slightly decreased<sup>33</sup>, however harmful use of alcohol remains a key risk factor for cardiovascular diseases and other NCDs, especially among young people<sup>34</sup>;
- Vaccination coverage among risk groups in many Member States remains suboptimal for vaccines that can reduce cardiovascular complications (e.g. influenza<sup>35</sup> and COVID-19<sup>36</sup> vaccines);
- Environmental factors, such as pollution, account for 18% of cardiovascular deaths in the EU<sup>37</sup>.

# Tackling cardiovascular diseases requires efforts across all age groups. However, specific challenges and trends among children and adolescents are of particular concern:

- type 1 diabetes typically starts early in life and at the same time type 2 diabetes is also increasingly affecting children and young people due to rising obesity rates and unhealthy lifestyle factors;
- vaping among young people is a particular concern, raising alarms about emerging nicotine habits;
- increased screen time and lack of physical activity are affecting young people's health<sup>38</sup>;
- 20% of young people are overweight or obese<sup>39</sup>;
- sugar consumption in children and young people is higher than the recommended levels, in particular, through sugar-sweetened beverages<sup>40</sup>;
- only 12% of adolescents achieve the recommended minimum intake of five portions of fruit and vegetables daily, whereas 42% consume no portions of fruit or vegetables daily<sup>41</sup>;

<sup>&</sup>lt;sup>31</sup> OECD report (2025) 'The state of cardiovascular health in the EU' - <u>Full Report: The State of Cardiovascular Health in the European Union | OECD.</u>

<sup>&</sup>lt;sup>32</sup> [ilc hch11] Persons eating fruit, vegetables or salad by educational attainment level, risk of poverty threshold, most frequent activity status and sex.

<sup>&</sup>lt;sup>33</sup> Average alcohol consumption declined slightly by 3% between 2010 and 2022.

<sup>&</sup>lt;sup>34</sup> Key findings from the 2024 European School Survey Project on Alcohol and Other Drugs (ESPAD): www.euda.europa.eu.

<sup>&</sup>lt;sup>35</sup> European Centre for Disease Prevention and Control (2024). Survey report on national seasonal influenza vaccination recommendations and coverage rates in EU/EEA countries.

<sup>&</sup>lt;sup>36</sup> European Centre for Disease Prevention and Control. COVID-19 vaccination coverage in the EU/EEA during the 2024–25 season campaigns, 1 August 2024 – 28 March 2025.

<sup>&</sup>lt;sup>37</sup> European Environment Agency (2025): Preventing cardiovascular disease through a healthy environment.

<sup>&</sup>lt;sup>38</sup> Combinations of physical activity, sedentary time, and sleep duration and their associations with depressive symptoms and other mental health problems in children and adolescents: a systematic review - PubMed.

<sup>&</sup>lt;sup>39</sup> Eurostat, EU-SILC, Person distribution by body mass index, educational attainment level, sex and age: ile hch10.

<sup>&</sup>lt;sup>40</sup> Azaïs-Braesco, V., Sluik, D., Maillot, M., Kok, F. and Moreno, L.A. (2017). A review of total & added sugar intakes and dietary sources in Europe, *Nutrition Journal*, *16* (1), 6. <a href="https://doi.org/10.1186/s12937-016-0225-2">https://doi.org/10.1186/s12937-016-0225-2</a>; Sugars and Sweeteners | Knowledge for policy.

<sup>&</sup>lt;sup>41</sup> Eurostat database: [hlth\_ehis\_fv3e] Daily consumption of fruit and vegetables by sex, age and educational attainment level.

- the harmful use of alcohol including binge drinking, is a significant concern among young people<sup>42</sup>. Alcoholic beverages, such as 'alcopops'<sup>43</sup>, seem to be particularly appealing to young people;
- anxiety and mental health issues amongst adolescents can contribute to poor lifestyle choices and cardiovascular risk<sup>44</sup>.

**Limited access to early detection and diagnosis**: early detection is essential because risk factors (e.g. high blood pressure, high cholesterol and diabetes<sup>45</sup>) can go unnoticed, thus increasing the risk of a heart attack or stroke.

- Despite the accessibility of blood pressure checks, 14.3% of citizens aged 65 and older, reported not having had a recent measurement<sup>46</sup>, even though hypertension is a key risk factor for cardiovascular diseases.
- Structural heart disorders remain underdiagnosed, leaving patients at risk of sudden, severe events.
- There is no protocol or guidance at EU level which would help Member States to develop early detection and diagnosis programmes, and this has resulted in fragmented approaches across the EU, which hinders data federation and collection of comparable data.
- Women are more likely to be misdiagnosed and to face delays in emergency care and under-treatment, especially after cardiovascular events, partly due to limited awareness among patients and healthcare workers.

**Treatment and care**: patients with cardiovascular diseases often require long-term management and a multi-faceted approach involving challenges that can impact patient outcomes.

- The suboptimal use of cardiovascular medications (e.g. antihypertensives, lipid lowering agents and anticoagulants) is an important gap in care across the EU, and there is a wide range of different clinical guidelines, and an overall EU approach is lacking.
- Continuity of care is lacking. Many patients face fragmented care pathways and unequal
  access to treatment. Patients often struggle to navigate between primary care, hospitals,
  and rehabilitation services, thus undermining long-term disease management and
  recovery.
- The lack of common standards for treatment and care across Member States leads to inequalities and inefficiencies, because innovative treatments and technologies are not equally accessible across the EU.

<sup>&</sup>lt;sup>42</sup> Key findings from the 2024 European School Survey Project on Alcohol and Other Drugs (ESPAD).

<sup>&</sup>lt;sup>43</sup> Alcopops are premixed alcoholic drinks that are designed to mimic the taste of a soft drink but contain added alcohol.

<sup>&</sup>lt;sup>44</sup> <u>UNICEF Report: The State of Children in the European Union: Addressing the needs and rights of the EU's youngest generation.</u> (2024).

<sup>&</sup>lt;sup>45</sup> Marx, N., Federici, M., Schütt, K., Müller-Wieland, D., et al. (2023). 2023 ESC Guidelines for the management of cardiovascular disease in patients with diabetes: Developed by the task force on the management of cardiovascular disease in patients with diabetes of the European Society of Cardiology (ESC), *European Heart Journal*. 44(39), 4043–4140, <a href="https://doi.org/10.1093/eurheartj/ehad192">https://doi.org/10.1093/eurheartj/ehad192</a>.

<sup>&</sup>lt;sup>46</sup> Eurostat database: [hlth\_ehis\_pa2e] Self-reported screening of cardiovascular diseases and diabetes risks by sex, age and educational attainment level.

- Multimorbidity is an important issue among cardiovascular patients and is strongly associated with poorer self-rated health and lower quality of life, sometimes even more than the presence of cardiovascular disease<sup>47</sup>.

**Digital and data challenges**: without EU-level leadership on digital standards and investment, progress will remain fragmented, uneven and non-scalable.

- Only six Member States use electronic health records to systematically monitor cardiovascular outcomes<sup>48</sup>.
- Most registries<sup>49</sup> lack interoperability, making it difficult to share or compare data across borders.
- Clinical data collection protocols and standards are insufficiently harmonised.
- Artificial intelligence (AI) and digital tools in cardiology exist, but few are deployed at scale in national health systems. This limits opportunities for earlier detection, personalised treatment, and system-wide improvements. When applying AI tools, it is key to ensure that gender, disability and other biases are avoided.

**Gaps in research and innovation:** important challenges remain despite substantial investment in research and innovation.

- Knowledge gaps persist, in particular in the understanding of disease onset and progression mechanisms.
- Gaps exist in understanding of biological mechanisms underpinning different cardiovascular diseases.
- Research translation should be fostered as innovations are slow to reach patients.
- Important gaps remain in understanding how to apply effective preventive measures consistently and how to support early intervention across diverse populations.
- Demand-driven innovation is not sufficiently supported.
- Cross-border collaboration, and AI innovation in cardiovascular diseases are hindered by limited availability of high-quality data. Sex- and gender-disaggregated data and data on other protected characteristics, including on persons with disabilities, is essential.

**Persistent health inequalities**: There are striking differences and inequalities across Member States and regions, gender and socioeconomic groups.

- Conditions unique to women across the life course, including early and late menarche, polycystic ovary syndrome, infertility, assisted reproductive technology, adverse

<sup>&</sup>lt;sup>47</sup> Dunlay, S. M., & Chamberlain, A. M. (2016). Multimorbidity in Older Patients with Cardiovascular Disease. *Current cardiovascular risk reports*, *10*, 3. <a href="https://doi.org/10.1007/s12170-016-0491-8">https://doi.org/10.1007/s12170-016-0491-8</a>; Skou, S. T., et al. (2022). Multimorbidity. *Nature Reviews Disease Primers*, *8*(1), 48. <a href="https://doi.org/10.1038/s41572-022-00376-4">https://doi.org/10.1038/s41572-022-00376-4</a>.

<sup>&</sup>lt;sup>48</sup> OECD report (2025) 'The state of cardiovascular health in the EU' - <u>Full Report: The State of Cardiovascular Health in the European Union | OECD.</u>

<sup>&</sup>lt;sup>49</sup> Examples include European cardiovascular registries such as the ESC EURObservational Research Programme (EORP) and national disease-specific registries listed in the European Directory of Registries. Their heterogeneous data structures and standards limit interoperability across borders.

- pregnancy outcomes, hormonal contraceptives and transitions to menopause, all of which increase their risk for cardiovascular diseases<sup>50</sup>.
- Access to high-quality cardiac care varies significantly between Member States, leading to differences in survival rates and quality of life. Mortality from cardiovascular diseases is significantly higher in some regions than in others, due to differences in prevention, access to care, and health system resources<sup>51</sup>.
- Socio-economically disadvantaged population groups are disproportionately affected by risk factors like unhealthy diets, smoking, air<sup>52</sup> and noise pollution<sup>53</sup>. They also often have limited access to prevention and treatment. This results in worse health outcomes, with more chronic conditions, that cause further inequalities in prevention, treatment, and management.

