The Condition: Mitral Valve Prolapse

Your mitral valve separates the upper and lower chambers of the left side of your heart. Your mitral valve has two flaps that control blood flow. When the valve opens, it allows blood to flow into your heart’s main pumping chamber. When this chamber contracts to push blood out of your heart, your mitral valve closes to stop blood from flowing backwards.

If your mitral valve flaps do not work as they should, some blood flows backwards. This is called regurgitation or prolapse. It makes the heart work harder and can increase the risk of heart failure.

Mitral valve prolapse is common and occurs in women more often than men. It can occur over time or your mitral valve can be abnormal at birth. Many people have no symptoms at all. If you do have symptoms, they may include a fast heartbeat, chest pain, fatigue, a hard time breathing after activity, or shortness of breath.
If your symptoms are mild, your doctor may suggest medicine or lifestyle changes. If your symptoms become worse, your doctor may suggest surgery. The goal of surgery is to allow your valve to open and close properly. There are two common types of mitral valve surgery: valve repair and valve replacement.

Valve Replacement: With valve replacement, your surgeon cuts out the damaged valve and replaces it with a new valve. The new valve may be mechanical (from man-made materials) or biological (from human or animal tissue).

Valve Repair: With valve repair, your surgeon rebuilds one or more of the valve flaps/leaflets using your own tissue.

Your doctor will fully explain the pros and cons of replacing your valve versus repairing it.
During mitral valve surgery, a heart-lung machine is used. This machine takes over the function of your heart and lungs during surgery. It allows doctors to operate on a blood-free and still surface.

**Open Surgery:** Mitral valve surgery may be performed using open surgery through a large incision (cut).

During open surgery, doctors make a large incision and cut through your breastbone (sternum) to reach your heart. The incision must be large enough for your surgeon to fit his or her hands and instruments inside your chest to reach your heart.

**Minimally Invasive Surgery:** During minimally invasive surgery, specifically mini-thoracoscopy, doctors repair or replace your valve through one or more small incisions instead of a large incision. Long, thin instruments and a tiny camera are inserted through the incisions to reach your heart. The camera sends images to a monitor to guide surgeons as they operate.

Another minimally invasive option for patients facing valve surgery is **da Vinci Surgery**.
**da Vinci Surgery:**

A Minimally Invasive Surgery Option

Using the *da Vinci* Surgical System, your surgeon makes a few small incisions between your ribs. The *da Vinci* System has a magnified 3D high-definition vision system and tiny instruments that bend and rotate far greater than the human hand. These features enable your doctor to operate with enhanced vision, precision, and control.

*da Vinci* Mitral Valve Repair Surgery offers the following potential benefit compared to open surgery:

- **Shorter hospital stay**\(^3,4,5,6,7\)

Clinical data suggests *da Vinci* Mitral Valve Repair Surgery offers the following potential benefits:

- **Low need for blood transfusions**\(^3\)
- **Short time in intensive care**\(^4\)
- **Low rate of pleural effusions after surgery** (excess fluid around the lung)\(^6\)
- **Fast improvement of physical function after surgery**\(^8\)
- **Small incisions for minimal scarring**

The *da Vinci* System has brought minimally invasive surgery to more than 3 million patients worldwide. *da Vinci* technology – changing the experience of surgery for people around the world.
Risks & Considerations Related to Mitral Valve Repair Surgery (surgery on an abnormal/leaking mitral valve): repair fails requiring another operation, stroke caused by a clot that gets stuck in smaller arteries of the brain, heart failure (heart cannot pump enough blood to the body), tear in the aortic wall causes it to separate, lengthy time on a breathing machine of 48 hours or more, lengthy time for a heart lung machine, extracorporeal membrane oxygenation (outside body technique to provide cardiac and respiratory support), intraaortic balloon pump (mechanical device to increase oxygen to cardiac muscles) or other cardiac assist systems, fluid in the lungs, sudden lack of blood flow to a limb due to a block in the blood stream, valve infection, irregular heartbeat that requires a pacemaker, sac-like cover around the heart becomes swollen and causes a low fever and chest pain for up to 6 months, bleeding disorder in which the blood cannot properly clot, heart attack, memory loss and/or loss of mental clarity, infections which may affect the kidneys, chest, valves or bladder cut in the major artery(ies) that sends blood to the pelvis and legs, pooling of blood between the chest wall and lung, pressure on the heart when blood/fluids build up between the heart muscle and its outer sac, injury to circumflex coronary artery (blood vessel to heart), inadequate closure.
Important Information for Patients:
Serious complications may occur in any surgery, including da Vinci® Surgery, up to and including death. Risks include, but are not limited to, injury to tissues and organs and conversion to other surgical techniques. If your doctor needs to convert the surgery to another surgical technique, this could result in a longer operative time, additional time under anesthesia, additional or larger incisions and/or increased complications. Individual surgical results may vary. Patients who are not candidates for non-robotic minimally invasive surgery are also not candidates for da Vinci Surgery. Patients should talk to their doctor to decide if da Vinci Surgery is right for them. Patients and doctors should review all available information on non-surgical and surgical options in order to make an informed decision. Please also refer to www.daVinciSurgery.com/Safety for Important Safety Information.
Your doctor is one of a growing number of surgeons worldwide offering da Vinci Surgery.

For more information and to find a da Vinci Surgeon near you, visit: www.daVinciSurgery.com