2025 Essential Messages from ESC Guidelines

Clinical Practice Guidelines Committee

Guidelines for the management of
Cardiovascular Disease and Pregnancy

ESC
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Essential Messages

2025 ESC Guidelines for the management of cardiovascular disease and pregnancy

Developed by the task force on the management of cardiovascular disease and pregnancy of the European Society of Cardiology (ESC). Endorsed by the European Society of Gynecology (ESG).

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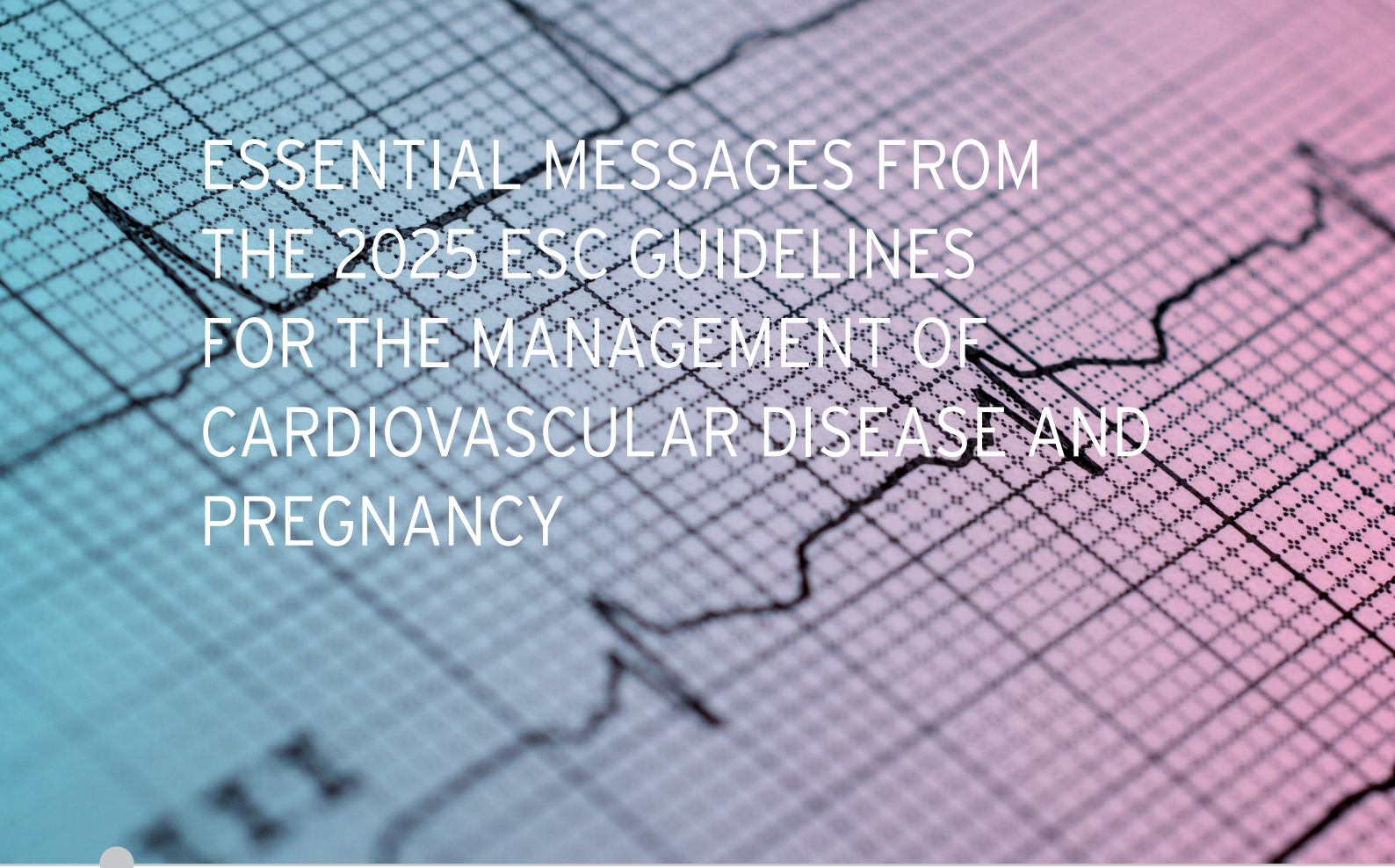
Associations: Association of Cardiovascular Nursing & Allied Professions (ACNAP), Association for Acute CardioVascular Care (ACVC), European Association of Cardiovascular Imaging (EACVI), European Association of Preventive Cardiology (EAPC), European Heart Rhythm Association (EHRA), Heart Failure Association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

Councils: Council on Cardiovascular Genomics, Council on Hypertension.

Working Groups: Adult Congenital Heart Disease, Aorta and Peripheral Vascular Diseases, Cardiovascular Pharmacotherapy, Cardiovascular Surgery, Myocardial and Pericardial Diseases, Pulmonary Circulation and Right Ventricular Function, Thrombosis.

