



遗体捐赠者

肾脏移植

本章解释了不同类型的遗体肾脏捐赠者。在您接到来做移植手术的电话前、请阅读本章，以便您了解会发生什么。

肾脏捐赠者资讯指数

当您会见您的移植团队时、他们会与您谈论到不同形态的遗体捐赠者。并会解释肾脏捐赠者资讯指数 (*Kidney Donor Profile Index (KDPI)*)。

肾捐赠者资讯指数 (KDPI) 是用于评估捐赠者的健康状态。肾脏捐赠者资讯指数 (KDPI) 是基于捐赠者的年龄、身高、体重、种族、血压高 (高血压) 的病史、糖尿病病史、是否因中风死亡、血清肌酸酐指标、丙型肝炎指标、与心脏死亡器官捐赠者 (Donor After Cardiac Death, DCD、有关心脏死亡器官捐献 DCD 的资料请参看第 4 页)

由肾捐赠者资讯指数 (KDPI) 可以知道某肾脏在移植后功能可以持续多久。此指数是按照百分比 (%) 来计算、其指数范围为百分之零 (0%) 至百分之百 (100%)。较低的指数表示肾脏功能持续的时间较长、例如：

- 肾捐赠者资讯指数 (KDPI) 为百分之二十 (20%) 的肾脏功能很可能持续的时间会比百分之八十 (80%) 的遗体捐赠的肾脏长。
- 肾捐赠者资讯指数 (KDPI) 为百分之六十 (60%) 的肾脏功能很可能持续的时间会比百分之四十 (40%) 的遗体捐赠的肾脏长。
- 肾捐赠者资讯指数 (KDPI) 高于八十五 (85%) 的肾脏功能预期能持续五年半 (5 ½ 年) 的时间。此种移植一般等候时间比肾捐赠者资讯指数 (KDPI) 指数 (KDPI) 低于 85% 的肾脏较短。



了解不同类型的遗体捐献者、有助于您在接到移植电话时做决定。

捐赠者类型

标准规范捐赠者

当您在遗体捐赠肾脏移植排名等待移植时、您是加在等待 *标准规范捐赠者 (standard criteria donor (SCD))* 的肾脏。

标准规范捐赠者 (**standard criteria donor (SCD)**) **standard criteria donor (SCD)** 是:

- 肾捐赠者资讯指数 (KDPI) 低于 **85%**
- 没有已知的肝炎或人类免疫力缺陷病毒 (HIV) 感染的风险

在撰写本文时 (2016 年 12 月) 标准规范捐赠者 **SCD** 肾移植的等待时间约为 **3 至 5 年**

其他捐赠者类型

您也可选择接受来自一位不符合标准规范捐赠者 (SCD) 规格的捐赠者的肾脏。此类捐赠者可能有:

- 肾捐赠者资讯指数 (KDPI) 高于 **85%**
- 已知有感染风险 (请参阅第 5 页有关“风险超标捐赠者”的资讯)

选择非标准捐赠者肾脏大多是因为等候移植的时间比一般排候者短。如您现时接受肾透析、及早接受肾移植很可能会使您活得更长久。

如您的血液是 **B** 型、您可选择接受从 **A** 或 **AB** 血型供体捐赠的肾脏 (参考第 6 页有关“**A2** 亚型与 **A2B** 型捐赠者”的资讯)。我们提供此类移植是由于 **B** 血型患者的排候期比 **A** 与 **AB** 血型患者的排名等待期漫长许多。

作捐赠者类型的决定

您随时随刻、不论早晚都有可能接到遗体捐赠者移植的电话通知。我们提供的肾脏可能来自于:

- 一位标准规范捐赠者 (SCD)
- 肾捐赠者资讯指数 (KDPI) 高于 **85%**
- 一位风险超标捐赠者
- 一位死于心脏病的捐赠者 (请参阅第 4 页有关“心脏死亡后捐赠”的资讯)
- **A2** 亚型或 **A2B** 型血的捐赠者

了解这些术语将有助于在接到移植通知电话时尽快地作出一个对您最好的决定。

- 您不一定要接受任何来自不符合标准规范的捐赠者的肾脏。但是、等待一位标准规范捐赠者(SCD)的时间、与肾捐赠者资讯指数(KDPI)超前者、或已知感染风险捐赠者的肾脏、可能要多花数月或数年。

