



Cardiomyopathy and Pregnancy

What is Cardiomyopathy?

Cardiomyopathy is a disease of the heart muscle that weakens its ability to pump blood around the body effectively. Due to a number of other changes, cardiomyopathy also causes the body to retain fluid. There are many causes of cardiomyopathy including family history (genetics), coronary artery disease, alcohol, virus related, pregnancy (peri-partum) and idiopathic (cause unknown). Pregnancy can put a strain on the heart if you already have cardiomyopathy or can cause cardiomyopathy.

What is Peripartum Cardiomyopathy?

Pregnancy related cardiomyopathy is called peripartum cardiomyopathy. It generally occurs in the last few months of pregnancy, at the time of birth or in the first five months following delivery. The exact cause is unknown.

What symptoms can occur?

Symptoms of cardiomyopathy vary and some can be confused with symptoms that are felt during a normal pregnancy and following delivery.

Symptoms you may experience include:

- Breathlessness
- Palpitations
- Fatigue
- Ankle swelling
- Reduced appetite
- Chest pain
- Faints/ dizziness
- Difficulty lying flat

Investigations

When you are first diagnosed with cardiomyopathy, you may be asked to undertake a number of tests. These tests provide information to help your doctor to decide on the best treatment. Some tests are listed below.

- Blood tests give your doctor information about your immunity and the functioning of other systems such as your kidneys and thyroid gland.
- Electrocardiograms (ECG) use small leads on your chest to look at your heart rate and rhythm.
- Echocardiograms (echo) use ultrasound to show the structures of your heart and how it is working.
- Chest X-rays shows if there is any fluid on your lungs that may be causing your shortness of breath.
- Exercise testing is used to assess the function of your heart. Occasionally your doctor will recommend exercise testing during early pregnancy but more commonly this would be undertaken either when planning for pregnancy or after delivery.
- Cardiac MRI assesses the structure and function of the heart. It uses a magnetic field for imaging which is safe in pregnancy. However, because of the special dye used to enhance images, MRI scans are only rarely performed during pregnancy but may be required before or after pregnancy.
- Coronary angiography takes images of the arteries supplying blood to the heart muscle. Images are obtained by insertion of a thin tube (catheter) into an artery in the arm or groin or with a CT scan. Because of the radiation and dyes used these tests are rarely performed during pregnancy but may be necessary before or after pregnancy.

Self Management

Your health care team will teach you how to monitor signs and symptoms such as increasing breathlessness (especially at night or at rest), and ankle swelling. Other symptoms to report are cough, difficulty sleeping flat, faints/dizziness, palpitations or chest pain and excessive fatigue.

Fluid Retention

People with cardiomyopathy should check for fluid retention by weighing every day and reporting changes. Even though changes in weight are normal during pregnancy and breast feeding, it is still important to closely monitor your weight so that your health care team can determine the cause of rapid changes. Sometimes your doctor may recommend limiting your fluid intake to a specific amount; this can cause difficulty with milk production when breast feeding and should be discussed with your doctor.

A low salt diet is also usually recommended as salt causes your body to retain fluid. (See section on low salt diet.)

Other ways to manage your health:

- Cease smoking
- Attend all follow up appointments with your health care team which may include your Obstetrician, Physician, Cardiologist, GP or Heart Failure Service
- Take all medications prescribed by your doctors
- Exercise regularly

Your health care team are there to assist you with all of these strategies and will help you to maintain good self management.

Healthy Eating

Healthy eating is important at all stages of life, especially during pregnancy and breastfeeding when your body has greater need for most nutrients. To meet your extra nutritional needs, it is important to eat a variety of healthy foods.

Your daily food group requirements during pregnancy and breastfeeding are outlined in the following table. The middle columns guide how many serves to eat from each food group per day.

