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Stretching your heart's narrowed mitral valve with a balloon (balloon mitral valvuloplasty)

Department of Cardiology
Information for Patients

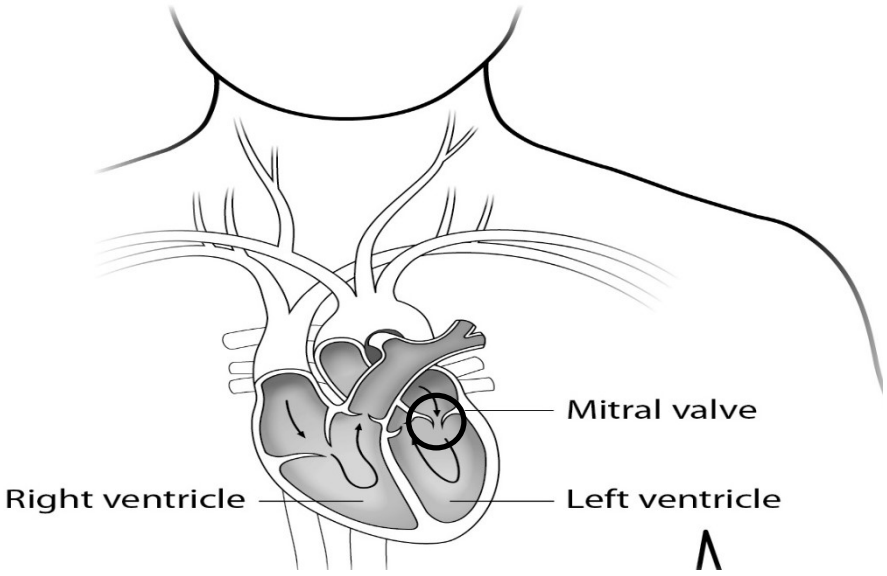
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This leaflet tells you about what to expect before, during and after your procedure to stretch your mitral valve (mitral valvuloplasty). Please ask the nursing or medical staff looking after you if you have any questions that the leaflet does not answer.

What is mitral stenosis?

We have 4 valves in our heart. They make sure the blood only flows in 1 direction through your heart. The mitral valve is a flap that is between the left upper and lower chambers of the heart.

Mitral stenosis is a heart condition where the mitral valve narrows and thickens. This limits the flow of blood through the heart. This may cause a back-up of blood and fluid to lungs. Mitral stenosis most often develops many years after a person has had rheumatic fever. Many patients diagnosed with mitral stenosis do not know they ever had the illness.



What are the symptoms?

Many of the symptoms, like shortness of breath and fatigue, are because of the back-up of blood in the lungs. Other symptoms include:

- weight gain,
- chest pain,
- weakness,
- dizziness,
- swelling in the ankles, feet and/or abdomen,
- irregular heartbeat,

How is it treated?

The symptoms can sometimes be treated with medicine. This is if the symptoms are mild. When medicines do not work, we can do a:

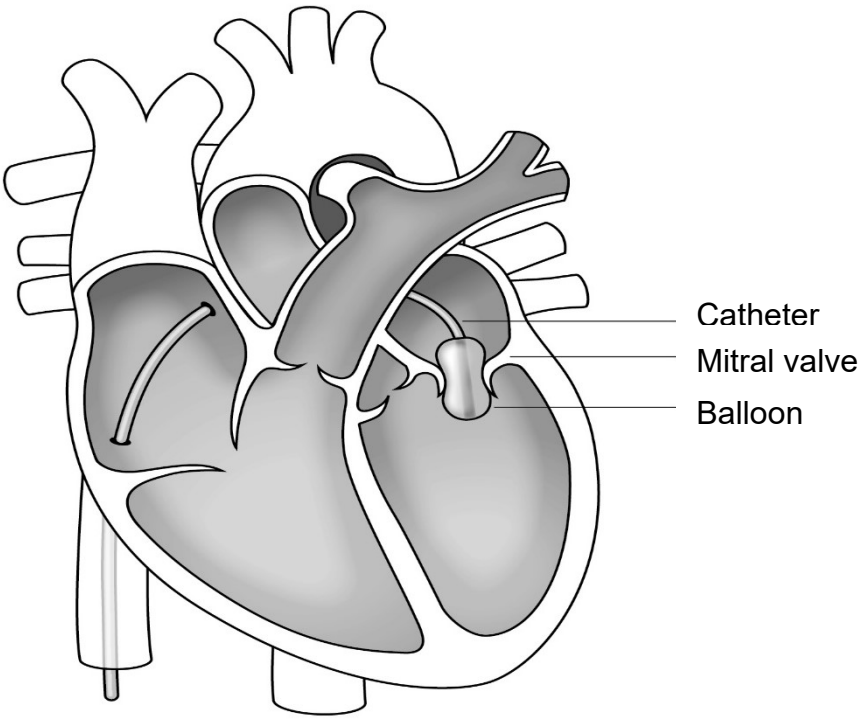
- balloon valvuloplasty,
- surgical valve repair,
- or replace the valve.

