# Cardiac Rehab for All

**A resource for patients recovering from a cardiovascular event**

IRISH ASSOCIATION OF CARDIAC REHABILITATION

Irish Heart Foundation

# Contents

# Introduction

**This educational tool is designed to help patients who are recovering from a cardiovascular event, and family members. It contains a wide variety of information that relates to your heart health.**

During the cardiac rehabilitation programme, you will learn about your individual risk factors and what lifestyle changes you may need to make.

Dr Angie Brown

Although cardiovascular disease continues to be one of the leading causes of death and disability in Ireland, and in most European countries, more and more patients survive their cardiac event. This is due to advances in medications, medical treatment and procedures, such as stenting, and surgical techniques.

Cardiac rehabilitation programmes are designed to help both patients and their families recover fully from a cardiac event, while identifying their personal cardiovascular risk factors and adopting the necessary lifestyle changes. The support of the cardiac rehabilitation team helps to ensure that patients understand that the immediate threat to their life is over, and that they can now concentrate on taking care of their heart health.

If you have not been able to attend a cardiac rehabilitation programme, and would like to do so, or if you require more information on your heart health, please contact the Irish Heart Foundation:

PHONE
**01 668 5001**

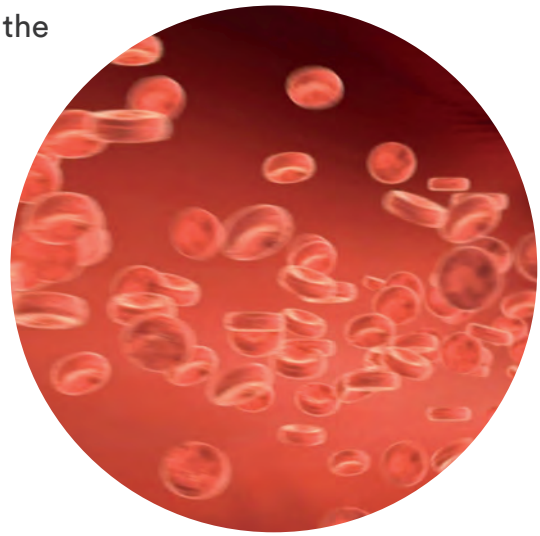
EMAIL
**info@irishheart.ie**

WEBSITE
**www.irishheart.ie**

The Irish Association of Cardiac Rehabilitation may also provide more information at **www.iacronline.ie**

# Introduction to Cardiovascular Disease

**Cardiovascular disease is a lifelong process that starts in childhood, progresses slowly and can affect people at all stages of life. The good news is that healthy lifestyle choices are helpful at any age.**



Your heart is a muscle that pumps the blood around the body. Like all muscles in the body, the heart has its own blood supply which comes from the coronary arteries.

As we grow older, these arteries can narrow and inflammation and damage can occur. This may lead to small cracks forming on the inside of the artery wall. Particles in the blood such as cholesterol and blood clots can stick to these cracks and plaque develops. This fatty plaque build-up narrows the arteries, reducing the blood flow, leading to a reduction in the supply of blood to the heart muscle. This results in a cramp like pain around the chest. This is called angina.

This reduction in blood supply may be more noticeable when the heart has to pump harder for example when someone is walking up a hill. The heart is working harder and demanding more oxygen for the muscle. Increased demand and reduced supply often lead to attacks of angina.

If the plaque ruptures, platelets (blood clots) collect at the site to try and block the plaque rupture. This blood clot can block the coronary artery so there is less blood or NO blood getting through to the heart muscle. This is called a myocardial infarction or heart attack.

The good news is that the heart can recover and there are many medical and surgical treatments available. You can do a lot too, by leading a healthy lifestyle, taking plenty of exercise, limiting alcohol, not smoking, lowering salt, sugar and fat and taking all medications as prescribed.

## Stroke, Peripheral Arterial Disease and other heart conditions

Similarly, the narrowing or blocking of the arteries in the brain may result in a stroke or a mini-stroke called a TIA or trans-ischaemic attack.

Narrowing of the arteries to the legs is called PAD or PVD - peripheral arterial disease or peripheral vascular disease which presents as a cramp type pain in the calf, thigh or buttock.

Cardiovascular disease can also include other types of heart problems such as heart valve disease, irregular or abnormal heart rhythms or a weak heart muscle leading to heart failure.

## Heart Valve Disease

The valves in the heart allow the blood to flow from one chamber to the next and allow for ejection (pumping out) of blood from the heart. These valves may become damaged due to a variety of causes and may narrow, restricting the blood supply flowing through them. This is called stenosis. Alternatively, they may become incompetent and not shut properly, allowing the back flow of blood. If the valve is severely damaged it will require surgical repair or replacement with a tissue or metallic valve.

## Atrial fibrillation (AF)

If you have atrial fibrillation (often called AF), you're not alone, as it is the most common type of arrhythmia (irregular heart beat). Atrial fibrillation occurs when the upper chambers of the heart, the atria, have an irregular heartbeat. This may lead to less blood being pumped from the heart around the body. The blood may pool in the atrial chamber and a clot may form. This clot may travel to the brain and block an artery, causing a stroke. Someone with AF is five times more likely to have a stroke than someone without this condition. Detection and ongoing management of AF is vital to reduce the risk of stroke.

AF is usually treated with medication and lifestyle changes. Most

# Introduction to Cardiovascular Disease
continued

people with AF will have medication to control the heart rate and will be prescribed a blood thinner to reduce their risk of stroke. Non-surgical and surgical treatment options may also be considered. During the cardiac rehabilitation programme, you will receive more information about this condition and how to manage it.

## Heart failure

Heart failure means your heart is not pumping as well as it should. This can lead to symptoms such as fluid building up in the body causing leg swelling or in the lungs causing shortness of breath. Combined with fatigue, these symptoms can make everyday activities more difficult.

Weight gain is a key sign of fluid build-up so it is important to weigh yourself every day. Noticing a weight gain and reporting it, is one of a number of important self-management skills that can help you get better and avoid admission to hospital.

There are a variety of medications available to help improve the function of the heart and to remove the extra fluid from the body. Other treatments include special pacemakers or defibrillators. All treatments are designed to improve the quality of life for patients with heart failure.

There are lots of treatments and medications available to help each of the above mentioned heart conditions.

Cardiac Rehabilitation Phase 1

# In Hospital

**“Have you had a heart attack? Have you had a stent or heart surgery? Have you had a stroke? Do you have angina? If the answer is yes, cardiac rehabilitation is here for you.**

# Cardiac Rehabilitation Phase 1
## In Hospital

If you are in hospital recovering, or waiting for a stent or heart surgery, this can be an anxious and worrying time for you, your family and your friends. The medical and nursing staff will be there to help you at this time.

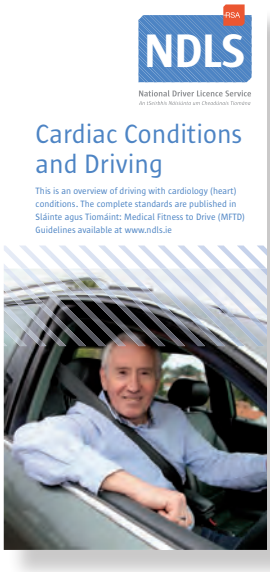
Remember that you are not alone. Rates of coronary artery disease in Ireland are high and many people have had a heart attack, stroke, heart surgery or a stent inserted. Because so many people have heart disease, there is a wide range of experience to learn from.

Remember this is not the end, but a beginning. With proper care and a healthy lifestyle, you can live a long and happy life.

During your hospital stay, a member of the cardiac rehabilitation team will visit you and explain the cardiac rehabilitation programme in detail before you go home. All patients are invited to attend the programme, which is designed and proven to help you recover from your cardiac event.

Cardiac rehabilitation is a programme of exercise and education which will enable you to return to a full, active and healthy life. If you have not been seen by a member of the cardiac rehabilitation team, please contact your local cardiac rehabilitation centre.

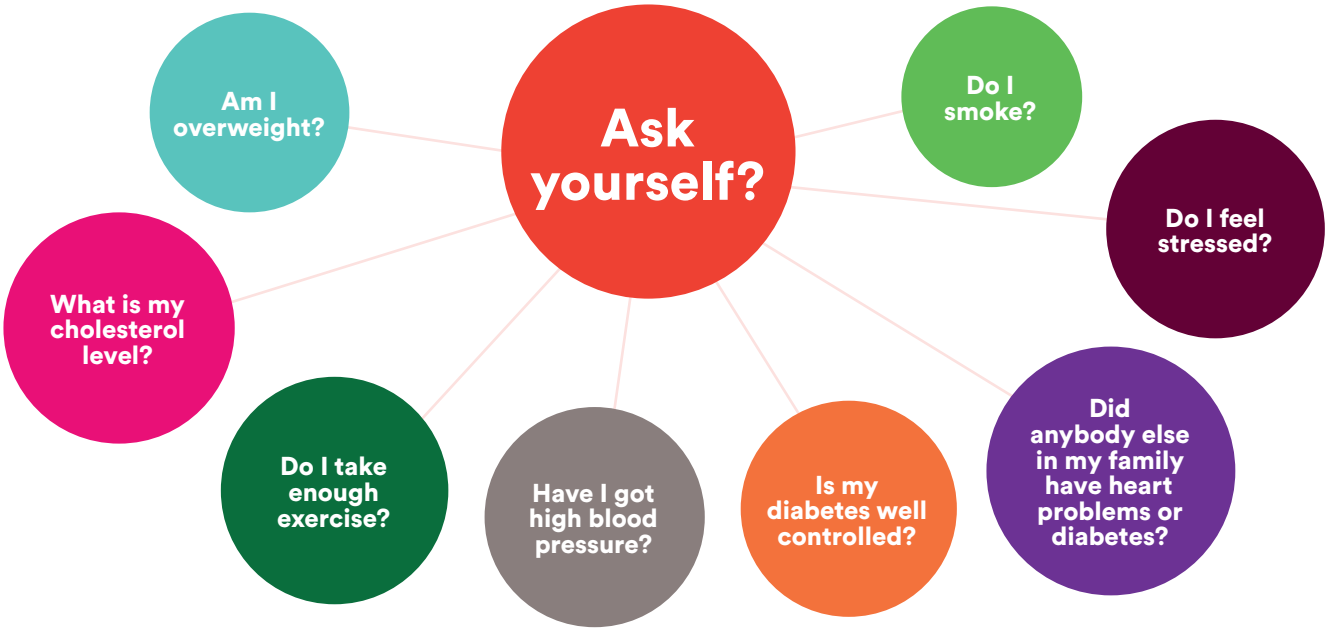
Remember your physical ability or age is not a barrier to participating in cardiac rehabilitation




Plans for your discharge will include a home exercise programme. Advice about returning to work, if applicable, may also be discussed at this time. Driving guidelines following a cardiac event are outlined on the Road Safety Authority website (**www.rsa.ie**), and can be discussed in relation to driving a car or company/ public vehicle.

It may have been a big shock or surprise to learn that you have heart disease. You go straight from being a person to being a patient. You wonder will I ever be myself again, what is going to happen to my life, how will I cope?

It is only human nature to feel confused, upset and worried, even feel guilty, but this is a good time to think about the things in your life that might have brought you to this point, and what changes you can make. This might be a wake-up call – a second chance. The cardiac rehabilitation nurse will discuss certain risk factors that may have contributed to your condition.




Remember there is a lot that you can do to help your recovery. Follow the advice given to you in hospital and start walking, after you are discharged home, gradually increasing the time as the days' go by. The cardiac rehabilitation programme will help you in making any necessary changes.

Cardiac Rehabilitation Phase 2

# Going Home

## What happens when I go home?

**Following your discharge from hospital, it is normal for you to feel a little worried or anxious over the coming weeks. This can lead to tension and stress at home. This is often called 'homecoming depression' and is usually temporary. However, if you are concerned about this contact your GP or team for support.**


Following your discharge from hospital, it is normal for you to feel a little worried or anxious over the coming weeks. This can lead to tension and stress at home. This is often called 'homecoming depression' and is usually temporary. However, if you are concerned about this contact your GP or team for support.

