

## Lung volume changes during apneas in preterm infants

### supplementary material

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## Supplementary methods

### Population and intervention

The setup of the original study has been described previously.[7,8] Infants were eligible if they were 1) born at <30 weeks gestation, 2) older than 7 days, 3) between 26-34 weeks postmenstrual age, 4) extubated for more than 24 hours, and 5) clinically stable whilst receiving nCPAP support. In a randomized crossover design, infants received nCPAP and nHFOV for 120 minutes with an initial washout period of 30 minutes on the respective therapy.[7] Respiratory support was provided using a Babylog VN500 ventilator (Dräger Medical System, Lübeck, Germany) and short binasal prongs (Hudson Respiratory Care, Temecula, California) for both intervention periods. The positive end-expiratory pressure (PEEP) during nCPAP and the mean airway pressure (MAP) during nHFOV were set to the PEEP level before study commencement and the applied pressures were equal during both therapies. Inspiratory to expiratory ratio (1:1), frequency [set at 8 Hertz (Hz)], PEEP and MAP were not modified during the study. The smallest amplitude to achieve visible chest wall vibration was used and modified to maintain transcutaneous carbon dioxide levels between 40 and 60 mmHg.[7]