What is the mitral valve?
The mitral valve is located between the left atrium (upper chamber) and left ventricle (lower chamber) of the heart. It acts as the doorway between the upper and lower chambers of the heart.

A normal mitral valve has two flaps or leaflets that open and close with each heartbeat. It opens to allow blood to flow from the left atrium into the left ventricle, and closes when the left ventricle contracts to keep blood from flowing back to the left atrium.

What is mitral regurgitation?
Mitral regurgitation happens when the mitral valve doesn’t close properly. As a result, when the heart contracts or squeezes, blood can leak backward into the left atrium and sometimes into the lungs.

There are two types of mitral regurgitation.

• **Primary (degenerative)** occurs when there is an abnormality or injury involving the valve leaflets themselves
• **Secondary (functional)** occurs when the valve itself is normal, but problems with the heart muscle keep the valve leaflets from fully closing

Regardless of the type of mitral regurgitation, it means less blood is pumped out to the body. Because blood can be pumped backwards, it can affect the lungs and impact a person’s breathing.

Mitral regurgitation often develops slowly over many years, even decades. But in some cases, such as after a heart attack, it can progress rapidly.
What causes it?

It usually happens because the valve is damaged in some way. Common causes include:

- The valve or cords that anchor the flaps or leaflets to the heart become weak, stretched or torn over time
- Mitral valve prolapse when the valve is deformed or bulges back into the left atrium
- Inflammation of the valve from rheumatic fever, a complication of untreated strep throat, which can cause permanent thickening or scarring
- Heart attack
- Infection of the valve (endocarditis)
- Cardiomyopathy in which the heart muscle thickens or dilates and can change the way the leaflets close together
- Trauma (car accident)
- Heart problems or deformity present at birth (congenital heart defect)

Anyone who develops any of the above is at risk for developing mitral regurgitation.

What are the signs and symptoms?

People with mild mitral regurgitation may not have any symptoms. For those who do have symptoms, you may have:

- Shortness of breath especially during activity and/or when you lie down
- Extreme tiredness/fatigue
- Dizziness
- Chest pain
- Heart palpitations — a rapid, fluttering, irregular heartbeat
- Swollen feet or ankles

Sometimes people will find out they have mitral regurgitation after being diagnosed with heart failure or other issues that can develop from having it.
How is it diagnosed?

It’s usually found or suspected during a routine visit. Your doctor may listen to your heart using a stethoscope and notice a murmur or other abnormal pattern.

He or she may order other tests to look at your heart valves and see how they are working. Examples may include:

- **Echocardiogram** — an ultrasound of the heart
- **Magnetic Resonance Imaging (MRI)** — helps show anatomy and sizing of the valve
- **Cardiac catheterization** — a test to check how the blood is flowing in the heart’s arteries and to find out how well your valves are working

Why is mitral regurgitation a concern?

When there is too much pressure in the heart from blood flowing back into the atrium, the heart must work harder to keep up with body’s demand for oxygen-rich blood. This is why many people feel weak and short of breath.

Other complications may occur that need to be managed. These may include:

- **Atrial fibrillation**
- **Heart failure**
- **Blood clots**
- **Pulmonary hypertension**

How is it treated?

Treatment will depend on:

- **How bad the leak is**
- **Your symptoms**
- **Your heart function**
- **The suspected cause or type of mitral regurgitation (primary or secondary) and whether it seems to be getting worse**
- **Other medical conditions**
Treatments may include a combination of:

- **Medications** to help ease symptoms by reducing the workload of the heart or to prevent blood clots:
  - Diuretics
  - ACE inhibitors
  - Vasodilators
  - Anticoagulants

- **Valve repair or replacement**
  These procedures are done in an operating room under general anesthesia and either involve:
  - Repairing or reshaping your valve so that it closes better to prevent or reduce the amount of blood that can flow backwards
  - Replacing your valve with a new mechanical or tissue-based valve, which may be better for people with secondary mitral regurgitation

If you decide to have your valve repaired or replaced, it is important to find a heart team and surgeon with experience treating mitral regurgitation. Talk with your doctor about the best option for you, and whether a less invasive approach is appropriate.

- **Ongoing monitoring**
  In some cases, your doctor may decide to monitor you to decide if and what treatments are needed. Repeat echocardiograms are often used, especially after a valve repair or replacement, to look at how the valve is working.
Questions to ask

It is important to talk with your health care team about how you are feeling, and ask questions. Questions you might ask include:

- What is likely causing my valve disease?
- What tests do I need?
- What’s the best treatment for me?
- At what point would I need to consider surgery?
- What are the pros and cons of valve repair vs. replacement?
- What are the main concerns with surgery?
- How often can I exercise? Are there activities I should avoid?
- Should I see a heart valve specialist or team?
- How many valve replacements or valve repairs do you or the referring surgeon perform a year?
- What other steps can I take to stay heart healthy?
- Am I at risk for other complications?
Resources

CardioSmart has a wealth of information about valve diseases, as well as various tests and treatments. Visit www.CardioSmart.org for more information. You can also find resources at:

National Heart, Lung, and Blood Institute
www.nhlbi.nih.gov

Information provided for educational purposes only. Please consult your health care provider regarding your specific health needs.

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