Physiotherapy following thoracic surgery
Enhanced recovery

Information for patients
Therapy Services - Surgical
Physiotherapy is an essential part of your recovery from your operation

The main areas of physiotherapy involvement are:

- Chest care
- General mobility
- Rehabilitation
- Education

The information in this booklet relates to:

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

It is important to remain physically active while you wait for your operation. The stronger and fitter you are before the operation the sooner you are likely to be able to go home afterwards.

Physical activity means day-to-day activities like walking and housework or a structured exercise programme.

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.
Ratings of perceived exertion

Using the scale on the following page we would like you to rate your perception of exertion, that is, how heavy and strenuous the physical task feels to you.

The perception of exertion depends mainly on:

- Strain and fatigue in your muscles
- Your feeling of breathlessness

Try to appraise your feelings as honestly as possible, without thinking about what the actual physical load is. It should be the conscious sensation of how hard, heavy and strenuous the physical task is.

Begin by looking at the verbal expressions, and then give a number for both of the following:

- Lower body muscle fatigue
- Breathlessness

To give some examples of exertion:

1  - is like walking slowly at your own pace for several minutes
3  - is not especially hard; it feels fine, and it is no problem to continue
5  - you are tired, but you don’t have any great difficulties
7  - you can still go on but have to push yourself very much. You are very tired
10 - this is as hard as most people have ever experienced before in their lives
12 - this is ‘absolute maximum’
## Scale of perceived exertion

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
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<tbody>
<tr>
<td>0</td>
<td>Nothing at all</td>
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<tr>
<td>0.5</td>
<td>Extremely easy</td>
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<td>1</td>
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<td>1.5</td>
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<td>2</td>
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<td>2.5</td>
<td>Moderate</td>
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<td>3</td>
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<td>4</td>
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<td>Very hard</td>
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<td>11</td>
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<td>12</td>
<td>Absolute maximum</td>
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You should use the Perceived Exertion score to grade how hard you are working from 1 - 12.

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

Please record your activities on the exercise record - it will help you monitor your progress.

When your physiotherapist sees you after the operation, they will use this diary to gauge what your capability was prior to your operation.

Remember that any increase in activity, however small, will be beneficial for you. **You should not exercise if you feel unwell.**
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Activity</th>
<th>Duration/ repetitions</th>
<th>BORG score</th>
<th>Comments</th>
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The following exercises are a combination of cardiovascular exercise and stretches. You do not need to do all of the exercises every day, but you should choose activities from each section and try to do something at least five days of the week if you are able to.

Try to gradually increase the amount of time you exercise to between 30 and 45 minutes.

**Warm-up**

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

**Cardiovascular**

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; however you should not be so breathless that you cannot hold a conversation.

**Marching on the spot**

Standing on the spot, march your legs up and down picking your knees up high.

**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 cardiovascular 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 40-50 revolutions per minute (RPM) with low or no resistance.

**Strengthening**

The following exercises are designed to strengthen the muscles in your legs and arms so that you find it easier to move around after your surgery.

Remember to use the scale of perceived exertion - you can then reduce the number of repetitions if it is too hard.

If you feel that the exercises are becoming too easy, you can increase the number of repetitions you complete, or you can add resistance such as ankle/wrist weights, or with something as simple as holding a can of beans.

**Knee extension in sitting**

Sitting on a chair, straighten your knee, hold it for a count of 10, and then bend your knee.

Repeat this 10 times on each leg.
Sit to stand
Sitting in a chair, stand up and sit back down without using your arms if possible.
Repeat this 10 times.

Bicep curls
Either sitting or standing, bend and straighten your elbow.
Repeat 10 times on each arm.

Hip extension
Standing with a chair in front of you for support, extend your leg out behind you and hold for a count of 5.
Repeat 10 times on each leg.

Static quads
Lying on the bed with your legs straight out in front of you, straighten your knee as much as possible pushing the back of your knee into the bed, and hold for a count of 10.
Repeat 5 times on each leg.
Stretches

The stretches are to improve your flexibility and posture prior to your surgery. You should feel a stretch but it should not be painful. You will be expected to continue these stretches after your surgery to ensure that your shoulders and back remain flexible whilst your wound heals.

Shoulder flexion

Sitting on a chair, raise your arm up above your head in front of you, keeping your arm straight, and slowly lower it again.

Repeat 10 times on each arm.

Neck rotation

Sitting in a chair, turn your head to look over your right shoulder and hold it there for a count of 3, then repeat to look over your left shoulder.

Repeat this 5 times in each direction.
Trunk rotation in sitting

Sitting in a chair, cross your arms over your chest and turn to look over your left shoulder making sure you turn at the waist.

Hold for a count of 3, then repeat turning to look over your right shoulder.

Repeat this 5 times in each direction.

Trunk lateral flexion in standing

Standing up with your arms down straight by your side, slide your left hand down your left leg, bending to the left as you do so.

Slowly return to an upright position, and then repeat with your right hand sliding down your right leg, bending to the right as you do so.

Repeat 5 times in each direction.
Chest care

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

**Always sit in an upright position, not slumped.**

To speed your recovery and prevent chest infections, it is **vital** that you **practise** the breathing exercises and coughing.

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

**Always ask for more painkillers if pain is stopping you from deep breathing or coughing.**
Deep breathing exercises

Take a deep breath in, keeping your shoulders relaxed. Hold for 3 seconds, if possible sniff up through your nose, then let the breath out.