Members of your family are concerned about you and are anxious that you don't overdo things. Sometimes it feels like you are being wrapped in "cotton wool".

Talk things over with your family, partner or friends and explain how you are feeling. This will help them understand what you are going through.

Remember there is a lot that you can do to help your recovery. Follow the advice given to you in hospital and start walking slowly on a daily basis, following the home exercise information you have been given in hospital, even 10 minutes a day is a good start. You can build this up gradually over time, but pace yourself, as it takes time. Returning to a full active life will vary depending on your cardiovascular event. You can seek individual advice from your cardiac rehabilitation team.

You may have a lot of hospital appointments to attend, whether it is going back to see the medical team, dietitian or perhaps the psychologist.

# Cardiac Rehabilitation Phase 2
## Going Home continued

The cardiac rehabilitation team will contact you for an assessment before commencing the exercise and educational programme. As part of this assessment you may have an appointment for an exercise assessment – this test is to check that the heart is functionally fit for the cardiac rehabilitation programme.

You may have questions that you wish to ask the doctor or cardiac rehabilitation staff. It might be helpful to write them down and bring with you on the day of the appointment. You may experience symptoms such as chest discomfort, shortness of breath, dizzy spells, or fatigue. Please record these events and bring this record with you, when returning to the hospital for your check-up.

The cardiac rehabilitation programme will build your confidence and help you in making any further changes. You are encouraged to attend the exercise and education programme as it has been proven scientifically that patients who complete a cardiac rehabilitation programme live longer, feel better and are much less likely to have cardiac problems in the future. You'll also enjoy it.

# What if I get Chest Pain?

It is common for people who have heart disease to get chest pain or discomfort now and then.

**If you experience:**

- **Crushing pain, heaviness or tightness in your chest**
- **Pain in your arm, throat, neck, jaw, back or stomach**
- **Sweating, lightheadedness, sickness or shortness of breath, you should:**

> Stop what you are doing.

> Sit down and rest. (Sometimes resting relieves the pain/discomfort)

> Locate your GTN spray (if prescribed) and take 1 spray under the tongue.

> Wait 5 minutes. If you are still experiencing pain, take a second spray.

> If the pain does not ease after the second spray, phone an ambulance 112 or 999.

> Never drive with chest pain.

> A maximum of 2 sprays of GTN over 15 minutes may be administered.

> Do not use the GTN spray if you have taken any phosphodiesterase inhibitor such as sildenafil (Viagra), tadalafil (Cialis) or vardenafil (Levitra) in the last 24 hours.

> Please remain seated as GTN may cause dizziness or headache.

> If you do not have GTN spray, sit and rest, and if pain is still present after 5-10 minutes, phone an ambulance 112 or 999.

> Stay resting until the ambulance arrives.

> If the pain does ease following spray or rest but occurs again or more frequently, inform your GP or your Cardiologist as this requires further investigation.

> Keep a written record of your symptoms/pains.

> Remember, report any symptoms that do not feel right.

> **Remember, if at any time you think you are having a heart attack, call 112 or 999 immediately.**

# Cardiac Rehabilitation Phase 2
## Going Home continued

After you go home you may feel vulnerable without the security of the hospital staff around you.

It is important to know what symptoms to act on.

You should always report these changes to your healthcare provider:

- Any new chest discomfort or chest pain, or any change in how often, how intense or how long you have the pain or discomfort
- Any new shortness of breath, especially with physical activity
- Feeling extremely tired
- Feeling dizzy or fainting
- Feeling fluttering/pounding in your chest

Keep a record of these type of events in a diary, page or note on your phone, as these can be very useful to bring along to a medical check-up.

**It is important to have the phone number of your GP or family members in a handy place especially if you live alone. It is also useful to write down the Eircode for your house.**

Cardiac Rehabilitation Phase 3

# Exercise and Education Programme

**Heart disease is one of the leading causes of death in Ireland and Europe. Once diagnosed, heart disease is a lifelong condition that needs ongoing management for people to live longer and healthier lives.**

# Cardiac Rehabilitation Phase 3
## Exercise and Education Programme

Once the immediate threat to your life is gone, you need to be very clear that ongoing management of heart disease involves a lifelong commitment to diet and activity/exercise. Taking your prescribed medications is essential. Patients who successfully do this have much better outcomes.

Participating in a cardiac rehabilitation programme should be the first critical step in a patient's recovery from a cardiac event, and ongoing management of their cardiovascular disease.

Cardiac rehabilitation programmes are much more than just supervised exercise. Attention is also given to modifying risk factors such as smoking, high cholesterol, high blood pressure (BP), high blood sugars, stress and depression. These are all addressed by individual counselling and/or group education. Referral to specialists can also be arranged if patients are newly diagnosed with diabetes or wish to quit smoking. While these programmes are successful in reducing both stress and depressed mood, further specialist support can be arranged as required.

Cardiac rehabilitation is an individualised programme and suitable for a variety of patients, both young and old. Patients are treated with respect at all times on their journey to recovery.

Most hospital programmes involve attending exercise sessions twice to three times per week over a 6-10 week period in a safe and structured environment. Exercising on the other days of the week is important to build up fitness levels and improve stamina.

The exercise starts slowly and progresses over time. Warm-up exercises, a supervised circuit, and a cool down session takes place at each visit. The warm-up exercises and stretches are guided by the exercise specialist, who may be a Physiotherapist, Nurse or Exercise Physiologist, trained in clinical exercise.

Cardiac rehabilitation is an individualised programme and suitable for a variety of patients, both young and old.

Other members of the team may include a dietitian, occupational therapist, psychologist, social worker and pharmacist. Each staff member contributes to the cardiac rehabilitation programme according to their expertise. With this comprehensive approach, patients are encouraged, monitored and helped to regain their confidence and ability to return to their normal daily lives.

It is important you take control by finding out as much as you can about your heart condition. Attending the educational sessions during the cardiac rehabilitation programme will help you understand more about your heart condition and how best you can help yourself. You will learn about the importance of diet and exercise for good heart health. The cardiac rehabilitation programme will help you on the road to recovery, with the support of other patients and the cardiac rehabilitation team. This will help ensure that you feel in control of your health again.


In addition to improving fitness, cardiac rehabilitation programmes also help patients successfully manage their new medications and a heart-healthy diet. Studies consistently show that cardiac rehabilitation also reduces levels of anxiety and depression in cardiac patients. Together, all these changes ensure that patients live longer, with a better quality of life and fewer admissions to hospital. Therefore, cardiac rehabilitation programmes are considered an essential part of the cycle of care for cardiac patients, along with regular visits to the GP and the Cardiologist. Staff in cardiac rehabilitation communicate with all of these health providers so everyone is kept informed.

## The multidisciplinary team in cardiac rehabilitation

While you are in the exercise and education programme you will meet members of the cardiac rehabilitation multidisciplinary team that are in your local cardiac rehabilitation centre. Some of the multidisciplinary team members include the dietitian, physiotherapist, pharmacist, psychologist, occupational therapist and social worker.

The speed of recovery will depend on your heart condition – what brought you into the hospital and your previous level of fitness.

Exercise can have a positive effect on health, on risk factors such as blood pressure, cholesterol levels and blood glucose and helps with the activities of daily living such as housework, gardening and shopping. You feel fitter and stronger over time. Activity is your friend and an investment in your future

Your medication will be explained by the pharmacist or the nurse, for example, what tablets you have to take, why you have to take them, and for how long you must continue to take them.


He/she will also discuss the importance of taking your medication every day and what to do if you miss a dose. The consequences of missing a dose may be mild but may be harmful. Taking medicines may be a new concept for you and there may be a lot to remember. It is important to decide on a way to remember when to take the medicines.

Following a cardiac event, its normal to feel lost and lacking in confidence. By attending the cardiac rehabilitation programme and talking to the medical team, you will realise that help is available. In addition to family and friends, talking to other patients who are also going through the same experiences as you, can be very helpful at this time. During cardiac rehabilitation, patients also learn to manage stress more effectively so that it doesn't adversely affect their health. Many cardiac rehabilitation programmes have a dedicated psychologist who can help with various difficulties that emerge after a cardiac event. For example, sleep problems, anxiety, low mood, or even just difficulties adjusting to their heart condition.

**Remember, the cardiac rehabilitation team are there to help you and to increase your confidence. This is just the start of your journey on the road to recovery. In addition, your support network, your GP, family and friends can all play an important role in your recovery.**

# Cardiac Rehabilitation Phase 3
## Exercise and Education Programme continued

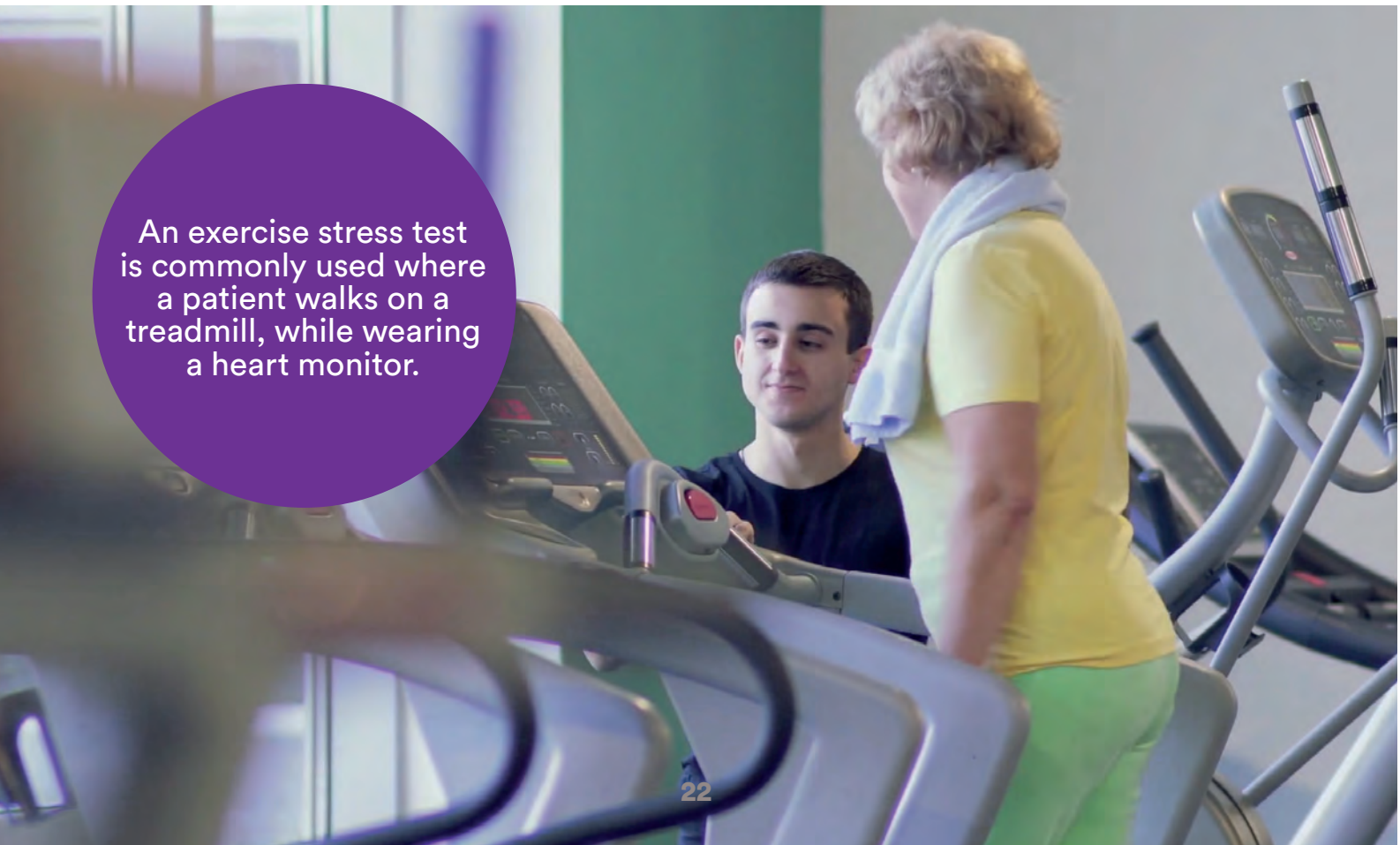
### Exercise assessments and monitoring during the cardiac rehabilitation programme

It is important to assess a patients' level of fitness before they attend the cardiac rehabilitation exercise and education programme, known as phase 3 cardiac rehabilitation. There are a few different methods of doing this.

