

ESC Clinical Practice Guidelines for the
**Management of
Cardiovascular Disease
and Pregnancy:
What Patients
Need to Know**



What are Clinical Practice Guidelines?

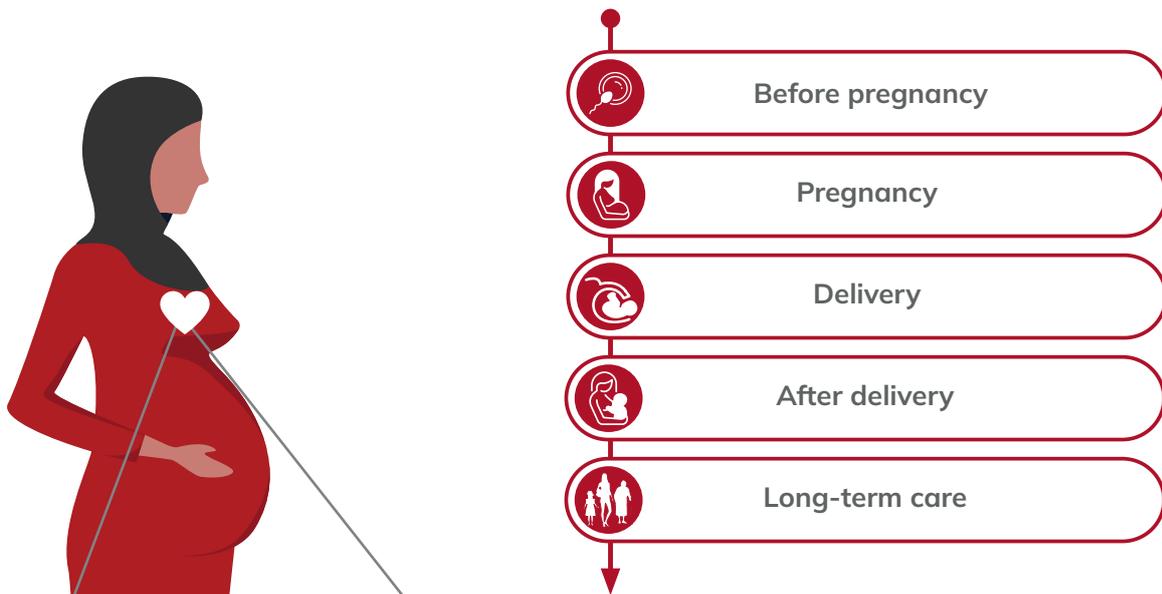
Clinical Practice Guidelines are documents created by healthcare professionals, scientists and patients. They are primarily intended for medical and paramedical staff and offer recommendations based on the best available medical and scientific evidence. Guidelines help ensure that patients receive the best possible care.

How will this document help me?

This guide is based on the [European Society of Cardiology \(ESC\) Guidelines for the management of cardiovascular disease and pregnancy](#) and is designed for patients and their families.

The guide helps to explain how pregnancy should be managed in patients who have pre-existing cardiovascular disease (CVD) and includes pre-pregnancy advice and information about different aspects such as delivery, breastfeeding and long-term maternal care.

The document aims to give you confidence to work with your healthcare team to make informed decisions.



Cardiovascular diseases

Congenital heart disease	Valvular heart disease
Heart failure	Aortic disease
Pulmonary hypertension	Heart rhythm disorders
Thromboembolism	Hypertensive disorders
Cardiomyopathies	



Why focus on pregnancy?

Pregnancy causes changes in the cardiovascular system to meet the increased needs of the mother and unborn baby. These changes occur from the early stages of pregnancy onwards. For example, there are increases in the mother's heart rate and in the amount of blood pumped out of the heart from the first 6 weeks of pregnancy. Blood pressure and the heart's workload increase further in labour, then rapidly decrease after delivery. The extra demands on the heart need to be considered for women with a higher maternal risk (see below).

In addition, pregnancy is associated with higher risks of blood clotting.

