

STEM CELL THERAPY FOR IPF & COPD

What Every Member Should Know in 2026

Prepared by the Naples Pulmonary Rehab Club Education Committee

⚠ IMPORTANT DISCLAIMER

This newsletter is for educational purposes only and does not constitute medical advice. Always consult your pulmonologist or healthcare provider before making any treatment decisions. Stem cell therapies for IPF and COPD are largely experimental and not FDA-approved as of 2026.

Introduction

Stem cell therapy has been one of the most discussed — and most misunderstood — frontiers in pulmonary medicine. For members living with Idiopathic Pulmonary Fibrosis (IPF) or Chronic Obstructive Pulmonary Disease (COPD), understanding what is real, what is experimental, and what to be cautious about is essential.

This report summarizes the latest clinical evidence as of early 2026, covering the types of stem cells being studied, what outcomes have been observed in trials, short- and long-term side effects, and — critically — where you can safely access these therapies.

Types of Stem Cells Being Studied

Mesenchymal Stem Cells (MSCs) — The Most Researched

The majority of clinical research focuses on MSCs, which can be derived from:

- Bone marrow (BM-MSCs)
- Adipose tissue / fat (AD-MSCs)
- Umbilical cord (UC-MSCs)
- Placenta (PL-MSCs)
- Lung spheroid cells — newer, lung-specific
- Bronchial basal cells — taken from the patient's own airways (autologous)

Induced Pluripotent Stem Cells (iPSCs)

A newer and exciting approach involves reprogramming adult cells back to a stem cell state. These are still largely preclinical but represent a promising future direction.

MSCs have anti-inflammatory and immunomodulatory properties that can help alleviate airway inflammation and emphysema in COPD. In IPF, MSCs or MSC-derived extracellular vesicles

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may reduce fibrosis by acting on macrophages, encouraging repair of alveolar cells, and suppressing lung fibroblast activity.

Findings for IPF Patients

How Stem Cells Are Being Delivered in IPF Trials

Delivery routes being tested include:

- Intravenous infusion (IV into the bloodstream)
- Endobronchial instillation (via bronchoscope)
- Intratracheal delivery
- Inhalation

Clinical Trial Results — What the Evidence Shows

A Phase Ib study of Endo bronchially administered autologous adipose-derived MSCs showed acceptable safety outcomes and improvements in quality of life. Longitudinal follow-up demonstrated 100% survival at 2 years and a median progression-free survival of 26 months.

In a trial using high cumulative doses of bone marrow MSCs in patients with rapidly progressive IPF:

- FVC (forced vital capacity) improved by 7.8% in the MSC group over 12 months
- The placebo group showed a 5.9% decline in FVC over the same period
- Significant improvements were also seen in 6-minute walk distance and diffusion capacity (DLCO)

Emerging Drug-Based Approach: Activating Your Own Lung Stem Cells

A promising drug called NZ-97 (with clinical candidate CMR316) works by inhibiting the DPP4 enzyme in the lung to stimulate repair of alveolar cells. CMR316 is designed for weekly nebulizer delivery and could potentially be added to existing anti-fibrotic medications like nintedanib or pirfenidone.

Findings for COPD Patients

How Stem Cells May Help in COPD

MSCs reduce the recruitment of neutrophils and macrophages into the airways, decreasing pro-inflammatory cytokine production. They also increase growth factors including VEGF, HGF, and EGF to support tissue repair and regeneration.

Clinical Trial Results

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One clinical study using allogeneic UC-MSCs (umbilical cord-derived) in COPD patients showed reduced symptom scores, fewer exacerbations, and improved quality of life — the first study to use non-HLA-matched UC-MSC transplantation for COPD.

However, it is important to be realistic: several Phase I trials have been conducted, mostly examining safety. A handful of small Phase II trials have been largely negative for measurable lung function improvements. There are currently no Phase III randomized controlled trials and no FDA approval for COPD.

The REGEND001 Trial — A Promising New Direction

This trial evaluates autologous bronchial basal cell therapy, where the patient's own bronchial basal cells are collected via bronchial brushing, expanded in a lab, and reintroduced via bronchoscopic infusion. The primary objective is to assess improvement in lung diffusion capacity (DLCO).