移植后预计存活 (EPTS) 率

每位被列于遗体肾捐献名册的排名等候者、均会获得一个 *移植后预计存活率(Estimated Post-Transplant Survival, EPTS)* 指数。此指数为百分比值(%)、它把可能运作时间较长的肾脏配对给需要肾脏时间较久的人。

您移植后预计存活率 (EPTS) 是基于、您对移植肾脏功能持续时间上的需求:

- 您的年龄
- 您已透析了多久
- 您已接受过几次移植
- 有无糖尿病病史

如您移植后预计存活率 (EPTS) 较高、您可选择接受肾脏捐赠者档案指数(KDPI)高于 85%捐赠者的肾脏。此类肾脏功能可能持续的时间比从肾捐赠者档案指数(KDPI) 低于 85%捐赠者的肾脏短、但您的排名等待的时间很可能较短。

以下是两个有关移植后预计存活率 (EPTS) 的例子;

- 移植后预计存活率 (EPTS) 为 20%的患者、通常是一位年轻人、并很可能需要一个移植后能比 80%的其他候选人的肾功能持续更长的肾脏。
- 若移植后预计存活率 (EPTS) 为 60%、很可能需要一个移植后能比 40% 的其他候选人的肾功能持续更长的肾脏。

如何取得您的移植后预计存活率 (EPTS) 的指数

我们会告诉您。也可透过器官获取及移植联网(Organ Procurement and Transplantation Network) 自行计算: Organ Procurement and Transplantation Network 网址:

<https://optn.transplant.hrsa.gov/resources/allocation-calculators/eps-calculator/>

肾脏的寿命与捐赠者的资讯指数 (KDPI)

此表展示基于肾脏捐赠者资讯指数 (KDPI) 的预期肾脏寿命：

遗体肾捐赠者的资讯指数(KDPI)	肾脏预期寿命
高于 85%	5.60 年
21% 与 85% 之间	8.90 年
0% 与 20%之间	11.44 年

请注意：以上数值为 *中位数 (medians)*。就是半数 (50%) 肾脏发挥功能的时间会超过 “肾脏预期寿命” 所列出的年限、另一半 (50%) 的肾脏发挥功能的时间却会更短。您的健康与您按照医嘱服药是移植肾脏发挥功能时间长久的主要因素。

肾捐赠者资讯指数 (KDPI) 高于 85% 的捐赠者的肾脏往往持续功能的时间会比肾捐赠者资讯指数 (KDPI) 低于 85% 的肾脏短。一般有两种排名等候者、我们建议他们接受肾捐赠者资讯指数 (KDPI) 高于 85% 的捐赠者的肾脏：

- 年龄高于 60 岁并无糖尿病
- 年龄高于 50 岁患有糖尿病

心脏死亡后的捐赠

影响肾捐赠者资讯指数 (KDPI) 的因素之一是 *心脏死亡捐赠者 (donation after cardiac death, DCD)* 的情况。提供给您的肾脏可能来自心脏死亡捐赠 (DCD) 者、因此您有必要了解这情况及对您有何影响。

- 大多数的移植器官是来自 *脑死亡* 的捐赠者。但是有些器官是因心脏死亡者捐赠的。就是这些捐赠者的心脏在他们被宣布死亡前已停止跳动。
- 一位心脏死亡捐赠 (DCD) 者的肾脏在他的心脏停止跳动时已停止接受氧气的供应。因此、来自一位心脏死亡捐赠 (DCD) 者的肾脏可能需要较长的时间才会在您体内开始发挥它的作用。此现象即为 *移植肾功能延迟恢复 (delayed graft function, DGF)*。来自心脏死亡捐赠 (DCD) 的肾脏在手术后一般都需要透析。
- 恢复期过后、多数心脏死亡捐赠 (DCD) 的肾脏都运作的很好。

肾捐赠者资讯指数 (KDPI) 高于 85% 的捐赠者也可能是一位心脏死亡捐赠 (DCD) 者。

风险超标捐赠者

- 某一些遗体捐献者在生时参与了“高风险行为”。公共卫生局(Public Health Services, PHS)为这些行为作出的定义包括
- 吸毒
- 被监禁过
- 卖淫

欲了解完整的高风险行为、请上网“近日对于 HIV, HBV, HCV 行为性感染的风险因素(“Behavioral Risk Factors for Recent HIV, HBV, or HCV Infection”)文章:

optn.transplant.hrsa.gov/media/1163/2013_phs_guideline.pdf.

