NHS
The Leeds Teaching Hospitals
NHS Trust

Keeping active on the liver transplant list

including a daily activity journal

Information for patients

Leeds Liver Unit

Welcome

We want to support you to be as well as possible when you are called in for your liver transplant, so that you will make a good recovery after surgery.

Research has shown that if a patient remains physically active before an operation, there is less chance that they will experience complications after their surgery, and make a quicker recovery. Keeping active also reduces the risk of developing cancer, heart disease and diabetes in the future.

This booklet is designed to give you some information about the things you can do to stay active, so that your recovery will be as swift and trouble free as possible. There is also a journal included to allow you to record your activity, review your progress and motivate you to do more.

If, after reading this booklet you have any more questions, get in touch with the Liver Transplant Co-ordinators by phone, email or in clinic or on the ward.

Scan this QR code with your smartphone or tablet's camera to watch our introductory video.

Or **https://www.youtube.com/watch?app=desktop&v=ffxVDgWUhQ8&feature=youtu.be**

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Getting started

It is advisable to start to increase your activity as soon as possible. The longer you spend on becoming more active, the greater difference you will notice after your surgery.

Your physical activity should include a combination of activities to improve your heart and lungs (cardiovascular) and strengthening exercises to help build up your muscles. If you already exercise or play a sport, keep this up if you can.

If you already have an existing problem with your arms, legs or balance, some of the exercises may need to be adapted.

- Give yourself plenty of space to complete the exercises.
- You will need to wear some comfortable clothes.
- Have a bottle of water nearby.
- Have some weights ready. If you don't have any, you can improvise by using bottles of water, bags of sugar or tinned food.
- If you have been prescribed inhalers, make sure you have them handy.

Before you start

Complete the following pages when you are first given this activity journal.

It is to help you identify how active you are currently and help you to stop and think about what you will get out of becoming more active.

You might want to write the answer to the first question on the front cover to remind you why you are being active every time you pick up this booklet.

I want to become more active because…

Write down why you want to be more active, e.g. to play with my children more

Being more active will allow me to…

Write down what you might be able to do if you are more active, e.g. go shopping

Things that stop me being active include…

Write down things that stop you being active, e.g. tiredness

I can start to overcome these things that stop me being active by…

Write down how you could overcome these obstacles, e.g. by resting before activity

The space below is for any other information you may wish to include

The exercises

There are 4 exercises in this book. They are designed to improve how well your heart and lungs work, as well as your overall muscle strength. For each set of exercises there are 3 levels:

Exercise scale

Exercise Scale	
Level 1 - Easy	Taking a gentle stroll. You could work at this level for hours. You could sing.
Level 2 - Moderate	Going for a brisk walk. You feel your heart beating faster and your breathing is deeper. You are getting a bit rosy-cheeked. You could just about hold a conversation, but you couldn't sing.
Level 3 - Hard	Going for a run! Your heart is racing, your cheeks are getting redder, your breathing is deeper and harder, and you are breaking into a sweat. You could talk just about, but you couldn't hold a conversation and you certainly couldn't sing!

How hard do I work?

If it is a long time since you have done any strenuous exercise, you find it difficult to climb a flight of stairs, or you have problems with your balance, we would recommend that you start at Level 1 (Easy). Otherwise start at Level 2 (Moderate) and work up or down depending on how hard you needed to work. If you can, build up to working at Level 3 (Hard).

How often should I exercise?

We would like you to complete a set of 4 exercises repeated 3 times, twice a week.

If you find you are working at either the **Moderate** or **Easy** level, you may need to move to a harder set of exercises. If you find that the rest period is too short for you to recover, move down to an easier set of exercises.

If you are experiencing considerable discomfort or pain, stop immediately and rest. If you do not feel comfortable or feel unsafe exercising alone, you can exercise with a friend or family member.

Warm up

Before you start your exercise session, make sure you warm up well. The warm up exercises are designed to loosen up your muscles, to avoid injury, followed by exercises to start to raise your pulse.

When you start the warm up, aim to work at a **moderate** level, and towards the end move to a **hard** level.

If you are finding the exercises too difficult to do standing up, feel free to do them sitting down.

