



Since the first heart transplant in 1967, the techniques have improved considerably and there are some 3,500 heart transplants performed worldwide today. At the end of last year in the UK there were 267 people on the waiting list for a heart transplant and 46 had been waiting 3 years. In 2016 there had been an 8% increase in heart transplant rate on the previous year. There are around 350 paediatric heart transplants performed a year and 10% of these are in the UK, with Great Ormond Street Hospital (GOSH) being one of the largest centres for this procedure worldwide, and it is to this remarkable hospital that most of our Island's children who need transplantation will go.

Without scientific research none of this would be possible which is why Catherine MacLachlan and her family are raising funds through The Love Hearts Appeal to help GOSH carry out much needed research into the problems associated with transplantation. Already some very interesting results are being seen.

The thymus gland is very active during the childhood years and plays a vital role in developing the child's immune system which of course is necessary to combat infections and also to ensure that the child's own immune system does not destroy its own organs, a process known as self-tolerance.

The immature white cells produced in the bone marrow travel to the thymus gland which is a triangular shaped small gland that sits just above but right next to the heart. Here the cells are trained to become active against bacteria and viruses and because they are developed in the thymus they are known as T cells. One form of these T cells are called T regulator cells ( T reg ) and these specifically control the immune system and prevent the immune system from damaging the persons own organs.

When a child has a heart transplant the thymus gland has to be removed with the sick heart and because this gland is so important it is thought that it may be the reason that some people may reject their new heart or get inflammation of the coronary arteries following heart transplantation. The Love Hearts Appeal, and through the generosity of the island's public who have supported this Appeal, has helped fund a preliminary study that is being written up for publication soon. Preliminary results suggest that those children who have their thymus at the time of heart transplantation have altered immunity following the procedure compared to another group of children who have had heart surgery without the removal of the thymus gland. The second part of

their research, led by Dr Mike Burch who looked after Catherine MacLachlan when she was so ill, has shown that it is possible for the thymus gland to produce T reg cells at a later date after the thymus gland has been removed from the body and thawed after freezing. This raises the exciting possibility of the child's thymus being reimplanted back into their body following the heart transplant which may then mean fewer hearts are rejected and fewer children go on to get coronary artery disease with their new hearts. It may also mean that they may need less immunosuppressant drugs to prevent rejection which would be good as these drugs have their own side effects.

Funding medical research is so important and scientific research plays a key role in the continued improvement to health and wellbeing of society generally. At a time of tight control over public spending it is vital that important research is protected and at the moment Jersey relies on the third sector, charity, to fund medical research. In the UK some 1.7% of GDP is spent on science and research, below the OECD average of 2.4% and behind the 2.8% of Germany and United States.

The Love Hearts Appeal would be very grateful if any businesses or individuals would consider sponsoring ongoing research into paediatric heart transplantation. We are wanting to fund a research doctor for 3 years to work on a

project at GOSH; we need to invest in the future, a future which we hope we can share with our children.

[www.gosh.org/lovehearts](http://www.gosh.org/lovehearts)  
[www.organdonation.nhs.uk](http://www.organdonation.nhs.uk)

**Any donations may be sent to :  
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