

Physiotherapy following cardiac surgery

i Information for patients
Cardiac Surgery



PROUD TO MAKE A DIFFERENCE

SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST



Physiotherapy is an essential part of your recovery from your operation.

There are 4 main areas of physiotherapy involvement:

1. Chest care
2. General mobility
3. Rehabilitation
4. Education

The information in this booklet relates to:

- Preparation for surgery
- Your hospital stay
- Your discharge from hospital

Preparation for surgery

It is important to remain physically active whilst you wait for your operation. Physical activity means day-to-day activities, like walking and housework, or a structured exercise programme.

The more active you are before the operation, the sooner you are likely to be able to go home afterwards.

The exercise you choose will depend on your level of fitness, but it is important for you to find ways of introducing exercise into your daily routine.

Scale of perceived exertion (effort)

The scale on the following page can be used to help to gauge how hard you are working when exercising or carrying out an activity.

How you feel will depend on:

- The strain and fatigue (tiredness) in your muscles
- Your feeling of breathlessness

Try to be honest about how you feel when carrying out an activity or exercise. Begin by looking at the descriptions on the next page and then give a number for both of the following:

- Lower body muscle fatigue
- Breathlessness

You should use this score to grade how hard you are working. You should aim to be working between 3 and 5 on the scale. This will ensure you are working hard enough to see a benefit from your exercise, but are not overdoing it.

Remember that any increase in activity, however small, will be beneficial for you. You should not exercise if you feel unwell.

Rating	Description	Example
0 / 0.5	Nothing at all / Extremely easy	Able to continue activity without stopping
1	Very easy	
2	Easy	
3	Moderate	You feel fine and able to continue
4		
5	Hard	You feel tired but able to continue
6		
7	Very hard	You have to push yourself a lot
8		
9		
10	Reaching your maximum	
11		
12	Absolute maximum	

Warm-up

You should always warm-up your muscles and prepare your body for exercise. Warming up for 5 to 10 minutes should be enough, for example by marching on the spot, or starting a very gentle walk or cycle.

Exercises for your heart and lungs

Walking, cycling and climbing stairs are all good ways of improving your fitness. You should choose an activity and an intensity that is appropriate for your current level of fitness. Ideally the exercise should raise your heart rate and make you breathless, but not so breathless that you cannot hold a conversation. Think about the perceived exertion scale and aiming for scale 3 to 5.

Marching on the spot

Standing on the spot, march your legs up and down, picking your knees up high. You might need to hold onto something for balance.

Walking

It is important to maintain your current level, or even try to increase the amount of walking you can do before your operation.

Stairs

You can climb the stairs at home as part of your exercise, either completing a full flight or by doing step-ups on the bottom step.

Exercise bike

If you have a static exercise bike you can use this as part of your cardiovascular exercise. Start by pedalling at a low speed of 40 to 50 revolutions per minute (RPM) with low or no resistance.

Household activities

If an activity gets your heart rate raised and feeling breathless, this can also help to improve your fitness.

Leg strengthening exercises

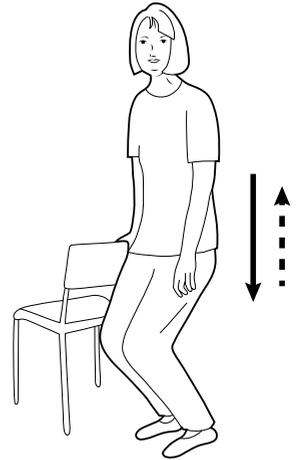
After surgery if you have a chest wound, your upper arm activity will be reduced and you may be more reliant on your leg strength. These exercises can help strengthen your legs if completed on a daily basis.

A. Alternate knee bends (20 each leg)

- (i) Sitting with your legs straight out in front of you, bend one knee towards your chest
- (ii) Straighten and repeat with the opposite leg

B. Half squats holding onto sturdy furniture for support (10 times)

- (i) Stand with feet slightly apart and back straight
- (ii) Bend your knees to 45° slowly and straighten
- (iii) Keep heels on the floor throughout



C. Step ups (10 times)

- (i) Lift your right foot onto the first step of your staircase
- (ii) Bring your left foot up to join it
- (iii) Step down
- (iv) Repeat, leading with your left foot

Chest care

Chest problems can occur after cardiac surgery even if you have no history of chest problems or smoking.

