GUIDELINE

Developmental Positioning Guideline

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH, NETS WA

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this disclaimer

Contents

Aim

To improve and maintain physiological status or autonomic system of the infant. Prevent developmental delays and hospital acquired deformities as well as support self-regulatory behaviours and prepare infants for discharge home in line with current recommendations of Safe Infant Sleeping.

Risk

If this policy is not adhered to infants are at increased risk of SIDS, increased levels of cortisol and stress, compromised respiratory function, musculoskeletal acquired deformities, and deprivation of appropriate sensory neurodevelopmental experiences such as hands to midline/mouth.

Key points

- Infants are to be nursed with the mattress flat unless medically documented.
- Safety is paramount, positioning aids need to be easily removed in emergency situations and should not obstruct breathing or airflow around the face.
- Boundaries should support and contain rather than restrict spontaneous movements.
- The infant's face should be positioned to avoid pressure and distortion of the nasal septum.
- Correct alignment of head, trunk and limbs in all positions will assist in preventing acquired postural deformity.
- Peanut pillows are available to maintain head alignment during all cares only. Remove before leaving the bedside.
- Positioning is based on how much and how little assistance the infant needs. Avoid over-protection and recognise each infant's competency. Positioning and positioning aids should be based on the infant's cues and capabilities.
- Explain to parents the use of positioning aids and why they should not be used in the home environment (SIDS recommendations).

Infants Requiring Intensive Care (supine)

Preferred position for:

- Muscle relaxed infants.
- Infants with unilateral and bilateral intercostal catheters.
- Surgical infants as required.

This position should:

- Encourage flexion of the arms to the midline and legs with the use of a rolled swaddle / thick blanket in a U-shape down the sides of the trunk and under the legs to support the legs in flexion.
- Allow support and alteration of the head position with the use of a peanut pillow or gel pad if deemed necessary
- Allow assessment and checking pressure areas as charted, refer to Skin Care Guideline for management options

Prone and ¼ Turn Prone

Long-term prone positioning is fundamental to the management of the neonate to facilitate ventilation and digestion; however, it can result in excessive hip abduction as well as external rotation at hips and external tibial torsion. It also encourages extensor tone, retraction of shoulder girdle, more severe scaphocephaly, reduced general mobility and reduced hand to mouth and midline skills. Correct positioning and use of positioning aids can reduce the risk of these sequelae and promote development of flexor tone. It is important to provide boundaries as sick or preterm infants do not have the muscle tone and strength to maintain a comfortable flexed position.

All positioning is guided by the acronym:				
A - Alignment	**B - Boundary**	**C - Comfort**	**F - Flexion**	**M - Midline**

Prone

Prone position preferred for:

- Medically fragile infants.
- Infants with acute respiratory disease (ventilated or on Continuous Positive Airway Pressure [CPAP]).
- Infants with feed intolerance.
- Infants with identified medically documented needs

This position should:

- Place infant with chin slightly tucked and head rotated to alternating sides
- Flex arms and tuck arms into the sides so that hands are placed close to shoulders or face.
- Flex hips and knees up under the body to avoid excessive hip abduction. Aim to tuck toes in so that great toes are touching “toe-to-toe”.

Maintain position with use of a **nest (isolette)** or **swaddle (open cot).** A folded swaddle may be used as a ‘seatbelt’ to anchor baby’s pelvis down if they are very active and pushing with their feet. This provides a boundary and containment.

¼ Turn Prone

- Only used with ventilated or CPAP infants, generally nursed in an isolette.
- Alternate ¼ turn prone with prone as soon as infant is stable.

This position should:

- Use a rolled snuggly under zygomatic arch minimises nasal trauma by lifting the CPAP mask clear of the mattress

- Flex uppermost arm and leg over the roll to support the trunk from shoulder to pelvis with the upper hand tucked near the infant's chin
- Position the other lower arm close to the trunk as in 'recovery' position behind the infant
- Extend the lower leg with the knee facing the mattress with neutral foot position facilitated by:
    - Body and leg supported by sheepskin
    - Foot free over edge of sheepskin

Side lying

Side lying position preferred for:

- Stable infants as a progression from prone or ¼ prone as a transitional position to supine (as per SIDS guidelines for discharge at or around term age)
- Infants who do not have to be in prone position for respiratory reasons.
- Stable infants tolerating milk feeds.
- Surgical infants who are unable to be nursed prone.
- Infants with neurological impairments and chronic lung disease who have had prolonged admission will benefit from side lying as this encourages hand to hand and hand to mouth and helps to establish oral feeding.
- Reducing hip/shoulder abduction and rotation, promotes midline orientation and encourages hand to face and grasping behaviour.
- Reducing stress and cortisol levels in the infant. It has also been shown to reduce stress to the infant.
- Treating unilateral lung disease: better oxygenation may be achieved by positioning the 'good' lung uppermost
- Reducing the severity of Gastro-oesophageal Reflux (GOR), the left lateral position is as effective as prone position

