

Prone versus supine positioning in the well preterm infant: Effects on work of breathing and breathing patterns.

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Premature infants with respiratory distress oxygenate better and have improved breathing synchrony when they are nursed in the prone position. We investigated whether work of breathing (WOB) is decreased in the prone position in healthy premature infants nearing discharge from the neonatal intensive care unit. Nineteen convalescing premature infants in room air were studied in both supine and prone position. Positioning order was randomized. Mean birth weight was 1358 +/- 332 (SD) g, gestational age 29.7 +/- 2.1 weeks, weight at study 1757 +/- 248 g, and age at study 33.6 +/- 1.4 days. Calibrated respiratory inductance plethysmography (RIP) was used to measure tidal volume; an esophageal catheter estimated pleural pressure. Inspiratory, elastic, and resistive WOB were calculated and were unaffected by prone versus supine positioning (P = 0.46, 0.36, and 0.87, respectively). Similarly, respiratory rate, tidal volume, minute ventilation, and lung compliance did not differ between positions. These data suggest that sleep position recommendations for healthy premature infants discharged home without oxygen should be no different than for term infants.

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