An exercise stress test is commonly used where a patient walks on a treadmill, while wearing a heart monitor. The speed and the incline of the treadmill is increased in order to put the heart under "pressure" and check that it is safe to proceed with the phase 3 exercise programme.

The test is stopped if the patient reaches the allocated target heart rate or develops any symptoms or there are any changes on the heart rhythm on the monitor.

Other tests to check patients' fitness include a specific walk test or a step test.



The heart rate achieved at the assessment, guides the level of training for each individual and will help improve strength, stamina and allow progression to long term fitness.

Monitoring is generally done in a number of ways. Staff in the cardiac rehabilitation programmes have received specific training and have expert knowledge and experience to observe patients exercising in the gym. Cardiac monitors are commonly used in cardiac rehabilitation programmes in Ireland. The patient attaches leads to their chest, which are connected to the portable monitors. The heart rhythm and rate is displayed on a screen and provides invaluable information for the staff observing.

Portable watches or other devices may also be used to capture the patients' heart rate and rhythm. Patients' blood pressure is checked before and after exercise for a period of time.

Some cardiac rehabilitation centres may use a questionnaire to establish patients' activity or request patient complete an exercise diary for a week.

It is important that patients become aware of how hard their body is working, particularly as they progress during phase 3 cardiac rehabilitation programme, or if they are following a home exercise programme. The cardiac rehabilitation staff will guide you in understanding the "BORG" scale.

It is important that patients exercise the days they are not attending the cardiac rehabilitation programme, and as part of their future self-care.

Recommended long-term choices include either a daily structured walk, join a local walking programme or gym, use an exercise bike at home, or attend recommended phase 4 community-based programmes available regionally. Other phase 4 programmes are listed on Irish Association of Cardiac Rehabilitation website **www.iacronline.ie**

A home based programme is on the accompanying media programme attached to this manual. Other home based programmes are currently being developed.

Please ask the cardiac rehabilitation staff for information regarding individual fitness levels required for returning to work, or for certain heavy physical activities.

## Borg Scale

| Rating | Perceived Excertion |
|---|---|
| 6 | No exertion |
| 7 | Extremely light |
| 8 | Easy |
| 9 | Very light |
| 10 | Sort of Hard |
| 11 | Light |
| 12 | |
| 13 | Somewhat Hard |
| 14 | |
| 15 | Hard |
| 16 | |
| 17 | Very hard |
| 18 | |
| 19 | Extremely hard |
| 20 | Maximal exertion |

Cardiac Rehabilitation Phase 4

# Community or Home Based Programme

**Phase 4 represents the continuation of the exercise and dietary patterns that have commenced during the phase 3 cardiac rehabilitation programme.**

This home based programme can be used for a lifelong exercise prescription.

Patients may be referred to a community 'maintenance' programme with specifically trained phase 4 cardiac rehabilitation instructors. Other patients may prefer to revert to their original pattern of exercise (i.e. walking, cycling, dancing, tennis, swimming, hill walking) or attend a gym in their own locality.

The important point is that patients continue to exercise either in a formal setting, with a local organisation, or independently.

A home based programme can also be prescribed with the exercise intensity gradually increased over a period of time.

This home based programme can be used for a lifelong exercise prescription and is available on the media platform accompanying this manual.

## Returning to work

If you are looking after the family home, you can gradually resume housework, commencing with light duties. Once you have been reviewed by the medical team in the hospital following your stent, for example, or by the surgical team post bypass surgery, then you can progress to more strenuous tasks such as hoovering, cleaning the windows or washing the car.

Ideally, returning to work can occur gradually, if this facility is allowed at your workplace. If you are self- employed, this may or may not be an option. Depending on the physical nature of your work, a specific time may be required to elapse before it is deemed safe for you to resume your duties.

If you are employed by a public transport sector, a medical review is usually required by the employer, and an optional exercise stress test may also be required.

You can talk to the cardiac rehabilitation staff regarding any issues or concerns that you may have in relation to returning to work. They may be able to advise you, and also can refer you to the social worker or the occupational therapist for further information.

## Insurance

It is advisable to tell your mortgage, health and motor insurance company that you have had a cardiac event. It is also advisable to declare this information when taking out travel insurance.

**The Irish Heart Foundation has a list of insurance companies that patients can contact if they are having difficulties.**

## Driving

Driving guidelines are available on the Road Safety Authority website www.rsa.ie. Driving guidelines will depend on your particular condition.

Returning to normal driving is usually not a problem but if you drive commercially or for public transport provider, other concerns may need to be addressed. It is important to speak to your Doctor or the staff in the cardiac rehabilitation who may be able to answer your queries.

# Important lifestyle messages

Be active for at least 30 minutes each day, and at least 5 days per week

Quit smoking tobacco or other substances

Eat a healthy balanced diet

Maintain a normal weight

Consume alcohol in moderation

Keep blood pressure, cholesterol, and diabetes well controlled

Take prescribed medication

Take time to relax

Remember this is your second chance – enjoy every moment

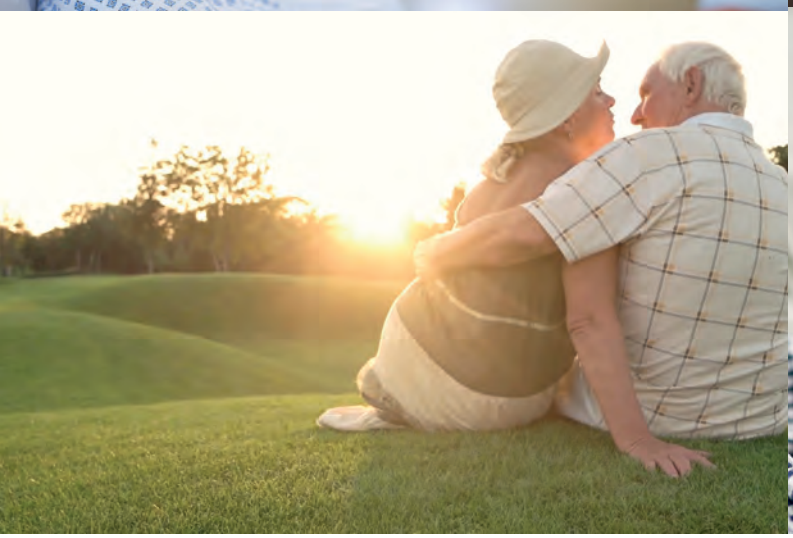
# Risk Factors

**There are many risk factors that can lead to the development of heart disease and stroke. Some of these risk factors can be changed, such as your lifestyle, the amount of exercise you take and the food you eat. Some risk factors cannot be changed such as age, gender and genetics.**

A large study called the INTERHEART study showed that greater than 90% of risk factors for heart disease can be controlled.

In this section, we discuss the risk factors and the lifestyle changes you can make to reduce your risk of heart disease and stroke. These include stopping smoking, moderating alcohol consumption, managing your diet or losing weight, taking up exercise and controlling diabetes, blood pressure and cholesterol.

During the cardiac rehabilitation programme, you will learn about your individual risk factors and what lifestyle changes you may need to make.



# Smoking and your Heart

## Stopping smoking is the single most important thing you can do to improve your health and extend your life.

**In this section, we talk about different ways you can work with your healthcare team to reduce your risk of having a second cardiovascular event, such as a heart attack or stroke. As part of the cardiac rehabilitation programme, you can receive guidance on how to quit smoking.**

Whether you are thinking about quitting, have tried many times in the past or are actively trying to quit smoking, we can help you to get to the next stage.

**In this section of the manual we will discuss**

- The damaging effects smoking tobacco can have on your heart, blood vessels and body, causing cardiovascular disease.
- The benefits of quitting for you and your family.
- Passive smoking and the damaging effects it has on the health of all those who are exposed to it.
- The importance of using appropriate treatments and resources that can make quitting easier.

Getting the right help could make you four times more likely to quit cigarettes and stay off them for good

## So how does smoking affect your body and your heart health?

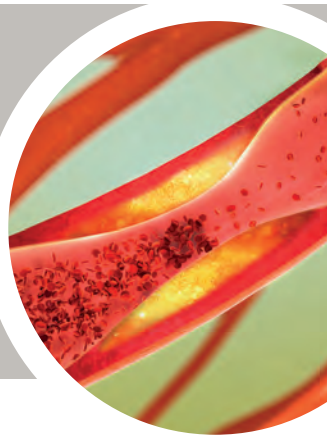
There are more than 7,000 chemicals in a cigarette. When you light a cigarette, the burning tobacco releases a number of highly toxic chemicals. These are distributed throughout the body, changing and damaging cells, causing harm to every organ and increasing the risk of cancers. If you are a smoker, this may also interfere with the benefits of the medication that you have been prescribed.

Let's consider **carbon monoxide,** a poisonous gas that is released from burning tobacco. It affects your body in three ways.

1. When inhaled, carbon monoxide binds itself to the haemoglobin in your blood and blocks off the oxygen in your bloodstream. When the heart and other organs are starved of oxygen, they have to work harder – causing breathlessness and sometimes angina, or chest pains.

2. It damages the lining of the blood vessels making it easier for fatty deposits to build up in your arteries making you more prone to heart attack and stroke.

3. It makes your blood 'stickier', which can cause a clot to form. The clot can break loose, travel through the blood vessels and cause a heart attack or a stroke.



Tobacco also contains **nicotine,** which is an addictive drug. It is a stimulant and will increase your blood pressure and pulse when you smoke which means your heart has to work harder.

Smoking can also **increase the 'bad' cholesterol (LDL)** level and decrease the 'good' cholesterol (HDL) level in your blood. When you quit, your cholesterol levels may improve.

Inhaling smoke from other people's cigarettes is known as passive smoking. It is dangerous, especially for pregnant women, children, the elderly and those with health conditions. People who breathe in second-hand smoke regularly are more likely to get the same illnesses as smokers, such as lung disease, cancer or heart disease.

# Benefits

## What happens to your body after you stop smoking?

**It doesn't take long to see the benefits**

- Within 20 minutes, your circulation improves, your heart rate and blood pressure return to more normal levels. This reduces your risk of heart attack straight away.
- Within eight hours, the carbon monoxide level in your blood will drop and the oxygen level will go up.
- Within one to two days, all the carbon monoxide will have left your body.
- Within a few days, your sense of smell and taste will start to improve.
- After three days, your breathing will improve, and your energy levels will increase.
- Within two or three months, your lung capacity can increase by up to 30%.
- Within one year, your chance of heart attack drops by half.
- Within five years, the risk of smoking-related cancers will be greatly reduced.
- Within 10 years, the risk of having a heart attack drops to almost the same as a non-smoker.
- In most cases, between five and 15 years after you stop, your stroke risk becomes almost the same as if you had never smoked.

## Your mental health

It has also been shown that quitting smoking can improve mental health. Shortly after stopping smoking, patients experience lower levels of anxiety, stress and depression, particularly if they attend a cardiac rehabilitation programme. Your mood improves and quality of life increases.

Did you find this information surprising? Now that you have this knowledge, maybe you will consider quitting? If you would like to, talk to us we can help you devise a plan to suit your particular needs around quitting. We can help you to set a quit date, learn how to cope with withdrawal symptoms and come up with effective strategies to stay on track.

There are many treatments available to support you on your journey. You might want to consider nicotine replacement therapy in the form of patches, chewing gum or lozenges. Or you could try an inhaler, spray or prescription medication. These medications make quitting easier.

Many cardiac rehabilitation programmes include excellent stress management programmes that patients find very helpful when trying to give up smoking. We can also refer you to support services in your local community.

Giving up smoking can be hard, but may feel even harder if you try to do it alone. Make sure you have the correct support so that you are set up to succeed, not to fail.

