

NEONATOLOGY

HEAT LOSS PREVENTION SUIT



NEONATAL HYPOTHERMIA: A WORLDWIDE ISSUE

HYPOTHERMIA IS AN IMPORTANT FACTOR IN MORBIDITY AND MORTALITY OF ALL BIRTHWEIGHTS AND GESTATIONAL AGES, AND PARTICULARLY FOR VULNERABLE PRETERM INFANTS⁽¹⁾.

Incidence of hypothermia on admission in the NICU from the delivery room is⁽²⁾:

- more than 56% for infants < 750g

- more than 25% for infants <= 2500g



Consequences

INTERNATIONAL RECOMMENDATIONS

neohelp

Interventions to prevent hypothermia at birth in preterm and/or lowbirth-weight -World Health Organization - 2010

Meta-analysis of (...) studies found that plastic wraps (polyurethane or polyethylene bag) were statistically significantly more effective than routine care in reducing heat losses in infants aged < 28 weeks of gestation. Stockinette caps were not effective in reducing heat loss in infants.⁽¹⁾

Management of a newborn baby - 51st congress of French Society of Anesthesia and Intensive care - 2009

The transport incubator used to limit heat loss can be cumbersome and difficult to obtain. It may be «replaced» by a stockinette cap and a transparent polyethylene bag wrapping whilst the baby is still wet. This greatly reduces the risk of hypothermia.⁽⁵⁾

Hypothermia and occlusive skin wrap in the low birth weight premature infant - NAINR - 2012

The transparency of bags makes it easier for caregivers to observe and manage the infant with minimal disruption of the wrap.⁽⁴⁾

ILCOR: Neonatal Resuscitation- Part 7. - 2015

Among newborn preterm infants of less than 32 weeks gestation under radiant warmers in the hospital delivery room, we suggest using a combination of interventions that may include environmental temperature 23° C to 25° C, warm blankets, plastic wrapping without drying, cap, and thermal mattress to reduce hypothermia (temperature less than 36.0° C) on admission to NICU (weak recommendation, very low-certainty evidence). We suggest that hyperthermia (greater than 38.0° C) be avoided because it introduces potential associated risks (weak recommendation, very low-certainty evidence).

neohelpTM, POLYETHYLENE OCCLUSIVE SUIT TO PREVENT HEAT LOSS⁽⁷⁾

neohelpTM is a sterile suit to swaddle the infant immediately after delivery (before resuscitation).

Double layer of Polyethylene Adjustable hood - Limits heat loss by convection and evaporation - Limits heat loss by radiation, convection and evaporation - Allows good skin contact due to the thin inner layer - More efficient than stockinette cap⁽¹⁾ - Allows passage of radiant heat from the warmer⁽⁴⁾ - Adjustable to the infant s head Pre-shaped foam cushion - Limits heat loss by conduction Adapted materials - Helps to maintain an open airway (by raising the shoulders - Transparent and silent material that level)⁽⁸⁾ enables the visualization of the skin color - Stabilises the infant s position and the infant s breathing movement - Facilitates carrying of the infant - Non-toxic and biocompatible material - Provides comfort to the infant (ISO 10993-1)

Central opening

- Velcro® closure that ensures heat conservation
- Easy and quick placement of the infant
- Easy access to the infant s body
- Designed for easy placement of monitoring equipment, IV and umbilical catheters

According to UNICEF, such interventions can help reduce neonatal mortality or morbidity by 18-42 $\%^{\scriptscriptstyle(1)}$



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CLINICAL STUDY: neohelp (TM) VS NON-STERILE PLASTIC BAG⁽⁹⁾

Evaluation of two polyethylene bags in preventing admission hypothermia in preterm infants : a quasi-randomized clinical trial; A. L. C. Possidente et al.

Objective

This study aims to evaluate two polyethylene bags in preventing admission hypothermia (AH) in preterm infants, at a level III neonatal unit of the Women's Hospital of the State University of Campinas in Brazil.