如我们提供给您的移植肾脏是来自一位有已知风险的遗体捐赠者、我们会先告诉您肾脏来自一位“风险超标捐赠者”。

此类肾脏发挥功能的时间与从标准规范捐赠者(SCD)获得的肾脏相同。接受风险超标捐赠者的肾脏可能把等待移植的时期减短。

移植后的感染风险

我们对每一位遗体捐赠者都作过乙肝、丙肝、与人类免疫力缺陷病毒(HIV)感染的检测。但是、测试还是有低风险的 *假阴性* 结果。在这种情况下;虽然测试结果呈阴性、捐赠者体内还是带着肝炎或人类免疫力缺陷 (HIV) 的病毒。

被有风险超标行为的捐赠者、及假阴性测试结果者感染风险较高。在给予**风险超标的捐赠者肾脏之前，我们将始终征得您的同意。**

因肾移植导致的肝炎或人类免疫力缺陷病毒 (HIV) 的风险是很低的。在接受来自风险超标捐赠者的肾脏时、您被感染的风险是:

- 乙肝病毒: 300 移植病例中有 1 位 即 (0.33%)。
- 丙肝病毒: 5,000 移植病例中有 1 位 即 (0.02%)。
- 人类免疫力缺陷病毒(HIV): 16,000 移植病例中有 1 位 即 (0.006%)。

相对来说: 坠机事件身亡的风险是 5,000 位乘客中有 1 位即 (0.02%)。

乙肝感染的风险较高。移植前会给您一系列的乙肝疫苗。这会减低您受此病毒感染的风险。

如您决定接受风险超标捐赠者的肾脏、手术前有一位传染病的专家医生会来见您。此专科医生会详细地讲解所有的风险。

我们会在移植后一年内、持续地为您做肝炎及人类免疫力缺陷病毒(HIV)的测试。即使器官是来自一位标准规范捐赠者(SCD)、被感染的风险从不会是零(0%)。

A2 亚型或 A2B 型血的捐赠者

某些 A 型血捐赠者的红血球的表面上带有不同的蛋白质。从您的免疫系统的角度来看、这些蛋白质使此种捐赠者的血液看起来像 O 型血。也就是您的身体可能更容易接受它们的器官。

此种血型被称为“A2 亚型”(“A2 subtype”)或“非 A1 亚型”(“non-A1 subtype”)。某些 AB 血型的人有“A2B 亚型”(“A2B subtype”)或“非 A1B 亚型”(“non-A1B subtype”)。

A2 亚型或 A2B 亚型血的捐赠者均能安全地把器官捐献给某些 B 型受赠者。A2 型捐赠者亦可安全地捐献给某些 O 型受赠者、但此配对仅限于活体捐献、并不适用于遗体捐赠者。

如您是 B 型血

如您是 B 血型、您排候遗体捐赠的时间往往会比其他血型的排候者长。如您能接受 A2 或 A2B 型捐赠者的肾脏，您的排候期很可能相对来说较短。

透过血液测试、我们可了解您的身体对 A 型血有多强烈的反应。此测试要查的是抗 A 抗体滴度 (anti-A antibody titers)。

- 如您在这测验中产生了强烈的反应、我们即不会提供来自 A2 或 A2B 型血捐赠者的肾脏。
- 如您示反应不强烈、我们就可以很安全地为您提供来自 A2 或 A2B 血型捐赠者的肾脏。如我们为您提供来自 A2 或 A2B 血型捐赠者的肾脏、就表示您抗 A 抗体的指标不是太高。

来自 A2 或 A2B 血型捐赠者的肾脏相当于 B 型血捐赠者的肾脏。它们的效果与患者的生存率及移植器官的存活率相等。

将 A2 或 A2B 血型捐赠器官移植给 B 型的病人会有很小的风险。可能导致较高的早期排斥的风险。移植后您的医生会仔细地观察您的肾脏。如有必要、医生可能会作一个肾活检。

您可以选择不接受来自 A2 或 A2B 血型捐赠者的肾脏。此选择并不会影响您在排候 B 型血肾移植的名册上的排名。

您有疑问吗？

我们很重视您的提问。如有疑问或顾虑，请致电您的医生或医护人员。

移植科电话：
206.598.3882

Deceased Donors

For a kidney transplant

This chapter explains the different types of deceased kidney donors. Read this chapter before you are called for surgery so that you know what to expect.

The Kidney Donor Profile Index

During your team visit, the transplant team will talk with you about the different types of deceased donors. They will also explain the *Kidney Donor Profile Index* (KDPI).

