Gift of Life

2024 EDITION

Living kidney donation
your questions answered

A booklet for anyone considering becoming a living kidney donor

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Introduction

If a person has kidney failure, the treatment options are **dialysis** and/or transplantation. A successful **transplant** is often the preferred treatment for suitable recipients from a medical, psychological and social point of view.

A kidney transplant from a living donor is even better.

Kidneys for transplantation come from people who have donated organs after their death (deceased donors) or from people who donate whilst they are alive (living donors). Living donors are usually relatives or close friends but, since the law changed in 2006, more people are coming forward to donate a kidney to someone whom they have never met. A non-directed altruistic donor (NDAD) is a person that wishes to donate a kidney but who has no intended recipients.

This booklet provides information for people considering living kidney donation and helps to support their discussions between healthcare professionals and prospective donors during the decision-making, assessment and preparation stages.

It aims to provide all prospective living donors and their families with information about the risks, benefits, investigations, procedures and follow-up associated with donating a kidney. This information does not replace face-to-face meetings between the transplant team, the donor, the **recipient** and their families, but it is designed to give people considering living kidney donation an opportunity to ask questions that are relevant to a person's individual circumstances. Anything in this booklet can be discussed in more detail with the healthcare team at the local kidney unit or transplant centre.

Within this booklet, there are first-hand accounts from people who have been involved in a living donor kidney transplant. All of the quotes are from people who have either donated or received a kidney. Readers will see how these people have coped with the transplantation process from start to finish; from the moment that the decision is made, through to the tests that must be undertaken, what happens before, during and after the transplant operation and in the short- and long-term.

It is hoped that this booklet will help potential donors make a fully informed decision that is right for them and gives insights into how to manage some of the challenges that might arise along the way.

Words shown in **bold** throughout this booklet are explained in more detail in the Glossary boxes on selected pages.

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GLOSSARY

Dialysis: A process of removing the body's waste materials from the blood, which are normally filtered from the kidneys. There are two main types – haemodialysis and continuous ambulatory peritoneal dialysis (CAPD)
Transplant: To transfer (an organ or tissue) from one part of the body to another or from one person or animal to another during a grafting or transplant operation
Recipient: A person who receives an organ from someone else (a donor) to maintain his or her life without dialysis

Why do we need a living donor?

Living donation makes an invaluable contribution each year in providing people in need of **organ transplants** the chance at a new life. In the UK, the number of living donors accounts for almost 40% of the total number of organ donors. Almost one third of all kidney transplants in the UK are from a living donor kidney.[1]

UK statistics about kidney transplants during 2023/2024[1]

3,355 kidney transplants were performed

- **907** were from living donors
- **1,447** were from deceased kidney donors

6,250 patients were waiting for a kidney transplant

(at 31 March 2024)

The number of patients waiting for a tranplant is increasing due to reactivation of the waiting list following the COVID-19 pandemic

In September 2006, the Human Tissue Act 2004 (for England, Wales and Northern Ireland) and the Human Tissue Act 2006 (for Scotland) came into force and, together, they provide the legal framework for organ and tissue donation across the UK[2,3]. The Human Tissue Authority (**HTA**) - the regulatory body established under the Acts - regularly update their Codes of Practice and guidance for clinicians. These documents set out the legal requirements that must be met for living organ donation[4].

The rules set out by the HTA describe who can be a living donor and who can donate to whom including paired/pooled, non-directed altruistic kidney donation and directed altruistic kidney donation[4]. These types of donation are explained in more detail later in this booklet.

'Deemed Consent' legislation for deceased donation (known as 'opt-out') was introduced in Wales in December 2015, in England (Max and Keira's Law) in May 2020 and Scotland followed in March 2021. The legislation in Northern Ireland changed on 1 June 2023, to an opt-out system of consent, in line with other regions of the UK. See https://www.organdonation.nhs.uk/uk-laws/

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GLOSSARY

Deceased donor: A person who may have expressed a wish to give their organs after dying to help someone, and his or her family has allowed that their loved one's organs can be used for transplantation
HTA: The Human Tissue Authority is a regulator set up in 2005 following events in the 1990s that revealed a culture in hospitals of removing and retaining human organs and tissue without consent and has also updated and brought together other laws that relate to human tissue and organs
HLA: Human Leucocyte Antigen [see HLA type below]
HLA type: A blood test performed prior to transplantation to determine the HLA antigens of both the donor and recipient, and thereby evaluate the closeness of their compatibility (ie, whether they 'match')
Recipient: A person who receives an organ from someone else (a donor) to maintain his or her life without dialysis

The UK organ donation and transplantation community develops and implements strategies for both deceased and living donation and transplantation to ensure that patients and their families have access to the best opportunities for a successful transplant[5].

The benefits of living kidney donation

A kidney from a living donor offers a higher chance of a successful kidney transplant compared with a kidney from a deceased donor[6]. If the kidney is donated by a blood relative (genetically-related) - particularly close family members - it is more likely that there will be a closer tissue (Human Leucocyte Antigen (**HLA**)) match between the donor and **recipient**[6].

Transplants from non-blood relatives (not genetically-related) - usually spouses, partners or close friends who have a close emotional relationship with the recipient - or people who have no relationship with the donor (non-directed altruistic donors) are equally successful, even though the HLA match is less likely to be close.

What is the chance of success of a living kidney transplant?

Although there is no guarantee that any kidney transplant will work, living kidney donors offer the opportunity for the most successful transplant long-term, compared to deceased kidney donors.[1]

Year(s) after transplantation	Transplantation success rate (graft survival)	
	Living kidney donor	Deceased kidney donor (donors after brain death)
One year	99%	96%
Five years	94%	87%
Ten years	82%	77%

One-year data 2019-2022, 5-year data 2016-2018, 10-year data 2010-2012.[1]

The advantage of planning

The advantage of living kidney donation is that the donor is thoroughly assessed and the operation carefully planned so that the kidney is in the best possible condition and is transplanted in a timely fashion.

Also, the transplant operation can be scheduled at a time that is convenient for the recipient and the donor. It provides the opportunity to plan it before the need for dialysis, with all the added benefits of a pre-emptive (before dialysis) transplant. Planning the transplant operation is also helpful for people who have complex medical conditions because the operation and recovery can be arranged in the best way to make it as safe and successful as possible.

Together, these factors increase the chance of a successful transplant.

"We were able to fix a date for the transplant, which fitted in with family arrangements as John's partner was expecting a baby. I was most concerned before the operation that it would not be successful – I was bothered by the worry that John would go through all of this for nothing," **explains Robert.**

A pre-emptive (before dialysis) living donor transplant is the best option for patients and transplant survival.

What do potential living kidney donors need to be aware of?

The information in this booklet aims to address the most common questions and concerns based upon the best available evidence and experience from professionals, donors and recipients. It does not replace individual discussion between potential donors and members of their healthcare team, nor does it address every eventuality that may occur for every person. Every donor must be given an opportunity to discuss their own situation and any concerns that they may have with the multi-disciplinary team during their assessment and preparation for donation. One of the most frequent concerns for potential living kidney donors is whether the loss of one kidney will impact on their health in later life.

Most people with a single normal kidney have few or no problems. However, some longer-term health issues have been recognised and it is recommended that people with a single kidney, are followed up for life. If one kidney is removed, the capacity of the remaining kidney increases to carry out the function of two[7].

The UK Guidelines for Living Donor Kidney Transplantation[6] provide detailed recommendations for the assessment of living donors based upon the best evidence available. Most long-term studies show that there does not appear to be any risk of serious problems from donating a kidney. However, some studies suggest that there may be a slightly increased lifetime risk of developing end-stage kidney disease in living kidney donors versus the general population - the risk is greatest in living donors of black ethnicity vs Caucasians, and in men vs women. Risk of death is not reported to be higher in living donors compared with the general population[6]. There is sometimes a slight rise in blood pressure or increased loss of protein in the urine, the significance of which has not been fully elucidated[6]. In summary, the donor is at a very low risk of developing kidney failure or ill health after donation but it is very important that the prospective donor has access to all available information and the opportunity to discuss this with the healthcare team in relation to their individual circumstances.

The success rates of living donor kidney transplants are higher than for deceased donor transplants[1].

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Who can donate a kidney?

Any adult can be considered as a living donor- whether or not they are a family member, close friend or a stranger.

Under the rules set out by the HTA, it is illegal to exchange money or gifts for organs for transplant. It is important that any living kidney donor consents freely and is not under any pressure to donate[2].

The role of the Independent Assessor

In order to safeguard the interests of the donor, the HTA has specified that all donors and recipients must see an Independent Assessor (**IA**) - who is independent of their healthcare teams - before a transplant operation can go ahead[6]. IAs are trained by the HTA and are responsible for making sure that the relationship between genetically and emotionally related donor and recipient pairs is genuine, and that appropriate evidence, such as marriage or birth certificates, photographs and testimonies are available to confirm this. The IA also makes a judgment about the nature of the relationship between the donor and recipient, and the motivation for the donation. In all cases of living donation, including non-directed and directed altruistic donations, the IA must be satisfied that the donor can provide freely informed consent for surgery before making a recommendation to the HTA to approve or reject the suggested donation[6].

Where the donor and recipient are known to one another, the IA will interview the donor and recipient together and separately on the same occasion. This interview will usually be arranged in the local kidney unit or transplant centre once both donor and recipient have been thoroughly assessed as being suitable for the donor and transplant operation to proceed[6].

For more information about the independent assessment process, please read the HTA leaflet *'Guidance for living organ donors on the Human Tissue Authority's independent assessment process, Published February 2023'* which is available from local kidney units or transplant centres or via the HTA website at https://www.hta.gov.uk

GLOSSARY

HTA: The Human Tissue Authority is a regulator set up in 2005 following events in the 1990s that revealed a culture in hospitals of removing and retaining human organs and tissue without consent and has also updated and brought together other laws that relate to human tissue and organs

Non-directed altruistic donor: This is where a person volunteers to donate a kidney to an unknown recipient

IA: Independent Assessor – trained and accredited by the HTA to assess certain types of living organ transplantation in the UK

Age limit on kidney donation

In most places in the United Kingdom, people over 18 years of age can be considered as living kidney donors. In Scotland, the age of consent is 16 years of age, but donation from young people under the age of 18 years is rare and only in exceptional cases would young people be considered for organ donation. The HTA requires court approval before they will consider cases under the age of consent[6].