What is mitral valvuloplasty?

This is a procedure to widen the mitral valve in your heart.

We pass a small balloon to your heart through a large vein in your groin.

The balloon is gently inflated and deflated to stretch the valve. This helps blood flow through it more easily.



What are the benefits of this procedure?

- It helps with shortness of breath and chest pain.
- It helps to increase the mitral valve area.
- Makes you feel better quickly by helping blood flow more easily.
- If the procedure works well, you may feel much better for months or even years. How long this last can be different for each person, depending on their heart and their age.
- In some cases, this treatment can delay the need for other treatment, like replacing the valve later. In other cases, no more treatment may be needed.

It does not cure the heart valve problem. Your doctors will keep checking how well the procedure has worked and decide if any other treatment is needed in the future.

You will still need:

- regular check-ups,
- take your medicines,
- try to stay healthy.

What are the risks?

Every procedure has risks. These can be different for each person. There are many risks related to balloon mitral valvuloplasty. You will need to think about the risks before giving your consent.

The risks are:

- bruising/ discomfort where the catheter is inserted is common.
- 1 in 100 patients have risk of needing permanent pacemaker.
- 1 in 100 patients have risk of collecting fluid around the heart.
- 1 in 100 patients have risk of causing abnormal heart rhythm (atrial fibrillation). You are already at risk of atrial fibrillation because of mitral stenosis.
- 1 to 2 in 100 patients have risk of stroke, heart attack (myocardial infarction), or minor bleeding.
- 1 to 5 in 100 patients have risk of bleeding which may need surgery.
- 5 in 100 patients have risk of causing major mitral regurgitation. This means the blood flows the wrong way in the heart as the mitral valve does not close properly.
- 1 in 200 patients have risk of death.
- 1 in 1000 patients have risk of damaged parts of the heart.
- Less than 1 in 1000 to 10,000 patients have risk of radiation induced cancer by using the X-ray machine for the procedure.

- Damage to teeth, throat or food tube (oesophagus). During the procedure, the doctor will put a flexible tube (a probe) down your throat into your food tube. This is a transoesophageal echo (TOE). It gives imaging guidance for clip placement. Fewer than 1 in 1,000 people (0.1%) have serious complications from a TOE, such as damage to teeth, throat or food tube.
- Blood transfusion. This is very unlikely.
- Other procedures: Needing to use medicines to keep your blood pressure and heart rate within the normal range (haemodynamic support) or emergency heart (cardiac) surgery.

Your pre-admission appointment

You will have a pre-admission appointment at Clinic D Glenfield Hospital. This will take about 2 hours. **Eat and drink as normal for this appointment.**

During the appointment, a nurse will:

- check your condition and medical history.
- give you more information about the procedure. You can ask any questions you have.
- do an electrocardiograph (ECG) test and blood tests.
- swab samples from your nose, between your legs (perineum) and any visible skin wounds. This is to check for MRSA.

If you are on any **blood thinning tablets** or have **diabetes,** the nursing staff will advise you about what tablets you may need to stop taking before coming into hospital.

Patients that are taking any blood thinning tablet may, in some cases, need to be admitted earlier for intravenous heparin or to have injection in your abdomen.

Remember to bring all your usual medicines with you to your pre-admission appointment and your admission.

What happens on the day?