Some CVDs have a genetic basis, which means there is a chance that children may inherit the CVD.

Importantly, some common cardiovascular drugs should not be used during pregnancy and breastfeeding.

Assessing maternal risk

While many women with CVD will have a healthy pregnancy, it is important that women of childbearing age with CVD have a personalised check-up to understand if pregnancy might affect their health or the baby's health.

The risk assessment includes the type of CVD the woman has, their ability to perform daily activities and their medication regimen as well as risk factors including age, smoking history, obesity, any other co-existing diseases and problems in previous pregnancies.

According to the underlying CVD, the [guidelines](#) assess the risk to the mother's health using different classes (I–IV).

Modified World Health Organization (mWHO) 2.0 classification:

Class I: No detectable increased risk of death and no/mild increased risk to health

Class II: Small increased risk of death or moderate increase in risk to health

Class II–III: Intermediate increased risk of death or moderate-to-severe increase in risk to health

Class III: Significantly increased risk of death or severe risk to health

Class IV: Extremely high risk of death or severe risk to health

It is recommended that women with CVD with risk class II–III and above are evaluated and managed by a [Pregnancy Heart Team](#) from the time they start planning a pregnancy, throughout pregnancy and delivery, and for at least 6 weeks after the baby is born.

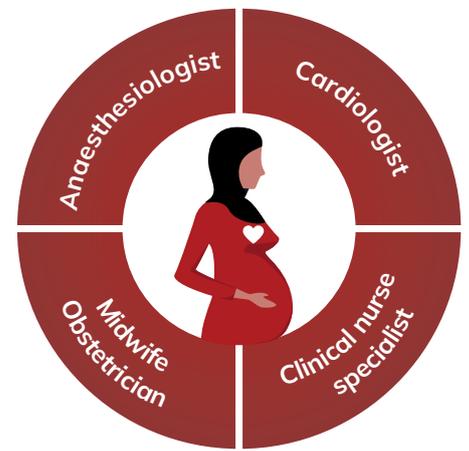
The Pregnancy Heart Team

The **Pregnancy Heart Team** includes a cardiologist, anaesthesiologist, midwife, obstetrician and clinical nurse specialist. The team's responsibilities include risk assessment, developing a collaborative care plan and monitoring.

Depending on the clinical problem, the team could be expanded to include other healthcare professionals, for example, a general practitioner, surgeon, intensive care specialist, psychologist and genetic counsellor.

For women with very high-risk conditions (class IV), it is important to have a thorough discussion with the Pregnancy Heart Team about the serious risks that pregnancy can pose for both mother and baby. Together, you will be able to discuss all options, including the possibility of pregnancy termination, and make the decision that feels right. Emotional and psychological support will be offered. Contraception options will also be discussed to help you plan for the future safely.

Maternal preferences should be thoroughly explored as part of the shared decision-making process.



Genetic counselling

Some CVDs have a genetic basis. Where the baby may be affected by an inherited condition, it is recommended that **genetic counselling and testing** are performed before pregnancy in a specialised cardiogenetic centre.

Where the parent has a known genetic abnormality, pre-implantation genetic testing may be suggested. This involves *in vitro* fertilisation (IVF) and genetic testing to see if the embryo is affected. This service may not be available in all locations and may not apply for all genetic diseases.

Another option involves genetic testing of amniotic fluid or placenta when the unborn baby is in the womb. Because some of these options take time to arrange, early referral is required.

Education and psychological support are needed to enable you and your partner to make your own choices and fully understand your decisions, while following the local ethical and legal framework.

Contraception

All girls and women with CVD should receive information about contraception, starting from their first period to help prevent unplanned pregnancies and to find the method that is **safest and most suitable**. For example, some methods – such as the progestin-only ‘mini pill’, hormone-releasing coils or contraceptive implants – may be safer for women who have a higher risk of developing blood clots. It is also important to be informed about what to do if emergency contraception is ever needed.

Medication

Before planning a pregnancy, it is important to consult your doctor in order to identify the best drug regimen during pregnancy, delivery and breastfeeding.

