

Table 18. Temperature Terminology

Term	Body temperature, °C	
Moderate hypothermia	32.0–35.9	Measured with a digital, mercury, or contactless thermometer (axillary, rectal, or other defined site) on admission to a postnatal ward or neonatal unit; or if admission temperature not reported, temperature measured between 30 and 60 min of age
Cold stress	36–36.4	
Hyperthermia	>37.5	

and homes (prevalence range, 11%–92%), even in tropical environments.¹⁴¹ A SysRev was initiated from a priority list from the ILCOR Neonatal Life Support (NLS) Task Force (PROSPERO; CRD42021270739). The full text of this review can be found on the ILCOR website.¹⁴²

PICO, Study Design, and Time Frame

- Population: Late preterm and term newborn infants (≥ 34 weeks' gestation)
- Intervention: Increased room temperature to $\geq 23.0^{\circ}\text{C}$, thermal mattress, plastic bag or wrap, hat, heating and humidification of gases used for resuscitation, radiant warmer (with or without servo control), early monitoring of temperature, warm bags of fluid, warmed swaddling/clothing, skin-to-skin care with a parent, or any combination of these interventions
- Comparator: Drying, without any of the above interventions, and comparisons between interventions
- Outcome:
 - Critical: Survival
 - Important: Rate of normothermia on admission to neonatal unit or postnatal ward; rate of hypothermia and hyperthermia on admission to neonatal unit or postnatal ward; response to resuscitation (eg, need for assisted ventilation, highest FiO_2). For this and all subsequent reviews, importance of outcomes was in accord with Strand et al¹⁴³ or by consensus of the task force for outcomes specific to each review. Additional outcomes are

included in the full online CoSTR.¹⁴² For the purposes of the review, the definitions in Table 18 were used.¹⁴⁴

- Study design: RCTs and nonrandomized studies (non-RCTs, interrupted time series, controlled before-and-after studies, cohort studies) were eligible for inclusion. Unpublished studies were excluded.
- Time frame: All years and all languages were included if there was an English abstract. The literature search was conducted to August 2, 2021.

Consensus on Science

The SysRev identified 35 studies (25 RCTs including 4625 participants^{145–169} and 10 observational studies^{170–179} including >3342 participants [number not reported in 1 study]). All RCTs had eligibility criteria that excluded some or all infants who were at high risk of needing resuscitation or who received resuscitation. The studies were conducted in high-, middle-, and low-resource countries, but few interventions were studied in all settings. None of the studies included out-of-hospital births. Temperature outcomes were reported in a wide variety of ways, constraining the meta-analysis. There were insufficient data to conduct any of the prespecified subgroup analyses.

Comparison 1: Increased Room Temperature Compared With No Increased Room Temperature for Late Preterm and Term Newborn Infants

The SysRev identified 1 cluster RCT including 825 late preterm and term newborn infants for this comparison.¹⁵² All were born by caesarean section, so the study pertains specifically to operating room temperatures, and only temperatures of 20°C and 23°C were compared. Data relating to the key critical and important outcomes for this comparison are summarized in Table 19. Evidence for additional outcomes evaluated is included in the full online CoSTR.¹⁴²

Table 19. Increased Room Temperature Compared With No Increased Room Temperature for Late Preterm and Term Newborn Infants

Outcomes (importance)	Participants (studies), n	Certainty of the evidence (GRADE)	RR (95% CI)	Anticipated absolute effects, n	
				Risk with room temperature 20°C	RD with room temperature 23°C
Normothermia on admission (important)	825 (1 RCT) Duryea et al, ¹⁵² 2016	Very low	1.26 (1.11–1.42)	449/1000	130 more infants/1000 (55 more–209 more) were normothermic when 23°C was used
Temperature on admission (important)	825 (1 RCT) Duryea et al, ¹⁵² 2016	Very low	Not applicable	Mean temperature 36.4°C	MD, 0.3°C higher (0.23°C higher– 0.37°C higher) when 23°C was used
Moderate hypothermia ($<36^{\circ}\text{C}$) (important)	825 (1 RCT) Duryea et al, ¹⁵² 2016	Very low	0.26 (0.16–0.42)	189/1000	140 fewer infants/1000 (158 fewer–109 fewer) were moderately hypothermic when 23°C was used
Hyperthermia ($>37.5^{\circ}\text{C}$) (important)	825 (1 RCT) Duryea et al, ¹⁵² 2016	Very low	4.13 (0.88–19.32)	5/1000	15 more infants/1000 (1 fewer–87 more) were hyperthermic when 23°C was used

GRADE indicates Grading of Recommendations Assessment, Development, and Evaluation; MD, mean difference; RCT, randomized controlled trial; RD, risk difference; and RR, risk ratio.