Reasons for chest problems after your operation include:

- **The anaesthetic gases**
 - increase the amount of phlegm produced
 - make the phlegm sticky and difficult to cough up
 - make you sleepy after your operation
 - make you take small rather than big breaths
 - make your cough less effective
- **Previous chest problems or history of smoking**
 - can lead to increased amounts of phlegm being produced after your operation.
- **The operation**
 - during the operation your lungs are not inflated fully and you need to re-expand them after your operation.
- **The incision**
 - the discomfort from the wound may mean you are reluctant to take deep breaths or cough effectively.
- **Posture**
 - if sitting or lying in a slumped position in your bed or chair, you will be unable to take a full deep breath.
- **Decreased activity**
 - in the early stages after your operation you spend more time in bed than usual, and do not take such deep breaths as you would when walking, so phlegm can accumulate.

Always sit in an upright position, not slumped



To speed up your recovery and prevent chest infections, it is **important that you practice** the breathing exercises and coughing that your physiotherapist teaches you.

If you practise these before your operation, you will find them easier to do after your operation.

Breathing exercises

- Sit upright
- Place a hand high on your abdomen (tummy), at the lower end of your breast bone. Take a normal breath in and feel your hand move outwards, then breathe out normally and feel your hand move in.
- Practise this relaxed, breathing for about 1 minute.
- Follow this by taking a **deep** breath in, keeping your shoulders relaxed
- Hold the breath for a count of 3
- Breathe out
- Repeat this 4 times and then return to your relaxed breathing.
- **Complete 3 sets of 4 deep breaths every 30 minutes**
- Cough and clear your chest as necessary

Coughing

Effective coughing is **extremely important** to clear any phlegm present on your chest.

- When coughing, ensure that you are sitting upright and that you support your wound with the cough pillow provided
- Take a deep breath in
- Cough strongly from your tummy **not** your throat
- Afterwards, do some relaxed breathing as described above

If you have difficulty with this, the physiotherapist will be able to teach you other ways to effectively clear any secretions present.

Always ask for more painkillers if pain or discomfort are stopping you from deep breathing or coughing effectively. Please don't suffer in silence.

General mobility

It is important to become active as soon as possible.

You will sit out of bed the day after your surgery, and start walking as soon as possible after this, despite any drips and drains you may have.

When moving in bed or rising from a chair, it is important not to push down through your arms. This would put too much of a strain through your wound.

Walking is an excellent way to take deep breaths and assist in clearing your chest. It will also help increase your strength after your operation.

Your exercise tolerance (amount of walking) will be increased gradually over the following days.

The physiotherapist will check you can manage a flight of stairs, if appropriate, before you go home.

When you are able to walk on your own, try to have a walk every hour.



Activity and exercise after discharge from hospital

Following your cardiac surgery, it is extremely important to maintain and increase your exercise tolerance.

Regular exercise both helps you feel better and improves your heart function.

Exercise should become part of your daily routine starting the day of discharge. However, you must realise that you will be starting from a lower level of fitness initially and it is important to build up gradually.

Exercise at your pace and avoid sudden bursts of activity

Aches and pains around the chest and neck are very common after heart surgery. These exercises are designed to prevent your neck, rib cage and back from becoming stiff and painful. They also help to make you more aware of your overall posture.

Breathing exercises

During the first 2 weeks after you are discharged home, it is important to continue with the breathing exercises you have been practicing during your hospital stay. This will prevent you developing chest infections and improve your lung function.

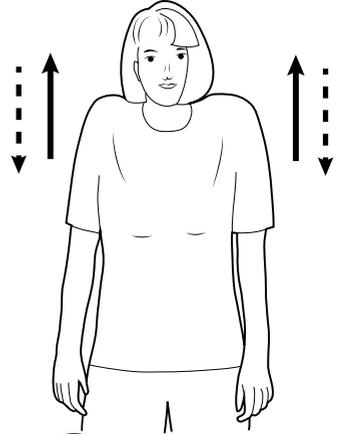
These exercises should be continued as long as you feel they are helping.

Shoulder exercises

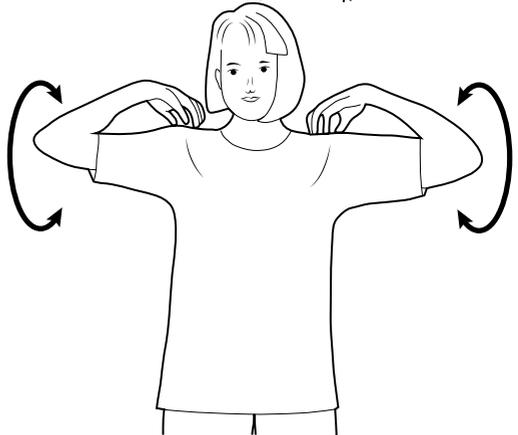
These exercises are to help ease off some of the stiffness or aching you may develop following your heart operation. They should be done slowly.

