

Outstanding Care,
Compassionate People,
Healthier Communities



Sherwood Forest Hospitals
NHS Foundation Trust

Cardiac rehabilitation Exercise booklet

Information for patients



Name: _____

Date issued: _____ Given by: _____

Introduction

This booklet has been developed to support the information you have already been provided with, either in person (during your admission or a subsequent face-to-face appointment) or via a telephone call with a member of the Cardiac Rehabilitation team.

Physical activity and exercise

This is an important element of your rehabilitation – you should treat it as another form of medicine. Even if you feel you are limited by your heart or another health condition, most exercises can be adapted to help you increase your level of activity – just a small increase in activity levels have been shown to help improve confidence, increase fitness and muscle strength as well as reduce the risks associated with low levels of physical activity. Many people believe they already do enough exercise, often responding with "My job keeps me active", "I'm always on the go – I never sit still" or "I walk the dog twice a day". Unfortunately in a large proportion of these instances, it is either not the right type of exercise or not done the right way for it to benefit the heart and cardiovascular system.

So what is the right way?

For exercise to be of benefit, even for the fittest of people, we have to ask the body to do a little more, or to do things differently to what it is currently used to doing. This is done to cause what is known as the 'Overload' principle and basically means your heart rate will need to increase and beat a little stronger whilst your breathing will also get deeper and faster as a result of doing a little more – with your muscles also possibly feeling a little more tired and achy.

These are perfectly normal physiological reactions to the increased demand from the muscles and actually need to happen in order for the muscles (including the heart itself) to receive more blood (which contains the oxygen and energy needed for exercise and movement) and to remove the waste products the muscles produce during exercise.

To help ensure physical activity and exercise are done at the right level of intensity to be of benefit, we need you to reach what is considered a moderate intensity.

This is typically where your heart rate and breathing both feel stronger, deeper and quicker than before exercise, but not to a point where you are unable to talk in short sentences (usually felt or described as managing anywhere from 4-8 words between breaths).

The Borg 'RPE' scale is designed to help you monitor how hard or difficult you feel the activity you are undertaking is becoming. (Page 5):

- Moderate intensity is considered to be around 11-14.
- RPE stands for Rating of Perceived Exertion.

In terms of the actual exercise undertaken, this often takes the form of aerobic activity – things that use the larger muscle groups such as walking, cycling and weight bearing, or body weight based movements; some of which can also be done in sitting.

It can involve the use of equipment such as treadmills, static cycles, hand held weights and elasticated resistance bands. Other examples of aerobic exercise include swimming and dancing.

Other forms of exercise such as resistance or strength training are also important to undertake, with some forms of activity able to combine more than one element at a time; for example carrying shopping whilst walking. Flexibility or stretching exercises can also be beneficial.

The aim of the exercise programme is to ultimately increase the amount of activity you can manage in one go, no matter where you are starting from, towards the long term goal of achieving 20-30 minutes of continuous cardiovascular exercise per session and completing 150 minutes each week.

The following exercises are the same as some of the exercises undertaken within the cardiac rehabilitation sessions. Also included are some alternative options / adaptations for the exercises that require equipment e.g., static exercise bike for those who you don't have access to this equipment at home.

Each exercise should initially be done for 1 minute, or for those who have attended the programme, for the same duration as you have managed during the sessions at the hospital.

Remember

Aim to exercise at least three times a week, but stay active on other days by going for a gentler walk.

Always give yourself at least two rest days a week when you do not exercise.

Wait two hours after a heavy meal before exercising and ensure you stay hydrated whilst exercising by drinking water.

Do not exercise when you have an infection or feel unwell. Rest and resume exercise when you feel well again.

Stop exercising if you experience severe shortness of breath, chest pain or tightness, nausea, faintness or dizziness. Use your GTN spray as you have been taught, if appropriate, or consult a doctor if you are experiencing problems.

Warm up and cool down

It is important before starting these exercises you complete a warm-up that should last for at least 10 minutes.

This could be a gentle walk around the house, garden or on the spot. Alternatively you can do some of the exercises from this home exercise programme, gradually increasing the height and speed of movements and aiming to reach RPE 10-11 (see next page) by the end of your warm up period.