#### 2. ACTION AT EU LEVEL ON CARDIOVASCULAR HEALTH: A TARGETED APPROACH

The Safe Hearts Plan is a strategic response to the challenges described above. It focuses on delivering a selected number of ambitious and targeted actions that can deliver clear EU added value for citizens, governments, and stakeholders, in line with the EU's competitiveness agenda and the rapid development of digital innovation. It is designed to improve people's lives and public health at societal level, boost competitiveness, promote innovation and invest in sustainable healthcare systems.

Tackling cardiovascular diseases requires a preventive, cross-sectoral and multi-stakeholder approach, in line with the One Health<sup>54</sup> approach, which is based on the interconnection and interdependence between the health of humans, animals, plants and the wider environment. The plan puts patients and citizens at its centre and aims to complement national policies and promote efficiency and competitiveness through collaborative research and innovation.

The Safe Hearts Plan is built on three key pillars across the entire cardiovascular patient pathway: (1) prevention; (2) early detection and screening; and (3) treatment and care, including rehabilitation.

These are supported by three **cross-cutting themes**:

(1) the promising opportunities offered by digital solutions, including AI technologies and personalised medicine approaches;

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 $<sup>^{50}</sup>$  Vogel, B. et al. (2021), The Lancet women and cardiovascular disease Commission: reducing the global burden by 2030.

<sup>&</sup>lt;sup>51</sup> In 2022, regional mortality rates varied from 139 deaths per 100,000 people to 1196 deaths. Source: Eurostat <a href="https://ec.europa.eu/eurostat/web/products-datasets/-/hlth\_cd\_asdr2">https://ec.europa.eu/eurostat/web/products-datasets/-/hlth\_cd\_asdr2</a>.

<sup>&</sup>lt;sup>52</sup> Despite improving trends overall, inequalities remain with PM2.5 concentrations consistently higher by around one third in the poorest regions: <a href="https://www.eea.europa.eu/en/analysis/indicators/income-related-environmental-inequalities-associated">https://www.eea.europa.eu/en/analysis/indicators/income-related-environmental-inequalities-associated</a>.

<sup>&</sup>lt;sup>53</sup> Vulnerable and low-income communities can be disproportionately affected by noise pollution: <a href="https://www.eea.europa.eu/en/analysis/publications/environmental-noise-in-europe-2025">https://www.eea.europa.eu/en/analysis/publications/environmental-noise-in-europe-2025</a>.

<sup>&</sup>lt;sup>54</sup> One Health - Public Health - European Commission.

- (2) addressing the research and innovation gaps across the entire cardiovascular health pathway as a key driver for high quality knowledge, information and healthcare solutions as well as digital tools; and
- (3) reaching every citizen because inequalities exist between countries and regions, population groups and genders.

Each pillar includes **flagship initiatives** and other actions, where EU-level action can bring added value, while also respecting national competences in health policy.

With these initiatives the EU will aim to reach the following targets, <sup>55</sup> by 2035:

- cardiovascular premature mortality to decrease by 25% with 2022 as the baseline year<sup>56</sup>;
- at least 75% of people aged 25 to 64, and at least 90% of people aged 65 and older, have their blood pressure measured once a year by a health professional<sup>57</sup>;
- at least 65% of people aged 25 to 64, and at least 80% of people aged 65 and older, have their cholesterol measured once a year by a health professional<sup>58</sup>;
- at least 65% of people aged 25 to 64, and at least 80% of people aged 65 and older, have their blood sugar measured once a year by a health professional<sup>59</sup>.

#### 3. PILLAR 1: PREVENTION - A LIFE COURSE AND PERSONALISED APPROACH

**Prevention is the most cost-effective way** of addressing the significant burden of **cardiovascular diseases** and the major risk factors, such as **diabetes** and **obesity**.

Cardiovascular diseases are largely preventable through targeted action on key modifiable risk factors (e.g. diet, physical activity, tobacco and harmful use of alcohol). Environmental and public health measures, such as reducing exposure to pollution and climatic stressors also play a crucial role in lowering cardiovascular risk especially in vulnerable populations.

To translate the potential of prevention into tangible action, the Commission will launch a new flagship programme on a lifelong, personalised and digitally enabled cardiovascular disease prevention – the 'EU cares for your heart'. The flagship initiative will support Member States in capacity-building to develop or strengthen national cardiovascular health plans, and it will support Member States in their efforts to step up prevention, including using personalised approaches and digital tools.

<sup>&</sup>lt;sup>55</sup> The definitions of these targets will be considered in the early detection and screening protocol as well as the treatment guidance. These targets will be further defined in the design of the early detection and screening programmes

<sup>&</sup>lt;sup>56</sup> In 2022, the most common cause of premature death is ischaemic heart disease with 77 704 deaths (17.9 per 100 000 inhabitants): Source: Eurostat [hlth\_cd\_apr] Treatable and preventable mortality of residents by cause and sex.

<sup>&</sup>lt;sup>57</sup> Eurostat online database, Self-reported screening of cardiovascular diseases and diabetes risks by sex, age and educational attainment level[hlth\_ehis\_pa2e\_\_custom\_19301842].

<sup>&</sup>lt;sup>58</sup> Eurostat online database, Self-reported screening of cardiovascular diseases and diabetes risks by sex, age and educational attainment level[hlth\_ehis\_pa2e\_\_custom\_19301918].

<sup>&</sup>lt;sup>59</sup> Eurostat online database, Self-reported screening of cardiovascular diseases and diabetes risks by sex, age and educational attainment level[hlth\_ehis\_pa2e\_\_custom\_19301947].

13 Member States already have national cardiovascular health plans or strategies<sup>60</sup>, and this flagship programme will support all 27 Member States<sup>61</sup> in developing and implementing policies to reduce the cardiovascular disease burden. Updated estimates on national spending on preventive cardiovascular health will, through an EU-funded OECD project<sup>62</sup>, allow the Member States to benchmark their investments, identify gaps and receive strategic guidance on how to allocate resources more efficiently.

The flagship programme will invest in supporting Member States in improving prevention, early detection and care. It will use digital tools and personalised medicine approaches, especially for vulnerable groups. It will aim to empower patients and healthcare professionals with digital tools for improved prevention and will invest in stakeholder-led targeted prevention and early detection actions<sup>63</sup> that include a focus on vulnerable groups.

Some Member States<sup>64</sup> have developed their own integrated national or regional digital health platforms. These Member States now have the capacity to implement data-driven and AI-enabled systems as part of routine health service delivery. Their experience demonstrates what is already possible, from predictive analytics and diagnostic automation to system optimisation and personalised care pathways. Building on the experience of these Member States, targeted EU investment could support the scaling-up of interoperable, data-driven and AI-enabled care solutions across the EU. Several EU co-funded projects, such as JADECARE<sup>65</sup>, have laid the foundations for digitally assisted care models. The Commission intends to mobilise the communities developed within these projects, scale up their best practices, and extend their innovations across the EU. Now is the time to put these achievements into practice, linking the EU's digital assets, promoting interoperability, and accelerating the deployment of AI-enabled solutions that make health systems more resilient, equitable and efficient.

# Flagship initiative: a lifelong, personalised and digitally enabled prevention – the 'EU cares for your heart' programme

The Safe Hearts Plan encourages Member States to develop or implement standalone or integrated **national cardiovascular health plans by 2027**, taking into account existing initiatives, and will propose actions to help Member States to do so.

The Commission intends to co-create this flagship programme together with Member States, stakeholders, such as hospitals, the public health community, industry, academia and citizens, particularly young people, to ensure that it supports national health systems and puts citizens at its core for better future health.

62 This is an EU - OECD partnership: 26284fbb-0c7b-4d4d-ae57-f7f2a47e493f en.

<sup>&</sup>lt;sup>60</sup> Croatia, Czechia, Estonia, Finland, France, Latvia, Luxembourg, Netherlands, Poland, Portugal, Romania, Spain and Sweden have national cardiovascular disease control plans.

<sup>61</sup> EU4Health 2025 work programme.

<sup>&</sup>lt;sup>63</sup> European Commission, Call for proposals on lifelong prevention for a healthy life with focus on cardiovascular diseases, CR/CV&NCD-g-25-18, 26284fbb-0c7b-4d4d-ae57-f7f2a47e493f en.

<sup>&</sup>lt;sup>64</sup> Such as Finland, Denmark and Estonia.

<sup>65</sup> JADECARE, Joint Action on implementation of digitally enabled integrated person-centred care.

**Healthy dietary habits** (e.g. daily fruit and vegetable intake, and consuming less sugar, saturated fats and salt when they have a negative impact on health and when consumed disproportionately within a daily or weekly diet), reduce the risk of cardiovascular diseases. Emerging research<sup>66</sup> also highlights the role of diet in shaping the gut microbiome, thus opening new avenues for personalised medicine to address risk factors. Dietary habits also influence oral health which is in turn vital element of cardiovascular health<sup>67</sup>.

The Commission supports actions to improve dietary habits, including through the food industry-led EU Code of Conduct on Responsible Food Business and Marketing Practices<sup>68</sup> (also called the Agri-food Code), as well as Food 2030<sup>69</sup>, the research and innovation policy framework deployed under the Horizon Europe programme. In addition, the Commission supports national reformulation initiatives to reduce the levels of saturated fats, sugar and salt in the context of the overall daily or weekly diet and promotes the consumption of fruit and vegetables. The Commission has completed a review of the successful EU school scheme on fruits, vegetables and milk and milk products, and proposed its continuation beyond 2027<sup>70</sup>. Local governments could be supported and motivated to ensure that healthy foods are served in public institutions such as schools, hospitals, and government facilities. A recently published report by the Joint Research Centre on criteria for sustainable public procurement for food, catering services and vending machines can be used by local governments to ensure that healthy foods are served in public institutions<sup>71</sup>.

