



## NEWS from Trudell Medical International

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**AeroChamber**  
*Plus* with **Flow-Vu**  
 Valved Holding Chamber

### Optimal Characteristics of Face Mask for Valved Holding Chambers

General asthma consensus guidelines have recommended the use of Valved Holding Chambers (VHCs) with a mask for children younger than four who are prescribed an aerosol medication.<sup>1</sup> Many studies have outlined the ideal characteristics of VHC design, but until recently little research had focused on specific mask characteristics for infants and young children.

A recent article in the journal of *Pediatric Pulmonology* has considered these special needs with respect to facemask design and has evaluated various chambers on the market to determine the ideal characteristics for effective delivery of medication for these young patients. Three characteristics were identified as particularly important to overall face mask design – dead space, seal/leakage and flexibility.

To ensure the greatest proportion of medication is available for inhalation, face masks should minimize the volume of dead space between the face and mask.<sup>2</sup> In patients with high respiratory rates or low tidal volumes, the facemask fit becomes even more significant.

Several recent studies have emphasized the importance of the seal formed between the face and the edge of the mask and note significant differences between available models and their ability to prevent ambient air from entering the mask during inhalation. Improper design can lead to gaps – as small as ½ cm – which allow ambient air to enter the mask, resulting in almost no medication being delivered to the patient.<sup>3</sup> When tested against other chambers available on the market, the **AeroChamber**\* Brand of VHC performed better than any of the others, and was most similar to the ‘gold standard’ Hans-Rudolph anesthesia mask.<sup>2</sup>

The anatomically designed **ComfortSeal**\* Masks for the infant and child **AeroChamber**\* VHCs minimize the amount of dead space, while providing a soft, curved lip which requires less force to seal and is more comfortable for the patient. In addition, the **EZ Flow** Exhalation Valve, **Flow-Vu**\* Indicator and Alignment Feature all help parents and caregivers ensure that the chamber is applied to the face correctly, and ensure the Metered Dose Inhaler (MDI) is inserted in the correct vertical position.

With over 25 years of research and innovation, the **AeroChamber**\* Brand of VHC has been continually improved to ensure a comfortable mask fit and exceptional drug delivery. For more information about the importance of facemask design to the delivery of aerosol medications or for **Mask Sizers** to assist in the selection of the proper size mask, please visit our website at [www.trudellmed.com](http://www.trudellmed.com)

<sup>1</sup>Global Initiative for Asthma (GINA). *Global Strategy for Asthma Management and Prevention*. Updated 2006.

<sup>2</sup>Amirav, I and Newhouse, MT. *Review of Optimal Characteristics of Face-Masks for Valved-Holding Chambers (VHCs)*. *Pediatric Pulmonology* 43:268-274 (2008)

<sup>3</sup>Morton RW and Mitchell JP. 2007. *Design of Facemasks for Delivery of Aerosol-Based Medication via Pressurized Metered Dose Inhaler with Valved Holding Chamber: Key Issues that Affect Performance*. *Journal of Aerosol Medicine*. 20(1):29-45.

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