

Respiratory Rate During the First 24 Hours of Life in Healthy Term Infants | Articles

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Abstract

BACKGROUND AND OBJECTIVE: Abnormal respiratory rate (RR) is a key symptom of disease in the newborn. The aim of this study was to establish the reference range for RR during the first 24 hours of life in healthy infants born at term.

METHODS: Infants were included at the hospital postnatal ward when time permitted. During sleep or a defined quiet state, RR was counted at 2, 4, 8, 16, and 24 hours by placing the bell of a stethoscope in front of the nostrils and mouth for 60 seconds. Data on maternal health, pregnancies, and births were obtained from medical records and the Medical Birth Registry of Norway.

RESULTS: The study included 953 infants. Median RRs were 46 breaths/minute at 2 hours, thereafter 42 to 44 breaths/minute. The 95th percentile was 65 breaths/minute at 2 hours, thereafter 58 to 60 breaths/minute. The fifth percentile was 30 to 32 breaths/minute. Within these limits, the intraindividual variation was wide. The overall mean RR was 5.2 (95% confidence interval [CI], 4.7 to 5.7, $P < .001$) breaths/minute higher while awake than during sleep, 3.1 (95% CI, 1.5 to 4.8, $P < .001$) breaths/minute higher after heavy meconium staining of the amniotic fluid, and 1.6 (95% CI, 0.8 to 2.4, $P < .001$) breaths/minute higher in boys than girls. RR did not differ for infants born after vaginal versus cesarean deliveries.

CONCLUSIONS: The RR percentiles established from this study allow for a scientifically based use of RR when assessing newborn infants born at term.

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