The body handles drugs differently during pregnancy. In addition, there are some drugs that should not be used during pregnancy and breastfeeding due to harmful effects on the baby.

After consultation with the doctor, some medication may be continued, changed, stopped or potentially started.

It is important that you do not stop your medication without consulting your doctor first.

Pregnancy

The management of pregnancy will vary based on the type and severity of CVD, but **regular follow-up and assessment** of the **mother** and **baby** are important for all.

While the risks may be higher in women with CVD than in those without CVD, risks to the mother and baby are still **low in many cases**, particularly if there is careful monitoring. Women with more severe CVD have a greater chance of pregnancy complications.

Maternal risks during pregnancy include worsening CVD, heart failure, arrhythmias, high blood pressure/pre-eclampsia or blood clots forming in the legs and lungs. Risks to the unborn baby include pregnancy loss, stillbirth, early birth or slower growth due to reduced blood flow, medication or nutrition.

During pregnancy, you and your healthcare team will create a **personalised delivery plan**. This plan will outline whether labour should be induced, how labour and birth should be managed, and what monitoring you may need after the baby is born.



Delivery

Pregnant women with CVD are more likely to develop complications or other conditions during delivery than those without CVD and some may require additional monitoring and care managed by a Pregnancy Heart Team. Nevertheless, many women with CVD can be supported to give birth in their local hospital.

Induction of labour prior to 39 weeks is not recommended for cardiac reasons in most women with stable CVD due to potential risks to the baby.

Most women with CVD will be encouraged to have a **vaginal delivery** because the complications associated with vaginal birth are generally lower. Women with CVD may choose to have a caesarean section but this will need to be discussed with the obstetric team.

In certain circumstances, a caesarean section may be recommended. Among others, this includes women who have used oral anticoagulants such as warfarin within the last 2 weeks before pregnancy. It is recommended that the timing of delivery is planned in women on anticoagulants to ensure safe and effective anticoagulation during labour and delivery. Other reasons for a caesarean section include severe or unstable CVD.

Breastfeeding

Breastfeeding encourages the mother's body to return to its state before pregnancy. It has been shown to lower future risk of CVD and mortality. Breastfeeding can reduce body weight, and improve blood pressure, cholesterol and blood sugar levels.

Your healthcare team will provide advice about breastfeeding and what drugs you can (or cannot) take during breastfeeding.

Adverse pregnancy outcomes

Adverse pregnancy outcomes are conditions such as:

