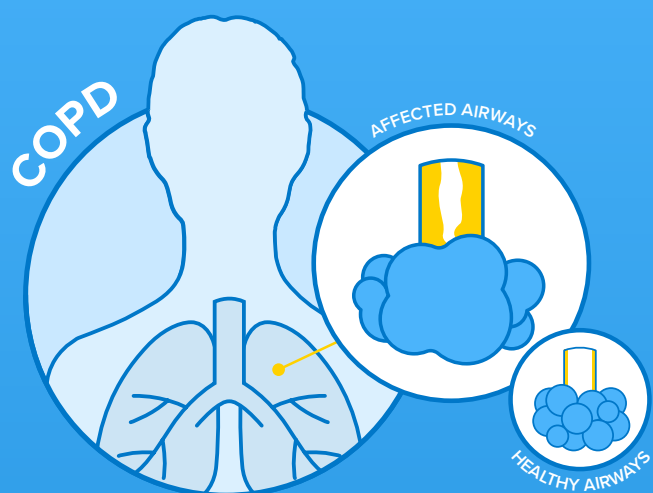




Aerosol drug delivery for the treatment of chronic obstructive pulmonary disease (COPD)¹⁻⁵

COPD affects millions of people worldwide and is associated with considerable morbidity and mortality⁶

~212M

people live with COPD
(2019 data)⁶



COPD accounted for

74.4M

disability-adjusted life years
(DALYs) globally in 2019⁶



3.3M

deaths were attributed
to COPD in 2019⁶

Aerosol therapy is the cornerstone of COPD treatment,⁷ but challenges exist:



Difficulties with device use

Correct technique is required to administer medication via inhaler, which can be affected by age, manual dexterity, cognitive ability and coordination skills⁷



Concerns about fugitive emissions

The need to open a pressurised ventilator circuit to administer aerosolised medication is considered a potential risk factor for the release of fugitive aerosol^{8-10†}



Support during escalation of care

Patients admitted to hospital during exacerbations may receive respiratory support (e.g., high-flow therapy [HF]) or ventilatory support (e.g., non-invasive ventilation [NIV], invasive mechanical ventilation [IMV])⁷ and require concomitant aerosol therapy

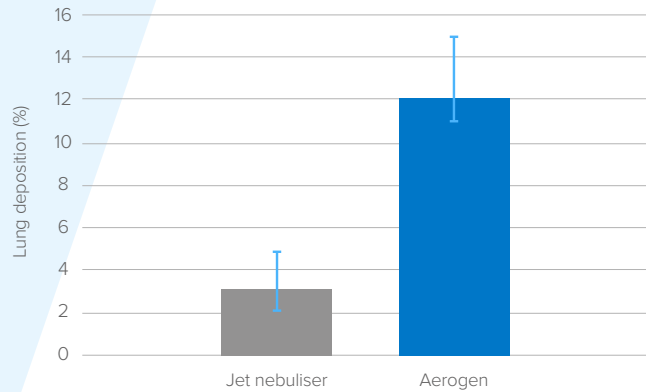
How might Aerogen address these challenges?

[†]The study by Joyce et al was performed in an in-vitro model of invasive mechanical ventilation.

In COPD:

Aerogen supports effective drug delivery³

In a study of patients with stable moderate-to-severe COPD receiving NIV:

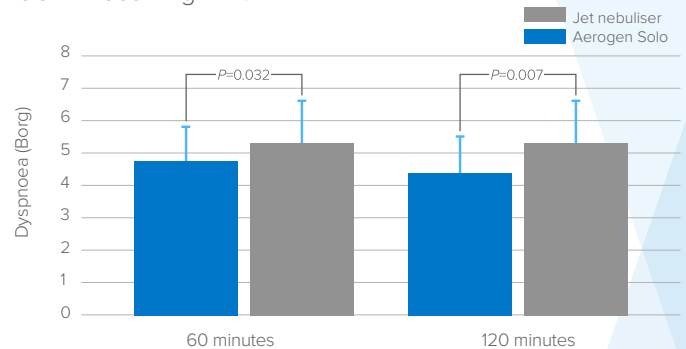


~4x more medication was delivered to the lungs using Aerogen during NIV vs a jet nebuliser³

Mean (±SD) lung deposition: 12.05 ± 2.96% vs 3.14 ± 1.71%; $P < 0.001$

Aerogen supports response to bronchodilator therapy^{4,5}

In a study of patients with an acute exacerbation of COPD receiving NIV:



Significant improvements in lung function (FEV₁, FVC, breathlessness score [Borg], respiratory rate [RR] and PaCO₂) were observed with bronchodilator therapy delivered via Aerogen vs a jet nebuliser⁴

Between-group difference in change from baseline to 60 minutes and to 120 minutes: FEV₁, $P = 0.001$; FVC, $P < 0.001$; dyspnoea (Borg) score: $P = 0.007$; PaCO₂: $P = 0.004$.

Aerogen helps to address some of the challenges of aerosol drug delivery in the treatment of respiratory disease:



Difficulties with device use

- Aerogen is quick and easy to set up¹
- No added flow required¹



Concern over fugitive emissions

- Aerogen Solo is a closed-circuit aerosol drug delivery system,¹ which eliminates the need to open the circuit when administering medication during IMV or NIV



Support during escalation of care

- One system used throughout a patient's respiratory journey (IMV, NIV, HF, SV),¹ supporting continuity of care

Aerogen Solo

- Quick and easy to set up¹
- Virtually silent¹
- Single patient use¹
- 28 days intermittent or 7 days continuous use¹
- No added flow¹
- Refill medication cup without opening the circuit¹



Aerogen Ultra

- Oxygen port enables optional delivery of oxygen¹¹
- An ergonomic, valved mouthpiece controls the flow of air through the chamber to facilitate aerosol drug delivery¹¹
- Innovative chamber design provides an aerosol reservoir intended for optimal drug delivery¹¹
- Extended mouthpiece⁸ to easily add bacterial or viral filter¹¹



⁸The Aerogen Ultra with an extended mouthpiece is only available in selected regions. Refer to the relevant instruction manual for your region to determine availability.

/ Discover Better

Aerogen[®]

FEV₁, forced expiratory volume in 1 second; FVC, forced vital capacity; PaCO₂, partial pressure of carbon dioxide; SV, self-ventilating.

1. 30-354 Rev U Aerogen Solo System Instruction Manual. 2. Li J, et al. Respiration. 2019;98(5):401-409. 3. Galindo-Filho VC, et al. Respir Med. 2019;153:60-67. 4. Avdeev SN, et al. J Aerosol Med Pulm Drug Deliv. 2021;34(6):358-365. 5. Beuvon C, et al. Respir Care. 2021;respcare.09242. 6. Safiri S, et al. BMJ. 2022;378:e069679. 7. Global Initiative for Chronic Obstructive Lung Disease: Global strategy for prevention, diagnosis and management of COPD, 2023. Available at: www.goldcopd.org/2023-gold-report-2. Accessed: May 2023. 8. Joyce M, et al. Pharmaceutics. 2021;13(2):199. 9. O'Toole C, et al. Ann Transl Med. 2021;9(7):592. 10. Fink JB, et al. J Aerosol Med Pulm Drug Deliv. 2020;33(6):300-304. 11. 30-1487 Rev A Aerogen Ultra Instruction Manual.