Side Effects: What to Expect

Short-Term Side Effects (Based on Clinical Trials)

Clinical trials to date have generally shown that infusion or instillation of MSCs is well tolerated, with no serious adverse events causally related to cell treatment. Specific findings include:

- In a Phase I trial of IV MSCs for IPF: 21 adverse events were reported in 7 of 9 patients, but none were attributable to the treatment itself
- Studies of placental-derived IV MSCs found only minor and transient changes in blood pressure and oxygen levels during infusion
- Some patients in bone marrow MSC trials reported fever and temporary dyspnea (shortness of breath)
- Some bone marrow MSCs sourced from IPF patients showed chromosomal abnormalities, potentially limiting autologous (self-donated) use

Long-Term Side Effects & Serious Risks

Long-term data beyond 2-3 years is very limited. Known potential risks include:

- Cell embolism: stem cells may clot in the pulmonary blood vessels
- Abnormal cell growth: theoretical concern that cells could cause benign or malignant tumors
- Sterility issues: some private clinics operate without adequate sterilization protocols
- Immune reactions: particularly with allogeneic (donor-sourced) cells

The American Lung Association states:

"Very little is known about the short and long-term effects of administering any type of stem cell therapy to patients with lung diseases. We are strongly concerned that the treatment could cause adverse effects and could worsen the patient's condition."

Where Can It Be Done?

Option 1: Legitimate Clinical Trials (STRONGLY RECOMMENDED)

The Pulmonary Fibrosis Foundation and American Lung Association both strongly recommend that patients only engage in stem cell therapies as part of an approved clinical trial, which includes:

- IRB (Institutional Review Board) oversight
- Written informed consent
- Close safety monitoring
- No charge to participants for the experimental treatment

To find enrolling trials, visit: clinicaltrials.gov — search "stem cells" combined with "IPF" or "COPD". Active research institutions include:

- University of Miami Miller School of Medicine
- University of California San Francisco (UCSF)
- Institutions in China, Australia, and Greece testing placental-derived and bronchial stem cells
- Multiple Veterans Affairs (VA) medical centers for COPD research

Option 2: Private / Medical Tourism Clinics (PROCEED WITH CAUTION)

A number of private, for-profit clinics offer stem cell treatments outside of formal clinical trials. The Pulmonary Fibrosis Foundation warns that these clinics often exaggerate safety and efficacy claims, have weak or absent scientific rationale, and operate with minimal oversight.

Warning signs that a treatment is unproven:

- Claims that regulatory oversight is not needed
- Requests for payment for the experimental treatment (often \$7,000–\$31,000 USD)
- Claims of miraculous or guaranteed results based on testimonials
- No published peer-reviewed data

Summary Comparison Table

Category	IPF	COPD
Best studied cell type	BM-MSc, AD-MSc, PL-MSc	UC-MSc, bronchial basal cells

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Trial phase reached	Phase I / II	Phase I / II
FDA approved?	No	No
Best proven outcome	Slowed FVC decline; improved walk distance	Reduced exacerbations; improved quality of life
Long-term data available?	Very limited (2–3 yrs)	Very limited (2–3 yrs)
Insurance coverage	No	No

Bottom Line for Members

Stem cell therapy is genuinely promising for both IPF and COPD — but it remains experimental. The best current evidence shows it can be safe and may slow disease progression or improve quality of life. However, it has not been proven to cure either disease, and long-term outcomes are largely unknown.

Our recommendations:

- Talk to your pulmonologist FIRST before considering any stem cell therapy
- If interested, pursue enrollment in a clinical trial at clinicaltrials.gov
- Be very skeptical of private clinics charging large fees with no clinical oversight
- Continue your approved medications (nintedanib, pirfenidone for IPF; bronchodilators for COPD)
- Stay connected with our club for updates as this research evolves

Contact & Resources

<p>Naples Pulmonary Rehab Club Meets 2nd Wednesday each month 11:30 AM NCH Conference Room Naples, Florida</p>	<p>Key Resources clinicaltrials.gov — Find open trials pulmonaryfibrosis.org — PFF Foundation lung.org — American Lung Association</p>
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*This newsletter was prepared by the Naples Pulmonary Rehab Club Education Committee, Spring 2026.
Naples Better Breathers Club is affiliated with the American Lung Association.*

