

Questions & Answers

for **Transplant**
Candidates *about*
Lung Allocation Policy



In spring 2005, the method for allocating lungs changed significantly. The new system helps determine the order that lung offers are made to lung transplant candidates by assigning each candidate a Lung Allocation Score. This score is based on each candidate's particular medical information. It reflects both the seriousness of each candidate's medical status before transplant and the likelihood of a successful transplant.

What are the OPTN and UNOS?

The Organ Procurement and Transplantation Network (OPTN) is the nation's organ procurement, donation, and transplantation system. The United Network for Organ Sharing (UNOS) is the non-profit organization that operates the OPTN under a contract from the federal government. The OPTN and UNOS continuously evaluate new advances and research, and then use this information to improve organ transplantation policies to best serve people needing a transplant. All transplant programs and organ procurement organizations are OPTN/UNOS members and agree to follow OPTN policies.

What is the lung allocation system?

In the lung allocation system, every lung transplant candidate age 12 and older receives an individualized *lung allocation score*. The *lung allocation score* is an important factor in determining priority for receiving a lung transplant when a donor lung becomes available. The system determines the order of everyone awaiting a lung transplant by their *lung allocation scores*, blood type, and the geographic distance between the candidates and the hospital where the lung donor is located. Age also plays a role because lungs from pediatric and adolescent donors are offered first to pediatric and adolescent transplant candidates before they are offered to adults.

The lung allocation system uses medical information specific to each lung transplant candidate. This information includes lab values, test results, and disease diagnosis. This medical information is used to calculate a *lung allocation score* from 0 to 100 for each transplant candidate. The *lung allocation score* represents an estimate of the severity of each candidate's illness and his

or her chance of success following a lung transplant. All candidates are placed in order for compatible lung offers according to their score: A candidate with a higher *lung allocation score* will receive higher priority for a lung offer when a compatible lung becomes available.

The supply of donor lungs is limited. The OPTN designed this allocation system to more effectively use the limited number of available donor lungs as well as reduce the number of deaths among people waiting for a transplant. Prior to this system, transplant candidates received donor lungs based on the amount of time they had been on the waitlist for transplantation. The OPTN designed the *lung allocation score* system by studying scientific data on lung transplantation and by drawing on prior experience with many types of patients with lung diseases. By offering donor lungs to candidates according to their medical characteristics instead of their waiting time, lungs will be directed first to candidates who have the most urgent need and who will have the greatest chance of success after transplantation.

What does the lung allocation system mean for me?

The lung allocation system is responsive to your individual medical needs because it will help determine when you will receive an offer for donor lungs based on your particular medical information. Your *lung allocation score* is based on your own medical information and will reflect the seriousness of your medical status before transplant and your likelihood of a successful transplant.

How is waiting time used in the lung allocation system?

Waiting time plays a very limited role when allocating lungs to transplant candidates ages 12 and older. These candidates will receive lung offers based mainly on their *lung allocation scores*. Waiting time will be used only to break a tie if two lung candidates happen to have the same *lung allocation score*.

Waiting time plays a more significant role in the system for transplant candidates under age 12. These candidates will receive offers based on the amount of time they have waited for a lung transplant, their blood type, and distance from the donor hospital.

Transplant candidates' lung allocation scores are calculated from the following medical information:

- **Forced Vital Capacity-** This is a lung function test that measures the maximum amount of air you can breathe out after you breathe in as deeply as possible. This amount may be lower in patients with lung disease.
- **Pulmonary Artery Pressure-** This is the pressure the heart must generate to pump blood through the lungs. This pressure may be high in some people with serious lung disease.
- **Oxygen at rest-** This is the amount of oxygen needed at rest to maintain adequate oxygen levels in the blood. People with severe lung disease may need additional oxygen.
- **Age-** This is the candidate's age at the time lungs are offered.
- **Body Mass Index-** BMI is a ratio of a person's weight to height that, when interpreted with other medical test results, helps to evaluate health status.
- **Diabetes-** Diabetes may be a predictor of health status in some people with lung disease.
- **Functional status-** A way to measure the effects that lung disease may have on a person's ability to perform routine daily tasks.
- **6-minute walk distance-** In the 6-minute walk test, transplant candidates are asked to walk as far as they can in 6 minutes. The distance walked is a measure of functional status.
- **Assisted ventilation-** The use of a ventilator to assist breathing may be a measure of disease severity and may affect success after a transplant.
- **Pulmonary Capillary Wedge Pressure-** The pressure that blood returning to the heart from the lungs must overcome. This pressure can become increased when the heart is not pumping effectively.
- **Serum Creatinine-** Serum creatinine levels are a measure of kidney function. High creatinine levels reflect impaired kidney function, sometimes associated with severe lung disease.
- **Diagnosis-** Research has shown that urgency among people needing a lung transplant and success following a lung transplant vary among people with different lung diseases. Therefore, for every lung transplant candidate, diagnosis factors into the calculation of the *lung allocation score*.
- **PCO₂-** The candidate's current PCO₂ and change in PCO₂ are both considered in the lung allocation score calculation. A blood gas test is performed to measure the amount of CO₂ in the blood. When the lung's ability to exchange oxygen and CO₂ becomes impaired, the PCO₂ level may become increased.