- You will need to fast before your procedure. **Do not eat after midnight (12am).** You may have a drink at 6am (clear fluids such as water, black tea or coffee). You must stop drinking all fluids **2 hours before** the procedure.
- You will need to shower with an antibacterial wash. We will give you this at the pre-admission appointment.
- Please bring your current medicines or recent prescription.
- It is a day case procedure. You will go home the same day. If there are any complications after the procedure, you may need to stay in hospital. Please bring an overnight stay bag in case.
- You will be admitted to Ward 32 at the Glenfield Hospital. On admission you will be told for when you are booked (scheduled) to have your procedure.
- An anesthetic doctor and your cardiologist will review you. You will have both a general and local anaesthetic during the procedure.

- You will be asked to sign a consent form.
- About 1 hour to 1 hour and 30 minutes before your procedure you will change into a hospital gown.
- If there is too much hair growth in the groin area (catheter incision site), it may be shaved off.

What happens during the procedure?

1. When you arrive in the catheter room you will see that there is a lot of machinery. This can be overwhelming. Do not be alarmed. This is special monitoring and X-ray equipment.
2. You will need to lie on your back on a hard X-ray table. We will attach heart monitor wires to you.
3. The anaesthetic doctor will insert a small needle in your hand. They will give you injections to make you sleep.
4. To begin the procedure, the doctor will clean your left and right groin areas with a cold antiseptic liquid. They will then cover you with green cloths to keep a sterile working area.
5. You will then be injected with local anaesthetic in both groins to numb (freeze) the area where the tubes (catheters) will be inserted. The tubes go into the blood vessels (one in either side) and is guided into the chambers of the heart.
6. They will place an ultrasound probe in your mouth that you swallow (transoesophageal probe). This will go down your food pipe (gullet). This helps us assess the mitral valve during the procedure. This also will help your consultant position the catheters and balloon.
7. The doctor creates a tiny hole in the wall between the 2 upper chambers of the heart. This hole will let the doctor access the left chamber (atrium) with a special tube that has a balloon at the tip. You will be given an anti-clotting drug through the needle in your hand/arm.
8. The catheter will be positioned with the balloon in the mitral valve. The balloon will then be inflated and deflated as many times as is needed to widen the valve opening. Once the doctor has decided the opening of the valve has been stretched enough, the balloon will be deflated and removed.
9. The doctor may close the catheter insertion site with a device that uses stitches (sutures). One of the staff will put manual pressure on the area to stop the blood vessel from bleeding. Once the bleeding has stopped, a small sterile dressing will be put on the area.
10. The procedure takes 1 hour to 1 hour and 30 minutes to do. You will be asleep for most of this time. Once awake you will be cared for by the recovery team.

Returning to the ward

- Your nurse will collect you from the recovery area.
- When you return to the ward, the nurse will check your blood pressure, pulse and pulses in your feet (called ‘pedal pulses’). They will do an ECG (electrocardiograph) or heart tracing. These are all routine checks that are needed in case of any complications.
- You will need to stay in bed for 2 hours. Sometimes for longer to prevent bleeding.
- If you have temporary numbness or weakness in your leg, special steps will be taken to make sure you are safe when you first get up. If you need to pee and your leg is numb, it may not be safe to walk to the bathroom. You will use a urinal or bedpan instead.
- You can go home when your doctor says it is okay to do so. This may mean you have to stay overnight. Someone will need to drive you home.
- Tell your nurse right away if you have:
    - a fever,
    - chest pain,
    - swelling at the groin,
    - pain in your groin or leg,
    - bleeding at your groin site.
- You will also be connected to a drip or IV (intravenous infusion). It will run for about 4 to 6 hours.

If you have any specific worries about any of these issues, please talk to your consultant.

Before discharge

On the evening of the procedure your medications will be reviewed and restarted.

Sometimes a repeat echocardiogram will be requested before discharge. An echocardiogram is a scan of your heart using ultrasound equipment.

Discharge

If there are no complications you will be able to go home the same day as your procedure. The doctors will talk to you about your results.

