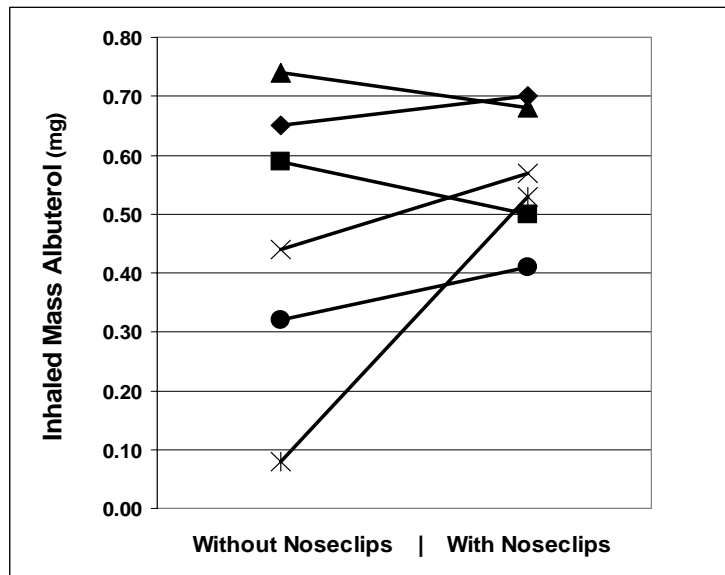


IS A NOSECLIP NECESSARY FOR SMALL VOLUME NEBULIZER TREATMENTS? – Michael McPeck BS RRT, Glenn Samford CNMT and Ross Potter CNMT. Healthline Aerosol Medicine, Baldwin Park CA and Timothy Snitily AA CPFT, St Francis Medical Center, Lynwood CA.

BACKGROUND: We have observed that many respiratory therapists do not attempt to have patients use noseclips when receiving aerosol therapy via SVN and we therefore wished to determine if use of a noseclip improved aerosol delivery. **METHODS:** Aerosolized albuterol delivery to HEPA filters placed at the mouthpiece of six volunteer subjects [3 males, 3 females, mean age 29.3 (range 15-38) years] was determined twice while the subjects received 10 minute SVN “treatments” with radiolabeled (^{99m}Tc) unit-dose albuterol (2.5 mg in 3 mL 0.9% NaCl) administered by the Healthline Mediator[®] Plus Aerosol Maximizer. For the first treatment, the subjects did not use a noseclip but they did use a noseclip for the second treatment. Only one of the subjects had ever received an SVN treatment previously and none of the subjects were told in advance that the consequence of the noseclip was being studied. After each treatment filters were measured in a radioisotope counter and the Inhaled Mass fraction (radioactivity on filter / radioactivity of initial nebulizer charge) was determined. Inhaled Mass of albuterol (mg) delivered to the HEPA filter was determined by multiplying the Inhaled Mass fraction by 2.5 mg (the mass of albuterol initially placed in the nebulizer). **RESULTS:** The change in albuterol delivery for

the 6 subjects without and with a noseclip is shown graphically. Mean (±SD) albuterol delivery was 0.47 (±0.24) mg without a noseclip vs. 0.57 (±0.11) mg with a noseclip; however, the increase was not statistically significant by the paired t-test (p=0.28). The coefficient of variation (CV) was 51.7% without a noseclip vs. 19.5% with a noseclip.



SUMMARY: For the group, aerosol delivery increased by a mean of 21.3% by the use of a noseclip. Four of the 6 subjects showed increases in albuterol delivery with a noseclip, including one whose increase was over 562%. The variability of aerosol delivery, as measured by the CV, was substantially reduced through the use of a noseclip. **CONCLUSION:** Aerosol delivery by SVN to most patients may be modestly improved, and the variability reduced, through the use of noseclips. Occasional patients, predominantly nose-breathers, may benefit immensely.