Food Group	Number of serves		1 serve
Breads, Cereals, Rice, Pasta, Noodles	Pregnant 8-12	Breastfeeding 5-7	1 slice bread ½ medium bread roll ½ cup cooked rice, pasta, noodles ½ cup breakfast cereal flakes ¼ cup muesli or oats
Fruit	Pregnant 4	Breastfeeding 5	1 piece medium sized fruit 2 pieces smaller fruit 20 grapes or cherries ½ cup juice 1 cup diced/canned fruit 1 ½ tsp sultanas
Vegetables, Legumes	Pregnant 5-6	Breastfeeding 7	1 medium potato/yam ½ medium sweet potato 1 cup lettuce or salad vegies ½ cup cooked vegetables
Meat, fish, poultry, eggs, nuts, legumes	Pregnant 1 ½	Breastfeeding 2	65 – 100g cooked meat/chicken 80–120g cooked fish 2 small eggs 1/3 cup cooked beans, lentils, chick peas or canned beans 1/3 cup peanuts/almonds
Milk, yogurt, cheese	Pregnant 2	Breastfeeding 3	1 cup milk 40g (2 slices) cheese 200g yoghurt 1 cup custard

Low Salt Diet

Why control salt intake?

Salt makes your body retain fluid. To pump this extra fluid, your heart has to work harder. In cardiomyopathy, eating too much salt can worsen symptoms such as swelling and shortness of breath.

What is salt?

Salt is sodium chloride. It is found naturally in many fresh foods and added to food as a preservative and for flavour. Salt is hidden in many foods, especially tinned, processed and takeaway foods.

How to reduce salt

- Remove the salt shaker from the table. Do not add salt to your meals. Use pepper instead.
- Don't add salt in cooking.
- Avoid high salt foods and processed foods. Choose 'no added salt', low salt or 'reduced salt' foods in the supermarket.
- Beware of pre-mixed herb/spice mixes, vegetable salts, and sea salt.
- Salt substitutes (eg. Lite Salt) are high in potassium and should be avoided in people with cardiomyopathy.
- Use pepper, herbs, spices, lemon juice or vinegar to add flavour to food instead of salt.



Reading food labels

Read food labels to compare different brands of foods and choose the one with the lowest salt (sodium) content. Check the nutrition information panel- a sodium (Na) content less than 150mg per serve is desirable.

LOW SALT	MODERATE SALT
Less than 120mg sodium per 100g	120-400mg sodium per 100g

Common high salt foods include:

- Cured, smoked, canned or salted meat eg. ham, corned beef, bacon, sausages, salami, brawn, pate, frankfurts
- Meat pies, sausage rolls, crumbed or battered fish, hamburgers, BBQ chicken, pizza, chicken nuggets, chinese food
- Tinned fish in brine or tomato sauce, anchovies
- Pickled and canned vegetables, olives
- Tomato juice or vegetable juice
- Cheese (except cottage, ricotta or quark cheese)
- Packet rice & pasta with flavouring, instant noodles
- Savoury and sweet biscuits
- Crisps, pretzels
- Tinned spaghetti, baked beans
- Sports drinks
- Soup, vegemite, Bonox, Gravox, gravy, stock cubes
- Most sauces- tomato, tartare, BBQ, teriyaki, soy, Worcestershire, cheese sauces

Speak to a member of your health care team if you have further nutrition questions or specific dietary requirements.

Medications

Medications are an important part of the treatment of cardiomyopathy.

The same groups of medications are used to treat cardiomyopathy that develops with pregnancy (peri-partum) as for cardiomyopathy which develops without pregnancy.

A special consideration when you are pregnant or breastfeeding is the possible effect that your medication may have on your baby. Some medicines have been taken by a large number of pregnant and breastfeeding women and are known to be safer for your baby. Your medical team chooses these medicines rather than medicines that lack detailed safety information in pregnancy and during breastfeeding. Your good health is also vital to ensure healthy development of your unborn baby, and so it is very important to continue your medicines as prescribed. Please discuss any concerns you may have with your doctor or healthcare professional.