There is no upper age limit, but all potential donors must meet the UK criteria to establish that they are fit to donate[6].

Although most family members would want to give a kidney to a loved one, donation can involve complex psychological and cultural issues. The emphasis should be on informed consent, freely given without prospective donors feeling under emotional pressure or obligation to donate.

Parental dilemmas

For the parents of children requiring a transplant, the decision may seem more straightforward but loyalties can be divided between the desire to provide for one child while inevitably depriving other children of a parent for a period of time. This is not a trivial consideration, as the transplant may come after a prolonged illness for the affected child, during which other children may have felt deprived of their share of parental love. Parents, as with all donors, must consider the possibility that the kidney transplant may be unsuccessful. There may also be conflict between the parents as to whom is best placed to donate a kidney and/or provide the role of carer for the family.

> *The Human Tissue Act allows flexibility in who can be a living kidney donor and who can donate to whom.*

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Different ways of donating a kidney

The overall success of living donor transplants in both genetically related and unrelated transplants prompted additional options for living donor transplantation to be made permissible in the UK within the legal framework of the Human Tissue Acts (**HTA**).

These are described as:

- Non-directed altruistic donation
- Paired/pooled donation transplant cycles
- Non-directed altruistic

These make up the **UK Living Kidney Sharing Scheme** (UKLKSS), which are administered by **NHS Blood and Transplant**.

There are special considerations to be taken into account for all non-directed altruistic donors and those who register into the UKLKSS. Donors and recipients must remain anonymous to one another before the transplant procedure, but can meet or make contact after the transplant procedure through the living donor co-ordinators, provided that all parties involved wish to do so. This is very different from living donations between close family members and/or friends, and must be considered carefully by all donors and recipients during assessment in preparation for registering in the scheme. It is very important that all recipients and donors have a clear understanding of what is involved, how the scheme works and their roles and responsibilities once they are registered.
As well as discussion with the transplant team, it is recommended that all donors and recipients view:

- NHSBT website pages at https://www.organdonation.nhs.uk/become-a-living-donor/

Non-directed altruistic donation

This is where a person volunteers to donate a kidney to an unknown recipient – someone they have never met before or who is not known to them. All non-directed donors are entered into the UKLKSS to initiate a transplant chain of up to three transplants, unless there is a recipient with higher priority for transplant on the UK transplant list. In this case, or if the non-directed donor cannot be matched to a recipient to initiate a chain, the kidney is donated to the most suitable recipient on the UK transplant list, using the same kidney offering scheme that is used for deceased donor kidneys. Non-directed altruistic donors must complete their donor assessment, including mental health assessment and HTA approval, before being registered with NHSBT[6]. Once a recipient is identified, compatibility with the donor is confirmed before a date for surgery is scheduled, with both donor and recipient operations on the same day. This careful planning means that it may take several weeks after the match has been confirmed before the donation goes ahead.

GLOSSARY

HTA: The Human Tissue Authority is a regulator set up in 2005 following events in the 1990s that revealed a culture in hospitals of removing and retaining human organs and tissue without consent and has also updated and brought together other laws that relate to human tissue and organs
UK Living Kidney Sharing Scheme: A scheme that enables kidneys from living donors that are donated from non-directed altruistic donors and through the paired/pooled scheme to be used throughout the UK for the benefit of recipients waiting for a transplant
NHS Blood and Transplant: A special health authority of the NHS which is responsible for overseeing the supply of blood, organs and tissues

More than 1000 people have donated a kidney anonymously to a stranger on the transplant waiting list through the UKLKSS. The 1,000th non-directed altruistic living kidney donation took place in 2023.[8]

Paired or pooled donation

When a donor and recipient are incompatible or mismatched with each other - either by blood group or HLA type - it may be possible for them to be matched with another donor and recipient pair in the same situation and for the kidneys to be exchanged or swapped in a transplant cycle. This is called paired donation and each recipient benefits from a transplant that they would otherwise not have had[6].

When more than two pairs are involved in the swap, it is known as pooled donation. Compatible donor and recipient pairs may also choose to register in the scheme if, for example, they would prefer to try for a closer age or HLA type match than they have between themselves[6]. Compatible pairs are often matched quite quickly in the UKLKSS and, as well as achieving a transplant for themselves, they also benefit other pairs in the scheme by adding to the pool of possible donor-recipient pairs that could be matched together.

Fully assessed recipient and donor pairs are registered into the UKLKSS by individual transplant centres and matching runs are performed quarterly throughout the year using specially developed computer technology*. Once matched pairs have been identified, compatibility tests are carried out to check that all the transplants can proceed as planned, and then the operations are scheduled, usually on the same day. If all the transplants cannot be performed on the same day, they can be safely 'staggered' over several days provided that everyone involved agrees.

"Three years after donation the man with what used to be my kidney emailed me: "My kidney has just had its third birthday and it is time I bought you a pint". We met for the pint and he told me "Three years ago I had been expecting just to fade away and now I am perfectly well" as indeed he seemed to be. What more could I want after hearing that? Only to have another spare one to give away!"

[Quote from non-directed altruistic donor who agreed to meet with the recipient of his kidney after the recipient requested contact with him through their living donor coordinators.]

*Technology developed by colleagues at the University of Glasgow.

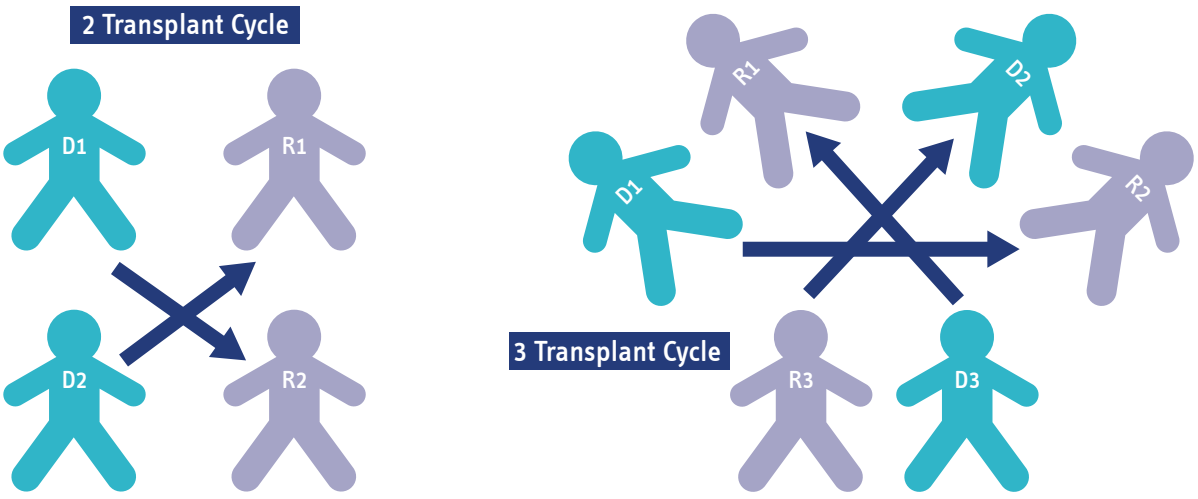
Usually, donor and recipient pairs stay in their own transplant centres and the kidneys are safely transported from each donor hospital to the recipient transplant centres. Depending on how complex the arrangements are, it can take several weeks to organise this and it is important for recipients and donors to take this into account when making plans for the time they will be in hospital and recovering afterwards. The most up to date information about the arrangements within the UKLKSS are available from the living donor co-ordinators and from NHSBT website at https://www.organdonation.nhs.uk/become-a-living-donor/

Transplant chains

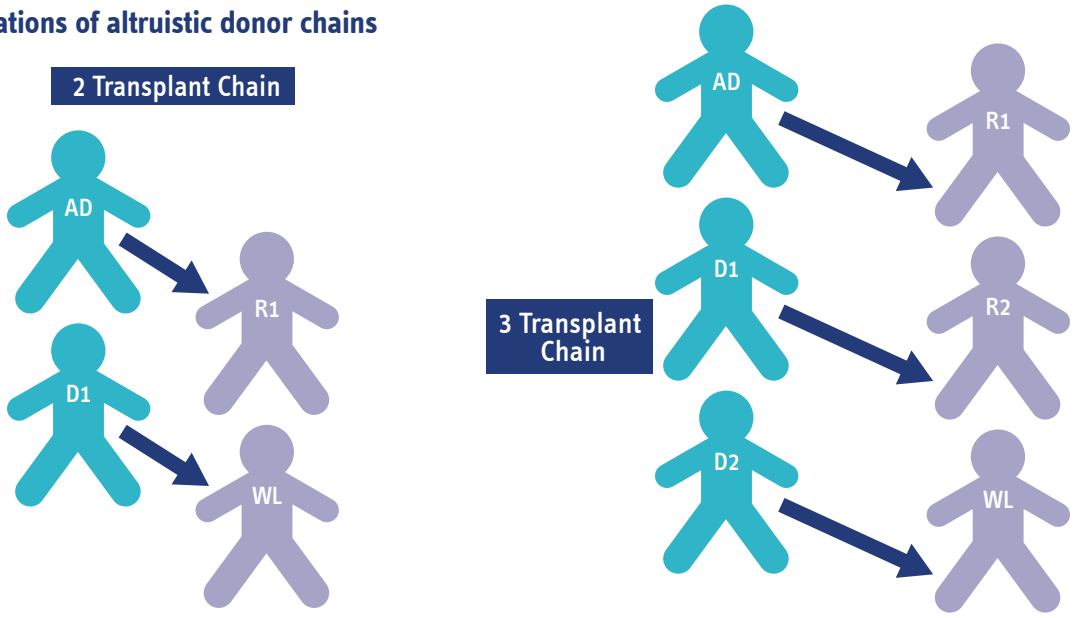
This is where a non-directed altruistic donor donates into the paired/pooled scheme rather than directly to the UK transplant list. Provided there is not a patient on the transplant list who has a higher priority, the non-directed altruistic donor enters a paired/pooled matching run and the kidney is matched to a recipient in the paired/pooled scheme whose donor then donates to a patient on the transplant waiting list. Transplant chains may include up to two recipients and donor pairs in the middle, and always ends with the donation to a recipient on the transplant list. The same process of compatibility testing is followed as in paired/pooled donation and anonymity between all parties is similarly respected[6]. Operations maybe scheduled on the same day or safely 'staggered' over several days if everyone involved agrees.