Loosening exercises

Aim to do each loosening exercise for around 15 seconds. If you have a smartphone, you can use it to scan this QR code to watch a video of the warm up exercises:

Or **https://www.youtube.com/watch?app=desktop&v=SZI_-CT5rR8&feature=youtu.be**

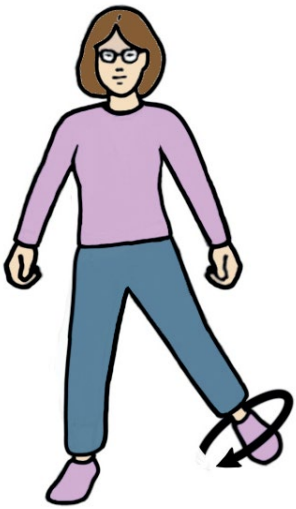
Warm up exercises

Toe tapping

- Step forward with alternate legs, whilst keeping your weight on the back foot.
- Feel free to use a chair back for balance or sit down if you need to.

Ankle rolling

- Stand on one leg.
- Rotate the other ankle clockwise for 15 seconds and then anticlockwise for 15 seconds.
- Repeat on the other leg.
- Sit down or hold the back of the chair if you need to.

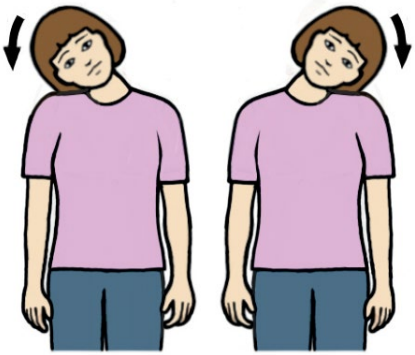


Neck to chest

- Put your chin on your chest.
- Look up at the ceiling.
- Repeat for 15 seconds.

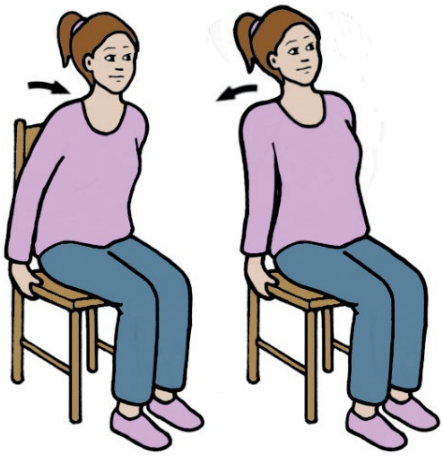
Side to side neck

- Look forward.
- Bend your neck to try to put your right ear on your right shoulder.
- Try to put your left ear on your left shoulder.
- Repeat each exercise for 15 seconds.



Neck rotation (looking over shoulder)

- Look straight ahead.
- Turn your head to try to look over your left shoulder.
- Turn to look over your right shoulder.
- Repeat for 15 seconds.

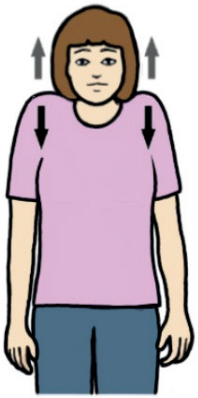


Shoulders forward and back

- Hunch both shoulders forward.
- Push both shoulders back and push your chest out slightly.
- Repeat for 15 seconds.

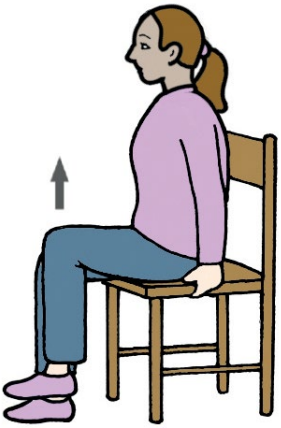
Shoulder shrugs

- Shrug both shoulders.
- Relax your shoulders down.
- Repeat for 15 seconds.



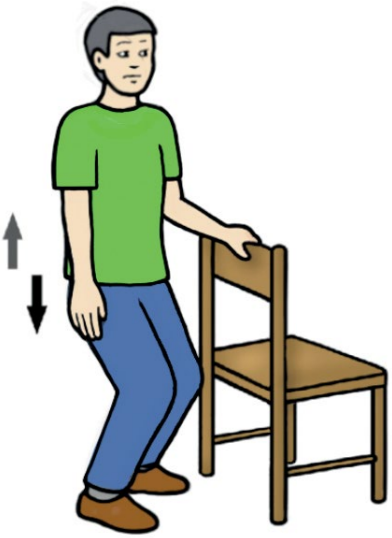
Knee raises (You can sit down for this exercise if you need to)

- Lift your right knee up so your thigh is in line with the floor.
- Do the same with the left knee.
- Repeat for 15 seconds.



