

The Role of Pulmonary Rehabilitation in Lung Transplant

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Objectives

- Provide pulmonary rehab programs with up-to-date information on transplant criteria
- Provide information on the critical role pulmonary rehab plays in peri-transplant success
- Equip providers with the tools needed to help patients self advocate for transplant





The many faces of transplant.



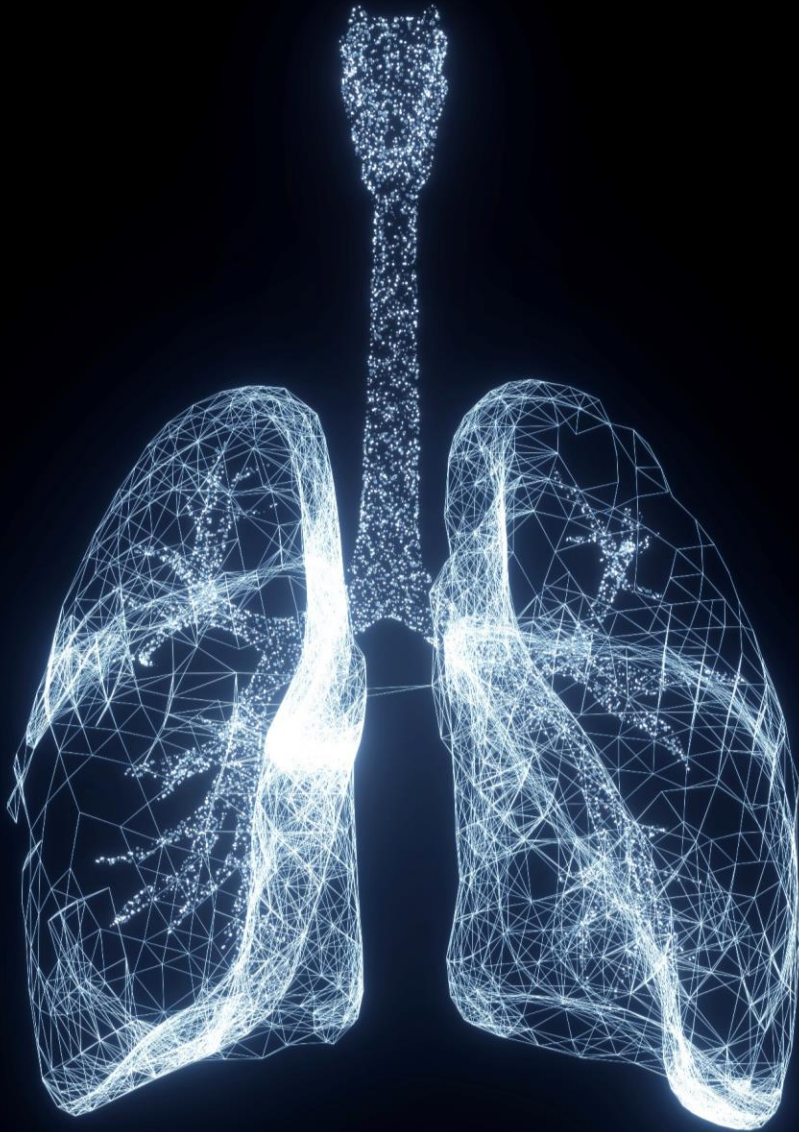
- COPD
- Cystic Fibrosis
- Pulmonary Fibrotic Lung Diseases
- Sarcoidosis
- Pulmonary Hypertension
- COVID
- Bronchiectasis

