

The use and advantages of nebulisers



What is a nebuliser?

A nebuliser turns liquid medication into an aerosol that can be inhaled by a patient into their lungs through a mask, mouthpiece or via a breathing system. Nebulisers are suitable for any patient group requiring nebulised drug therapy. Nebulisers require no specialist breathing technique therefore making them easy to use¹. All the patient needs to do is breathe in and out.

Ease of use

- All patient populations of any age can use a nebuliser with no teaching or training required
- No special technique or inspiratory force is required for drug inhalation, normal breathing pattern is effective
- No physical strength is required for device actuation
- Remaining drug levels are easily observed and the visible mist of the nebuliser gives patients confidence that they are receiving their treatment
- Onset of effect with inhaled drugs is faster than oral dosing¹
- Targets specific area requiring treatment

Adaptability

- Ability to deliver a continuous dose of medication for a treatment (10 to 15 minutes or longer)
- Concentration and volume of dose can be modified
- Ability to administer a variety of drugs depending on a patient's needs in one treatment
- Nebulisers can be used for any applicable disease
- Supplemental oxygen can be given in case of hypoxia
- Compatible with a variety of patient interfaces e.g. mouthpiece, face mask, tracheostomy mask, T-piece, or ventilator system, whichever is most suitable
- Useful in hospitals when the patient does not respond to therapy administered from MDI or when emergency treatment is required
- Nebulisers do not require harmful propellants, which are bad for the environment.³
- Cirrus™2 and HOT Top™2 will both operate in orientations from horizontal to vertical for more flexibility of usage

Patient group

The patient groups which may benefit the most from nebuliser use are: paediatrics, geriatrics, patients with disabilities, chronically ill patients and patients in distress.

These patient profiles may have specific conditions such as asthma, COPD, arthritis, Parkinson's, Alzheimer's, dementia, neuromuscular conditions or hand/mouth deformities and their conditions may incur a variety of inabilities or difficulties for the patient including:

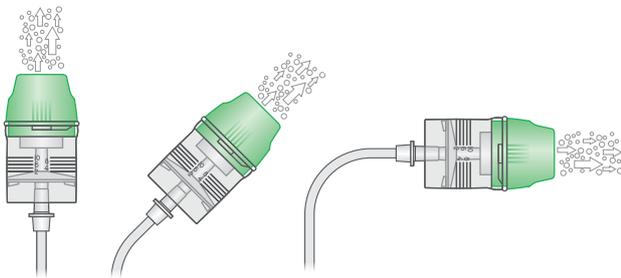
- Physiological changes in respiratory function may mean the patient is unable to take a fast deep breath in
- Inability to take and/or hold deep breaths
- Reduced or impaired cognition
- Reduced or impaired coordination
- Reduced hand strength or chronic muscle weakness

These impairments can be detrimental to the effective use of devices such as inhalers and therefore the use of nebulisers may be preferential.

Why use a nebuliser over a pressurised metered dose inhaler (pMDI)?

MDI can be affected by the following:

- Storage temperature¹
- Nozzle size¹
- Priming before use, the canisters need to be shaken prior to dose^{1,5}
- Coordination of breath¹
- Limited formulations of MDI¹
- Lack of dose counter to indicate when device is empty¹
- Across 4 studies observing over 50,000 patients' ability to use inhalers, GOLD reported "On average more than two thirds of patients make at least one error in using an inhalation device"¹. Although use of a spacer can reduce user error, it does not improve the inability to press the inhaler, they are bulky and require cleaning



References

1. Gardenshire, DS, Burnett, D, Strickland, S, Myers T. A Guide To Aerosol Delivery Devices for Respiratory Therapists. https://www.aarc.org/wp-content/uploads/2015/04/aerosol_guide_rt.pdf. 2017.
2. Global Initiative for Chronic Obstructive Lung Disease, Inc. (2019) Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease 2020 report. pp. 54. Available at: [https://goldcopd.org/gold-reports/Blades, A. \(2023\) An Evaluation of the Use and Benefits of Nebulisers over MDIs. Wokingham: Intersurgical.](https://goldcopd.org/gold-reports/Blades, A. (2023) An Evaluation of the Use and Benefits of Nebulisers over MDIs. Wokingham: Intersurgical.)
3. Geller, D.E. (2005). Comparing Clinical Features of the Nebulizer, Metered-Dose Inhaler, and Dry Powder Inhaler. *Respiratory Care*, [online] 50(10), pp.1313–1322. Available at: <https://rcjournal.com/content/50/10/1313.short>.
4. Everard, M.L., Devadason, S.G., Summers, Q.A. and Le Souef, P.N. (1995). Factors affecting total and 'respirable' dose delivered by a salbutamol metered dose inhaler. *Thorax*, 50(7), pp.746–749. doi:<https://doi.org/10.1136/thx.50.7746>.

Intersurgical nebulisers



Intersurgical offer a wide range of nebuliser products to suit many clinical applications. Options include individual nebulisers and nebulisers supplied with a variety of patient interfaces. The nebuliser products featured below will provide suitable particle size for tracheobronchial deposition.

Cirrus™2 nebuliser

The Cirrus2 nebuliser incorporates a number of features, including a graduated medication cup which provides guidance on how much drug is in the nebuliser. The cup has a quick-release fitting which enables the nebuliser to be attached, as well as detached, with a quarter turn. This allows for a faster refilling process and provides a more reliable seal between the cup and the nebuliser body, reducing the risk of drug wastage. The Cirrus2 can be used with a variety of patient interfaces and within a breathing system.



FiltaNeb™

The FiltaNeb features a non-vented mask based upon the Intersurgical EcoLite™ mask, with a filter on the exhalation gas pathway.

The system provides >95% reduction of particulates into the environment, helping to minimise potentially infected exhaled gases and emissions escaping during nebulisation therapy, which may reduce the risk to healthcare professionals.



HOT Top™2 nebuliser

The HOT Top2 nebuliser is a new design of “open” nebuliser incorporating twin entrainment ports resulting in high output flows which in turn result in reduced treatment times which may improve patient compliance¹.



For individual nebuliser technical performance, please refer to the IFU provided with the product.

Further information can be found by visiting www.intersurgical.com/products/oxygen-and-aerosol-therapy/nebuliser-therapy

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