

# Welcome to the transcatheter aortic valve implantation (TAVI) clinic

You have been given this factsheet because you have been referred to the TAVI (transcatheter aortic valve implantation) clinic at University Hospital Southampton (UHS). This factsheet will explain what a TAVI is, why you have been referred to our service, and what you can expect from your first visit to us.

We hope it will answer some of the questions you may have and help with the discussions you will have with your doctors in the clinic. If you have any questions after reading this sheet, please contact us using the details on page 9.

#### What is TAVI?

TAVI stands for transcatheter aortic valve implantation (TAVI). It is a procedure to replace a faulty aortic (heart) valve via a thin plastic tube.

#### Why have I been referred to the TAVI clinic?

You have been referred to the TAVI clinic because there is a problem with your aortic (heart) valve (the valve that allows blood to leave the heart and flow into the body).

The valve may be narrowed (stenosis) or leaky (regurgitant), or a combination of both. TAVI treatment is mostly used to treat people with severely narrowed heart valves.



Diagram 1. showing location of the aortic valve and a normal heart valve compared to a severely narrowed heart valve (aortic valve stenosis)

Your cardiologist (specialist doctor) has identified a possibility that, based on your previous medical history, TAVI may be a treatment option for you. The purpose of this clinic visit will be to go through this in more detail with you.

The TAVI procedure is only offered in hospitals that perform open heart surgery, which is why you have been offered an appointment here at University Hospital Southampton.

**Important information about travel to your appointment** You **must not drive** to your appointment at the TAVI clinic.

The DVLA prohibits patients who have symptoms of severe aortic stenosis from driving. This will be discussed with you during your appointment.

You will need to arrange for someone to bring you to your appointment or, if this is not possible, travel by public or hospital transport (if you are eligible).

If you are unable to attend the clinic in person for any reason, then please let us know and we can arrange a telephone or video appointment for you.

#### Why is the treatment being considered for me?

Treatment for a heart valve problem is usually only offered when the issue is causing you to experience symptoms that are affecting your quality of life, for example:

- breathlessness when you walk
- chest pain or chest tightness (sometimes known as angina)
- dizziness or collapse
- swelling or fluid retention (heart failure).

TAVI treatment may be offered when conventional open-heart surgery may pose a heightened risk, for example, if you:

- have had previous cardiac surgery (coronary bypass or valve surgery)
- have problems with your lungs
- have blood clotting issues
- or where there are any other factors that might make recovery from cardiac surgery more difficult for you. There are many reasons why this might be the case this will have been carefully considered by the team that has referred you to us.

Choosing to undergo a TAVI procedure is still a very complex and personal decision, and we will take time to run through all of the considerations with you. After this discussion, some patients choose to move forward with the TAVI procedure, and some decide that it is not right for them.

#### Are there any reasons why TAVI might not be right for me?

In general, TAVI treatment is only offered when it is likely to help the patient feel better or lead a better quality of life, and where it is likely that the patient has more than two years to live.

#### What does the TAVI procedure involve?

During a TAVI procedure, a replacement heart valve is placed across the narrowed valve via a tube or 'catheter' inserted via a groin vessel (femoral artery). X-ray technology is used to guide the procedure, which is performed in a cardiac catheter lab.

The graphic below illustrates:

- a normal aortic valve compared to a closed valve
- the anatomy of the heart and where the replacement valve will be placed
- the valve in-situ
- the process to insert, place and complete the TAVI procedure via a catheter (tube) through the aorta (main artery that carries blood away from your heart to the rest of your body).

We will discuss this with you when you come to the clinic and you will have the opportunity to ask questions.







#### Transcatheter aortic valve replacement procedure



Balloon catheter is inserted through Aorta and into heart valve



Transcatheter valve placed into position over the diseased aortic valve



Transcatheter valve in place, procedure completed

Diagram 2. Illustration of the TAVI procedure, showing an open heart valve compared to a narrowed valve, the location of the valve, the replacement TAVI device (Medtronic) and the process to insert, place and complete the procedure.

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Diagram 3. The valve replacement process depicted using the Edwards Sapien valve (at UHS we use one of two devices for the TAVI procedure: the Medtronic Evolut and the Edwards Sapien). We will explain more about the different valves used when we meet you in the clinic.