Squats (Hold the back of a chair if you need to)

- Put your hands on your hips (or hold a chair if you need to).
- Bend both knees a little.
- Repeat for 15 seconds.

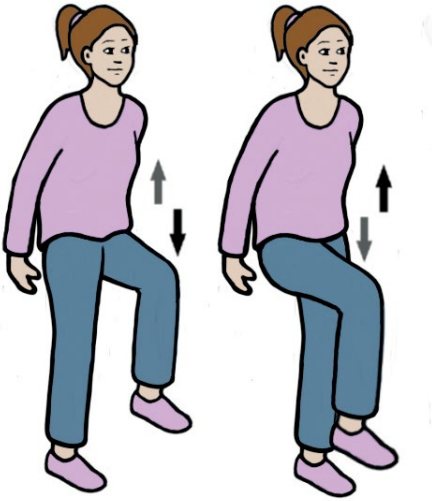


Side steps

- Step out to the right and back in again.
- Step out to the left and back in again.
- Repeat for 15 seconds.

Pulse raiser

- Raise your left knee then your right knee in turn.
- Gradually speed up (you may start a light jog if you want to!).
- Do this exercise for 30 seconds.



Beginning the exercises

There are 4 sets of exercises in each group. The exercises can be done at an **Easy, Moderate or Hard level**.

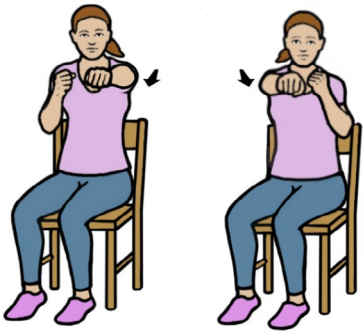
Easy	Moderate	Hard
Sit in chair. Punches forward and above head (can add weights).	Punch out and above body.	Punches across and upwards whilst holding weights.
Mountain climbs - hold back of chair, lift knees.	Hold chair and move feet back. Raise knees quickly.	Hands on floor - moving legs up and down.
Sitting jumping jacks (arms and legs out to the side). Can add weights.	Jumping jacks - Simultaneously raise same arm and leg standing up.	Jumping jacks - move both arms and both legs at the same time.
Squats (hold the back of the chair).	Squats (no holding the back of the chair).	Squats (Reach out to the front as going down and go up on to tiptoes).

- Complete each exercise for 30 seconds with a 30 second break afterwards.
- During the rest periods, either sit in a chair and tap your toes or march on the spot.
- Once you have completed each set of four exercises, have a 30 second rest and repeat each set a further 2 times.

Easy (Level 1)

Punches (Level 1)

- Sit in a chair.
- Punch out to the front first with one arm, the with the other.
- Punch upwards and across your body, first with one arm then the other.
- Repeat this for 30 seconds.



If you would like to make this exercise a little more challenging, you can hold a light weight such as a tin of beans or a water bottle in each hand.

Rest and recover for 30 seconds

Mountain climbs (Level 1)

- Hold on to the back of a chair.
- Lift one knee then the other as high as you can.
- Repeat for 30 seconds.

Rest and recover for 30 seconds

Jacks (Level 1)

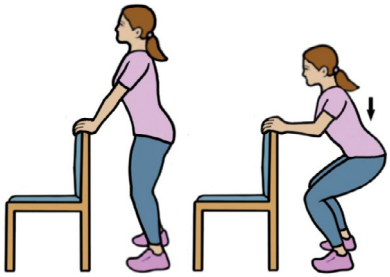
- Sit near the front of the chair (an upright chair will be better for this exercise).
- Move one leg out to the side. **AT THE SAME TIME** move the same arm out to the side and upwards.
- Repeat with the other arm and leg.
- Continue this for 30 seconds.

If you would like to make this exercise a little more challenging, you can hold a light weight such as a tin of beans or a water bottle in each hand.

Rest and recover for 30 seconds

Squats (Level 1)

- Hold the back of the chair.
- Bend both knees and squat down a little whilst continuing to hold the back of the chair.
- Repeat for 30 seconds.
- If you find this too easy, you can squat a little lower.