These are some commonly used medicines for cardiomyopathy:

Beta-Blockers

Beta-Blockers slow down the heart rate and lessen the workload on the heart. This strengthens the pumping action of the heart. Some Beta-Blockers have been used for many years in pregnant women without significant effects on the unborn baby. These Beta-Blockers are often prescribed during pregnancy and may also be safely continued while breastfeeding.

Examples of Beta-Blockers include metoprolol (Betaloc®, Toprol®) and labetalol (Trandate®).

Diuretics (also known as “water tablets”)

Diuretics remove excess fluid from the body that commonly builds up in the ankles, feet, or lungs. They do this by causing you to pass more urine. Removing fluid from the lungs makes breathing easier. There are different types of diuretics available and your doctor will choose a suitable diuretic if you require one during pregnancy or breastfeeding.

Digoxin

Digoxin helps the heart to beat stronger and to maintain a regular heart beat. This may improve the symptoms of heart failure or a fast heart rate. Digoxin has been taken by a large number of pregnant women without proven harmful effects on the unborn baby. It is considered safe to take during pregnancy and while breastfeeding. More frequent blood tests may be required while taking this medicine due to body changes during pregnancy.

Hydralazine

Hydralazine lessens the workload on the heart and improves the pumping of the heart. Hydralazine has been used for many years in pregnant women to treat preeclampsia (raised blood pressure). It is considered safe to take while breastfeeding.

Nitrates

Nitrates may be used to lessen the workload on the heart and improve the pumping of the heart. These medicines have only been taken by a limited number of pregnant women, and there do not appear to be significant harmful effects associated with their use. Your specialist will discuss the use of these medicines with you if you require them. Blood pressure should be monitored with this medication. Should you wish to breastfeed while taking these medicines, please discuss with your specialist.

Calcium channel blockers

Calcium channel blockers, such as nifedipine, are not used to treat cardiomyopathy but in patients with stable or mild cardiomyopathy may be used for other reasons.

Calcium channel blockers have been used extensively to control blood pressure during pregnancy and have an important role in preventing pre-term (early) labour.

Oral nifedipine does not appear to cause significant harmful effects on the mother or unborn baby. Blood pressure should be monitored with this medication. Your specialist will discuss the use of these medicines with you if you require them. There is some information regarding the safe use of nifedipine for hypertension (high blood pressure) while breastfeeding.

ACE inhibitors

ACE inhibitors widen narrowed blood vessels to make it easier for the heart to pump blood to all parts of the body. These medicines also help to stop some of the body's harmful responses to heart failure, such as fluid retention. As these medicines have the potential to affect an unborn baby, they are generally not recommended during pregnancy. After delivery, ACE inhibitors with known safety in breastfeeding are commonly used, such as captopril (Capoten®).

Anticoagulants (“blood thinners”)

Anticoagulants, such as warfarin (tablets) and heparin or enoxaparin (injections) have an important role in the treatment of some patients with cardiomyopathy during pregnancy and after delivery. The choice of best treatment is complicated and depends on individual patients needs. Your cardiologist or physician will discuss this with you if this type of treatment is required.

There are other medicines that may be used to treat cardiomyopathy. Your doctor’s choice of medicines will depend on your individual needs. Your pharmacist will provide further information on the medicines you are prescribed.

Medication Tips

- Keep medicines out of the reach of children.
- Be aware of commonly experienced side effects, such as dizziness. These symptoms often improve once your body gets used to the medication.
- Carry an updated list of your medicines at all times.
- Do not stop taking your medicines unless your doctor advises you to do so.
- Your pharmacist can help you if you have trouble remembering to take your medicines.
- If you have ANY questions or concerns please ask your healthcare professional.



Exercise

Exercise is often recommended for women with cardiomyopathy as it improves fitness and strength and can lessen some of the symptoms that you experience. Exercise may reverse some of the changes in your muscles and blood vessels that occur with cardiomyopathy.

