GUIDELINES FOR PATIENTS

CARDIAC REHABILITATION

Please stick addressograph here
Introduction

This booklet is for people who have been in hospital and have had a procedure or treatment for their heart condition. It tells you about how cardiac rehabilitation can help you get back to as full a life as possible. The booklet will also be useful for your family, friends or carers.

What is a Cardiac Rehabilitation?

Cardiac rehabilitation is the process by which you recover and get back to as full a life as possible after a cardiac event such as a heart attack, or after having a treatment such as coronary bypass surgery. It also aims to help promote your health and keep you well after you go home from hospital.

‘Cardiac rehabilitation’ is sometimes called ‘cardiac rehab’.

Who is Cardiac Rehabilitation for?

Cardiac rehabilitation is an essential part of your recover if:

- you have had a heart attack
- you have had a coronary angioplasty
CARDIAC REHABILITATION – PHASE 3

- you have had coronary bypass surgery or another type of heart surgery
- you have had an implantable cardioverter defibrillator (ICD) fitted, or
- you have stable heart failure.

Cardiac rehabilitation can also be very important for people who
- have other conditions such as stable angina,
- cardiomyopathy or congenital heart disease.

**How will we help you**

The physiotherapist or a cardiac care nurse will come visit you on the ward to provide written information to you, explain what has happened to you, explain risk factors to you and provide advice to you post your procedure.

After you are discharged home, the physiotherapist will contact you within a week, and arrange for you to attend the cardiac rehabilitation programme - which consists of information sessions and a supervised exercise programme

---

**What are the aims of Cardiac Rehab?**

- Improve heart function and general health, partly through exercise
- Support you in making long-term changes in your lifestyle
- Increase your confidence
- Modify the risk factors for heart disease
- Reduce the risk of heart events in the future
- Give you a better quality of life

**Who is involved in Cardiac Rehab?**

We have a multidisciplinary team, led by a cardiac rehabilitation co-ordinator that includes the following:

- Consultant Cardiologist
- Cardiac Registrar
- Clinical Nurse Specialists
- Dieticians
- Health Promotion Nurse
- Pharmacist
- Physiotherapists
- Psychotherapist
- Secretary
- Social Worker

---

PT.PIL.003  Last Updated May 2014
The Heart in Brief

**How your heart works:**
The heart circulates blood around the body. The blood carries oxygen and nutrients to the rest of the body through the blood vessels, called arteries and veins. The heart is a muscular pump, which like all organs, needs its own blood supply. The main vessels supplying the heart muscle are called the coronary arteries; these supply the heart muscle with oxygen.

**Blood Pressure:**
This the pressure measured in the arteries, which rises and falls as the heart pumps out blood.

<table>
<thead>
<tr>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>140 or below is the normal systolic reading</td>
<td>85 or below is a normal diastolic reading</td>
</tr>
<tr>
<td>When the heart contracts to pump blood out, the pressure in the arteries goes up</td>
<td>When the heart relaxes, the pressure in the arteries goes down</td>
</tr>
</tbody>
</table>

**Heart Rate:**
The heart pumps at different speeds according to the needs of our body. There is a wide range of normal heart rate. Everyone’s heart rate goes up or down, whether they are resting or exerting themselves. Heart rate and blood pressure are also affected by things such as our emotions, medications, smoking, and a variety of illnesses.

**Causes of heart disease:**
The reason why the coronary arteries narrow is not yet fully known. Research has shown that there are several risk factors which can cause heart disease, which may lead to the
development of angina and heart attacks. Risk factors are habits and bodily characteristics which tend to increase your risk of developing angina or a heart attack. Risk factors include:

- Smoking
- High Blood pressure
- Being overweight
- Diabetes
- Family History of heart disease
- Ethnicity
- Being inactive
- Age
- Your sex
- Stress and Psychological Issues

However, some people still have heart disease even though they have none of the above risk factors.

