

Meet the first child in Britain to benefit from a pioneering kidney transplant that didn't require a matching donor

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Article Reproduced from The Mail on Sunday – 23rd October 2011

The family of nine-year-old Nabeel Nanuck had all but given up hope of him having a lifesaving kidney transplant. Born with chronically damaged kidneys, the schoolboy spent two years waiting for a suitable donor. It meant that daily trips to hospital for dialysis were keeping him alive.

Today, though, Nabeel is enjoying a normal life thanks to a revolutionary new treatment. He was the first child in Britain to benefit from a pioneering procedure that essentially 'washes' the blood, meaning he could receive an organ from an incompatible donor – his mother Bibi, 35.

The process, previously only available to adults, could bring hope to youngsters like him dying of kidney failure. There are 6,494 patients waiting for a kidney, 95 of them under 18. Every day, about ten die. And though last year there were 1,502 kidney transplants in Britain, this was five per cent fewer than in the previous year.

But now a medical team at the Evelina Children's Hospital in London has become the first in Europe to complete successfully the breakthrough operation on a child after being developed and trialled on older patients five years ago.

Judy Mason, a kidney disease specialist, helped carry out treatment on Nabeel as well as on one other child at Great Ormond Street. She says: 'Children are automatically put higher up on transplant waiting lists than adults, and are also more likely to have a living parent who could provide a compatible match. Now, if they're on a waiting list for a long time, we can offer them the option of an incompatible transplant.'

During the procedure, the patient is given an injection of a drug called Rituximab a month before the transplant to suppress the immune system, stopping it producing antibodies. Next, any remaining incompatible antibodies are washed from the blood by taking the blood out of the body via a tube in the arm. The blood passes through two filters that trap antibodies. It is then sent back into the transplant recipient's body through another tube in a process lasting three hours.

This blood is now free from the destructive antibodies that would attack an incompatible organ.

The procedure is carried out ten days before the transplant and then two days afterwards to ensure any new antibodies that may have formed are also removed.

Compatibility usually relies on three factors: blood type, tissue type and cross matching, which looks for presence of antibodies produced by the body to attack harmful invaders. This test involves mixing the liquid portion of the recipient's blood (the part of the blood that contains antibodies) with cells from the donor. If these cells are killed, it indicates the presence of antibodies.

If the donor and recipient are compatible, it is likely the body will tolerate the organ.

Using the new technique, Nabeel's transplant has been a success, even though his blood type is O and his mother's is A – not normally a compatible match.

After his mother's kidney was successfully transplanted, Nabeel was given Rituximab again as well as anti-rejection drugs. He will continue to take the latter throughout his life as no organ can ever be a perfect match.

Ms Mason explains that despite advances in anti-rejection drugs, the human body continues to make antibodies that gradually break down transplanted organs.

The only perfect transplant match comes from an identical twin. Children who undergo the new procedure will need at least one further transplant during their lifetime, usually after 15 years.

So far, though, outcomes have been very promising. Ms Mason says: 'There is no greater risk of rejection than with a normal transplant. This will bring new hope to children in need of a new kidney.'

Before the operation, it was difficult for Nabeel to enjoy a completely normal childhood. Now he is back at school full-time and living life to the full, playing table tennis and swimming. 'He's been such a brave boy after all that he's gone through,' says Bibi.

'We were really excited but because it's a new procedure there were uncertainties. I would have done anything to help him. I'm glad when they said I was the perfect "mismatch" for Nabeel.

'I'd never say to him I'd saved his life, but the nurse said to him I'd given him a second life.'

And Nabeel says: 'I feel well and have lots of energy. The kidney donated by my mum is the most important gift I could ever receive.'