Rest and recover for 30 seconds

Scan the QR code below with your smartphone or tablet's camera to watch our easy exercises:

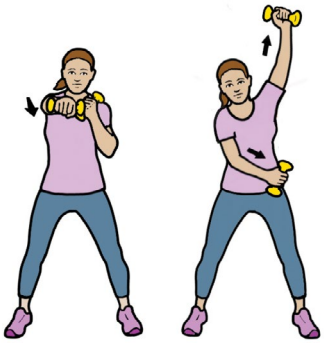
Or **https://www.youtube.com/watch?v=CDvpSvCjUPE**

Moderate (Level 2)

These exercises are similar to the Easy exercises, but they have been adapted to make them a little more challenging.

Punches (Level 2)

- Stand up.
- Punch out to the front first with one arm, then with the other.
- Punch upwards and across your body, first with one arm then the other.
- Repeat this for 30 seconds.

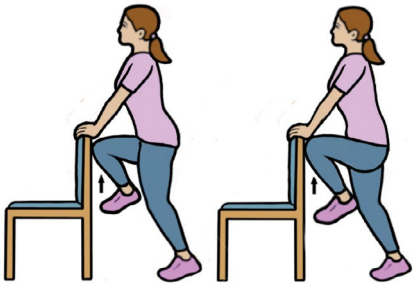


If you would like to make this exercise a little more challenging, you can hold a light weight such as a tin of beans or a water bottle in each hand.

Rest and recover for 30 seconds

Mountain climbs (Level 2)

- Hold on to the back of the chair.
- Move your legs back a little.
- Raise your left and then your right leg up as if you were running on the spot.



Rest and recover for 30 seconds

Jacks (Level 2)

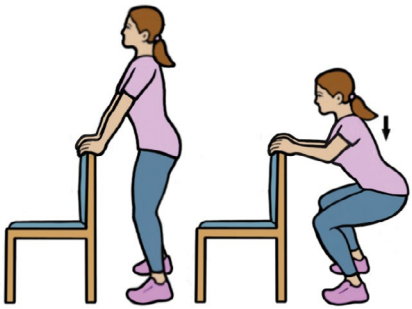
- Stand upright.
- Point one leg out to the side.
- At the same time bring both arms up in a circle above your head.
- Step back in again and bring your arm down.
- Repeat on the other side.

Rest and recover for 30 seconds

Squats (Level 2)

- Stand upright.
- Bend both knees and squat down a little whilst continuing to hold the back of the chair.
- Repeat for 30 seconds.

If you find this too easy, you can squat a little lower.



Rest and recover for 30 seconds

Scan this QR code with your smartphone or tablet's camera to watch our moderate exercises:

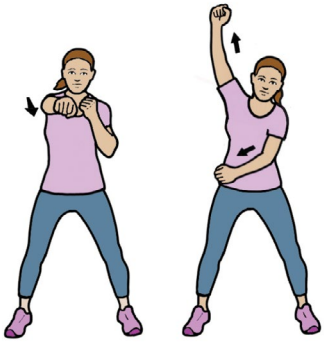
Or **https://www.youtube.com/watch?app=desktop&v=3qxxkEXNmng&feature=youtu.be**

Hard (Level 3)

These exercises are similar to the moderate level and are designed to work at the maximum level. Do each exercise for 30 seconds and rest for 30 seconds between each. Complete each set of four exercises 3 times.

Punches (Level 3)

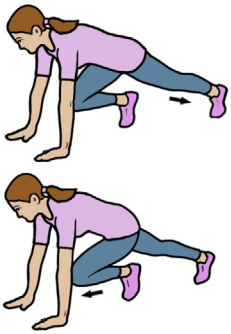
- Stand up and hold a suitable weight in each hand.
- Punch out to the front with first the left and then the right hand.
- Punch upwards and across your body.
- Repeat this for 30 seconds.



Rest and recover for 30 seconds

Mountain climbs (Level 3)

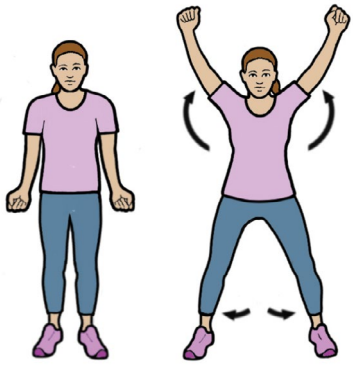
- Place both hands on the floor directly below your shoulders.
- Move your legs back so you are taking most of your weight on your shoulders and arms.
- Bring first one leg and then the other upwards in a running motion.
- Repeat for 30 seconds.