<table>
<thead>
<tr>
<th>Investigations while in Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>While you are in hospital we will need to carry out some tests to investigate your heart condition. These may include some, or all of the following.</td>
</tr>
<tr>
<td>➢ <strong>Electrocardiogram (ECG)</strong></td>
</tr>
<tr>
<td>Records the rhythm and electrical activity in the heart.</td>
</tr>
<tr>
<td>➢ <strong>Exercise Tolerance Test/ Exercise Stress Test</strong></td>
</tr>
<tr>
<td>This is an ECG carried out while you walk on a treadmill. Your Heart rate and blood pressure are recorded while you exercise. This test helps to determine if your symptoms are cause by angina, a type of pain which is associated with coronary heart disease.</td>
</tr>
<tr>
<td>➢ <strong>Echocardiogram (Echo)</strong></td>
</tr>
<tr>
<td>This is an ultrasound of your heart. This tells us how the heart muscle has been affected by your heart attach.</td>
</tr>
<tr>
<td>➢ <strong>Coronary angiogram</strong></td>
</tr>
<tr>
<td>This test is used to find places where the coronary arteries are blocked or narrowed. A local anaesthetic is used to numb your groin, and then a fine tube is passed up the artery at the top of your leg and into the heart. A special dye is injected into the artery. This is filmed using x-ray equipment. The picture is used</td>
</tr>
</tbody>
</table>
to help your doctor to decide what, if anything needs to be done to improve the blood supply to your heart muscle.

**The Heart and Percutaneous Coronary Intervention (PCI)**

This treatment opens up the narrowed artery by squashing the atheroma (fatty tissue), allowing the blood to flow more easily. A special type of catheter (fine tube) which has a balloon at the end is passed into the coronary artery through the leg. The balloon is then positioned in the narrow part of the artery and blown up to squash the atheroma. The balloon is then deflated and more dye is injected to check the results on an x-ray machine.

Often a small piece of stainless steel mesh (stent) is placed inside the artery to make sure it stays open after the angioplasty.

**Coronary Artery Bypass Graft**

The purpose of this surgery is to bypass the narrowed/ damaged sections of the coronary arteries. The heart surgeon does this by grafting a section of blood vessel between the aorta and a point in the coronary artery beyond the narrowing.

A bypass graft can be carried out for each of the main coronary arteries affected. Most people have 3 or 4 grafts. In most cases the surgeon uses the mammary artery from your chest wall but blood vessels from other parts of the body, such as the leg, are also used.
Heart Conditions

Acute Coronary Syndrome

This is a term which you may hear the doctors using when they discuss your diagnosis. The doctor makes the diagnosis based on your recent history, clinical examination, the ECG and blood tests over 12-24 hours. The blood test measures an enzyme called Troponin - a chemical released by the heart when the heart muscle has been damaged. This measurement will be slightly raised even if only a very small amount of damage has occurred. The doctor may then be able to talk to you about having had a heart attack.

Heart Attack (Acute Myocardial Infarction)

A heart attack may also be called a myocardial infarction, a coronary thrombus, a coronary occlusion or acute coronary syndrome.

A heart attack occurs when an area of the heart muscle has been deprived of oxygen for a short period of time by a blood clot or blockage in a coronary artery. This usually caused severe pain or discomfort that may last for up to several hours. It is therefore very important that if you have pain that is not relieved by GTN spray or by rest that you call 112/999 and get to a hospital as soon as possible so you can be treated. Other symptoms that you’re having a heart attack can include nausea, vomiting, sweating, shortness of breath, dizziness and occasional loss of consciousness.

The area of the heart muscle that is deprived of oxygen forms scar tissue over the first 4-6 weeks. The aim of all the treatment you receive in hospital is to help your heart to recover.

Physical Activity

Regular physical activity had been shown to have numerous benefits for people with heart disease. For example, it can:

- Help lower your blood pressure
- Improve your cholesterol levels
- Reduce your risk of diabetes
- Help you lose weight
- Reduce your angina
- Reduce your risk of having a stroke
- Help you return to work earlier after a heart attack
- Reduce the number of hospital visits that you make or tablets you have to take
- Also, if you have had a heart attack, physical activity as part of a rehabilitation programme can reduce your risk of dying from
CARDIAC REHABILITATION – PHASE 3

another heart attack by around 25% (O’Connor et al, 1989; Oldridge et al, 1988)

Physical activity is a broad term that includes everything from walking to dog or gardening, to structured forms of exercise such as swimming or playing a sport. Many people who do regular physical activity report that it makes them feel better and more energetic, provides relief from stress and anxiety, improved their sleep, helps them to stay independent, as well as enhancing their mood and level of self confidence. It can also be sociable and a lot of fun!

