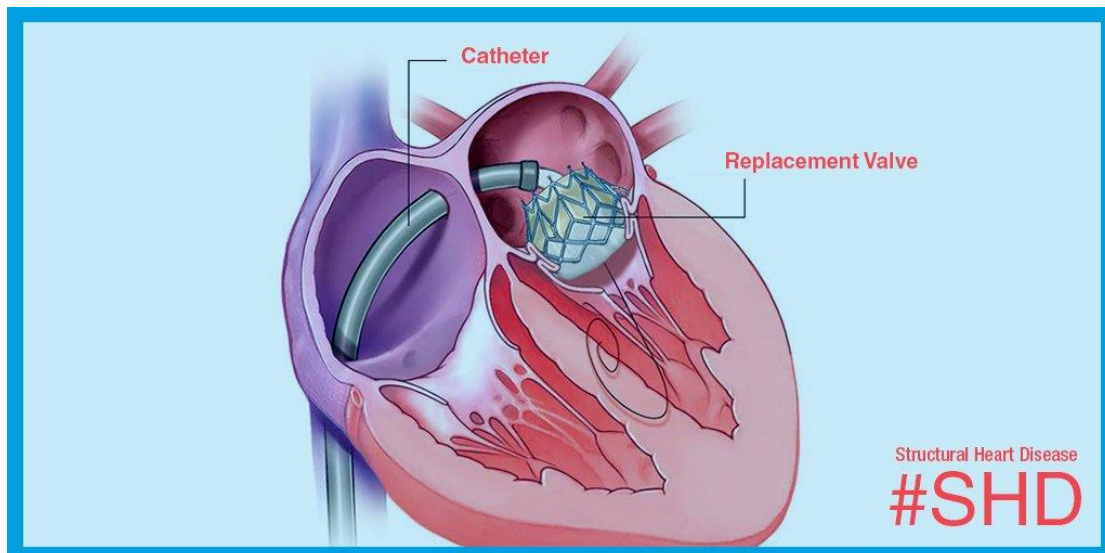


Patient Information

## Cardiac Services

### Heart valve replacement without open heart surgery (Transcatheter Mitral Valve Implantation or TMVI)



## Patient Information

Content Description	Page
Introduction	3
What is mitral valve disease?	4
Symptoms of mitral valve disease	5
What are the possible treatment options for mitral valve disease?	5
About the heart	7
What is Transcatheter Mitral Valve Implantation(TMVI)?	7
How is the valve put into my heart?	10
What can I do to improve my health before a TMVI?	11
Hospital admission	11
A Typical Procedure	12
Following your procedure	13
Potential benefits of a TMVI procedure	13
Potential risks of the procedure	14
Recovery at home	14-17

# Patient Information

## Introduction

You have been diagnosed with mitral valve disease by your doctor. We hope that this information will help you to understand your condition and treatment options, in particular a heart valve replacement procedure known as TMVI (Transcatheter Mitral Valve Implantation).

We also hope that this information is useful for your family and/or carers to understand your condition so that they can support you before and after any procedures that take place.

We do hope this booklet proves to be useful, if you have any suggestions to improve its content or if things could be explained differently, please contact us with your suggestions using the following contact details.

e-mail – [lauren.deeghan@uhcw.nhs.uk](mailto:lauren.deeghan@uhcw.nhs.uk) (TMVI Specialist Nurse)  
[nishant.gangil@uhcw.nhs.uk](mailto:nishant.gangil@uhcw.nhs.uk) (Cardiology Consultant)

## Patient Information

### What is mitral valve disease?

Mitral valve problems can either involve narrowing of the valve (mitral stenosis) or leaking of the valve (mitral regurgitation). In both cases people can have symptoms like breathlessness, swollen feet, and difficulty exercising.

Mitral stenosis can present in young patients after bacterial infection of the heart or in elderly patients due to deposition of calcium on the mitral valve.

Mitral regurgitation can either be due to age related valve degeneration, secondary to bacterial infection or a problem with the heart muscles.