It is rare for a person to miss out on the kidney that they were expecting to receive through a transplant cycle or chain on the day of a transplant or before an exchange has completed for the recipients and donors involved. However, any recipient whose 'paired' donor has already donated will be given higher

Illustration of paired and pooled donation



Illustrations of altruistic donor chains



Adapted from BTS/RA Living Donor Kidney Transplantation Guidelines March 2018, 4th Edition[6].

priority for a transplant so that they will be offered a kidney as soon as a suitable one is available. However, some recipients are more difficult to match than others, which will impact on how long they might expect to wait for a suitable offer.

Directed altruistic donation

This is where a potential donor identifies a recipient to whom they wish to donate but they do not have a close relationship with the recipient. Within the legal framework, the HTA identifies these donors in two ways - those with a genetic relationship but no emotional relationship with the recipient (eg, a relative with whom there has been no contact for many years) and those where there is no previous relationship of any kind - the donor has only come forward because they have identified that the recipient needs a transplant. This is quite a complex area but, in some cases, it is possible to consider living donor kidney transplantation, provided certain criteria are met[6]. Anyone considering a social media or media appeal to seek a possible living donor should ask their transplant team for further advice.

More information and guidance about directed altruistic donation is available at:

HTA website,
https://www.hta.gov.uk/guidance-public/living-organ-donation/types-living-organ-donation

NHSBT website,
https://www.organdonation.nhs.uk/become-a-living-donor/

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What should a potential living donor consider?

Someone who is thinking about donating one of their kidneys to help someone else has many things to consider.

It is something that has to be thought about seriously from a personal point of view. The medical staff will also want to undertake tests, which may take quite a long period of time. This is to make sure that the donor is in good physical and psychological health, and that the kidney is a suitable organ for transplantation.

It is worth remembering that the operation to remove a healthy person's kidney is – as far as their own body is concerned – not of any direct benefit. Although all possible precautions are taken, there is always a risk when undergoing surgery and donating a kidney is classified as 'major' surgery.

There are also practical considerations, such as the time taken off work for the investigations and recovery after the operation, or domestic responsibilities and arrangements, such as looking after children or the family pet. Coercion from family members may arise and there may be pressure to continue with the donation from within the family, even if the donor is not entirely sure it is the right thing to do.

A number of investigations are performed that may uncover an unknown medical condition. Also, the donor needs to consider the possible impact on their future of having one kidney.

All of these aspects are discussed later in this booklet in more detail.

Elizabeth, who donated a kidney to her sister, comments *"When Joyce was told she had kidney failure, I cannot remember actually making the decision about asking to be considered as a donor. I just knew it was what I wanted to do. My husband and children were completely supportive too, which in my opinion is vital to the whole process, because it inevitably involves you all."*

Richard's wife Christine who also donated her kidney to her husband notes that
"I offered to donate immediately and then began to think about the implications. My first doubts were about our two sons. The kidney disease that my husband suffered from was hereditary – should I therefore be prepared to donate to one of our sons instead? The more I thought about it the more I realised that, at the rate of progression of the disease, our sons would not require a transplant until they were in their late fifties, and by that time I would be in my eighties! Also, with the incredible advances in kidney research, transplants could be a thing of the past."

> *Donors need to consider the practical aspects of donation.*

Managing expectations

The transplant team are fully aware of the potential problems that may arise – psychological or otherwise – in volunteering as a potential living kidney donor. For that reason, they may appear to take a deliberately discouraging stance, pointing out to prospective donors all the physical hurdles and tests they must pass before being considered. They will also warn of the possible loss of the transplant. It is very important that, before volunteering and throughout the assessment process, anyone considering becoming a living donor fully understands what is involved and consider all the risks and implications. Anyone thinking about a living donor transplant should discuss openly how they feel with family and loved ones so that they are as prepared as possible for any eventuality and consequence that may arise.

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What makes a donor suitable?

Potential donors are fully assessed to identify those who are suitable to donate. A compatible ABO blood group and human leucocyte antigen (HLA) transplant offers the best opportunity for success. A potential donor should be healthy, without infection or medical conditions that could impact the safety of either the donor or recipient.[6]

Sometimes donors and recipients have blood groups that do not match, or the recipient may have **antibodies** against the HLA type of the donor kidney (sensitised) which causes a 'positive' or unsuitable '**cross match**' (see section '**The cross match**').

One option to consider is paired/pooled donation (see '**Different ways of donating a kidney**'), where donor and recipient pairs who are incompatible by blood group and/or HLA type are matched with other pairs in the same situation to create combinations of compatible transplants. Increasingly, this has become the best option for most people[6].

In the past, it would not have been possible to carry out a transplant under such circumstances, but now it is often possible to remove the HLA type and blood group antibodies by treating the recipient's blood so that the transplant can go ahead.
Whilst this is not always possible, it can offer another option for a successful transplant for recipients who are not compatible with their donors. The alternative to paired/pooled donation is antibody removal treatment. Sometimes it is possible to remove the HLA type and blood group antibodies.

It is always preferable to transplant a recipient from a compatible donor. Both recipient and donor must know what is involved and the likelihood of success for both antibody removal and paired/pooled donation in their particular case. This involves a detailed discussion with the transplant team.

Every transplant centre in the UK participates in the paired/pooled donation scheme, but fewer offer antibody removal treatments. It may be possible for a referral to be arranged if it is a feasible option.

1) Checking blood groups

Blood group compatibility of the donor and recipient is tested before any further assessment. Most people know that red blood cells have a specific type or group – A, B, AB or O. For transplantation, it is more straightforward if the blood group of the

GLOSSARY

Cross matching: This test indicates if specific immune reactivity (compatibility) is present between the donor and recipient. The test involves exposing the recipient's blood to the donor's blood cells. The recipient may have antibodies that could harm the donor's cells – a 'positive cross match' which would be a contraindication to transplant, as it signifies that the recipient has the ability to destroy the donor's cells and would, most likely, also destroy the donor's transplanted kidney

potential donor is compatible with that of the intended recipient. The different pairs that can be considered as directly compatible are:

Matching blood groups

Recipient's blood type	Required blood type of potential donor
O	O
A	O or A
B	O or B
AB	O or A or B or AB

Being Rhesus-positive or -negative neither influences the outcome of a kidney transplant nor affects compatibility.

Family members may have different (ie, incompatible) blood groups, so one person may be a preferable donor over another at this stage of matching a potential donor to a recipient.

2) Checking tissue (Human Leucocyte Antigen (HLA))-type compatibility

An issue that may influence the suitability of a potential donor is their HLA type compatibility with the recipient. The **HLA type** of an individual is determined by 'marker' proteins on the surface of cells. (HLA type is a more accurate term than the term 'tissue typing' sometimes used.) The higher the percentage of these proteins that match, the greater the compatibility between donor and recipient and the less likely the recipient is to develop HLA **antibodies** or become sensitised (see '**Checking the cross match**' below). This compatibility is more frequently seen when people are closely related.

3) Checking the cross match

Some recipients may have formed **antibodies** (called HLA antibodies) that are directed against a potential donor's cells and will destroy them despite the use of drugs to suppress the immune system. Such antibodies arise as a result of a previous transplant, blood transfusion or, in the case of women, pregnancy. These antibodies can be detected by a laboratory test known as a 'cross match'.

In this test, the recipient's blood is mixed with the potential donor's blood in the presence of reagents. Any pre-formed antibodies against the potential donor's cells can be detected. This is known as a 'positive cross match' and means that the transplant cannot be carried out in the usual way as the implanted kidney would be rapidly and aggressively rejected.

Because of the importance of this test, and depending on the recipient's HLA antibody status, it may be carried out more than once.

A 'cross match' is always performed in the last few days before the transplant operation to ensure it is still negative.

GLOSSARY

HLA type: A blood test performed prior to transplantation to determine the HLA antigens of both the donor and recipient, and thereby evaluate the closeness of their compatibility (ie, whether they 'match')
Antibodies: Proteins that are secreted into the blood to kill bacteria, viruses or parasites. They can also attack transplanted organs

Ken notes his experience, *"The matching process took about six months with tests of many kinds (mainly blood). My brother Brian went to hospital in Portsmouth for these tests and I went to Leicester General. In the final stages, we both went to Leicester. Personally, this did not pose any problems as the possible outcome outweighed any minor inconveniences."*

4) Making sure the donor is healthy

All donors must meet the UK criteria to show that they are fit to donate, whatever their age. They must be in good physical and mental health to make sure that they can have a major operation with the lowest possible risk, as well as live a normal life with only one kidney[6].

A full medical history, physical examination, laboratory and radiological investigations are performed to assess this. Blood tests are also performed to check that the donor is not carrying any potentially harmful viruses that could be passed on with the transplanted kidney.

Potential living donors undergo careful screening for infectious diseases. The presence of any infection, past or present, usually precludes donation. Apart from the implications for the potential donor, several infections may be transmitted by organ transplantation.[6] This will be discussed with you in detail with a healthcare professional.

5) Checking the marker proteins

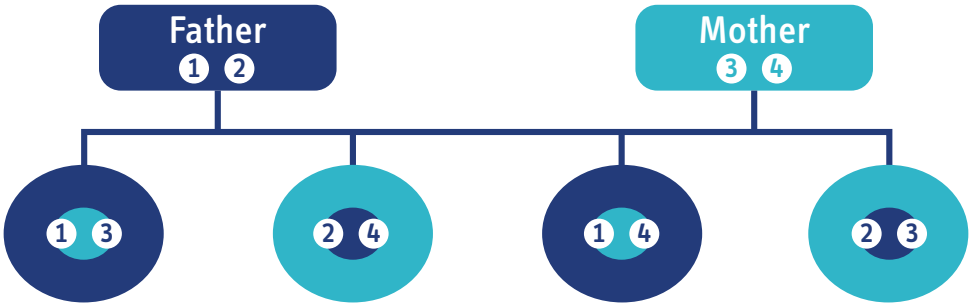
Every cell in the body contains DNA (deoxyribonucleic acid) – the 'genetic blueprint' for the entire make-up of the body. One particular part of DNA carries information that determines the production of a series of 'recognition' or 'self ' proteins (molecules) on the surfaces of cells, known as **HLAs**. As all cells in a person have the same DNA, HLAs are present on most cells to a greater or lesser extent. Unlike blood groups, many different types of proteins make up the HLA system, so it is rare to find a perfect **HLA type** match in the general population. As previously mentioned, this does not necessarily stop a transplant from being successful.