Rest and recover for 30 seconds

Jacks (Level 3)

- Stand up with your hands by your sides.
- Jump and bring each leg out to the side
- **AT THE SAME TIME** bring each arm in a circular motion out to the side and above your head.
- Jump your legs back in and bring your arms down in the same circular motion.



If you find it too easy, you can hold some light weights.

Rest and recover for 30 seconds

Squats (Level 3)

- Stand with your legs a bit wider than your shoulders.
- Bend your knees and squat down a little.
- **AT THE SAME TIME** bring both arms out in front of you.
- As you stand up, bring both arms above your head and spring up on to your toes.

Rest and recover for 30 seconds

Scan this QR code with your smartphone or tablet's camera to watch our hard exercises:

Or **https://www.youtube.com/watch?app=desktop&v=pd8CDBIkDPs&feature=youtu.be**

Cool down

Once you have finished the exercises it is very important to cool down afterwards. This can be done by walking briskly on the spot for a couple of minutes and then gradually slow down to a stop. This cool down will help bring your heart rate down and prevent injuries after exercise.

Scan this QR code with your smartphone or tablet's camera to watch our cool down video:

Or **https://www.youtube.com/watch?app=desktop&v=1JfWZd9Yrs0&feature=youtu.be**

Other activity

Patients waiting for a liver transplant can vary a lot in how unwell they feel. This means that the amount of activity someone can do will vary a lot as well. Try not to compare yourself to other patients, as they may be affected differently to you.

People with liver disease may have days where it is more difficult to stay active, for example when you have a lot of fluid around your abdomen **(called ascites)** or when you are more confused **(called hepatic encephalopathy)**. Don't be disheartened if this happens to you, but try to keep as active as you can on those particular days. You may find you need to reduce how hard you work when you are doing the exercises.

You may be able to gradually increase your activity levels day to day as well. This can be things like cycling or running if you are able, but also walking is a good activity to help increase your fitness. You may find you can build this in to your day to day life, such as taking the stairs instead of the lift. Also day to day activities such as housework, gardening and DIY help to build your strength up and get you more ready for liver transplant. Choose an activity you enjoy, and it will make it easier to continue doing this.

If you have a smartphone, you may have a step counting app or a health app built in. If not you can download one. This can be a good way to record your progress and after a period of time you will probably see an increase in what you can do.

Many organisations recommend 10,000 steps a day. If this is too much for you, set a goal you can achieve and aim towards that. Each week try to increase that goal a little, to help increase what you are able to do.

Remember: Any activity is better than none!

My daily activity diary

Week Commencing:

Use this space to record your activity each day

	Punches	Mountain climbs	Jacks	Squats
Monday				
Tuesday				
Wednesday				
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Other activity this week:

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Other activity this week:

Activity after your transplant

After your liver transplant, becoming mobile as soon as possible will help in several ways:

- It can prevent the development of a chest infection.
- It can help prevent blood clots in your legs **(called a deep vein thrombosis)**.
- It improves circulation and promotes wound healing.
- It helps your bowel return to normal.

Gradually getting back on your feet on the ward will make the jump from hospital to home easier.

The first steps

Within 48 hours of your transplant, it is likely you will be ready to sit out of bed for the first time. You will be helped by the physiotherapists and nurses, who will support you and move the equipment which will still be attached to you. You will usually sit out for up to a couple of hours and the staff will help you back into bed. If things are going really well, the staff will support you to have a short walk on the same day.

The physiotherapists will help you to become confident walking until you are safe enough to walk around by yourself. It will get easier as your drips and drains are removed. At this point, aim to gradually build up the amount you are walking on the ward each day. It is helpful if friends and family encourage you to walk with them at visiting time.

If you are concerned or are nervous about climbing the stairs when you go home, the physiotherapists can practise these with you before you leave hospital.

Breathing exercises

It's not unusual to have a build-up of sputum in your lungs after your operation; it is one of the side effects of the general anaesthetic. If you find that you are chesty, it is important for you to keep your lungs clear of sputum to prevent a chest infection. The easiest way to do this is by regularly practising deep breathing exercises and coughing. We recommend you do this even if you feel your chest is clear.