The Transplant Gap





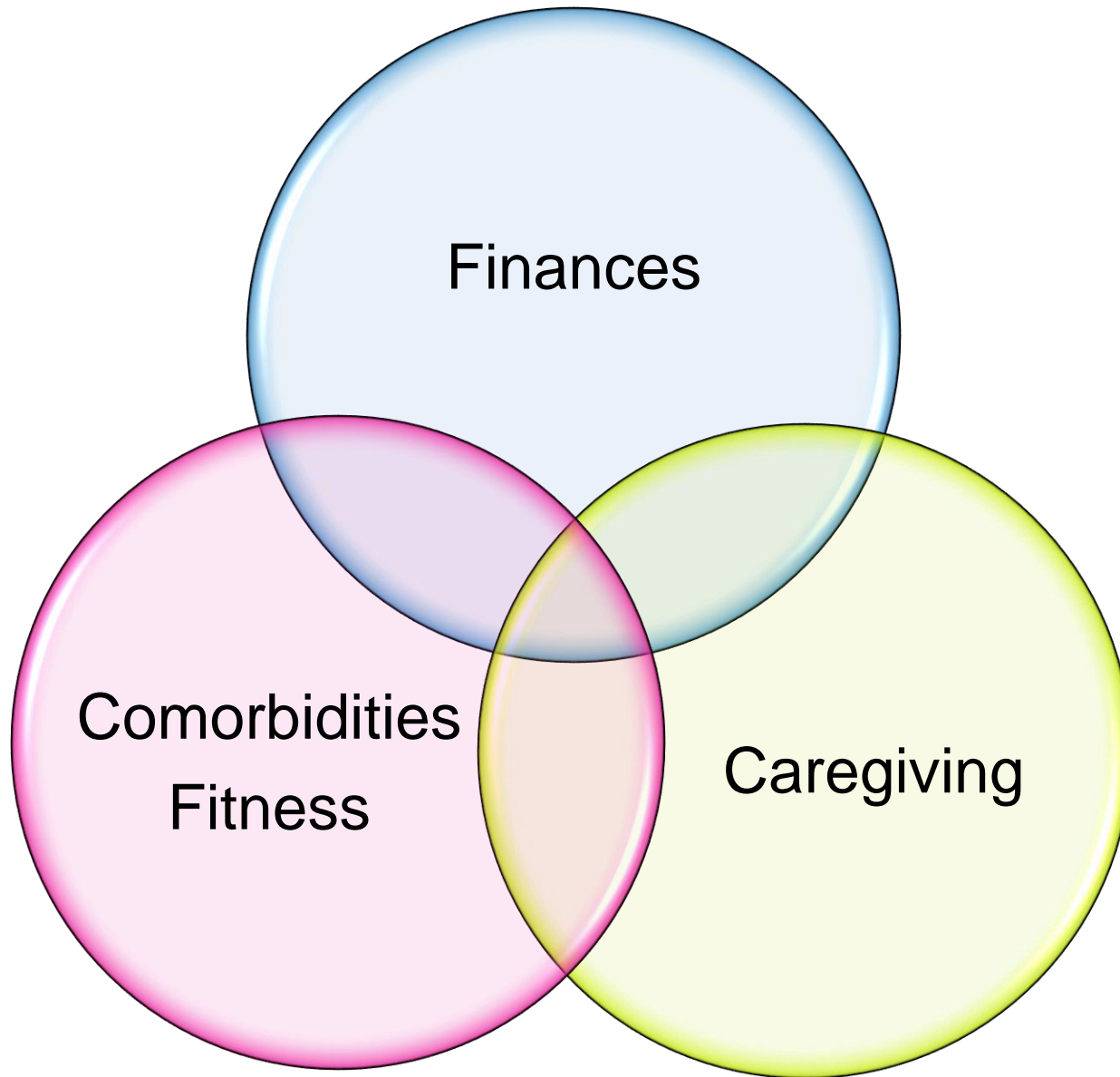
How is Lung Transplant
Candidacy determined?



Yes, No, Maybe

- **Psychosocial Criteria**
 - Caregivers
 - Relocation
 - Pharmacological Concerns
- **Financial Criteria**
 - Insurance
- **Medical Criteria**
 - Labs
 - Cancer screening
 - Imaging
 - Fitness

Modifiable Risk Factors



A river cuts through a rock not because of its power but because of its persistence.”

James N Watkins



How to Address Transplant Barriers

The things you can change...