"When it became clear that I was compatible and my general health was good, a two-day hospital admission was arranged for a series of more specific tests. This was my first visit to hospital, excluding the birth of my children, but any apprehension was soon dispelled by the supportive attitude of the staff. The tests consisted of blood tests, blood pressure, a chest X-ray, an ultrasound scan and a renal angiogram. I actually quite enjoyed the experience!" **Elizabeth remarks**

Every person inherits two sets of DNA – one from each parent. The diagram below shows how different HLA types are inherited from each parent. Within a family, brothers and sisters might inherit the same two sets of DNA from their parents (there is a one in four chance of this happening), share half their HLA type (there is a one in two chance of this happening) or inherit completely different genetic information (there is a one in four chance). That is why a family member is more likely to be a close match than someone who is unrelated (not a blood relative).

There is a group of patients for whom HLA-type matching is vital - individuals who have developed a large number of antibodies directed against HLAs. This can result from a previous blood transfusion, previous transplant or pregnancy.

Genetically-unrelated donors, such as spouses or non-directed donors, are unlikely to be well matched to the recipient. In all but the perfectly matched situation, the success rates of these transplants are equal to those of genetically related donors. However, if a kidney does fail in the future, there is a risk that antibodies will have been made that may lower the chance of finding another suitable donor in the future.



All of us inherit one set of DNA from our mother and one set of DNA from our father. In this diagram, each set of DNA is represented by the numbers 1, 2, 3 and 4.

GLOSSARY

HLA: Human Leucocyte Antigen [see HLA type below]
HLA type: A blood test performed prior to transplantation to determine the HLA antigens of both the donor and recipient, and thereby evaluate the closeness of their compatibility (ie, whether they 'match')

Why are so many tests needed?

Checking that a donor is both suitable and healthy is a detailed process that usually takes between three to six months, but may be longer in some cases.

Numerous tests make sure the transplant team can assess, as far as is possible, that the transplant will be safe and successful for both donor and recipient. It also gives potential donors time to consider their options and to be sure that they want to carry on with the donation.

Some people who wish to donate find that they are not able to do so because health problems are found during the assessment process. If this occurs, members of the healthcare team involved in the assessment will provide any help or support that is needed, including referral to another specialist or to the donor's GP if necessary.

Being a healthy person does not automatically mean that a person is a suitable donor. For example, someone who is found to have only one kidney during assessment could not donate but is likely to be perfectly healthy.

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How to become a donor?

For most people with end-stage kidney disease, their hope is to receive a successful kidney transplant, but often they do not want to ask family members or friends to donate or impose on them.

Therefore, the suggestion to donate will often come from a family member, spouse or friend who wishes to help a loved one. Sometimes, a direct approach by a member of the healthcare team to family members may be made if that is most appropriate.

Wherever the suggestion comes from, all issues must be talked through. Talking about the option to donate is essential for both donors and recipients.

Often, the most suitable person for the family member or spouse to go to is the transplant coordinator or nurse. They will be able to give information and advice on how to take the process forward. Medical staff will also be aware of an individual's circumstances and be able to offer advice, including general and specific health information and other transplant options (eg, whether the person has a common blood group and/or HLA type). It is important to share all decisions with everyone involved; shared decision-making is an essential part of a successful living donation.

The best time to start to thinking about living donation is as soon as a loved one is told they have advanced kidney disease and is considering the types of kidney replacement treatments available. This is the best time because it may be possible to avoid dialysis with a successful pre-emptive (before dialysis) living donor kidney transplant.

If the potential kidney recipient has been on the transplant list for some time, a donor may be prompted to come forward because of the decline in the recipient's condition and/or the impact of dialysis on work and family life.

More and more people are volunteering to donate anonymously to someone in need of a transplant. This is called non-directed altruistic donation (see page 12) Visit https://www.organdonation.nhs.uk/become-a-living-donor/ to find out more and how to take next steps.

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GLOSSARY

HLA type: A blood test performed prior to transplantation to determine the HLA antigens of both the donor and recipient, and thereby evaluate the closeness of their compatibility (ie, whether they 'match')

What are the risks and benefits for donors and recipients?

There are risks and benefits associated with living donor kidney transplantation, both for the prospective donor and the recipient.

Richard was worried about what he might be about to put Christine through.

"Part of me hoped that the tests would show that my wife could not donate so the decision would be taken away from me. The initial tests showed that further, more detailed tests were required, and I became very stressed with extremely mixed emotions. One of the tests was very painful and I decided that it should all be called off, but my wife persuaded me otherwise. The extra tests meant that the planned transplant date was not feasible and a new date was set. Needless to say, the delay gave me more time to go through more feelings of selfishness and guilt."

It was also an emotional time for Christine,

"The self-preservation side of my mind kept thinking perhaps I won't be suitable, whereas the sensible decision side hoped that I would be. I wanted to do it, but I was afraid. Once all the tests were over and everything was found to be OK, my mind was completely adjusted and I was ready to go ahead with it. I had a great deal of support from my consultant and from another consultant required to give an independent opinion of our case."

Donor advantages

Jan, an altruistic donor explains

"The process of donating a kidney was straightforward and, for me, extremely rewarding. It's not often you have the opportunity to make such a significant difference to someone else's life. From the first meeting with my coordinator, I was well-informed about what to expect every step of the way. For me, the assessment process took around six months. There are many medical tests to check that you are healthy enough to donate and are not putting yourself at any undue risk, but they are non-invasive and painless. In fact, the worst part for me was the multitude of blood tests along the way as I'm not a fan of needles! For me, the entire journey was complication-free, and any questions or concerns I had during that time were dealt with professionally and carefully. By the time the surgery came around, I felt very confident that I knew what to expect and absolutely assured that I was doing the right thing and was in the safest possible hands."

Giving the 'gift of life' is both satisfying and rewarding.

The best outcome is that the donor should be able to enjoy the fact that they have given the recipient the best possible chance of a successful transplant; **truly a 'gift of life'**.

The feeling of satisfaction which comes from donating a kidney to a loved one is immense and cannot be overestimated; seeing a loved one enjoy a better quality of life is very rewarding. With such an improvement in health, the recipient is usually able to contribute more to the life of their immediate family, and their family's life is also improved.

Non-directed altruistic donors (see '**Different ways of donating a kidney**') who donate to an unknown recipient describe equal satisfaction in being able to make a difference to someone else's life, even if they never meet the person to whom they donated their kidney.

This very positive aspect of living donation often completely outweighs the physical challenges.

On a wider scale, living donation removes someone from the transplant list and increases the chances for another person to receive a deceased donor kidney transplant.

Potential donor disadvantages

Donating a kidney requires a major operation under general anaesthetic. No operation is without risk[6], but if the living donor is fit and well beforehand, the risks are as low as possible.

Risks from having surgery

It is very difficult to describe risk in a way that means something to everyone.

Donors are at risk of infections (eg, chest, wound or urine) and, more rarely, bleeding or blood clots. There is a chance of an increase in blood pressure and extra protein in the urine of living donors compared with the general population. However, studies suggest that you can live a normal, healthy life with one kidney[6].

The most common risks associated with a **nephrectomy** (removal of a kidney) are usually relatively minor, and can be treated appropriately. These include respiratory, cardiac, infections, hernia/wound complications, thrombosis, bleeding, and most commonly gastrointestinal[6].

GLOSSARY

Nephrectomy: The medical term for the surgical operation to remove a kidney

The medical transplant team is experienced in dealing with such situations quickly and appropriately to minimise the risk.

There is a very small risk of death for the donor: the exact risk depends on genetic, racial and immunologic factors, as well as age[6]. The chance of dying as a result of donating a kidney has been compared to the risk of having a fatal road accident[6].

The long-term risk of kidney failure in living kidney donors is low in comparison with the general population[6]; living kidney donors are thoroughly screened in preparation for donation. Studies suggest that living kidney donors may be at slightly higher risk of kidney failure compared to a selected group of healthy non-donors[6]. Nevertheless, the actual rate of kidney failure among living kidney donors remains reassuringly low, occurring in fewer than 1 in 200 (0.5%) donors[6].

It is very important that every donor thinks carefully about individual risk in the context of their own health and well-being and that he or she is prepared to take these risks to donate a kidney, however unlikely they may seem.

Risk cannot be removed completely but the rigorous assessment process, dedicated hospital care and commitment of the transplant team aim to lower the risks of surgery and long-term complications (see '**Making sure the donor is healthy**') for all living kidney donors. The donor selection process ensures that only the most suitable people are considered for donation.

Occasionally, people who have donated a kidney in the past may require a transplant themselves. Although this is unusual and rarely due to the donation itself, all living donors are given priority for a transplant within the current kidney offering scheme should they need one during their lifetime.

Post-surgery pain

Pain control after kidney removal, particularly immediately after the surgery and during the early days of recovery, is very important.

Effective pain relief is given in different ways. After the operation, it is often given directly into the blood stream through a continuous pump (intravenous infusion) for the first few hours, and then tablets will be prescribed. The most important thing for a donor to remember is to 'keep taking the tablets' for as long as they are needed - it is more important to be pain free and move around freely in the first few weeks.

Potential donors are free to change their minds at any time.

Unexpected findings
While the donor is undergoing assessment, an unexpected abnormality may show up. This can be a shock to the donor and may have implications for future life and medical insurance. The transplant team is always there for support, and referral to an appropriate specialist will be organised. Another way to look at this is that a health problem that is identified at an early stage can often be dealt with more effectively.

Psychological challenges
Psychological issues play a big part in the decision to become a donor. Feeling under pressure to donate can be incredibly hard to deal with, especially if the recipient is a close family member. An important point to remember is that the donor is able to withdraw consent at any time if they have a change of heart. The decision must be considered carefully before the operation - some donors experience a sense of anticlimax after donation and may even regret donating. Thinking it through beforehand helps to confirm whether or not it is the right decision for that individual.