As soon as you have woken up from the anaesthetic you can start to do the breathing exercises. You will have a system of pain relief called a **patient-controlled analgesia system (PCAS)**. This is a large syringe of pain killer that you will control yourself with a handset. The nurses will show you how to use this. You can also ask the nursing staff to give you a rolled up towel that you can hold over your wound to support it and make coughing more comfortable.

You may not be completely pain free, but if you are in too much pain to cough and take a deep breath, tell the staff looking after you, as they can often give you a bit more painkiller to make you more comfortable.

To do your breathing exercises, take a deep breath in, and hold this for a few seconds before breathing out. Repeat this 4-8 times and then have a cough. You should do this every hour that you are awake.

As well as coughing to help you clear sputum from your chest, you can also "huff" to help clear sputum, by taking a medium breath in and breathing out quickly, in the same way you would clean your glasses, or steam up a window. You may find that you can cough sputum more easily after you have changed position or been walking.

First activity at home

When you go home it is important to continue the activity that you started in hospital. Set a goal each week to walk slightly further than the previous, but remember to rest as well if you need to. To begin with aim to walk as far as you were walking in hospital, and then build upon this. At first you may want to walk with someone, if you do not feel confident walking on your own.

Aim to walk 5 days each week, starting for around 10 minutes, and then gradually build up the length of time you are walking to around 45 minutes each time. If you want to start more strenuous activity, you need to talk this through with your doctor first. It might be that you are able to take up swimming after a few months once your scar has healed but it can take up to a year for your stomach muscles to completely heal. Doing anything too strenuous may result in damage to those muscles. If you are unsure about taking up exercise, talk it through with the doctor when you come to clinic.

Keeping active whilst waiting for a liver transplant requires determination and commitment to do some form of activity even though you may feel unwell.

The benefits of staying as active as possible whilst waiting for a liver transplant will be seen when you are recovering from the operation. You will find that you have fewer complications and make a speedier recovery if you have remained active.

Remember

- Discover what activity you can manage comfortably, regardless of how little or how much.
- Aim to do this activity up to 5 times each week, every week.

- Some days you may find that you can manage more activity than on other days. This is normal for patients with liver disease or recovering from a liver transplant.
- Following the advice in this booklet will ensure you are safe whilst exercising.
- If you are worried that your level of activity is decreasing, contact your liver doctor or one of the transplant co-ordinators.

British Transplant Games

The British Transplant Games is the flagship event of the charity Transplant Sport, and has been in existence for 40 years, since the first games in Portsmouth in 1978.

Since these early beginnings, the Games have grown and are held every year in different cities throughout the UK. The British Transplant Games have been staged annually since 1978 in 17 host cities across the UK including Portsmouth (1994), Edinburgh (2007), Belfast (1998) Medway (2012), Sheffield (2013), Bolton (2014), Newcastle/Gateshead (2015) & Liverpool (2016). Leeds was proud to host the 2022 British Transplant Games.

Over the past 40 years the Games have grown to a four day annual event with over 800 transplant recipients aged from 2 - 80+ taking part in over 20 different sports, and over 1000 supporters watching.

The Games aim to demonstrate the benefits of transplantation, encouraging transplant patients to regain fitness, whilst increasing public awareness of organ donation and the need to discuss their wishes with their families. They also seek to thank and celebrate donor families and the gift of life.

Some competitors come to win medals, training for their specialist events and hoping to be selected for Team GB & Northern Ireland competing at the World Transplant Games.

Most come to meet new friends, catch up with old friends, enjoy new sports at their own pace and relax for a few days with others who've also faced debilitating illness but are now fit and well because of a successful transplant.

For more information please scan the QR code below:

Or visit:
https://www.britishtransplantgames.co.uk/

Useful contacts

Liver Transplant Co-ordinators

By Telephone

- (0113) 206 6585

Office hours are Monday to Friday 8am-5pm.
There is a 24 hour answerphone in operation on this line.

By email

- leedsth-tr.livertransplant@nhs.net

Websites

- **www.leedsth.nhs.uk**
- **www.britishlivertrust.org.uk**
- **www.organdonation.nhs.uk**

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What did you think of your care?

Scan the QR code or visit **bit.ly/nhsleedsfft**

Your views matter

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