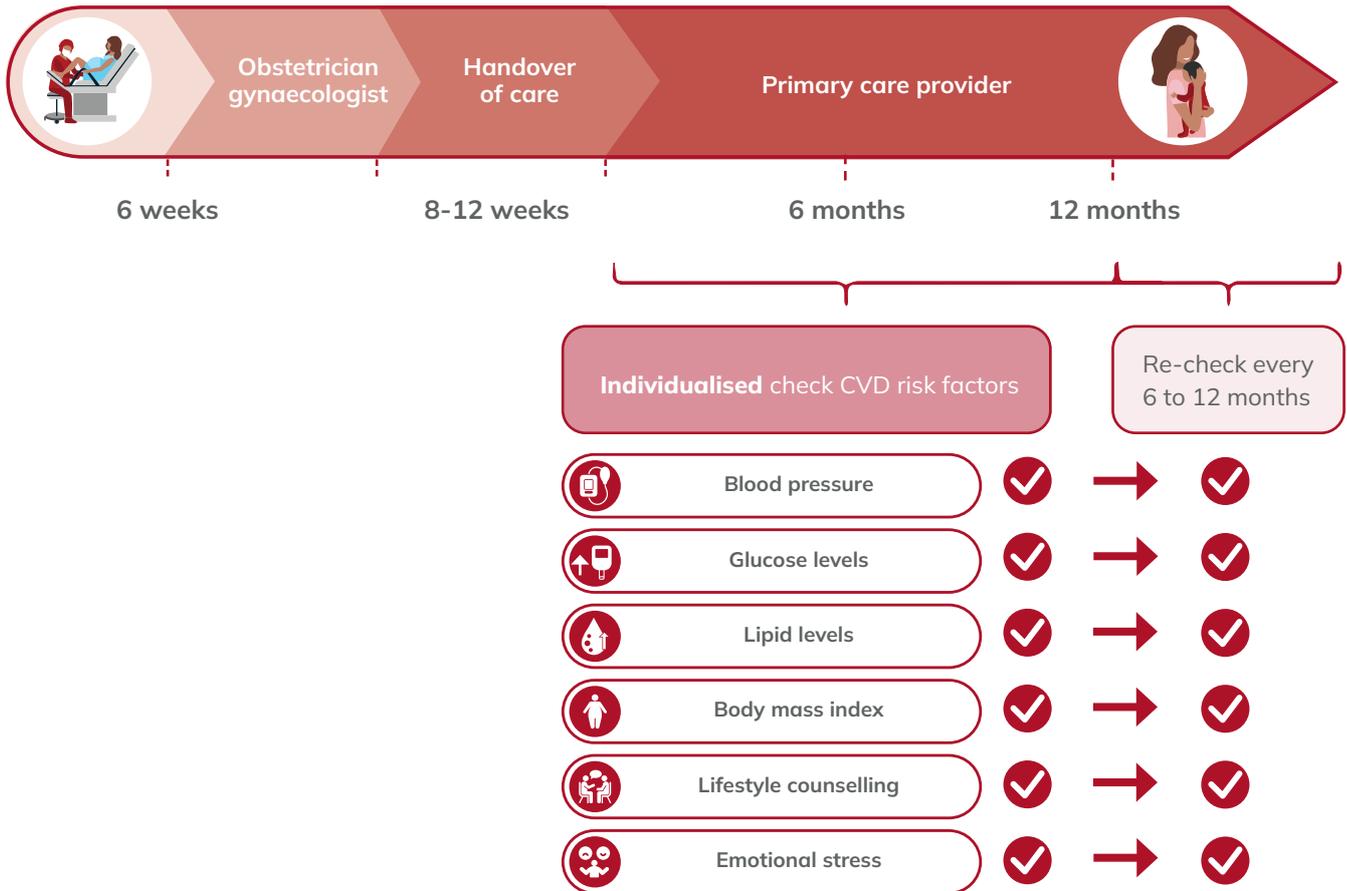
- Hypertensive (high blood pressure) disorders:
 - Pre-existing hypertension
 - Gestational hypertension: Develops after 20 weeks' gestation and usually resolves within 6 weeks after delivery
 - Pre-eclampsia: Gestational hypertension with protein in the urine and/or organ dysfunction (e.g. kidney, liver or blood complications)
- Gestational diabetes
 - A form of diabetes that first occurs during pregnancy
- Pre-term birth
 - Delivery before 37 weeks of gestation
- Small or large for gestational age
 - When the baby has low or high birth weight

Women with adverse pregnancy outcomes have a higher incidence of CVD in the long-term. It is recommended that these women are **regularly monitored** in the weeks after delivery and receive a comprehensive cardiovascular risk assessment with repeated follow-ups from a multidisciplinary team of healthcare professionals.

Additional treatments may be needed. For example, women who have developed hypertension may require blood pressure-lowering medication that is suitable for breastfeeding.

It is important that women with adverse pregnancy outcomes receive advice on the importance of healthy lifestyle choices to enable them to take care of their own cardiovascular health in the long term.