Over time, the heart muscle weakens. This affects your overall health and may stop you from taking part in your normal daily activities. Without treatment, mitral valve problems are a very serious, life-threatening condition, leading to heart failure and risk of sudden cardiac death.

Mitral valve problems are often not preventable and may be related to:

- Age
- A build up of mineral (calcium) deposits that narrows the valve (stenosis)
- Radiation therapy
- A history of a bacterial infection of the heart (rheumatic fever)
- Increased fat in the blood vessels (high cholesterol)



This is an example of a normal mitral valve



This is an example of a dysfunctional mitral valve

### **Signs and symptoms of mitral valve problems can include:**

- Shortness of breath
- Irregular heart beat (palpitations)
- Unusual sound heard during a heartbeat (murmur)
- Swelling of the feet

### **What are the possible treatment options for mitral valve disease?**

Having an artificial (biological or mechanical) valve is the traditional treatment for patients with severe mitral valve disease who are fit enough for surgery.

This is known as Surgical Mitral Valve Replacement or SMVR and involves making a large cut in your chest bone to access your heart.

Up until recently, if you are not fit enough for surgery, your treatment options would have been focused on helping to manage your symptoms only, for example, taking medicine to help you pee more which can reduce breathlessness; and medicines to prevent the size of your heart getting bigger.

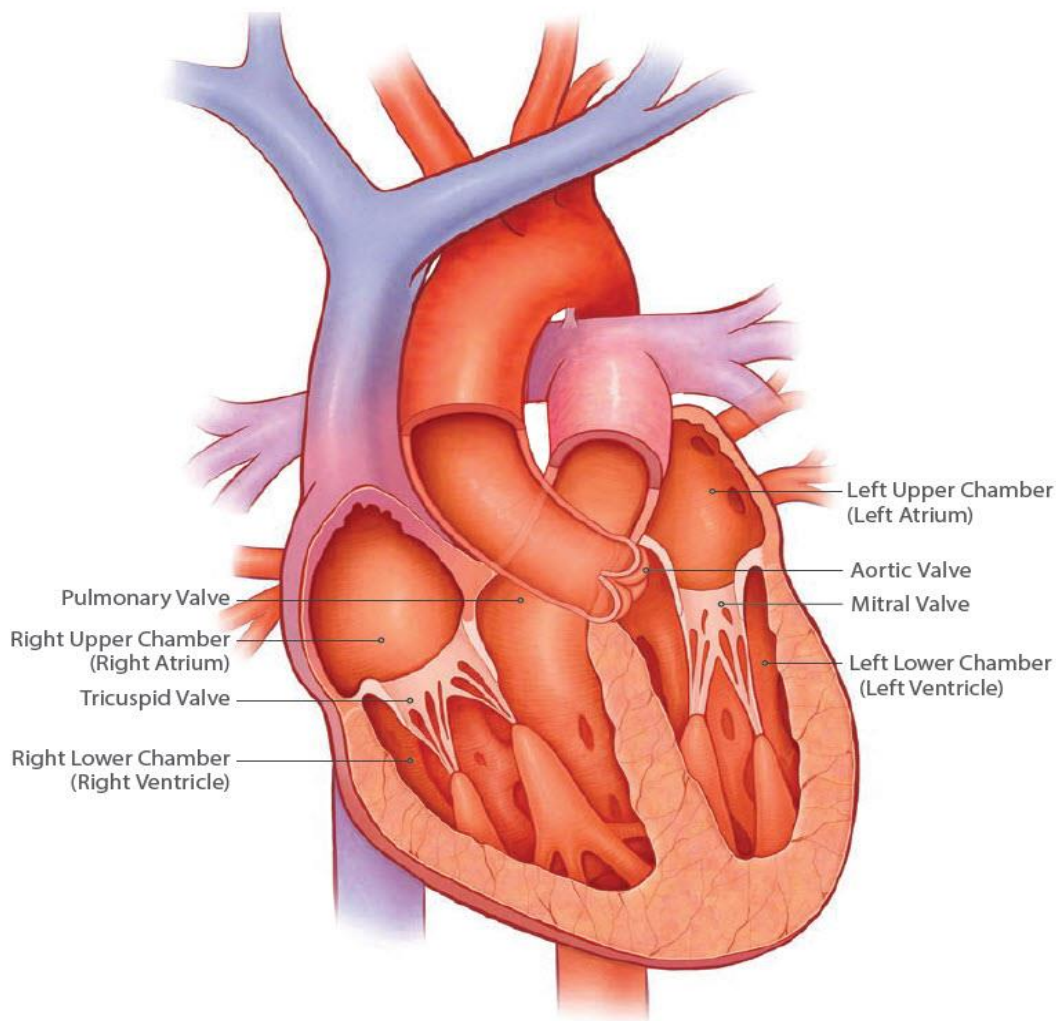
These medicines may help control your symptoms for a period of time; however, without mitral valve replacement, it could worsen to a more serious condition.