## What about electronic cigarettes?

An electronic cigarette (e-cigarette) is a device which vaporises and delivers a chemical mixture known as an "e-liquid" to the lungs in the form of an aerosol. Electronic cigarettes are relatively new, and there is not enough research to be sure they are safe to use. Evidence tells us that the most effective way to quit is to get specialist support and to use the treatments mentioned on the previous page. These are safe for cardiac patients and only need to be used temporarily.

**Giving up smoking can be challenging but, with the right support and treatment, many people do quit and stay off for good.**

In Ireland, we have more ex-smokers than smokers. Remember, getting the right support and using appropriate medication will make you four times more likely to quit for good. Speak to a member of the cardiac rehabilitation team or another health professional for advice.

You can also get help by calling the National Smokers Quit line at 1800 201 203. Staff can help you to get one-to-one support over the phone or they can link you in with your local stop-smoking support services.

**1800 201 203**

Or you can go to **www.quit.ie,** which has lots of information and support. You can sign up for an online quit plan to guide you through the quitting process day by day.

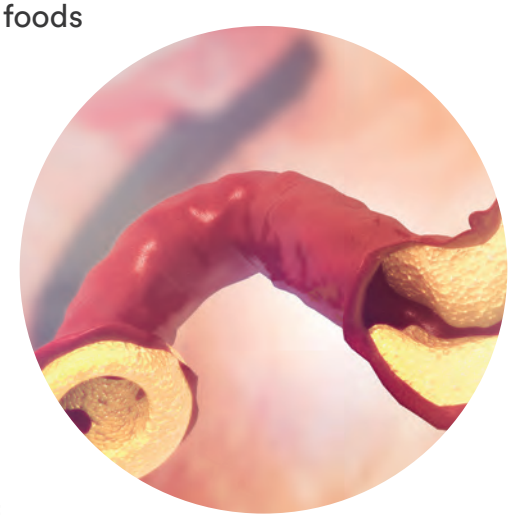
**www.quit.ie**


In Ireland, there are more ex-smokers than smokers.

# Cholesterol

## What is cholesterol?

**Cholesterol is a fatty substance found in the blood. A certain amount of cholesterol is important for a healthy body, but too much can increase your risk of getting heart disease or a stroke.**



Cholesterol is mainly made in the body by the liver. Eating foods high in saturated fat increases the amount of cholesterol the liver makes and can increase blood cholesterol levels. Foods high in saturated fat include cream, full-fat cheese, butter, fatty red and processed meat, cakes, pastries, chocolate, crisps, mayonnaise and salad dressings. To help improve your cholesterol level, it is also important to reduce foods containing transfats where possible. These fats are most likely to be found in processed foods such as biscuits and cakes, fast food, pastries and some margarines and spreads.

Some foods, such as eggs, shellfish, liver and kidneys, also contain cholesterol but they do not usually make a great difference to the level of cholesterol in your blood. If you need to lower your cholesterol level, it is much more important that you eat less foods that are high in saturated fat.

However, if there is a history of high cholesterol in your family, you may need to be more careful when it comes to eating foods that are high in cholesterol. Talk to your doctor or a dietitian for advice on these foods.

The tendency towards high levels of cholesterol in the blood can be inherited from your parents, but this can be treated effectively in consultation with your doctor.

### Lipoproteins

Cholesterol is transported in the blood by proteins that allow the lipid (fat) to bind to them. There are two types of lipoproteins in the blood:

- Low-density lipoprotein (LDL or bad cholesterol). LDL is involved in the build-up of plaque in the body's arteries, which are the blood vessels that deliver blood from your heart to the body. High levels can increase your risk of heart disease or stroke.
- High-density lipoprotein (HDL or good cholesterol). HDL helps to remove cholesterol and to slow down the build-up of plaque in the body's arteries. Higher levels protect against heart disease and stroke.

### What are triglycerides?

There is also a group of fatty substances in the blood called triglycerides. Triglycerides can contribute to the narrowing of the artery walls and high levels of these can damage your heart. If you carry excess weight, eat a lot of high-fat and high-sugar foods, or drink too much alcohol, you are more likely to have a high triglyceride level.

**The best way to reduce cholesterol is to follow a healthy lifestyle: exercise daily, eat healthily and take cholesterol-lowering tablets as prescribed.**

**All three are essential to reduce your cholesterol levels.**

# *Why your weight matters*

## If you are an unhealthy weight, you can gain important health benefits by losing 5-10% of your weight.

This will help to reduce your risk of getting diabetes, decrease your blood pressure and help to control your cholesterol level. Remember that you are on a long-term journey to improve your health and gain control of your weight. Your efforts to lose weight can continue from phase 3 of the cardiac rehabilitation programme into phase 4. Simple strategies such as walking for longer or sitting for less can help to make a difference.

**Being overweight is a risk factor for:**

- Coronary heart disease – angina, heart attack
- High blood pressure – stroke
- Diabetes
- Impotence – erectile dysfunction
- Sleep apnoea
- Cancer

## How do I know if I need to lose weight?

There are **two main ways** to tell whether you need to lose weight, your body mass index and waist circumference.

1

## Body mass index (BMI)

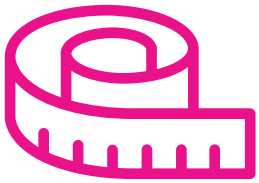
BMI is a measurement that considers the relationship between your weight and your height. It gives an estimate of your risk of developing weight-related diseases. To work out your BMI, you will need to know your height and weight. A nurse or GP can help you determine your BMI.

- Ideal: 18.5 to 24.9
- Overweight: 25 to 29.9
- Obese: 30 and above

2

## Waist circumference

Your shape, as much as your weight, can affect your health risk. Weight around your middle can increase your risk of getting heart disease, cancer and type 2 diabetes. That's because fat cells around the organs in the abdominal cavity produce toxic substances that cause damage to your body.



You can work out if you are at increased risk by simply measuring your waist. Find the bottom of your ribs and the top of your hips, and measure around your middle at a point mid-way between these. For many people, this will be at the level of the belly button.

| HEALTHY WAIST MEASUREMENT | MODERATE RISK | HIGH RISK |
|---|---|---|
| **Men**<br>Less than 94cm (37in) | **Men**<br>Between 94cm and 102cm (37in and 40in) | **Men**<br>More than 102cm (40in) |
| **Women**<br>Less than 80cm (32in) | **Women**<br>Between 80cm and 88cm (32in and 35in) | **Women**<br>More than 88cm (35in) |

## Why have I put on weight?

# Despite what you might read, the problem of obesity isn't caused by any single food. It's not a question of a lack of willpower either. Many factors influence what we eat.

Our environment and lifestyles have changed in recent decades which means healthy choices are not always the easiest to make. Shops encourage impulse buying of sweets and crisps through marketing cheap and processed food, using price promotions and placing products near the checkouts. Fast-food outlets are often clustered around our neighbourhoods. These often serve up larger portion sizes of processed foods that are high in fat, sugar and salt compared with home-cooked meals.

At the same time, we are becoming less physically active than previous generations. Our jobs and leisure activities have become more sedentary and we are less likely to travel on foot or by bicycle.

This means that we need to make conscious choices about what we eat and how we stay active. A good first step is to think about why you might have put on weight. Is this a recent change or something that has happened over the longer term? Did you start doing something differently, such as being less active or eating different foods?

Shops are often laid out to encourage impulse buying of sweets and crisps, which are placed near the checkouts.

# What can I do to maintain a healthy weight or to lose weight?

**There are many things you can do, so start with these first steps:**

1. **Eat a nutritious, balanced diet**
Include lots of fruit, vegetables and salad along with lean protein, whole grains and healthy fats in appropriate portions. Half of your plate should be vegetables or salad. You don't need to give up foods you enjoy, you can still have treats as part of a balanced eating plan.

2. **Be prepared**
The key to achieving your nutritional goals is preparation. Make sure to have a weekly meal plan so you know what you will be eating. Write a shopping list before going out so you can make sure to have healthier foods in the house.

3. **Look at your portions**
If you are eating too much at meals, you may struggle to lose weight. Try using a smaller plate or bowl to help you cut down without feeling deprived.

4. **Keep a food diary**
Try using a food diary to help identify the foods that you eat too often. Try not to purchase these products.

5. **Check food labels and try to make healthy choices, not just lower-calorie ones**
Use our Irish Heart Foundation food shopping card.

6. **Stay hydrated**
Make sure that those feelings of hunger are not thirst. Ask yourself, "Am I hungry or just thirsty?"

7. **Be more active**
This can help you to control your weight in the long term. It is good for your mood, blood pressure and heart health. It can also help you to manage or prevent type 2 diabetes. Find a form of physical activity you enjoy, so you are more likely to make time in your routine for it.

8. **Try to get enough sleep**
Aim for seven to eight hours per night.

9. **Make sure your plan is sustainable**
Think of your weight-loss journey as a lifestyle change that you can keep going over the long term, rather than a "diet" which you may struggle to stick with. Make changes that you can follow every day such as drinking skimmed instead of semi-skimmed milk or using low-fat spreads instead of standard ones. These tweaks may seem insignificant, but they can make a big difference over time.

Even if you lose weight slowly or hit a plateau, making these healthy lifestyle changes will benefit your heart health.

Weight management is a lifelong challenge for most of us. If you are thinking about making changes to your food or activity levels, plan ahead. Be realistic about your plans and focus on making sustainable changes. Getting knocked off track is normal from time to time, but it is important to learn from it and get back on track.

It can take time and determination to lose weight. It may require lifelong effort to maintain your ideal weight. Sometimes people have high expectations and feel frustrated when they do not see results quickly. Losing weight can be a challenging process, but the benefits are worth it. Life will be less tiring, and you will look and feel younger. A healthy diet does not have to be limited. You can still enjoy treats as long as they are part of a healthy, balanced diet.

# Realistic advice about losing weight

**Losing weight or managing your weight differently isn't easy.** High-calorie, processed foods are inexpensive. They are also heavily marketed and very accessible for most of us. If we indulge often, we can gain weight easily without really noticing. Once we have put on weight, the body likes to protect that weight. This means it can be difficult to lose more than 10% of your bodyweight with lifestyle changes alone.

**That is why it is important to make realistic plans and think about how you can make the food environment around you** – at home or at work – as encouraging as possible. Expecting yourself to resist tempting, high-calorie foods if they are all around may be unrealistic, so remove the temptation.

**It is important to set yourself a realistic weight-loss target.** Trying to lose more than 10% of your current weight may be unrealistic. Worse, it could lead to you not achieving your goal, feeling that you have failed and giving up completely.

**It is important to know that losing 5-10% of your weight can bring lots of health benefits.** It can take pressure off your joints and heart, reduce pain, help with blood glucose levels in type 2 diabetes and reduce blood pressure.

# Tips for healthy eating

### Eat more fish for a healthy heart

Fish, especially oily fish, is a great source of omega-3 fatty acids, which help to protect your heart. Adults should aim to eat at least two portions of fish per week, including at least one portion of oily fish such as salmon, trout, mackerel or sardines. It is not recommended to take omega-3 supplements as there is not enough evidence for their use.

### Eat five to seven portions of fruit and vegetables daily

Fruit, vegetables and salad add vitamins, minerals and fibre to your meals. Eating a healthy diet can help to protect your heart from further problems by helping you control cholesterol and blood pressure levels as well as manage your weight.

So, what does a portion of fruit or vegetables look like? A standard portion is 80g. An apple, banana, pear or other similar-sized fruit counts as one portion. Or you could have a dessert bowl of salad or three tablespoons of vegetables. Remember every little portion counts whether it is fresh, frozen, tinned, dried or juiced fruit and vegetables.

### Swap bad fats for good fats

Swap saturated fats and trans fats for monounsaturated and polyunsaturated fats. Saturated fats are found in animal products such as meat,full-fat dairy, and coconut oil. Trans fats are found in processed foods. The Mediterranean diet, which is based on long-term research around the best diet for heart health, advocates using unsaturated fats found in olive oil, rapeseed oil, nuts, seeds and avocados, in place of saturated and trans fats such as those found in processed foods such as butter, cheese, cream, mayonnaise, crisps and pastries.

