



# Planning Pregnancy with Aortic Disease

[aorticdissectionawareness.org](http://aorticdissectionawareness.org)



Pregnancy in women with aortic disease can be high risk. However, the risk can be reduced with the right care and planning.

### **Why might this affect me?**

A minority of people are at risk of an aortic dissection, which is a tearing of the aortic wall. Those include people with syndromes that are strongly associated with aortic dissection, such as Marfan, Loeys-Dietz, Ehlers-Danlos and Turner Syndromes. People may also be at risk if a close relative has aortic disease or has had an aortic dissection or surgery for an enlarged aorta. Lastly, the risk can sometimes be identified by chance, such as discovering an enlarged aorta on a heart ultrasound scan performed for another reason.

If any of these affect you, whether the risk has already been identified, or if you know your family has a history of aortic disease, this booklet will help you navigate the issues around pregnancy and aortic risk.

# What might happen?

Pregnancy increases the risk of aortic dissection and this is more likely when the aorta is abnormal. Although it is rare, aortic dissection can be life-threatening for you and your baby. The aorta can also grow during pregnancy and rarely surgery is required before the baby is born.



# How risky is it?

Every woman's risk is slightly different. Before planning a pregnancy, it is important to know about your aortic disease and your particular risk. One of the most important things is the size of your aorta. Risk is also increased if anyone in your family has suffered from an aortic dissection or if you have high blood pressure.

# Before Pregnancy

## What do I need to do before getting pregnant?

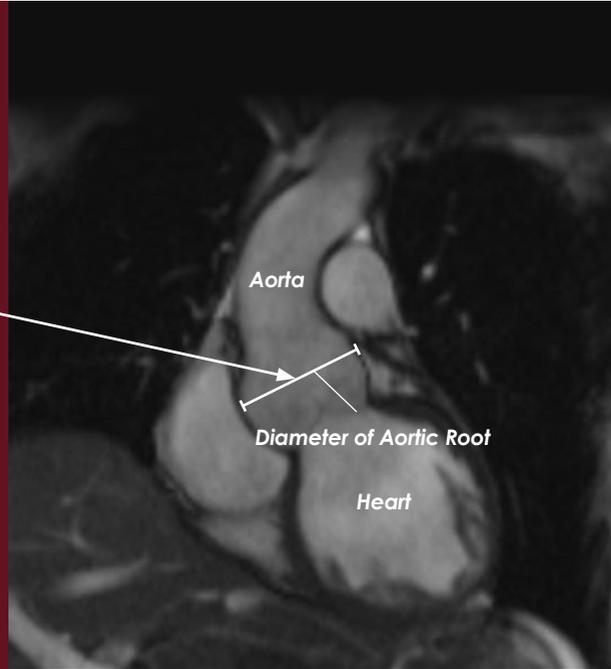
It is extremely important to have pre-pregnancy counselling with your cardiologist and preferably an obstetrician as well. They will go through your individual risk and what might happen during a pregnancy.



It is often a good time to start taking pregnancy multivitamins, eat a balanced diet, make sure you are exercising, maintaining a healthy weight and not smoking or drinking alcohol.

Your cardiologist will ensure that you have up to date imaging of your aorta by MRI or CT and a recent echocardiogram. The picture below shows an example of an MRI of the aorta in a woman with an enlarged aortic root.

**Aortic Root**



**MRI of Aorta**

## **Will my baby be affected?**

Most diseases of the aorta are inherited in such a way that there is a 50:50 chance of having a child who is affected. If the genetic variant causing the disease is known in your family, it is possible to have pre-implantation genetic diagnosis (PGD). This involves creating embryos with your eggs and your partner's sperm. The embryos are all tested for the mutation and a healthy embryo is chosen to be implanted by IVF.



## During pregnancy

You should be looked after by an experienced team of cardiologists, obstetricians and anaesthetists throughout your pregnancy.

### How will I be monitored?

During pregnancy you will be seen every four weeks from about 12 weeks onwards by the joint expert team. This is primarily to scan your aorta by echocardiogram. If there are any concerns, an MRI may be recommended. This is entirely safe in pregnancy. You will also see your midwife regularly on top of these appointments. Your midwife will monitor the progress of your pregnancy, including checking your blood pressure, though you may wish to do it yourself as well if you have a home monitor.

### How will my baby be monitored?

Your baby will be monitored in the usual way, but additional growth scans will be necessary from around 24 weeks' gestation, if you are taking beta-blocker tablets.

### **What can I do to help myself?**

It is important that you attend all appointments with the joint cardiac-obstetric team and bring your handheld maternity notes each time.

### **Can I deliver near home?**

If you're at risk of aortic dissection, it would be unsafe to have a home delivery. Depending on where you live, it may not be safest for you to deliver in your local hospital. If aortic dissection occurs, the most important thing is to be in a cardiac surgical centre. For this reason, it is recommended that all women with aortic disease deliver in a cardiac surgical centre.

### **Can I have a normal delivery?**

The first stage of normal labour is usually painful. This causes high pressure in the aorta and so an epidural is recommended for all women with aortic disease.

The second stage of labour is where the baby gets pushed out with contractions of the uterus and maternal effort. Pushing also results in high blood pressure and a fast heart rate. Birth of the baby can be facilitated with less maternal effort, using forceps. This is ideal for women with aortic disease.