However, depending on your individual health needs, UHCW can now offer patients who are not suitable for traditional surgery a valve replacement procedure called Transcatheter Mitral Valve Implantation (TMVI).

## Patient Information

### How the Heart Works

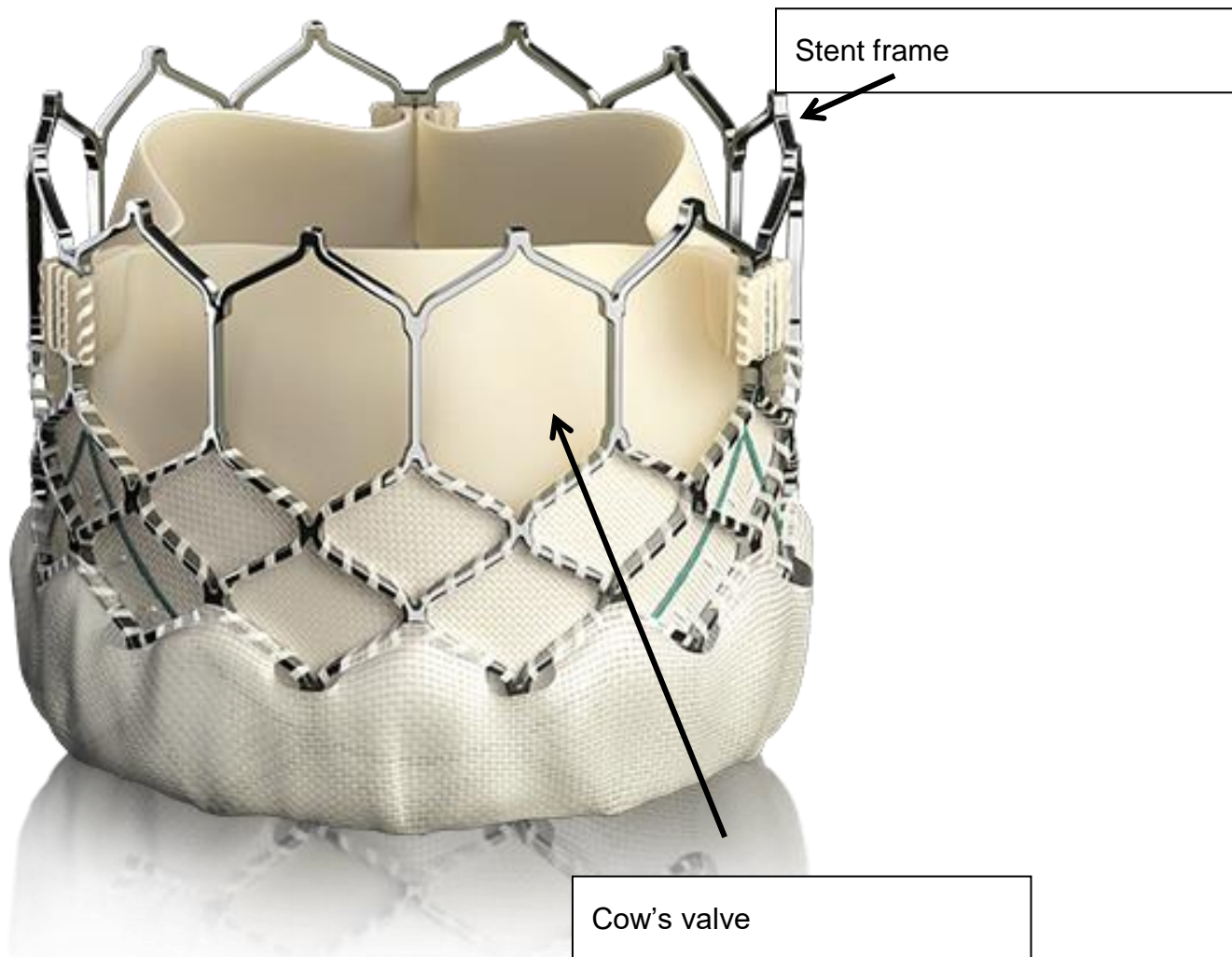
A normal heart has four chambers. The upper two chambers are the right and left atria. The lower two chambers are the right and left ventricles. The heart's job is to supply the body with oxygen-rich blood. Blood is pumped through the four chambers with the help of four heart valves—the tricuspid, pulmonary, **mitral** and aortic valves.



