

RESPIMAT®

Respimat® is the propellant free platform inhaler for Boehringer Ingelheim's COPD and Asthma product family.



Berodual®†

(fenoterol/ipratropium bromide)

Combivent®**

(ipratropium bromide/albuterol)

Spiriva®†

(tiotropium)

Striverdi®

(olodaterol)

Spiolto®

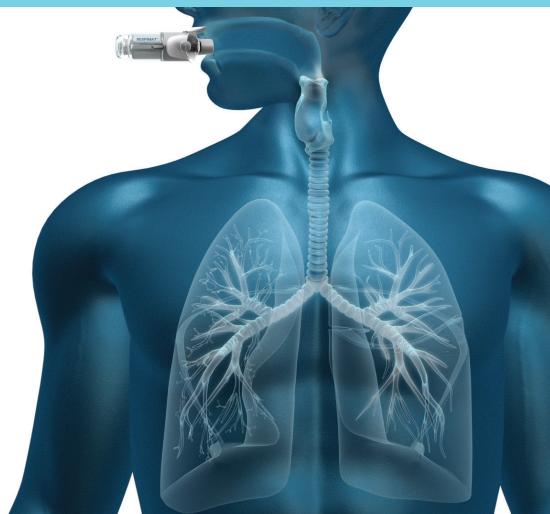
(tiotropium/olodaterol)

For patients with COPD and asthma, it is important to get the medication deep into the lungs where it is needed.¹

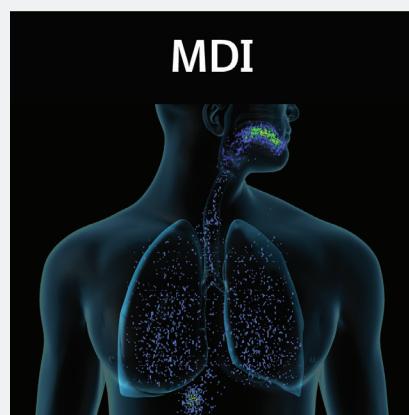
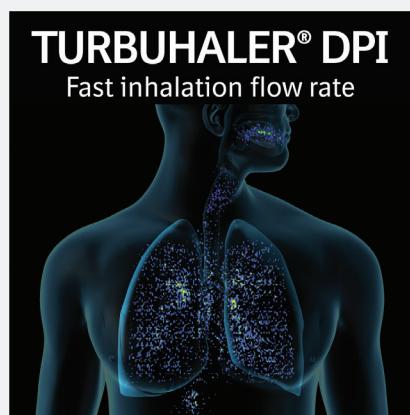
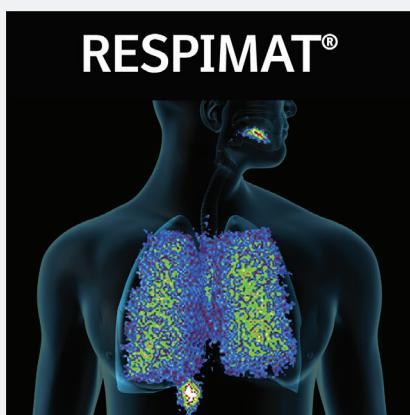


Respimat® is the only inhaler available that actively[‡] delivers a unique mist...²

...meaning the patient just needs to breathe in naturally³ for the medication to go deep into the lungs^{4,5,6}



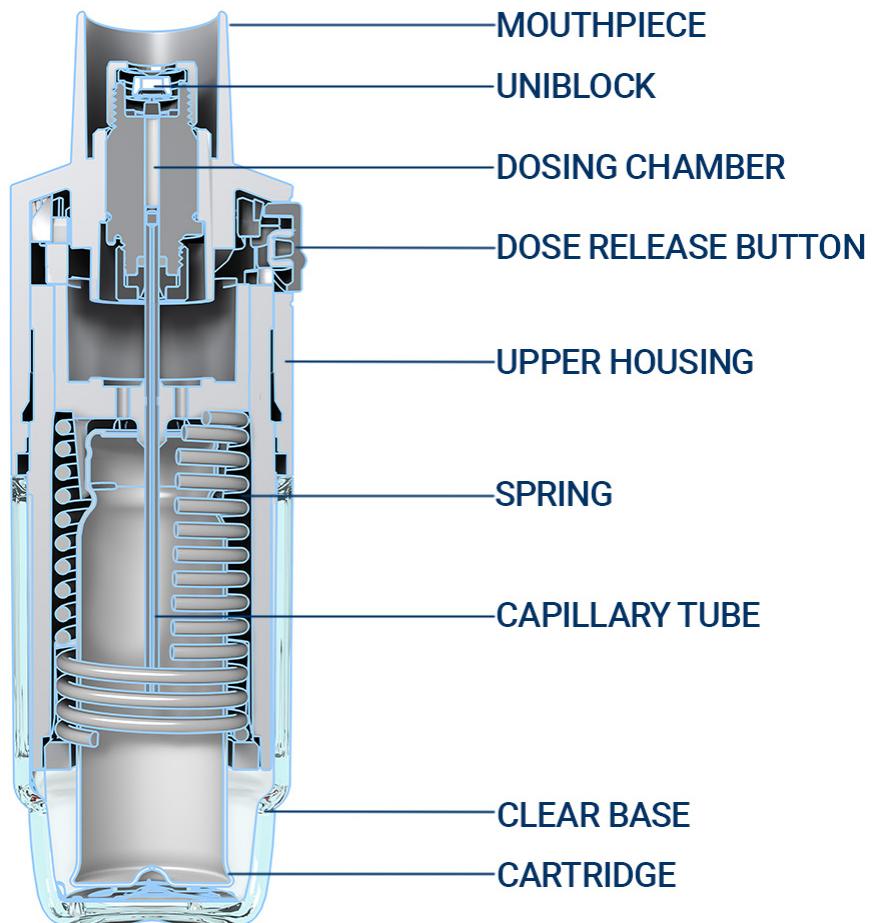
Respimat® results in deeper lung deposition compared to other common inhalers such as a dry powder inhaler (DPI)[§] or a metered-dose inhaler (MDI)^{§4,5,6,7}



