



## *A Comparison of Commercial Jet Nebulizers*

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### ◆ *Find This Study*

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### ◆ *The Study*

Seventeen commercially available jet nebulizers from the United States were compared for total output (TO), time for total output (TTO), percent output in respirable range (PORR), and calculated respirable particle delivery rate (RPDR) by dividing TO by TTO and multiplying by PORR.

### ◆ *The Results*

Sidestream was considerably greater than all other nebulizers in regards to the percent output in respirable range (PORR) and therefore calculated a significantly greater RPDR than most at 0.19 mg/ml.

The PORR is from 1 to 5 microns.

### ◆ *What's New*

All commercially available jet nebulizers had the same initial fill with 2ml of saline solution plus 0.5 ml of albuterol and powered with the same source (DeVilbiss PulmoAide).

The output characteristics of commercial nebulizers vary greatly and will impact on the time required for treatment as well as the total amount of drug delivered to the lungs. There were also high significant differences in the means and variances among the groups ( $p<.0001$  for means,  $p<0.005$  for variances).

### ◆ *Note*

Studies such as this one can influence clinicians to select nebulizers on the basis of demonstrated performance rather than solely on convenience and cost.

### ◆ *Bottom Line*

Desirable characteristics for a nebulizer may vary among different indications. Jet nebulizers, such as the Sidestream, are commonly used for the delivery of bronchodilators, antimicrobial agents, and for bronchial challenge studies. This study demonstrates the Sidestream as highly efficient in drug delivery performance (< 5 microns).