What sort of exercise should I do?

In general, low to moderate intensity exercise such as a regular walking programme is recommended. This can be started as soon as you feel up to it after the birth, though it is important to start slowly, avoiding hills at the beginning. Aim to build up to 30 minutes daily. Low impact exercise does not affect the amount of milk you produce or its quality.

High intensity exercise, such as running, should always be avoided for women with cardiomyopathy as it can be dangerous. A good guide to judge if you are doing too much is the “walk and talk test.” If you cannot speak a whole sentence whilst you are exercising, then you are doing too much.



Pelvic Floor

Pregnancy and childbirth can weaken your pelvic floor and abdominal muscles so it is best to avoid exercise other than walking until 6 weeks after the birth. Practice pelvic floor exercises as taught by your physiotherapist. During this time you are more prone to back and pelvic pain so it is important to avoid over stretching and sudden changes of position. If you do experience ongoing pain or symptoms of urinary or faecal incontinence, please notify your physiotherapist for advice.

Supervised exercise programmes are available at most major hospitals for people with cardiomyopathy. Your exercise specialist will provide you with more specific advice about these programmes and other exercises that are safe for you to do.

Device Therapy

In general, the pumping function of the heart will improve with the right medications. However, there are people whose heart function does not improve. If your heart function remains poor after a few months of treatment with medications, a defibrillator may be considered. It is possible to continue with pregnancy normally if you have a defibrillator.

People with cardiomyopathy are more likely to experience irregular heart rhythms. These abnormal rhythms may cause palpitations, dizziness or blackouts. You should tell your doctor if these symptoms occur. A defibrillator can detect these life-threatening heart rhythms and deliver a small electric shock to restore the normal heart rhythm. For people who are prone to these abnormal heart rhythms, having a defibrillator may improve outcomes and often gives the person peace of mind.

In some instances, these defibrillators can also be used as a special pacemaker. In this case, the device works to improve the pumping function of the heart and may help to improve symptoms. Investigations such as an electrocardiogram (ECG), an echocardiogram (echo) and cardiac MRI will help identify patients who will benefit from these pacemakers.

All defibrillators and pacemakers are implanted in the upper left or right chest wall under a local anaesthetic.



During Delivery

If you develop peripartum cardiomyopathy or have cardiomyopathy and are pregnant you will be reviewed by a cardiologist and commenced on appropriate treatment.

Your cardiologist will discuss your management with your obstetric team which may include your obstetrician, obstetric physician, midwife and anaesthetist to determine the best timing and method of delivery for you. It is likely you will need to deliver in a major hospital so that you can be monitored before and after delivery and receive appropriate treatment should any complications occur. The method of delivery is dependent on a number of factors including how many weeks pregnant you are, whether a vaginal delivery is favourable and whether you have any increasing symptoms. Your treating team will consider all these factors and discuss with you the best method of delivery for you and your baby.

Pregnancy in patients with cardiomyopathy does have risks however with recent research and guidelines health care teams are able to help you by creating the best possible plan aiming for a safe pregnancy and delivery.



Being a new Mum

Motherhood always brings new challenges to our lives whether it is having your first baby or adding to your family.

For many women having a baby is the most significant life-changing event they will ever experience. Mixed feelings towards your baby are quite common in the initial post-natal period and for several weeks after. These feelings may be more noticeable if you have been unwell and unable to do the usual things you did prior to pregnancy or prior to becoming unwell with cardiomyopathy.

There are emotional and physical changes you will experience following childbirth, however always remember to be kind to yourself. It is very important to have enough rest as this is necessary for you to recover and improve your health and well-being. Be sure to tell family and friends how you are feeling as it will not always be obvious to others that you have a medical condition and may get more tired than normal. So, try and arrange for your partner, family or friends to help out with cooking, washing, cleaning or childcare. However, be clear about what you would like them to do and what you prefer they didn't do.