#### Step-by-step guide to the TAVI procedure

You will normally asked to arrive at the hospital either the afternoon before, or on the morning of the procedure. You will usually be awake for the procedure, but will have sedation (medicine to make you relaxed and sleepy) but not usually full general anaesthetic.

During the TAVI procedure, a thin tube (catheter) is introduced through a small cut either at the top of your leg (known as a transfemoral TAVI), your shoulder (known as transaxillary or Tax) or on the left-hand side of your chest (known as transapical TAVI).

A wire is placed into the heart and then the replacement valve is passed through the thin tube, over the wire, and positioned across the damaged heart valve.

The new valve is then implanted inside the old valve.

The implanted valve then behaves like new and restores the heart valve function.

The wire and tubes are then removed and the hole is closed.

The procedure usually takes between 1 and 2 hours.

Patients normally stay in hospital for 1 - 3 days following the procedure.

#### What are the benefits?

Successfully replacing a narrowed heart valve with a TAVI valve in patients who have a severe valve narrowing has been shown to:

- improve symptoms
- help patients feel better
- increase life expectancy (when compared to patients with the same narrowing who don't receive treatment)
- recovery is quicker than open heart surgery. Patients are usually able to go home within 1 3 days.

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The benefits of any procedure are balanced by the risks. The risks of this procedure are explained below.

#### What are the risks?

Every cardiac procedure carries with it some risk. The risks will vary from person to person, depending upon their circumstances. The actual risks to you may be higher or lower than what is written in the table below. Your cardiologist will explain this in more detail at the clinic visit.

#### Table of risks associated with the TAVI procedure

Risk	How many people does it affect?
Risk of stroke	1 in 30
Strokes can be treated with clot-busting medication or clot removal. If symptoms are identified and treatment is required, it will be organised and performed immediately after the TAVI procedure has finished.	
Risk of death	1 in 50
Approximately 2% of people will die within 30 days of a TAVI procedure.	
Risk of heart attack	1 in E0
A heart attack can occur when an artery that supplies the heart gets blocked. If this happens the doctors performing your procedure can reopen such blockages using balloons and small metal tubes (called stents).	1 IN 50
Risk of needing a pacemaker	1 in 20
The TAVI valve can put pressure on the heart's electrical system as it is delivered - and this damage can become permanent - needing a pacemaker to correct it. This may be done at the same time as the valve, or a few hours/days later.	
Risk of needing an operation for bleeding	1 in 20
Damage to the artery, or occasionally the heart itself, may require an operation to fix. If this is required, it will be done at the time of the procedure.	

If you have any questions about the risks of the TAVI procedure, please speak to your doctor at your clinic appointment.

#### Are there any alternatives to this treatment?

There are two main alternatives to TAVI treatment:

#### **Conventional open-heart surgery**

In patients that have been referred for TAVI, conventional open-heart surgery is often considered higher risk. However, this type of surgery can remain an option, particularly if there are technical features which make TAVI very difficult or potentially riskier.

#### Medical therapy (treating your heart valve symptoms with medication)

This option is sometimes preferred by patients who want to avoid very invasive treatment and the risk of harm. The aim is to find the combination of tablets that may improve your symptoms with as few side effects as possible. It's important to understand that getting the combination of medication for your symptoms won't treat the underlying heart valve problem itself or help increase your life expectancy.

A summary table is included on page 10, which you may find helpful to refer to in clinic. Your cardiologist will talk through all these options with you during your appointment.

#### What to expect when you come to the TAVI clinic

#### Location

The TAVI clinic is located in the Cardiac Outpatients department, D level, East wing, at Southampton General hospital.

#### The consultant team

The TAVI clinic at UHS is run by four consultant cardiologists: Dr Simon Corbett, Dr Richard Jabbour, Dr John Rawlins and Dr Rohit Sirohi.

You may see any one of us in clinic, and this person will then become your named consultant who will take responsibility for your care. Dr Rawlins is the current service lead.

#### What will happen in the clinic?

Before you see the consultant, we will:

- measure your height and weight
- perform an ECG (electrical heart tracing)
- you may also have a repeat cardiac ultrasound scan (echocardiogram).

You will then meet one of the consultant team and discuss the procedure. After this, you may also meet one of our TAVI nurses and they will be able to provide more information about TAVI, and answer any questions that you may have.

#### What do I need to bring with me?

Remember to bring:

- a list of your tablets
- a list of any previous medical problems

Please also bring a relative or friend (if possible). This may help you with the discussion about your treatment.