Heart valves open when the heart pumps to allow blood to flow forward, and close quickly between heartbeats to make sure blood does not flow backward. Any disruption in this normal flow will make it difficult for the heart to effectively pump the blood where it needs to go.

## What is Transcatheter Mitral Valve Implantation (TMVI)?

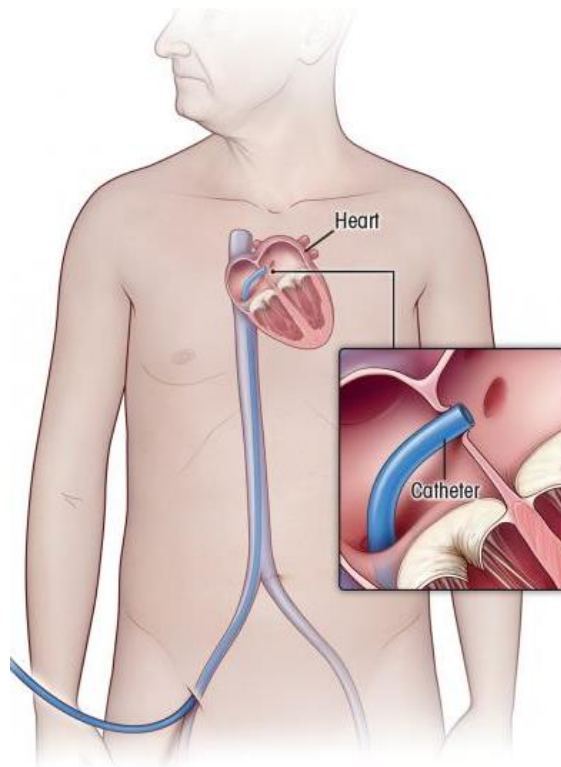
- Transcatheter mitral valve implantation (TMVI) involves inserting a new artificial heart valve inside the old diseased valve using a balloon catheter.
- The valve is made up of a metal frame (stent) and the outer lining (pericardium) of a cow's (bovine) heart.
- The leaflets that control the flow of blood are secured to a flexible, self-expanding metal frame (nickel-titanium) for support.
- A thin, flexible tube (catheter) is used to put the valve in place. It is a less invasive treatment option than open heart valve surgery.



## Patient Information

### How is the valve put into my heart?

A flexible tube (catheter) carrying the new valve is usually inserted through the femoral vein in the groin. This tube will be taken to the heart chamber. The new valve will then be taken inside this tube and implanted at the position of the mitral valve.



