



Promotion of Sleep Position Statement

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COINN (Council of International Neonatal Nurses, Inc) acknowledges that limited resources and/or personnel may restrict opportunities to implement the recommendations and action points. To improve health outcomes, the global neonatal care community must strive to uphold these recommendations. This position statement is applicable to any healthcare professional caring for the small and sick newborns and their families.

SUMMARY

The Council of International Neonatal Nurses, Inc. (COINN) recommends that a neonate's sleep is to be protected and supported. Sleep is important for brain development, growth, healing, and general health. The protection of sleep post-delivery and during the period of hospitalization particularly for premature neonates, is a core component of neonatal care.

BACKGROUND AND FACTORS

Newborn term healthy neonates on average sleep 16–18 hour per day, with sleep states generally defined as quiet sleep and active sleep - precursors to non-rapid eye movement and rapid eye movement sleep states in adulthood (Bennet et al., 2018).

Active sleep is considered the most important behavioural state for neonates (particularly premature neonates who spend 70-80% of their sleep time in this state). Active sleep plays a key role in organizing the central nervous system and is important for sensory input processing, consolidation and learning (Altimier & Phillips, 2016). During active sleep muscle tone is reduced with irregular breathing and heart rate, and spontaneous twitching and eye movements (Curzi-Dascalova, 2001).

Quiet sleep is necessary for energy restoration, tissue growth and repair, and the maintenance of homeostasis (Altimier & Phillips, 2016). In quiet sleep there is higher muscle tone, absence of eye movements, and regular heart rate and respiration (Bennet, Walker, & Horne, 2018). This state is limited for premature neonates due to immature physiological systems, reduced muscle tone, poor control of movements and limited ability for self-regulation.

Distinctions of sleep states are difficult to determine before 30 weeks gestational age – prior to 30 weeks both sleep states are largely characterised as indeterminate sleep (Mirmiran, Maas, & Ariagno, 2003).

Sleep is crucial to foster optimal brain development, cognition and behaviour, however, disruptions can occur from the first hours of life (Grigg-Damberger, 2016). Sleep quality can be impaired by the environment, including the light and noise of neonatal intensive care units (NICU) (van den Hoogen et al., 2017) and treatment such as respiratory support (Collins, Barfield, Davis, & Horne, 2015). Neonatal nursing care interventions, whilst critical, can lead to physiological instability, and can be stressful for neonates, which together with sleep interference risk negatively impacting their neuromotor, behavioural, growth milestones and sleep patterns (Sanders & Hall, 2018). It is a priority that neonatal teams understand the importance of sleep for the neonate's wellbeing and that this is part of their education. It was recognised in a recent study that healthcare professionals view sleep as important but more theoretical knowledge would support strategies for implementation in practice (de Groot et al., 2023).

Ultimately, optimizing opportunities for sleep gives neonates a better chance of healthy brain maturation (Bik et al., 2022) as sleep has a protective effect on brain development in premature neonates (Ednick et al., 2022). General strategies to protect sleep involve optimizing the environment, comfortable positioning, minimizing stress and pain, integrating families in care, protecting skin integrity, and ensuring adequate nutritional status.

COINN RECOMMENDATIONS AND ACTION POINTS:

1. Recognize the significance of promoting and protecting sleep as a keystone of the treatment of neonates in the neonatal intensive care unit (NICU.)
2. Include sleep theory in neonatal education.
3. Support neonatal sleep integrated teaching and education programs (e.g., e-learning, parent information, flyers) targeted to nurses, physicians, parents, visiting healthcare professionals and support personnel.
4. Observe and record sleep and wake periods of neonates to assist with identifying sleep-wake patterns.
5. Incorporate appropriate sleep measurements (e.g., validated observational scales, EEG, innovative non-obtrusive sleep measurements) into daily ward round assessments to increase awareness of sleep as a key factor in neonatal health.
6. Establish good practice guidelines about elective care procedures which can be postponed during sleep (e.g., routine blood testing, routine x-rays, routine cardiac assessments).

7. Avoid (where possible) disrupting neonatal sleep no less than 60 minutes after a previous sleep disruption.
8. Schedule care / interventions for when the neonate is naturally awake (where possible)
9. When required to wake the neonate, undertake this with gentle touch and quiet talking.
10. Pay attention to intolerance of cares / interventions – provide clustered activities and care as tolerated.
11. Practice regular scheduled unit-based quiet times/hours (dim lighting, quieter environment, reduced visitors)
12. Promote opportunities for skin-to-skin contact (kangaroo care) and neonatal massage.
13. Consider use of the following as appropriate to protect and support sleep:
 - a. Headphones
 - b. Alarm modifications
 - c. Nesting aids
 - d. Swaddling
 - e. Non-nutritive sucking
 - f. White noise
 - g. Music therapy
 - h. Eye masks
 - i. Incubator covers.

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