#### What will happen after my visit to the clinic?

If the decision is taken to go ahead with the TAVI procedure, you will need to have some tests and investigations.

These may include:

- a CT scan before the operation (you may have had one already), to look at both the size of the valve and the size of the arteries in your legs. This is an essential part of the planning process.
- you may also need a procedure known as a TOE (transoesophageal echocardiogram). A TOE uses sound waves (ultrasound) from a probe to check the structure of your heart and how well it is functioning. It involves passing an ultrasound probe (about the size of an index finger) down the throat and into the oesophagus, to look at the heart in detail.

We may need to get additional information from your other doctors about any other medical problems you may have. Occasionally, we uncover medical issues on the scans which were not known about before, and often further information from other doctors is needed about these. This can add to the time it takes to get you treated.

Once we have all of the required information, the team meets to examine this along with the results of the tests and investigations you have had. Then, taking into account our conversations with you in the clinic, we can make recommendations about how best to treat your heart valve problem.

You will then be contacted by a member of the team with the results of our discussions and details of the next steps. This may be via telephone or a letter.

Once we have all the necessary information and results from any scans you will be placed on the waiting list for the procedure.

#### When do I have to decide about having TAVI treatment?

You do not have to decide about the procedure on the day you attend the TAVI clinic.

The purpose of the clinic visit is for you to meet the team and run through the risks and benefits of any treatment. You may feel that you have enough information to make a decision, but there is no immediate rush. After the clinic appointment, we will send a letter to you, your GP and your cardiologist which will summarise our discussions in the clinic. Once you have decided, please contact one of our nursing team using the contact details below.

#### Frequently asked questions about having TAVI

We have tried to answer some of the most frequently asked questions about having a TAVI procedure below. If you have further questions or need to discuss any aspect of your TAVI clinic visit please don't hesitate to get in touch with us.

#### Would I need to be put to sleep (general anaesthetic)?

Usually, we aim to perform TAVI under local anaesthetic. We have found that patients cope with remaining awake for the procedure very well and often have little in the way of discomfort. The top of your leg will be made numb with a local anaesthetic, and you will be offered some medication to make you sleepy (sedation). This will all be explained further by one of the anaesthetic team the day before the procedure. If however any significant

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complications occur during the procedure a general anaesthethic may need to be given.

#### How long would I need to stay in hospital for?

You would need to come to Southampton General Hospital for a pre-assessment appointment around a week before having a TAVI procedure. At this appointment:

- we go through the consent process with you
- make sure all the necessary tests and investigations have been completed
- you will also meet one of the anaesthetic team.

The procedure will then take place within the following week, usually on a Monday or Wednesday.

Our aim is to discharge you 48 hours (2 days) after the procedure, so it is helpful to bear this in mind. You should have someone at home with you for the first couple of days.

#### Is a TAVI procedure painful?

It can sometimes be uncomfortable as we put in the various plastic tubes that are required to implant the valve. We make all the areas numb with local anaesthetic and have pain medication always available to be given through the vein during the procedure. Any discomfort is usually fairly short-lived. After the procedure, you will need to spend time in bed lying flat on your back. This helps the hole created by the plastic tubes close up and reduces the risk of major bleeding problems. This can become uncomfortable. The nursing staff on the ward can give painkillers as required.

#### Will I need any extra medications?

You will often need an extra blood-thinning medication for a short period of time following the procedure. This does however vary from person to person, so your consultant will be able to discuss this further with you.

#### Who do I contact if I have any further questions?

We have a dedicated team of specialist nurses who are available Monday to Friday, 8am to 4pm. They should be your first point of call. They will usually be able to deal with any questions, problems that you may have and if you need to rearrange the appointment.

Please do not hesitate to contact us if you feel you need any more information or have any further questions.

#### **Further information:**

We have developed an information video for patients.

Visit **www.explainmyprocedure.com/tavi-southampton**, or scan the QR code opposite to go straight to the website.



We hope it will be useful in explaining TAVI and would strongly recommend watching it before we speak in the clinic.

We look forward to meeting you in the clinic.

