



组织配对

有关肾或胰脏的移植

为了查看您与候选的捐赠者有多相容，您需要做 **4** 个测试。此章节描述与讲解的就是这些测试与结果的用途。

何为组织配对？

组织配对能查出到底两人是否 *相容*（相像）。组织配对的结果能让我们了解把捐赠者的器官放置到您体内是否安全。

何为供体（捐赠者）相容？

供体相容所指的是当您与供体组织的相似度达到一个使您身体（比起排斥）更倾向于接受那移植过的器官。

为何供体兼容是重要的？

您体内与生俱来就有一个用来识别有害物的免疫系统。此系统会对抗任何不是来自您身体的物质。不过它主要任务是对细菌与病毒产生反应，因为它们可以引起感染或疾病。

您的免疫系统很自然地会视来自他人的移植器官为一种威胁，并会试图排斥它。如您与一位捐赠候选者的身体是相容的，那么您身体排斥此捐赠者的器官的可能性就比较低。

组织配对是如何完成的？

评估当中，我们能透过血液测试来了解您的免疫系统。这些化验结果将透露：

- 您的血型 (O, A, B, 或 AB)
- 在您血液中有可能对捐赠者的器官产生反应的抗体
- 您的组织的类型 (人类白细胞抗原 *human leukocyte antigens* 或 *HLA* 分析)



作评估时您会抽血，好让我们了解您的免疫系统。

我们将会用这些化验结果来决定到底某一位捐赠者是否与您相容。

接受移植后您也将收到**免疫抑制药**好让您的身体更大可能地接受那相容的器官。此药的抑制防止您的免疫系统排斥您的新器官。

相容性测试

您需要做 4 项测试来检测您与可能的捐赠者是否相容。 它们是：

血型 (ABO) 相容性

血型主要有 4 种 **O, A, B, 与 AB**。我们将从您及捐赠候选者抽取血样、以便进行测试以确保血液类型是相容的。

此图标显示平常相容的血型组合：

血型	可以接受	可以捐赠给
O	O, A2	O, A, B, AB
A	A, O	A, AB
B	B, O, A2	B, AB
AB	O, A, B, AB	AB

- **O** 型血的人被誉为“万能献血者”、可以给所有其他血型的人。
- **AB** 型血是配合接收所有其他血型。它被称为“万能受血者。”
- 有些 **A** 型人在血液中的红血球内略有不同的蛋白质、使他们血液的免疫系统血像是 **O** 型血。这就是所谓的“**A2** 亚型。”**A2** 亚型血可以捐献血液给 **O** 型和 **B** 型的人。这种捐赠者与接受者的组合需要更多的测试来决定他们是否适合彼此。

抗体检测

抗体是血液中的蛋白质、它们识别和抵抗您体内的异物，如病毒、细菌、或移植过的器官。通常来说，您的抗体会对体内的异物上的一种叫**抗原**的东西产生反应。

当抗体在抵抗移植器官的时候，往往都是在抵制人类白细胞抗原（**HLA**）。除非您接触过人类白细胞抗原（**HLA**）（例如怀孕、输血、感染、或过往的器官移植），不然您的身体正常来说是不会产生人类白细胞抗原（**HLA**）的。

有两种测试能查出您的身体有无产生人类白细胞抗原（**HLA**）：

群体反应性抗体 (PRA) 试验

群体反应性抗体 (PRA) 试验、是用您的血液与众多捐血者的“组织” (在此就是白血球) 做比较。就会显示您对抵制人类白细胞抗原 HLA 反应 (敏感度) 有多强。

群体反应性抗体 (PRA) 的指数是按照百分比来计算的。譬如, 如您的群体反应性抗体 (PRA) 指数是百分之五十(50%), 那就代表了您的免疫系统会对百分之五十(50%)的捐赠者的器官产生反应。您身体对不同种类的人类白细胞抗原 (HLA) 的反应越多, 您的群体反应性抗体 (PRA) 百分比就越高。

高群体反应性抗体 (PRA) 指数表示的是:

- 您的移植有较高的排斥风险
- 您可能需要更多的免疫抑制药
- 可能会更难配对到一位捐赠者。这意味着您等待移植的时间可能更长久。

怀孕、输血、及感染都会让您的免疫系统产生新的人类白细胞抗原 (HLA), 并促使您的群体反应性抗体 (PRA) 指数升高。

如您在完成群体反应性抗体 (PRA) 试验后: 怀孕了或接受输血, 您就需要通知移植科护士, 并且再做一次群体反应性抗体 (PRA) 实验。

交叉配对

交叉配对也测人类白细胞抗原 (HLA), 并会把您与特定的捐赠者的血液作一个对比。可以是一个活体或遗体的捐赠者配对。

- 如您接受活体捐赠、交叉配对是在评估过程的早期做、来检测捐赠者与您是否相容。
- 若是遗体捐赠、您的血与捐赠者的血液将会是在器官变成可供您使用的时候进行测试。

如您血液中的抗体对捐赠者的血液产生了反应、即称为“阳性交叉配对反应”。一般交叉配对反应呈阳性时; 意指您大致上不能接受该捐赠器官、因为您血液里的抗体会即刻排斥该捐赠的器官。

在某些情况下、有一种治疗可以将抗体除去、并防止再产生更多这类的抗体。此治疗称作脱敏, 并可能让您配对到更多的捐赠者。

我们将与您讨论脱敏是否适用于您的情况。但即使经过这种治疗、抗体仍然有可能会再产生、使器官排斥的风险比目前没有抗体的风险要高。

组织分型

人类白细胞抗原（HLAs）是在人体组织或细胞中的抗原（蛋白质）。属于您体内的抗原取决于您的基因编码。

一般来说、与您血亲越接近的人、遗传差异就越少、与您的抗原就越相似。也就是您的免疫系统更容易接受与您血亲相近的捐献者所捐赠的器官。

人类拥有一对称为单体型（*haplotype*）的脱氧核糖核酸（DNA）、并从父母亲分别继承一个单体型、所以您可以把自己想成您与父母亲是“半匹配”。这些单体型将决定某一位捐赠者是否配合您。

移植接受者有机会对捐赠者的人类白细胞抗原（HLAs）产生供体特异性抗体 *donor-specific antibodies (DSAs)*。这在移植前后均有可能发生。

移植后您的血液会被拿去做供体特异性抗体（DSAs）测试。阳性的结果可能意味着早期排斥。如其他测试也指向排斥，我们能给您治疗来预防排斥的发生。

您有疑问吗？

我们很重视您的疑问。当有疑问或顾虑时，请致电您的医生或医护人员。华大医院诊所的工作人员也可随时给您协助。

移植科电话：
206.598.3882

Tissue Matching

For a kidney/pancreas transplant

You will have 4 tests that will show how compatible you are with a potential donor. This chapter describes those tests and explains how the results are used.

What is tissue matching?

Tissue matching is a way of finding out if 2 people are *compatible*, or alike. The results of tissue matching help us know if it is safe for us to place a donor's organ into your body.

What is donor compatibility?

Donor compatibility is when your tissues and the donor's tissues are enough alike that your body is more likely to accept the transplanted organ.

Why is donor compatibility important?

Your body has a built-in *immune system* that recognizes substances that could harm it. This system protects your body against anything that is different from your body. Its main job is to react to bacteria and viruses that could cause infections or disease.

Since a transplanted organ comes from another person's body, your immune system naturally sees it as a threat and tries to reject it. If you and a potential donor are compatible, there is a lower chance that your body will reject an organ from that donor.

How is tissue matching done?

As part of your evaluation, blood tests will tell us about your immune system. The results of these tests will show:



You will have blood tests during your evaluation that tell us about your immune system.

- Your blood type (O, A, B, or AB)
- Antibodies in your blood that may react against the donor organ
- Your tissue type (*human leukocyte antigens* or *HLA analysis*)

We will use the results of these tests to find out if a certain donor is compatible with you.

