DEVELOPMENTAL CARE
Caring for a baby by ensuring a gentle environment

Due to the nature of the NICU environment (increased light and sound, painful invasive procedures, multiple care givers, lack of consistency, disruption of sleep/wake cycles, and other abnormal stimuli), the infant is deprived of his/her normal ante/postnatal developmental environment. Over time this overload of stressors can affect a baby’s ongoing growth and development and can lead to emotional and behavioural problems.

1) Sight
The premature eye has a decreased tolerance for light. The iris has a decreased ability to adjust to changes in light and frequently admits more light, which causes pain.

- Decrease ambient light – turn off overhead lights by 13h00
- Use individual lighting where possible
- Cover eyes when under phototherapy
- Cover all closed incubators with a blue blanket to decrease light penetration. Ensure baby is nursed on a monitor if not clearly visible
- Shield critically ill / ventilated babies with a blanket where possible
- Allow babies to focus on mother’s face but do not stimulate two senses at once e.g. sight and hearing
- Normal diurnal patterns should be maintained with decreased light and activity at night

2) Hearing

- Decrease ambient noise
  - Keep radio and voice levels low
  - Eliminate alarms as quickly as possible
  - Do not hold conversations at the bedside
  - Do not bang the incubators
  - Empty water from humidified tubing promptly
- Protect baby’s ears in the presence of loud noises

3) Positioning and Growth

- Ensure baby receives 120 Kcal/kg/day
- Monitor weight gain which should be ± 1% increase per day
- Maintain flexion of spine and limbs, as in utero. Use appropriate positioning devices e.g. nesting
- Ensure shoulders are curved inwards and not abducted, particularly when nursed prone, which assists in preventing the development of an abnormal posture (use of a small fabric roll placed vertically between the shoulders when lying prone is helpful)
- Ensure baby is flexed along the midline, contained and nursed in the prone or lateral position, as this ensures natural muscle and tendon formation. Avoid “squashed frog” positioning
- Use rolled blankets as “cocoon”/nest - this must be big enough to contain baby horizontally with the feet flexed against it (to prevent drop foot). Use blanket tucked over “cocoon” to cover baby
- Allow hands access to face, as this is a primitive reflex
- Use shoulder roll to ensure patent airway and curved shoulders when nursed supine
- Nurse prems predominantly prone as this aids in absorption of feeds; ↓ aspiration; ↓ apnoea and promoting rest and sleep

4) Pain

- Pain transmission along nerve pathways is both exaggerated and prolonged, therefore keep all sensory stimulation to a minimum
- Provide pain relief, e.g. non-nutritive sucking, containment / skin-to-skin holding for minor procedures. For invasive procedures (e.g. PICCS or lumbar punctures) use sucrose or appropriate analgesia, e.g. morphine prior to the procedure
- Ensure adequate sedation and analgesia, e.g. Dormicum® and morphine, prior to intubation
5) Rest and sleep
- Research has suggested that sleep may affect our immune systems, enabling us to stay well. Infants need ± 16 hrs of sleep a day. If this is not achieved, irritability and behavioral problems may occur
- All prems under 1.2kg must have minimal handling, i.e. 6 - 8hrly
- Group all interventions to coincide with awake periods. Do not wake baby if at all possible, e.g. to change a nappy
- All babies and mothers to sleep between 13h00-14h00, i.e. no interventions except emergencies
- Try to differentiate between night and day with regard to amount of interventions, degree of sound and light etc.

6) Handling
- Observe and teach mother to identify her baby’s behaviour and signals, and show her how to respond appropriately.
- There are three typical types of behavior:
  - Stress or withdrawal, which indicate the infant’s need for a change or cessation from stimulation. Behaviours include colour changes, changes in vital signs, vomiting, hiccupping, passing flatus, sneezing, yawning, hypotonia, frantic flailing movements, finger splaying, hyper-extension of extremities, sleepiness, glassy, staring eyes, irritability or a look of panic.
  - Approach, which indicates that a baby is ready for interaction. Behaviours include regular respiration, stable heart rate, pink colour, quiet states (absence of startles, twitches and tremors), awake or alert states, smooth movements of arms or legs and a relaxed appearance.
  - Self-regulatory, whereby the infant calms him/herself and maintains a quiet state. Behaviours include hand-to-mouth and hand-to-face movement, sucking, grasping, hand clasping, holding onto objects, looking away, tucking arms, legs and trunk into a flexed position and bracing.
- Only handle baby when awake. Encourage mother to massage and interact with baby at these times. Discontinue handling when baby becomes distressed.
- Avoid stroking prems - they respond better to stationary containment with one hand on their head and the other on their body.

7) Consistency
- The NICU environment constantly changes which is stressful to the developing infant and his/her family. It is important to try and establish consistent routines and, particularly prior to discharge, to establish routines as close as possible to those at home. This allows the infant to develop a sense of security.
- Consistency of caregivers should be maintained as much as possible, as the nurse learns to understand and interpret the baby’s individual behavior and develop a trust and rapport with the parents.

8) Kangaroo mother care
This involves the baby being nursed on his/her parent’s chest with skin-to-skin contact (only a nappy and a cap). The head should be covered with a cap and a blanket tightly tied round, holding baby to parent. (see “KMC” guideline) The more frequently and longer this is done the better. Research has shown that this: ↓ infection rates; ↑ bonding; ↑ SATS; ↓ apnoea; ↓ aspiration; promotes homeostasis; ↑ growth rate and ↓ length of hospital stay.
- Kangaroo mother care (KMC) should be given to all stable babies for as much of the day as possible
- Mothers may walk around with babies if no interventions are required
- Babies in special care should be KMC’d for the majority of the day
- If babies are on IV or O2, KMC can be given at the bedside
- Ventilated infants can be given KMC with supervision, depending on their condition
- If KMC is not possible at other times it should at least be given between 14h00-16h00