Heart Transplant in Adults

What is it?

A heart transplant is performed by replacing the patient's heart with a donor heart. Doctors remove the patient's heart by transecting the aorta, the main pulmonary artery and the superior and inferior vena cavae, and dividing the left atrium, leaving the back wall of the left atrium with the pulmonary vein openings in place. The donor heart is then connected by sewing together the recipient and donor vena cavae, aorta, pulmonary artery and left atrium. In patients with congenital heart disease, simultaneous transplantation of the lungs and the heart may be required.

Why is it needed?

Heart transplantation is performed in patients with congenital heart disease for several reasons. The most common reason is that one or both ventricles have poor function and severe heart failure is present. Ventricular failure can happen in many forms of congenital heart disease. It’s more common in congenital defects with a single ventricle or if long-standing valve obstruction or leakage have led to irreversible heart failure. Patients who've had the Fontan procedure may need a heart transplant because the blood flow through the venous system is slow and the veins are congested. This leads to swelling, fluid accumulation and/or protein loss.

How does it affect the heart?

The donor heart is matched to the recipient by blood type and body size. The heart transplant recipient must take immunosuppressive medications to prevent his or her immune system from rejecting the new heart. The amount of immunosuppressive medication is balanced against the risk of side effects. Taking too much of the medication can result in infection or cancer.

How does a heart transplant affect me?

A heart transplant gives a patient with congenital heart disease the opportunity to have a normal heart with normal blood circulation. If the transplant goes well, heart function
and blood flow will be better than ever. A patient who has had a heart transplant requires lifelong medication and monitoring for possible rejection.

If my heart transplant happened in childhood, what can I expect?

The transplanted heart grows to adult size as the patient grows. Heart transplant recipients need to take their immunosuppressive medications and other medicines for the rest of their lives to control the transplant’s side effects. During young adulthood, a patient’s medical care will be transitioned from a pediatric to an adult heart transplant cardiologist.

Ongoing Care:

What will I need in the future?

Heart transplant recipients are closely monitored for heart rejection, which can happen in the heart muscle cells or in the heart’s arteries. Side effects of the immunosuppressive medications include diabetes, infection, kidney disease, cancer or high blood pressure. If any of these problems arise, often the immunosuppressive medications type or doses are changed. As new immunosuppressive medications become available, a patient’s medications may be changed.

Medical Follow-up

Heart transplant recipients require regular checkups by a transplant cardiologist. At these visits, blood tests will be done to check the levels of the immunosuppressive drugs and look for side effects. Electrocardiogram, echocardiogram and Holter monitoring help doctors monitor the heart rhythm and function. An endomyocardial biopsy can detect signs of rejection in the heart. Your doctor will evaluate your coronary arteries yearly or every other years to monitor for signs of narrowed coronary arteries in your transplanted heart. You should also have routine medical checkups to maintain overall health if you’ve had a heart transplant.

Activity Restrictions

Heart transplant recipients have no specific activity restrictions. Discuss activity ideas with your transplant cardiologist.

Endocarditis Prevention

Endocarditis prophylaxis isn’t required after a heart transplant, unless significant heart valve disease is present.

Pregnancy

Women who’ve had a transplant could have complications during pregnancy. Depending on the type, immunosuppressive medications may negatively affect the fetus. After delivery, risk of rejection may increase. A transplant recipient who is
considering pregnancy should discuss the pros and cons with her transplant cardiologist and obstetrician.

**Will I need more surgery?**

The rhythm of the transplant heart may become slow and a pacemaker may be needed. Rarely, the tricuspid valve can become damaged by the endomyocardial biopsy procedure and need to be repaired or replaced. In patients with congenital heart disease who have had a coarctation repair or problems with narrow or small pulmonary arteries, surgery or interventional catheterization may be needed after the transplant to increase the size of these areas. The transplanted heart may fail because of rejection, damage to the heart cells or coronary arteries of the heart (which leads to heart failure). In some recipients, doctors can transplant another heart.