This position should include:

- Head in midline and aligned with the trunk.
- Pelvis tucked and legs flexed.
- Lower arm well forward to prevent infant rolling to prone position.
- Uppermost arm and shoulder forward and hands together.
- In an open cot, swaddle with infant's hands together and under the chin so that they can touch their face or suck on their fingers. Avoid over restriction of the hands and refrain from using rolled snuggle between legs and or behind back/head if baby no longer requires CPAP.

- If on CPAP in an open cot, can continue to use a rolled snuggly under zygomatic arch to minimise nasal trauma within swaddle.
- If in an isolette, consider using a premade nest with folded swaddle “seatbelt” to secure pelvis

Supine

Preferred position for stable infants who:

- Do not require cardiac monitoring.
- Have stable respiratory rate.
- Have not experienced large vomits or spills during the previous 48 hours.
- > 34 weeks and/or preparing for discharge.
- Long term CPAP infants.

This position should include:

- Use of swaddling as a positioning aid with hands under chin if infant in an open cot
- Place infant with feet at the bottom of the cot. Tuck in bedclothes securely to prevent the infant slipping under the covers. No bumpers or toys in cot
- Alter infant’s head position from side to side. Educate parents with demonstration and support.

Supported Sitting with equipment such as a bouncer or Frazer Chair

Frazer chairs or bouncers are provided by the Physiotherapy Department for post-term infants for ongoing neurodevelopmental support as appropriate. They provide a semi-reclined posture with pelvic tuck/ hip flexion and supported shoulder protraction. They are often used in conjunction with a peanut pillow or rolled swaddle under head to maintain head in the midline. For smaller infants, a rolled swaddle may be placed in a u-shape down sides and under legs to maintain flexed position and support at the sides. They may only be used in a large metal cot (adjusted flat) or at PCH they may be used on the floor in the patient’s room.

Mobiles (which are mounted securely to the end of a large cot) or hanging visual cues are offered in conjunction with a supported chair. This provides the infant with a symmetrical supported position with midline orientation for visual gazing/sensory input and encourages hands to the midline. Contact the Paediatric Physiotherapists.

Positioning during Skin-to-skin (STS) or Kangaroo Care

STS holding is the method of holding an infant on the parents’/carers’ chest. The infant is dressed in a nappy only. A blanket is placed over the infant once they are positioned comfortably. Also refer to Parenting in the Neonatal Unit guideline.

Offer daily (if possible and infant stable) and for as long as is tolerated by baby and practical for parents as there are many benefits to both the infant and parents/carers as outlined in the Skin to Skin Holding Guideline.

Developmentally appropriate positioning should be continued during kangaroo care.

The optimal position includes

- Position baby in prone with arms flexed, elbows tucked and hands near face.
- Legs tucked up under trunk and feet positioned with big toes together “toe-to-toe” (avoid excessive external rotation/abduction).
- Avoiding pressure of CPAP mask on nasal septum by using rolled snuggly under zygomatic arch
- Parents to support under infants feet and bottom to provide a boundary and ensure they do not slide lower down the chest. Infants should be just below the level of the chin.

Safe infant sleeping in preparation for discharge home

Refer to:

- WA Department of Health Safe Infant Sleeping Mandatory Policy (MP0106/19): Safe Infant Sleeping Policy and Standard
- CAHS Safe Infant Sleeping (Theory) via MyLearning

Related CAHS internal policies, procedures and guidelines

- Safe Infant Sleeping Policy and Standard MP0106/19
- CAHS Safe Infant Sleeping (Theory) via MyLearning
- Parenting in the Neonatal Unit
- Skin to Skin Holding Guideline
- Skin Care Guideline

