

# Developmental Care in Newborn Intensive and Special Care



## Key points

- Developmental care supports and enhances the model of care
- Developmental care minimises stress for the baby and their family
- Developmentally supportive care encourages the caregiver to be guided by the needs of the individual baby and family

## 1. Purpose

This clinical guideline outlines the provision of developmental care for babies admitted to The Royal Women's Hospital Newborn Intensive Care Unit (NICU) and **Special Care** (Sandringham campus). This includes providing the baby's family with the knowledge and skills to enable them to deliver developmentally supportive care for their babies in hospital and at home.

The aims of developmental care are:

- reduction of baby's stress and agitation
- energy conservation and enhanced recovery
- caregiver understanding of baby's behavioural cues (signs of stability or stress)
- encouragement and support of parents in the primary caregiver role
- minimisation of potential harm due to the ex-utero environment
- promotion of normal growth and development
- prevention of abnormal postures
- stabilisation at each stage of baby's neuro-developmental maturation and support of emerging behaviours and organisation
- enhanced family emotional and social wellbeing.

## 2. Definition of terms

**Developmental care:** interventions taken to support the behavioural organisation of each individual baby, enhancing physiological stability, protecting sleep rhythms and promoting growth and maturation. These interventions include handling and positioning measures, reduction of noxious environmental stimuli, and cue based care - including feeding.

**Behavioural organisation:** the ability of the baby to maintain a balance between the 5 subsystems (autonomic/physiologic, motor, state, attention and interaction, and self-regulation) via which the baby is in continual interaction with his/her environment.

**Cue based care:** care giving and interaction based on the baby's behavioural cues, including the appropriate provision or modification of sensory stimulation and interaction.

## 3. Responsibility

All baby caregivers (family, nursing, medical and allied health staff) to provide individualised developmental care for the baby, to the extent that the baby's medical condition permits.

Education and involvement of parents, acknowledging that they are the most important people in the baby's life and supporting the baby's emotional, social and physical wellbeing, is a crucial part of family centred developmental care.

## 4. Guideline

### 4.1. Assessment / investigations

- Observation of baby's behavioural cues
- Provision of sensitive handling, responsive to behavioural cues
- Provision of supportive positioning
- Monitoring of ambient light in the NICU or SCN
- Monitoring of types of noise and noise levels in the NICU or SCN
- Provision of cue-based feeding opportunities, responsive to baby's engagement and disengagement cues.

### 4.2. Management

Developmental care should be:

- individualised to each baby
- consistent with baby's level of maturity and gestational age
- flexible and able to be adapted to changes in the baby's health status.

Care/interventions need to be sensitive to baby's cues, taking into account how much stimuli each baby can tolerate. When possible, appropriately timed interventions to support the baby's state, physiologic status and behavioural responses.

Interventions should be evaluated based on the baby's response or 'cues' and the appropriateness of all interventions should be evaluated regularly.

Individualise all stimuli e.g. auditory, tactile, visual stimuli and positioning as appropriate for baby's gestational and postnatal age and medical condition.

Encourage families to participate, in partnership with staff, in designing a developmental care plan that meets their baby's needs and incorporates observations of their baby.

Integrated care practices that emphasise co-ordination and continuity throughout the continuum of care are encouraged.

All other hospital workers (PSA, Ward Clerk, BME, Engineers) or visitors (family visitors or professional) in the NICU to assist in the provision and maintenance of a developmentally supportive environment as requested.

Neonatal Services and hospital management to provide support for integration of care practices and continuing education and monitoring of care.

### Interventions

Continually assess the baby's physiologic and behavioural responses.

### Cue-based care and handling measures

- Recognise behavioural cues (signs of stability or stress, approach signals, coping/self calming signals, time-out signals) and provide or modify care as appropriate.
- Protect quiet (deep) sleep - delay handling if baby is in quiet/deep sleep. Observe baby for 5-10 minutes post handling for any delayed stress response.
- Cluster care as tolerated to provide long periods of undisturbed rest. Recognise signs of stress and sensory overload. Respond to stress cues during handling with containment holds and time-outs (short breaks), enabling physiological recovery before continuing with slower handling. If a baby is unable to cope with a particular cluster of care, then perform fewer care procedures next time if possible.

# Developmental Care in Newborn Intensive and Special Care



- Handling techniques include gentle arousal (talk softly to baby and touch gently before handling), slow and minimal handling, containment of baby during handling/procedures including lifting and transfers, and swaddling for weighing and bathing. Avoid sudden position changes. Avoid over-stimulation - whenever possible try to minimise unnecessary light and noise during handling.
- Facilitate self-consoling/calming behaviour.
- Provide soothing interventions or comfort measures such as non-nutritive sucking, containment of baby's arms and/or legs (gently hold baby's hands together on their chest and/or hold legs tucked up), grasping opportunities and kangaroo care (skin to skin contact).
- Provide opportunities for oral (suck) feeding in response to baby's feeding readiness cues. Recognise signs of stress and respond to baby's disengagement cues by providing a short break, adjusting flow rate or modifying positioning as needed.