Most people in your position are understandably concerned about how much exercise and physical activity is right for them. However, the heart is a muscle, and like any other muscles, it needs physical activity to stay healthy. Regular physical activity will improve the blood flow to the heart muscle, and will help your heart become stronger and more efficient.

Physical activity is very important part of your recovery, but the amount and type of activity that we advise will differ tremendously from person to person, and it is important that you work within your own limits.

It is important that during any form of physical activity, you:

STOP if you experience any

- undue shortness of breath
- Chest pain/ discomfort
- Inappropriate tiredness
- Nausea/ Headaches/ Dizziness
- Persistent Palpitation
- Feeling Unwell

If in doubt… STOP and check with your GP before continuing.
Immediately Post Discharge

Advice on Everyday Tasks

During your first week at home, rest and enjoy being there. You may find out you tire easily when you first return home. If you feel tired, have a sleep during the day. As far as possible stick to your normal routine, i.e. get up and get dressed- it is not necessary to take to your bed. Don’t let visitors stay too long in the early days.

From the second week at home, try increase the number of activities that you do, ensuring that you don’t get too tired. Walk up and down stairs as necessary.

As a very general rule, light household chores may be resumed as soon as you feel fit, but heavy manual work such as bed changing and vacuuming should be avoided for 6-8 weeks. Similarly, light gardening may be undertaken but heavy lifting and straining, digging, sawing, or moving should be avoided for 8-12 weeks. Initially you should also try avoiding long periods of work with your arms above your head, such as trimming a high hedge or painting the ceiling, because this will raise your blood pressure and put extra strain on your heart.

When you feel you are able to do larger tasks such as mowing the lawn, or vacuuming for the first time, split the task into manageable chunks- have a rest and sit down if you are feeling too tired, and finish the task later or the next day if necessary. Also, try to space activities out during the day.

Try not what you are able to do now with what you used to do. Do not be afraid to ask for help. Friends and family members will be more willing to lend a hand. In time you should be able get back to normal- if not better!

What sort of exercise is best?

The types of activities that are most beneficial for the heart are called aerobic activities. Aerobic activities are repetitive, rhythmic forms of exercise such as walking, cycling, swimming, and dancing, which involve large muscle groups (e.g. leg muscles).

The other main type of exercise is called resistance or strength training, e.g. press ups, and heavy lifting. However, these activities are not recommended for everyone, especially if you have high blood pressure, because they increase your blood pressure and put your heart under more stress.

With this in mind, it is strongly recommended that you incorporate regular, continuous aerobic activity into your day. This should be of a moderate intensity, i.e. exercise that makes you feel slightly warm and slightly out of breath. Walking is an ideal activity that can easily become part of your daily routine. The following
CARDIAC REHABILITATION – PHASE 3

programme is designed to provide you with a framework so you can build up your walking levels gradually.

Cardiac Rehabilitation Phase 2

Walking Programme

The walking programme shown below is a rough guide only. Everybody recovers at a different rate, be sensible - if you are finding the distances hard, take things nice and slowly. If you are finding them very easy you may progress through the stages quite quickly.

- Progress through each stage in order; do not miss any stages regardless of how well you think you are progressing
- If you feel comfortable, try to increase your walk by 1 or 2 minutes, and move on to the next stage when you are ready. It is important that you increase the time and speed very gradually

By the end of the programme your aim should be to go walking at least 5 times a week, at a brisk pace for at least 30 minutes. This is the amount of activity that is recommended to keep your heart healthy.