Aim to do them twice a day, starting with 5 of each and gradually building up until you can do 10 of each.

A. Shrug your shoulders towards your ears and then push them down



B. Place your finger tips on your shoulders and draw circles with your elbows

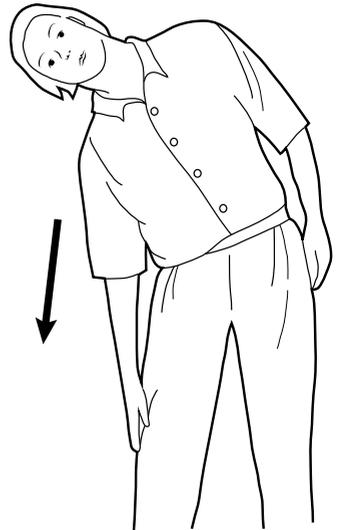


C. With alternate arms, reach high towards the ceiling

Trunk exercises

A. Alternate side bending standing

- (i) Bend sideways to the left without leaning forwards or backwards. Slide your fingers towards your knee.
- (ii) Count to 5 and slowly return to standing.
- (iii) Repeat to the right side.



B. Upper body rotation

- (i) Sitting with your hands across your chest, slowly turn to the right.
- (ii) Hold for a count of 5.
- (iii) Repeat to the left.



Leg exercises

Exercises will help improve your circulation and ease any stiffness or swelling that may be present due to leg wounds.

See the leg strengthening exercises and diagrams on page 6.

These should be done at the same time and the same amount as the shoulder exercises.

You should continue these exercises for 6 weeks.

Walking

It is important that you continue to take regular walks (twice a day initially). Prior to discharge, you will have walked around the ward, and it is essential that you try to walk outdoors when you go home. Gradually increase the length of time walking as you feel able.

Initially you should aim for a 10 minute walk and this can then be increased gradually, depending on how you feel.

It is natural to become slightly short of breath on exercise, if however, this shortness of breath is excessive and doesn't recover within a minute or so, you are working too hard. You should always be able to continue talking when exercising.

Try to aim for a 30 minute walk by the time of your first clinic appointment.

It is essential that you continue with some form of regular exercise indefinitely.

Return to activities after sternotomy

These activities should be avoided until your breast bone has completely healed.

- **Driving** - usually around 6 to 8 weeks, though please follow your consultant's advice or ask at clinic
- **Swimming** - 2 to 3 months. All wounds need to be completely healed.
- **Bowling** - 2 months
- **Dancing** - 2 months
- **Golf** - 3 months
- **Jogging** - 3 months or after your Cardiac Rehabilitation class
- **Cycling outdoors** - 3 months
- **Static exercise bike at home** - discuss with your physiotherapist
- **Work** - depends on your occupation (job) so you need to seek the consultant's advice:
 - light work - 2 months
 - manual work - approximately 4 months
- **More active sporting activities** - follow doctor's advice or see physiotherapist at post-surgical discussion or exercise groups

Return to activities after minimally invasive (key hole) surgery

For 4 to 6 weeks, care should be taken with any activity or posture which involves over stretching your right groin, where your surgeon accessed your artery.

- **Driving** - consultant advice at clinic
- **Non-strenuous activities** - 2 to 4 weeks
- **Heavy lifting** - 6 to 8 weeks

Cardiac rehabilitation exercise class

You will be referred to your local programme. These vary in content but you will be contacted after discharge regarding the details.

General advice

- Following cardiac surgery, it is natural to experience new aches, pains and stiffness in your chest, back and neck areas as bruising appears and your bone heals. This does not resemble angina pain. It may take 2 to 3 months before it completely resolves.
- Do not lift, carry, push or pull anything heavy for at least 6 weeks, until your breast bone heals.
- Avoid sudden exertion or exercise which will put an unexpected load on your heart. Building up gradually is therefore important. Never continue to exercise if you experience palpitations, undue shortness of breath, extreme fatigue or dizziness.
- Do not exercise on a full stomach.
- In extreme weather conditions you tend to work much harder whilst walking. Use your common sense. If you cannot go outdoors, you need to do more exercise indoors.
- Do not walk with a dog on a lead for the first 6 weeks.

Who should I contact if I have any questions or concerns?

If you have any queries, please contact the Physiotherapy Department:

- **0114 226 6173**

Remember:

Regular exercise makes your heart grow stronger



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