

Cardiomyopathy and Exercise

Balancing benefits and concerns around staying active

- Exercise has a number of health and wellbeing benefits.
- Many people with cardiomyopathy have concerns about the risks and benefits of exercise.
- Guidelines, and discussion with your GP or cardiologist, can help you make decisions about what exercise may be most suitable for you.

This information sheet aims to help you understand the benefits and risks of exercise for you so that you can make informed decisions, alongside a discussion with your GP, cardiologist or nurse specialist. This information is general guidance only, and aims to outline some of the risks and benefits of exercise. This is not advice, and we recommend that you discuss your individual circumstances with your clinician.

Why exercise?

Exercise has many benefits. It can improve overall health and fitness levels, control weight and be part of a healthy lifestyle. It can also prevent and improve many health conditions such as stroke and type 2 diabetes, and help to improve mental wellbeing by reducing stress and depression.

What are the different types of exercise?

Aerobic exercise (which relies on the heart pumping oxygen to the muscles) is very beneficial for the heart and circulation. It reduces the risk of coronary heart disease, helps manage high blood pressure and can reduce some symptoms of heart failure. It can also help to build stamina so that you can do more activity without getting out of breath. Examples of aerobic exercise include walking, jogging, cycling, swimming and gym classes. To get the most benefit it is recommended to do aerobic exercise most days of the week, building up the duration gradually until you manage 30 minutes at a time.

Resistance exercise is movement that strengthens our muscles. This can be done with free weights, machines, resistance bands or body weight.

Resistance exercise is vital to ensure our muscles and bones stay strong as we get older, and we maintain our ability to do daily activities. It also helps maintain metabolism and therefore helps control body weight. Resistance exercise should be done 2-3 days a week. Other types of exercise include flexibility, balance

and core strength. Although these might not directly benefit your heart, they are good for your overall health and wellbeing.

Find out more about the benefits of exercise at www.nhs.uk/livewell/fitness

Describing intensity of exercise

Exercise can be described in terms of how challenging it is for the body. Low intensity exercise would be described as 'easy' and typically wouldn't cause any significant change in breathing rate.

Moderate intensity exercise would cause comfortable breathlessness and would take a little longer to recover from. High intensity exercise would cause your breathing to be too fast to talk easily. It is important to know what intensity exercise is most beneficial and most safe for you. The sections below give guidance on this.

Exercise for people with cardiomyopathy

If you have cardiomyopathy you may understandably have concerns about doing exercise, such as whether it may cause symptoms or make your condition worse. You may also have questions about how to begin exercising, how to go about exercise safely, and how to know when to stop.

Guidelines on exercise vary and it is difficult to give general recommendations as it depends on the type of cardiomyopathy you have, and how it affects you. Any individual with cardiomyopathy wanting to participate in high intensity or competitive sport should do not do so without seeing a sports cardiologist for specialist screening and advice.

Arrhythmogenic cardiomyopathy (ACM) / Arrhythmogenic right ventricular cardiomyopathy (ARVC) – with this condition we know that large volumes or intensities of exercise can unfortunately



cause more rapid progression of the disease, and an increased burden of arrhythmias. For most people with ACM they should only participate in low or low- moderate intensity exercise, and should also avoid large volumes of endurance exercise. For some people this means significantly reducing their exercise compared to the amounts they were completing before their diagnosis.

Dilated cardiomyopathy (DCM) – for people who are on medication, with stable symptoms and who do not have heart failure or arrhythmias, moderate intensity exercise is typically safe and recommended. It can help to improve symptoms and is not likely to affect the underlying condition. However those with DCM with symptoms should abstain from moderate or high intensity exercise. Those with DCM with pathogenic variants such as LaminA/C or filamin C mutations are at higher risk of exercise-related arrhythmias and should be advised to avoid competitive or high intensity sports.

Hypertrophic cardiomyopathy (HCM) – moderate intensity exercise is safe for the majority of those with HCM. However, some individuals with HCM may be at risk of exercise-related arrhythmias, so it is best to get advice from your cardiologist on your individual risk. If an arrhythmia is picked up during an exercise test during diagnosis, the person may be considered for an ICD.