The increase in NCDs linked to unhealthy diets and so-called 'ultra-processed foods', makes it necessary to provide clear information to empower citizens to be aware of the nutrition choices at their disposal, and preferably choose healthier food options. Evidence-based information on food can also serve as a basis for EU or national level interventions addressing unhealthy foodstuffs and incentivising food reformulation.

The Commission has launched a study<sup>72</sup> on the impact of the consumption of so-called 'ultra-processed foods', based on the opinions of the Scientific Advisory Mechanism (SAM) and of the European Group of Ethics (EGE). These opinions will support the annual food dialogue created under the Vision for Food and Agriculture<sup>73</sup>.

<sup>&</sup>lt;sup>66</sup> Ahmad, A. F., Dwivedi, G., O'Gara, F., Caparros-Martin, J., & Ward, N. C. (2019). The gut microbiome and cardiovascular disease: Current knowledge and clinical potential. *American Journal of Physiology-Heart and Circulatory Physiology*, 317(5), H923–H938. <a href="https://doi.org/10.1152/aipheart.00376.2019">https://doi.org/10.1152/aipheart.00376.2019</a>.

<sup>&</sup>lt;sup>67</sup> Hopkins S, Gajagowni S, Qadeer Y, Wang Z, Virani SS, Meurman JH, Leischik R, Lavie CJ, Strauss M, Krittanawong C. More than just teeth: How oral health can affect the heart. Am Heart J Plus. 2024 May 24;43:100407. doi: 10.1016/j.ahjo.2024.100407. PMID: 38873102; PMCID: PMCI1169959.

<sup>&</sup>lt;sup>68</sup> Code of Conduct - Food Safety - European Commission.

<sup>&</sup>lt;sup>69</sup> Food 2030 - Research and innovation - European Commission.

<sup>70</sup> School scheme explained - European Commission.

<sup>&</sup>lt;sup>71</sup> Criteria for Sustainable Public Procurement for Food, Food Services and Vending Machines (2025), Joint Research Centre - https://publications.jrc.ec.europa.eu/repository/handle/JRC139495.

<sup>&</sup>lt;sup>72</sup> As foreseen in the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, <u>A Vision for Agriculture and Food Shaping together an attractive farming and agri-food sector for future generations</u>, COM(2025) 75 final.

<sup>&</sup>lt;sup>73</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, <u>A Vision for Agriculture and Food Shaping together an attractive farming and agri-food sector for future generations</u>, COM(2025) 75 final.

# Flagship initiative: empowering consumers through information on food processing in the EU

The Commission will work towards a new comprehensive food processing assessment system, looking into portions, frequency of intake and role in the diet, to empower consumers with transparent, accessible, science-based digital information on food processing, with the aim to ultimately encourage shifts towards healthier diets.

**Smoking** is a major cause of cardiovascular diseases as well as other NCDs. Active smoking and second-hand smoke exposure cause around 20% of coronary heart diseases. Significant progress has already been made, but smoking rates in the EU remain high, particularly among young people. In 2022<sup>74</sup>, more than one in six 15-year-olds that were surveyed stated that they had smoked cigarettes at least once during the preceding month.

The EU's legislative framework on tobacco control<sup>75</sup> has successfully contributed to the significant decline in smoking rates, including among young people<sup>76</sup>. However, novel tobacco and nicotine products, such as heated tobacco products, e-cigarettes and nicotine pouches, have become increasingly popular in recent years, especially among young people. Emerging evidence highlights the health risks associated with these products and suggests that they may serve as a gateway to nicotine addiction and traditional tobacco consumption. With a view to protecting young people in particular from the harmful effects of tobacco and related products, the Commission is considering these new developments and market trends in its on-going evaluation of the legislative framework on tobacco control.

Taxation at EU level has played a pivotal role in reducing risk factors linked to our lifestyles. Around 40% of the decline in smoking in the EU in the past decade can be attributed to taxation<sup>77</sup>. According to the World Health Organization (WHO), taxation is one of the most effective instruments in curbing tobacco consumption<sup>78</sup>. On 16 July 2025, the Commission adopted a proposal for an amendment of the Tobacco Taxation Directive<sup>79</sup> to raise excise duty rates on traditional tobacco products and to harmonise taxation on novel tobacco and nicotine products, such as e-cigarettes, heated tobacco products, nicotine pouches and other nicotine products. In the light of evolving public health challenges and significant shifts in the market, the reform aims to modernise the directive in line with the EU's health and economic priorities and to strengthen the single market. The revision of the directive will make a key contribution to achieving the objective of Europe's Beating Cancer Plan for a tobacco-free generation, where less than 5% of the population uses tobacco by 2040.

<sup>&</sup>lt;sup>74</sup> The Eurobarometer survey on Attitudes of Europeans towards tobacco and related products.

<sup>&</sup>lt;sup>75</sup> Directive 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC, OJ L 127, 29.4.2014, pp. 1–38; Directive 2003/33/EC of the European Parliament and of the Council of 26 May 2003 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the advertising and sponsorship of tobacco products, OJ L 152, 20.6.2003, pp. 16–19.

<sup>&</sup>lt;sup>76</sup> The Eurobarometer survey on Attitudes of Europeans towards tobacco and related products.

<sup>&</sup>lt;sup>77</sup> Impact analysis of the review of tobacco excise duty rules - Publications Office of the EU.

<sup>&</sup>lt;sup>78</sup> Health Promotion – WHO, tobacco taxation.

<sup>&</sup>lt;sup>79</sup> Council Directive 2011/64/EU of 21 June 2011 on the structure and rates of excise duty applied to manufactured tobacco, OJ L 176, pp. 24–36.

# Flagship initiative: modernising tobacco control legislation

The Commission intends to propose, in 2026, a revision of the legislative framework on tobacco control.

The long-term goal is for fewer than 5% of adults to be using tobacco by 2040<sup>80</sup>.

**Harmful use of alcohol** is a risk factor for cardiovascular diseases Alcohol consumption levels and patterns vary considerably across the EU.

The harmful use of alcohol, including underage and binge drinking from an early age is a significant concern<sup>81</sup>. Alcoholic beverages, such as 'alcopops'<sup>82</sup>, seem to be particularly appealing to young people. This calls for targeted approaches, focusing on harmful consumption, particularly regarding underage and binge drinking<sup>83</sup>.

Levies, taxes and duties can serve as incentives to influence consumer behaviour, encouraging healthier food choices, including by limiting the consumption of sugar-sweetened beverages and alcoholic beverages<sup>84</sup>. Since 2015, 13 Member States have introduced taxes on unhealthy food products, the majority on sugar-sweetened beverages and some on foods high in fat, sugar and salt<sup>85</sup>. The Commission will continue to support Member States in advancing taxation by discussing the design and practical implementation of such measures applied to non-alcoholic beverages with Member States.

**Sustainable support to prevention at EU level:** according to the 2025 Eurobarometer survey, citizens believe that public health is one of the top five most important areas that the EU should prioritise<sup>86</sup>. In 2022, preventive services accounted for 5.5% of the EU's total healthcare expenditure. The largest share went to curative and rehabilitative care (51.9%), followed by medical goods like pharmaceuticals (17.8%) and long-term care (16.2%). Spending on prevention does not reach 5% in the case of most of the national healthcare budgets<sup>87</sup>. In this context it is suggested to support Member States' efforts in primary prevention.

There is evidence linking a high intake of so-called 'ultra-processed foods' with high sugar, fat and salt content with the risk of developing obesity, diabetes and a range of metabolic diseases, which are risk factors for cardiovascular diseases<sup>88</sup>. Such diseases are thus having a serious impact not only on EU citizens but also on health systems and the EU's overall competitiveness. In this respect, an initiative on so-called 'ultra-processed food' related to these morbidities should be considered.

<sup>&</sup>lt;sup>80</sup> Communication from the Commission to the European Parliament and the Council, <u>Europe's Beating Cancer</u> Plan, COM(2021) 44 final.

<sup>&</sup>lt;sup>81</sup> Key findings from the 2024 European School Survey Project on Alcohol and Other Drugs (ESPAD): www.euda.europa.eu.

<sup>82</sup> Pre-mixed alcoholic drink designed to mimic the taste of a soft drink but with added alcohol.

<sup>&</sup>lt;sup>83</sup> Health Promotion and Disease Prevention Knowledge Gateway: <a href="https://knowledge4policy.ec.europa.eu/health-promotion-knowledge-gateway/alcoholic-beverages\_en">https://knowledge4policy.ec.europa.eu/health-promotion-knowledge-gateway/alcoholic-beverages\_en</a>.

<sup>&</sup>lt;sup>84</sup> Study on Health Taxes from an EU Perspective - Taxation and Customs Union.

<sup>&</sup>lt;sup>85</sup> Denmark taxes ice-cream and confectionary and Hungary taxes food products containing high levels of salt, in addition to sugar sweetened beverages.

<sup>86</sup> https://europa.eu/eurobarometer/surveys/detail/3380.

<sup>87</sup> https://data.europa.eu/en/publications/datastories/health-and-well-being-eu-investing-where-it-matters.

<sup>88</sup> Ultra-Processed Foods and Human Health, The Lancet series.

#### The Commission intends to:

- > establish a network of competent authorities to provide a forum for cooperation and coordination in the taxation of unhealthy food products to support the exchange of information and best practices among Member States;
- > set up a database of such taxes or levies in force in Member States.