Delivery



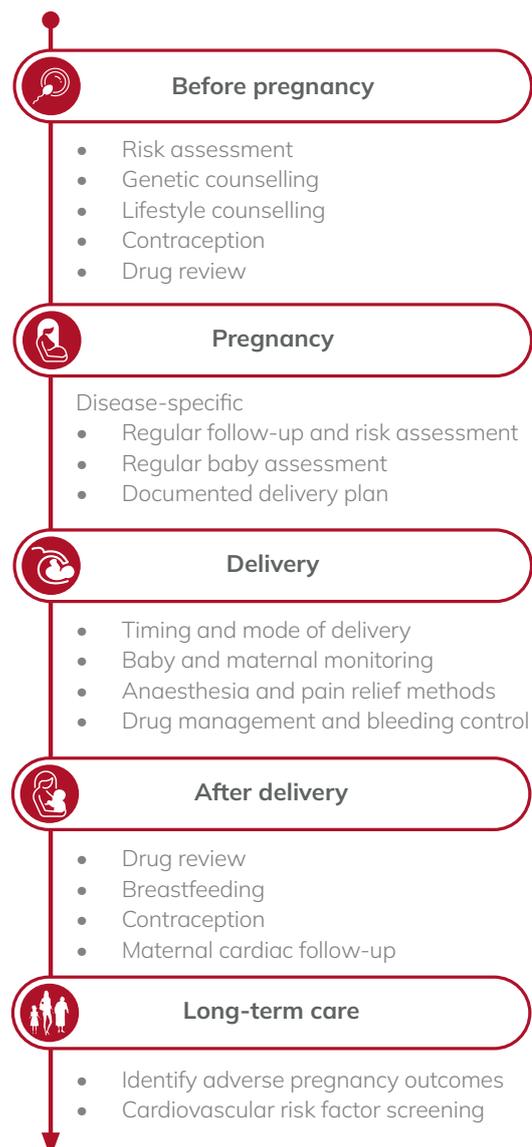
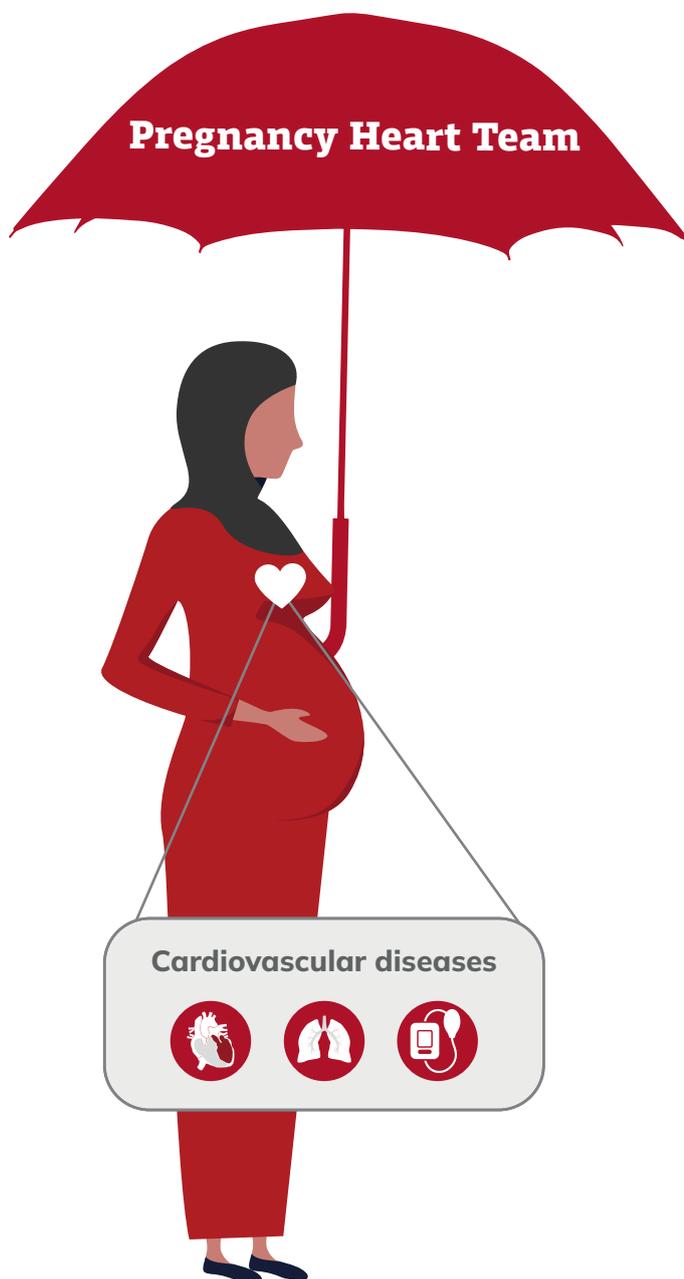
Mental health

