Learning About Mitral Regurgitation (MR)

Causes | Symptoms | Treatment Options
How Your Heart Works

Your heart **pumps blood through your lungs to replenish it with oxygen**, and then pumps the oxygen-rich blood back out to the rest of your body.

The heart has **four chambers**; the upper two chambers are called atria (each one is an atrium), and the lower two are called ventricles. There are **four valves that function as the doorways** between these chambers. Each valve is made of thin but strong flaps of tissue called leaflets.

The **valves open in one direction** to let blood pass from one chamber to the next, closing quickly between heartbeats **so blood does not flow backward**.
HOW YOUR HEART WORKS

- Explain the role of the heart in blood circulation and describe its anatomy (four chambers, four valves)
- Discuss how the valves function to keep blood flowing in one direction within the heart

How Your Heart Works

Your heart pumps blood through your lungs to replenish it with oxygen, and then pumps the oxygen-rich blood back out to the rest of your body.

The heart has four chambers; the upper two chambers are called atria (each one is an atrium), and the lower two are called ventricles. There are four valves that function as the doorways between these chambers. Each valve is made of thin but strong flaps of tissue called leaflets.

The valves open in one direction to let blood pass from one chamber to the next, closing quickly between heartbeats so blood does not flow backward.

Note: pulmonary valve not shown.
The Mitral Valve and MR

The mitral valve is the **valve between the left atrium and left ventricle** of your heart.

The mitral valve has **two tissue leaflets** (or flaps) that open and close to **ensure blood flows in only one direction** between the left atrium and left ventricle.

**When the mitral valve is damaged,** the valve doesn’t seal completely. As a result, some **blood leaks backward into the left atrium.** This “leaky heart valve” is a condition called **mitral regurgitation.**
THE MITRAL VALVE AND MR

- Describe the location of the mitral valve and how the leaflets function
- Explain what happens when the mitral valve is damaged and define mitral regurgitation

The Mitral Valve and MR

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

The mitral valve has two tissue leaflets (or flaps) that open and close to ensure blood flows in only one direction between the left atrium and left ventricle.

When the mitral valve is damaged, the valve doesn’t seal completely. As a result, some blood leaks backward into the left atrium. This "leaky heart valve" is a condition called mitral regurgitation.

Normally functioning mitral valve

Improperly functioning mitral valve allowing blood to flow back into left atrium (mitral regurgitation)
Symptoms of MR

MR makes the heart and lungs work harder than normal. In some cases, patients may have MR but not experience any symptoms. In other cases, patients may experience symptoms such as:

- Fatigue
- Inability to exercise
- Decrease in appetite
- Dry, hacking cough (often worse when lying down)
- Shortness of breath (especially at night)
- Fainting
- Weight gain from retaining fluid
- Accumulation of fluid in feet, ankles, and lungs (edema)

If you have any of these symptoms, it’s important that you be screened for MR as soon as possible. Treatment can reduce MR and improve quality of life.
SYMPTOMS OF MR

- Explain how MR impacts the heart and lungs
- Discuss the various symptoms that patients with MR may experience

MR makes the heart and lungs work harder than normal. In some cases, patients may have MR but not experience any symptoms. In other cases, patients may experience symptoms such as:

- Fatigue
- Inability to exercise
- Decrease in appetite
- Dry, hacking cough (often worse when lying down)
- Shortness of breath (especially at night)
- Fainting
- Weight gain from retaining fluid
- Accumulation of fluid in feet, ankles, and lungs (edema)

If you have any of these symptoms, it’s important that you be screened for MR as soon as possible. Treatment can reduce MR and improve quality of life.
Why Is MR a Problem?

**MR CAN WEAKEN YOUR HEART**

To make up for the backflow of blood, your left ventricle must pump harder to keep blood flowing through your body. This strain can enlarge and weaken your heart.

**MR GETS WORSE OVER TIME AND MAY LEAD TO HEART FAILURE**

The extra burden on your heart and lungs may lead to congestive heart failure, a condition that occurs when your heart can’t pump enough blood to meet the needs of your body. This can severely impact quality of life and make it harder to perform simple day-to-day tasks.

There are ways to treat MR. If you have been diagnosed with MR, it’s important to discuss treatment options with your doctor as soon as possible.
WHY IS MR A PROBLEM?

- Explain how MR can damage and weaken the heart
- Discuss heart failure and its impact on quality of life

Why Is MR a Problem?

MR CAN WEAKEN YOUR HEART

To make up for the backflow of blood, your left ventricle must pump harder to keep blood flowing through your body. This strain can enlarge and weaken your heart.