Patient Forum

Adapted from the 2025 ESC Guidelines for the management of cardiovascular disease and pregnancy (European Heart Journal; doi:10.1093/eurheartj/ehaf193) published on 29 August 2025



ESSENTIAL MESSAGES FROM THE 2025 ESC GUIDELINES FOR THE MANAGEMENT OF CARDIOVASCULAR DISEASE AND PREGNANCY

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European Heart Journal; 2025 - doi: 10.1093/eurheartj/ehaf193

Key messages

- A Pregnancy Heart Team should be involved in the risk assessment, counselling and management of women in mWHO 2.0 class ≥II–III from pre-conception to the late post-partum. Each woman should have a detailed delivery plan agreed in advance.
- In women with known CVD, a complete clinical re-evaluation should take place pre-pregnancy to estimate risk, optimize treatment, consider and evaluate the removal of contraindicated drugs, and reduce the probability of complications.
- Women and their partner (if any) should be offered structured psychosocial support during the entire trajectory, especially for those at high risk and those considering pregnancy termination.
- Women with known heritable cardiovascular disorders should be counselled about the transmission risk, including the option for assisted reproductive technology.
- Management of women with CVD who are pregnant or wishing to become pregnant should be individualized and performed according to a shared decision-making model, respecting the woman's autonomy.
- Women in mWHO 2.0 class IV should be comprehensively counselled about the very high pregnancy risk, being careful to promote a detailed and transparent dialogue about the heightened maternal and foetal risks associated with pregnancy. A shared decision-making process is essential, allowing for informed choices, including the consideration of pregnancy termination if necessary.
- Vaginal delivery is the first choice for the majority of women with CVD. In a life-threatening situation, treatments such as defibrillation, interventions, acute coronary revascularization, mechanical circulatory support, and medication should be the same as in non-pregnant women, irrespective of contraindications.
- The use of non-invasive imaging tests with ionizing radiation during pregnancy should only be performed when the benefits clearly outweigh the maternal and foetal risk, and if the result will significantly modify the medical management.
- In women with LQTS and CPVT, the continuation of beta-blockers throughout pregnancy with monitoring of foetal growth is recommended (atenolol is the only contraindicated beta-blocker). Beta-blockers of choice are propranolol and nadolol.
- In women with LQT2, post-partum is a distinct high-risk period, and therefore full dosage of beta-blockers is strongly recommended.
- Genetic testing should be considered in PPCM.

Key messages

- In women with PPCM and DCM, subsequent pregnancy is not recommended if LV function does not normalize.
- Genetic testing in women with aortic disease wishing to conceive is recommended and management should be based on the presence and type of P/LP variant.
- Women with the following ACHD lesions should be provided with expert counselling and education by a Pregnancy Heart Team, with clear and thorough discussion of the very high pregnancy risk and the need for a shared decision-making process:
- Systemic RV, in NYHA class III–IV, ventricular dysfunction (EF <40%), more than moderate TR, or treated HF;
- A Fontan circulation and oxygen saturation <85%, reduced ventricular function, severe arrhythmias, or in NYHA class III–IV.
- There is no safe cut-off value for elevated pulmonary artery pressure in pregnancy.
- Women of childbearing potential with PAH should be counselled at the time of diagnosis about the risks and uncertainties associated with becoming pregnant.
- Any suspicion of VTE, including DVT and PE, requires an immediate formal assessment with validated diagnostic tests by a multidisciplinary specialized team.
- LMWH is the agent of choice for prophylaxis and treatment of VTE in pregnancy.
- When treating women with HF during pregnancy, it should be noted that several drugs [ACE-Is, ARBs, direct renin inhibitors, sacubitril–valsartan (ARNIs), MRAs, and SGLT2 inhibitors] are not recommended. When inotropes or more advanced treatment is necessary, referral to an expert centre is recommended.
- When possible, mechanical valves should be avoided in girls and women of childbearing age.
- Methyldopa, labetalol, and CCBs are recommended for the treatment of hypertension in pregnancy.
- Women at high or moderate risk of pre-eclampsia should be advised to additionally take 75–100 mg of ASA daily from weeks 12 to 36/37.
- After cardiac transplantation, it is recommended to postpone pregnancy for at least 1 year, taking individual risk factors into account.
- Women with APOs should be informed about long-term risks and preventive strategies and offered appropriate follow-up, including psychosocial support (if necessary).

Gaps in evidence

Pre-pregnancy counselling and evaluation

- Data on the adverse effects of assisted reproductive treatment in women with CVD are lacking.

Diagnostic methods

- There is a lack of data on the safety of echocardiographic contrast agents during pregnancy or lactation.
- There are controversial data on the use of gadolinium-based contrast agents in pregnancy.
- There are no clear cut-offs for NT-proBNP levels during pregnancy.
- There are no normative values of cTnI and cTnT in pregnancy and the post-partum period.
- There is a lack of data on normal lung ultrasound pattern during pregnancy.