Results

Frequency of admission hypothermia in each group



Observations regarding preterm infants using neohelp have shown: - significantly less frequent admission hypothermia

- 86% risk reduction of the condition

Conclusion

Based on these results, the suggested benefits are the following

• neohelpTM is more effective in reducing admission hypothermia in infants born at < 34 weeks

General warning: Preterm infants have reduced disabilities to dissipate heat, that is why hyperthermia is an important issue to be considered carefully. The regular monitoring of the newborn s temperature is essential.



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HOW TO USE neohelp TM

neohelp



- Unfold neohelp completely.
 Place it on the resuscitation table, under the heat lamp (if applicable)
 Fully open the Velcro[®] and the hood to facilitate the infant s reception



- 4) Do not dry the baby at birth.5) Place the baby immediately after birth
- a) Align the shoulders at the upper edges of the foam.
 b) Easily close the Velcro[®] tightly along its entire length.



8) Adjust the hood to the head of the infant. Do not cover the airways due to the risk of suffocation. 9) Other heating appliances (e.g. heating) will need to be adjusted accordingly due to risk of hyperthermia.



10) The infant should be kept wrapped until temperature stabilization.
11) Temperature of the infant should be monitored continuously or consecutively (ideally every 5 minutes).
12) Do not use more than 24 hours



13) neohelp is suitable with the use of an hemostatic device to eliminate bleeding from the cord vessels.

14) If a medical device such as an umbilical cord is needed, simply open the Velcro[®], insert the device, and once again easily close the Velcro[®] along its entire length.

Technical features

Designation	Dimensions	Indications	Code	Quantity
neo heip ™ SMALL < 1KG	L. 38 x W. 30 cm	NICU Delivery room Operating room Transport	37.09.14	10/box
neo help [™] MEDIUM 1KG 2.5KG	L. 44 x W. 38 cm		37.09.15	10/box
neo help [™] LARGE > 2.5KG	L. 50 x W. 38 cm		37.09.16	10/box

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References

1 McCall EM, Alderdice F, Halliday HL, Vohra S, Johnston L. Interventions to prevent hypothermia at birth in preterm and/or low birth weight infants. Cochrane Database of Systematic Reviews 2018, Issue 2.Art. No.: CD004210. DOI: 10.1002/14651858.CD004210.pub5.Accessed 22 September 2023.

2 DR Bhatt, R. White and al. Transitional hypothermia in preterm newborns. Journal of Perinatalogy, 2007

3 World Health Organization (WHO). Thermal protection of the newborn: a practical guide, 1997.

4 T. Cordaro and al. Hypothermia and occlusive skin wrap in the low birth weight premature infant. NAINR. 2012;12⁽²⁾:78-85.

5 J.F. Diependaele and A. Fily. Management of a newborn baby, 51st congress of French Society of Anesthesia and Intensive care, 2009.

6 Perlman JM, Wyllie J & Kattwinkel et al. International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. Circulation. 2015; 132 (suppl 1): S204-S241

7 S.Vohra et al. Heat Loss Prevention (HeLP) in the delivery room: A randomized controlled trial of polyethylene occlusive skin wrapping in very preterm infants. 2004 Dec;145⁽⁶⁾:750-3.

8 ANZCOR Guideline 13.4, Management and mask ventilation of the newborn infant, 2016.

9.A.L.Possidente, I.G.Bazan, H.C.Machadoetal., Evaluation of two polyethylene bags in preventing admission hypothermia in preterm infants: a quasirandomized clinical trial, Jornal de Pediatria⁽²⁰²³⁾, https://doi.org/10.1016/j.jped.2023.04.0046. S.Vohra et al. Heat Loss Prevention (HeLP) in the delivery room: A randomized controlled trial of polyethylene occlusive skin wrapping in very preterm infants. 2004 Dec;145⁽⁶⁾:750-3.

FOR FURTHER INFORMATION, PLEASE CONTACT: questions@vygon.com

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