

# LUNG TRANSPLANT Indications for Listing and Referral

## Indications for Referral and Listing for COPD

### Referral

- Progressive disease despite optimal medical treatment
- Not a candidate for LVRS
- BODE 5-6
- PaCO<sub>2</sub>>50 or PaO<sub>2</sub><60
- FEV<sub>1</sub><25% predicted

### Listing

- BODE >7
- FEV<sub>1</sub><15-20% predicted
- >three exacerbations during the preceding year
- one severe exacerbation with acute hypercapnic respiratory failure
- Moderate to severe PH

## Indications for Referral and Listing for Interstitial Lung Disease

### Referral

- Evidence of UIP or NSIP
- FVC <40% predicted
- Dyspnea or functional limitation
- Any O<sub>2</sub> requirement
- For inflammatory ILD, failure in improvement of dyspnea, O<sub>2</sub> requirement or PFTs after medical therapy

### Listing

- >10% decline in FVC or >15% decline in DLCO on a six-month follow-up
- SPO<sub>2</sub> (oxygen saturation) <88%, 6MWD <250 m
- 50 m decline in 6MWD in a six-month follow-up
- Pulmonary Hypertension
- Hospitalization due to respiratory decline, pneumothorax or acute exacerbation



## Indications for Referral and Listing for Cystic Fibrosis

### Referral

- FEV<sub>1</sub> <30%
- Patient with advanced disease and rapidly falling FEV<sub>1</sub> despite optimal treatment, especially female patients infected with NTM or BCC
- 6MWD <400m
- PH in absence of hypoxic exacerbation
- Increased frequency of exacerbations with:
  - ARF requiring NIV
  - Increased antibiotic resistance and poor clinical recovery
  - Pneumothorax
  - Worsening nutritional status
  - Life threatening hemoptysis despite bronchial embolization

### Listing

- Chronic respiratory failure
  - With hypoxia PaO<sub>2</sub> <60 mmHg
  - With hypercapnia PaCO<sub>2</sub> >50 mmHg
- Long-term NIV therapy
- Group 3 pulmonary hypertension (mPaP >25, RVSP >60)
- Frequent hospitalizations
- Rapid lung function decline
- WHO functional class IV

## Indications for Referral and Listing for Pulmonary Vascular Disease

### Referral

- NYHA class III-IV symptoms during escalating therapy
- Rapidly progressive disease
- Use of parenteral targeted PAH therapy
- Known or suspected PVOD or pulmonary capillary hemangiomatosis

### Listing

- NYHA class II-IV despite at least three-month combination therapy including prostanoids
- CI <2L/min/m<sup>2</sup>
- mRAP >15 mmHG
- 6MWD <350 m
- Significant hemoptysis, pericardial effusion, or progressive RHF

*"Because donated organs are a severely limited resource, the best potential recipients should be identified. The probability of a good outcome must be highly emphasized to achieve the maximum benefit for all transplants." — OPTN/UNOS Ethics Committee General Considerations in Assessment for Transplant Candidacy. HRSA; 2010.*

# LUNG TRANSPLANT Referral Criteria

## ABSOLUTE Contraindications

- Adults with a recent history of malignancy
- A five-year disease-free interval should be demonstrated in most cases, particularly for those with a history of hematologic malignancy, sarcoma, melanoma or cancers of the breast, bladder, or kidney.
- Poorly controlled significant dysfunction of another major organ system (e.g., heart, liver, kidney or brain) unless a multi-organ transplant is being considered
- Uncorrected coronary artery disease with end-organ ischemia or dysfunction and/or coronary artery disease not amenable to revascularization
- An unstable medical condition, including but not limited to acute sepsis, myocardial infarction and liver failure
- Uncorrectable bleeding disorder
- Poorly controlled infection with a virulent and/or resistant microbes
- Active Mycobacterium tuberculosis infection
- Chest wall or spinal deformity expected to cause severe restriction after transplantation
- Class II or III obesity (BMI $\geq$ 35.0 kg/m<sup>2</sup>)
- Current non-adherence to medical therapy or a history of repeated or prolonged episodes of non-adherence to medical therapy
- Psychiatric or psychological issues likely rendering the patient unable to comply with a complicated medical regimen
- Inadequate social support system
- Functionally limited with inability to participate in a rehabilitation program
- History of illicit substance abuse or dependence (e.g., alcohol, tobacco, marijuana or other illicit substances)
- Active HIV infection (only done at centers with significant experience in these types of transplants)

## RELATIVE Contraindications

- Age over 65 years in association with low physiological reserve and/or other relative contraindications
- Class I obesity (BMI 30.0 to 34.9 kg/m<sup>2</sup>), **particularly truncal (central) obesity**
- Significant malnutrition
- Significant osteoporosis; generally > 4.0
- Extensive prior chest surgery with lung resection
- Mechanical ventilation and/or extracorporeal life support (ECLS)
- Colonization with resistant or highly virulent pathogens
- Candidates infected with hepatitis B and/or C with no significant clinical, radiological or biochemical signs of cirrhosis or portal hypertension and who are stable on appropriate therapy
- Infection with *Burkholderia cenocepacia*, *Burkholderia gladioli* and multi-drug resistant *Mycobacterium abscessus*
- Coronary artery disease burden sufficient to put the candidate at risk for end-organ disease after lung transplantation
- Extrapulmonary conditions that have not resulted in significant organ damage, such as diabetes mellitus, systemic hypertension, epilepsy, central venous obstruction, peptic ulcer disease or gastroesophageal reflux should be well-controlled before transplantation.

### Lung transplantation should be considered for adults meeting general criteria:

- High (>50%) risk of death due to lung disease within two years if lung transplantation is not performed
- High (>80%) likelihood of surviving at least 90 days after lung transplantation
- High (>80%) likelihood of five-year post-transplant survival from a general medical perspective provided there is adequate graft function



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