The risk of developing depression among new mothers in the general population is about 10–20%. This risk increases with underlying health conditions such as CVD. It is important that women with CVD receive **regular mental health screening** by their healthcare team so that any problems are identified early and tailored support given.

If you feel worried or have symptoms of depression, please speak to your healthcare provider. The [patient guide to mental health and CVD](#) also provides information about sources of support.

Key messages

- Women with known CVD who wish to become pregnant should undergo a clinical evaluation before pregnancy to estimate the risks, optimise treatment and reduce the risk of complications.
- Before pregnancy, the Pregnancy Heart Team should be involved in the risk assessment, counselling and management of women in risk class II–III or above.
- Management should be individualised and performed in a shared decision-making process, respecting the woman's choices.
- Depending on the type and severity of the CVD, women should be assessed during pregnancy and have a detailed delivery plan agreed in advance.
- Vaginal delivery is the first choice for the majority of women with CVD.
- Women with adverse pregnancy outcomes should be informed about long-term risks, receive advice on healthy lifestyle choices and other preventive strategies, and be offered appropriate follow-up.
- It is important to speak to a healthcare professional if you have any concerns.



This guide for patients is a simplified version of the [2025 ESC Guidelines for the management of cardiovascular disease and pregnancy](#).

Authors

Michèle de Hosson, Cardiology, Ghent University Hospital, Ghent, Belgium

Eva Goossens, Centre for Research and Innovation in Care, Department of Nursing and Midwifery, Faculty of Medicine and Health Sciences, University of Antwerp, Antwerp, Belgium, and Department of Public Health and Primary Care, KU Leuven, Leuven, Belgium, and Department of Patient Care, Antwerp University Hospital, UZA, Antwerp

Françoise Steinbach, ESC Patient Forum, Sophia Antipolis, France

Nina Eide Hasselberg, Department of Cardiology, Oslo University Hospital, Rikshospitalet, Oslo, Norway

Matthew Cauldwell, Obstetrics, St George's Hospital, London, United Kingdom

Julie De Backer, Cardiology, Ghent University Hospital, Ghent, Belgium, and Center for Medical Genetics, Ghent University Hospital, Ghent, Belgium

Kristina H. Haugaa, Department of Cardiology, Oslo University Hospital, Oslo, Norway, and Institute for Clinical Medicine, University of Oslo, Oslo, Norway

Disclaimer

This material was adapted from the ESC Guidelines for the management of cardiovascular disease and pregnancy (European Heart Journal 2025 - doi.org/10.1093/eurheartj/ehaf193) as published on 29 August 2025.

Copyright © European Society of Cardiology 2026 - All Rights Reserved.

This material has been published for personal and educational use only. No commercial use is authorised. No part of this document may be translated or reproduced in any form without written permission from the ESC. Permission can be obtained upon submission of a written request to ESC, Practice Guidelines Department, Les Templiers - 2035, Route des Colles - CS 80179 Biot - 06903 Sophia Antipolis Cedex - France. Email: guidelines@escardio.org

This material was adapted from the ESC Guidelines as an aid to patients and carers. It represents the views of the ESC and was produced after careful consideration of the scientific and medical knowledge and the evidence available at the time of their publication. The ESC is not responsible in the event of any contradiction, discrepancy and/or ambiguity between the ESC Guidelines and any other official recommendations or guidelines issued by the relevant public health authorities, in particular in relation to good use of healthcare or therapeutic strategies. Please refer to the preamble of the original guidelines for further details of the role of Clinical Practice Guidelines and the individual responsibility of health professionals when making decisions for the care of patients.