

Histocompatibility testing for kidney transplant donors

You have come forward to see if you might be a suitable organ donor for a family member or close friend who needs a kidney transplant or as a potential altruistic donor who may be willing to donate a kidney to someone you do not know. Before you can donate your kidney, you will need to provide blood samples for a number of tests. We will give your blood samples to the histocompatibility and immunogenetics (H&I) laboratory to carry out these tests. There are two tests - HLA typing and crossmatching.

What is HLA typing?

You inherit your HLA (human leucocyte antigen) type (also called tissue type) from your parents. HLAs are found on the surface of most cells in the body. If your HLA type is different to the patient's, their immune system may recognise the difference and attack the kidney and damage it. The better the HLA match between you and the patient, the better the chance of the transplant being successful in the long term. However, while a perfect match is best, it is not always essential, and many transplants work well despite some differences in the HLA type.

There are many different tissue types and so most people are different from each other. The best chances of finding a good match are from within the patient's family. There is a one-in-four chance of a brother or sister being an exact match. However, it is also possible to find a good match from other relatives, or from a donor who is not related to the patient.

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How is the test carried out?

We must identify your HLA type to see how good a match you are with the patient. We will do this by testing a sample of your DNA, which we get from your blood cells.

The laboratory will store a sample of your DNA in case we need to carry out further tests in the future to help with the care of the patient having the transplant.

What happens to my results?

We will give the results of your HLA typing to the transplant team at the hospital that is caring for the patient. If the patient is transferred to another hospital after we have carried out your tests, and you still want to donate your kidney, we may send your results to the new transplant team.

If we find you to be a suitable match and the transplant goes ahead, we will send your test results to NHSBT Organ Donation and Transplantation, who must keep records of all organ transplants that take place in the UK.

What is crossmatching?

The crossmatch is a direct test between your white blood cells and a blood sample from the patient. This is a test of whether the patient has any antibodies in their blood that could attack the transplanted organ and cause it to fail. A transplant cannot take place unless the result of this test shows that none of these antibodies are in the patient's blood at the time of the transplant.

We may carry out more than one crossmatch while you are waiting to donate your kidney. The first crossmatch will show if you are a suitable donor. If you decide to go ahead with donating your kidney, we will carry out another crossmatch a few days before the transplant. We may also carry out another crossmatch, especially if there is quite a long gap between these tests. This is because the patient's antibodies can change over time if they have:

- received a blood transfusion
- had another transplant, or
- had an infection

We will give the crossmatch results to the transplant team caring for the patient.

If the transplant goes ahead, we will store your samples in case we need to carry out further tests to help with the patient's ongoing treatment. If appropriate we may ask you to give more samples after the transplant if it looks like the patient is rejecting the kidney. We will use the tests we carried out on these samples to help decide if the patient is rejecting the kidney and what might be causing it. The results will help the transplant team decide the best treatment for the patient.

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What happens to my sample?

When we no longer need your samples for testing, or we have more samples than we need, the law allows us to use these anonymously for quality control (making sure our tests are working correctly), research (depending on whether this is approved by an ethics committee) or introducing new procedures, or for educating and training doctors, nurses, scientists and other professionals working in healthcare. This helps us maintain accurate testing procedures and improve our knowledge, and so provide the best possible care for all patients.

However, if you do not want us to use your samples for any of the purposes above, you must tell your doctor or the person taking your blood (or both). We will respect your wishes and dispose of any samples we no longer need.

This patient information leaflet does not replace the guidance provided by your treating clinical team. Your treating clinical team should advise you of the options for treatment, advise of any alternative treatment and associated risks. Your treating clinical team should ensure that you are aware of the material risks associated with the treatment advised.

If you are unsure about any aspects of the treatment/care, ask your treating clinical team to explain.

NHS Blood and Transplant

NHS Blood and Transplant (NHSBT) saves and improves lives by providing a safe, reliable and efficient supply of blood and associated services to the NHS in England and North Wales. We are the organ donor organisation for the UK and are responsible for matching and allocating donated organs. We rely on thousands of members of the public who voluntarily donate their blood, organs, tissues and stem cells.

All information provided to NHS Blood and Transplant is used in accordance with the General Data Protection Regulation (GDPR) and all other applicable privacy legislation. For more information on how we look after your personal details or to find out more about your privacy rights visit www.nhsbt.nhs.uk/privacy or call 0300 123 23 23. NHSBT are committed to keeping your data safe and confidential.

For more information

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Call **0300 123 23 23**