Psycho-social Needs

- ✓ Caregivers
- ✓ Secure Housing
- ✓ Substances of Abuse
- ✓ Medical Literacy
- ✓ Stress-Management Strategies
- ✓ Nutritional Needs

Financial Needs

- ✓ Fundraising
- ✓ Workshops
- ✓ Assistance filling out forms
- ✓ Securing acceptable insurance

Fitness Needs

- ✓ Pre- and post-transplant pulmonary rehabilitation

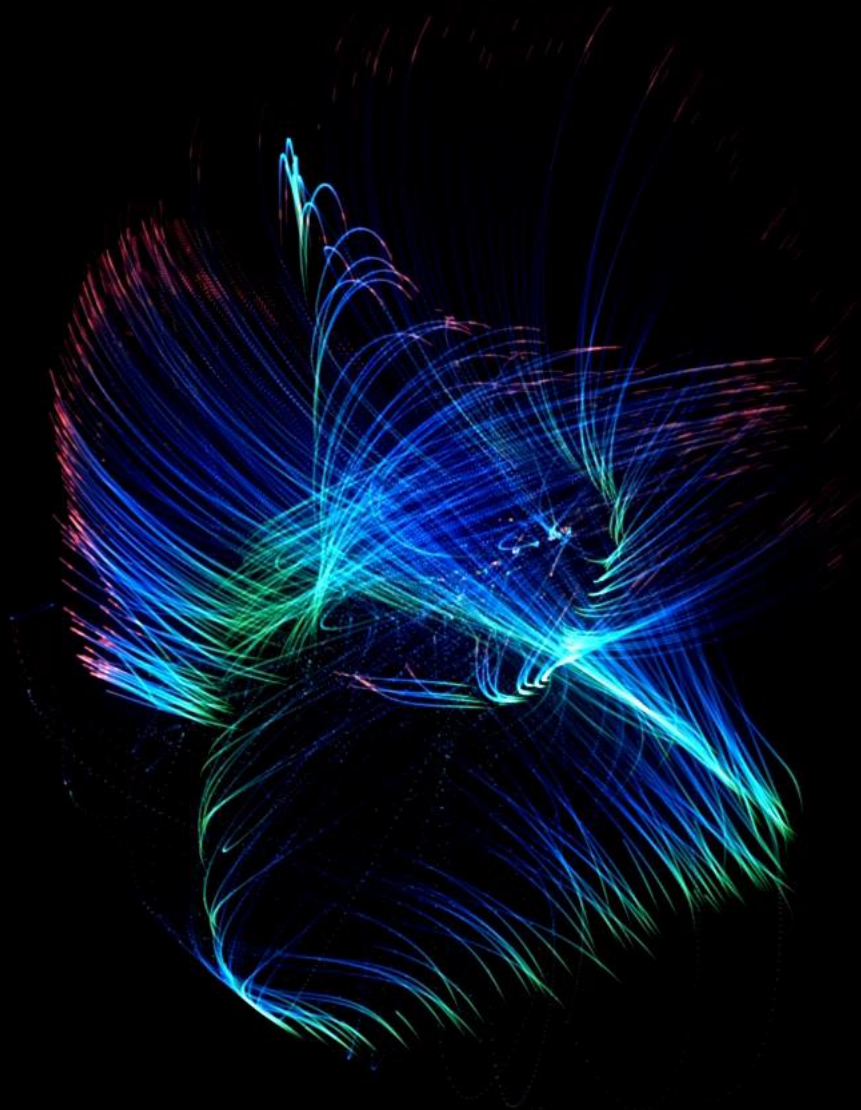
Physical Fitness and Pulmonary Rehabilitation in Lung Transplantation

Making “Fitness” Objective

- Measures of fitness in lung transplantation
 - **6 minute walk distance**
 - **1000 feet in 6 minutes is the one standard across centers**
 - Vo2 peak
 - Incremental shuttle walk test
 - Peak work rate
 - Endurance time
- Frailty assessments- poor consensus across transplant centers