Repeat this 4 times, rest for 15 seconds and then repeat a further 2 cycles.

Repeat this at least every 30 minutes.

Supported cough

Effective coughing is very important to clear any phlegm.

Sit upright and support your wound with a cough pillow or towel.

Take a deep breath in, then cough strongly from your tummy not your throat.
Sitting out of bed / change of position

- It is important to change your position regularly to relieve the pressure on your bottom.
- It is also important to sit out of bed as much as you are able. This will enable you to sustain a better posture and make your breathing exercises easier, which will help keep your chest clear.
- For the first few days after your surgery, you may need help from the nurses to do this as you may have attachments and drains in place. It is normal to take rests on the bed in between as you need.

<table>
<thead>
<tr>
<th>Afternoon/evening of surgery</th>
<th>Sat out</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Day 1 after surgery</td>
<td>Sat out for ..................... hours</td>
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<tr>
<td>Day 2 after surgery</td>
<td>Sat out for ..................... hours</td>
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<tr>
<td>Day 3 after surgery</td>
<td>Sat out for ..................... hours</td>
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<tr>
<td>Day 4 after surgery</td>
<td>Sat out for ..................... hours</td>
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<tr>
<td>Day 5 after surgery</td>
<td>Sat out for ..................... hours</td>
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<tr>
<td>Day 6 after surgery</td>
<td>Sat out for ..................... hours</td>
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**Walking or marching on the spot**

It is important to begin walking around or marching on the spot as soon as possible after your surgery to help expand your lungs and clear secretions, as well as building up your strength and exercise tolerance.

Either stand up in front of your chair and march on the spot, lifting your knees as high as you are able (being careful of your lines), or with assistance in the first few days walk, between 60-100 metres on the ward as signposted.

It is normal to be a little bit short of breath initially but this will improve.
Day 1 after surgery
Marched on the spot for 3 minutes
1 □ 2 □ 3 □ times or
Walked at least 60 metres
1 □ 2 □ 3 □ times

Day 2 after surgery
Marched on the spot for 5 minutes
1 □ 2 □ 3 □ times or
Walked at least 80 metres
1 □ 2 □ 3 □ times

Day 3 after surgery
Marched on the spot for 7 minutes
1 □ 2 □ 3 □ times or
Walked at least 100 metres
1 □ 2 □ 3 □ times

Day 4 after surgery
Walked at least 100 metres
1 □ 2 □ 3 □ times

Day 5 after surgery
Walked at least 100 metres
1 □ 2 □ 3 □ times

Day 6 after surgery
Walked at least 100 metres
1 □ 2 □ 3 □ times
Exercises and postural advice

Due to the wound and/or chest drains, you may tend to lean towards the operated side, as this may feel more comfortable in the early stages. However it is important to maintain a good upright posture after your operation to prevent further neck and back pain/stiffness which develop as a result of poor posture.

The exercises will maintain / improve your posture, and help your wound heal without a sensation of tightness.

The pulling sensation you experience during these exercises is normal.

Chest exercises

Trunk lateral flexion as on page 10

Trunk rotation as on page 10

Upper limb exercises

Shrug your shoulders towards your ears and then push them down.
Take your arm out to the side and then up towards the ceiling.

Place your hand behind your neck and then in the small of your back.

Shoulder flexion as on page 9
Neck rotation as on page 9
Physiotherapy advice to continue your rehabilitation on discharge from hospital

Following your thoracic surgery it is important to try to maintain or increase your exercise tolerance. Your physiotherapist will give you advice on what is appropriate for you. Remember that everybody’s progress is quite different!

**Exercises**

It is quite common for you to feel ‘chesty’ when you are discharged from hospital. It may take a week or two to clear. When you are discharged it is important to continue with the breathing exercises you have been practising during your hospital stay. This is to prevent development of chest infections and improve your lung function.

**Shoulder and postural exercises**

For the first month after your operation it is important to continue the shoulder and postural exercises you have been practising during your hospital stay. This is to ensure that you have no loss of movement or function of the affected arm or any postural changes which could cause back pain.

They will also ensure that the wound is mobile, not tight and restrictive.

An additional exercise to practise is:

- In upright sitting, allow yourself to slump, causing your spine to become curved. Then sit up straight again.
**Walking**

It is very important to continue taking regular walks as you have been encouraged to do by the staff during your stay in hospital.

Remember to use the scale of perceived exertion (page 4). You should aim to be working between 3 - 5 on the scale.

It is natural to become slightly short of breath when walking, but you should always be able to talk when walking and the shortness of breath should recover within one minute. If you are unable to do this you are working too hard.

Doing the stairs regularly is another good way to maintain or increase your strength if you are unable to get outside.

**Return to activities**

**Driving** - take consultant’s advice, normally 4 - 6 weeks

**Work** - depends on your occupation: seek your consultant’s advice

**Sports/hobbies** - It is very important to return to your sports and/or hobbies as soon as you are able.

The physiotherapist or doctor will give you advice before you are discharged from hospital or at your clinic appointments.

**Pulmonary rehabilitation**

Your physiotherapist may discuss this with you and refer you to your local pulmonary programme if appropriate.
Contact details

Physiotherapy Department (Northern General Hospital)

- 0114 243 4343 bleep 2688

Cardiothoracic Therapy Service (Firth Wing, Northern General Hospital)

- 0114 271 5192

Your named physiotherapist is:

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