<table>
<thead>
<tr>
<th>Stage of Recovery (approximate)</th>
<th>Length of walk (in minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>5 minutes: several times per day. Strolling / leisurely pace</td>
</tr>
<tr>
<td>Week 2</td>
<td>10 minutes: twice a day. Leisurely pace</td>
</tr>
<tr>
<td>Week 3</td>
<td>15 minutes: daily. Leisurely / moderate pace</td>
</tr>
<tr>
<td>Week 4</td>
<td>20 minutes: daily. Moderate pace</td>
</tr>
<tr>
<td>Week 5</td>
<td>25 minutes: daily. Brisk pace</td>
</tr>
<tr>
<td>Week 6</td>
<td>30 minutes: daily. Brisk pace</td>
</tr>
<tr>
<td>Target</td>
<td>30-40 minutes: daily. Brisk pace</td>
</tr>
</tbody>
</table>

Important points to remember

Once you have established the walking programme, and progressed to a moderate pace (Week 4 or above) it is important to:

**Warm-up:**

It is extremely important that when you go for a walk, you don’t start walking at your full pace immediately, but build up gradually during the first few minutes of the walk. Ideally the warm up period should be between 5 and 15 minutes long. The warm up should be less effort that the walk and should be adapted to your stage of recovery e.g. walking on the spot, walking slowly. This will give your body and heart time to adapt to the work that you are asking it to do. This ‘warm up’ period has very important safety implications, including reducing the risk of angina and disturbances in your heart rhythm.
CARDIAC REHABILITATION – PHASE 3

Cool Down:

Similarly, you should never speed up towards the end of your walk and stop suddenly. It is important that you gradually slow your pace during the last portion (ideally 10 minutes) of your walk. This ‘cool down’ period helps to reduce the risk of sudden heart problems or a sudden drop in blood pressure, and should be taken very seriously.

Plan your route on firm, level ground if possible, especially for the first few weeks of your programme. As you gain confidence and fitness, increase the pace, and try to introduce some gradual hills into your route.

Occasionally you may have a day when you are not feeling as energetic as usual. Please do not feel disheartened- this is not a step backwards in terms of your recovery. Reduce the amount that you do that day, or walk at a slower speed. Everyone has good days and bad days- remember to listen to your body.

You may find it useful to map out a specific walking route before you start. If possible, find out how far it is and how long it takes you to walk it, and then you have a means of monitoring your progress.

To start with it may be a good idea to take a friend or relative with you when you walk- this will help your confidence and enjoyment. Be careful that they do not lead the pace, and go at a level suitable for you.

Do not walk straight after a meal as this may bring on angina. Try to leave at least an hour after you have eaten before you start exercising.

How fast should I walk?

For the first few weeks of the programme, you should walk at a leisurely to moderate speed. As you get fitter, you should try to increase your pace gradually, building up to a ‘brisk’ pace.

Talk Test

One way of checking your pace, is by doing the ‘talk test’ while you are walking.

➢ If you can talk very easily, you are not walking briskly enough.
➢ If you can talk but feel warm and are breathing heavier than normal, you are walking at about right pace.
➢ If you can’t talk, you are walking too briskly, so you should slow down.
CARDIAC REHABILITATION – PHASE 3

Borg Scale

Whilst exerting yourself you will want to use the modified Borg 0-10 scale below to help you to rate how strenuous an exercise or activity feels as you are doing it. The perception of exertion depends mainly on the strain and fatigue in your muscles and on the feeling of breathlessness or aches in the chest.

<table>
<thead>
<tr>
<th>No.</th>
<th>Effort Experienced</th>
<th>Verbal Expression</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Nothing at all</td>
<td>Sitting in a chair</td>
</tr>
<tr>
<td>0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>Extremely weak</td>
<td>Just noticeable</td>
</tr>
<tr>
<td>1</td>
<td>Very weak</td>
<td>No problem</td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Weak</td>
<td>Light/very easy to continue</td>
</tr>
<tr>
<td>2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>Comfortable to continue</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Beginning to feel puffed</td>
</tr>
<tr>
<td>5</td>
<td>Strong</td>
<td>Heavy/feeling a bit puffed</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Feeling puffed</td>
</tr>
<tr>
<td>7</td>
<td>Very Strong</td>
<td>Tiring/you have to push yourself to continue</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Very tiring</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Out of breath/shattered</td>
</tr>
<tr>
<td>10</td>
<td>Extremely strong</td>
<td>As hard as most people have experienced, whole body exhausted</td>
</tr>
</tbody>
</table>