### What will happen before the procedure?

The TMVI work up is a series of hospital tests that are essential to make sure that your mitral valve problems will benefit from this procedure. The tests also check that it would be a safe procedure for you.



## Patient Information

### **The tests of the 'work-up' may include the following:**

- a chest x-ray to look at your lungs
- an ECG to check your heart rhythm
- lung function tests to see how well your lungs work
- a transthoracic echocardiogram (externally looking at your heart with ultrasound)
- a transoesophageal echocardiogram – (a more detailed ultrasound of your heart)
- a CT aorta (a special x-ray that looks at the middle section of your body)
- a coronary angiogram to look at the coronary arteries that supply blood to your heart

You may already have had some of these procedures. The TMVI team will talk to you about whether they need to be repeated.

## **What can I do to improve my health before a TMVI?**

### **Stop smoking**

If you smoke, you should try to stop completely or at least for several weeks before your treatment. This reduces the risk of breathing problems and makes your anaesthetic safer.

The sooner you stop smoking, the more it will reduce your risk. There is plenty of support available to help you give up

for good. Please talk to your GP, pharmacist or call SMOKEFREE on 0800 0224 332.

## Patient Information

### Controlling your weight

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

### Visit your GP

If you have any ongoing medical problems such as diabetes, asthma, bronchitis, thyroid problems or high blood pressure (hypertension), you should ask your GP if you need a check-up.

### Hospital admission

Once accepted by the team for TMVI, you will be invited in for the procedure. You will receive a letter with your admission details. This will usually ask you to stop any blood thinning medications five days before your operation. You will be asked to come in the day before your procedure for preparation. Before the operation, you will be seen by members of the operating team. You won't be able to eat or drink for a few hours before your procedure and the nurses will help you to shave your chest, wrists and groins and also to shower. The procedure will be done in the Catheter suite, sometimes known as the "Cath lab".

### A Typical Procedure

- Patients are normally put to sleep for the procedure by an anaesthetic doctor.
- The interventional cardiologist will make a small cut (incision) in your groin area and guide a long, hollow tube (sheath) into your vein.
- Using special imaging equipment to look at your arteries, a thin, flexible tube (catheter) with a balloon on the tip is threaded through the sheath and into your heart. If you're not fully sedated, you may have a "fluttering" feeling in your chest.
- When the end of the balloon is in your mitral valve, the balloon will be inflated which causes the new valve to replace the old one.
- Your new mitral heart valve will begin opening and closing; the doctor will conduct a test to confirm it is working properly. The thin, flexible tube will be removed, the incision will be closed with stitches, and the procedure will be complete.

## Patient Information

### **After your procedure**

- You will go from the catheter suite to either to the coronary care unit (CCU) or cardiothoracic critical care (CTCC) where you will be closely monitored.
- Normally you are woken up early after the operation but sometimes you may need to stay asleep so will be kept sedated and if necessary admitted to CTCC.
- Whilst there are tubes in your groin you will have to be on bed rest.
- Over the next 48 hours you will have your drips and sheath's (tubes) removed.
- When these tubes are removed you can sit out and start to walk about.
- You will be in hospital for two to three days depending on how quickly you recover.

### **Potential benefits of a TMVI procedure**

- Treatment with the new valve should improve your symptoms.
- It will give you a more normal mitral valve performance and improve your overall heart function.
- This procedure is less invasive with shorter recovery period as compared to open heart surgery.
- We would hope this will increase your life expectancy and improve your quality of life.

## Patient Information

### Potential risks of the procedure

- Risk of stroke: 2-3% (or 2 to 3 people in every 100 treated)
- Risk of death during the procedure approximately: 2% (or 2 people in every 100 treated)
- Risk of requiring a permanent pacemaker: 3% (or 3 people in every 100 treated)
- Damage to groin arteries
- Bleeding: 1% (or 1 person in every 100 treated)
- Infection
- Emergency open heart surgery 1% (or 1 person in every 100 treated)

**A TMVI would be recommended only if your doctors feel the risk is lower than traditional mitral valve replacement surgery**

### Recovery at home

These are general guidelines as everyone's recovery is slightly different. You should have someone to care for you for the first week after you leave hospital. Please speak to your nurse or doctor as soon as possible if you think this will be a problem.