Newborn babies are delightful but do not arrive with a pre-programmed routine. As time goes by you will develop your own routine to suit you and your baby. There are many rewarding moments to look forward to as a new mum.

Post Natal Depression

Post natal depression (PND) is common following pregnancy and doesn't have one single cause.

Factors that may contribute to PND include:

- Past history of depression or anxiety
- Stressful or complicated pregnancy
- Depression during your current pregnancy
- Delivery complications
- Family history of depression
- Difficulty breastfeeding
- Sleep deprivation
- Being a single parent
- Unrealistic expectations about motherhood
- Lack of financial/emotional support

The signs and symptoms of PND are the same as depression and included:

- Low mood
- Decreased interest in activities
- Tiredness
- Sleep disturbance
- Change in appetite
- Negative thoughts or feelings

If you have concerns that you may be feeling depressed or anxious please talk to your doctor or any member of your healthcare team as they can help you to get the right help.

Child Care

Looking after your newborn child and other children may be a significant concern for you if you are feeling unwell. A variety of child care options are available to assist women in these circumstances. These include options for home based care as well as centre based care though your eligibility for each may vary depending on personal circumstances. Please contact a member of your health care team to put you in contact with a social worker for further information.



Sex and Fertility

Sexuality, fertility, contraception and future pregnancies are important topics that women with cardiomyopathy should discuss with their treating doctors.

Although sexual activity can be practiced with different degrees of intensity and energy, it is estimated that the level of exercise required is equivalent to walking 275 metres on the flat or two flights of stairs. During sexual activity there is a gradual increase in the heart rate, blood pressure and oxygen consumption of the heart.

If you are able to walk at least 275 metres on the flat or two flights of stairs free of symptoms, you are generally safe when engaging in sexual intercourse. Safety can be improved by the following measures:

- Take your heart medications.
- Avoid sex after heavy meals or a hot bath.
- Engage in sex when well rested.
- Ensure the room temperature is not too warm or too cold.
- Try the least stressful position possible.

Women with cardiomyopathy have normal fertility. As you may be on medications which have the potential to cause harm to an unborn child it is important that you discuss contraception with your treating doctor.

Contraception and Future Pregnancies

Risks to your heart in future pregnancies

The risks to your health during pregnancy are increased if you have cardiomyopathy. The level of risk depends upon your: heart function, symptoms of heart failure, medications, and the health of other organs.

Contraception

If you wish to avoid the risks associated with future pregnancies it is necessary to have safe and effective contraception. The method of contraception selected will depend upon a number of factors including your personal preference, whether you are breastfeeding and your medications.

Contraception may include: progesterone only pill, injection (depo provera), or implant (Implanon); levonorgestrel intrauterine contraceptive device (Mirena), copper intrauterine contraceptive device, and barrier methods such as condoms and tubal ligation.

It is important that you discuss with your doctors the most appropriate method of contraception based on your individual circumstances.

Planned and unplanned pregnancy

Before becoming pregnant again it is important to seek counselling about the risk to you and your unborn child so that you can make an informed decision.

Cardiomyopathy may run in the family and if necessary your doctor may offer you and your family members referral to a clinical genetics service for advice and further testing.

In case of unplanned pregnancy, please consult your doctor as soon as you suspect that you may be pregnant.

Your Healthcare Team

A diagnosis of cardiomyopathy can be overwhelming. Your healthcare team is here to offer support and assistance.

If you have any concerns or queries, please don't hesitate to contact your local Heart Failure Service or healthcare team.

Contact details: _____

Useful Contacts

National Heart Foundation of Australia

<http://www.heartfoundation.org.au>

Ph: 1300 362 787

Cardiomyopathy support

<http://www.cmaa.org.au> ph: 1300 552 622

Beyond Blue

<http://www.beyondblue.org.au>

Ph: 1300 224 636

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