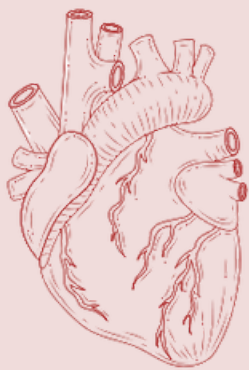


Addressing Sex and Gender Disparities in Cardiovascular Health

- A European Call to Action

We cannot tackle the SHD burden if we continue to ignore women in research, evidence, practice and policy – this is the reality!

Cardiovascular diseases (CVDs) are the leading cause of death among women in Europe, with a mortality rate of 37% compared to 31% in men [1], yet significant disparities persist in their prevention, diagnosis, treatment, and research [2].



What are Structural Heart Diseases?

Structural Heart Disease (SHD) is a subset of CVDs and affects the heart's valves, walls, and chambers. In 2020, it is estimated that 14 million people **in Europe** were living with SHD, a number which is set to increase to **20 million by 2040** [3]. SHD **presents sex and gender disparities, especially for women**. These challenges begin in the pre-phase, where women are significantly underrepresented in research and clinical trials, resulting in selection bias [4].

This lack of inclusion limits the development of sex-specific insights that could improve diagnostic and therapeutic outcomes, perpetuating disparities in care. Many women remain unaware that they may have SHD, often dismissing their symptoms as less serious or unrelated, which leads to delayed recognition and intervention.



Across Europe, women are less likely to receive routine cardiac exams during GP visits (24.2% for women vs. 31.3% for men), contributing to significant delays. Delays in detection, diagnosis, and referral are recurring issues for women with SHD. Conditions such as mitral valve prolapse and aortic valve disease are frequently diagnosed later in women, resulting in worse health outcomes.

[1] ESC, 2025. EU 27 Cardiovascular Realities, Available [here](#)

[2] Peters, S. A. E., & Van Spall, H. G. C. (2024). Advancing women's cardiovascular health: an international lens on the Joint British Cardiovascular Societies' consensus statement. *Heart*, 110(22), 1289-1290.

[3] Himawan, A (2024). Holding us back? Tackling inequalities in the detection and treatment of structural heart disease in Europe. ILC UK.

[4] Betaï D, Ahmed AS, Saxena P, Rashid H, Patel H, Shahzadi A, Mowo-Wale AG, Nazir Z. Gender Disparities in Cardiovascular Disease and Their Management: A Review. *Cureus*. 2024 May 5;16(5):e59663. doi: 10.7759/cureus.59663. PMID: 38836150; PMCID: PMC11148660.

Women with heart valve failure are diagnosed at a later age (79.5 vs 76.4 years)	Women are 50% more likely than men to be initially misdiagnosed
Women have a higher degree of renal impairment (31.7 vs 23.3%)	Women also face a higher risk of in-hospital mortality during tricuspid valve surgery

This **delay is compounded by the lack of familiarity among healthcare providers with sex and gender-specific symptoms and inequities in access to care** [5].

In addition, women in key life stages, such as menopause and pregnancy, during which a woman's cardiovascular system undergoes significant changes to adapt to the demands of the fetus, **could face complications such as hypertension-related disorders** (gestational hypertension, preeclampsia, HELLP syndrome), chronic hypertension, and venous thromboembolism (VTE), requiring close monitoring.

For instance, during pregnancy, **women with pre-existing SHD, such as congenital heart defects or valvular heart disease may experience exacerbated symptoms and increased risk of complications**. Conditions like mitral valve prolapse or aortic stenosis can become more pronounced due to the increased blood volume and cardiac output required during pregnancy [6] [7]. Since the prevalence of CVDs, including SHD, in women is frequently underestimated, they are less likely to receive treatment options like aortic valve replacement (AVR) [8]. Even when treatment is provided, women face higher complication rates after procedures like aortic valve replacement compared to men.

For instance, **tricuspid valve disease, often referred to as the "forgotten valve" due to late treatment, is more prevalent in women** and is associated with higher in-hospital mortality rates and less frequent combined procedures, such as mitral and tricuspid valve repairs [9] [10]. **These disparities arise from a combination of biological differences, delayed intervention** [11], **and a lack of tailored treatment approaches** [12].

Sex and gender inequalities also persist in follow-up care, such as cardiac rehabilitation, where women often receive less comprehensive monitoring and support, increasing their risk of poorer outcomes [13].

[5] Richard Paul Steeds, et al. - IMPULSE: the impact of gender on the presentation and management of aortic stenosis across Europe: Open Heart 2021;8:e001443.

[6] Beck, L.D., 2023. Feature | Cardiovascular Disease in Women: From Maternal Health to Menopause, American College of Cardiology. Available [here](#)

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[8] Caoimhe T Rice et al., Impact of gender, ethnicity and social deprivation on access to surgical or transcatheter aortic valve replacement in aortic stenosis: a retrospective database study in England: Open Heart 2023;10:e002373.

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[13] Alberto M Marra, et al., Sex and gender specific pitfalls and challenges in cardiac rehabilitation: a working hypothesis towards better inclusivity in cardiac rehabilitation programmes, European Heart Journal Open, Volume 4, Issue 5, September 2024, oeae071, <https://doi.org/10.1093/ehjopen/oeae071>

Addressing these disparities is essential to improving outcomes for women and reducing the burden of SHD and other cardiovascular diseases.



Sex and Gender Gaps in SHD and Cardiovascular Care

Underrepresentation in Clinical Trials

Women are significantly underrepresented in clinical trials, leading to a lack of research into how SHD specifically manifests and progresses in women. This gap results in treatment guidelines that are predominantly based on male-centric data, reducing their effectiveness for women [14].