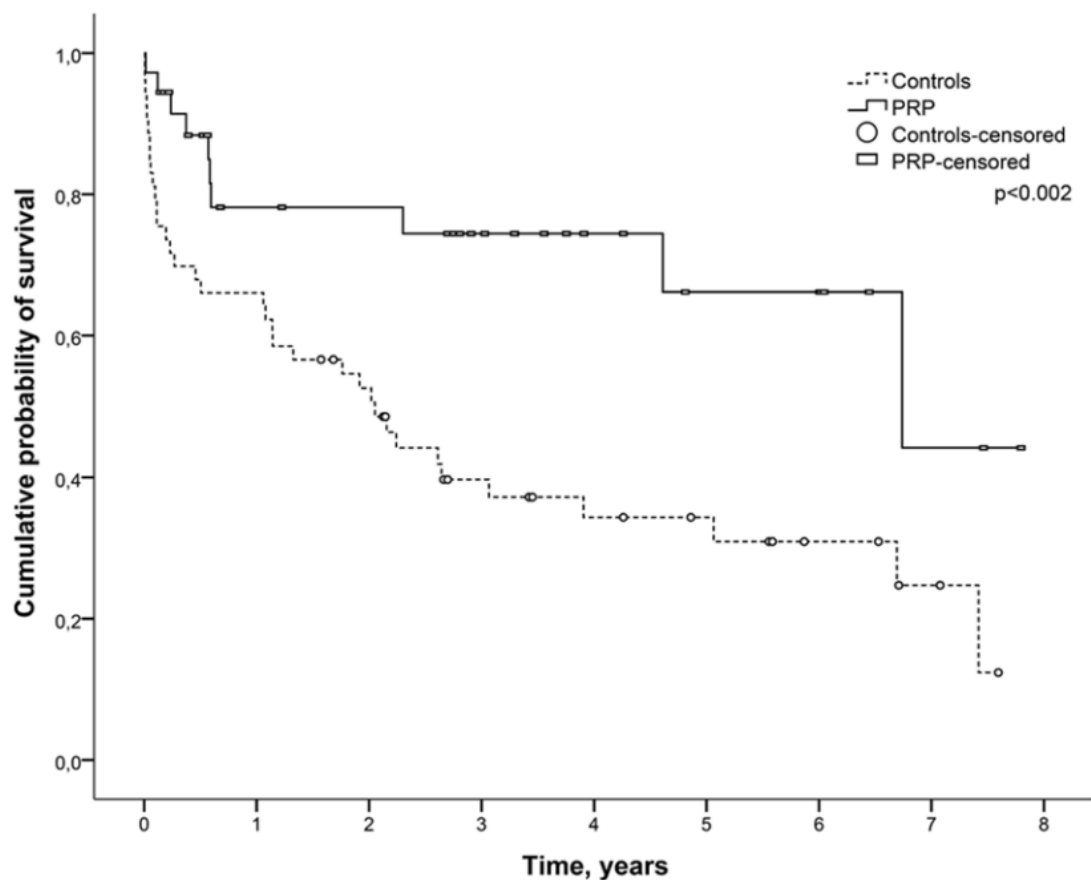
Example of Fitness Criteria: UNC Health

	Pre-Transplant	Post-Transplant
Walking	<ul style="list-style-type: none"> Ambulate 20 minutes, 3-5 times per week No rest stops At least ½ mile 	<ul style="list-style-type: none"> Ambulate 30 minutes, 5-7 times per week No rest stops At least 1 mile
Bike (stationary, Airdyne or recumbent bike) or NuStep	<ul style="list-style-type: none"> At least 20 minutes No rest stops 	<ul style="list-style-type: none"> At least 20 minutes No rest stops Increase resistance
Treadmill (optional)	<ul style="list-style-type: none"> 30 minutes 1.5-2.0mph No rest stops 	<ul style="list-style-type: none"> 30 minutes 2.0mph minimum No rest stops



The Impact of Pulmonary Rehab

How does Fitness Impact Outcomes?



Variables	Total (N = 89)	Control (n = 53)	PRP (n = 36)	<i>p</i>
IMV > 24 hs.	45 (50.6%)	37 (69.8%)	8 (22.2%)	0.001
Days in ICU	6 [4.5–13]	7 [5–19]	5 [4–7.5]	0.004
Days in hospital	23 [19–33]	25 [20–39]	20 [17.7–26]	0.046
Mortality				
ICU	18 (20.2)	16 (18.0)	2 (2.2)	0.006
1 year after LTx	25 (28.1)	18 (20.2)	7 (7.9)	0.156
5 years after LTx	42 (47.2)	33 (37.1)	9 (10.1)	<0.001
Total study time	46 (51.7)	36 (40.4)	10 (11.2)	<0.001

- Improved Quality of Life
- Improved exercise capacity



Conclusion



Who to Contact

UNC Center for Transplant

[Lung Transplant | UNC Medical Center | Chapel Hill, NC](#)

984-974-7589





Questions