This allows your heart and body to gradually adjust to the change in activity. When walking or cycling, warming up may be as simple as starting off slowly and gradually building up. In this instance cooling down would be gradually slowing down before you stop.

After completing the exercise circuit you should finish with a cool down, lasting 5-10 minutes. Again this can be done walking around the house/garden, aiming to gently slow down your pace, bringing your breathing and heart rate back towards pre-exercise levels.

You may also want to do some stretches after your session. Some examples of stretches and guidance are included later in the booklet.

Remember it is important that you pace yourself whilst exercising; these exercises should feel no more than 'somewhat hard' (RPE 13/14) and you should be comfortable enough to continue and be able to talk in full sentences without tiring.

Use the diary sheet at the end of the booklet to help you record the amount of exercise you are able to undertake – this can allow you to see some of the smaller, subtle improvements you are making that you would perhaps otherwise miss.

It can also help if you do happen to notice any problems that occur.

It requires just a small amount of information to be recorded each time you do some exercise – see the diary sheet for an example.

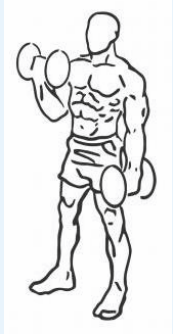
Rating of Perceived Exertion (RPE) scale

Try to use this scale to help you appraise your overall feeling of exertion as honestly as possible, without thinking about what the actual physical load is, or focusing on any one factor such as leg pain or shortness of breath. Your own feeling of effort and exertion is important, not how it compares to others. Look at the scale and the expressions and then choose the number from below that best describes your level of exertion. This will give you a good idea of the intensity level of your activity and you can use this information to speed up or slow down your activity to reach the correct range.

BORG RPE Scale:

- 6 No exertion at all
- 7 Extremely light
- 8
- 9 Very light
- 10
- 11 Light
- 12
- 13 Somewhat hard
- 14
- 15 Hard
- 16
- 17 Very hard
- 18
- 19 Extremely hard
- 20 Maximal exertion.

1: Bicep curl / front raise / upright row



Bicep curl:

- Stand upright, arms relaxed at your side, palms facing forward.
- Bend one elbow, bringing your hand (or a weight) up towards your shoulder.
- Pause briefly before lowering back down to your side. Repeat with the opposite arm.

(You can also perform this exercise in sitting).



Front raise:

- Stand upright with arms relaxed at your side, palms facing behind you.
- Keeping your arm straight, slowly lift up towards your shoulder. Pause briefly before lowering back down to your hips.
- Repeat with opposite arm.

(You can also perform this exercise in sitting).



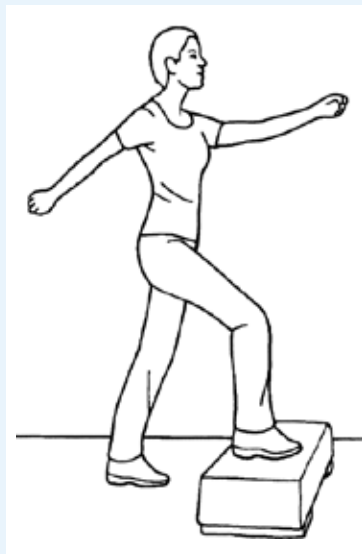
Upright row:

- Stand with your hands just in front of your hips / waist.
- Slide your hands up the body towards your chest, making sure you push your elbows up and out – try to keep the elbows higher than your wrists.
- Try not to lean backwards.
- Lower both arms back to the start position and repeat.

(You can also perform this exercise in sitting).

Remember to keep your feet moving at all times, especially when performing the arm exercises in a standing position.

2: Step-ups / high knees



Step-ups:

- Stand at the bottom of a step (such as your stairs).
- Place one foot onto the step, push up through this leg and then bring your other foot up – so you finish standing on the step.
- Step back down to the ground, one foot at a time.
- Repeat.

For an alternative, tap the edge of the step with each foot in turn.