Flagship initiative: based on the outcome of the study on so-called 'ultra-processed foods', the Commission will examine which appropriate tools, including possible financial actions, could be deployed to support/fund public health actions in the field of primary prevention and stimulate food reformulation and healthier consumer choices.

**Sports and regular physical activity** offer significant benefits for cardiovascular health by strengthening the heart muscle, improving blood circulation, and helping to regulate blood pressure and cholesterol levels. Promoting regular physical activity remains essential for healthier communities, disease prevention and overall well-being across the EU.

#### The Commission intends to:

- propose an update of the Council Recommendation on promoting health-enhancing physical activity across sectors;
- ➤ strengthen awareness of the link between regular physical activity and cardiovascular health through annual Europe-wide campaigns, including the #BeActive campaign and the European Week of Sport<sup>89</sup>;
- > continue to provide EU funding to support physical activity, including its crucial role in prevention, through programmes such as Erasmus<sup>+90</sup> and EU4Health.

## Focus on children and young people

Prevention of cardiovascular diseases, diabetes and obesity must start in childhood. Preventing obesity in children, in particular, is key to reducing the risk of diabetes and cardiovascular diseases in early adulthood.

Early intervention with children and young people creates a unique opportunity to establish lifelong healthy habits, including healthy diets and physical activity<sup>91</sup>. The Commission will continue to promote the consumption of fruit and vegetables. The findings from the WHO study<sup>92</sup> on children's eating habits highlight that action is needed to promote healthy eating habits among children, to increase daily consumption of fresh fruit and vegetables. Excessive consumption of foods and beverages that are high in sugar is linked to an increased risk for obesity. Schools and other educational settings can significantly influence children's and young people's eating habits through education and the provision of healthy food choices to encourage the intake of healthier foods, such as fruit and vegetables.

<sup>&</sup>lt;sup>89</sup> Starting in June 2026, these initiatives will aim to engage millions of Europeans across more than 50,000 events each year, encouraging healthier lifestyles and reducing cardiovascular risk.

<sup>&</sup>lt;sup>90</sup> Home - Erasmus+.

<sup>&</sup>lt;sup>91</sup> Study on the evaluation of the <u>EU Action Plan on Childhood Obesity</u>.

<sup>92</sup> How healthy are children's eating habits? – WHO/Europe surveillance results.

The Commission is funding collaborative actions between Member States and stakeholder-led projects that promote healthy eating and physical activity through education, and policy and community engagement<sup>93</sup>. In addition, research projects<sup>94</sup>, are focusing on identifying risk factors, e.g. obesity and on improving healthy diets<sup>95</sup>, promoting prevention, and developing personalised interventions to support lifelong healthy lifestyles specifically for children and young people. Sports and regular physical activity offer significant benefits for cardiovascular health by strengthening the heart muscle, improving blood circulation, and helping to regulate blood pressure and cholesterol levels. However, fewer than 1 in 5 boys and 1 in 10 girls (5-17 years) meet the WHO's recommended level of physical activity<sup>96</sup>.

The rapid growth in the consumption and sales of novel tobacco and nicotine products e.g. heated tobacco products, e-cigarettes, and nicotine pouches, among young people is alarming. Around one in five of young people (15-19 years) that consume tobacco and nicotine products started out by regularly using e-cigarettes<sup>97</sup>. This clearly indicates that e-cigarettes act as a gateway to nicotine addiction and tobacco use among young people.

Children and young people are particularly vulnerable to marketing on so-called 'ultra-processed' foods and foods high in fat, sugar, and salt, as well as tobacco and emerging products. The Audiovisual Media Services Directive<sup>98</sup> aims to protect viewers, including children from harmful advertising. It encourages co-regulation and self-regulation to limit children's exposure to marketing of unhealthy foods and beverages.

#### The Commission intends to:

- ➤ evaluate the Audiovisual Media Service Directive which includes rules to protect minors from harmful content, by the end of 2026, and consider a proposal for its revision;
- ➤ present a 'Toolkit for Child and Adolescent Health and Mental Wellbeing Promotion' by the end of 2026, to support policymakers in improving the physical and mental health of children<sup>99</sup>.

Climate change and environmental factors, such as air or noise pollution significantly impact cardiovascular diseases, especially among vulnerable groups. Fossil fuel combustion and extreme weather events may cause or worsen cardiovascular diseases. Climate-related cardiovascular risks are already recognised in 20 out of 27 national adaptation policies<sup>100</sup>. Switching to a clean energy economy, reducing pollution and integrating health into climate adaptation plans, especially at local level, are essential to ensure appropriate responses and lower cardiovascular disease rates.

**Vaccination** against infections, e.g. influenza, SARS-CoV-2 (COVID-19), respiratory syncytial virus, pneumococcal disease and or herpes zoster, is an effective measure to prevent

<sup>93</sup> Funded under the EU4Health programme: <u>Health4EUKids</u>; <u>Schools4Health</u>; <u>DUSE</u>; <u>RYHEALTH</u>.

<sup>&</sup>lt;sup>94</sup> <u>BIO-STREAMS</u>; <u>OBELISK</u>; <u>PAS GRAS</u>; <u>HealthyW8</u> (EUR 40 million from Horizon Europe); <u>The PREVENT</u> Living Labs: A new approach to tackling childhood obesity - PREVENT.

<sup>95</sup> Zero Hidden Hunger EU; PLAN'EAT; Co Diet (EUR 27 million from Horizon 2020 programme).

<sup>96</sup> Step Up! Tackling the Burden of Insufficient Physical Activity in Europe | OECD.

<sup>&</sup>lt;sup>97</sup> Attitudes of Europeans towards tobacco and related products - June 2024 - Eurobarometer survey.

<sup>98</sup> Audiovisual Media Services Directive.

<sup>&</sup>lt;sup>99</sup> The European Commission and UNICEF announce a new partnership to improve health outcomes for children.

100 European Climate and Health Observatory.

cardiovascular complications in high-risk groups<sup>101</sup>. Vaccinating for all these diseases for people aged 65 and over, as well as those with cardiovascular diseases, reduces the risk of heart attacks, stroke and other acute events. Influenza vaccination is associated with a 34% reduction in the risk of major adverse cardiovascular events<sup>102</sup>, highlighting immunisation as an important preventive strategy<sup>103</sup>.

The Commission supports national efforts to increase vaccination coverage through EU-funded projects <sup>104</sup>, the European Vaccination Information Portal <sup>105</sup> and campaigns like #United in Protection <sup>106</sup>. The Commission collaborates with the European Centre for Disease Prevention (ECDC) and the European Medicines Agency (EMA) to counter disinformation, support national vaccination strategies with scientific evidence, monitor the performance of immunisation programmes ensure transparency in vaccine approval, and maintain independent post-authorisation surveillance.

### The ECDC would help Member States by:

- ➤ providing guidance and capacity-building to strengthen national immunisation information systems and registries for cardiovascular disease-risk groups, including interoperability standards and reporting indicators, in accordance with the legal framework of the European Health Data Space (EHDS);
- > providing targeted training to healthcare professionals on the link between key vaccinepreventable diseases and cardiovascular diseases.

# Flagship initiative: proposal for a Council recommendation on vaccination against respiratory infections as a preventive measure for cardiovascular diseases

The Commission intends to propose a Council recommendation to promote immunisation<sup>107</sup> as a measure to prevent cardiovascular diseases, taking a lifelong approach and tackling high-risk vulnerable groups. Member States are envisaged to be offered support in identifying the target population for vaccination, and in monitoring and increasing their vaccination coverage.

The proposal for a Council recommendation would aim to encourage all Member States to report vaccination coverage data for influenza and COVID-19 respiratory syncytial virus and

<sup>&</sup>lt;sup>101</sup> Heidecker, B., Libby, P., Vassiliou, V. S., Roubille, F., Vardeny, O., Hassager, C., et al. (2025). 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), and the Heart Failure Association (HFA) of the ESC. *European Heart Journal*, *46*(36), 3518–3531. <a href="https://doi.org/10.1093/eurheartj/ehaf384">https://doi.org/10.1093/eurheartj/ehaf384</a>.

<sup>&</sup>lt;sup>102</sup> Behrouzi, B., Bhatt, D. L., Cannon, C. P., et al. (2022). Association of influenza vaccination with cardiovascular risk: A meta-analysis. *JAMA Network Open*, *5*(4), e228873. <a href="https://doi.org/10.1001/jamanetworkopen.2022.8873">https://doi.org/10.1001/jamanetworkopen.2022.8873</a> <sup>103</sup> A recent clinical consensus document from the European Society of Cardiology highlights the importance of immunisation as a preventive strategy that improves survival, reduces hospitalisations, and enhances quality of life.

<sup>&</sup>lt;sup>104</sup> European Immunisation Week 2025: EU4Health and Horizon Europe projects protecting the health of people of all ages - European Commission.

<sup>&</sup>lt;sup>105</sup> European Vaccination Information Portal.

<sup>&</sup>lt;sup>106</sup> European Commission actions on vaccination.

<sup>&</sup>lt;sup>107</sup> New systematic review and meta-analysis shows an association between shingles vaccination and lower risk of heart attack and stroke.

pneumococcal disease, and viral infections such as herpes zoster, in individuals with chronic conditions, including cardiovascular diseases, by 2029.

**Health literacy**<sup>108</sup> is crucial to empower citizens to make informed decisions about their lifestyle and habits, to engage in personalised prevention and early detection to manage risk factors like high blood pressure and to seek timely help. The Commission is working with Member States on strengthening health literacy, e.g. through the development of new tools to inform citizens on healthy lifestyles, and the creation of a European health literacy arena<sup>109</sup>. Through e-Twinning, the Commission also promotes teacher training and collaborative school projects on health literacy that deal with health, wellbeing, digital health, inclusion, healthy habits and mental health education.