Additional sensory input is provided as a baby matures (if physiologically stable) (as listed below):

- Additional sensory input may involve providing the opportunity for the baby to look at faces, pictures or toys, and listen to gentle sounds.
- Interaction is best when a baby is in a quiet and alert state, and demonstrating approach signals. Supportive positioning and reduced lighting and noise facilitate optimal interaction.
- The baby should set the pace for interaction, and engagement and disengagement cues need to be recognised and responded to appropriately.
- Introduce one stimulus at a time e.g. looking at a parents face without talking or stroking.
- Additional sensory input is not appropriate for an ill, unstable, fragile or extremely premature baby.
- Avoid over-stimulation e.g. too many toys may be overwhelming).

## Positioning

Provide developmentally supportive positioning for all babies within the confines of necessary medical and nursing care.

Developmentally supportive positioning is important to optimise musculoskeletal development and behavioural organisation.

Promote flexed, symmetric postures by encouraging:

- shoulder and hip flexion and adduction
- neutral alignment of ankles with dorsiflexion
- neutral alignment of head and neck whenever possible
- some flexion of trunk.

Promotion of flexed postures helps baby conserve body heat and energy (improved weight gain and growth) and facilitates midline skills as in hand to hand/face/mouth movements and behaviours.

Appropriate positioning is facilitated by the provision of boundaries, through the use of nesting and /or swaddling.

**Note** - As babies approach discharge to home safe sleeping guidelines must be implemented unless contra-indicated. This is usually as baby approaches term age or possibly later with longer stay babies, according to their clinical and developmental needs. Consult with the AUM or medical team, refer to [Safe Sleeping for Babies guideline](#).

## Reduction of Noxious Stimuli

**Maintain a quiet environment:**

- always close incubator porthole doors quietly and encourage everyone else to do the same
- always talk quietly in the NICU

# Developmental Care in Newborn Intensive and Special Care



- do not talk across baby's cot
- minimise other noise in the nursery (minimise audible alarms - set alarm limits and tone at appropriate levels and try to anticipate and silence alarms before they sound. Silence audible alarms as soon as possible).
- observe 'quiet' hours if introduced
- monitor noise levels at least periodically so problems can be identified and modifications made (Noise level monitors - mobile 'Ears')
- investigate equipment noise levels prior to purchase
- comply with noise level unit based recommendations

### Maintain appropriate individualised light environment:

- shield babies from bright light (cover cots and provide appropriate eye wear when necessary)
- reduce light levels, maintaining a safe level for accurate clinical observation as necessary
- make use of available daylight, but avoid bright, direct sunlight
- monitor ambient light levels

### Reduce other noxious stimuli:

- open alcohol swabs outside incubator and remove them from the incubator immediately after use
- discourage use of strong fragrances
- suction gently only as required
- provision of mouth care
- encourage use of breast milk
- maintain skin integrity
- minimise painful procedures and provide appropriate pain relief measures including comfort measures.

### 4.3. Consumer information

Discuss developmental care with the babies' parents and family members (as appropriate) and provide relevant information.

## 5. Evaluation, monitoring and reporting of compliance to this guideline

Compliance to this procedure will be monitored by incidences reported to VHIMs.

Queries from staff or parents regarding the developmental care principles and protocols can be addressed to senior nursing staff and/or the Allied Health Developmental Team.

## 6. References

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# Developmental Care in Newborn Intensive and Special Care



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## 7. Legislation/Regulations related to this guideline

Not applicable.

## 8. Appendices

### [Appendix 1: Organisation of Behavioural Development and Sleep State](#)

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# Organisation of Behavioural Development and Sleep State



Subsystems	Characteristics
Autonomic	Heart rate, Blood pressure, Respirations, Colour, O <sub>2</sub> Saturations, Temperature regulation, GI functions
Motor	Posture, muscle tone, movements
State Organisation (including attention and interaction)	States of Consciousness (i.e., range of Sleep and Awake States), including Transition between States; Alertness; Taking in information and responding to caregivers and environment

Sleep state organisation	
<p><b>Sleep:</b> contributes to growth regulation by flexible nutrition supply utilisation and growth hormones secretions. It is thought that sleep is involved in development and maturation of the brain. Sleep organisation is correlated with normal neurological development, and in early life may promote brain development</p>	
<p><b>Quiet sleep:</b> absence of REM and body movements, presences of regular respirations</p>	<p>Most environmental factors can interfere with sleep ratios, posture, prone/side-lying nested in a comfortable position is associated with less stressful behaviour and longer periods of sleep.</p>
<p><b>Active sleep:</b> presence of REM, irregular respirations and body movements</p>	
<p><b>Indeterminate sleep:</b> the period of time at the beginning of sleep and between quiet sleep also known as transitional sleep</p>	