



**UNDERSTANDING
MITRAL VALVE DISEASE**

**Important
Information and
Treatment Options**



UNDERSTANDING YOUR HEART

HOW YOUR HEART WORKS

Your heart beats thousands of times per day, pumping dozens of gallons of blood each hour. It pumps blood through your lungs, where the blood is replenished with oxygen, and pumps it back out to the rest of your body.

The heart has four chambers; the upper two chambers are called the left atrium and right atrium, and the lower two are called the left ventricle and right ventricle.

Heart valves are the doorways between these chambers. They open to let blood pass from one chamber to the next, closing quickly between heartbeats so blood does not flow backward.

UNDERSTANDING YOUR MITRAL VALVE DISEASE

WHAT IS THE MITRAL VALVE?

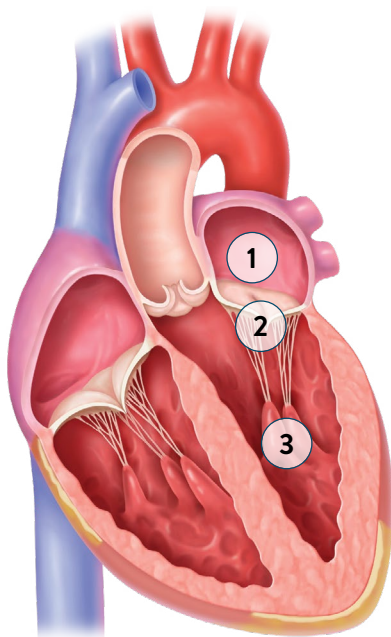
It is one of four valves in your heart that helps to keep blood moving correctly through the heart.

WHERE IS IT LOCATED?

The mitral valve is part of the left side of your heart, between the left atrium and left ventricle.

WHAT DOES IT DO?

Under normal conditions, oxygen-rich blood flows into the left atrium from the lungs. When the left atrium is filled, the mitral valve opens to allow the blood to flow into the left ventricle. The mitral valve then closes to prevent blood from flowing backward. All of this happens in a matter of seconds, tens of thousands of times per day.



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1. Left Atrium
 2. Mitral Valve
 3. Left Ventricle

WHAT HAPPENS WHEN THE MITRAL VALVE DOESN'T WORK CORRECTLY?

When the mitral valve loses its ability to open or close properly, it's typically the result of one of two conditions: mitral regurgitation (MR) or mitral stenosis (MS).

MITRAL REGURGITATION: WHAT YOU NEED TO KNOW

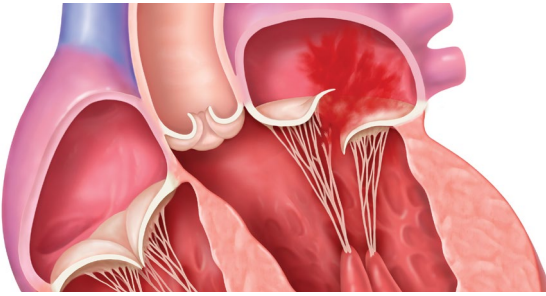
When your mitral valve's two leaflets (or flaps) do not close properly, some blood flows backward through the valve back into the left atrium. This is called mitral regurgitation (or MR). To compensate and keep blood flowing through the body, the left ventricle pumps harder. This strain can lead to other heart complications.

SYMPTOMS OF MITRAL REGURGITATION MAY INCLUDE:

- Shortness of breath
- Fatigue
- Coughing
- Lightheadedness
- Heart palpitations
- Swollen feet or ankles

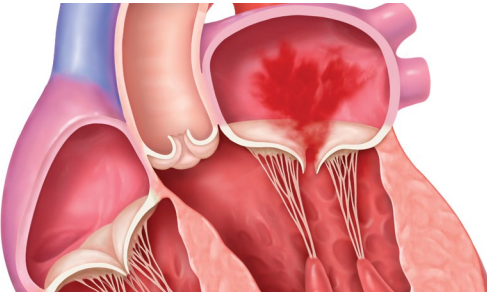
Left untreated, mitral regurgitation may lead to congestive heart failure and eventually death.