To improve the chances that your body will accept a compatible organ, you will also receive *immunosuppressant* drugs after transplant. These drugs suppress your immune system to keep it from rejecting your new organ.

Compatibility Tests

You will have 4 tests that will show if you are compatible with your potential donor. They are:

Blood Type (ABO) Compatibility

There are 4 main blood types O, A, B, and AB. We will test blood samples from both you and the potential donor to see if your blood types are compatible.

This chart shows which blood types are usually compatible:

Blood Type	Can Receive from	Can Donate to
O	O, A2	O, A, B, AB
A	A, O	A, AB
B	B, O, A2	B, AB
AB	O, A, B, AB	AB

- People with blood type O can donate to all other blood types. It is called the “universal donor.”
- People with blood type AB can receive from all other blood types. It is called the “universal recipient.”
- Some people with blood type A have unique proteins on their red blood cells. This “subtype” of type A blood is called A2. This type of blood looks like blood type O to the immune system. People with subtype A2 blood may be able to donate to people with blood types O and B. More tests are needed to see if this is possible for a donor-recipient pair.

Antibody Testing

Antibodies are proteins in your blood that identify and react against a “foreign object” in your body, such as a virus, bacteria, or a transplanted organ. Your antibodies usually react to proteins called *antigens* that are on the foreign object.

Antibodies that react against a transplanted organ are often reacting to *human leukocyte antigens* (HLAs). Your body usually does not make HLA antibodies unless you have been exposed to them before. Events that can cause your body to produce HLA antibodies include pregnancies, blood transfusions, infections, or a previous organ transplant.

There are 2 types of tests to find out if you make HLA antibodies:

Panel Reactive Antibody Test

A *panel reactive antibody* (PRA) test compares your blood to the white blood cells of people who have donated blood. This shows how *reactive* (sensitive) your immune system is against their HLAs.

Your PRA is calculated as a percent. For example, if your PRA is calculated as 50%, this means that your immune system will react against organs from 50% of donors. The more HLAs you react against, the higher your PRA percent.

A high PRA means:

- There is a higher risk of rejection when you get a transplant.
- You may need more immunosuppressant medicines.
- It may be harder to match you with a donor. This may make your wait for a transplant longer.

Pregnancy, blood transfusions, and infections can make your immune system create new HLA antibodies, which increases your PRA. If you become pregnant or have a blood transfusion after you have had your PRA test, contact your transplant nurse coordinator. You will need to have another PRA test done.

Cross Matching

Cross matching also checks for HLA antibodies. It compares your blood to a certain donor's blood. This can be a living donor or a deceased donor.

- With a living donor, cross matching is done early in your evaluation to see if that donor is compatible with you.
- With a deceased donor, your blood is tested against the donor's blood when the organ becomes available.

If antibodies in your blood react against the donor's blood, it is called a *positive cross match*. This usually means the antibodies in your blood would cause rejection of the donor organ right away. Most times, you would not be able to receive an organ from that donor.

There is a treatment that removes HLA antibodies and keeps more of them from forming. This treatment is called *desensitization*. This may allow more donors to be a match for you.

We will talk with you about desensitization, if it might work for you. But even with this treatment, the HLA antibodies may return, making the risk of organ rejection higher than if you never had the antibodies at all.

Tissue Typing

HLAs are *antigens* (proteins) found on human tissue or cells. Your antigens are decided by your genes.

The more closely related you are to someone, the fewer genetic differences you have. This means your antigens are more alike. Your immune system is more likely to accept an organ from a donor who is closely related to you.

People inherit 2 copies of DNA called *haplotypes* from their parents, 1 set from each parent. This means you are a tissue “half match” with each of your parents. These haplotypes define whether or not a donor is a match for you.

Transplant recipients can develop antibodies against the donor HLAs, called *donor-specific antibodies* (DSAs). This can happen both before and after transplant.

We will check your blood for DSAs after your transplant. If you have DSAs, it may be an early sign of rejection. If other tests show that you might be rejecting the transplanted organ, we can start treatment to keep this from happening.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

Transplant Services:
206.598.3882