The KDPI is used to rate a donor's kidney health. The KDPI score is based on the donor's age, height, weight, ethnicity, history of high blood pressure (*hypertension*), history of diabetes, whether stroke was the cause of death, serum creatinine levels, hepatitis C status, and Donor After Cardiac Death (DCD) status (see "Donor After Cardiac Death" on page 4).

A donor's KDPI score tells how long their kidney is likely to work after transplant. The score is given as a percent (%). It can be as low as 0% and as high as 100%. A lower KDPI score means that the kidney is expected to last longer. For example:

- A KDPI score of 20% means the kidney is likely to work longer than 80% of other deceased donor kidneys.
- A KDPI score of 60% means the kidney is likely to work longer than 40% of other deceased donor kidneys.
- Kidneys with KDPI above 85% are expected to work longer than 5½ years. These transplants tend to happen more quickly than transplants of kidneys with KDPI below 85%.



Learn about the different types of deceased donors so that you are ready to make decisions when you get the call for transplant.

Types of Donors

Standard Criteria Donors

When you are placed on the deceased donor kidney transplant wait list, you are added to the list of people who are waiting for a kidney from a *standard criteria donor* (SCD).

An SCD:

- Has a KDPI score below 85%
- Does not have known risks for hepatitis or HIV infection

At the time of this writing (December 2016), the wait time for an SCD kidney transplant is about 3 to 5 years.

Other Types of Donors

You can also choose to accept a kidney from a donor who does not meet the standard criteria. These donors may have:

- A KDPI score above 85%
- Known risks of infection (see “Higher-Than-Standard-Risk Donors” on page 5)

Most times, making this choice means you have a shorter wait for kidney transplant. If you are on dialysis, you are likely live longer after transplant if you receive your kidney earlier.

If you have type B blood, you may choose to accept a kidney from a donor who has type A or AB blood (see “A2 and A2B Donors” on page 6). We do these types of transplants because the wait list for type B transplant patients is much longer than the wait list for type A and AB patients.

Deciding on Donor Type

We may call you at any time of day or night for a deceased donor transplant. The kidney we offer you may be from:

- An SCD
- A donor with KDPI above 85%
- A higher-than-standard-risk donor
- A donor who has had cardiac death (see “Donation After Cardiac Death” on page 4)
- An A2 or A2B donor

You will need to know what these terms mean so that you can quickly make the best decision for you when we call.

You do not need to accept a kidney from any donor who does not meet the standard criteria. But, your wait for a kidney from an SCD might be months or years longer than your wait for a kidney from a donor who has a higher KDPI score or with known risks of infection.

Estimated Post-Transplant Survival (EPTS)

All people on the deceased donor kidney transplant wait list are given an *Estimated Post-Transplant Survival* (EPTS) score. This score is used to match kidneys that are likely to last longer with the people who will likely need working kidneys longer. The score is given as a percent (%).

Your EPTS score is based on factors that affect how long you will need a kidney to work after transplant:

- Your age
- How long you have been on dialysis
- How many transplants you have already had
- Whether you have a history of diabetes

If you have a higher EPTS score, you may choose to receive a kidney from a KDPI above 85% donor. This kidney may not last as long as one from a KDPI below 85% donor, but your wait time for transplant will likely be shorter.

Here are 2 examples of how the EPTS score works:

- Someone with an EPTS score of 20% is often a young person who will likely need a kidney transplant to last longer than 80% of other candidates.
- Someone with an EPTS score of 60% will likely need a kidney transplant to last longer than 40% of other candidates.

How to Find Your EPTS Score

We will tell you your EPTS score, but you can also figure it out yourself. To do this, visit the Organ Procurement and Transplantation Network website:

<https://optn.transplant.hrsa.gov/resources/allocation-calculators/epts-calculator/>

Kidney Life and Donor KDPI Scores

This chart shows how long we expect a kidney to last based on the donor's KDPI score:

Deceased Donor's KDPI Score	Kidney Expected to Last
Higher than 85%	5.60 years
Between 21 and 85%	8.90 years
Between 0 and 20%	11.44 years

Please note that these numbers are *medians*. This means that half (50%) of the kidneys will work longer than the number of years in the “Kidney Expected to Last” column and half (50%) will work a shorter time. Your health and how well you take your medicines will be the main factors that affect how long the transplant will work.

Kidneys from donors with a KDPI score above 85% often do not last as long as kidneys from donors with a KDPI score below 85%. We usually offer kidneys from donors with KDPI above 85% to people on the wait list who are:

- Over age 60 and do not have diabetes
- Over age 50 and have diabetes

Donation After Cardiac Death

One of the factors in the donor's KDPI score is their *donation after cardiac death* (DCD) status. You may be offered a kidney from a DCD donor, so it is important to understand what this means and how it may affect you.

