

Defining the Reference Range for Oxygen Saturation for Infants after Birth.

Dawson J.A., Kamlin C.O., Vento M., Wong C., Cole T.J., Donath S.M., Davis P.G., Morley C.J. *Pediatrics*. 2010 Jun;125(6):e1340-7.

Objective

The goal was to define reference ranges for pulse oxygen saturation (SpO₂) values in the first 10 minutes after birth for infants who received no medical intervention in the delivery room.

Methods

Infants were eligible if a member of the research team was available to record SpO₂ immediately after birth. Infants were excluded if they received supplemental oxygen or any type of assisted ventilation. SpO₂ was measured with a sensor applied to the right hand or wrist as soon as possible after birth; data were collected every 2 seconds.

Results

We studied 468 infants and recorded 61650 SpO₂ data points. The infants had a mean + or - SD gestational age of 38 + or - 4 weeks and birth weight of 2970 + or - 918 g. For all 468 infants, the 3rd, 10th, 50th, 90th, and 97th percentile values at 1 minute were 29%, 39%, 66%, 87%, and 92%, respectively, those at 2 minutes were 34%, 46%, 73%, 91%, and 95%, and those at 5 minutes were 59%, 73%, 89%, 97%, and 98%. It took a median of 7.9 minutes (interquartile range: 5.0-10 minutes) to reach a SpO₂ value of >90%. SpO₂ values for preterm infants increased more slowly than those for term infants. We present percentile charts for all infants, term infants of > or = 37 weeks, preterm infants of 32 to 36 weeks, and extremely preterm infants of <32 weeks.

Conclusion

These data represent reference ranges for SpO₂ in the first 10 minutes after birth for preterm and term infants.