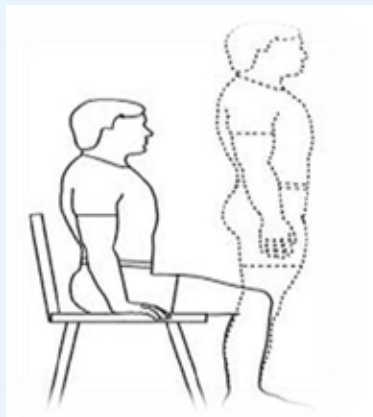


High knees:

- Stand with your feet hip width apart.
- Lift one knee as high as you feel comfortable.
- Try not to tuck slouch / tuck your bottom under or drop your chest.
- Pause briefly before lowering back down.
- Repeat with the opposite leg.

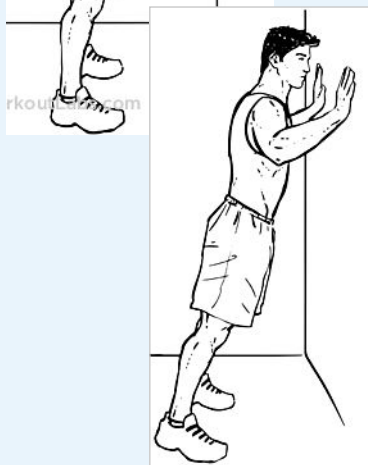
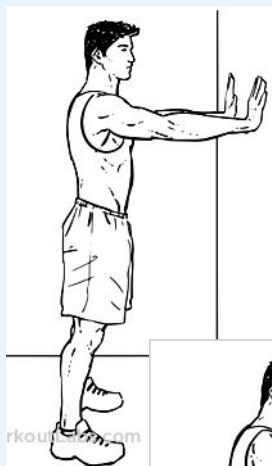
(You can also perform this exercise in sitting).

3: Sit-to-stand / wall press up



Sit-to-stand:

- Sit in a sturdy chair (such as a dining chair), no further back than the middle.
- Place your feet under your knees (approx. 90° angle).
- Leaning forward slightly from the waist (approx. 45° angle), lead with the top of your head and using your hands or arms if required, push through your legs at the same time and come up into standing – finish nice and tall.
- Pause briefly.
- Return to sitting in a controlled manner.
- Repeat.



Wall press up:

- Stand a comfortable distance away from a plain wall.
- Place your hands no higher than your shoulders.
- Keep your shoulders relaxed (away from your ears).
- Gently bend the elbows, moving the chest towards the wall. Allow your heels to lift if needed.
- Try not to arch your back / push your head forwards. Return to the start position.
- Repeat.

4: Bike / marching / hamstring curl



Exercise bike:

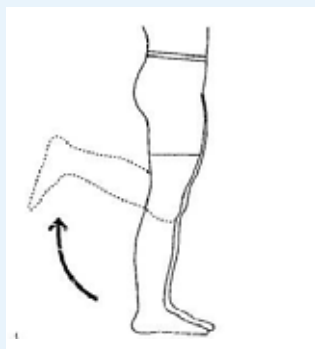
- If you have access to an exercise bike, remember the seat should be level with your hip when stood next to the bike and you should be able to keep your foot flat when it reaches the bottom of the cycle – not having to tip the foot.
- Try and pedal against a slightly lighter resistance so you can maintain a brisk pace / RPM rather than slow and heavy.



Marching:

- Standing nice and tall (with a chair for support if required), lift one knee as high as you feel comfortable (no more than a 45° angle).
- Lower back down and repeat with the opposite leg.
- Try and maintain a brisk but comfortable pace.
- Try not to tuck slouch / tuck your bottom under or drop your chest.

(You can also perform this exercise in sitting).



Hamstring curl:

- Stand nice and tall (using a chair for support if required)
- Gently 'kick' the heel of one leg towards your bottom (as much as the knee will allow you to).
- Shift your weight onto your standing leg as you do this.
- Return the leg to the floor, repeat on the opposite side.