Another psychological issue is that of transplant rejection or failure, or even death, which can happen even though the donor and recipient have been thoroughly assessed. This can be devastating for everyone involved, and needs to be considered carefully and realistically.

The considerations are different for every case, and the transplant team will want to discuss all aspects in detail to make sure that all donors and recipients, including families, fully understand and accept the risks in their specific case before going ahead with the donation and/or transplantation.

Although there is usually a common aim to achieve a successful living donor transplant, donors and recipients need time and space, individually, to make the right decision and feel they can discuss worries or concerns in confidence with the most appropriate members of the healthcare team. Within close family relationships, it can be quite difficult to achieve this, and it can sometimes feel a little artificial to make the separation between home and hospital. However, donor and recipient are each a 'patient' in their own right, with their own consultants and nurses to guide them through the preparation and assessment process. The transplant team makes sure that only essential information that is relevant to both (eg, a cross match result (see **'Checking the cross match'**) is shared without mutual consent. It is important that everyone involved understands the importance of this from the start so, for example, the recipient does not expect to be informed about the outcome of donor tests or feel entitled to know why a donor is unsuitable and cannot go ahead with the donation.

Recipient advantages

The main benefit to the recipient of a successful kidney transplant is freedom from dialysis. Dialysis is time-consuming and is not as efficient as a kidney transplant, so many patients do not feel as well on dialysis as they would with a transplant. With a pre-emptive transplant (before dialysis), patients can avoid starting dialysis which is better for everyone (see '**Why do we need living donation?**')

Depending on the complexity of the transplant and individual circumstances, most transplant recipients can expect to return to work or normal lifestyle activities after a suitable period of recovery and rehabilitation.

Recipient disadvantages

Risks from having surgery

There are no guarantees of success. The risks associated with major surgery also apply to the recipient, although the operation to implant a kidney into the recipient is usually more straightforward than the one to remove the kidney from the donor. Complications during and after the transplant operation can lead to failure of the organ, which is very difficult for everyone involved. However, living donor kidney transplantation continues to offer the best chance of a successful outcome over many years for both patients and their transplanted kidneys compared with deceased donor transplants[1].

Dela shares her experience trying to donate to her brother.

"When my brother Tayo told me he had kidney failure, I immediately said "You can have one of my kidneys." He gave me a big hug and said "Are you sure?" I said "Very sure!" The preliminary blood and tissue tests were successful which meant I could continue to the next stage of the living donor assessment process. It never once crossed my mind that I wouldn't be able to donate a kidney, and it was an amazing and rewarding journey I was on that could only end on a positive note with Tayo having a transplant. So when I was told several months later that donating a kidney to my brother might put my health at risk and that I couldn't donate, I was absolutely devastated and broke down. There had been so much anticipation and hope that Tayo would receive his transplant, but now that had all ended with one phone call. Not being able to help my brother left a void and had a profound emotional effect on me. I believe I would have benefited greatly from talking to other people who had gone through a similar situation. I still wish I was able to help my brother, and I know it will only be when he has his transplant that my tears will finally stop."

Psychological challenges
Psychological problems can also affect the recipient. Sometimes they may feel indebted to the donor. A positive relationship between prospective donor and intended recipient contributes to the overall success of the transplant.

The recipient also has to face the fear of transplant failure and possible anxiety about restarting dialysis. If the transplant is unsuccessful, the recipient may feel guilty about the trouble everyone has gone to and the sacrifices they have made. This fear can last for years. It is best to discuss these concerns with loved ones and ask for professional support through members of the transplant team.

Transplant rejection
To minimise the risk of the transplant being rejected, the recipient will receive medication to suppress the immune system. This can increase susceptibility to a variety of infections and to some types of cancer, especially of the skin. The recipient needs to be particularly careful to avoid the risk of sun exposure.

Overall, the recipient needs to be helped to live well with their transplant, and to know where to go and who to ask if they have a concern.

Long-term transplant survival can never be assured, but the best chance of a successful transplant is from a living donor.

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What further assessments are necessary?

There is a sequence of tests that are necessary to thoroughly examine the health of the potential donor as well as the well-being and anatomy of the kidney[6].

This system of testing and the order in which it is undertaken may differ between transplant centres; however, below is an example of the types of tests that a potential donor can expect.

These tests can usually be performed as an out-patient but may involve a short stay in hospital (1–2 days), depending on the centre. Throughout the period of assessment, potential donors should bear in mind that these tests may reveal a reason for them to be an unsuitable donor.

A) Blood tests

Blood samples are taken for routine analyses, including blood group, **HLA typing** and donor and recipient cross matching (see '**What makes a donor suitable**' and '**Checking the cross match**'). Blood tests can show **anaemia** or signs of infection, they can show how the blood clots and they can determine kidney and liver function or the suggestion of diabetes[6]. Samples are also tested for certain blood borne viruses, such as **hepatitis B, E and C**, **HIV, CMV**, **EBV** and **syphilis**[6]

All blood tests should be explained before they are conducted so that donors know why they are being tested and can agree to the blood being taken. Written consent may be requested for some of the samples, eg, HLA testing, HIV testing, where there are specific considerations to discuss in relation to being tested.

B) Urine analysis

Many underlying conditions can be identified by examining the urine for glucose, protein, blood or bacteria – so these are all assessed[6]. Several urine samples are required for dipstick and laboratory analysis.

C) Blood pressure monitoring

Kidneys can be a prime target for damage due to **hypertension**, so the potential donor's blood pressure is checked to exclude hypertension[6]. Sometimes, if slightly higher levels than normal are found, a portable device that measures blood pressure at home for 24 hours can be fitted[6]. If blood pressure remains higher than normal, it may be possible to treat and still proceed to donation, provided that it is safe to do so. Additional tests on the heart are required[6] and each case is assessed on an individual basis according to the treatment that is required.

GLOSSARY

HLA type: A blood test performed prior to transplantation to determine the HLA antigens of both the donor and recipient, and thereby evaluate the closeness of their compatibility (ie, whether they 'match')
Anaemia: A deficiency of the red blood cells that carry oxygen round the body
Hepatitis B and C: Hepatitis - inflammation of the liver usually as the result of a viral infection
HIV: Human Immunodeficiency Virus [see AIDS below]
AIDS: Acquired Immune Deficiency Syndrome – caused by the human immunodeficiency virus (HIV)

D) Glomerular filtration rate

Several kidney function tests are performed to ensure that the donor has two well-functioning kidneys and that they will have sufficient kidney function after donation to remain in good health in the future. It also assesses the amount of function that the recipient will receive in the transplanted kidney.

A measure of kidney function that will be assessed is the glomerular filtration rate (**GFR**)[6]. This test assesses the ability of the kidney to 'clear' the blood of a particular substance.

E) Kidney ultrasound

This is a simple, non-invasive scan that checks the size and shape of the kidneys using a ball-shaped probe coated in clear gel that is moved over the skin of the abdomen. The scan identifies any abnormalities that might affect kidney donation.

F) Kidney angiography

Most centres now use **CT** or **MRI** kidney angiography to show the number and size of blood vessels taking blood to and from the kidneys. Both techniques show a more detailed anatomy of the kidneys, draining tubes, ureters and bladder than previous techniques, such as X-rays. This is important so that the surgeon has a clear idea of which kidney is the most suitable one to remove and which kidney has the easier access.

CT angiography is a special kind of X-ray taken of the abdomen. Iodine-containing 'dye' is injected into a vein in the arm and the scan is repeated. A computer is then used to build a three-dimensional view of the kidneys, blood vessels and draining tubes. The whole procedure takes about 30 minutes and can be performed at an out-patient appointment.

Magnetic resonance angiography (MRA) is a group of techniques based on magnetic resonance imaging (MRI) to image blood vessels; it uses a powerful magnet rather than X-rays, and is used in some centres to view the kidneys.

It is very rare for direct angiography to be used routinely in the assessment of kidney donors. This is a more invasive test, which involves injecting dye through a cannula passed up to the region of the kidney arteries via a direct needle puncture of one of the large arteries in the groin. An overnight stay in hospital may be needed for this.

G) Electrocardiogram (ECG)

This test is used to check that the heart is healthy and functioning properly. An ECG involves having several small electrosensitive pads placed at different points on the chest, arms and legs for a few minutes. Normal clothes or a hospital gown can be worn for the procedure. The pads monitor the electrical activity of the heart to produce a tracing - they are painless and harmless. If heart disease is present, an abnormal tracing may be seen which could indicate increased risk associated with the anaesthetic during kidney donation.

GLOSSARY

CMV: Cytomegalovirus - a herpes virus
EBV: Epstein-Barr Virus - a member of the herpes family
Syphilis: A sexually transmitted bacterial infection with highly contagious early stages
Hypertension: High blood pressure
GFR: Glomerular filtration rate - describes the flow rate of filtered fluid through the kidney
CT: Computerised tomography - a specialised X-ray
MRI: Magnetic resonance imaging - a detailed scanning technique

Sometimes, additional heart tests, such as an exercise ECG test, treadmill test or ultrasound of the heart (echocardiogram), may be performed if required[6].

H) X-rays

A series of X-rays, including a chest X-ray, may be taken. In some centres, a special X-ray of the kidneys - known as an Intravenous Pyelogram (**IVP**) or Intravenous Urogram (**IVU**) - may be undertaken. This involves having an iodine containing 'dye' injected into a vein in the arm. The dye is taken up by the kidneys and excreted into the urine via the bladder. A series of X-rays shows the kidney outline and drainage tubes in detail. Similar information may be obtained from taking a Computerised Tomography (**CT**)/Magnetic Resonance Imaging (**MRI**) scan, and these are now more commonly used in practice.

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GLOSSARY

IVP/IVU: Intravenous Pyelogram/Urogram – a specialised kidney X-ray
CT: Computerised tomography - a specialised X-ray
MRI: Magnetic resonance imaging - a detailed scanning technique

What other practical aspects need to be considered?

A) Financial considerations

The financial burden associated with donating a kidney frequently includes the cost of travel and accommodation (if the donor lives a considerable distance from the transplant unit), lost wages and other non-medical costs incurred during the recovery period.

