Artificial Heart Valves

What is an artificial heart valve?

An artificial heart valve is a man-made device used to replace a heart valve that is not working well. The heart valves work with each heartbeat to keep blood flowing to the body. Sometimes disease may damage a heart valve so that it leaks or stops working. When damaged valves cannot be fixed, artificial valves are used to replace them. This is done during an open-heart surgery called heart valve replacement.

What kinds of artificial heart valves have been developed?

In general, there are 2 kinds of artificial heart valves: mechanical valves and biological valves.

Mechanical valves are made completely from man-made materials. The mechanical valve used most often is a bi-leaflet valve. The bileaflet valve consists of 2 hinged leaflets made of very light and long-lasting material (pyrolytic carbon). When you have a mechanical valve, you must take blood-thinning drugs (anticoagulants) to reduce the risk of blood clots. The main advantage of mechanical valves is that they last a very long time--in most cases 20 years or more.

Biological valves are made from human or animal tissue that has been specially treated so that your body does not reject the valves. After being treated, the valves are attached to man-made materials to give them support. The valves made from human tissue can come from human organ donor hearts or from organ donor pericardium. (The pericardium is a strong sac that covers the heart.) Biological valves do not need the long-term use of blood thinners. They do not last as long as man-made valves, although they probably last longer in older people.

No artificial valve is perfect. However, they offer a second chance for many people with diseased heart valves.

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Published by RelayHealth.