Figure E1A (Patients 1-5)

Global pressure/impedance relationships (left panels; inflation limb: *open diamonds;* deflation limb: *closed diamonds*) during open lung high-frequency oscillatory ventilation in ten premature infants. The middle and right panels show the change in oscillation volume (*open circles*) and transcutaneous carbon dioxide pressure levels (*closed circles*) during the inflation and deflation limbs, respectively. The X-axis of the deflation limb is shown in the reversed order from high to low continuous distending pressures. The Spearman's rank correlation coefficients between oscillation volume and transcutaneous carbon dioxide pressure are given in the right upper corner of each individual patient (* $p < 0.05$, ** $p < 0.01$).

Definition of abbreviations: AU = arbitrary unit, CDP = continuous distending pressure, kPa = kilopascal, P-V = pressure-volume, $TcPCO_2$ = transcutaneous carbon dioxide pressure level, Vosc = oscillation volume

Figure E1B (Patients 6-10)

Global pressure/impedance relationships (left panels; inflation limb: *open diamonds;* deflation limb: *closed diamonds*) during open lung high-frequency oscillatory ventilation in ten premature infants. The middle and right panels show the change in oscillation volume (*open circles*) and transcutaneous carbon dioxide pressure levels (*closed circles*) during the inflation and deflation limbs, respectively. The X-axis of the deflation limb is shown in the reversed order from high to low continuous distending pressures. The Spearman's rank correlation coefficients between oscillation volume and transcutaneous carbon dioxide pressure are given in the right upper corner of each individual patient (* $p < 0.05$, ** $p < 0.01$).

Definition of abbreviations: AU = arbitrary unit, CDP = continuous distending pressure, kPa = kilopascal, P-V = pressure-volume, $TcPCO_2$ = transcutaneous carbon dioxide pressure level, Vosc = oscillation volume