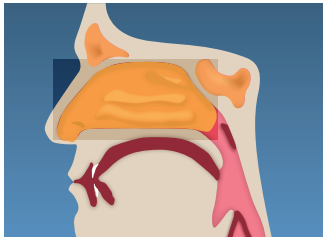


Optimizing Nasal Drug Delivery

Choose the system that delivers medication to the entire nasal cavity — and keeps it there

NasoNeb® Nebulizer

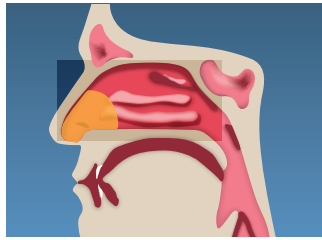


Demonstrated deposition throughout the entire nasal and paranasal cavities

- + Optimized particle size, airflow and fluid volume^{3,7,9}
- + Results in positive outcomes⁷



Spray Bottles / MDI's

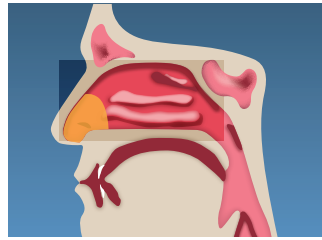


Deposition only in the front of the nasal cavity

- No supporting airflow²
- Limited deposition to the front of the nasal cavity²



Powered Irrigator / Atomizer

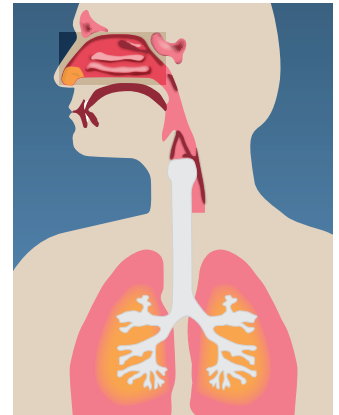


Intended to wash out the nose, fluid goes in one nostril and comes back out the same side and is captured in a container to be discarded.

- Inadequate airflow^{6,12}
- Limited distribution to the antrum^{6,12}
- No more than 10% of residual drug left behind^{6,12}

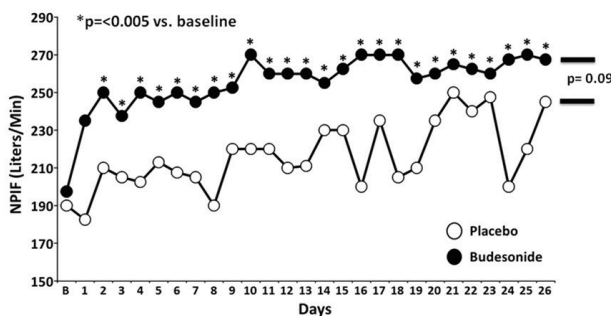


Modified Pulmonary Nebulizer



Early nasal nebulizers are pulmonary nebulizers with nasal adapters. They generate small, lightweight particles (3-5 microns) that are carried to the lungs on the inhaled airstream.⁸ Non-sterile drugs and suspensions delivered to the lower airway may cause lung damage.

- At most, 3% of drug delivered to the antrum of the nose⁸
- 18-20% deposition of drugs in the pulmonary system⁸



Backed by Clinical Data

NasoNeb-delivered pharmaceutical therapy demonstrated a statistically-significant 50 LPM increase in daily nasal peak inspiratory flow (NPIF) from baseline to endpoint in the treatment arm of a parallel, randomized, double-blinded, placebo-controlled clinical trial examining the response to Budesonide delivered via NasoNeb in a perennial allergic rhinitis patient population.⁵

Irrigation vs. drug delivery

Choose the right tool for the job at hand

Use irrigation when you want to *cleanse the nasal cavity*



- Medicated irrigation rinses the nasal cavity and runs down the sink
- Deposits only 1.4 - 2.8% of very dilute medication⁴

Use the NasoNeb[®] System to *deliver medication*



- + The NasoNeb System delivers up to 15 ml of liquid medication which stays in the nasal cavity
- + Ensures a high concentration of medication with high intranasal drug retention.
- + NasoNeb delivers up to 71x the drug dose of irrigation and small particle nebulizers.

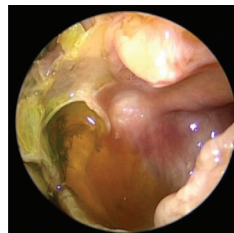
Avoids the issue of exostoses linked to cold fluid irrigation



Exostoses of the paranasal sinus cavities

Medication irrigations often require refrigeration. Repeat exposure to cold fluid irrigations has been linked to the formation of paranasal exostoses.^{1,6,10,11} The aerosolizing action of the NasoNeb ensures solutions are at or near ambient temperatures.

NasoNeb delivers a high concentration of medication



Post-Fess maxillary sinus deposition

Multiple studies, including a peer-reviewed journal article, demonstrate the NasoNeb System deposits a high concentration of medication to the nasal and paranasal sinus cavities, including the frontal recess/sinus, sphenoid and maxillary sinuses, all turbinates, the middle meatus and olfactory cleft.^{3,9}

The NasoNeb System delivers 71x more medication

	NasoNeb System	Irrigation		Small Particle Nebulizers
		Post-Surgical	Pre-Surgical	
Example dose (mg)	0.5	0.5	0.5	0.5
Fluid (ml)	2	120	120	2
Concentration (mg/ml)	0.25	0.004	0.004	0.25
Retained %-age	100%	1.40%	2.80%	3%
Effective dose (mg)	0.5	0.007	0.014	0.015
NasoNeb delivers:		71.4X	35.7X	33.3X

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