Depending upon the type of surgery, rate of recovery and work and lifestyle commitments, the donor will usually spend between 3-7 days in hospital for the operation and need a further 6-12 weeks off work. This could present the problem of earning very little or no money (see also 'Donor disadvantages'). Leave from work (annual or sick) should be discussed with employers in advance. Expenses and loss of earnings may be incurred. Whether or not a donor gets paid while off sick from work is dependent on their employer. Employers are not obliged to provide paid sick leave for donors. It is sensible for a potential donor to discuss the topic with their employer early in the living donor process. Most employers understand, so this should not present a problem. For people who are self-employed, it may be important to plan their donation to coincide with the most suitable time for their business.

Talk to employers about paid sick leave.

In the absence of paid sick leave, it may be possible for the donor to claim social security benefit. Assuming the necessary contributions have been paid in the past, the Department of Social Security will pay incapacity benefit if the donor can provide a medical certificate. If the donor is already receiving Income Support, the amount received may increase at this time. In these circumstances, the best approach initially would be to contact the local social services, the hospital social worker or the living donor coordinator for advice. Regardless of who actually donates the kidney, all family members have the option of participating in the transplant experience by offering practical and emotional support to those undergoing the surgery.

Financial issues need to be considered.

Although legislation forbids any form of payment as coercion to donation, it does allow reimbursement of legitimate expenses incurred by the donor. There are policies for reimbursement of expenses for living donors in all UK countries. People wishing to apply for reimbursement should ask their living donor coordinator for the details early in the process so that they know what they need to do to make a claim before their donation goes ahead.

Another financial issue that may need to be considered is the cost of private health or life insurance after donation. Potential donors should alert their insurance company to understand if there will be any impact on their life cover or other premiums after donation. Most insurance companies accept that a living donor can live a normal life with one kidney and insurance premiums should not change. Insurance companies recognise that donors undergo a rigorous health check and do not usually alter premiums as a result. However, this may vary depending on the insurance company. Transplant teams can provide letters of endorsement for insurers if required.

B) Preparation

Once the date for the operation has been set, donors should ensure that the following arrangements have been made:

- Employers know that several weeks will be required away from work
- Friends and family know what is happening
- Children have somewhere to stay and someone to look after them
- Pets are being looked after
- The house is locked and secure, and electrical appliances in the home have been switched off
- Transport is arranged for the journey to and from the hospital

C) Contraception for females

Depending upon the exact medicine that is prescribed, women who take the oral contraceptive pill may be advised to stop taking it one month before the operation and use alternative contraceptive methods until after the operation. Potential donors should ask the transplant team for specific advice about this.

"Much to our delight the results showed that I was in good general health and I had two well-functioning kidneys. Reality strikes! Dates were put into place and arrangements made. Joyce and I are both teachers and we are fortunate enough to have a long break in the summer, so it was arranged that this was when our operations would take place. This was at our request and another example of how well we were looked after," **remembers Elizabeth.**

For Christine and Richard, the preparations were equally important. *"As both my husband and I would be incapacitated at the same time, there were quite a number of arrangements to make. For example, provision had to be made for the dog, the freezer had to be well stocked and, most importantly, someone had to come and look after us for a few days."*

Checklist The following checklist can help in preparing for the stay in hospital:

To take to hospital:

- Overnight bag, including washing products, towel, toothbrush and toothpaste
- Something to sleep in, dressing gown, slippers
- Any medication currently being taken
- Loose fitting underwear and clothing for after the operation
- Contact lenses and solutions, or glasses
- Book or magazine to read
- Small change for newspapers/snacks/drinks

To do/think about before going into hospital:

- Keep valuables safe - remove any jewellery that is not needed and leave it at home.
  - Wedding bands are the only items of jewellery that can be kept on during surgery because they can be taped to the finger
- Check which electronic/IT equipment that is permitted on the ward before packing
- Remove metal piercings from face, ears, tummy button and replace with plastic retainers
- Remove nail varnish from fingers and toes

If it is the first time in hospital, it will feel unfamiliar. The transplant team and hospital staff will be there to help and advise.

"The faces I saw on the ward, on the way to the theatre and in the anaesthetic room were familiar. All had introduced themselves previously, which is so helpful when the surroundings are unfamiliar," **says Elizabeth.**

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Who makes the final decision?

Before any living donor transplant is possible, the recipient and donor have to consent to their donation or transplant operation to proceed. All the test results will be reviewed and discussed with the healthcare teams responsible for the donor and/or recipient.

The period of testing and matching - which can continue over several months - provides opportunities for private and confidential discussions with the transplant surgeon(s), transplant coordinator, consultant kidney specialist and other members of the healthcare team.

Confidential, honest and impartial discussions
At any time, potential donors are free to raise specific concerns with the transplant team that they may not wish to share with other family members or the intended recipient.

The transplant team would much rather know of any concerns that the donor may have about proceeding, regardless of when this occurs in the process. If the donor should decide to withdraw consent, even at a late stage, this will be kept confidential by the transplant team. Nothing will be held against someone who decides they do not wish to become a donor.

Sometimes, talking to someone else who has been a living donor can be helpful as they have personal experience of the donation process. The living donor coordinator can arrange this for potential donors. The 'Give a Kidney' charity at www.giveakidney.org supports non-directed altruistic kidney donors and has a number of living donors who are willing to speak to anyone considering living donation.

It is very important that, throughout this process, close family members also have a full understanding of what to expect and carefully consider all risks and implications. The support a donor receives from their family can sometimes make the decision easier or more complex, so a knowledgeable, impartial opinion can be helpful.

The Independent Assessor for the **HTA** also has to be sure that the donor is giving free and voluntary consent before the HTA can legally approve that a living donation proceeds, so it is very important that the donor makes the right decision for themselves, without pressure or coercion (see '**The role of the Independent Assessor**').

> *The right decision is the one that is best for the potential donor.*

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GLOSSARY

HTA: The Human Tissue Authority is a regulator set up in 2005 following events in the 1990s that revealed a culture in hospitals of removing and retaining human organs and tissue without consent and has also updated and brought together other laws that relate to human tissue and organs

Possible model for donor assessment

Initial contact from potential donor (e.g. non-directed altruistic donor) and/or discussion with potential donor and recipient pair about the options for transplantation. Potential donor provided with information and the opportunity to discuss the operation with a past donor

For 'directed' donor-recipient pairs, begin appropriate pre-transplant assessment to establish ABO blood group compatibility +/- HLA type, and identify whether the recipient is fit for transplantation from previous medical history

Living donor coordinator facilitates discussion with the potential donor and +/- recipient to discuss possible social, psychological and medical risk factors and to plan donor assessment if appropriate

Full donor evaluation is initiated

If donor unsuitable, follow-up consultation arranged

Potential donor referred for final pre-operative discussion with consultant transplant surgeon

Independent Assessment and HTA approval - date of transplant agreed

Final cross match in week prior to transplantation, routine pre-op investigations/ pre-admission visit

Admission to hospital for donor and recipient on day before/day of surgery (centre preference)

Transplant/donation procedure usually takes 2-4 hours each for donor and recipient but times may vary

Donor discharge from hospital between 3-7 days depending upon procedure and recovery

Living donor coordinator maintains contact with donor and facilitates life-long follow-up arrangements

In general, the donor assessment process takes at least 3 months and is tailored to the needs of the individuals concerned. Complex medical issues will extend duration of assessment.

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What comes next once the donor decision is made?

The nephrectomy (removal of a kidney)

Under a general anaesthetic, the kidney is removed (**nephrectomy**) in the same way as it would be removed if it was diseased. The kidney is lifted out of the wound, flushed with a cold solution to wash out blood and slow the metabolism and then kept cold in ice until it is transplanted into the recipient. If the kidney is donated in one hospital and transplanted in another or needs to be stored for a short period of time between the donor and recipient operations, it is carefully packed in a specially designed ice box to keep it protected.

The donor's cut is then sewn up in layers and the donor returns, via the recovery room, to the ward. The donor will have several temporary tubes or lines inserted during the operation. These include a tube inserted into the bladder (called a catheter) and a drainage tube from the wound (to remove excess body fluids). Intravenous fluids to keep the body functioning (such as saline and glucose) are administered through a 'drip' and, because the incision can be painful afterwards, an infusion pump of painkillers (directly into a vein) is usually set up during the operation, which the donor controls with the press of a button, as required. Tubes are usually removed the day after surgery, when the donor is encouraged to get out of bed, sit in a chair and feels more like drinking and eating. This reduces the risk of post-surgery complications.

Types of kidney removal surgery

There are different types of donor kidney removal surgery which can be performed, but most transplant surgeons now remove the kidney by some type of 'keyhole' or minimally invasive technique. These techniques are briefly discussed in the following pages; however, the living donor transplant team will discuss the various options in more detail.

Keyhole kidney removal (laparoscopic nephrectomy)

The benefits of laparoscopic ('keyhole') surgery vs. open surgery are less pain, a shorter stay in hospital and an earlier return to work[6] (see below). The technique carries similar risks to open surgery but avoids the painful incision[6]. The operation is performed through four 0.25 inch half cuts near to the rib cage, and usually involves a 3-4 day stay in hospital; however, this can vary depending on the individual.

Hand-assisted laparoscopic nephrectomy

This is similar to the 'keyhole' surgery described above but some surgeons prefer this technique. During this procedure, the abdomen is inflated and the surgeon makes an additional cut in the abdomen about 3.5 inches long through which the kidney is removed by hand.

Open kidney removal (nephrectomy)

This is the traditional operation to remove the kidney, but is now rarely performed. It involves a 9 inch cut below one side of the ribcage, through which the kidney is removed. A minority of centres have developed a technique using a much smaller cut called

GLOSSARY

Nephrectomy: The medical term for the surgical operation to remove a kidney

a 'mini-incision' open nephrectomy, which is more popular with donors because of the smaller scar.

How long does it take to recover?

