Organ And Tissue Transplants

The human body is a wonderfully complex organism with the cell as its basic unit. Groups of specialized cells make up tissues, groups of tissues make up organs, and groups of organs make up an organ system. An organism, such as the human body, is made up of a variety of organ systems functioning differently but depend on each other to keep the body alive. Organs systems are linked in a way that if one organ fails it affects the function of other organ systems. For example, failing lungs put excess stress on the human heart due to a lack of oxygen. The human body is vulnerable to many different types of diseases that prompt us to seek medical treatment. When a disease is severe enough to cause our organ(s) to fail and not function properly despite conventional medical treatment, an organ transplant may be recommended. For people with cardiovascular disease such as coronary heart disease, beyond treatment, it is possible to receive heart transplantation from a deceased donor.

A transplant is a surgical operation where an organ or tissue is taken from one person and given to another. A donor is a person who has voluntarily chosen to donate their organs or tissues to someone who’s have failed function properly.

The two most common ways to get organs or tissues to transplant are from deceased donors and live donors. A vital organ, such as a heart is harvested from a deceased person and an organ such as a kidney can be donated from a live person as you can live with one kidney but not without a heart. Less commonly, animal organs and artificial organs are used. Non-human organs or cells being transplanted into a human’s body is called xenotransplantation. The most common animal-to-human transplants are from pigs and baboons, as their organs are similar in size to humans. Animals can donate hearts, livers, kidneys, and even lungs. Pig’s heart valves are now successfully used in xenotransplantation. Artificial organs are another source for transplants. Kidneys, livers, and hearts have been made and successfully transplanted, although they are expensive, several people die while waiting for a real organ.

One example of a disease affecting an organ that may lead up to needing a transplant is coronary heart disease. It is a disease where a fatty plaque builds up affects the heart by blocking the arteries and not allowing the flow of oxygenated blood. This disease does not immediately require a transplant, however, if it gets severe enough where not even medical treatment can benefit, it will need a heart transplant.

“According to the latest WHO data published in 2017”, Qatar cardiovascular diseases are the number one cause of death. Specifically, coronary heart disease killed about 526 people 17.42% of the total deaths in Qatar. 101.08 per 100, 000 people in Qatar are killed by coronary heart disease. In Canada, coronary heart disease killed 37, 876 people or 17.93% of the total death in Canada. Only 55.36 per 100, 000 people in Canada are killed by coronary heart disease. Canada is a larger country with a larger population and less deaths caused by coronary heart disease while Qatar is smaller country with a smaller population but has more deaths cause by coronary heart disease. Qatar is ranked #144 while Canada is ranked #172. Canada has a better ranking then Qatar. About one- third of the people in the world, aged over 35, are killed by coronary heart disease.

Science has discovered what causes and helps prevent coronary heart disease.

We know that coronary heart disease is caused from an accumulation of plaque build up on the coronary artery walls. We have discovered that this plaque is made up of cholesterol, which is a fatty, waxy substance found in your cells but also comes from some types of foods. Although your body needs cholesterol to function, too much of it can cause the storing and sticking of it to your arterial walls. When your arteries begin to narrow and become blocked because of the plaque, this is coronary heart disease.

There are many ways to reduce or even cure coronary heart disease. Canada and Qatar are both first world nations with high quality primary health care. Both countries perform the same procedures to treat coronary heart disease.

Medicine is the first and most common way used to reduce coronary heart disease. Prescribed medicines attempt to optimize heart function, lower cholesterol levels, thinning out your blood to prevent clotting, reducing blood pressure and widen your arteries, etc. If the medicine does not work, before they consider transplants, they would try other procedures such as angioplasty. Angioplasty is when a small balloon-like item is put into the arteries so that when it is inflated it pushes and packs down the plaque outwards which allows the blood to flow much easier. If no procedure works and the heart continues to fail, doctors may recommend a heart transplant.

In Qatar, to become a deceased organ donor, you need to bring your Qatar ID and visit the Qatar Organ Donation Center where you will complete a form. Your details will be added to the national registry and you will receive an organ donor card to complete and detail which organs and tissues you want to donate. To become a living donor in Qatar, you need to visit the donation centre, select the organs you would like to donate, and schedule an appointment where you will be assessed and tested. Before the surgical procedure occurs, an ethical committee discusses and determines whether the surgery will be approved.

In Canada, to become a donor, you can give consent for donation by signing the back of your healthcare card. You can also provide basic information such as your date of birth and health card number to an online registry which will be placed on a database of potential donors.

A deceased heart donor who consented to donate their heart to a recipient with coronary heart disease must not have died of cardiac arrest. However, Qatar does not currently perform heart transplants. Before a heart transplant can take place, the medical team need to determine tissue compatibility between donor and recipient. This is done with preliminary lab tests comparing blood type and human leukocyte antigen (HLA). A compatible donor’s heart needs to be similar in size to the recipients, so it can physically fit into the recipient’s chest cavity. Ideally, the donor heart should be healthy and free of disease.

There are several advantages to organ or tissue donations and transplants such as, it saves lives, and increases life spans. Some disadvantages and limitations of organ and tissue transplants are that they are expensive, a recipient’s body may reject the donor organ, and people try to illegally sell organs to make money.

I believe more people in the world should become organ or tissue donors, as one donor can save up to 8 lives. Donating at least one organ can really make a big difference. As of January 5, 2019, there are about 113,993 people waiting for an important organ. Every ten minutes,

someone new is added to the national transplant list while about twenty people a day die waiting for an organ. Why do we let this happen when we know we can all help?