Drugs during pregnancy and lactation

- Safety data of DOACs and antidotes (idarucizumab, andexanet alfa, cirapantag) in pregnancy are lacking.
- Safety data of newer anti-arrhythmic drugs and rate-controlling drugs (vernakalant, ivabradine, landiolol) in pregnancy are lacking.

Cardiomyopathy and primary arrhythmia syndromes

- The available data on gene-specific management during pregnancy in different cardiomyopathies and primary arrhythmia syndromes are limited.

Peripartum cardiomyopathy

- The potential for recovery of cardiac function in PPCM remains unclear and the risks in subsequent pregnancies are not well defined.

Gaps in evidence

Aortopathies

- More data are needed to correctly estimate the pregnancy risk in women with previous aortic dissection and/or aortic root surgery.
- Risk factors for aortic dissection in the post-partum period are poorly understood, making counselling about this difficult.
- It is unclear whether a distinction between root and ascending phenotype in women with BAV should lead to a different threshold for prophylactic surgery (as in non-pregnant women).

Congenital heart disease

- More data are needed to estimate the risk and the long-term effects of pregnancy (including multiple pregnancies), especially in women with a Fontan circulation or univentricular hearts.
- Risk factors for the development of heart failure and arrhythmias in pregnant women with (systemic) right-heart failure are poorly understood.

Pulmonary hypertension

- Defining the optimal timing to start or escalate PAH therapies in pregnancy complicated with PAH remains challenging.

Venous thromboembolism

- Data on risk stratification of VTE in pregnancy are limited, specifically in those with other pre-existing comorbidities.
- Data on the use of anticoagulant agents (other than LMWH) are limited, just as data on the efficacy and safety of inferior vena cava filters and catheter-based thrombectomy (in PE).

Gaps in evidence

Acquired heart disease

- The foetal risks associated with the newer HF medications remain unclear, particularly regarding exposure during different trimesters.
- The optimal tools to stratify risk of recurrence for atherosclerotic and SCAD ACS are unknown.
- Physiopathological mechanisms of SCAD in pregnancy are unknown.
- Optimal treatment of SCAD during pregnancy is not well established.
- There is scarce evidence about the necessity of using statins during pregnancy in women with cardiovascular risk or established ASCVD.
- Optimal anticoagulation strategies for women with MHVs during pregnancy remain uncertain.
- The role of anti-factor Xa level monitoring needs to be determined.

Women's Heart Clinics

- Optimal strategies for surveillance and follow-up of women with APOs are unclear.
- It is unclear how social determinants of health (the environmental factors that affect how people live, learn, and work) affect APOs.
- There is a need for studies exploring models of post-natal care, starting from the initial antenatal visit through to the end of the post-partum period.
- Further research is needed to identify risk factors for pregnancy-related depression and poor health behaviour engagement in women with CVD, enabling the development of tailored interventions to improve their health and quality of life.

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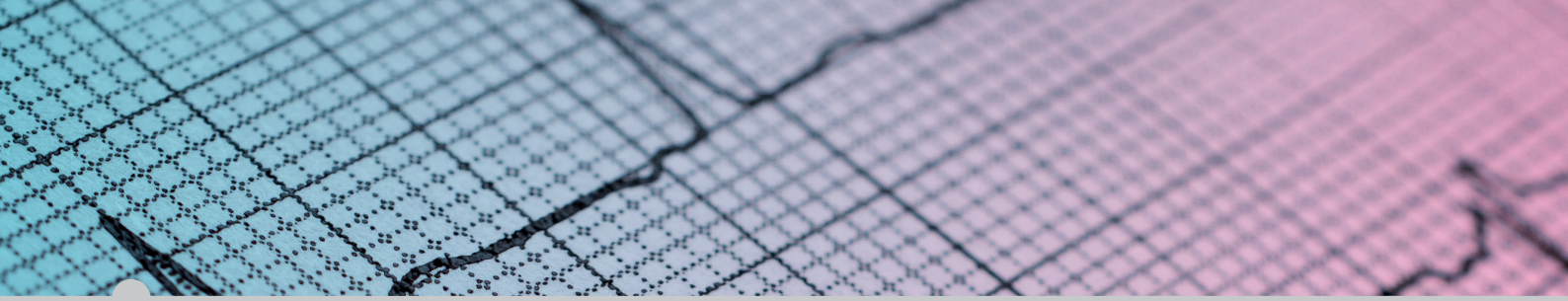

The following material was adapted from the 2025 ESC Guidelines for the management of cardiovascular disease and pregnancy (European Heart Journal; 2025 - doi: 10.1093/eurheartj/ehab193).

Post-publication corrections and updates are available at: www.escardio.org/guidelines

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