5: Shuttle walk / tap back / heel raise



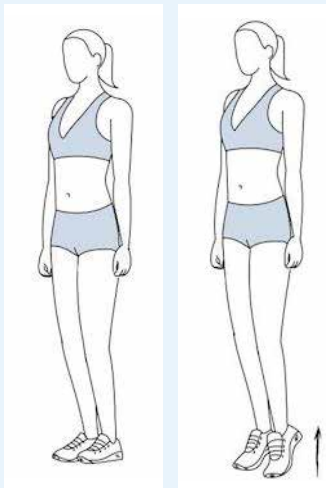
Shuttle walk:

- If you have the space available, clearly mark out / place two objects (such as chairs) approximately 4 metres apart in a straight line.
- Walk around them as briskly as you feel able.



Tap back:

- Stand nice and tall, feet hip width apart.
- Tap back with one leg as far as you feel comfortable – try and just touch the toes to the floor (don't put weight onto your heel).
- Return to the start position and repeat with your other leg.
- The movement should be as brisk as you feel you can manage.
- At the same time you can also reach the arms forwards (no more than chest height) – if you feel able to do so.

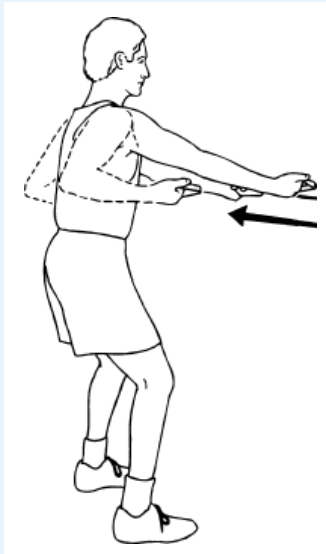


Heel raise:

- Stand with your feet close together. (Use a chair for support if required).
- Lift both heels up from the floor, lifting onto the balls of your feet / toes. Maintain your balance.
- Gently lower back down and repeat.

This exercise can also be done in sitting and one leg at a time.

6: Horizontal row / lateral arm raise



Horizontal row:

- Stand with your feet hip width apart.
- Raise your hands to about shoulder height (palms can face inwards or towards the floor).
- Slowly pull your elbows backwards towards the ribcage – bringing your hands closer to your chest. You should feel your shoulder blades gently squeezing towards one another.

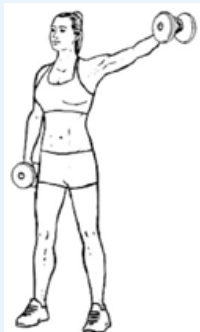
(You can also perform this exercise in sitting).



Lateral arm raise:

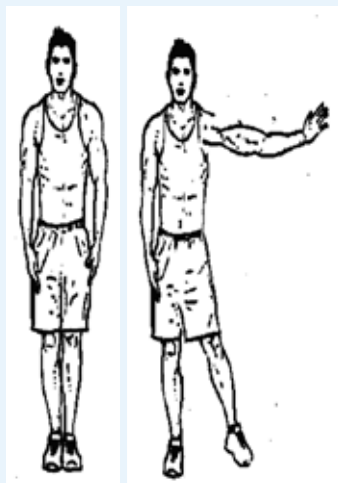
- Stand with your feet about hip width and your arms by your side (palms facing inwards).
- Lift one arm out to the side as far as you feel comfortable – don't lift above approximately a 90° angle – arm level with the shoulder.
- Hold very briefly before lowering the arm back down.
- Repeat on the opposite side.

(You can also perform this exercise in sitting).



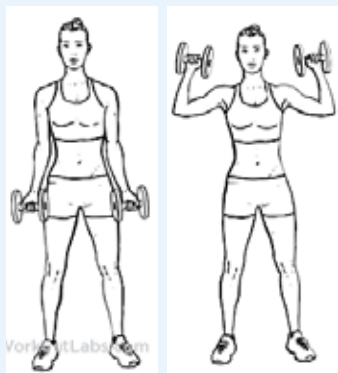
Remember to keep your feet moving at all times, especially when performing the arm exercises in a standing position.

7 Half jack or side tap / bicep curl – shoulder press



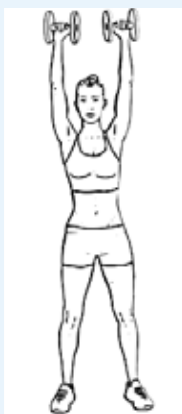
Half jack / side tap:

- Stand with feet hip width, arms by your side.
- Gently tap one leg out to the side, touching the floor with your toes.
- Return the leg back to the start position and swap to the other leg.
- You can also lift one arm out to the side at the same time as the leg – this can be on the same side as the leg or the opposite – whichever is easiest to coordinate.



