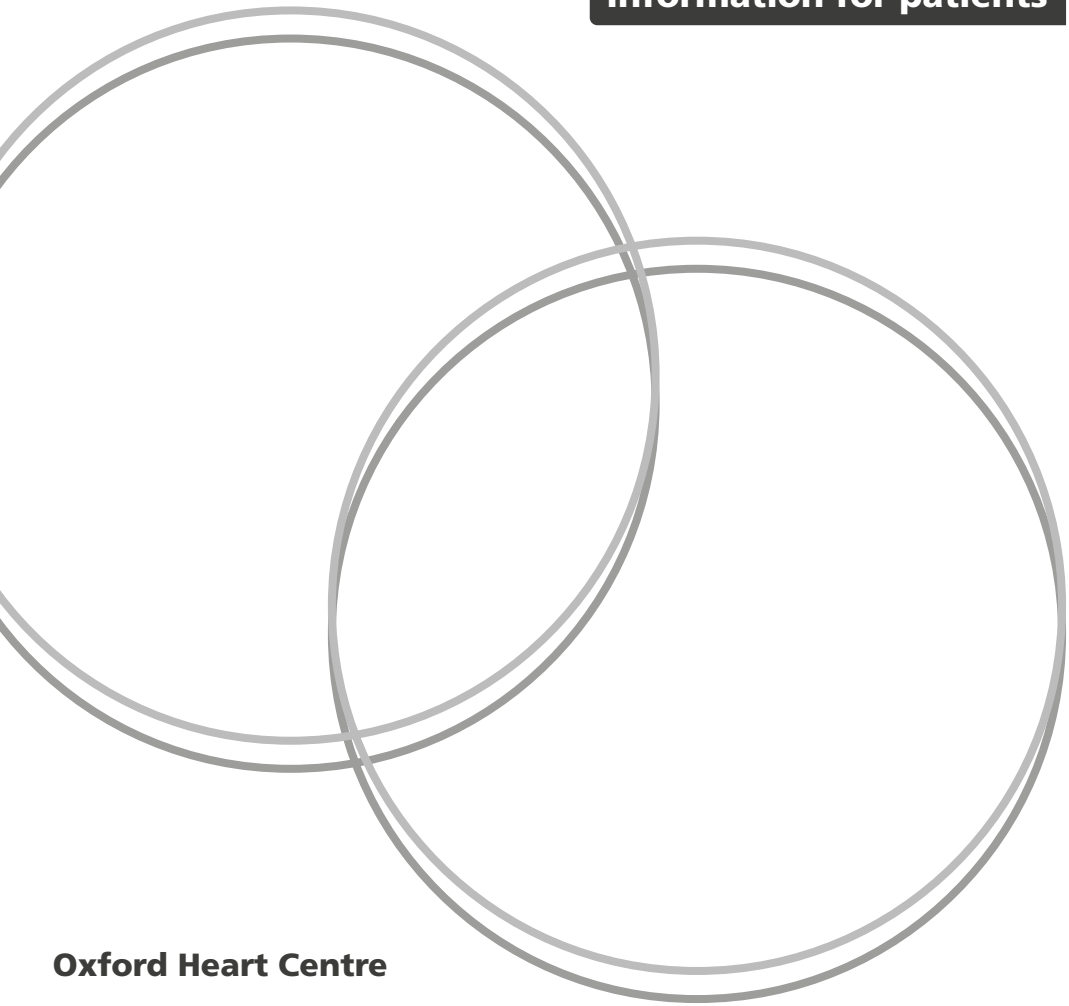
Oxford University Hospitals
NHS Foundation Trust

Transcatheter Edge-to-Edge Repair (TEER)

Information for patients



Oxford Heart Centre

Introduction

You have been diagnosed with a condition called mitral and/or tricuspid regurgitation, which is a leakage in the heart valve.

We have reviewed your investigations and discussed your case in our multidisciplinary team meeting. We have decided that you may benefit from a treatment called TEER (Transcatheter Edge-to-Edge Repair) to repair the valve.

This procedure is a newer type of treatment performed under general anaesthesia, where a catheter (plastic tube) is inserted into the heart via a small incision in the vein at the top of the leg. A clip is then placed on the valve to reduce leakage. The goal is to improve heart function, alleviate symptoms, and enhance your quality of life.

It is important to understand that not all patients referred for consideration of a TEER procedure by another cardiologist or cardiac surgeon will be able to undergo the procedure. This may be due to technical reasons that increase your risk or additional medical problems that make it unlikely to improve your symptoms or quality of life.

If we feel that TEER is not appropriate for you, we may either:

- Refer you to a cardiac surgeon for further assessment and alternative treatment methods
- Use medication to ease your symptoms, such as shortness of breath, tiredness, and swelling from fluid build-up. However, medication cannot stop your heart valve from getting worse over time. This means your symptoms may come back or gradually get harder to manage.