MR GETS WORSE OVER TIME AND MAY LEAD TO HEART FAILURE

The extra burden on your heart and lungs may lead to congestive heart failure, a condition that occurs when your heart can’t pump enough blood to meet the needs of your body. This can severely impact quality of life and make it harder to perform simple day-to-day tasks.

As MR progresses it weakens the patient's ability to complete day-to-day tasks.

There are ways to treat MR. If you have been diagnosed with MR, it’s important to discuss treatment options with your doctor as soon as possible.
MR Facts

- Mitral regurgitation is the **most common type of heart valve condition**
- About **1 in 10** people aged **75 and older** have moderate or severe MR
- MR gets worse over time and can **lead to heart failure**, a potentially deadly condition
- Despite the serious complications that can occur, **MR often goes untreated**
- Many patients with MR **may not have any symptoms** (known as asymptomatic MR)

**Early screening and diagnosis can help prevent serious complications** resulting from MR

MR FACTS

- Discuss the prevalence of MR
- Emphasize that MR gets worse over time and can lead to heart failure, yet often goes untreated
- Explain that some patients with MR may not experience any symptoms
- Stress the importance of early diagnosis and treatment to help prevent serious complications

MR Facts

- Mitral regurgitation is the most common type of heart valve condition
- About 1 in 10 people aged 75 and older have moderate or severe MR
- MR gets worse over time and can lead to heart failure, a potentially deadly condition
- Despite the serious complications that can occur, MR often goes untreated
- Many patients with MR may not have any symptoms (known as asymptomatic MR)

Early screening and diagnosis can help prevent serious complications resulting from MR

Types of MR

THERE ARE TWO TYPES OF MR:

**Degenerative MR**
Also known as primary or organic MR, degenerative MR is usually due to an anatomic abnormality of the mitral valve itself. It can be related to age, a birth defect, underlying heart disease, or a history of rheumatic fever.

**Functional MR**
Also known as secondary MR, functional MR is caused by problems with the heart that force blood backward through an otherwise normal mitral valve.
TYPES OF MR

- Define the two types of MR and what causes them

**Types of MR**

**THERE ARE TWO TYPES OF MR:**

1. **Degenerative MR**
   
   Also known as primary or organic MR, degenerative MR is usually due to an anatomic abnormality of the mitral valve itself. It can be related to age, a birth defect, underlying heart disease, or a history of rheumatic fever.

2. **Functional MR**
   
   Also known as secondary MR, functional MR is caused by problems with the heart that force blood backward through an otherwise normal mitral valve.
Diagnosing MR

A NUMBER OF EXAMS ARE TYPICALLY USED IN COMBINATION TO MAKE AN MR DIAGNOSIS:

Physical Exam
Doctors can often make the initial diagnosis of MR using a stethoscope to listen for the sound of a murmur in your heart.

Echocardiogram and Stress Test
Echocardiography, also called an echo test or heart ultrasound, uses sound waves to create images of your heart, including the mitral valve, and the flow of blood through it. The echo allows the physician to examine your mitral valve and to measure the amount of blood leakage (regurgitation).

Your doctor may perform the echocardiogram both before and after your heart is stressed by having you exercise. This is called a “stress echo.”

Other Tests
Your doctor may perform other tests, such as a chest x-ray to see the size and shape of your heart and lungs, or a CT scan to create images of your mitral valve.

A NUMBER OF EXAMS ARE TYPICALLY USED IN COMBINATION TO MAKE AN MR DIAGNOSIS:

Physical Exam
Doctors can often make the initial diagnosis of MR using a stethoscope to listen for the sound of a murmur in your heart.

Echocardiogram and Stress Test
Echocardiography, also called an echo test or heart ultrasound, uses sound waves to create images of your heart, including the mitral valve, and the flow of blood through it. The echo allows the physician to examine your mitral valve and to measure the amount of blood leakage (regurgitation).

Your doctor may perform the echocardiogram both before and after your heart is stressed by having you exercise. This is called a “stress echo.”

Other Tests
Your doctor may perform other tests, such as a chest x-ray to see the size and shape of your heart and lungs, or a CT scan to create images of your mitral valve.