(Images adapted from) Anderson P. *Int J Chron Obstruct Pulmon Dis.* 2006

- Metered-dose inhalers (MDIs) require good coordination to inhale the medication effectively^{8,9,10,11}
- Dry powder inhalers (DPIs) require the patient to breathe in forcefully to deliver the medication effectively^{8,11,12}

Respimat® is designed and precision-engineered in Germany – Boehringer Ingelheim is the only pharmaceutical company worldwide to produce its own inhaler devices in-house, from early development to large-scale commercial manufacturing¹³



Boehringer Ingelheim microParts Atomisation Factory, Dortmund



Footnotes

- * Available in Germany
- ** Available in US, Canada and Mexico
- † Berodual® and Spiriva® are licensed for the treatment of Asthma and COPD
- ‡ Respimat® delivers a metered dose of medication in a mist at the push of a button not requiring the force from the patient's inhalation
- § In asthma patients - typical scintigraphic images in one patient comparing drug deposition profiles.
- Mean percentage of the dose deposited in the lungs of 14 asthma patients. For the comparison Respimat® versus Turbuhaler® with fast inhaled flow rate p<0.001, Becloforte® pMDI p<0.001.
- Test drug inhaled
 - from Respimat® and Turbuhaler®: budesonide
 - from pMDI: beclomethasone dipropionate

References

1. Hochrainer D, Hölz H. Comparison of aerosol velocity and spray duration of Respimat® Soft Mist™ Inhaler and pressurized Metered Dose Inhalers. *J Aerosol Med* 2005; 18(3): 273-282.
2. Zierenberg B. Optimising the in vitro performance of the Respimat®. *J Aerosol Med* 1999; 12 (Suppl 1): S19-S24.
3. Spiriva® Respimat® SPC 09/2014.
4. Newman SP, Brown J, Steed KP, Reader SJ, Kladders H. Lung deposition of fenoterol and flunisolide delivered using a novel device for inhaled medicines: Comparison of Respimat® with conventional metered-dose inhalers with and without spacer devices. *Chest* 1998; 113: 957-963.
5. Pitcairn G, Reader S, Pavia D, Newman S. Deposition of corticosteroid aerosol in the human lung by Respimat® Soft Mist™ Inhaler compared to deposition by metered dose inhaler or by Turbuhaler® dry powder inhaler. *J Aerosol Med* 2005; 18(3): 264-272.
6. Peterson JB, Prisk GK, Darquenne C. Aerosol deposition in the human lung periphery is increased by reduced-density gas breathing. *J Aerosol Med Pulm Drug Deliv*. 2008 Jun; 21(2): 159-168.
7. Anderson P. Use of Respimat® Soft Mist™ Inhaler in COPD patients. *Int J Chron Obstruct Pulmon Dis*. 2006;1(3): 251-259.
8. Dalby R, Spallek M, Voshaar T. A review of the development of Respimat® Soft Mist™ Inhaler. *Int J Pharm* 2004; 283: 1-9.
9. Chapman KR, Voshaar TH, and Virchow JC. Inhaler choice in primary practice. *Eur Respir Rev* 2005; 14: 96, 117-122.
10. Newman SP. Inhaler treatment options in COPD. *Eur Respir Rev* 2005; 14: 96, 102-10.
11. Janssens W, Vandendriessche P, Hardeman E, et al. Inspiratory flow rates at different levels of resistance in elderly COPD patients. *Eur Respir J*. 2008; 31(1): 78-83.
12. Fernández Tena A, Casan Clarà P. Deposition of Inhaled Particles in the Lungs. *Arch Bronconeumol* 2012; 48(7): 240-246.
13. BI data on file