

**S8 Supplementary Figure** Plots of fraction of clusters size (yellow) and fraction of severely obstructed units (black) as a function of tidal volume. Note the step-wise reduction in cluster size and the gradual reduction in the number of severely obstructed units as tidal volume is increased at constant smooth muscle activation and breathing frequency. The negative tidal volume dependency of cluster size is similar to that observed in the extent of the tracer retaining areas observed after deep inhalations in bronchoconstricted asthmatics (Fig. 1a of paper and Suppl. Fig. S5).