General points:

- The length of stay in hospital is usually between 3-4 days, around 1.5 days lower following keyhole (laparoscopic) surgery compared with open surgery (4.54 days versus 5.85 days)[9] (see '**What comes next once the donor decision is made**')
- Pain after the operation is expected with both keyhole and open operations, but likely to be reduced with keyhole vs. open surgery due to the smaller incisions
  - Effective pain relief is important so that the donor can get out of bed and move around comfortably the day after surgery and to support recovery at home (see '**Potential donor disadvantages**')
- After leaving hospital, 4-6 weeks recuperation at home is recommended before the donor returns to normal activities
- Dissolvable stitches or clips may be used to close skin incisions
  - Clips are usually removed ten days after the operation
  - Dissolvable stitches do not need to be removed because they dissolve gradually by themselves
- The wound can remain sensitive for several weeks
- There may be 'twinges' or a 'drawing' sensation for several months after the operation, and often numbness on the skin around the incision due to small nerves having been cut during the operation
- The donor will be asked to return to the transplant centre for at least one review appointment following the operation to ensure that they are recovering well
- An annual appointment with the transplant centre or the GP is recommended (see '**How do donors feel afterwards?**')

> *The donor can be out of bed the day after the operation.*

Anti-rejection medications are given to the recipient.

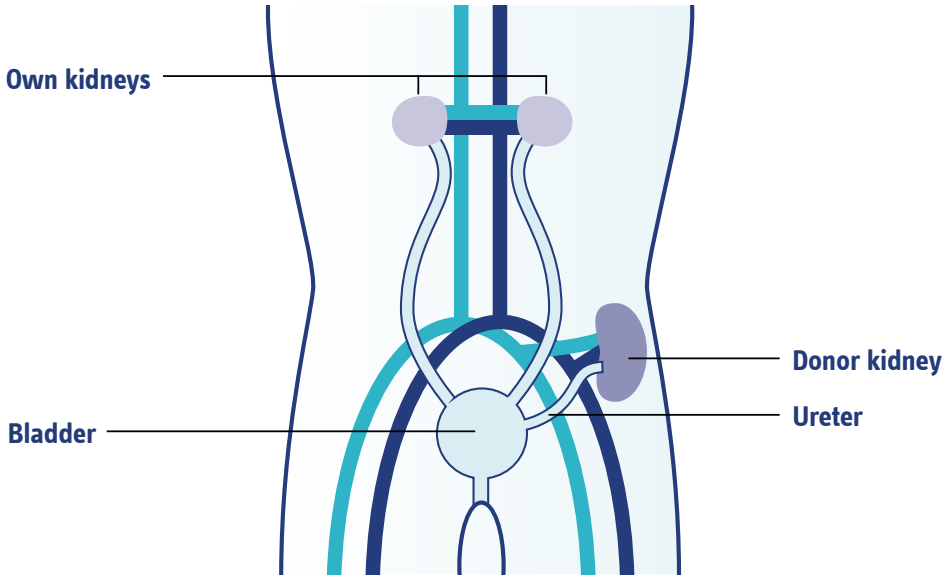
The kidney transplant

The kidney is put into the recipient's outer pelvis area, low down and to one side of the bladder (see figure below). The blood vessels of the new kidney are then joined to the large blood vessels supplying the leg. The kidney lies snugly here, away from the intestines and their covering, and the ureter can be sewn into the bladder more easily.

The recipient's existing kidneys are not routinely removed unless there is a medical reason for doing so, which will have been discussed and addressed separately.

The recipient is encouraged to get out of bed within one to two days after the transplant. After only a few days, most or all of the various tubes inserted during the surgery will be removed. Medication to suppress the immune system and minimise the risk of rejection is started before the surgery, and must be taken for the lifetime of the transplanted kidney (see opposite).

Where is the donor kidney placed?



Recipients often soon feel the benefit of their new kidney but it may take longer for others.

Anti-rejection medications help the recipient's body tolerate a 'foreign' organ. In the early stages, the medication may be in the form of infusions (directly into a vein) as well as tablets; later, when appropriate, this will change to tablets only. Although the dose may be reduced over time, the anti-rejection medications will need to be taken by the recipient for the entire life of the transplant.

The most anxious time for both the recipient and donor is waiting to see if the new kidney functions well.

Depending on how successful the transplant has been, the recipient can usually expect to leave hospital 1-2 weeks after the transplant has been performed by which time they may already be feeling the benefit of the operation. Some people take longer to recover from the surgery and the new regimen of tablets and frequent visits to hospital, so it may be several weeks or months before some recipients feel the benefit of their transplant.

After they have left the hospital, recipients with new transplants are carefully monitored and, initially, visit the transplant out-patient clinic frequently. As the recipient recovers and the donor kidney settles, visits are less frequent.

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How do donors feel afterwards?

The donor is asked to return to the hospital within the first few weeks after their operation to ensure that they have made a good recovery from the operation and that the wound has healed well (see 'Getting back into a routine').

It is recommended that the donor receives annual check-ups to monitor blood pressure and kidney function using a simple blood test and examination of the urine. These annual check-ups can take place at the transplant centre where the donor's operation took place, in a kidney unit closer to where the donor lives or at the donor's GP surgery.

Psychological effects

As previously discussed, some people can feel quite emotional after donation. There can be a sense of anticlimax; so much time has been spent thinking about the operation that life may seem a little empty afterwards. The donor may also feel sad and have an unconscious resentment towards the recipient if they feel unsupported by relatives and hospital staff after the operation, as attention is shifted to the recipient.

This kind of feeling can be more pronounced if the recipient does not make good progress or the transplant is unsuccessful. In some cases, donors may need additional help and support, including counselling, which can be arranged. Non-directed altruistic donors are unlikely to know anything about the person who received their kidney unless both parties choose to make contact, in writing or in person, after the operations (see **non-directed altruistic donation**). It is usually left to the recipient to make the first move if they wish to make contact and, although it does happen, it is more usual for donors and recipients to remain unknown to one another. It is important that anonymous donors are prepared not to hear anything from or about their recipient.

Counselling facilities are provided for the donor at some centres (see '**Potential donor disadvantages**'). GPs and patient and donor charities may also be able to offer help and support.

Where there is a direct relationship between donor and recipient, the impact of donation will be individual to each pair. People who receive kidneys are always grateful, but they are unable to repay the gift and can feel indebted to the donor. It is helpful if the donor can behave in a normal and relaxed way towards the recipient to minimise this feeling. For similar reasons, recipients of non-directed donor kidneys often find it difficult to know how to acknowledge the gift of donation or to thank their donor directly in writing. Transplant teams can offer support and guidance to transplant recipients in this situation and NHSBT have produced resources to support recipients to write to their living donor (https://www.nhsbt.nhs.uk/organ-transplantation/resources/writing-to-your-living-donor/).

Non-directed altruistic donors do not expect to hear anything from their recipient but they always appreciate it when they receive news of them via a letter or card.

Christine explains *"My decision to be a donor was totally the right one. Although it has been a more painful experience than I had hoped it would be, it has been so worthwhile seeing my husband looking so well and knowing that, all being well, we can look forward to many happy and healthy years together. I also believe that it has brought us even closer together as it has been a truly shared experience. I would not hesitate to recommend it to anyone thinking of becoming a living donor."*

Elizabeth agrees *"Being a donor is a unique experience that not everyone who wishes to has the opportunity to take. I was fortunate to be able to do this and would encourage others to do so as well. Personally, I feel richer as a result of the whole experience and through meeting so many special people."*

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Getting back into a routine

The success of the transplant is judged by how well the transplanted kidney works and how quickly the donor returns to full health.

Recuperation

The first three months after a transplant is the 'settling down' period when there is more disruption and uncertainty for both donor and recipient. Once these three months have passed, it is easier for each to resume a normal routine.

Depending on their work or lifestyle commitments and the type of surgery, donors can expect to be at home recuperating after the operation for several weeks. Sometimes this can be a frustrating time, wanting to return to a normal life but without the energy and overall health. Patience is required, as is support from other family members.

For direct donor and recipient pairs, if the donor regularly sees the recipient, this can be an added source of satisfaction – watching the recipient return to good health is a positive experience.

Driving

The Driver and Vehicle Licensing Agency (DVLA) has no hard and fast rules about when it is safe to start driving again after major surgery.

Generally, if the donor feels well and capable, they can usually return to driving after four to six weeks. A good benchmark is whether or not it is possible to do an emergency stop.
Long journeys and/or busy roads require

"After a week in the unit, I was allowed home. A follow-up six weeks after the operation ensured that my blood and urine tests had returned to normal. It is also made very clear that if anything crops up at home that causes concern, there is always someone available at the transplant unit to answer questions and provide support"
comments Elizabeth.

The donor should allow for several weeks of recuperation - depending on the type of surgery - to get back to full activity.

Jan, a non-directed donor explains *"After the surgery on a Thursday, I returned home on the Sunday. I was a little sore and tired for a couple of weeks, but very soon after I was back to full strength and have nothing at all to show for it, other than a few small scars and the satisfaction of knowing my kidney helped someone who really needed it. If I had another kidney to spare I wouldn't hesitate to do it again."*

concentration and stamina which may be reduced in the early weeks after the operation, so these aspects should be considered when assessing the sort of driving conditions to be avoided. It is sensible to seek advice from the transplant team or GP prior to getting back in the driving seat.

Car insurance should be checked as different policies will specify different timeframes for when people are not insured to drive after an operation.

Exercise

Maintaining a healthy lifestyle is as important after donation as it is beforehand. A post-donation exercise programme should begin slowly, according to advice from the transplant team and what feels comfortable for the donor. The length of time spent exercising, and the effort involved, should be increased over a period of time according to the donor's ability and feeling of wellness.

Sexual relations

Donors should be able to resume sexual relations as soon as they feel comfortable. It may take a few months before normal activities are resumed, depending upon overall recovery and recuperation.

Pregnancy

Donors are advised to talk to their transplant centre before considering becoming pregnant.

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Who are all the different people involved in the process?