The aim of this information booklet is to help you understand your condition and the TEER procedure. It is also helpful for your family and care givers to read to enable them to understand your condition and what the procedure involves.

What is regurgitation?

Regurgitation is when a leaking heart valve allows blood to flow backwards into the heart. The heart valve contains flaps also known as leaflets, which should open and close. When they no longer close tightly or meet in the middle, the heart is forced to work harder. This extra work can cause enlargement of the heart chambers. This can weaken the heart and make it work less effectively.

It can happen to:

- the mitral valve, on the left side of the heart
- the tricuspid valve, on the right side of the heart
- or both

The mitral valve separates the left atrium (upper left heart chamber) from the left ventricle (lower left heart chamber). It consists of two flaps, known as leaflets.

Similarly, the tricuspid valve separates the right atrium (upper right heart chamber) from the right ventricle (lower right heart chamber). This valve has three flaps, also called leaflets. The leaflets open to allow blood to flow into the right ventricle and close to prevent blood from flowing backward into the right atrium.

Symptoms of mitral and tricuspid regurgitation

Both conditions might give you symptoms such as:

- breathlessness
- swollen feet
- difficulty exercising
- irregular heartbeat (palpitations)

What happens during the TEER procedure?

The procedure is performed under general anaesthetic.

This is provided through a drip into a vein in your hand or arm, through which the anaesthetic can be given to send you to sleep. After this, you will receive some oxygen through a mask.

Once you are asleep, a trans-oesophageal echocardiogram (TOE) probe will be passed into your oesophagus (also known as your gullet or "food pipe"). First, a small incision is made in the right femoral vein in your groin. Using x-ray pictures, a catheter (plastic tube) is guided into your heart. Once the catheter is in place, the clip device is delivered into position to reduce the leak of the valve. Some patients may require more than one clip to adequately repair the valve.

Because this is not open-heart surgery the nature of the repair is less detailed than a surgical procedure and does not result in a perfect repair. However, the clip holds the edges of the valve leaflets in position and aims to reduces the leak. Before release, we can assess the procedural result with echocardiography, and if it is unsatisfactory, we can regrasp. Should there be any mitral regurgitation, we have the option of putting in a second or third device. Most patients have between one and two devices.

For all patients we will assess the tricuspid valve at the time of the procedure. If this also has a significant leak, and we feel this can be safely treated with TEER, we may do this either at the same time or at a separate procedure.

For patients, up to the age of 56 years, please advise a member of staff prior to the procedure, if there is any possibility of pregnancy.

The procedure involves the use of ionising radiation (X-rays). The benefit of the procedure outweighs the risk.

Benefits of a TEER procedure

The aim of the procedure is to improve the symptoms of regurgitation (usually breathlessness).

Risks of TEER procedure

No medical procedure is entirely without risk. Complex procedures like TEER are never completely predictable and it is important that you and your family understand this procedure.

The risks involve:

- Partial detachment of the device after implantation 2% (1 in 50 people) This can generally be treated with a further clip for stabilization and not impact on the patient's long-term outcome
- Emergency surgery and death 1% (1 in 100 people)
- Stroke 1% (1 in 100 people)
- Pericardial effusion (collection of blood around the heart) 1% (1 in 100 people)
- Bleeding 5% (1 in 20 people). This is usually at the access site and can be managed by manual compression in most of the cases
- Infection or damage to the blood vessel requiring surgical repair or stenting 5% (1 in 20 people)
- Embolisation of the TEER device (less than 1%)
- Damage to teeth, throat and esophagus, 1 in 1000 (0.1%)
- Procedure abandonment- sometimes, it is not possible to achieve a satisfactory reduction in regurgitation. If this is the case, we will remove the device and stop the procedure, 3% (1 in 33 people).

Recovery post TEER

After your procedure, you will be moved to a recovery area where you will be closely monitored for 1-2 hours. Typically, you will be woken up soon after the procedure.

Within a few hours your nurse will encourage you to sit up and begin walking around. Some patients may be able to go home on the same day, others are required to stay in hospital for 1 night. If you need to stay in for longer, we will inform you of this.

Wound care

This procedure is performed via a vein in the groin and should be healed by the time you leave hospital. The area around your groin may have some bruising and may feel a little tender. The plaster can be removed the day after your procedure and does not need to be replaced.

You can shower when you get home but avoid rubbing the wound site. Do not have a bath or use creams or soap directly onto the groin site for up to a week after the procedure to avoid irritation and reduce the likelihood of infection.