#### To further support these efforts:

➤ the EU-funded European Code against Cancer<sup>110</sup> will be updated with recommendations for the prevention of cancer and other non-communicable diseases such as cardiovascular diseases that share common risk factors.

#### 4. PILLAR 2: EARLY DETECTION AND SCREENING OF THOSE AT RISK

Early detection and screening are important public health tools in disease prevention, in particular for cardiovascular diseases, given their scale, cost and largely preventable nature. Investing in early detection and screening programmes through health checks can enable the timely identification of individuals at high risk (e.g. those with high blood pressure, high cholesterol or obesity), before symptoms emerge. Personalised medicine approaches are critical to enable early detection and diagnosis, through the identification of patients at risk<sup>111</sup>.

In addition to traditional screening areas, detection of kidney disease, and congenital conditions such as elevated lipoprotein(a) (which affects every fifth person), the presence of familial hypercholesterolemia, cardiomyopathies as well as early detection of heart failure risk, or detection of obstructive sleep apnoea, should also be included in the scope of the screening.

It is essential for citizens to know the key cardiovascular risk factors e.g. high blood pressure, cholesterol, blood sugar and body weight, genetic predisposition as this data provides a clear picture of the heart-health risk. People who understand their own risk profile are better equipped to make lifestyle changes and engage proactively with the health system, leading to earlier detection, effective management, and significantly lower likelihood of cardiovascular events. Early detection can prevent disease progression, reduce hospital admissions and avoid costly emergency care. Screening initiatives should be adapted to national and regional situations and should include large-scale screening of a defined population group based on age, sex, gender and other protected characteristics<sup>112</sup> or geographical area. They should also be targeted at specific subgroups of the population that are at a higher risk because of their family history, medical history or lifestyle or environmental factors.

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 $<sup>^{108}</sup>$  The ability to understand, access and use health information which is essential in the prevention of cardiovascular diseases.

<sup>&</sup>lt;sup>109</sup> Strengthening health literacy to reduce inequalities in cancer and other NCDs. JA PreventNCD.

<sup>&</sup>lt;sup>110</sup> ECAC5 project - Revision and update of the European Code against Cancer.

<sup>&</sup>lt;sup>111</sup> <u>POCCardio</u> project, funded by Horizon Europe (EUR 14 million).

<sup>&</sup>lt;sup>112</sup> Non-discrimination - European Commission.

Risk prediction tools<sup>113</sup> are used to estimate a person's risk of developing cardiovascular disease. They typically include indicators (e.g. blood sugar and lipid levels, blood pressure measurements and body mass index) and assessment of lifestyle factors (e.g. smoking, physical activity and nutrition). However, blood pressure monitoring rates are still suboptimal across the EU, especially among older people. Regular monitoring through health checks would enable early detection and timely management of high blood pressure, significantly reducing the risk of heart attacks, strokes, and other cardiovascular complications, while supporting healthier ageing and improved quality of life.

To ensure wide coverage of the screening programme, the Commission is ready to support Member States in organising community-based screening initiatives that bring preventive health services directly to the population. Relevant stakeholders should be invited to participate and contribute their expertise.

The current poor state of cardiovascular health is also attributable to other risk factors, such as genetic conditions including familial hypercholesterolemia (FH) or elevated levels of lipoprotein(a), which can now be easily screened. These inherited conditions remain significantly underdiagnosed across the EU. FH affects around 1 in 250 individuals, but fewer than 10% of cases are detected and diagnosis is often delayed until after a cardiovascular event has occurred. To strengthen cardiovascular disease prevention, particularly among children and young adults, ongoing EU-funded projects<sup>114</sup> are supporting the development of strategies for earlier diagnosis and management of inherited conditions to improve outcomes for patients and their families.

#### The Commission intends to:

work closely with the Member States to support the introduction of early detection initiatives or screening programmes for FH, depending on the population risk.

In addition, Member States could make use of cohesion funds to enhance laboratory capacity, genetic testing services, and digital registries. Member States may consider incentives to stimulate participation in screening programmes. This could take the form of initiatives to facilitate timely follow-up after screening, helping citizens to benefit from early detection while fully respecting Member States' responsibility for organising and managing their health systems.

The integration of risk prediction tools empowers both individuals and healthcare providers to make informed decisions and apply personalised prevention plans. For example, polygenic risk scores<sup>115</sup> have the potential to assess the personal risk of developing cardiovascular diseases with a genetic background. When combined with digital tools, AI and advanced computational models, including Virtual Human Twins<sup>116</sup>, in early detection efforts could further reduce hospitalisations, improve health outcomes, and generate economic benefits by shifting the

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<sup>&</sup>lt;sup>113</sup> SCORE2 risk prediction algorithms: new models to estimate 10-year risk of cardiovascular disease in Europe. *European Heart Journal*. 42 (25), 2439-2454. <a href="https://doi.org/10.1093/eurheartj/ehab309">https://doi.org/10.1093/eurheartj/ehab309</a>.

<sup>&</sup>lt;sup>114</sup> FH-EARLY and BIOMARCARE; PERFECTO.

<sup>&</sup>lt;sup>115</sup> Schunkert, H., Di Angelantonio, E., Inouye, M., Patel, R. S., et al. (2025). <u>Clinical utility and implementation of polygenic risk scores for predicting cardiovascular disease</u>, <u>European Heart Journal</u>, Oxford Academic. 46(15), 1372-1383. https://doi.org/10.1093/eurheartj/ehae649.

<sup>&</sup>lt;sup>116</sup> Virtual Human Twins initiative for health and care.

focus from treatment to prevention. This approach could save lives and generates long-term economic and societal benefits.

Cardiovascular diseases, unlike cancer, lack a harmonised protocol for early detection and diagnosis. This results in fragmented approaches across the EU, and that in turn hinders data federation and collection of comparable data. The Safe Hearts Plan includes the development of an **EU protocol on health checks** to improve timely detection and early diagnosis, reduce health inequalities and lower healthcare costs. The protocol would provide a framework for Member States to implement health checks to support the early detection of cardiovascular diseases, diabetes and obesity. By identifying individuals at-risk and helping them to better understand and manage their health proactively, the protocol would facilitate the shift from treatment towards prevention. It also aims to address the challenges related to standardisation across Member States, data management, integration of care pathways and the comprehensiveness of screening programmes.

Mobile and community-based health delivery models have already proven their value across Europe. Several EU level screening initiatives<sup>117</sup> demonstrate that bringing screening and health services directly to people increases uptake, builds trust and improves early detection rates. Expanding such models in the different Member States can strengthen prevention, early diagnosis and citizen engagement, particularly in rural or underserved areas.

### Flagship initiative: EU protocol on health checks for cardiovascular diseases

In 2026, the Commission will propose a Council recommendation on health checks for cardiovascular diseases to support a common approach for Member States in developing and implementing national health checks. The Commission intends to support the pilot-testing and launch of the EU protocol on health checks in Member States, as well as launch awareness campaigns ('Know Your Numbers') to support this initiative.

The proposal for a Council recommendation is envisaged to recommend screening towards specific targets that support the general and intermediate targets linked with decreasing cardiovascular disease burden. The Council recommendation would also support the identification and implementation of incentives to participate in screening programmes.

The Commission intends to support Member States in the piloting of mobile screening outreach programmes to attain a high level of screening coverage levels.

# 5. PILLAR 3: LIVING WITH CARDIOVASCULAR DISEASES - IMPROVING PATIENT TREATMENT AND CARE

Prevention is key to reducing cardiovascular diseases, but access to high-quality, coordinated and patient-centred care also remains essential. Many people live with multiple chronic diseases, and therefore require long-term, multidisciplinary support and care. Young people living with cardiovascular diseases have different needs from older people. Evidence shows that personalised treatments and care can reduce healthcare costs and improve quality of life<sup>118</sup>.

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<sup>&</sup>lt;sup>117</sup> EUCanScreen, Solace, Oncoscreen.

<sup>&</sup>lt;sup>118</sup> Casassus, B. (2025). Patients with chronic diseases do better with personalised care, international survey finds. *BMJ*, 388, r365. <a href="https://doi.org/10.1136/bmj.r365">https://doi.org/10.1136/bmj.r365</a>.

Approaches to stratify patients, such as pharmacogenomics, can improve treatment outcomes, notably by predicting treatment response and reducing complications and adverse effects<sup>119</sup>.

Clinical guidelines can improve healthcare system efficiency and support better patient outcomes. However, the lack of common standards for treatment and care across Member States leads to inequalities and inefficiencies. Patients need tools and guidance to monitor their health and follow treatment pathways, for example, on how to monitor their blood pressure, adhere to medication, and to adopt lifestyle changes. Digital tools, such as telemedicine, electronic health records and connected devices, can support self-management, continuity of care and access to care, especially in rural and underserved regions. These technologies also help prevent avoidable hospitalisations and support integrated and patient-centred care models. It is important that such tools are accessible for older people and persons with disabilities, ensuring interoperability with assistive devices.

Integrated care models in primary care and community settings can, especially for people with multimorbidity, such as living with chronic kidney disease, diabetes and cardiovascular disease, reduce unplanned hospital admissions and improve quality of life while saving costs. Patient-centred approaches bring benefits, but such approaches are less frequently covered in national cardiovascular health plans<sup>120</sup>. The feasibility of adapting person-centred digital cancer care models<sup>121</sup> for cardiovascular care (e.g. cardiac rehabilitation and the monitoring of symptoms and health metrics), can be explored through multi-country pilot projects. It is also possible to enhance and roll out innovative ICT-enabled integrated care solutions tailored specifically to advance multi-disciplinary health and care for patients with chronic heart failure<sup>122</sup>.