References and related external legislation, policies, and guidelines

1. Altimier L, Phillips, R. The Neonatal Integrative Developmental Care Model: Advanced Clinical Applications of the Seven Core Measures for Neuroprotective Family-centered. Developmental Care, Newborn and Infant Nursing Reviews, Volume 16, Issue 4, 2016, Pages 230-244, ISSN 1527-3369, https://doi.org/10.1053/j.nainr.2016.09.030.
2. Angus L, MacKay M, Coughlin M, DeWolfe T, Fuller K and Bauwens N. A pain and stress assessment and management quality improvement initiative to align with the BEST START recommendations, Journal of Neonatal Nursing, 2022, ISSN 1355-1841, https://doi.org/10.1016/j.jnn.2022.09.001.
3. Cheong JLY, Burnett AC, Treyvaud K, Spittle AJ. Early environment and long-term outcomes of preterm infants. J Neural Transm (Vienna). 2020 Jan;127(1):1-8. doi: 10.1007/s00702-019-02121-w. Epub 2019 Dec 20. PMID: 31863172.
4. Doğan,I, Balci, N and Gunuz A. (2022). Physiotherapy and Rehabilitation Approaches to Premature Infants in Neonatal Intensive Care Units. Journal of Physical Medicine Rehabilitation Studies & Reports. 1-5. 10.47363/JPMRS/2022(4)150.
5. Govindaswamy P, Laing S, Waters D, Walker K, Spence K, Badawi N. Needs and stressors of parents of term and near-term infants in the NICU: A systematic review with best practice guidelines. Early Hum Dev. 2019 Dec;139:104839. doi: 10.1016/j.earlhumdev.2019.104839. Epub 2019 Aug 19. PMID: 31439386.
6. Griffiths N, Spence K, Loughran-Fowlds A, Westrup B. Individualised developmental care for babies and parents in the NICU: Evidence-based best practice guideline recommendations. Early Hum Dev. 2019 Dec;139:104840. doi: 10.1016/j.earlhumdev.2019.104840. Epub 2019 Aug 21. PMID: 31445697.
7. Jani P, Skelton H, Goyen TA, Fitzgerald DA, Waters K, Badawi N, Tracy M. Regional oxygenation, perfusion and body and/or head position: Are preterm infants adversely impacted? A systematic review. Paediatr Respir Rev. 2022 Sep;43:26-37. doi: 10.1016/j.prrv.2021.09.004. Epub 2021 Sep 23. PMID: 34654646.
8. Montirosso, R et al. “Promoting Neuroprotective Care in Neonatal Intensive Care Units and Preterm Infant Development: Insights From the Neonatal Adequate Care for Quality of Life Study.” Child Development Perspectives 11 (2017): 9-15.
9. Nasef N, Rashed HM, Aly H. Practical aspects on the use of non-invasive respiratory support in preterm infants. Int J Pediatr Adolesc Med. 2020 Mar;7(1):19-25. doi: 10.1016/j.ijpam.2020.02.005. Epub 2020 Feb 18. Erratum in: Int J Pediatr Adolesc Med. 2020 Dec;7(4):212. PMID: 32373698; PMCID: PMC7193067.
10. Nurlaila, Herini ES, Hartini S, Kusuma MTPL. Interventions to reduce parental stress and increase readiness of parents with preterm infants in the neonatal intensive care unit: A scoping review, Journal of Neonatal Nursing, 2022. DOI.org/10.1016/j.jnn.2022.12.002
11. Park J. Sleep Promotion for Preterm Infants in the NICU. Nurs Womens Health. 2020 Feb;24(1):24-35. doi: 10.1016/j.nwh.2019.11.004. Epub 2020 Feb 19. PMID: 32083554.
12. Santos, Alessandra & Viera, Claudia & Bertolini, Gladson & Osaku, Erica & Costa, Claudia & Grebinski, Ana. (2017). Physiological and behavioural effects of preterm infant positioning in a neonatal intensive care unit. British Journal of Midwifery. 25. 647-654. 10.12968/bjom.2017.25.10.647.
13. Kelsee L Shepherd, Stephanie R Yiallourou, Alexsandria Odoi, Emma Yeomans, Stacey Willis, Rosemary S C Horne, Flora Y Wong, When does prone sleeping improve cardiorespiratory status in preterm infants in the NICU?, *Sleep*, Volume 43, Issue 4, April 2020, zsz256, https://doi.org/10.1093/sleep/zsz256
14. Wiley F, Raphael R & Ghanouni P (2021) NICU positioning strategies to reduce stress in preterm infants: a scoping review, Early Child Development and Care, 191:15, 2333-2350, DOI: 10.1080/03004430.2019.1707815

This document can be made available in alternative formats on request.

Document Owner:	Neonatology		
Reviewer / Team:	Neonatal Coordinating Group		
Date First Issued:	August 2006	Last Reviewed:	June 2023
Amendment Dates:		Next Review Date:	June 2026
Approved by:	Neonatology Coordinating Group	Date:	27th June 2023
Endorsed by:	Neonatology Coordinating Group	Date:	
Standards Applicable:	NSQHS Standards:  Child Safe Standards: 1,10		

Printed or personally saved electronic copies of this document are considered uncontrolled