Limiting processed meats, such as ham, bacon and sausages is also recommended. These changes will help to reduce cholesterol and slow plaque build-up in the walls of the blood vessels. Remember even with heart healthy fats, it is important to monitor serving sizes as they are still high in calories and can lead to unwanted weight gain if you have more than the recommended portion sizes.

### Get more fibre

Fibre is found in carbohydrates such as wholemeal flour, bread and oats. It is also found in plant foods such as fruits, vegetables, beans and lentils. Fibre is extremely important; it helps to keep your digestive system and bowels in good working order. An increased amount of soluble fibre, which is found in oats and some fruit and vegetables, can also help to

lower your cholesterol and protect your heart. Here are our top tips on how to get more fibre into your diet:

- Check the labels. If you are buying ready-made products such as bread, pasta or breakfast cereal, check the nutritional information on the back of the pack. Try to choose the higher-fibre options where possible. A product must have 6g per 100g to claim it is high in fibre.

- Choose wholegrain bread instead of white bread.

- Have a wholegrain breakfast cereal such as porridge oats, wheat biscuits or bran flakes. Why not try adding a handful of fruit or nuts for extra fibre? Load up on fruit and vegetables. Try keeping chopped fruit and vegetables on hand as snacks. Throw some frozen vegetables into your stews and curries. Add some salad to your lunchtime sandwich or a handful of fresh fruit to your breakfast cereal.

- Choose good quality carbohydrates. Have wholegrain or high-fibre starchy carbohydrates such as potatoes with the skin on, whole wheat pasta or brown rice with your evening meals.

If you are increasing the fibre in your diet, you should do so gradually, as going from a little to a lot can cause discomfort. It is also important to drink enough water as fibre needs fluid to do its job.

**Use less salt and sugar**

Too much salt can increase your blood pressure. The higher your blood pressure, the greater your risk of having further problems with your heart. The maximum daily recommended amount of salt for an adult is 6 grams or one teaspoon. About 70% of the salt we eat is already in foods so make sure to avoid it or eat less of those foods that have more than 1.5g salt (or 0.6g sodium) per 100g. The Irish Heart Foundation food shopping card is a useful tool to tell you whether a product is high or low in salt.

Rather than adding salt to foods, either in cooking or at the table, use herbs such as black pepper, paprika or flavourings such as balsamic vinegar, especially if you have high blood pressure.

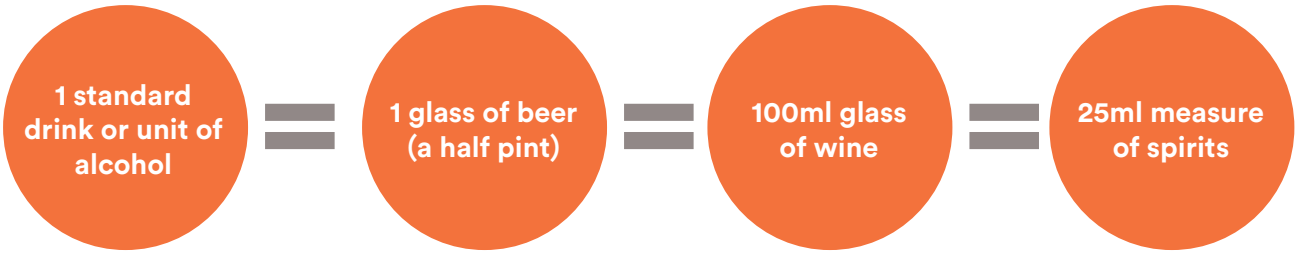
Too much sugar can lead to high triglycerides which is a bad type of fat in our blood vessels. This is why you should reduce concentrated forms of sugar such as fruit juice, sugary drinks, biscuits and cakes. If you wish to have these treats, try to have them only occasionally.

# Alcohol consumption

**If you drink alcohol, the good news is that you don't have to give it up. Consuming a moderate amount of alcohol that keeps you within the recommended maximum weekly limits is considered low risk, unless a doctor has advised you against it.**

It is important to keep within the guidelines for safe consumption and to have at least three alcohol-free days per week.

For drinking to be considered "low risk", the Health Service Executive advises that women have fewer than 11 standard drinks or units of alcohol in a week and men have fewer than 17 standard drinks or units.




Drinking too much alcohol over time may damage your health. Excessive alcohol consumption disturbs healthy sleep and may raise your blood pressure. This makes your heart work harder to pump blood around the body.

High blood pressure can significantly increase your risk of stroke and heart disease. It can affect how quickly your heart beats, and can even cause the heart muscles to weaken. This can lead to heart failure or sudden cardiac death. Drinking too much alcohol can also lead to liver disease, early-onset Alzheimer's and certain cancers.

Alcohol may raise triglyceride levels (blood fats) but provides no nourishment. One standard drink contains 100-150 calories. Having 17 standard drinks in one week can add up to at least 1,700 extra calories. This can lead to weight gain of 1.5 stone or about 9.5kg over a single year.

## Do you know how much you drink?

There can be a gap between what people think they drink and what they actually drink. The Health Service Executive has developed a website to deliver information about the effects of alcohol on the heart and general health. It is called **askaboutalcohol.ie** and it has a **drinks calculator** that can be used to find out if your level of drinking may be putting your health at risk.

Here are some questions to ask yourself if you are worried about your drinking:

**Is my drinking affecting my life, my work, my relationships or my health?**

**Do I know how much alcohol is too much?**

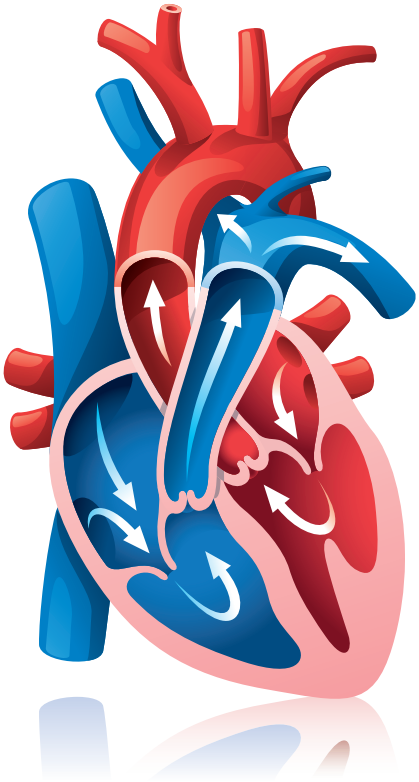
**Do I know when to stop?**

It is usually safe to take a small amount of alcohol when taking heart medications. You may require specific advice if taking blood thinners, such as Warfarin, Dabigatran, Rivaroxaban, Apixaban or Edoxaban.

For more information, visit: **www.askaboutalcohol.ie**

# High blood pressure

**High blood pressure (BP) is one of the main risk factors for cardiovascular disease.**



High blood pressure is common as we get older and can also be hereditary. The good news is that, in addition to lifestyle changes, there are many medications available to lower your blood pressure and prevent this happening.

The heart is a muscular pump. It squeezes and pumps blood out of the heart around the body. The heart then relaxes and fills again with blood, ready for the next pump. Blood pressure is the force that the blood exerts on the inside of the blood vessel or artery wall as the blood flows around the body. When you exert yourself, your blood pressure rises, and the heart has to work much harder to pump the blood around your body. If your blood pressure is always high, then the lining of the blood vessel will become damaged. If you smoke or have high cholesterol, this damage, which is described as increased wear and tear, may be increased.

## How to understand a blood pressure reading

Blood pressure is measured in millimetres of mercury (mmHg) and is written as two numbers. So, your reading might be 120/80mmHg, though we usually say simply “120 over 80”.

The first number is the systolic reading and is the highest pressure when your heart pumps. The second number is the diastolic reading, it records the lowest pressure when your heart is relaxed between beats.

**140/90**

For people with heart disease, the first reading should be less than 140 and the second should be less than 90. Ideally, it would be less than 130/80. If you have diabetes, then the reading should be 140/80 or less.

Lifestyle factors can increase the risk of developing high blood pressure. These include, smoking, being an unhealthy weight, not getting enough physical activity, drinking more than the recommended limits of alcohol, having too much salt in your diet and stress. Sleep apnoea, a condition that affects your breathing when you are sleeping, can also be a factor. Kidney disease may cause high blood pressure in a small percentage of people, but often there may be no particular cause.

It is important for adults to have their blood pressure checked regularly and to take the prescribed medication if high blood pressure is diagnosed. You may have to wear a blood-pressure monitor for 24 hours to find out whether you have the condition.

It is also important to make any lifestyle changes that you can, such as stopping smoking, managing stress, reducing your salt and alcohol intake, and getting regular exercise.

It is important to continue to take prescribed medication in order to control your blood pressure, even if you do not feel any benefit. When you go for regular check-ups with your GP, they can show you how these medications are helping to control your blood pressure.

**Controlling high blood pressure with lifestyle changes and taking prescribed medication correctly greatly reduces your risk of developing heart disease or having a stroke.**

# What is diabetes?

## Diabetes is a condition where the amount of glucose or sugar in the blood is too high.

Diabetes develops when the body cannot break down and use glucose properly, because there is a lack of insulin, or the insulin produced is not working properly.

### Types of diabetes

There are two types of diabetes.

#### Type 1 diabetes

Occurs when the body completely stops producing insulin and the level of glucose (sugar) in your blood becomes too high. Daily injections of insulin are required to keep your blood glucose levels under control. Type 1 diabetes is usually seen in children and is often a genetic condition, which cannot be prevented.

#### Type 2 diabetes

Occurs when the body stops producing enough insulin, or the produced insulin does not work properly. This usually happens later in life and is often related to lifestyle and weight. Type 2 diabetes also occurs in children and is directly related to lifestyle.

You may also hear the term called pre-diabetes. Pre-diabetes happens when blood glucose levels are higher than normal, but not yet high enough to be classified type 2 diabetes. Cardiac rehabilitation programmes are an ideal opportunity to learn about your blood sugar level and what you need to do to control it, if it is high. You can reverse pre-diabetes by making effective lifestyle changes.


## Important diabetes terminology

Diabetes is all about managing your blood sugar levels. Normal blood glucose levels should be 4-6 millimoles per litre (mmol/L) before meals and no higher than 10 millimoles per litre two hours after meals.

Another term you will hear is HbA1C, which is a measurement of the amount of glucose being carried by the red blood cells in your body. This gives an estimate of your blood glucose control over the previous two to three months. The target is less than 53mmol/L or 7% and possibly as low as 48mmol/L or 6.5% for some people. Keeping it below this level has been shown to reduce the risk of complications of diabetes such as heart disease.

## Management of type 2 diabetes

The management of type 2 diabetes includes healthy eating, exercise and lifestyle changes. You may also need tablets or injections to help control your blood glucose levels. It is important to also control your weight, blood pressure and cholesterol. Cardiac rehabilitation programmes are ideal for you to learn about diabetes and recommended lifestyle changes, particularly if you have recently been diagnosed with diabetes.

## Complications of diabetes

You will need to manage your diabetes and maintain control over your blood sugar levels if you are to avoid the common complications that can be associated with diabetes. Having raised blood glucose levels for a long time can cause damage to the blood vessels and nerve endings. If it continues for years, it can lead to eye, kidney and foot problems, as well as cardiovascular disease.

## Eye disease

Diabetic eye disease is known as retinopathy. Retinopathy happens when the tiny blood vessels in the lining at the back of the eye are damaged. Your sight will not be affected in the early stages of retinopathy, so it is essential that you attend eye screening regularly. Diabetic Retina Screen is the national diabetic retinal screening programme that offers free, regular diabetic retinopathy screening for those with diabetes who are aged 12 years and older.

## Kidney disease

Diabetic kidney disease is known as nephropathy. Over time, high blood glucose levels can damage the small blood vessels in the kidneys causing them to work less efficiently. It is important to have your kidney function checked regularly. This is done by having a blood and urine test carried out by your GP.

