

each individual patient. Other methods to mitigate pain caused by the heel puncture procedure include evaluating how the procedure is performed. Manual procedures, in which the pressure used to puncture the skin is variable, has the potential to cause more pain than when using an automated lancet.^{45,46} Repeated procedures, either due to frequent heel punctures or multiple attempts to retrieve the sample, can lead to a cumulative pain effect.⁵⁰ Therefore, reducing the number of heel punctures inflicted on the patient is important for the overall well-being of the infant.

Similar to the findings related to pre-analytic errors, this systematic review found no literature related to the impact of dyshemoglobins that met inclusion criteria. However, it is important to consider conditions that may shift the oxyhemoglobin dissociation curve, such as methemoglobinemia, fetal hemoglobin, and body temperature, and result in over- or underestimated oxygenation. When considering the inability of the capillary blood sample to accurately reflect the oxygenation status of the patient, an arterial blood sample may be warranted in situations in which evaluation of P_{aO_2} is important to guide the plan of care. Although there was a general lack of strong evidence to develop recommendations, this guideline highlights when a capillary blood sample may be used as an alternative to an arterial sample for clinical decision making. It also brings to light the gaps in the literature, from which future research can be focused to better guide our clinical practice.

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