Some people with HCM have an obstruction in how the blood flows out of the heart (called left ventricular outflow tract obstruction or LVOTO).

This obstruction might affect them all of the time, or only when they exercise (when the heart is working harder). This can cause breathlessness, chest pain and tiredness. Those with HCM who have LVOTO will need stress exercise tests to determine how much exercise is safe for them.

General recommendations for exercise for people with cardiomyopathy are:

- Warm-up first – whatever your activity, make sure your first few minutes are at an easy pace. This ensures your heart and breathing rates increase gradually, and allows your body to get ready for exercise safely.
- If you are new to exercise, being active 'little and often' may be better tolerated initially than longer bouts of exercise.
- Build up the duration and intensity of exercise gradually. Be patient and wait until exercise feels like it is getting easier before you increase the pace or intensity.

- Avoid exercise that involves sudden bursts of exertion (such as sprinting or very heavy weight lifting) – these are very demanding on the heart.
- Avoid exercise that involves static holds. When doing strength exercises, choose forms that involve movement rather than holds.
- Avoid breath-holding when lifting weights or exercising – this raises blood pressure.
- Avoid exercises that require you to rapidly move from one posture to another – for example lying on the floor to standing suddenly – as this requires your heart to work hard to maintain your blood pressure and may result in symptoms.
- Always cool-down – for the last few minutes of any activity bring the pace down slowly. Keep your feet moving until you have completely caught your breath.
- Find a type of exercise that you enjoy doing. It will benefit you more as an activity you enjoy is one that you are more likely to carry on doing.
- Listen to your body – if you don't feel well for any reason – either have a day off exercise or reduce the intensity until you feel well again.

Monitoring exercise intensity

There are two ways of monitoring exercise intensity: Heart rate and 'Feelings of exertion'.

The normal 'resting' heart rate (while you are resting and not being active) is 60 - 100 beats per minute (bpm), although some cardiac medications may take your resting heart rate a little lower than 60bpm.

You can find your heart rate by putting the tips of your first two fingers over the pulse point on your wrist and counting the number of beats in 15 seconds. Multiply this number by 4 to give you beats per minute. Your 'maximum heart rate' is the highest rate (fastest beats per minute) that your heart can beat during maximum exercise. This rate depends on your age, as is calculated as: 220 minus your age. So typically for a 20-year-old this is 200 beats per minute, and for a 60-year-old it is 160. For those on betablockers, their maximum and exercising heart rates are often 20-30 beats lower than others their age.

For people without a health condition, doing exercise that increases their heart rate up to their 'maximum heart rate' is usually safe, although up to 85% is usually more beneficial. For people with cardiomyopathy the 'safe' exercising heart rate will be individual, and depends on how their condition affects them and how well their heart copes with exercise, but a typical safe target will be 60-80% of their maximum heart rate.



Using your 'feelings of exertion' is a very reliable way of monitoring your exercise intensity. Feelings of exertion include breathlessness, muscle fatigue and an overall feeling of tiredness from being active. Moderate intensity exercise would cause you to feel 'comfortably breathless' but just about able to talk, whereas high intensity exercise would make you feel too breathless to talk easily. Once you know how your body feels at different intensities of exercise, it can be as reliable as heart rate for monitoring if you are working at the right level.

Types of exercise tests and what they do

Most people with cardiomyopathy will have exercise tests as part of their diagnosis. These tests include:

- a sub-maximal walking test – such as a 6 minute walk test or an incremental shuttle walk test;
- an ECG monitored exercise test – having an ECG (electrocardiograph or heart monitor) while exercising on a treadmill or static bicycle. Some people may have this test while having their breathing monitored (cardiopulmonary exercise test); and
- an exercise echocardiogram – doing exercise while their heart is being imaged (an 'echo').