#### The Commission intends to:

➤ set up an EU network of cardiovascular health centres to bring together expertise and facilitate the uptake of diagnosis and treatment, as well as rehabilitation and long-term care and effective management, including adherence to treatment and medical advice<sup>123</sup>.

People living with cardiovascular diseases often experience anxiety, fear of recurrence, and difficulty adjusting to lifestyle changes and long-term treatments. All these factors can negatively impact quality of life and mental health. The Commission's comprehensive approach to mental health<sup>124</sup> recognises the link between physical and mental health, and prioritises support for vulnerable population groups, including those with chronic conditions. The Commission will continue, through initiatives, such as the EU PROMENS<sup>125</sup> training and exchange programme on mental health, to equip health, social care and education professionals with the skills needed to deliver integrated, multidisciplinary, and person-centred mental health care. It will also continue supporting the education and training of future specialists in

<sup>&</sup>lt;sup>119</sup> <u>HT-ADVANCE119</u>, a project funded under Horizon Europe; Shorbaji, A., Pushparaj, P. N., Al-Ghafari, A. B. et al. A narrative review of research advancements in pharmacogenetics of cardiovascular disease and impact on clinical implications. (2025). *NPJ Genom. Med.* 10, 54. https://pubmed.ncbi.nlm.nih.gov/40640196/.

<sup>&</sup>lt;sup>120</sup> OECD report (2025) 'The state of cardiovascular health in the EU'.

<sup>&</sup>lt;sup>121</sup> eCAN – Joint Action.

<sup>122</sup> INCAREHEART project funded under Horizon 2020.

<sup>&</sup>lt;sup>123</sup> This will build on projects such as JACARDI and stakeholder-led projects.

<sup>&</sup>lt;sup>124</sup> EU comprehensive approach to mental health.

<sup>125</sup> EU-PROMENS Project Page - EU-PROMENS.

cardiovascular diseases, and interdisciplinary training in well-being, including through European Universities alliances<sup>126</sup>.

Rehabilitation after acute events, such as a heart attack or stroke, is vital in reducing the risk of death and disabilities through the patient pathway. It must be multidisciplinary and comprehensive, and address physical, psychological and social needs. Rehabilitation and continuity of care must be an integral part of national strategies. To ensure truly personalised care, it is essential to apply lived experience across the cardiovascular disease continuum, especially in management and care approaches.

**Medical devices** and innovative technologies play an essential role in cardiovascular care. The Commission has proposed a revision of the EU legislative framework on medical devices <sup>127</sup> and in vitro diagnostic medical devices <sup>128</sup>, to simplify procedures and make requirements more cost effective and proportionate, while preserving a high level of protection for patients. This includes an accelerated regulatory pathway for breakthrough medical devices to ensure their timely availability for EU citizens. A pilot of the pathway is in preparation and will be launched in early 2026. It will place particular focus on cardiovascular and paediatric breakthrough devices.

Access to affordable, safe and innovative medicines has been central in the reduction of deaths from cardiovascular diseases. The revision of the EU's pharmaceutical legislation intends to modernise the regulatory framework, incentivise research and innovation, streamline the authorisation process and cut red tape, enabling faster authorisation and patient access to innovative treatments. It also aims to make the European Medicines Agency more agile and support access to essential cardiovascular-related medications. Moreover, the proposed Critical Medicines Act<sup>129</sup> aims to improve the availability, supply and production of critical medicines within the EU, including certain medicines used in the treatment of cardiovascular diseases<sup>130</sup>.

The proposal for a Biotech Act<sup>131</sup> aims to bring biotech from the laboratory to the factory and then onto the market, with a focus on health, to accelerate the time-to-market for biotech products, and to boost the entire ecosystem to create a more innovation-friendly environment.

In the EU, **clinical trials** are the foundation to generate the necessary evidence to enable safe, effective and innovative treatments that can improve cardiovascular outcomes. Decentralised

EUTOPIA Alliance, CIVIS European University Alliance, European University Alliance for Global Health, and EC2U Alliance offers education and training relevant to public health.

<sup>127</sup> Proposal for a Regulation of the European Parliament and of the Council amending Regulations (EU) 2017/745 and (EU) 2017/746 as regards simplifying and reducing the burden of the rules on medical devices and in vitro diagnostic medical devices, and amending Regulation (EU) 2022/123 as regards the support of the European Medicines Agency for the expert panels on medical devices and Regulation (EU) 2024/1689 as regards the list of Union harmonisation legislation referred to in its Annex I.

<sup>&</sup>lt;sup>128</sup> Regulation (EU) 2017/746 of the European Parliament and of the Council of 5 April 2017 on in vitro diagnostic medical devices, OJ L 117, 5.5.2017, p. 176–332.

<sup>129</sup> Critical medicines act - Public Health - European Commission.

<sup>&</sup>lt;sup>130</sup> The current EU List of Critical Medicines includes medicines that are relevant for cardiovascular care. European Medicines Agency (EMA).

<sup>&</sup>lt;sup>131</sup> COM(2025) 1022 [Proposal for a Regulation of the European Parliament and of the Council on establishing a framework of measures for strengthening Union's biotechnology and biomanufacturing sectors particularly in the area of health and amending Regulations (EC) No 178/2002, (EC) No 1394/2007, (EU) No 536/2014, (EU) 2019/6, (EU) 2024/795 and (EU) 2024/1938]; COM(2025) 1031[Proposal for a Directive of the European Parliament and of the Council amending Directives 2001/18/EC and 2010/53/EU as regards the placing on the market of genetically modified micro-organisms and the processing of organs].

clinical trials supported by digital health technologies are key to increasing patient participation, streamlining monitoring, and improving clinical outcomes. Enabling decentralised approaches is particularly important in cardiovascular trials, where the target population is often frail and therefore can be difficult to reach or retain. The proposal for a Biotech Act aims to enable the authorisation of clinical trials with decentralised elements to simplify the rules for the authorisation and conduct of clinical trials, to shorten the time to market for innovative medicines, including those used in cardiovascular care. The forthcoming Clinical Research Investment Plan will propose ways to facilitate funding for multi-country clinical trials and to further streamline European research infrastructures in the field of clinical research <sup>132</sup>.

The updated harmonised EU-level best-practice guidance under the initiative 'accelerate clinical trials' (ACT EU)<sup>133</sup> is intended to help the uptake of decentralised elements in clinical trials by providing consistent, practical instructions for sponsors and trial sites across Member States.

The EU Regulation on **Health Technology Assessment**<sup>134</sup> supports Member States' cooperation on the clinical assessment of new health technologies comparing them with existing treatments. Since the start of 2025, advanced therapy medicinal products targeting cardiovascular disease, are subject to joint clinical assessment. Eligible high-risk medical devices are mainly implantable and are mostly intended for treatment of cardiovascular diseases. In 2026, joint clinical assessments of high-risk medical devices will start, such as stents or cardiac valves, helping Member States to make faster and informed decisions on their pricing and reimbursement. Furthermore, the joint scientific consultations will provide health technology developers with recommendations on their development plans to enhance the quality of clinical studies.

Funding opportunities are available to Member States under the Technical Support Instrument<sup>135</sup>, which provides tailor-made technical expertise to Member States to design and implement reforms<sup>136</sup>. In addition, relevant investments to improve population health outcomes in general, including for cardiovascular disease, can draw on funds made available through the EU cohesion funds. Member States have EUR 7.3 billion allocated from the European Regional Development Fund across national, regional and Interreg programmes, for investments in health infrastructure, equipment and cooperation across borders.

Following the development of an effective early detection and screening approach, the Commission intends to support the development and piloting of **EU guidance on personalised treatment and monitoring of cardiovascular diseases, to** ensure appropriate follow-up care. This would help to strengthen cardiovascular care, support data collection, facilitate the integration of data across the EU and help develop more robust treatments and management strategies for cardiovascular diseases and their comorbidities.

<sup>&</sup>lt;sup>132</sup> Strategy for European Life Sciences - Research and innovation.

Recommendation paper on decentralised elements in clinical trials.

Regulation (EU) 2021/2282 of the European Parliament and of the Council of 15 December 2021 on <u>health</u> technology assessment, OJ L 458, 22.12.2021, p. 1–32.

<sup>&</sup>lt;sup>135</sup> Technical Support Instrument (TSI).

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<sup>&</sup>lt;sup>136</sup> Regulation (EU) 2021/240 of the European Parliament and of the Council of 10 February 2021 establishing a Technical Support Instrument, OJ L 57, 18.2.2021, p. 1-16.

# Flagship initiative: proposal for a Council recommendation on personalised treatment and monitoring of cardiovascular diseases

The Commission intends to propose, in 2027, a Council recommendation to improve the quality and consistency of personalised and integrated care pathways for cardiovascular diseases and related conditions, including using digital tools.

This proposal is envisaged to complement and inform the deployment of digital and AI-based solutions supported under the EU4Health programme (see Chapter 6) and help to improve access to essential treatments across the EU.

### 6. INTEGRATING DATA AND DIGITALISATION IN CARDIOVASCULAR HEALTH

**Digital technologies and AI** are reshaping how cardiovascular diseases are prevented, detected, and managed. They can transform the way clinicians and patients address related conditions such as hypertension, diabetes and obesity, which are key risk factors for cardiovascular disease. By integrating genetic information, clinical and imaging data, lifestyle patterns and environmental determinants, AI can make it possible to more precisely predict cardiovascular risk and tailored interventions accordingly. Personalised prevention can strengthen existing population-based measures, empowering individuals to engage directly in managing their cardiovascular health. Digital and data-driven tools are essential to making this shift a reality. They enable earlier detection, targeted treatment and more efficient use of healthcare resources, amplifying the impact of prevention strategies across Member States.