Lower Access to Secondary Prevention

Women are less likely to receive optimal care post-cardiovascular events. Secondary prevention strategies, such as post-heart attack rehabilitation, are less frequently applied to women, contributing to worse long-term outcomes [15].

Treatment Outcomes and Follow up

In general, due to the delay in referral and consequent disease progression, women experience a higher level of symptoms and worse outcomes after intervention. Conservative treatment is associated with higher rates of all-cause and cardiovascular mortality in women, who also experience an increased incidence of heart failure [18]. Women also face a higher risk of in-hospital mortality during tricuspid valve surgery and are less likely to receive combined procedures, mitral valve (MR) and tricuspid valve (TV) repairs together [19].

Delayed Diagnosis and Treatment

Women experience delayed diagnosis and treatment, with studies showing that women are 50% more likely than men to be initially misdiagnosed and that symptom-to-treatment time can be delayed by an average of 7 months, often because signs like fatigue or breathlessness are misattributed to anxiety or ageing [16]. For instance, women with heart valve failure (i.e. SAS) are diagnosed at a later age (79 vs. 74 years) and are less likely to receive life-saving aortic valve replacement [17].

Social factors such as caregiving responsibilities, socio-economic inequalities, and regional disparities further deepen inequities in access to care and health outcomes. Failing to address these challenges will lead to escalating costs for Europe as its population continues to age and the burden of SHD increases.

[15] López Ferreruela, I., Obón Azuara, B., Malo Fumanal, S., Rabanaque Hernández, M. J., & Aguilar-Palacio, I. (2024). Gender inequalities in secondary prevention of cardiovascular disease: a scoping review. *International Journal for Equity in Health*, 23(146)

[16] Peters, S. A. E., & Van Spall, H. G. C. (2024). Advancing women's cardiovascular health: an international lens on the Joint British Cardiovascular Societies' consensus statement. *Heart*, 110(22), 1289-1290.

[17] Didier Tchetché et al., for the RHEIA Investigators, Transcatheter vs. surgical aortic valve replacement in women: the RHEIA trial, *European Heart Journal*, 2025; ehaf133, <https://doi.org/10.1093/eurheartj/ehaf133>

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Closing the Gap in SHD Care for Women: We Must Act Now!



Prioritizing Sex and Gender-Specific Initiatives in the EU Cardiovascular Plan

The upcoming EU Cardiovascular Plan, proposed by Health Commissioner Olivér Várhelyi, must promptly prioritize sex and gender-specific cardiovascular and SHD health to address the critical disparities affecting women. Policymakers should ensure this plan integrates dedicated funding for research and healthcare programs focusing on women's cardiovascular health, particularly via SHD early detection and timely treatment [20]. By making sex and gender-focused initiatives a central pillar of the plan, the EU can drive systemic change, ensure equitable care for women, reduce the burden of SHD, and prevent avoidable deaths and other cardiovascular diseases across Europe.



Promote Public Awareness Campaigns

Targeted public health campaigns should educate the general population about women's unique cardiovascular risks and the importance of early detection. These campaigns must emphasize symptom recognition and the need for time diagnosis and treatment.



Mandate Sex and Gender-Sensitive Research

Legislation should require proportional representation of women in cardiovascular research and clinical trials. Funding for studies should prioritize exploring sex and gender-specific differences in SHD, its progression, and treatment.



Support Early Detection Programs

Routine cardiovascular screenings for women shall be implemented, particularly for those 55 years old and above, as well as during key life stages such as postpartum and post-menopause. In addition, AI-driven diagnostic tools should also be considered to enhance early detection and address gender disparities. This will help detect cardiovascular conditions earlier and improve treatment outcomes while ensuring healthy and active ageing.



Secure Dedicated Funding for SHD Treatment Access

To ensure equitable care, national governments must allocate targeted funding for the treatment of SHD in women. This includes covering advanced therapies (e.g., transcatheter interventions, valve replacements) and removing cost barriers that disproportionately prevent women—especially older or socioeconomically disadvantaged populations—from accessing life-saving care. Such investment is critical to closing the gender treatment gap and ensuring timely intervention and better health outcomes



Address Systemic Biases

Healthcare systems must adopt gender/sex-sensitive protocols, including inter alia increased treatment rates, to eliminate biases in care delivery, and integrate comprehensive education and training for healthcare professionals on cardiovascular risk factors specific to women—including both obstetric (e.g., preeclampsia, gestational hypertension) and non-obstetric risks, as well as the influence of social determinants of health and the distinct impact of classical risk factors in women [21]. Training strategies should explicitly include cardiovascular nurses, who play a pivotal role in the follow-up of patients with acute coronary syndromes, heart failure, and structural heart disease (e.g., the TAVI nurse role). Furthermore, the systematic exploration and documentation of non-classical risk factors in cardiovascular clinical records should be encouraged, as these are often underreported and overlooked in women. This can also be complemented by exploring the possibility of developing specialized SHD and cardiovascular care units tailored to women's needs

By implementing these recommendations, policymakers can tackle significant gender disparities in cardiovascular health, ensuring women have access to the care they need. This approach will help alleviate the burden of SHD, prevent avoidable deaths, and reduce the prevalence of other cardiovascular diseases across Europe.

About the SHD Coalition

The **Structural Heart Disease Coalition (SHD Coalition)** is a European network that brings together experts including key opinion leaders, politicians, and patients to work together to ensure that policy on SHD is prioritised. Within the Coalition, the **Women's Health Task Force** is committed to advocating for better heart health for women.



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