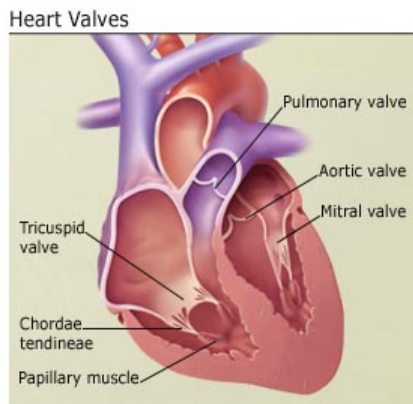


Medtronic Hall Easy-Fit Mechanical Heart Valve

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The human heart contains four chambers, each of which contains a valve located at the exit of the chamber. Heart valves include the pulmonary valve, aortic valve, mitral valve, and tricuspid valve. These valves allow for blood to flow easily in the proper direction, and prevent blood from flowing and leaking in the wrong direction. Every time your heart beats, these valves are opening and closing, allowing for blood to be circulated throughout the body.



When one of these heart valves does not function properly, the individual has “heart valve disease”. 5 million Americans each year will learn they have heart valve disease. This disease can be congenital or acquired. Bacterial infections such as rheumatic fever and endocarditis can damage heart valves. Other causes include the chordae tendineae or papillary muscles tearing or stretching, the annulus dilating, or the leaflets of the valves can become stiff. Eventually, heart valve disease can lead to heart failure depending on the severity of the condition. If the valve is severely damaged, total valve replacement is an option.

Heart valve replacement requires the complete removal of the damaged heart valve, and replacing it with an artificial valve. 95% of all heart valve replacements are performed for mitral or aortic valves. Heart valves can be taken directly from a human donor. These are known as Homografts or Allografts and are beneficial for children or pregnant women since they do not require long-term anticoagulation therapy. However, this method is not widely available. Some replacement heart valves are actually valves taken directly from a pig’s heart. These tissue valves are chemically treated and fitted with a thin

polyester mesh ring that allows the valve to be implanted into the human. Another type of valve replacement are mechanical valves. Mechanical valves are designed to replicate the function of a real valve by using a titanium or carbon material that can pivot to allow the proper blood flow. Patients with mechanical heart valves must take blood thinner medication to prevent blood clots from forming.

Medtronic manufactures the “Hall Easy-Fit Mechanical Heart Valve”. This mechanical heart valve is designed to be durable and long lasting, provides a low risk for blood clots, and allows for excellent blood flow. The Hall Easy-Fit Heart Valve is constructed from a pyrolytic carbon disc that can open and close similar to a normal heart valve, and is positioned inside a titanium ring that is covered with a cloth used by the surgeon to attach the device. This mechanical valve has been used for more than 20 years and more than 250,000 implants have been performed. Usually, this valve replaces the aortic or mitral valve.



The Hall Easy-Fit Mechanical Heart valve is completely safe for use with X-rays, and safe for MRI with a magnetic field of less than 3.0 Tesla. This valve gives off a faint clicking sound when it opens and closes. This sound can give the patient piece of mind that the valve is working properly. It is most likely that this specific valve will last throughout the patient’s lifetime.

References:

- <http://www.medtronic.com/your-health/heart-valve-disease/about-surgery/our-heart-valve-products/hall-easy-fit-mechanical-valve/index.htm>
- http://www.medicinenet.com/heart_valve_disease/page_4.htm#tocg
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