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Baby It's Cold Outside: Effectiveness of Skin to Skin in Preventing Hypothermia in Low Birth Weight Infants

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Question

In low birth weight infants, is receiving immediate skin to skin care, compared to those who don't more effective in preventing hypothermia?

- ### Key Terms
- Low birth weight**- less than 2500 g (approximately 5.5 pounds) (Centers for Disease Control, 2018).
 - Immediate skin to skin care**-“placing newborns skin-to-skin with their mothers immediately after birth, with no bedding or clothing between them” (Centers for Disease Control, 2018).
 - Hypothermia**- falling below 95 degrees Fahrenheit or 35 degrees Celsius” (Mayo Clinic, 2018).



- ### Background
- Worldwide, hypothermia is a significant problem in low birth weight infants. Approximately 9.57% or roughly 321,839 babies in the US are born with a low birth weight of less than 2500 grams (approximately 5.5 pounds).
 - Low birth weight infants are at a higher risk for developing complications of “low oxygen levels, trouble staying warm, breathing problems and immature lungs.” The pathophysiology behind why low birth weight infants are unable to maintain their body heat is based off the absence of body fat when compared to infants born at the average body weight (URMC, 2019).
 - Newborns anatomic and physiologic characteristics, such as having a thin layer of subcutaneous fat, blood vessels closer to the surface of their skin, and larger surface area in relation to their body mass, all put the newborn at risk for heat loss leading to hypothermia which is common and a dangerous problem (Lowdermilk, et. al., 2016).
 - Current standard care in preventing hypothermia in newborns includes, a warm delivery room, wrapping the newborn in warm dry blankets, removing wet or dampened blankets and placing the newborn on the mom for skin to skin contact or placing the newborn under a radiant warmer (Kristoffersen, Soen, Hansen, Wilhelmesen, & Bergseng, 2016).

Study	Description	Results
Kangaroo Mother Care for Low Birth Weight Infants: A Randomized Controlled Trial (2008).	Level II randomized controlled trial that compares kangaroo care to conventional care and its effectiveness on weight gain, neonatal morbidity, mortality and duration of hospitalization (Rao et al., 2008).	The evidence found through this study showed that those who received CMC had a significantly higher number of low birth weight infants who suffered from hypothermia compared to the KMC group (Rao et al., 2008).
Skin-to-Skin Care After Birth for Moderately Preterm Infants (2016).	Level IV prospective cohort study that aimed to explore “if early Skin to Skin care (SSC) in the delivery room after the vaginal births of moderately preterm infants was safe and feasible” (Kristoffersen et al., 2016, p. 340).	The authors of the study found no statistical significance between the infant’s first temperature and glucose reading between the two groups. Although it was not statistically significant, “more newborns in the IG had a lower body temperature than in the SSG” (Kristoffersen et al., 2016, p. 343).
Effect of Early Skin-to-Skin Contact Following Normal Delivery on Incidence of Hypothermia in Neonates More than 1800 g: Randomized Control Trial (2014).	Level II, randomized control trial with the aim to “evaluate the effect of SSC for the first 24 hours on incidence of hypothermia” (Nimbalkar et al., 2014).	The study concluded that infants in the skin to skin contact group were able to better achieve thermal control than those in the control group, thus supporting the use of SSC to prevent hypothermia in newly born infants (Nimbalkar et al., 2014).
Newly Born Low Birthweight Infants Stabilise Better in Skin-to-Skin Contact than when Separated from their Mothers: a randomised control trial (2016).	Level II, randomized control trial that compares the effect of skin to skin contact to the effect of conventional care, in this case an incubator, on the stabilization of low birthweight infants (Luong et al., 2016).	Results found that hypothermia occurred more in those placed in the control group than those in the intervention group. It was noted, “skin-to-skin contact is the appropriate environment for early physiological transition for LBW infants”(Luong et al., 2016, p. 389).
Effect of Very Early Skin to Skin Contact on Success at Breastfeeding and Preventing Early Hypothermia in Neonates (2014).	Level II, randomized control trial to which 298 mother-baby couplets were assessed over a 2-year period. Two groups: control (no SSC) and study group (2 hours of SSC). Axillary temperatures of babies were recorded prior and after SSC sessions with mother (Srivastava et al., 2014).	The results of this study concluded that those babies who were a part of the study group (received SSC) had an increase in recorded axillary temperature compared to those in the control group (Srivastava et al., 2014, p. 3).
Effect of Kangaroo Mother Care on Vital Physiological Parameters of The Low Birth Weight Newborn (2014).	Level III, quasi-experimental study design with the objective to “assess physiological state of LBW babies before and after KMC in a teaching hospital setting” (Bera et al., 2014, p. 245).	Data concluded that temperatures of the babies showed a small rise during KMC with significant changes over the course of the three-day trial. Overall, during KMC, “most babies showed steady rise in temperature and none developed hypothermia” and temperatures never fell below 36.8°C and continued with a mean temperature of 37.1°C (Bera et al., 2014, p. 247-248).

- ### Results
- The research confidently supports the PICOT question.
 - Five out of the six studies analyzed showed statistical significance that skin to skin contact is more effective for preventing hypothermia than other methods of care.
 - Infants that used skin to skin contact were better able to thermoregulate than those using the standards of care per facility.



- ### Nursing Application
- Skin to skin is a zero cost method for hospitals to utilize to create a thermal environment for newborn infants to thermoregulate effectively and is currently not the standard of care.
 - This method is shown to be more effective than other methods. Nurses can advocate for policy change on the labor and delivery floors to make SSC the new standard of care to decrease cases of hypothermia, and mortality.
 - Skin to skin contact not only improves thermoregulation but also has more benefits, such as stabilizing blood glucose, initiating breastfeeding and enhancing mother-infant bonding.
 - Education to nurses, midwives, and doctors of SSC benefits, especially to low-income patients and underdeveloped areas.