## Foot Disease

If your blood glucose level is above the target for a long time, the nerves and the blood vessels that supply the feet can become damaged, potentially leading to foot ulcers. In extreme cases, it may be necessary to amputate or remove your foot. Everyone with diabetes should have an annual foot assessment by a medical practitioner, such as a podiatrist, who checks for problems related to circulation and sensation. You should be advised of your risk of developing foot problems and also given instructions on how to take care of your feet. This advice will include looking after your feet by examining them each day, washing feet in lukewarm water and drying them thoroughly, moisturising the skin, not walking around barefoot and wearing good footwear.

## Heart disease

Damage to the large blood vessels in the body is known as macrovascular disease and it can be the cause of heart attack and stroke. As part of your diabetes appointments, your heart should be checked by having your blood pressure and cholesterol levels checked regularly.

If you have diabetes, you are three to four times more likely to develop cardiovascular disease than someone who does not have diabetes. If you already have diabetes, you can reduce your risk of cardiovascular disease and other complications of diabetes by:

- Maintaining healthy blood sugar levels
- Making the dietary changes discussed earlier
- Keeping your cholesterol levels under control
- Being physically active every day
- Aiming to achieve or maintain a healthy weight and waistline
- Stopping smoking
- Keeping your blood pressure readings at less than 140/80
- Keeping within the recommended alcohol intake limits
- Taking your medications as prescribed by your doctor
- Attending your appointments for review of your diabetes, eye care and foot care.

# Physical Activity

**Regular exercise is essential for your cardiovascular health. It is as important as your medication and will make a positive difference to every aspect of your health.**

For good health, National Physical Activity Guidelines recommend to get 30 minutes of moderate exercise at least five days per week. This could be walking at a moderate pace for 30 minutes, for example. Remember you must always warm up the muscles for five minutes before walking and warm down for five minutes after the walk.

This activity can be divided into shorter segments throughout the day, but the main aim is to get more movement into every day. The best forms of aerobic activity are walking, cycling and swimming. A home exercise bicycle can be very helpful, especially when the weather is bad.

Just being on your feet is not enough, however. You will need to get up and keep going, rather than stopping and starting. Strolling and stopping often can be pleasant but is not enough for your heart health. Sitting down resting for too long is not advisable.

Are you aware that sitting for long periods of time is now considered a risk factor for cardiovascular disease? A recent study identified that we spend about two hours more sitting down per day than we estimate.

More detail regarding fitness and stamina levels required in order to return to physical work and activities, will be available at your cardiac rehabilitation programme.

If you have had a heart attack, a stent or surgery, a cardiac rehabilitation programme is an opportunity for you to avail of advanced levels of assessment, monitoring and supervision by a clinical team. Your risk factors for heart disease are assessed, measured and treated. There may also be psychological support, such as stress management, or mindfulness available as part of the programme.

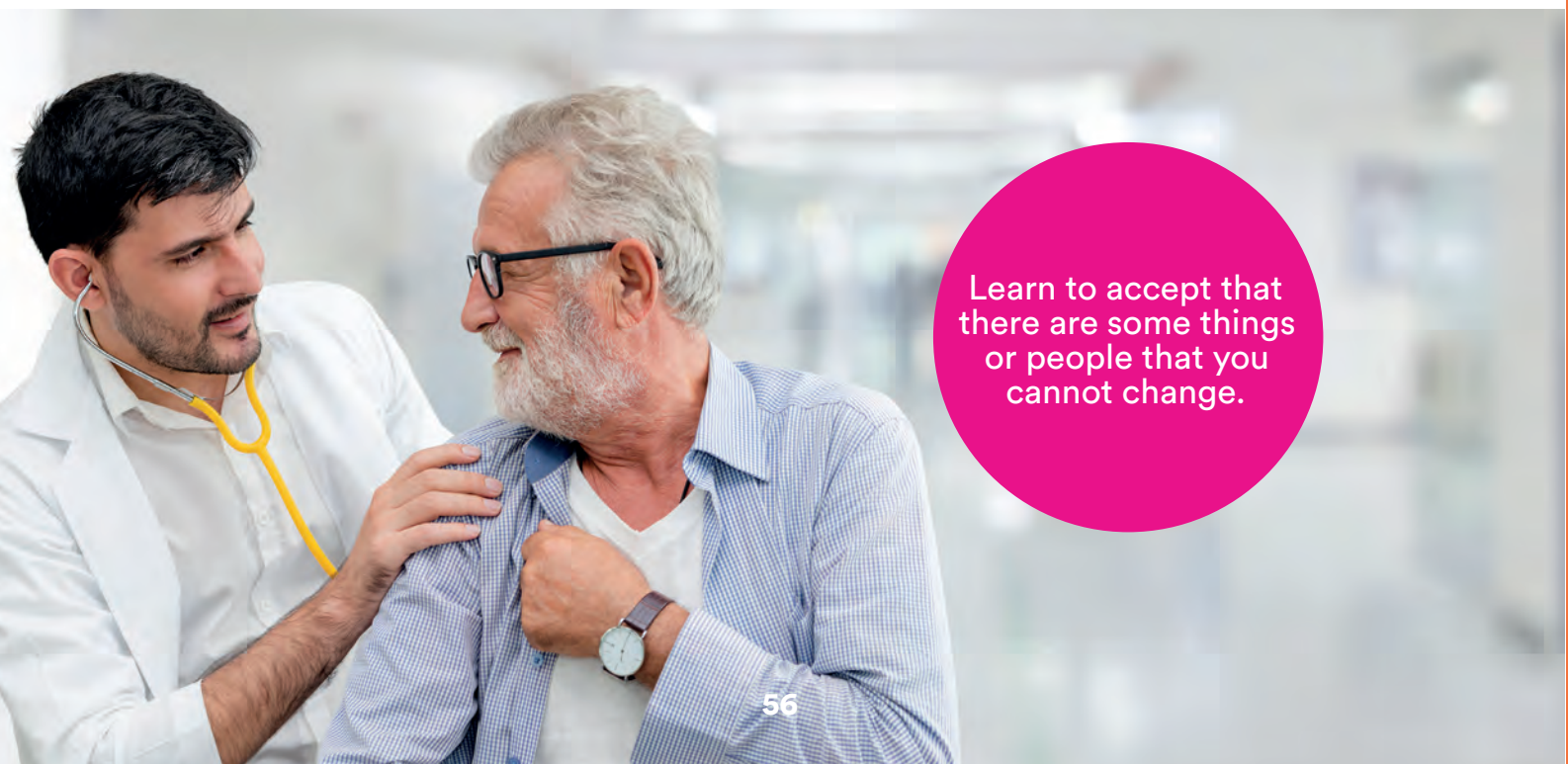
Following that, it is recommended that you get involved in at least one of the many exercise programmes in your community such as local walking groups or exercise classes. Your cardiac rehabilitation unit will have a list of all local options.

# What is Stress?

**Stress is a natural part of everyday life, though it can mean different things to different people. A certain amount of stress can be good for the body as it motivates us to get things done. However, too much stress is harmful for physical and mental health.**

Stress occurs when demands or worries begin to overwhelm us and we feel unable to cope. Some things you may feel stressed about include work demands, family life, money worries or illness. The way we deal with these demands will depend on our personality, the way we think about things and our own experience of life.

Some people experience stress following a cardiac event, such as a heart attack or stroke. This is a natural part of recovery and this emotional distress should eventually go away. There are many ways to cope with stress. Firstly, you need to learn to recognise the signs that you are stressed. These may include feeling tense, experiencing disrupted sleep, feeling worried or irritable, forgetting things, having difficulty making decisions, avoiding problems or feeling that you need an alcoholic drink.



# Manage your Stress

**You can learn to manage your stress levels.**
**Here are some suggestions:**

Make sure to get enough sleep and rest in order to recharge your batteries.

Eat a balanced diet.

Drink less tea, coffee and alcohol.

Take more exercise. Physical activity improves mood and increases energy as the body produces its own happy hormones called endorphins.

Plan your day. Get involved in pleasurable activities such as a day out with friends or family, shopping, cinema or soaking in the bath.

Be realistic with your time and perhaps say "no" more often.

Do things that help you to relax such as listening to music, or practicing relaxation and meditation exercises.

Talk about difficult problems with a trusted friend or family member.

Ask for help and support when it is needed.

Learn to accept that there are some things or people that you cannot change.

Stress

# Typical psychological reactions after a cardiac event

**I don't feel like myself anymore. Is this normal?**

## A cardiac event is an emotional experience, and you will need to recover both physically and psychologically to feel "back to normal".

Everyone reacts differently. There is no right way or wrong way to feel. While some people are barely affected by their heart problem, for many others it can be a major life event.

Some of the most common psychological reactions include:

### Numbness
Your cardiac event may seem unreal to you, like you are experiencing a dream – "This can't be happening".

### Shock
You might even doubt that you really have a heart problem – "They must have made a mistake".

### Anger
You might feel angry about your heart problem, or even towards yourself – "Why did this happen to me?"; "Life is so unfair"; "Why didn't I look after myself sooner?"

### Guilt
Many patients feel guilty for having survived ("as others did not survive"), or about their unhealthy lifestyle if they smoked or worked long hours. You may even start to feel guilty about the effect of your health on your family.

### Anxiety
You might be fearful of having more heart problems or even going through surgery again. For many people an unexpected brush with death can leave them feeling vulnerable and uncertain about the future – "What happens now?"

### Increased awareness of your body
It is very possible you will start to notice every minor ache and twinge now – particularly in your chest – and you might even think these are signs of a heart attack.

### Sleep difficulties
Increased worries may cause your mind to race before bedtime and a lot of patients feel afraid to go to sleep in case they don't wake up. On the other hand, sleeping for too long can sometimes be an indication of depressed mood, but this can be treated.

## Sadness
Sometimes sadness after heart problems is actually grief for a loss of innocence – that sense of invincibility we might have when we feel healthy. You may also feel saddened by the thought of having to make future changes to your life at home or at work – "Will things ever be the same?"

## Feeling isolated
You might feel quite alone while you are trying to get better and this can worsen a low mood. At these times, support from family and friends is vital to ensure a good recovery.

## Helplessness
Perhaps you feel powerless or a lack of control over your life now, particularly if there's no obvious cause for your heart problems, or maybe heart disease runs in your family?

## Emotional
Patients sometimes feel exposed and vulnerable if they notice they get more easily upset or are more tearful than before.

## Increased need for privacy
You might find that you want to be on your own more now, or just to confine yourself to the company of loved ones.

## Relationship changes
You may feel that your role in the family has somehow changed. For example, many patients struggle to balance keeping their independence versus feeling "wrapped up in cotton wool" by family members.

If you experience any of these feelings, you are not alone. These are common psychological reactions and can produce good days and bad days. Getting back to normal – even a new sense of normal – can take several weeks or months.

Studies show that patients recovering from heart problems fall into roughly three groups of people:

- One-third of people are not too affected emotionally. They take on a positive attitude soon afterwards and start to make healthy lifestyle changes.
- Another third of people take longer to move on, and that's where the help and support of family and friends becomes really important.
- Finally, about one-third of cardiac patients experience significant psychological difficulties including anxiety, depression or insomnia. These patients may benefit from professional psychological support. Ask your medical team for advice here – many cardiac rehabilitation teams have psychologists who specialise in helping patients recover from heart problems.

It is important to say too, that many patients can feel extremely grateful or that they have been given a new lease of life. For example, patients can come to look at their heart problem as a wake-up call and refocus their time and energy on the things that are truly important to them such as their relationships, health or hobbies.

For these people, their initial medical problem actually leads to an unexpected improvement in their quality of life.

# Medications

## Managing your medication is just as important to protect your heart health as getting enough exercise and eating a healthy diet.

There are many different medicines used to treat heart disease. Some medications are used to reduce your cholesterol such as **statins**. Others are used to treat blood pressure or manage symptoms, such as **diuretics** (or water tablets) to reduce fluid retention, and **nitrates** to improve blood flow to the heart.

If you have heart disease you may need multiple medications. You will learn about these during the cardiac rehabilitation programme. It can be quite confusing, but lots of help is available from your doctor, cardiac rehab nurse and your pharmacist. Keep asking until you have all the information you need to know about your medications.

