

# M08: Neonatal Thermoregulation

Wes Bihlmayr

Updated: May 25, 2021

Reviewed: March 01, 2021

## Introduction

Neonates have a high body surface to weight ratio making them more prone to the four mechanisms of heat loss: convection; conduction; radiation; and evaporation. Paramedic and EMR/FR management of neonatal thermoregulation involves these four mechanisms.

- Convection: Decrease the wind or drafts in a room.
- Conduction: Heat is lost from a warm surface to a cooler surface.
- Radiation: Heat is lost to the environment when the environment is cooler than the body.
- Evaporation: Moisture on the body can accelerate the loss of heat from the other modes of heat loss.

## Essentials

- In addition to preparing an area for resuscitation during the delivery of a neonate, it is important to think about preparing the environment for the neonate. Environmental preparation revolves around the four mechanisms of heat loss:
  - Convection: Warm the room, eliminate any cold drafts
  - Conduction: Warm towels and warm surface
  - Radiation: Warm the room
  - Evaporation: Dry the baby off and place a toque on the baby's head
- The ideal temperature range for a neonate is 36.3 - 37.2°C.
- Encouraging "kangaroo care" following delivery develops a strong bond between the neonate and mother, which promotes family centred care. Kangaroo care is performed by placing the neonate on the mother's chest, creating skin-to-skin contact, while maintaining the principles of heat loss. In the stable neonate, this can be performed while APGARs are attained and awaiting delivery of the placenta.

## Additional Treatment Information

- Unless there are indicators of hypoglycemia, a blood sugar is not required until a few hours after birth.

## Referral Information

Neonates with no system specific problem that are maintaining a normal temperature can be left in the care of a midwife or other health care professional. If no medical professional is on scene, the mother and neonate should be conveyed for an initial assessment.

## Interventions

### First Responder

- Promote skin-to-skin contact while maintaining the principles of heat loss