Going home after the procedure

You should do as little as possible for 3 days. This means:

- **no heavy lifting,**
- **no heavy cleaning,**
- **no heavy shopping,**
- **no heavy gardening,**

- **do not drive for 2 weeks**. You do **not** need to contact the DVLA unless you hold a PSV/HGV license.
- There is a very small risk of the wound in your groin starting to bleed. **Do not panic if this happens:**
    - Lie down on the floor (not the bed), where you are less likely to faint. You or a relative or friend, should press with the flat of the fingers of both hands or a clenched fist over the groin wound for 30 minutes. Then slowly release.
    - Contact your GP so that they can check your wound and to see that you are all right. If the bleeding has not stopped after 30 minutes call **999** for help.
- It is common to have a painful bruise over the puncture wound in your groin. This is because of bleeding under the skin. If a painful lump does develop, especially if the groin becomes painful when walking, please get medical advice.
- Bruising and discolouration above and below the groin, even down to the knee may develop over the week after the procedure. This may look very unsightly passing from a blue purple colour eventually to a yellow one. This is often not painful and is not serious. You can take paracetamol for minor discomfort.
- Avoid baths, hot tubs, or swimming pools for the first 5 days or until the wound is closed. Showers are okay after 24 hours (1 day), but do not let the spray hit the site.
- Avoid bending or squatting or any intense activity such as running or lifting anything over 20 pounds.
- Take short walks for 5 to 10 minutes. Do this 4 or 5 times a day and build up slowly.
- If there is any doubt or problem with your groin wound, within the first week of returning home, you are advised to contact your GP.
- You can go back to work when your consultant say it is okay to do so.

It is rare to have severe bleeding from the wound site once you are home. If you do start bleeding, you must:

- lie down.
- apply pressure to the cut (incision) site and ask someone to call **999**.

You should get urgent medical advice if you feel unwell after the procedure with symptoms of:

- chest pain,
- dizziness,
- fainting,
- shortness of breath,

Does balloon valvulopasty cure mitral valve disease?

Balloon valvuloplasty is a procedure that may ease many of the symptoms of valve disease. It will not cure valve disease. Some patients may still need to take medicines, even after a successful procedure.

How will I know if the procedure has not worked? What signs should I look out for if things are getting worse?

You will often know if the procedure has not worked as expected, or if things are getting worse. You may notice a return or worsening of your symptoms.

Signs to look out for:

- Increasing shortness of breath, especially during activity or when lying flat.
- Feeling more tired than usual.
- Swelling in your legs, ankles, or abdomen.
- Dizziness or feeling light-headed.
- Chest discomfort or palpitations (awareness of your heartbeat).

If you notice any of these symptoms getting worse, or new symptoms developing, get medical help right away.

What happens after discharge home?

You will also have regular follow-up appointments and scans (such as echocardiograms). This will help your medical team assess how well the procedure is working.

Glossary of terms

Cardiac catheterisation: a procedure to look at how well your heart is working. Helps to find out if you have disease of the heart muscle, valves or heart (coronary) arteries. During this test, doctor's put a long, narrow tube called a catheter into a blood vessel in your arm or leg. They guide it to your heart with the help of a special X-ray machine. They inject contrast dye into your blood vessel through the catheter. This shows your valves, arteries, and heart chambers on X-rays.

Catheter laboratory (cath lab): an examination room in a hospital or clinic. It has imaging equipment to look at the arteries and chambers of the heart, and treat any stenosis or abnormality found.

Contrast dye: a solution that radiologists use to see your organs and tissues more clearly in medical images such as X-rays, MRI and CT scan.

Percutaneous: a way to access the inner organs through a needle puncture of the skin.

Radiologist: a doctor who is specially trained to read diagnostic images like X-rays, MRI and CT scans.

Transoesophageal echocardiogram (TOE): a test is sometimes done to take clearer pictures of the heart using a probe down your throat. You will be asked to lie down and swallow the tube. You may be given some drugs to help you relax before this is done.

More information

National Institute of Health and Care Excellence (NICE) guidance - Percutaneous mitral valve annuloplasty: https://www.nice.org.uk/guidance/htg225

Contact details

Structural Heart Valve Clinical Nurse Specialist: **07950 870853** (Monday to Friday, 8am to 4pm)

Structural Heart Valve Co-ordinator: **0116 258 3361** (Monday to Friday, 8am to 4pm)

Interpreters

Please tell a member of staff if you need an interpreter.

If you have any questions, write them down here to remind you what to ask when you speak to your nurse/ doctor/ consultant:

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