Treatment Options—Medicines

Physicians may prescribe medications that make symptoms of MR more manageable, including:

- Diuretics to reduce fluid buildup in the lungs and legs
- Beta blockers, which lower blood pressure and relax blood vessels
- Blood thinners to help prevent blood clots

However, these medications do not address the underlying problems that cause MR, nor do they prevent or correct the damage to the heart caused by MR.
TREATMENT OPTIONS—MEDICINES

- Discuss the various medications that are used to manage the symptoms of MR
- Explain that these medications do not address the underlying causes of MR or prevent further damage to the heart

Treatment Options—Medicines

Physicians may prescribe medications that make symptoms of MR more manageable, including:

- Diuretics to reduce fluid buildup in the lungs and legs
- Beta blockers, which lower blood pressure and relax blood vessels
- Blood thinners to help prevent blood clots

However, these medications do not address the underlying problems that cause MR, nor do they prevent or correct the damage to the heart caused by MR.
There are two types of surgery to reduce MR:

1. **MITRAL VALVE REPAIR**: In most cases, this is the preferred surgical option, because it preserves the mitral valve apparatus.

2. **MITRAL VALVE REPLACEMENT**: This procedure actually replaces the damaged valve that causes MR and is performed when repair is not suitable.

**SURGERY IS NOT AN OPTION FOR EVERYONE.** Mitral valve repair or replacement typically involves open-heart surgery, and some patients cannot have surgery due to their risk of death and complications.
TREATMENT OPTIONS—SURGERY

- Discuss the surgical options to repair or replace the mitral valve
- Explain why this type of surgery is not an option for certain patients

There are two types of surgery to reduce MR:

1. **MITRAL VALVE REPAIR:** In most cases, this is the preferred surgical option, because it preserves the mitral valve apparatus.

2. **MITRAL VALVE REPLACEMENT:** This procedure actually replaces the damaged valve that causes MR and is performed when repair is not suitable.

**SURGERY IS NOT AN OPTION FOR EVERYONE.**
Mitr valve repair or replacement typically involves open-heart surgery, and some patients cannot have surgery due to their risk of death and complications.
Percutaneous mitral valve repair (PMVR) is a minimally invasive procedure that uses a catheter to access the heart and repair the mitral valve.

- An option for patients with severe functional or degenerative MR who aren’t suitable for surgery due to age, advanced heart failure, or other serious medical conditions.
- Patients generally have a full recovery during their short time in the hospital.
- As with any procedure, there are risks associated with PMVR that your doctor will discuss with you.
TREATMENT OPTIONS—PMVR

- Introduce percutaneous mitral valve repair (PMVR) as an option for patients considered too high risk for surgery
- Emphasize that PMVR is a minimally invasive procedure with a short recovery time
- Discuss the benefits of PMVR
- Explain the risks associated with PMVR

Treatment Options—PMVR

Percutaneous mitral valve repair (PMVR) is a **minimally invasive procedure** that uses a catheter to access the heart and repair the mitral valve.

- An **option for patients** with severe functional or degenerative MR who aren’t suitable for surgery due to age, advanced heart failure, or other serious medical conditions
- Patients generally have a full recovery during their **short time in the hospital**
- As with any procedure, there are **risks associated with PMVR** that your doctor will discuss with you
The PMVR Procedure

1. You will be placed under **general anesthesia** during the procedure and a ventilator will be used to help you breathe.

2. A catheter (thin tube) is inserted through a **vein in your thigh** to reach your heart.

3. A **small device** (clip) is guided to the mitral valve through the catheter and carefully positioned.

4. The device then **grasps the two leaflets** to close the mitral valve and **reduce MR**.

5. Once in place, the device **allows blood to flow in one direction** on both sides of the clip. The catheter is then removed.
THE PMVR PROCEDURE

- Discuss the various steps involved in the PMVR procedure
- Describe the clip and how it works to reduce MR

The PMVR Procedure

1. You will be placed under **general anesthesia** during the procedure and a ventilator will be used to help you breathe

2. A catheter (thin tube) is inserted through a **vein in your thigh** to reach your heart

3. A **small device** (clip) is guided to the mitral valve through the catheter and carefully positioned

4. The device then **grasps the two leaflets** to close the mitral valve and **reduce MR**

5. Once in place, the device **allows blood to flow in one direction** on both sides of the clip. The catheter is then removed
Staying Healthy After MR Treatment

To help maintain an improved quality of life following your treatment for MR, it’s **important that you:**

- Keep all appointments for follow-up care
- Follow your doctor’s instructions
- Take all your medications as prescribed
- Stay active
- Eat a healthy diet
STAYING HEALTHY AFTER MR TREATMENT

- Summarize the important steps patients need to take to maintain an improved quality of life following their MR treatment

Staying Healthy After MR Treatment

To help maintain an improved quality of life following your treatment for MR, it's important that you:

- Keep all appointments for follow-up care
- Follow your doctor's instructions
- Take all your medications as prescribed
- Stay active
- Eat a healthy diet