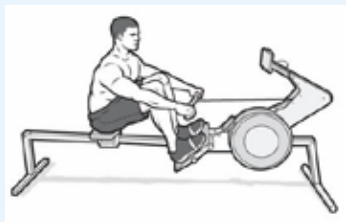
Bicep curl – shoulder press:

- Stand with feet hip width apart, arms by your side.
- Bend the elbows and bring both hands to the shoulders (palms face inwards).
- As you now push the hands up past your ears, turn the hands so the palms now face outwards.
- Reverse the movement, controlling the arms as you lower them down in the two stages.
- Repeat.
- Try not to lean back or sway as you lift the arms.



Remember to keep your feet moving at all times, especially when performing the arm exercises in a standing position.

8 Rower / squat



Rower:

- If you have access to a rowing machine, Remember to keep the tension on the chain at a moderate level (mid-to $\frac{3}{4}$ of range).
- Try to keep your heels flat as you push and extend through the legs to move backwards – at the same time, pull the elbows in towards the stomach.
- Once the legs are extended, reverse the movement. Allow the knees to bend so you slide back towards the front. Allow the arms to straighten so you finish in the same position you started (see picture).

Remember to try and avoid leaning backwards excessively.



Squat:

- Stand with your feet about hip width apart.
- Keeping your knees behind your toes and your heels on the floor, gently bend the knees and push your bottom backwards as if you were going to sit down.
- You should bend slightly at the waist, keeping your chest lifted so it sits above the space between your knees .
- Push through the legs to come back up into standing. You do not need to squat any lower than a 90° angle.
- You can place your arms out in front to help with balance.
- The movement should be controlled – faster movement could cause you to lose balance.

An alternative would be the sit-to-stand exercise.

Stretching

How to stretch:

1. Stretches should only be taken to the point of slight discomfort, never pain.
2. Never 'bounce' a stretch – this causes the muscle to tighten rather than stretch.
3. Relaxed sustained stretches are the most effective. Hold each stretch for at least 10 seconds, longer if possible in the cool down. Avoid holding your breath whilst you stretch.
4. Do not attempt any stretch that you feel uncomfortable with or that aggravates any other problems.
5. Stretches are more effective if muscles have been warmed up through gentle exercise such as walking on the spot for five minutes.

When and why to stretch

Stretching can be done after the warm-up, just prior to the main exercise if you feel it helps, however you should always try to do them after an exercise session because:

1. Muscles are less prone to injury when they are warmed up – they become more elastic.
2. Stretches help to disperse metabolic waste and can reduce muscle soreness after exercising.
3. Stretches can help improve the freedom of movement at your joints. Leg stretches and mobility movements.

Leg stretches and mobility movements:

a) Hamstring stretch



Stand with the leg to be stretched in front. Keep the front leg straight and bend the back knee. Lean the body forwards so that you can feel a stretch in the back of the front leg. Pull the toes up.

b) Calf stretch



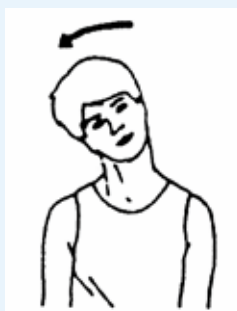
Stand in a walking position with the leg to be stretched out behind you. Take support from a wall or chair. Lean forwards until you feel a stretch in the calf of the leg. Hold for 5-10 seconds on both legs.

c) Ankle stretch / mobility

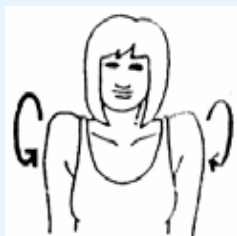


Hold onto a wall or table. Rotate your ankle. Change directions. Repeat five times each ankle.