1 IN 10 PEOPLE
AGE 75 & OLDER HAVE
MITRAL REGURGITATION.¹



PRIMARY MR

A faulty valve does not close properly or completely, allowing blood to flow backward into the left atrium



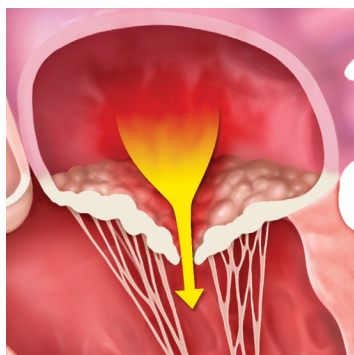
SECONDARY MR

Abnormalities in the left ventricle distort or separate the leaflets

THERE ARE TWO TYPES OF MITRAL REGURGITATION (MR)

One type of mitral regurgitation is called **primary MR** (also called degenerative or organic). It is caused by an abnormality in the mitral valve itself. Primary MR can be related to age, a valve abnormality present from birth, heart disease, coronary artery disease, or a history of rheumatic fever.

Secondary (or functional) **MR** is a condition that develops after heart disease causes the left ventricle to enlarge, misshape, or weaken. The abnormality to the left ventricle distorts or separates the typically normal mitral valve leaflets and prevents them from closing completely.



MITRAL STENOSIS

MITRAL STENOSIS:

WHAT YOU NEED TO KNOW

The mitral valve has two flaps of tissue, called leaflets, that open and close to ensure that blood flows in only one direction. Mitral stenosis is a narrowing of the mitral valve. In some cases, the two leaflets become thick or stiff and may fuse together. Because of this, the valve doesn't open properly or fully, which limits the flow of blood into the left ventricle.

The main cause of mitral stenosis is scarring from rheumatic fever, which is now rare in the United States.

SYMPTOMS OF MITRAL STENOSIS MAY INCLUDE:

- Shortness of breath
- Fatigue
- Coughing up blood
- Dizziness or fainting
- Heart palpitations
- Swollen feet or legs
- Chest pain or discomfort

Left untreated, mitral stenosis can lead to serious heart complications.

WHAT ARE YOUR TREATMENT OPTIONS?



MEDICAL MANAGEMENT

Medications may be prescribed to help manage symptoms of mitral valve disease, such as diuretics for fluid buildup in the legs and lungs. However, these medications only treat the symptoms and do not address the underlying problem.



MITRAL VALVE SURGERY

Considered the most effective long-term treatment for mitral valve disease, surgery gives you the greatest probability for a safe and effective solution over time. Several types of surgical procedures are available for the repair or replacement of the mitral valve. These include traditional open-heart surgery (with an incision over the chest and sternum), minimally invasive surgery that does not involve opening the chest, and less invasive robotic and transcatheter procedures.

Treatment guidelines increasingly recommend mitral valve surgery over medications.²



SURGICAL MITRAL VALVE REPAIR

If mitral valve repair is an option for you, a surgical technique called an annuloplasty may be performed. This procedure typically involves the implantation of a device surrounding the mitral valve ring, or annulus. The device pulls the leaflets together to facilitate coaptation and aids in reestablishing mitral valve function. When needed, other additional techniques may be used to repair the valve involving the leaflets or chords of the valve.



SURGICAL MITRAL VALVE REPLACEMENT (MVR)

If the mitral valve cannot be repaired, your doctor may recommend valve replacement with an artificial (prosthetic) valve. Two types of prosthetic mitral valves are available: mechanical or tissue.



TRANSCATHETER MITRAL VALVE REPAIR (TMVR)

Transcatheter mitral valve repair is a less invasive procedure that may be an option for patients with severe MR. Unlike surgery, this procedure does not require chest incisions and temporarily stopping the heart. In this procedure a clip will be implanted onto the center of your mitral valve. This reduces mitral regurgitation, and the valve continues to open and close on either side of the clip, allowing blood to flow through.