The third stage of labour is the delivery of the placenta. Strong drugs are usually given to limit postpartum haemorrhage. Some of these can cause high blood pressure in the aorta and other gentler drugs would be recommended in your birth plan.



## **Will I have to have a caesarean section?**

Caesarean sections are sometimes required for obstetric reasons, such as a breech presentation or failure for the labour to progress. However, for most women, vaginal delivery is preferable as it carries less risk of infection, blood clots in the legs and lungs and allows you to get up and around more quickly after the birth. It also means that you can have a vaginal delivery next time with lower risk than if you have had a previous caesarean section.

## **Do I stop my medications/ need any medications?**

If you are taking an angiotensin receptor blocker, such as losartan, you will need to stop this when you find out you are pregnant. If you are taking a beta-blocker, you can keep taking this throughout pregnancy, though it does risk the baby being a little smaller. Current recommendations are for beta-blockers to be offered to pregnant women with Marfan's syndrome, if their blood pressure allows it.



# After the baby is born

## **When can I go home after the baby is born?**

The risk of aortic dissection is highest in the first week after delivery. This is why you will be advised to stay in hospital during this time. You will have another echocardiogram of your aorta, prior to going home.

## **How will I know if my baby is affected?**

After the birth, your baby will be seen by a neonatal paediatrician. It is usually very difficult to tell if a baby is affected at this stage but they will be referred to the paediatric cardiology services and followed up throughout childhood. Your baby's paediatrician may offer genetic testing of your baby, if the mutation is known. This will usually involve discussion with a clinical geneticist and counsellor.

## **Can I breast-feed normally?**

Yes, you can breastfeed as normal. You can also breast feed whilst taking beta blockers but not losartan. If you choose to breastfeed, your losartan will not be restarted until you have stopped breastfeeding. You may be advised to take a different but similar tablet until that time.

## **When will I be seen again after going home?**

Usually your cardiologist will want you to have another scan of your aorta four weeks or so after the baby is born. It takes around six weeks for the changes of pregnancy to resolve and during this time your aorta can still grow. After that you will probably go back to being seen once a year, unless your aorta is enlarged and nearly at the threshold for surgery.

## **Can I have another baby?**

There is no reason why you cannot have more than one baby. However, if you have suffered an aortic dissection in the past, pregnancy is not recommended. As with any woman, any obstetric complication you have may have a bearing on future pregnancies.

## **Are there any obstetric complications associated with Marfan syndrome and related conditions?**

There are several other complications which are more common in women with Marfan's syndrome, and related conditions, due to the fragility of the connective tissues. Women are more likely to have poor wound healing and tears, premature rupture of the membranes with premature delivery and post-partum haemorrhage.

# What to do in an emergency

Emergencies are rare. However, if you know that you are at risk of aortic dissection, you should always wear a medical alert bracelet with details of your condition. This is vital if you become very unwell and unable to communicate your condition to paramedics or an emergency team. You should discuss your 'emergency pathway' with your cardiologist and your GP, i.e. which hospital you should go to and how you would get there. Write this down and keep it close to hand. With this in place, you will be better able to deal with an emergency.

If you experience severe and sudden onset of chest, back or abdominal pain, call an ambulance immediately or go to the nearest Accident and Emergency Department. It is then important to tell the emergency staff who see you that you are at high risk of an aortic dissection; your medical alert bracelet will help you do this. The emergency team will then be able to give you the most appropriate care promptly.

## **Attend the emergency department if you have any of the following symptoms:**

- Sudden severe chest or upper back pain, often described as a tearing or ripping sensation, that spreads to the neck or down the back
- Sudden pain that feels as though it might be a heart attack
- Sudden severe stomach pain
- Shortness of breath
- Symptoms similar to those of a stroke, including sudden vision problems, difficulty speaking, and weakness or loss of movement on one side of your body

## **BEFORE PREGNANCY**

- Pre-pregnancy counselling
- Up to date imaging
- Discuss pre-implantation genetic diagnosis
- Review medication
- Know your individual risk
- Take pregnancy multivitamins, optimise diet and weight

## **DURING PREGNANCY**

- Echo and review 4 – weekly plus midwife care
- Extra growth scans if taking beta-blockers

## **DELIVERY**

- Deliver in a cardiac surgical centre
- Epidural and passive forceps vaginal delivery unless Caesarean section needed

## **AFTER DELIVERY**

- Stay in hospital for 7 days
- Baby review by paediatrician
- Echo and medication review before home

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## Useful Links

Pre-implantation genetic diagnosis services - Guy's and St Thomas' NHS Foundation Trust

([guysandstthomas.nhs.uk](https://guysandstthomas.nhs.uk))

Planning your pregnancy - NHS ([www.nhs.uk](https://www.nhs.uk))

The Marfan association

([www.marfan.org/expectations/pregnancy](https://www.marfan.org/expectations/pregnancy))

British Heart Foundation

([www.bhf.org.uk/informationsupport/support/practical-support/pregnancy-with-a-heart-condition](https://www.bhf.org.uk/informationsupport/support/practical-support/pregnancy-with-a-heart-condition))



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