Contact us

TAVI nurse specialist team Telephone: 023 8120 8686 Email: <u>TAVI@uhs.nhs.uk</u>

TAVI and cardiac surgery D level North Wing Southampton General Hospital Tremona Road Southampton, SO16 6YD

Useful links UHS website - aortic stenosis https://www.uhs.nhs.uk/departments/blood-heart-and-circulation/transcatheter-aortic-valveimplantation-tavi/diagnosis-and-treatment-aortic-stenosis

NHS UK website - aortic valve replacement alternative treatments https://www.nhs.uk/conditions/aortic-valve-replacement/alternatives/

# Decision grid: Treatment options for patients with severe symptomatic aortic stenosis if surgery is considered to be high risk

Frequently asked questions	Best medical treatment	Aortic valve surgery (open heart surgery)	<b>TAVI</b> (transcatheter aortic valve insertion)
For whom does this work best?	<ul> <li>Patients who do not wish to risk a treatment with potentially serious complications</li> <li>Patients with major disabilities in whom aortic valve replacement will not improve their quality of life</li> <li>Patients who are not limited by symptoms caused by the aortic valve</li> </ul>	<ul> <li>Patients who wish to pursue active treatment in order to improve their symptoms</li> <li>Patients that are likely to survive for longer than 2 years</li> <li>Patients who have severe valve disease who are likely to improve with its treatment</li> </ul>	<ul> <li>Patients who wish to pursue active treatment in order to improve their symptoms</li> <li>Patients that are likely to survive for longer than 2 years</li> <li>Patients who have severe valve disease who are likely to improve with its treatment</li> </ul>
What will this involve?	<ul> <li>Ensuring that the combination of medications is best suited to maintain quality of life</li> </ul>	<ul> <li>Admission to hospital for around 7-10 days</li> <li>A surgical procedure to replace the aortic valve via a cut through the front of the chest</li> </ul>	<ul> <li>Admission to hospital for around 2-3 days</li> <li>A procedure in the catheter lab to replace the valve via the top of the leg</li> </ul>
What are the advantages?	• Avoids the risks and problems associated with a procedure	<ul> <li>Should improve symptoms as a result of the valve narrowing</li> <li>Should improve overall expectancy and quality of life</li> <li>Replacement valves last between 10-15 years</li> <li>You can drive after 6 weeks</li> </ul>	<ul> <li>Should improve symptoms as a result of the valve narrowing</li> <li>Should improve overall expectancy and quality of life</li> <li>Shorter recovery time in hospital and after the procedure</li> <li>You can drive after 4 weeks</li> </ul>

What are the dis- advantages?	<ul> <li>Life expectancy is likely to be shorter than with valve treatment</li> <li>You cannot drive</li> </ul>	<ul> <li>Risk of a major problem during the procedure</li> <li>Likely to require additional medication after the procedure for a short period of time</li> <li>Longer recovery time both in hospital and after the operation</li> </ul>	<ul> <li>Risk of a major problem during the procedure</li> <li>Likely to require additional medication after the procedure for a short period of time</li> <li>Less information on how long the valves last - current estimates are between 7-10 years</li> </ul>
What are the risks?	<ul> <li>Avoids the risk of the procedure but leaves the risks of the heart valve making you unwell or ending your life. The time scale of this is impossible for us to predict</li> </ul>	<ul> <li>Your risks will vary depending on your previous medical problems and will be specific to you. Your cardiologist and cardiac surgeon will discuss this in more detail with you.</li> <li>In general however, the overall risks of the procedure in an average case are:</li> <li>Death - 1-2% (1 person in 50)</li> <li>Stroke - 2% (1 person in 50)</li> <li>Heart attack - 3% (1 person in 50)</li> <li>Heart attack - 3% (1 person in 30)</li> <li>Need for a pacemaker - 5% (1 person in 20)</li> <li>Infection - 3.3% (1 person in 30)</li> </ul>	<ul> <li>Your risks will vary depending on your previous medical problems and will be specific to you. Your cardiologists will discuss this in more detail with you.</li> <li>In general however, the overall risks of the procedure in an average case are:</li> <li>Death - 1-2% (1 person in 50)</li> <li>Stroke - 2.5% (1 person in 50)</li> <li>Stroke - 2.5% (1 person in 40)</li> <li>Heart attack - 1% (1 person in 100)</li> <li>Need for pacemaker - 5% (1 person in 20)</li> <li>Need for operation on the artery in the leg - 5% (1 person in 20)</li> </ul>

Decision grid: Treatment options for patients with severe symptomatic aortic stenosis if surgery is considered to be high risk

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For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalsupport** 

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