- Most organ transplants come from donors who are pronounced *brain dead*. But, some organs come from donors who donate after cardiac death. This means that their heart stopped beating before they were pronounced dead.
- When the DCD donor's heart stopped beating, their kidney stopped receiving oxygen. Because of this, a DCD kidney may take longer to start working in your body. This is called *delayed graft function* (DGF). It is common to need dialysis after a DCD kidney transplant.
- Most DCD kidney transplants start working very well after they have some time to heal.

KDPI-above-85% donors may also be DCD donors.

Higher-Than-Standard-Risk Donors

Sometimes we find out that a deceased donor was involved in “high-risk behaviors.” These behaviors are defined by Public Health Services (PHS). They include:

- Drug use
- Time in jail
- Prostitution

For a full list of high-risk behaviors, read “Behavioral Risk Factors for Recent HIV, HBV, or HCV Infection” at optn.transplant.hrsa.gov/media/1163/2013_phs_guideline.pdf.

If we offer you a kidney transplant from a deceased donor with known risks, we will tell you that it is from a “higher-than-standard-risk donor.”

A kidney from this type of donor works just as long as a kidney from an SCD. Accepting a kidney from a higher-than-standard-risk donor may shorten your wait time for transplant.

Infection Risk After Transplant

We test every deceased donor for hepatitis B, hepatitis C, and *human immunodeficiency virus* (HIV). But, there is a very small chance that the test result will be a *false negative*. This means that even though the result looks negative, the donor did have the hepatitis or HIV virus.

The risk of an infection, and a false negative test result, is higher in donors who were involved in high-risk behaviors. **We will always get your consent before giving you a kidney from a higher-than-standard-risk donor.**

There is only a small risk that hepatitis or HIV will be passed to you through your kidney transplant. If you receive a kidney from a higher-than-standard-risk donor, your risk of getting an infection is:

- For hepatitis B virus: About 1 in 300 transplants (0.33%)
- For hepatitis C virus: About 1 in 5,000 transplants (0.02%)
- For HIV: About 1 in 16,000 transplants (0.006%)

In comparison, your risk of dying in a plane crash is 1 in 5,000 (0.02%).

The risk of getting hepatitis B is higher than the other infections. We will ask you to get a hepatitis B vaccine series before transplant. This will lower your risk of this infection.

If you decide to accept a kidney from a higher-than-standard-risk donor, you will meet with an infectious disease specialist before your surgery. This specialist will clearly explain the risks involved.

We will keep testing you for hepatitis and HIV for 1 year after your transplant. The risk of getting these infections through kidney transplant is never 0%, even if the organ is from an SCD.

A2 and A2B Donors

Some donors with type A blood have different proteins on their red blood cells. These proteins make their blood look like type O blood to your immune system. This means your body may accept their organ more easily.

This blood type is called “A2 subtype” or “non-A1 subtype.” Some people with type AB blood have the “A2B subtype” or “non-A1B subtype.”

Donors with A2 or A2B subtype blood can safely donate to some type B recipients. A2 donors can also safely donate to some type O recipients, but this match is only done with living donors, not deceased donors.

If You Have Type B Blood

If you have type B blood, your wait time for a deceased donor kidney is often longer than it is for other blood types. If you are able to receive a kidney from a type A2 or A2B donor, your wait time is likely to be much shorter.

We will do a blood test to see how strongly you react to type A blood. This test checks for *anti-A antibody titers*.

- If you have a strong reaction, we will **not** give you a kidney from a type A2 or A2B donor.
- If your reaction is not very strong, we can safely give you a kidney from a type A2 or A2B donor. If we offer you an A2 or A2B kidney, it means that your blood test showed that your anti-A antibodies are not too high.

A kidney from a type A2 or A2B donor can work just as well as a kidney from a type B donor. The outcome and long-term patient and graft survival rates are the same.

There are very small risks involved in transplanting an A2 or A2B kidney into a type B recipient. There may be a slightly higher risk of early rejection. Your doctor will monitor your kidney closely after your transplant. If needed, your doctor may do a kidney biopsy.

You may choose not to receive a kidney from a type A2 or A2B donor. This choice will not affect your place on the wait list for a type B kidney transplant.

Questions?

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

Transplant Services:
206.598.3882