The EU's digital health transformation is entering a new phase, moving from data access and exchange towards practical, data-driven applications that improve prevention, diagnosis and care. To achieve this, the Commission intends to support the deployment of interoperable digital infrastructures and trustworthy AI solutions in alignment with the EHDS<sup>137</sup>, continuing from previous actions under EU4Health and Digital Europe programmes. This also requires clinically validated AI tools, supported by robust evidence on performance, safety and real-world effectiveness in clearly defined clinical workflows. In parallel, the increasing use of consumer digital monitors can support individuals in tracking lifestyle and cardiovascular risk factors, provided information is used in a protected and responsible way.

The rapid evolution of digital technologies and AI is opening new possibilities. What began as a focus on data accessibility, data sharing and interoperability must now be directed towards data-driven health applications that actively support prevention, diagnosis, and healthcare optimisation, while increasing the efficiency and contributing to the sustainability of healthcare systems. The next stage of the EU's digital health transformation should move beyond mere health data exchange to developing intelligent tools that can predict risk, guide personalised prevention, automate diagnostics, enhance clinical decision-making and optimise various aspects of health services.

However, persistent barriers are limiting progress in cardiovascular medicine. Data relevant to cardiovascular diseases, including those linked to hypertension, diabetes and obesity and other risk factors, remain fragmented across care settings and data registries and therefore are not ready to use for effective health actions. They are often incomplete, lack standardisation or are

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<sup>&</sup>lt;sup>137</sup> Also connecting it to other relevant European dataspaces such as the Green Deal dataspace.

not sufficiently representative of diverse populations. In most cases, cardiovascular datasets are also not systematically linked with environmental risk factor data (e.g. air pollution), although such integration could improve risk prediction and prevention strategies. This hampers the development of accurate and equitable AI models for cardiovascular risk prediction and treatment optimisation. Interoperability gaps and limited integration of digital tools into cardiology workflows constrain their clinical validation and daily use. The lack of cross-border and longitudinal data of high quality further limits the ability to generate real-world evidence and to deploy trustworthy AI applications safely and effectively across the EU. Ensuring that datasets are diverse, and representative is also important to avoid algorithmic biases, as AI models trained on incomplete or unbalanced data, risk overlooking sex- and gender-related differences in symptoms, risk factors and treatment responses<sup>138</sup>.

The Safe Hearts Plan shifts the focus from fragmented pilot initiatives to coordinated deployment at scale. The plan aims to mobilise diverse, high-quality health data through interoperable digital infrastructures, and to promote trustworthy, clinically validated AI solutions. It can support the better deployment of public computational infrastructures, and the sharing of health applications. It will reinforce prevention, strengthen clinical and care pathways; reduce inequalities across regions, and support personalised, data-driven treatment of cardiovascular diseases. It will also enhance EU's capacity to innovate and compete globally in digital health and cardiovascular medicine.

**High-quality, diverse and representative health data** are essential for advancing cardiovascular research, innovation, and patient care. However, most Member States lack comprehensive national registries for cardiovascular disease and diabetes, and this lack is constraining robust clinical research, the development of personalised care solutions, and informed policymaking.

The EHDS is supported by EU investments in infrastructure and standards and is a cornerstone of the EU's data-driven innovation, in the cardiovascular field. The EHDS sets up a common framework that will facilitate efforts to securely access and link clinical, lifestyle, and genomic data across the EU. It will connect and unlock the value of initiatives such as 1+ Million Genomes<sup>139</sup> and Genome of Europe<sup>140</sup>, turning their assets into interoperable resources for prevention, care and research. This will enable earlier risk identification, better patient stratification, and more targeted interventions.

AI is transforming cardiovascular care through earlier detection, more accurate risk prediction, and personalised treatment. The AI Act sets clear rules for high-risk AI systems in healthcare, and the AI Continent Action Plan<sup>141</sup> and Apply AI Strategy<sup>142</sup> will guide investment and deployment. This will foster innovation and competitiveness in health and other strategic sectors.

The Commission is funding multi-country real-world evaluations and the responsible deployment of AI tools in clinical settings<sup>143</sup> under several actions supported from EU4Health

<sup>&</sup>lt;sup>138</sup> For example, the project <u>CARAMEL</u> funded under Horizon Europe.

<sup>139</sup> European '1+ Million Genomes' initiative.

<sup>&</sup>lt;sup>140</sup> Genome of Europe project launched: the first step towards a European reference genome.

<sup>&</sup>lt;sup>141</sup> The AI Continent Action Plan.

<sup>&</sup>lt;sup>142</sup>Apply AI Strategy.

<sup>&</sup>lt;sup>143</sup> SHAIPED is funded under the Digital Europe Programme.

and Digital Europe programmes. The application of AI to medical imaging represents one of the most mature, high-impact, and rapidly evolving domains<sup>144</sup>. These efforts are complemented by testing and experimentation facilities under the Digital Europe Programme, and an EU network of advanced screening centres under the Apply AI strategy<sup>145</sup> acting as testbeds for the deployment of multimodal AI-based imaging solutions in cardiovascular and cancer applications.

Member States may request tailored technical assistance under the Technical Support Instrument to prepare governance, regulatory and organisational reforms that enable the integration of AI in cardiovascular care, in line with the EHDS Regulation and other relevant EU regulatory frameworks.

Building on this momentum, the Commission will launch a flagship initiative to advance AI and data-driven solutions for cardiovascular and related diseases, enabling earlier detection, personalised care and rehabilitation, including for rare and complex cases.

# Flagship initiative: incubator for innovation and integration of AI and digital technologies in cardiovascular healthcare

The Commission will support a EUR 20 million flagship initiative<sup>146</sup> to accelerate the deployment and application of AI and data-driven tools for early detection, personalised prevention, integrated care for cardiovascular diseases, diabetes and obesity. The incubator will prioritise real-world uptake, cross-border validation and integration in care pathways, including for rare and complex cases. The Commission will scale up successful outcomes to support the broader use of digital tools for personalised prevention and management.

The flagship initiative aims to identify a common definition of a core set of technical specifications for datasets to be used in AI development and validation, by 2030, thus ensuring equitable access to these innovations across participating Member States.

The flagship initiative also aims to publish a **blueprint for cardiovascular AI deployment**, guiding validation, clinical integration and monitoring of AI tools in cardiology.

### 7. REACHING EVERY CITIZEN

Women are disadvantaged by significant inequalities in cardiovascular care because they are often underdiagnosed, undertreated and underrepresented in clinical trials<sup>147</sup>. This leads to delayed diagnosis and treatment<sup>148</sup>. Health literacy campaigns are vital to raising among both

<sup>&</sup>lt;sup>144</sup> European Commission: Joint Research Centre (2025(, <u>AI-driven innovation in medical imaging – Focus on lung cancer and cardiovascular diseases</u>; Targeted initiatives will build on projects e.g. <u>COMPASS AI</u>, the <u>EHDS</u> infrastructures, <u>ICUdata4EU</u> and <u>INDICATE</u>.

Apply AI Strategy; Home - TEF-Health - Testing and Experimentation Facility for Health and Robotics.
 EU4Health 2025 work programme.

<sup>&</sup>lt;sup>147</sup> Zannad, F., Berwanger, O., Corda, S., et al. (2024). How to make cardiology clinical trials more inclusive. *Nature Medicine*, *30*, 2745–2755. https://doi.org/10.1038/s41591-024-03273-3.

<sup>&</sup>lt;sup>148</sup> El Bassiri, Y., Azeem, A., Sharma, A. C., Hassan, M., Hassan, M., & Omari, I. (2025). Gender disparities in ischemic heart disease management: Underdiagnosis in women and differences in treatment. *Cureus*, *17*(8), e89912. <a href="https://doi.org/10.7759/cureus.89912">https://doi.org/10.7759/cureus.89912</a>; <a href="https://doi.org/10.7759/cureus.89912">Eurostat</a>; <a href="https://do

patients' and health professionals' awareness of specific symptoms and risks<sup>149</sup>. Young people are central to prevention efforts. Actions must start early and reflect their needs, ensuring a cross-sectoral approach to improving young people's health. Socio-economically disadvantaged groups experience poorer health outcomes and limited access to preventive care<sup>150</sup>. Addressing these inequalities requires a coordinated approach across the care pathway.

# Flagship initiative: addressing inequalities

The Commission intends to:

- ➤ develop an EU cardiovascular health inequalities dashboard that is modelled on the European Cancer Inequalities Registry<sup>151</sup> and based on existing data; and
- ➤ invest in research under Horizon Europe to advance the understanding of sex and/or gender-specific mechanisms of cardiovascular diseases, including, risk factors and disease pathway<sup>152</sup>.

#### 8. ADDRESSING THE RESEARCH AND INNOVATION GAP

To date, the EU has invested almost EUR 2.3 billion in cardiovascular and related research through the EU framework programmes for research and innovation<sup>153</sup>. The funding has supported research on the development of more effective preventive, diagnostic, therapeutic and monitoring approaches to improve the health of citizens.

However, breakthrough therapeutic innovation remains limited for cardiovascular diseases. Few new therapies have reached the market in recent years <sup>154</sup>. Most advances have built on existing treatments rather than developing new ones <sup>155</sup>.

There is a need to deepen our understanding of the disease mechanisms, early prevention, personalised risk prediction, and treatment optimisation to deliver effective, patient-centred and tailored care and to develop innovative diagnostics, medicines, and digital tools. Several systemic barriers, including the high cost and complexity of large-scale clinical trials and fragmented research efforts, further discourage private sector engagement. Furthermore, specific efforts need to be made to understand the mechanisms leading to cardiovascular differences between men and women.