How do I register as a lung transplant candidate under the lung allocation system?

Your transplant team will decide with you when the time is right for you to be registered for a lung transplant. When that time comes, you will need a complete transplant work-up. During the transplant work-up, you will participate in a series of medical tests that will give your transplant center the information it needs to register you as a candidate for lung transplantation. This same information will also be used to calculate your *lung allocation score*.

How often should my medical information be updated?

Your transplant center **must** update most of your medical information **every six months**. Since the lung allocation system uses your own medical information to compute your *lung allocation score*, it is important that your transplant center has your most current information and test results. Your transplant center may also update your information in the system any time your physician thinks it is necessary to reflect a change in your condition, but your transplant center will be required to update most of your information **at least once every six months**.

Important: If your medical information is not kept up-to-date, it **will** negatively affect your *lung allocation score*. It is important for you to work with the team at your transplant center to set up a schedule for visits that will allow you to keep your information up-to-date.

What if I cannot perform a required test?

Much of the medical information that is needed to calculate your *lung allocation score* comes from diagnostic tests or medical procedures. If your transplant team decides that you should not perform these tests or undergo these procedures because of the severity of your condition, your physician may supply a best estimate of your medical information to be entered on the system instead. The Lung Review Board, a national group of transplant surgeons and physicians, will evaluate your doctor's request and determine if it is appropriate to use estimated information in the system instead.

How high must my *lung allocation score* be before I may receive an offer for a lung transplant?

There is no specific *lung allocation score* that will guarantee that you receive an offer for donor lungs. When donor lungs become available, a “match run” list is created to match the lungs with suitable candidates based on blood type, distance from the donor hospital to their transplant center, and age group. Candidates who are registered at transplant centers in the local area around the donor hospital, who are in the appropriate age group, and who also have a blood type that matches the donor will be offered the lungs in order of their *lung allocation scores*. The compatible candidate with the highest *lung allocation score* at that time will receive first priority to be offered the donor lung(s). If no appropriate recipient is found among the candidates closest to the donor hospital, potential compatible recipients at greater distances will be offered the lung(s).

Remember, you and your medical team at your transplant center will always have the option to decide whether a lung transplant is the right choice for you at that time, or whether the donor lungs being offered are right for you.

Do pediatric candidates receive a *lung allocation score*?

Lung transplant candidates ages 12 and older will receive a ***lung allocation score***. However, matching donor lungs with transplant candidates under age 12 offers unique challenges. For this reason, children under age 12 will continue to use the amount of time they have spent waiting for a lung transplant, instead of a lung allocation score, as a main factor for receiving organ offers.

What if my doctors do not agree with my *lung allocation score*?

If your transplant physician or surgeon believes that you have exceptional characteristics, and that your needs are not adequately reflected by your *lung allocation score*, then your transplant center may ask the Lung Review Board to review your situation. The Lung Review Board is a national group of transplant physicians and surgeons who will consider your special circumstances and determine what steps to take.

Will the lung allocation system change in the future?

As transplant professionals apply this system and learn from it, some changes will likely be required to better meet the needs of transplant candidates. In fact, this system is designed to be flexible and allow for improvements. In organ transplantation, as in all scientific fields, new studies are taking place all the time to learn how to save more lives and how to help people live longer and fuller lives. The lung allocation system is reviewed periodically, and adjustments may be made to the way lung allocation scores are calculated. Your transplant team will keep you informed of changes to the system and what you may need to do.

What if I have more questions?

If you have any further questions or concerns, you should contact your transplant team for further information. You may also contact the UNOS Patient Services Department at 1-888-894-6361. Additional details about the OPTN, UNOS, allocation policy, and patient information resources are available on the following websites:

www.optn.org • www.unos.org • www.transplantliving.org



*The UNOS mission is to advance organ availability and transplantation
by uniting and supporting its communities for the benefit of patients
through education, technology and policy development.*



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