- Absolute maximum (highest possible)

By the time you have completed this programme physical activity should have become a regular part of your life. For example,

when you go back to work why not try going for a brisk walk during your lunch break. Ideally you should be doing at least 30 minutes of physical activity on 5 or more days of the week. Don’t forget that you can split up the 30 minutes- doing 2 lots of 15 minutes may be more convenient for you. Remember that it is current physical activity that protects your heart- i.e. what you are doing at the moment, not what you did last month, so you must keep up the good work!

Sensible precautions

In order to maximise your safety, it is important to read and follow these guidelines.

- Exercise only when you feel well.
  - If you are unwell with a virus, cold or tummy bug please do not attempt to undertake any exercise as this will slow your rate of recovery. Wait at least 2 days after the symptoms have disappeared.

- Do not exercise in extremes of temperature.
  - If it is warm, slow your pace. When exercising in the cold, dress warmly. Cold air or windy weather may provoke angina. You can help to prevent this by covering your mouth with a scarf when you are walking so that you warm the air that you are breathing in.
CARDIAC REHABILITATION – PHASE 3

➢ You must also compare how you feel on any given day with your usual symptoms and capabilities.
  o If you have developed any new symptoms or you have found that your usual symptoms (i.e. more breathlessness, more frequent angina, swollen ankles) get worse, you must inform your GP as soon as possible.

---

**Phase 3 Cardiac Rehabilitation**

**Supervised Exercise Classes**

As you achieve your goals with your walking programme, your consultant may recommend for you to attend a series of supervised exercises and information classes during your recovery after your heart procedure. Graded exercise is a vital part of your rehabilitation, and will help progress your activity levels from a walking program back to your baseline level.

The Cardiac Rehabilitation Programme in the Beacon Hospital aims to:

➢ Provide our patients with the highest quality cardiac rehabilitation and secondary prevention service in partnership with the Consultant Cardiologists, multidisciplinary team members, patients and their families.

➢ Assist the patient in his/her recovery after a cardiac event, improve self-confidence and enhance the wellbeing of the entire family unit.

➢ Promote through education and support the adaptation by patients of a healthy heart lifestyle. We work as a multidisciplinary team to maximise the care provided.

➢ Promote learning and provide a supportive environment for all participants, respecting each other’s needs, abilities and potential.

These sessions are provided by the cardiac rehabilitation team in the physiotherapy department in the Beacon Hospital. They are specifically designed to help you find out how much activity you can safely do, and provide you with the confidence and information to become more active.

➢ The courses run for a 6 week period, 24 hours total over 6 weeks.

➢ It consists of one hour’s exercise twice a week, with one education session before or after the exercise class on one day a week.

➢ There is a warm-up of ten/fifteen minutes prior to the circuit.
The aerobic phase lasts about thirty minutes and consists of:
- a treadmill
- biceps curls
- lunges
- press ups
- static bicycle
- upright row
- stepping
- wall squats
- hamstring curls
- lateral raises

To conclude the exercise session, there is a ten/fifteen-minute cool-down in order to taper off the exercise gradually.

Graded exercise should be accompanied at this stage by other interventions tailored to meet your individual requirements.

The second hour of each session is focused on this lifestyle education. Lifestyle changes should be encouraged and supported where appropriate, e.g. weight reduction, smoking cessation, retraining with a view to returning to work.

This will be accompanied by education concerning the cardiac condition and the reasons why changes in lifestyle might be desirable.

**Conclusion**

We hope that you have found this booklet useful and that it has helped to relieve some of your fears and anxieties regarding your heart procedure. During your hospital stay, your medical team will be available to answer any other queries you may have.

**Individual Patient Notes:**

Consultant Name: ________________________________

Date of Surgery: ________________________________

Surgery Note: ________________________________

**Contact Number for Cardiac Rehabilitation:** (01) 2936692

This Patient Education leaflet was developed by the Chartered Physiotherapists in Beacon Hospital. © Beacon Hospital.