CHOOSING BETWEEN A MECHANICAL VALVE OR A TISSUE VALVE

Mechanical valves are made of strong, long-lasting materials such as carbon and titanium and are designed to last for the rest of the patients' life. However, patients are required to take daily blood-thinning medication for the rest of their lives to help prevent blood clots.^{2,3}

Tissue valves are made with tissue from pig or bovine heart tissue (or a combination of the two) and can last about 10 to 15 years, requiring another surgery or procedure to replace the valve if it wears out. Tissue valves do not usually require long-term use of blood-thinners.^{2,3}

To determine what type of valve is best for you, your doctor will take many factors into consideration, such as your age, overall health, and medication requirements.²



**LESS THAN
50 YEARS
OLD:**

A mechanical valve is recommended based on a review of current clinical evidence and a discussion with your doctor, especially if:

- You can safely take a blood thinner and are willing to do so
- You are already taking a blood thinner for another health problem

A tissue valve may be considered depending on your lifestyle

**BETWEEN
50 TO 70
YEARS OF
AGE:**

The type of valve recommended will be based on a review of current clinical evidence and a discussion with your doctor

**GREATER
THAN 70
YEARS
OLD:**

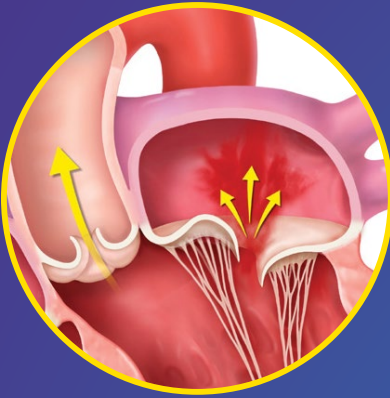
A tissue valve may be recommended with some exceptions depending on your clinical situation if:

- You do not want to take a blood thinner or you cannot take it safely
- You are willing to have another valve replacement procedure if the tissue valve wears out

In rare cases, a MHV may be recommended⁴

Most patients can expect to return to a normal quality and length of life for their age following surgery.⁵

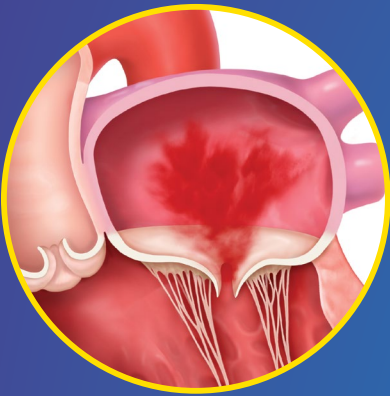
DIAGNOSIS:



Primary mitral regurgitation
prolapse



Primary mitral regurgitation
flail

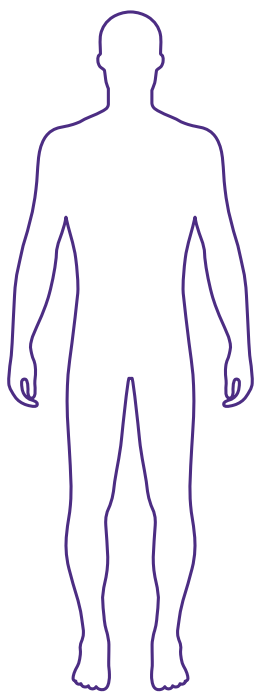


Secondary mitral
regurgitation



Mitral valve
stenosis

TREATMENT PLAN:



- ☐ SURGICAL MITRAL VALVE REPAIR
- ☐ SURGICAL MITRAL VALVE REPLACEMENT MECHANICAL
- ☐ SURGICAL MITRAL VALVE REPLACEMENT TISSUE
- ☐ TRANSCATHETER MITRAL VALVE REPAIR

NOTES: _____

**TREATMENT CAN LEAD TO A MORE COMFORTABLE,
ACTIVE LIFE. PLEASE SHARE THIS GUIDE WITH YOUR
FAMILY AND DISCUSS ALL TREATMENT OPTIONS WITH
YOUR DOCTOR.**

REFERENCES:

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2. Nishimura RA, Otto CM, Bonow RO, et al. 2017 AHA/ACC focused update of the 2014 AHA/ACC Guideline for the management of patients with valvular heart disease. *Circulation*. 2017;135(25):e1159-e1195.
3. Harris C, Croce B, Cao C. Tissue and mechanical heart valves. *Ann Cardiothorac Surg*. 2015;4(4):399.
4. Data on file at Abbott.
5. Tan MK, Jarra OA, Thong EH, et al. Quality of life after mitral valve intervention. *Interact Cardiovasc Thorac Surg*. 2017;24(2):265-272.

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