



## **About COPD**

Chronic Obstructive Pulmonary Disease (COPD) is characterized by a persistent airflow limitation that is chronic (ongoing) and progressive (gets worse over time). COPD interferes with normal breathing, so its most common symptom is persistent breathlessness (dyspnea). COPD is incurable, but treatable. It is one of the leading yet under-recognized causes of morbidity and mortality worldwide. In the US, the primary cause of COPD is smoking, yet environmental causes of COPD include air pollution, secondhand smoke, fumes and chemicals (occupational exposure), and childhood asthma. More than 300 million people are estimated to have COPD<sup>1</sup> worldwide, including over 19 million adults in the U.S. The prevalence of COPD increases with age, from 3.2% among those aged 18 – 44 years to 11.6% among those aged  $\geq 65$  years<sup>i</sup>. The U.S. annual healthcare burden of COPD is estimated to reach \$60 billion per year by 2029<sup>ii</sup>.

COPD is an umbrella term used to describe different pathologies that contribute to patient symptoms of breathlessness, coughing, sputum production, chest tightness and wheezing. Small airway disease refers to obstruction in the smaller airways deep in the lung. Chronic bronchitis may be diagnosed when patients experience significant periods of excess sputum production. Emphysema is the loss of alveolar tissue and lung elasticity, resulting in excess air trapping in the lungs. Some forms of asthma in adults co-exist in patients with COPD. Patients may interpret their shortness of breath from COPD as “normal aging” and reduce their activity levels in lieu of seeking medical help, which contributes to significant under-diagnosis. And many COPD patients have overlap of these pathologies, which is why global and national guidelines emphasize personalized treatment strategies to best address an individual patient’s symptoms.

## **Current Treatments**

COPD treatment consists of inhaled drug therapies to alleviate the patient’s symptoms, stabilize lung function, and reduce the patient’s risk of COPD exacerbation (increased symptoms that require urgent and additional medical treatments). Non-adherence to routine COPD therapy is extremely high – up to 75% of patients are unable to take their inhalers correctly or as prescribed. And up to 50% of patients still experience exacerbations of their COPD despite use of triple-therapy drugs<sup>iii</sup>. Add-on therapies such as monoclonal antibodies (biologics) have shown effectiveness in small subgroups of COPD patients<sup>iv</sup>, at an extremely high-cost burden to the patient and the healthcare system.



### **Unmet Needs**

Novel approaches are needed that durably reduce dyspnea and prevent exacerbations of COPD, without increasing burden on patients, providers, or the healthcare system. COPD treatments have not substantially changed over the past several decades<sup>1</sup>. A novel, one-time outpatient approach to denervate the pulmonary vagal nerves, with no implant left behind, and with published evidence of durable clinical response could potentially benefit a substantial proportion of the diagnosed COPD population with a small-airways disease dominant phenotype.<sup>v</sup>

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<sup>1</sup> Criner, G, Current Controversies in COPD, Report from the GOLD Committee, *AJRCCM 2018*

<sup>2</sup> Mannino, DM, National and local direct medical cost burden of COPD in the United States from 2016 to 2019 and projections through 2029, *Chest, 2023*

<sup>3</sup> Lipson, D., Once-Daily Single-Inhaler triple vs. dual therapy in patients with COPD, *NEJM 2018*

<sup>4</sup> Bhatt, S., Dupilumab for COPD with Type 2 inflammation indicated by eosinophil counts, *NEJM 2023*

<sup>5</sup> Bhatt, S., Prevalence of the phenotype of lung hyperinflation and minimal emphysema in COPD, *AJRCCM 2025*