Neck and shoulder stretches:



a) Side bending – lean one ear down towards the shoulder on the same side. Repeat 5 times each way. This is fine for most people but you should stop if you feel dizzy or faint. Hold for 5-10 seconds.



b) Shoulder rolling – roll your shoulders in both directions. Repeat five times.

c) Shoulder mobility



Push your shoulders forwards, stretch the arms diagonally forwards and down. Hold for 5-10 seconds. Reach your arms behind you with your thumbs upwards. Pull your shoulder blades together. Hold for 5-10 seconds.

d) Tricep stretch



Grasp your elbow with the other hand and push back and down gently until you can feel stretching at the back of your upper arm. Hold for 5-10 seconds on both arms.

Relaxation technique

This relaxation procedure has been practised for over 20 years. It has been studied by researchers and found to be effective.

You will feel very relaxed and calm as a result. It is not the same as hypnosis and you will not lose consciousness at any point.

Now that many health problems such as heart disease, diabetes and cancer have been linked to high stress levels it makes sense to introduce relaxation into your life, so try to make time for relaxation every day.

It is often easier to learn after exercise, so relaxation is recommended at the end of each exercise session, and should last about 10-15 minutes. You may want to play some soothing music or just be in silence.

Abdominal breathing

Let your attention focus on your abdomen. Feel it swelling as you breathe in and sink as you breathe out. Keep the breathing as gentle and slow as you can. Don't force it. You may wish to feel this sensation by putting one hand high on your chest and one on your abdomen until you have mastered it.

Important note

You may find this relaxation difficult in the beginning – it's a skill that usually takes weeks of practice to master. We would suggest you practice the technique daily at first, view it like learning a musical instrument - those that practice improve; those that don't, won't.

Using abdominal breathing to relax

Make yourself comfortable lying or sitting and close your eyes. Gently turn your attention to your breathing. Begin by noticing it in a general kind of way, then slowly bring your mind to focus on the movement of your abdomen. Keep your attention fixed on the movement of your abdomen – swelling as the air is breathed in and sinking as the air is breathed out. Allow the air to pass in and out quite naturally while you are concentrating on the abdominal movement. Do not try to influence the breathing rhythm but let yourself flow with it.

If your mind wanders gently bring it back to the swelling and sinking again – try counting the breaths to hold your attention – one count for every breath out and when you get to ten (or lose count), start again. Then try to focus your attention on each part of your body from your feet up to your head, releasing any tension and allowing your muscles to relax and become heavy.

Please continue for 10-15 minutes.

Before you open your eyes, stretch out and wait a few moments before moving, slowly sitting up and becoming alert and aware again.

Using words as cues

Let your breathing be as natural as possible. Just before you breathe out, think of the word relax, slowly release the air as you focus on the word, breathing in, and repeat the sequence. Keep the rhythm as gentle as you can and avoid deliberately deepening your breaths. Continue for a few moments.

If you have any questions or concerns, please discuss this with the Cardiac Rehabilitation team when you attend for exercise or tel: 01623 672296.

For additional information and exercises go to the BHF website or click the following link:

www.bhf.org.uk/information-support/support/cardiac-rehabilitation-at-home/cardiac-rehabilitation-exercise-videos

Activity diary

Use this diary sheet to help you record your activity levels and to monitor how you are coping with the activity as time progresses. It can help you identify improvements you could be making – even when they are not obvious to yourself.

You don't need to put in lots of detail; a brief summary of what you did is enough – it should be quick and easy to complete.

Date / time	Activity undertaken	Duration	Effort
Example: 09/10/11: 11.30am	Walk exercises 1, 2, 4, 6	15 minutes, 2 minutes each or 10 repetitions of each exercise	RPE 11 RPE 12

Further sources of information

NHS Choices: www.nhs.uk/conditions

Our website: www.sfh-tr.nhs.uk

Patient Experience Team (PET)

PET is available to help with any of your compliments, concerns or complaints, and will ensure a prompt and efficient service.

King's Mill Hospital: 01623 672222

Newark Hospital: 01636 685692

Email: sfh-tr.PET@nhs.net

If you would like this information in an alternative format, for example large print or easy read, or if you need help with communicating with us, for example because you use British Sign Language, please let us know. You can call the Patient Experience Team on 01623 672222 or email sfh-tr.PET@nhs.net.

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