There are many different people involved in the living donor/recipient transplant team and each has a specific role:

Living donor coordinator	The living donor coordinator/s is/are at the hub of the donation team, with responsibility for ensuring that all aspects of identifying a donor, pre-donation assessments and the actual operations run smoothly. They are aware of how the donor process is progressing and who is responsible for each part, and coordinating every stage to ensure that everything proceeds as smoothly as possible. Most transplant centres have a recipient coordinator who has similar responsibility for recipients, but sometimes living donor coordinators will also be involved with recipient assessment and preparation.
Consultant transplant surgeon	The consultant transplant surgeon removes and/or transplants the kidney. In most centres, the donor kidney removal and recipient transplant operations for one pair are performed by different surgeons. The transplant surgeons involved must be sure that all the results of the tests for assessing the donor for a particular recipient indicate a successful transplant. They must also ensure that both donor and recipient are fit to undergo surgery with minimum risk. The surgeon who removes the kidney carries overall responsibility for ensuring the safety of the donor and complying with the legal (**HTA**) requirements.
Consultant kidney specialist (nephrologist)	The consultant kidney specialist is the person who assesses the medical suitability of both the donor and recipient. Wherever possible, the donor and recipient will be assessed by different consultants. Together with the transplant surgeon, the consultant kidney specialist ensures that the transplanted kidney is likely to restore health and reasonable lifestyle for the intended recipient and, as far as possible, that the safety and welfare of the donor is ensured.
Consultant anaesthetist	There will usually be two anaesthetists - one for the kidney removal from the donor and one for the operation to transplant the kidney to the recipient. It is their responsibility to ensure the health of both people during the operations and to start appropriate pain relief during the operation.

GLOSSARY

HTA: The Human Tissue Authority is a regulator set up in 2005 following events in the 1990s that revealed a culture in hospitals of removing and retaining human organs and tissue without consent and has also updated and brought together other laws that relate to human tissue and organs

Transplant nurse practitioner	The transplant nurse practitioner cares for the recipient after their operation and throughout the post-transplant follow-up period, usually in the out-patient setting.
Physiotherapist	After any form of operation, returning to full activity can be a challenge. The physiotherapist can advise on making rehabilitation easier and more effective.
Psychologist/ Counsellor	There can be important psychological factors when considering kidney donation and donating or receiving a kidney. Whether there are family pressures or any other emotional discomfort, the psychologist/ counsellor is there to help. Donors can always ask to be referred to them at any time if they feel it would be helpful to them.
Social worker	There may be many practical issues to consider, and a social worker who has knowledge and experience in this particular field can offer sound advice and support.
GP	The potential donor's family doctor (GP) should be updated regularly. Once the donor has been discharged by the hospital-based transplant team, the GP will look after their general health. After giving a kidney, donors are offered life-long follow-up and invited for annual review to assess their blood pressure, test their urine and discuss any other health issues. This is often performed by the GP because health issues are usually unrelated to donation. However, there are different arrangements for donor follow-up care in each transplant centre or local kidney unit. The local healthcare team will be able to advise on this.
Pharmacist	Most centres have a specialist pharmacist who advises on pain relief and on all medicines that are prescribed for both donor and recipient throughout the living donor kidney transplantation process.
The ward team	Kidney donors and transplant recipients are cared for on specialist wards where all members of the healthcare team are specially trained to look after patients following kidney removal and transplantation. The team includes many of the same professionals listed above, and they are responsible for the care of donors and recipients from admission to discharge.
District/ Community Nurse	Specially trained nurses may come to the home and help with wound dressings, eg, changing them, or offering other supportive advice.

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Where to get more information

Anyone who is considering donating a kidney to someone who is in need of or may need a transplant should first contact the living donor coordinator. Where someone wishes to donate to a loved one, this should be at the hospital where that person is being treated. Non-directed donors can choose to attend any transplant centre in the UK and can register their interest to donate on-line at https://www.organdonation.nhs.uk/become-a-living-donor/

Living donor transplant coordinators are responsible for ensuring that the preparation and administration of the donor and transplant operations run as smoothly as possibly. They provide liaison with all members of the healthcare team, and continuity for patients and their families throughout the assessment process and admission for the operation. They are very experienced and spend time discussing questions before arranging a meeting with the transplant surgeon or kidney specialist.

For anyone considering donation to someone waiting for a kidney whom they have never met before, further information and how to register interest with a living donor coordinator in the most convenient transplant centre is available from NHS Blood and Transplant at https://www.organdonation.nhs.uk/become-a-living-donor/

Those interested in knowing more about living kidney donation can also contact the following organisations for advice:

The Human Tissue Authority

Email: enquiries@hta.gov.uk
Tel: 020 7269 1900
Web: www.hta.gov.uk

National Kidney Federation

Email: nkf@kidney.org.uk
Helpline: 0800 169 0936
(freephone from landlines)
Web: www.kidney.org.uk

Kidney Research UK

Email: enquiries@kidneyresearchuk.org
Tel: 0300 303 1100 (general)
Web: www.kidneyresearchuk.org

The British Transplantation Society

Web: www.bts.org.uk

Kidney Care UK

Email: info@kidneycareuk.org
Tel: 01420 541424
Web: www.kidneycareuk.org

Give a Kidney

Email: nkf@kidney.org.uk
Web: www.giveakidney.org

NHS Blood and Transplant

Email: enquiries@nhsbt.nhs.uk
Tel: 0300 123 23 23
Web: www.nhsbt.nhs.uk

Make Your Mark - Robert Dangoor Partnership

Email: enquiries@donateakidney.co.uk
Web: www.donateakidney.co.uk

Gift of Living Donation (GOLD)

Web: www.giftoflivingdonation.co.uk

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Glossary

Glossary terms also appear at the bottom of each page throughout this booklet

AIDS	Acquired Immune Deficiency Syndrome – caused by the human immunodeficiency virus (HIV)
Anaemia	A deficiency of the red blood cells that carry oxygen round the body
Antibodies	Proteins that are secreted into the blood to kill bacteria, viruses or parasites. They can also attack transplanted organs
CMV	Cytomegalovirus - a herpes virus
Cross matching	This test indicates if specific immune reactivity (compatibility) is present between the donor and recipient. The test involves exposing the recipient's blood to the donor's blood cells. The recipient may have antibodies that could harm the donor's cells – a 'positive cross match' which would be a contraindication to transplant, as it signifies that the recipient has the ability to destroy the donor's cells and would, most likely, also destroy the donor's transplanted kidney
CT	Computerised tomography – a specialised X-ray
Deceased donor	A deceased donor - a person who may have expressed a wish to give their organs after dying to help someone, and his or her family has allowed that their loved one's organs can be used for transplantation
Dialysis	A process of removing from the blood the body's waste materials, which are normally filtered from the kidneys. There are two main types – haemodialysis and continuous ambulatory peritoneal dialysis (CAPD)
End-stage kidney disease	This is where the kidneys are no longer able to remove the waste products from the blood to maintain health. At this stage dialysis, or a transplant, is essential to take over the work that the kidneys used to do
EBV	Epstein-Barr Virus – a member of the herpes familys
GFR	Glomerular filtration rate - describes the flow rate of filtered fluid through the kidney
Hepatitis B and C	Hepatitis - inflammation of the liver usually as the result of a viral infection

HIV	Human Immunodeficiency Virus [see AIDS opposite]
HLA	Human Leucocyte Antigen [see HLA type below]
HLA typing	A blood test performed prior to transplantation to determine the HLA antigens of both the donor and recipient, and thereby evaluate the closeness of their compatibility (ie, whether they 'match')
HTA	The Human Tissue Authority is a regulator set up in 2005 following events in the 1990s that revealed a culture in hospitals of removing and retaining human organs and tissue without consent and has also updated and brought together other laws that relate to human tissue and organs.
Hypertension	High blood pressure
IA	Independent Assessor – trained and accredited by the HTA to assess certain types of living organ transplantation in the UK
IVP/IVU	Intravenous Pyelogram/Urogram – a specialised kidney X-ray
MRI	Magnetic resonance imaging – a detailed scanning technique
Nephrectomy	The medical term for the surgical operation to remove a kidney
UK Living Kidney Sharing Scheme	A scheme that enables kidneys from living donors that are donated from non-directed altruistic donors and through the paired/pooled scheme to be used throughout the UK for the benefit of recipients waiting for a transplant.
NHS Blood and Transplant	A special health authority of the NHS which is responsible for overseeing the supply of blood, organs and tissues.
Non-directed altruistic donor	This is where a person volunteers to donate a kidney to an unknown recipient.
Recipient	A person who receives an organ from someone else (a donor) to maintain his or her life without dialysis
Syphilis	A sexually transmitted bacterial infection with highly contagious early stages
Transplant	This term is used for the surgical operation of removing an organ or tissue from one person, and putting it into someone else's body. It can also refer to the organ itself

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References

1. NHS Blood and Transplant – Organ Donation and Transplantation, Activity Report 2023/2024, at: https://www.odt.nhs.uk/statistics-and-reports/annual-activity-report/. Last accessed October 2024.
2. Human Tissue Act 2004 chapter 30, at: http://www.legislation.gov.uk/ukpga/2004/30/contents. Last accessed October 2024.
3. Human Tissue (Scotland) Act 2006, at: http://www.legislation.gov.uk/asp/2006/4/contents. Last accessed October 2024.
4. Human Tissue Authority, Code F Part One - Living Organ Donation, June 2023, at: https://www.hta.gov.uk/guidance-professionals/codes-practice-standards-and-legislation/codes-practice. Last accessed October 2024.
5. NHS Blood and Transplant, Performance and Strategy, at: https://www.nhsbt.nhs.uk/who-we-are/performance-and-strategy/our-strategy/. Last accessed October 2024.
6. BTS/RA Living Donor Kidney Transplantation Guidelines March 2018, 4th Edition.
7. Kidney Research UK, Living with one kidney, at: https://kidneyresearchuk.org/kidney-health-information/questions-about-kidney-disease/living-with-one-kidney/. Last accessed October 2024.
8. NHS Blood and Transplant - Milestone: 1,000 people in UK have donated a kidney to a stranger at: https://www.organdonation.nhs.uk/get-involved/news/milestone-1-000-people-in-uk-have-donated-a-kidney-to-a-stranger/. Last accessed October 2024.
9. Hadjianastassiou VG, Johnson RJ, Rudge CJ, Mamode N. 2509 living donor nephrectomies, morbidity and mortality, including the UK introduction of laparoscopic donor surgery. Am J Transplant 2007;7(11):2532-2537.

Additional resources

www.nhsbt.nhs.uk

www.organdonation.nhs.uk

www.organdonationscotland.org/tell-me-about-living-donation

www.gov.wales/living-donation/becoming-living-donor

www.giftoflivingdonation.co.uk

www.nbta-uk.org.uk

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Care plan

Donor assessment for_____(Name)

Date	Appointment/test/action	With whom	Where to attend

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This table is designed to help you plan/keep a personal record of your assessment schedule with your living donor coordinator.

Questions/queries

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Gift of Life

SANDOZ