VALVE FOR LIFE

Facts About Valve Donation

It's your decision

Your decision to donate your heart valves could make the difference between life and death for someone else. Success rates are very high. Most of the people who receive human heart valves (homografts) return to healthy, productive lives without the need for life long anti-coagulant therapy. You can make a difference. Please think carefully about your decision and discuss it with your family

.

The Heart

The heart consists of 4 chambers: two atria (also referred to as upper chambers) and two ventricles (the lower chambers).
Additionally, the heart is divided into two sides, right and left.
Hence, there is a right atrium, right ventricle, left atrium, and left ventricle. The ventricles are larger than the atria because they have to work (pump) harder to circulate the blood.

Function of the cardiac valves

Each pumping chamber (ventricle) has a one-way valve at its entry and exit that prevents blood from flowing backwards. When each chamber contracts the valve at its exit opens. When it is finished contracting the valve closes therefore preventing backflow.
If these valves do not function properly, many complications can occur. There are 2 main types of valvular heart disease, congenital and acquired. Congenital heart disease is present from birth and may be caused by a chromosomal abnormality. In most cases, however the cause is unclear. Acquired valvular heart disease is much more common. It is generally caused by a disease or injury to the heart, e.g. autoimmune disease related to, rheumatic fever, tumours of the heart muscle, injury to the chest and many other causes. These may occur at any age.

Why heart tissue valves?

In 1962 at Guy's Hospital London the first heart valve (homograft) was implanted into a patient. Demand has now out grown supply.
In the case of valve surgery it is the opinion of many heart surgeons that human heart valves are the best option. Human heart valves have many advantages over other alternatives. They are more resistant to infection and avoid the need for life long anti-coagulant drugs. Silent and as close as possible to normal function, they enable the patient to live a normal life. Durability expectations are 15-20 years. These donations are also used to repair congenital defects in babies and to replace diseased heart valves in adults.
Unlike solid organs, tissue such as heart valves can be stored for extended periods (up to 5 years or longer) in tissue banks, where they are prepared and then issued for transplant.
.

Case Studies

Paul, 11

Paul is 11years old. He was born with major heart defects and has required three heart operations to date. His last operation involved implanting a homograft valve. This last operation has resulted in a major improvement in the quality of his life. He is now able to participate with his peers in school and enjoy scouting activities. Paul is now an active member of his local scout group.

John, 62

John has undergone heart valve replacement surgery. A homograft valve was used; he has made a full recovery. By replacing the valve in this manner, he has returned to an active lifestyle.

Clare

My name is Clare and following complex cardiac surgery in 1975, I had to have repeat surgery in 2001. This time I received a homograft valve (human), which meant that I wouldn't be on long term medication. My surgery went well, and last February I gave birth to a healthy baby girl. Being an organ donor therefore, really can mean giving the gift of life.

Donor Criteria

Age Group New born to 65 years of age

Time Period Removal of the heart valves must be undertaken within 24 hours of death.

Currently, homograft heart valves are donated by multi-organ donors and heart Recipients. Strict medical guidelines must be followed.

Testing and medical histories determine suitability. People with any of the following conditions unfortunately cannot donate their heart valves:

- History of previous cardiac surgery
- Malignancy/cancer (except for brain tumours)
- Leukaemia
- Diseases caused by a viral infection
- Systemic septicaemia
- Steroid treatment > 3 months
- Intra-venous drug abuse
- Neurological degenerative diseases
- Disease where the cause is unknown

To minimise the risk of disease transmission from the donor to the recipient, a full social and medical history of the donor is recorded. A sample of the donor's blood is also tested for viral markers. Following extensive testing of the homograft, if the homograft is not suitable for use it may be necessary to discard it.

Consent

Many people support the idea of transplantation. Tissue donation i.e. heart valve donation often offers the only opportunity to fulfill the wishes of the donor when organ transplantation is not possible. All information relating to the donor is treated in the strictest of confidence. Hospitals will not proceed with a donation if the donor's family is not comfortable with the donation. Ask your family to respect your wishes.

Valve Bank

The Irish Heart Valve Bank was established in 1993 to process and cryopreserve homograft heart valves donated for transplantation purposes. The bank operates in a purpose built facility at the headquarters of the Irish Blood Transfusion Service on James's Street, Dublin 8. It operates to the standards SI 158/06, SI 597/07 and European Tissue Directives. In the 10 years since the bank was established more than 220 Irish patients have received homograft heart valves thanks to the generosity of donors and their families.

For further information regarding heart valve donation, please contact:

Transplant Coordinators, Cardiothoracic Transplant Programme,

Mater Misericordiae University Hospital, Eccles Street, Dublin 7, Tel. 8032000