Medications can act in the body in different ways and sometimes a medication can be used for different jobs e.g. **antiplatelets** (including aspirin, clopidogrel, ticagrelor and prasugrel) prevent clots in the blood vessels. **Anti-coagulants** do the same job but in a different way.

Sometimes the same medication is used for a variety of jobs, for example beta-blockers may be used for angina, irregular heart rhythms, high blood pressure and after a heart attack.

**This is why it is very important not to share your medicines with anyone, even if someone is taking the same medication as you it might not be for the same reason.**

| **Important things to know about your medications:** | |
|---|---|
| The name and strength | Aspirin 75 milligrams |
| How and When to take it | Once daily in the morning |
| Why you are taking it | To thin the blood |
| Where to get more information | Pharmacist, G.P. Cardiac rehabilitation staff |

The Irish Heart Foundation have published a book called ***Step by Step through Heart Medicines*** which will provide all the information that you need to know.

**Important points when taking medications:**

- Carry an up-to-date list of your medicines (your pharmacist can help you with this)
- Ask pharmacist to blister pack your medication, if you are having difficulty
- Check all your tablets with your pharmacist before leaving the pharmacy
- If your prescription changes bring old medicine back to your pharmacy
- Keep two weeks supply of medicines at all times and be aware of the expiry dates
- Plan ahead for travel, bring an up to date list of medications, carry medicines in hand luggage in original containers (don't transfer from containers)

## Tips for building a strong medication-taking habit


Sometimes we forget to take our medications. Here are some strategies you can use to make taking your medicines easier to remember.

- Get a weekly pill box
- Set reminders for yourself ---- use notes or phone or calendar
- Develop a routine for taking your medication and try to take at the same time every day. Connect taking your medication with an activity you do at the same time every day (e.g. brushing your teeth in the morning).
- Keep your medications somewhere you will see them can act as a reminder to take them (e.g. keeping your pill box next to your toothbrush).
- Making an 'Action Plan' can also help you to build a strong medicine habit. Form a plan in your mind or even on paper (e.g. "If I have finished eating my breakfast, then I will take my medication"). With just a little repetition, this will quickly become automatic.

Get to know your pharmacist, they have lots of information on all your medication. Pharmacists are also able to advise on side effects and interactions, as well as what to do if you cannot contact the prescriber.

**Treatment for heart disease includes a balance of lifestyle changes, diet, exercise and medications. But medications only work if you take them as directed.**

- Continue to take your medication even if you feel well and have no symptoms. Don't stop taking medication suddenly, remember most heart medicines are for long term treatment.
- Tablets may cause additional side-effects, which are infrequent and usually short lived and easily managed by your Doctor. The most common side-effects are tummy upset, constipation and headache. Your doctor will prescribe the most suitable medication for you. But if you suspect you might be experiencing a side-effect – report it to the prescriber. If this medication doesn't suit, there are always alternatives.
- Many factors influence how your medications work for you. Tablets interact with other medications, herbal remedies and sometimes with food and alcohol. This may result in medication being ineffective. Always check with your pharmacist before buying "over the counter" products and try and maintain interaction with one pharmacy only.
- It's so important to be honest with your doctor, pharmacist or cardiac rehab staff if you are finding it difficult to stick to your plan. If you are not taking your medications, you probably have a reason e.g. doubts, concerns, side-effects. Explain this to your doctor. They will be able to advise. There is usually a reason why you need to take this medication. Heart disease is serious so if you have concerns, discuss them with your doctor.

Treatment for heart disease includes a balance of lifestyle changes, diet, exercise and medications. But medications only work if taken as directed. You will benefit most by participating in all components of the cardiac rehabilitation programme.

# Taking Medications as Prescribed

**If you take medications regularly, you probably know how easy it can be to miss a dose or take the wrong dose by accident. You also may know how tempting it can be to adjust or skip doses on your own, without your doctor's consent.**

Failing to take your medication properly can have a negative impact on your treatment.

It is important to follow the exact instructions given with regard to your medicine prescription. You may hear your doctor use the term "medication adherence." This term means taking the proper dose of medication at the right time and in the right way for as long as you're supposed to take it. For example, your doctor may advise you to take one tablet with food, morning and night, until further notice. To properly "adhere" to these instructions, you must take one tablet with food twice a day at the correct times. Adjusting these instructions at all, for example taking one tablet once a day may lead to the tablet not working effectively.

If you're having trouble taking medications properly or are experiencing side effects, be sure to discuss these concerns with your doctor. He or she may adjust your medication accordingly. However, you should never make adjustments to medications yourself. Always consult first with your health care provider.

Lastly, if you are having trouble sticking to your regimen, here are some helpful tips:

- Develop a medication schedule so that it becomes part of your daily routine. Take medication after eating breakfast, or before going to bed.
- Create reminders for yourself —notes, checklists, journals or alarms.
- Ask family and friends to remind you to take your medication regularly, as they can be a source of support.

# Sex and heart disease

## If you have recently had a cardiac event, you may be coming to terms with many changes in your life.

You may also be concerned about resuming sexual activity. Try not to worry. This chapter should give you peace of mind by addressing any questions or concerns you may have. It is perfectly normal to be worried about being intimate after a cardiac event, and you may wish to talk to a medical practitioner about these concerns.

**Sexual problems affect our quality of life, psychological wellbeing and relationship satisfaction.** Patients and their partners are often worried about how sex can affect your heart, after a cardiac event. it is important to speak to your partner about your concerns.

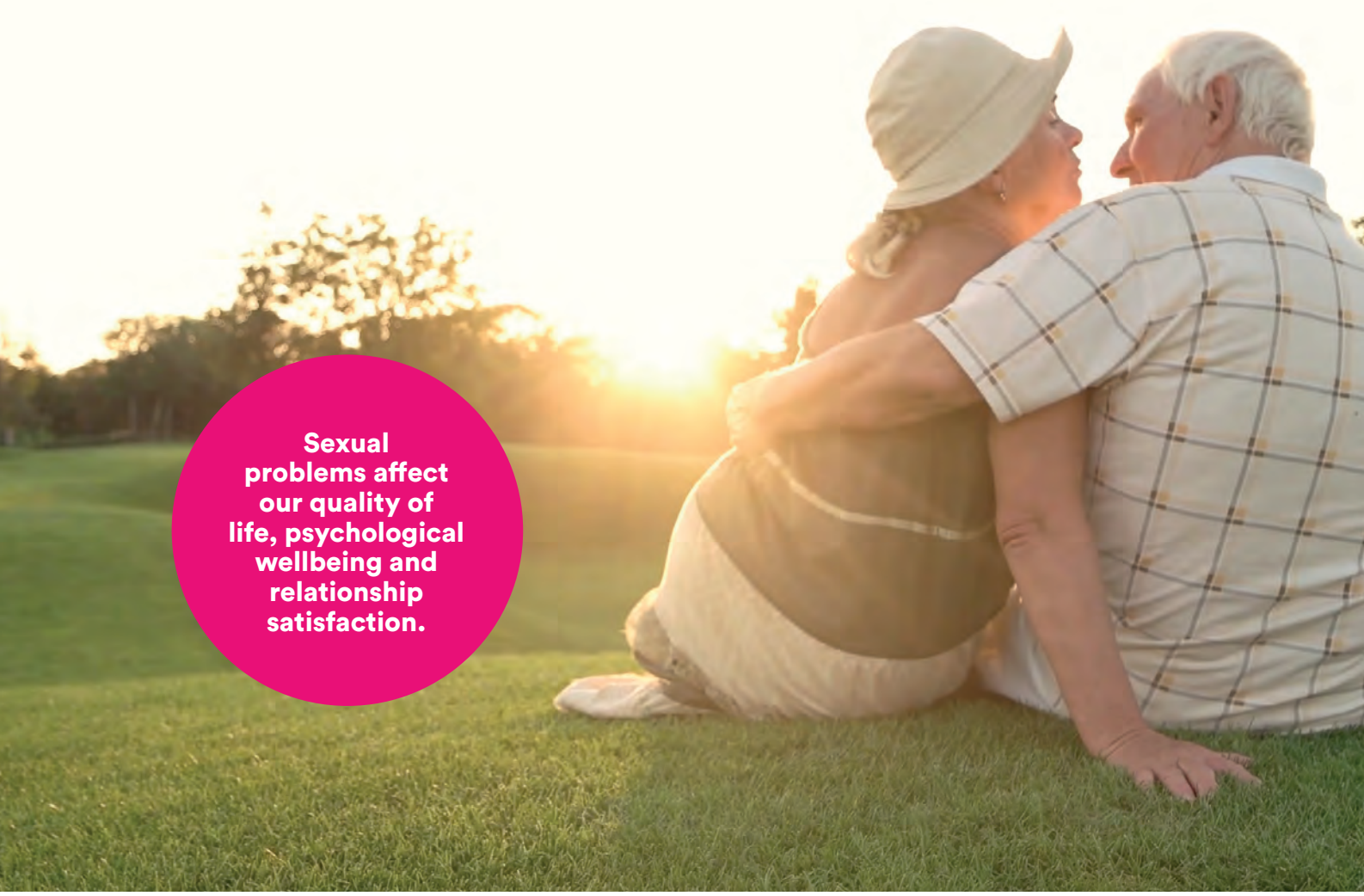
Evidence shows that it is very rare for a person to have a heart attack or die during sexual activity. When this occurs, other factors may be involved such as large quantities of food or alcohol.

### When is it safe to resume having sex after a cardiovascular event?

Sex is considered to be a form of moderate exercise. It is generally considered safe to resume sexual activity when you can climb two flights of stairs or walk briskly for a short duration without feeling faint, dizzy, have chest tightness or shortness of breath. If you experience these symptoms during sexual activity, it is important to report these to your doctor or medical practitioner.

Sometimes patients experience sexual difficulties after a cardiac event, but there are several things that can help. Here are some tips to reconnect and become intimate with your partner once again:

. Avoid rushing into sex to prove things are “back to normal.” You or your partner may be a little anxious about sex. It’s important to take your time and ease back into sexual activity.



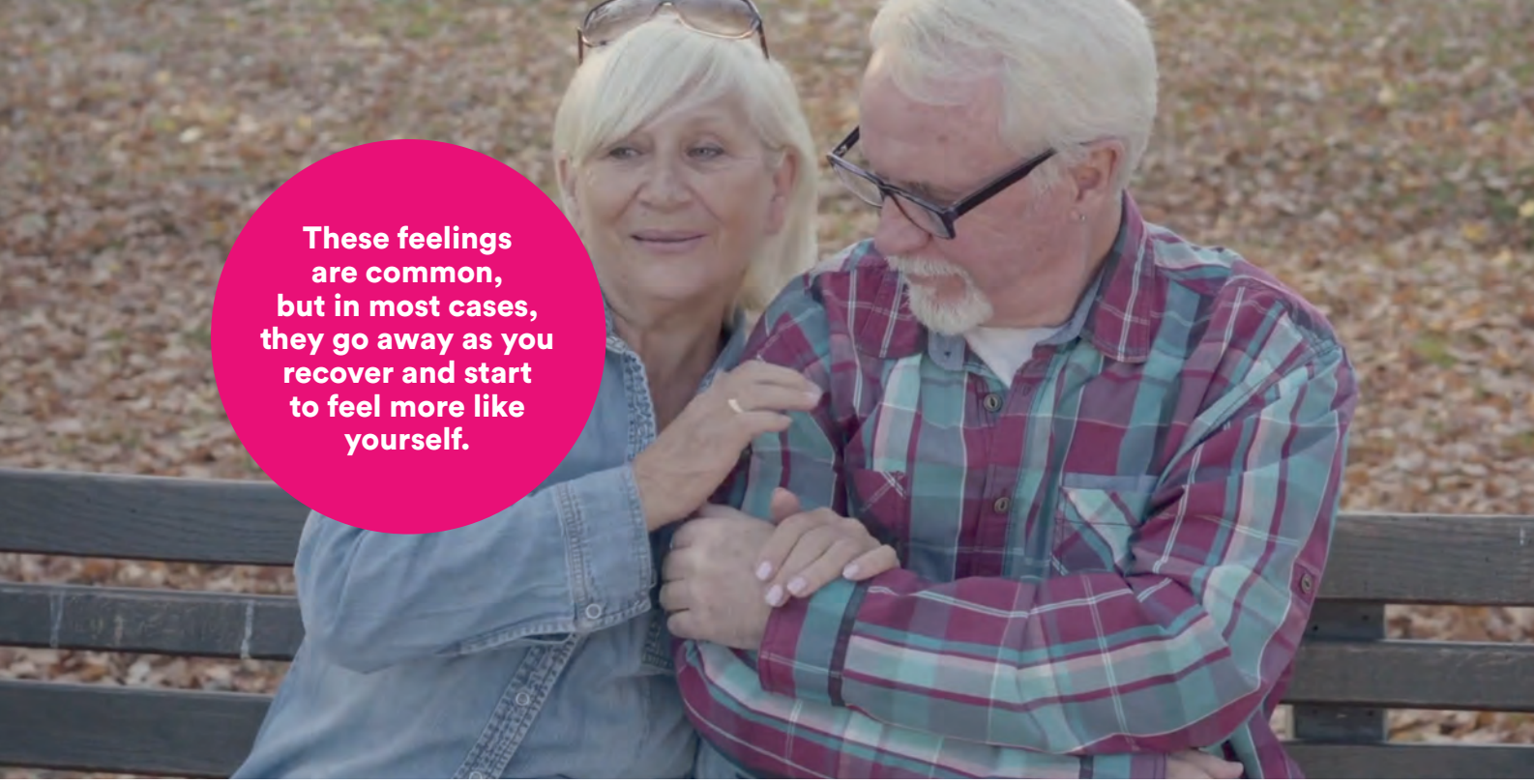

Take the pressure off yourselves and don't expect too much at first. Resume sex slowly and allow it to happen naturally.

