Facing open-heart surgery to replace or repair a heart valve?

You are not alone. Heart valve disease is very common.

- Each year, more than 700,000 patients undergo some type of heart surgery globally.
- You may recognize some of their faces. Barbara Walters, Barbara Bush, Robin Williams, Arnold Schwarzenegger, and Elizabeth Taylor have all had heart valve surgery.¹

Surgery may be recommended if your doctor determines that one of your heart valves needs to be repaired or replaced.

Learn more about your heart valves, heart valve disease, and the surgical procedures that correct it.

What a heart valve does

Your heart is a powerful muscle that is designed to keep blood moving through every part of your body. Your heart continually pumps blood that comes from the lungs, where the blood picks up oxygen, and is delivered to the rest of the body. When the blood returns to the heart after delivering the oxygen, the heart pumps it back to the lungs to pick up oxygen again.

For this process to work efficiently, the blood must move freely and in only one direction. Your heart valves open to permit blood to move forward, and then close to prevent blood from moving backward.

- Blood is pumped through the mitral and tricuspid valves as it enters the heart. These two valves control blood flow between the upper and lower chambers of the heart.
- On its way out of the heart, blood passes through the pulmonary and aortic valves.

Valve Disease

Several things can go wrong with the heart’s valves.

- A person can be born with a defective heart valve.
- In approximately 4 to 5% of the general population, a valve wears out and begins to leak, or fails to open completely.

When a worn-out valve fails to close properly or leaks (prolapses), blood flows backward (regurgitates) and the heart must work harder to pump the same amount of blood. Most often, it is the mitral valve that leaks.

- Calcium deposits may harden and narrow a valve.

This narrowing (stenosis), keeps the valve from opening completely and reduces the amount of blood that can flow through it. The risk of blood clots increases and the heart has to work harder.

This type of problem generally affects the aortic valve.

- Some types of infection may also lead to problems with a heart valve.

The bacteria that cause rheumatic fever can damage the heart, especially its valves, and an infection called bacterial endocarditis can deform or damage heart valves.
The symptoms of valve disease
A worn out or damaged heart valve can cause some or all of these symptoms:

- Shortness of breath
- Feeling tired (fatigue) during exertion
- A cough, especially a cough at night or when laying down
- An irregular or abnormally fast heart beat (palpitations)
- Swollen feet or ankles
- Pain or tightness in the chest
- Dizziness

Even a relatively insignificant leak in a valve can cause severe symptoms.

If you have symptoms, you may require surgery to repair or replace the diseased valve.

Sometimes there are no symptoms
Some people who have serious heart disease are not aware that there is a problem. Hidden symptoms may be uncovered when these people undergo an exercise test.

At this time, there is no specific medical treatment for patients who have not yet developed symptoms. Even if you are not yet aware of any symptoms, your doctor may recommend surgery if you are diagnosed as having heart valve disease.

Tests your doctor may use to diagnosis valve disease
After discussing your symptoms and listening to your heart to check for a murmur, the doctor may use a number of different tests to “see” how it is working before diagnosing valve disease as the cause of your symptoms.

- A chest x-ray can determine the size of your heart
- An electrocardiogram (also called an ECG or EKG) can detect a problem with your heart’s rhythm and some problems with how the blood flows
- An ultrasound test called an echocardiogram makes it possible to watch each heart valve, checking on its structure and thickness, as it opens and closes. Your doctor may order a special type of this test, called a transesophageal echocardiogram.
- A special type of x-ray called a radionuclide scan, uses a “tracer” chemical to produce images of a specific organ, such as the heart.

Traditional heart valve surgery
During typical “open-chest” surgery to repair or replace a heart valve:

- The surgeon makes one large main incision in the middle of the chest through the breastbone to access the heart.
- A heart-lung machine takes over the job of circulating blood throughout the body during the surgery, because the heart must be still and quiet while the surgeon operates.

There is an alternative to traditional “open-chest” surgery
Many surgeons are now able to offer their patients minimal incision valve surgery as an effective alternative to open-chest heart valve surgery.
How minimal incision valve surgery is performed

Minimal incision valve surgery does not require a large incision or cutting through the entire breastbone because the surgeon:

- Can gain access through one of three smaller, much less visible incisions (sometimes called “ports”). These incisions are made either between the ribs, or a smaller incision through the breastbone, as well as a smaller incision in the groin.

Repairs or replaces the diseased valve through one or more of the ports, looking at the heart directly or through a small, tube-shaped camera.

Our doctors will evaluate whether you are a candidate for a minimal incision procedure instead of traditional open-chest surgery.

During the more than 15 years that this surgical option has been available, numerous studies have demonstrated that a minimal incision approach offers patients a number of advantages, including:

- Less pain and trauma to the body
- Lower risk of complications
- Faster recovery and return to normal activity

The less invasive approach reduces the possibility of complications related to a full incision through the breastbone.

Most patients recover more quickly after a minimal incision procedure.

Patients typically spend less time in the intensive care unit after surgery, and are able to return home sooner. Many patients (46%) return to work within 4 weeks. By the eighth week, 71% are back at work or resuming normal activities. In comparison, it takes an average of 10 weeks to return to normal activity after a typical open-chest procedure.

- A smaller, less visible scar

Most patients are very pleased with the cosmetic results of the procedure. Unlike a larger scar in the middle of the chest, the smaller scar is hardly visible.

Most patients report that they would choose the minimal incision approach again if they found themselves facing the same situation.