Going home

When you have had your TEER, you will need someone to collect you from hospital and we suggest that they stay with you for the first few days after discharge. This is not for nursing care, but so that if you feel unwell, you have someone to help you. If you live alone, please consider whether you could ask a family member or friend to stay with you so that you could call them if you felt unwell, or whether you could stay with them. Everyone is different so recovery times can vary. As soon as you are walking comfortably around the home you can carry out light housework such as washing up, dusting, laundry, small amounts of ironing (while sitting down) and light weeding in the garden. None of these activities should make you feel extremely breathless – if they do, you are working too hard and need to slow down.

Activity

You should avoid strenuous activities for the first 4 weeks, including heavy lifting (such as shopping bags or suitcases) and activities involving pushing or pulling (such as mowing the lawn or vacuuming). This is to prevent injury to the groin site, as excessive strain can cause bleeding and complications, which may require additional procedures or surgery to correct.

It is important for your recovery to gradually increase your exercise tolerance. You may feel tired and need rest in the afternoon, which is normal.

You do not need to avoid climbing stairs or walking uphill. However, you may need to start at a slower pace and might feel slightly out of breath while walking. This should improve as your fitness level increases.

If you notice swelling in your ankles after the procedure, it is likely due to fluid retention. If the swelling extends beyond your ankles, please contact the structural heart nurse team for further advice.

Medications

The doctor or specialist nurse will advise you on changes to your medications. We recommend that all drugs are continued (including diuretics) until clinic follow-up.

DO NOT stop your water tablets unless instructed.

Driving

The DVLA (Driving and vehicle Licensing Agency) guidelines recommend that you do not drive for 2 weeks following your procedure. You will need to inform your insurance company of the procedure. If you have a HGV licence, you will need to have an exercise test before getting your licence back.

Air travel

In most cases, you can travel by plane 7 days after your procedure. The clip device will not set off metal detectors at airports.

Work

If you were working before your procedure, you should be able to return to work after about 4 weeks. Please ask the ward team if you require a fit note.

Sexual activity

You can resume your sexual activity 2 weeks after having your procedure.

Follow-up appointment

You will receive a follow-up appointment letter within 6 months after your procedure.

Antibiotic prophylaxis and dental treatment

Antibiotic prophylaxis is recommended lifelong for patients following a heart valve replacement or repair, when undergoing dental procedures such as extractions, periodontal or implant surgery, oral biopsies, or any procedure involving manipulation of the gum (including dental hygiene visits, scaling, polishing, and root canal treatment). It is also recommended for certain respiratory tract, skin, soft tissue, and cardiac procedures, but not generally for genitourinary or gastrointestinal procedures. According to ESC guidelines, a single antibiotic dose should be given 30–60 minutes before the procedure: for patients without a penicillin allergy, Amoxicillin 2g orally is recommended; for those with a Penicillin allergy, Clindamycin 600mg orally is advised.

Emergency Advice

If you experience any of the following symptoms, **please contact 999 immediately**:

- Chest pain
- Loss of consciousness/collapse
- Rapid increasing shortness of breath
- Confusion/change in character/drowsiness (Delirium)
- Slurred speech, facial droop, limb weakness
- Any signs of infection (a red or inflamed wound, temperature, fever)

Please contact your GP if you notice that your insertion site becomes red or inflamed. These may be signs of infection. If your wound starts to swell or bleed or you feel more breathless than before, seek help immediately. Alternatively, you can contact the nurses in the structural heart team.

What can I do to improve my health before TEER procedure?

Stop smoking

This will reduce the risk of breathing problems and makes your anaesthetic safer. Please talk to your GP, pharmacist or call **SMOKEFREE** on **0800 0224 332** for help in stopping.

Control your weight

If you are overweight, losing weight before your treatment will reduce many of the risks when having an anaesthetic.

Dental care

It is essential to maintain healthy gums and teeth especially if you have heart valve disease. This is to reduce the risk of dangerous infection of the heart valves, known as endocarditis.

It is important that you have dental checks before your heart valve procedure. Any pending dental treatment may need to be carried out before the TEER is performed.

How to contact us

If you have any questions or concerns, please contact the Structural Heart Nursing Team.

Telephone: **01865 226 166 / 01865 221 490**

Email: **structuralcardiology@ouh.nhs.uk**

Weight Tracker

We recommend that patients monitor their weight (measured in Kg) for a few days before the procedure and then re-check it 2-3 times a week after the procedure so that we can quickly identify if fluid is being retained, and diuretic dosing needs to be changed.

Please use the tracker on the next page.

Weight Tracker

Please record your weight for **3 days before your procedure**:

Day 1	
Day 2	
Day 3	

Post Procedure – measure **2-3 times** per week following your procedure.

If your weight is increasing, please contact the structural Nurse team.

Week 1

Day 1	
Day 2	
Day 3	

Week 2

Day 1	
Day 2	
Day 3	

Week 3

Day 1	
Day 2	
Day 3	

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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