- Most people think sexual activity means intercourse. But you can express your sexuality in many ways. You may just want your partner near you. Or you can touch, hold and caress without the goal of orgasm. You and your partner can feel loved and secure without feeling pressure to perform.
- Sex begins in the brain and is a journey. So, stay connected to your partner, continue to love and desire them and tell them so. This goes for both of you. Stay in touch, literally. Kiss, hug, and hold hands.
- Reassure them that they are still lovable. That's a first and very vital step.
- Both partners should be willing and happy to engage in the process.

# Tips to make resuming sex easier and more successful

- Choose a time when you are both rested and free from stress.
- Wait two to three hours after eating a full meal before having sex. This gives your body time to digest your food. Like other physical activities, digesting food requires more blood, which diverts it from elsewhere and makes the heart work harder.
- Avoid large amounts of alcohol before sexual activity.
- Choose a familiar, peaceful place where you won't be interrupted.
- Take your medicines as prescribed.
- Should you experience chest pain or symptoms of angina – stop and rest.
- Use your glyceryl trinitrate (GTN) spray as prescribed and if the pain doesn't ease get emergency help.
- Avoid stimulants or cocaine. These may cause chest pain and, in some cases, a fatal heart attack.
- Resuming sex often helps you feel emotionally closer to your partner. It lets you rekindle tenderness and romance.
- Keep in mind, sex after a cardiac event may help manage stress and boost your self-esteem.

Sex




## Emotional challenges

Many people have sex just as often as they did before their heart problem, some are less active, and some stop entirely. Emotional and psychological factors, such as anxiety and depression, that can occur following a heart attack or cardiac event can lower sexual interest and ability. Feeling tired and being unfit also reduces desire.

The passing of time, effective medical treatment, attending a cardiac rehabilitation programme and psychological support can all help.

While you are recovering from a cardiac event you may:

- Feel depressed, sad and/or afraid
- Have trouble sleeping or sleep too much, especially during the day
- Eat more or eat less than usual
- Gain weight or lose weight
- Feel less interested in life
- Feel tired all the time especially after activity

These feelings are common, but in most cases, they go away as you recover and start to feel more like yourself. If you are feeling depressed, talk with a medical practitioner about treatment options. Cardiac rehabilitation has been shown to be effective in reducing depression, but you may also benefit from medication or psychological support.

## Coping as a couple

- Your partner may also be anxious or depressed about your health. Your feelings, as well as those of your partner, can add stress to your relationship.
- It is important that both of you accept, respect and try to understand what the other is feeling. Your partner plays a big part in how you adjust. Research tells us that the support of a partner reduces your risk of having cardiac problems in the future.
- Your partner may struggle to strike a balance between being overprotective and not helping enough. In many cases, partners are overprotective. They don't like to make demands and risk upsetting or injuring you. Sometimes they don't let you return to normal activity. Your partner may even feel guilty about your heart disease and wonder if it could be their fault.
- Your partner may feel angry and frustrated. Unresolved issues can lead to more complex physical, emotional and social problems.
- Perhaps you could begin by increasing the time spent together. Take a daily walk together. This builds physical fitness, better communication and promotes intimacy.

## Medication

Some medicines make it difficult for men to achieve an erection. For some men, they may have premature ejaculations or none at all. Women may not have enough lubrication, which can make intercourse painful. Some women find they may not be able to get sexually aroused, or they may be unable to have an orgasm.

Medication to treat the following may affect sex drive and sexual function:

- Blood pressure
- Heart attack or cardiac surgery
- Water tablets (diuretics)
- Sedatives and antidepressants
- Chest pain or irregular heartbeat

If you feel your new medications are affecting your life, please don't stop taking your medications without talking with your medical practitioner first.

It is understandable to be shy or embarrassed to talk about this topic but remember that your medical team are trained to discuss and advise you about these common problems. Solving the problem may be as simple as changing or reducing the medication, but it is vital that you do this under your doctor's supervision.

## Erectile difficulties

It is common for men who have been diagnosed with cardiovascular disease to have erection difficulties. Studies show that rates of erectile dysfunction among men with cardiovascular disease are twice as high as those in the general population. By erectile dysfunction we mean the recurrent inability to achieve a hard penis to complete sexual intercourse.

This can be caused by several factors that often work in combination. Physical factors can result in a narrowing of the arteries and/or a lack of blood flow to the penis. Some medications can also have an effect.

Chronic stress produces changes in the body that make it difficult to achieve or maintain an erection. Unfortunately, worrying about this issue can make matters worse. Depression, which is common after a cardiac event, can also affect your sexual drive.

Many men find talking about such intimate matters very difficult, but your GP or cardiac rehabilitation staff are well used to dealing with this topic and will put you at ease. You could start a conversation with one of the following:

There are several options of treatment to help with erectile dysfunction, these include:

**Lifestyle changes:**

- Some lifestyle changes are worth considering – heavy alcohol consumption, smoking and poor sleep all play a significant role in erectile dysfunction.
- Stress plays a major role in problems with erections. Relaxation techniques have been shown to help with erectile dysfunction and premature ejaculation.

For some men, achieving an erection is easier in the morning. Some couples have found that an episode of success builds confidence and reduces anxiety based around future performance.

**Counselling:** Your GP can refer you to an appropriate qualified counsellor such as one specialising in sex therapy.

**Medications:** There are several medications that can be prescribed to treat the condition. Ask your doctor to discuss these options with you.

- Always ensure medication is prescribed by a doctor who knows your medical history and the other medications you are taking.
- Phosphodiesterase inhibitors can be very effective and safe in treating erectile dysfunction when taken under a doctor's supervision. It is very important not to take any phosphodiesterase inhibitor such as avanafil (Spedra), sildenafil (Viagra), tadalafil (Cialis) or vardenafil (Levitra) if you have taken GTN spray in the last 24 hours as this can have a dangerous lowering effect on your blood pressure.

### Specialist Clinics

There are specialist clinics where you can be prescribed products to help with erection difficulties, these include injections and insertions, vacuum pumps and urethral pellets. Ask your GP for further information.

Erectile dysfunction is a **man's condition but a couple's concern.** By discussing your problem with your partner, the pressure may be relieved and erectile function may improve.

### How to make this work for you

- Attending a cardiac rehabilitation programme is an important factor in your recovery. It is ideally designed to help address new sexual difficulties that can occur after a cardiac event. Attending a cardiac rehabilitation programme reduces anxiety and depression, improves sleep and increases confidence and fitness.
- Additional components of these programmes such as medication reviews, stress management and smoking cessation are very likely to bring improvements in this area.
- If you are unsure about your symptoms, or if it is safe for you to have sex, then ask your doctor or cardiac rehabilitation team for advice.
- Remember to take your time. It's as important to experience the journey as the destination.

**For more information and advice see:**

**www.sexualwellbeing.ie**

The sexual wellbeing website was developed in partnership with the HSE Sexual Health Communications Working Group and leading professionals in the field.

**www.sexualadviceassociation.co.uk**

## Specialist advice

If your GP feels you may need specialist advice, you may be referred to a sexual clinic or a consultant urologist.

Additional suggested reading by Dr Mary Rogan, GP and medical sexologist

- The Relate Guide to Loving in Later Life by Marj Thoburn and Suzy Powling
- Enduring Desire: Your Guide to Lifelong Intimacy by Barry McCarthy and Michael Metz
- Sex for Simple Humans by Dr Mary Rogan

# Exercise

Welcome to the physical activity component of this programme

It is important to exercise throughout the cardiac rehabilitation programme, in hospital and at home.

National Physical Activity Guidelines recommend adults should engage in at least 30 minutes of moderate intensity activity, 5 days per week.

## What are moderate levels of physical activity?

You should feel your heart rate increase a little, feel warmer, but always be able to walk and talk when exercising.

**The Borg Scale:** This is a measurement of how exercise feels for you in terms of muscle strength, endurance and breathing. Ask the question: how hard does this exercise feel for me?

### Borg Scale

| Rating | Perceived Excertion |
|---|---|
| 6 | No exertion |
| 7 | Extremely light |
| 8 | Easy |
| 9 | Very light |
| 10 | Sort of Hard |
| 11 | Light |
| 12 | |
| 13 | Somewhat Hard |
| 14 | |
| 15 | Hard |
| 16 | |
| 17 | Very hard |
| 18 | |
| 19 | Extremely hard |
| 20 | Maximal exertion |

# Home exercise programme

### Warm Up

Complete the warm up exercises to raise your heart rate, loosen the joints and stretch out the muscles.

### Circuit of 10 exercises

Complete each exercise for one minute

Complete the circuit three times

### Warm Down

Complete the warm down exercises to gradually reduce your heart rate and temperature, and help prevent stiff, sore muscles.

Hold each stretch for 8-10 seconds

Listen to your body and if you feel any of the following, sit and rest:

- Dizziness
- Faintness
- Shortness of breath
- Chest, jaw or arm pain

**If the symptoms do not start to ease off, please seek medical attention.**

# Acknowledgements

IRISH ASSOCIATION OF CARDIAC REHABILITATION

Thank you to the Irish Association of Cardiac Rehabilitation committee members for their dedication to this project.

Noeleen Fallon, Tallaght University Hospital (Chair)

Ann Marie Brown, Mayo University Hospital

Mary Connor, Cork Bon Secours Hospital

Kate Corrigan, Connolly Hospital

Anne Gallagher, Mater Hospital

Jonathan Gallagher, Beaumont Hospital

Maria Daisy Gamis, Our Lady's Navan Hospital

Mary Kerins, St James Hospital

Mairead Lehane, Mallow General

Rosemary Thorpe, Roscommon Hospital

Ruth Harkness, IACR Secretariat

# Notes

Irish Heart Foundation

**This educational booklet is designed to help patients who are recovering from a cardiovascular event, and family members. It contains a wide variety of information that relates to your heart health. This explanatory booklet is accompanied by a DVD.**

The Irish Heart Foundation is Ireland's national charity fighting heart disease and stroke through advocacy, research, prevention and care. For more information, visit **www.irishheart.ie**

Irish Heart Foundation
17-19 Rathmines Road Lower
Dublin 6.
D06C780

Phone: +353 1 6685001
Email: info@irishheart.ie
Website: www.irishheart.ie

Registered Charity Number (RCN): 20008376

CHY 5507



Supported by

Pfizer
Bristol-Myers Squibb

A.MENARINI
PHARMACEUTICALS IRELAND LTD
*Healthcare for Life*

20 YEARS