To address these challenges, EU funded ongoing public and private initiatives like the Innovative Health Initiative 156 (IHI) foster collaboration between academia, industry, and clinicians to co-develop new therapies and technologies for the prevention, detection,

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<sup>&</sup>lt;sup>149</sup> Al Hamid, A., Beckett, R., Wilson, M., et al. (2024). Gender bias in diagnosis, prevention, and treatment of cardiovascular diseases: A systematic review. *Cureus*, *16*(2), e54264. <a href="https://doi.org/10.7759/cureus.54264">https://doi.org/10.7759/cureus.54264</a>. <a href="https://doi.org/10.7759/cureus.54264">150 OECD report (2025)</a> 'The state of cardiovascular health in the European Union | OECD.

<sup>151</sup> European Cancer Inequalities Registry (ECIR).

<sup>152</sup> Horizon Europe Cluster 1 2026-2027 work programme: indicative funding EUR 40 million.

<sup>153</sup> Horizon 2020; Horizon Europe.

<sup>&</sup>lt;sup>154</sup> Global Trends in R&D 2024: Activity, productivity, and enablers - IQVIA.

<sup>&</sup>lt;sup>155</sup> Jackson, N., Atar, D., Borentain, M., et al. (2016). Improving clinical trials for cardiovascular diseases: A position paper from the Cardiovascular Round Table of the European Society of Cardiology. *European Heart Journal*, 37(9), 747–754. <a href="https://doi.org/10.1093/eurhearti/ehv213">https://doi.org/10.1093/eurhearti/ehv213</a>.

<sup>156</sup> Innovative Health Initiative Joint Undertaking.

diagnostic, treatment and care of cardiovascular diseases and other chronic diseases. IHI is launching a large project that brings together municipalities across Europe with researchers, healthcare providers, pharmaceutical and medical technology industry to have a better understanding of how cardiovascular care is organised and delivered, identify best practices, and promote integrated, patient-centred solutions across the EU.

A better understanding of microbiomes, through a One Health approach, will create opportunities to improve and create new products for health, as outlined in the Strategy for European Life Sciences. The PROPHET project<sup>157</sup>, funded by Horizon Europe, will deliver, by the end of 2025, a Personalised Prevention Strategic Research and Innovation Agenda (SRIA) to support the definition and implementation of innovative, sustainable and high-quality personalised strategies that are effective in preventing chronic diseases. The PROFID<sup>158</sup> project on the prevention of sudden cardiac death after myocardial infarction by defibrillator implantation has revealed important data on the effectiveness of defibrillator implantation. Such initiatives need to be continued to enable decision makers to choose the most efficient health technologies in the field of cardiovascular treatment and care. The European Virtual Human Twins initiative<sup>159</sup> supports actions that advance personalised cardiovascular care and accelerate the adoption of next-generation digital solutions. Such initiatives need to be continued to enable decision makers to choose the most efficient health technologies in the field of cardiovascular treatment and care.

Member States and regions could use the allocated cohesion funds from the European Regional Development Fund<sup>160</sup> to strengthen their research and innovation ecosystems on health. Moreover, the Interregional Innovation Investments (I3) Instrument<sup>161</sup> could help to scale up innovative health solutions, enhance territorial linkages and better integrate research and innovation across countries and regions.

Public procurement is a powerful catalyst for innovation tailored to user needs. EU funding programmes invest in innovation procurement to foster demand-driven innovation incentivising suppliers to co-create with procurers and deliver innovative solutions addressing the needs of healthcare professionals.

To strengthen research on personalised prevention and to unlock the full potential of innovation, the EU needs a **cardiovascular research and innovation roadmap** that streamlines funding, expands research capacity, and targets unmet needs.

# Flagship initiative: closing the cardiovascular research gap

The Commission intends to launch a flagship initiative to address the research and innovation gap for cardiovascular diseases with the aim of improving understanding of cardiovascular disease mechanisms and support the uptake of innovative tools for personalised risk prediction and the optimisation of treatment.

<sup>&</sup>lt;sup>157</sup> PROPHET.

PROFID PROJECT.

<sup>&</sup>lt;sup>159</sup>Virtual Human Twins initiative for health and care.

<sup>&</sup>lt;sup>160</sup> European Regional Development Fund (ERDF) - European Commission.

<sup>&</sup>lt;sup>161</sup> Interregional Innovation Investments (I3) Instrument - European Innovation Council and SMEs Executive Agency (EISMEA).

### This will involve:

- establishing a Cardiovascular Disease Research and Innovation Roadmap to accelerate innovation and translation of research into practice on risk prediction, and personalised and digital approaches for early detection and screening, especially for women and vulnerable groups<sup>162</sup>;
- research on **innovative healthcare interventions for cardiovascular diseases and diabetes,** including AI and digital approaches, to improve risk prediction, early detection and screening practices through personalised prevention and care pathways<sup>163</sup>;
- research on the role of **sustainable and healthy diets** for cardiovascular disease prevention with the support of digital tools, including the link between nutrition, the gut microbiome and cardiovascular disease<sup>164</sup>;
- research on **cardiovascular, metabolic and renal diseases**, under the European Partnership for Personalised Medicine<sup>165</sup>;
- ➤ funding of **Public Procurement of Innovation** for personalised healthcare approaches including cardiovascular diseases 166;
- ➤ pre-clinical research and multi-country clinical trials on cardiovascular diseases, nanomedicine, nutrition and healthy lifestyles under the European Partnership that fosters a European Research Area for health research (ERA4Health)<sup>167</sup>.

#### 9. WORKING TOGETHER: A FRAMEWORK FOR COLLABORATION AND MONITORING

Tackling cardiovascular diseases requires a **multi-stakeholder and cross-sectoral effort**, that brings together policymakers, health professionals, researchers, healthcare institutions, industry, civil society, and people with lived experience, to drive innovation, share knowledge, and place citizens at the heart of our solutions.

The Youth Advisory Group<sup>168</sup> of the Prevent NCD joint action provides a blueprint for how young people's perspectives can be integrated, including at national level, into the prevention and care of NCDs, such as cardiovascular diseases<sup>169</sup>.

#### The Commission intends to:

➤ continue to develop actions with Member States through the Expert Group on Public Health<sup>170</sup>, which is the main forum for discussions on the prevention and management of cardiovascular diseases and other NCDs;

<sup>&</sup>lt;sup>162</sup> Horizon Europe Cluster 1 work programme 2026-2027: indicative funding EUR 2 million.

<sup>&</sup>lt;sup>163</sup> Horizon Europe Cluster 1 work programme 2026-2027: indicative funding EUR 64 million.

<sup>&</sup>lt;sup>164</sup> Horizon Europe Cluster 6 work programme 2026-2027: indicative funding EUR 12 million.

<sup>&</sup>lt;sup>165</sup> Horizon Europe: indicative funding EUR 38 million.

<sup>&</sup>lt;sup>166</sup> Horizon Europe Cluster 1 work programme 2026-2027: indicative funding EUR 24.5 million.

<sup>&</sup>lt;sup>167</sup> European Partnership fostering a European Research Area for health research (ERA4Health).

<sup>&</sup>lt;sup>168</sup> JA PreventNCD Youth Advisory Group.

<sup>&</sup>lt;sup>169</sup> The Commission held a discussion with a group of young people with lived experience who shared their personal stories on living with cardiovascular diseases or related conditions - <u>Cardiovascular health</u> - <u>Public Health</u> - <u>European Commission</u>.

<sup>170</sup> Expert Group on Public Health - Public Health - European Commission.

- > create a network of cardiovascular and diabetes experts<sup>171</sup>, including medical societies and patient organisations;
- > support targeted actions<sup>172</sup> to reduce cardiovascular disease and diabetes risk among vulnerable groups, especially women;
- > strengthen collaboration between cardiovascular experts and cancer experts to support the joint efforts on prevention of diseases;
- > support a thematic network under the EU Health Policy Platform<sup>173</sup> will enable sustained stakeholder dialogue and action, focusing on young people;
- ➤ launch a call for evidence-based public health interventions on cardiovascular diseases and related risk factors including diabetes and obesity under the EU Best Practice Portal<sup>174</sup>.

Cardiovascular diseases are a **global public health challenge**. They are the leading cause of death worldwide and account for 32% of all global deaths. Tackling this challenge requires collaboration with countries that share common challenges. At the global level, the Commission will cooperate in the fight against cardiovascular diseases and other NCDs by accelerating progress through joint projects to reduce their burden through the exchange of best practices and approaches in the context of global collaboration with non-EU countries, international partners, global health institutions and actors, and stakeholders, including in the context of the Global Alliance for Chronic Diseases (GACD), which is co-funded by the Commission<sup>175</sup>

#### 10. CONCLUSION

The Safe Hearts Plan contains concrete and ambitious actions that will tangibly improve people's cardiovascular health and quality of life, reduce the burden of cardiovascular diseases, diabetes and obesity, by stepping up personalised prevention, introducing early detection and screening programmes, and applying innovative approaches to improve access to treatment, care and rehabilitation.

The challenge ahead of us affects everybody. Success depends on the active engagement of Member States, researchers, innovators, industry, civil society, healthcare providers and professionals, patients, academia, and international partners, working together at local, national and EU level. This collective commitment is essential to reduce health inequalities between Member States, population groups and genders. The Safe Hearts Plan lays the foundation for sustained, patient-centred action at national and EU level.

Together, these efforts will build a healthier and more resilient population, driving innovation and competitiveness across the EU.

<sup>&</sup>lt;sup>171</sup> Direct grants to Member States funded with EUR 5 million under the EU4Health 2025 work programme.

<sup>&</sup>lt;sup>172</sup> These action grants will receive EUR 2 million in funding under EU4Health 2025 work programme.

<sup>&</sup>lt;sup>173</sup> EU Health Policy Platform - EU Health Policy Platform.

<sup>174</sup> Best practices Portal.

<sup>&</sup>lt;sup>175</sup> Global Alliance for Chronic Diseases (GACD).