### Activity

- You should avoid strenuous activity for 4 weeks, This includes heavy lifting (eg shopping, suitcases) or pushing and pulling (eg cutting grass, vacuum cleaning).
- It is important for your recovery to have a short walk every day. This can be gradually increased. You may feel tired and need to rest in the afternoon.
- You do not have to avoid climbing stairs or walking up hill. You may have to start off at a slower pace and you may feel slightly out of breath when walking. This should improve as your fitness level increases.
- You may notice that your ankles are swollen after the procedure due to fluid retention. If this swelling travels further than your ankles please get reviewed by your GP.

## Patient Information

### Wounds

- Your wounds should be healed by the time you leave hospital, if they still require a dressing we will organise a District or practice nurse to continue this.
- The stitches are dissolvable so do not have to be removed. If your wound becomes red or inflamed please get your GP or practice nurse to check it.
- You may have bruising to your groin(s) for a few weeks.
- You may have a hard lump under the skin due to a collection of blood (haematoma). Please talk to your GP if this becomes painful or grows bigger.
- Please continue to shower every day using liquid soap. It is safe to get your wound wet, but avoid putting soap directly onto your wound or rubbing your wound before it has healed completely. It is important to keep this area dry between showers.

### Medication

- As well as your normal medicines including aspirin, you will usually be discharged with an additional blood thinning medicine called Clopidogrel. You will need to take this for at least three months. After this you will only need to take the aspirin.
- People on Warfarin may have only aspirin or Clopidogrel.
- You may be discharged with some painkillers which we would recommend you to take regularly until you are no longer getting discomfort from your wound(s).
- You can always consult your GP or the cardiologist in case of any confusion regarding the medications.

## Patient Information

### **Driving**

You are not allowed by the DVLA (Driving and Vehicle Licensing Agency) to drive for four weeks after your procedure.

You will need to inform your insurance company and the DVLA that you have had your mitral valve replaced.

If you have a LGV or PCV licence you will need to have an exercise test before getting your licence back.

### **Air travel**

Please check this with your consultant, nurse or cardiac rehabilitation nurse, but in most cases you can travel by plane seven days after your TMVI. The valve 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.

### **Cardiac rehabilitation**

You will be invited to attend cardiac rehabilitation sessions about 6 weeks after your procedure, if you live in Coventry. This will be explained to you by a cardiac rehabilitation nurse during your stay.

This is a programme of graduated exercise and general health discussions. If you live outside the Coventry area you may be referred to your local hospital, depending on what service they provide.

### **Follow-up care**

When you leave hospital, an electronic letter will be sent to your G.P explaining what you have had done and a list of your medications. We will phone you a week after you leave hospital to check on your progress. If you have any concerns you can call:

Coronary Care 024 765656

Cardiac Rehabilitation 024 76965688

## Patient Information

We would like to hear sooner rather than later about any potential problems.

You will be invited to attend an outpatient follow-up appointment about 6 weeks after your procedure.

Further follow-up clinics are usually arranged at 3 months, 6 months and 12 months after your TMVI.

During this visit you may have an ECG and chest X-ray. After 3 months you will have an ultrasound scan of your heart and see the cardiologist. The doctor will then decide about any future appointments.

The Trust has access to interpreting and translation services. If you need this information in another language or format please contact 08453109900 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

To give feedback on this leaflet please email [feedback@uhcw.nhs.uk](mailto:feedback@uhcw.nhs.uk)

### **Document History**

Department:	Cardiac Services
Contact:	25656
Updated:	April 2021
Review:	April 2023
Version:	1
Reference:	HIC/LFT/2592/21