The aims of exercise tests are to:

- assess the function of the heart and how it copes with the exertion of exercise (when it has to work harder);
- understand whether exercise brings on symptoms such as chest pain, breathlessness and dizziness;
- check whether exercise brings on arrhythmias (abnormal heart rhythms) which may be a risk for cardiac arrest (where the abnormal heartbeats cause the flow of blood out of the heart to suddenly stop);
- guide certain treatments, such as whether an ICD is recommended; and
- to understand baseline fitness to help ensure appropriate exercise prescription.

In addition to these tests, some people may have an MRI to check whether there are any problems with the flow of blood leaving the heart (called left ventricular outflow tract obstruction) which can be caused by some types of cardiomyopathy, and which may affect someone's ability to exercise.

I have an ICD (implantable cardioverter defibrillator). Can I exercise?

Some people are understandably concerned that a change in their heart rate due to exercise could cause their ICD to give them a shock.

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ICDs are programmed to continuously monitor your heart rhythm and only give a shock when they detect abnormal, dangerous, heart rhythms (arrhythmias). These arrhythmias are different to the higher regular heart rates that occur during exercise.

However, it is sensible to exercise to target heart rates that are below the thresholds your ICD is programmed to deliver.

ICDs are made up of a generator (which generates the shock if it is needed), a battery (to power the device) and leads (wires that connect the ICD to the heart).

For the first 6 weeks after an ICD is implanted it is important not to lift the arm on the affected side above shoulder height – this allows the leads to settle into the heart tissue. For many people, after these first few weeks, their ICD does not limit their physical activities. However, end of range very repetitive shoulder movements may slightly increase the risk of lead failure. Return to activities such as rowing may therefore not be advised.

For those with an ICD, doing regular moderate intensity exercise actually reduces the risk of arrhythmias as it dampens down the nervous system that helps regulate heart rhythm. For anyone with an ICD, it is a good idea to warm up before, and to cool down after exercise. This helps to ensure that their heart rate increases and decreases gradually. This also reduces the risk of arrhythmias.

Is there a link between exercise and sudden cardiac death?

Sudden cardiac death happens when someone dies suddenly due to a cardiac – or heart-related – cause. This may happen when someone has a life-threatening arrhythmia, which can happen in some types of cardiomyopathy.

Although sudden cardiac death can happen during exercise, it is very rare. In fact, in the majority of cases sudden cardiac death is unrelated to physical activity or exercise. However, some people with a history of arrhythmias may be advised to avoid strenuous and competitive sports. ICDs reduce the risk of sudden death caused by arrhythmias (as they detect and correct the heart rhythm).

What symptoms should concern me when I exercise?

If you have any of the following symptoms when exercising it is important to stop and seek advice from your GP or cardiologist.

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- You feel chest pain or tightness.
- You feel dizzy or light-headed.
- You faint.
- You are severely short of breath.
- You have sudden palpitations (you are aware of a change in your heart rate or rhythm).
- It takes longer for you to recover from exercise than you think is normal.
- You are worried or anxious about how exercise might be affecting you.
- If any of the symptoms you normally experience become worse when you exercise.

Everyone is different. You can talk to your clinician if you have any symptoms that are worrying you.

What is cardiac rehabilitation and can it help me?

Cardiac rehabilitation is a programme of exercise and support to make healthy lifestyle changes. It is often offered to people who have had a heart surgery or a heart attack to help them recover and improve their heart health. All those who have heart failure and those who have had an ICD are also eligible for cardiac rehabilitation.

Cardiac rehabilitation may also be helpful for people with cardiomyopathy. Many people with a diagnosis of cardiomyopathy find it helpful to get expert advice on getting and staying active, as well as receiving support to make other lifestyle changes to benefit their overall health. If you think this might help you, ask your clinical team to refer you to your local programme.

We're here for you

At Cardiomyopathy UK we offer help and support for you and your family. We have information about each type of cardiomyopathy as well as diagnosis, treatment and lifestyle issues. Look on our website or call us for more information. Call our helpline to talk to our cardiomyopathy support nurses. We can put you in contact with other people affected by cardiomyopathy through our support groups, peer support volunteers and social media. Contact us for more about our services, or look online.

Watch the presentation

Scan this QR code with your phone to watch the full presentation from the author of this information sheet.

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